Technical catalogue

SACE Isomax S

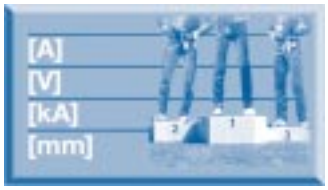
Low-voltage moulded-case circuit-breakers

604050/012 en

ABB

Contents

Presentation  1

Main features 

2

Ranges  3

Accessories  4

Characteristic curves and technical information  5

Dimensions and circuit diagrams  6

Order codes 

7

SACE Isomax S.
The greatest project for moulded-case circuit-breakers

A single series for all applications

SACE Isomax S is a project which evolves continually and is today the largest and most complete family of low voltage moulded-case circuit-breakers on the market, able to fulfil all installation requirements, from the small user up to large industrial electrical power distribution plants.

Innovation, Technology and Quality have always been the main guides for ABB SACE in developing products and are at their peak in the SACE Isomax S series – the moulded-case circuit-breakers characterised by high quality, reliability, and performance under all conditions, simplicity of installation and safety of operation.

The continual and constant evolution of the series has led to further extending the range of products, thereby making the SACE Isomax S offer increasingly complete over time.

The series, which is divided rationally into eight basic sizes from S1 to S8, does, in fact, consist of different ranges destined to fulfil any installation need in a specific and optimal way.

The completeness of the series can also be noted in better rationalisation of use: the overall dimensions, methods of installation and possibility of applying accessories are all the same, regardless of the type of range the circuit-breaker is placed in.

Great importance is also put on the microprocessor-based electronic releases (mounted on the circuit-breakers starting from 160A): SACE PR211/P, PR212/P and SACE PR212/MP (International ABB SACE Patent), specifically designed to actuate dedicated functions for motor starting and protection.

Thanks to innovative and state-of-the-art protection functions, they ensure reliability and precision and are unaffected by electromagnetic interference.

A basic characteristic of these types of releases is their ability to communicate and dialogue with the SACE SD-View 810 self-configuring software, thereby allowing full integration of the circuit-breakers in the management logics relative to electric network supervision and control systems.

INDUSTRIE FORUM
DESIGN HANNOVER

The new series has been studied respecting the most modern ergonomic criteria. Witness to this is the prize awarded with the IF seal to the circuit-breakers at the Design Forum in Hannover.

GSIS9071

A world of solutions for installation design engineering.

An answer to all requirements.

The SACE Isomax S family is divided into eight basic sizes, S1, S2, S3, S4, S5, S6, S7 and S8 with rated uninterrupted currents from 125 to 3200A.
The types of devices consist of: fixed, plug-in and withdrawable circuit-breakers with seven ultimate rated breaking capacity levels - from 16 to 200kA (380-415V) - identified by the letters:
B, N, S, H, L, V, X.

From this family, which is considered the common "nucleus", a series of dedicated ranges are configured, which keep the same installation characteristics and accessory application possibilities.
Within the series there are therefore circuit-breakers available for alternating and direct current distribution, current-limiting circuit-breakers, circuit-breakers for motor protection, switch-disconnectors, circuit-breakers for applications with voltages up to 1000V, and residual current circuit-breakers, as well as specific ranges (for motor protection and switch-disconnectors) complying with the North American UL489 and CSA C22.2 Standards.
This means wider application possibilities both in industrial and civil sectors.
They can therefore be mounted in primary (Power Center) and secondary (Panel Board) distribution switchboards, for motor protection and control (Motor Control Center), in generators and for end users. Their performances are, however, of particular interest where critical situations arise (very high rated and fault currents), or where complex plant engineering solutions are needed (special coordination requirements and plant automation).
They also guarantee total selectivity of the protections up to full breaking capacity of the circuit-breaker installed on the load side.


GSIS9072

Thanks to its special construction characteristics, this range of circuit-breakers combines normal Isomax safety characteristics with very high performances. The breaking technique used (double interruption per pole) and the special shape of the breaking parts, allow very high value short-circuit currents (200kA) to be tripped extremely rapidly, making these circuit-breakers ideal wherever protection close to the power supply source is needed.

Alternating current

Circuit-breakers with thermomagnetic releases and circuit-breakers fitted with microprocessor-based SACE PR211/P, PR212/P releases are available for protection of alternating current networks. These feature an application field from 10 to 3200A and a rated voltage of 690V. Apart from the more generic applications, they are particularly suited to protection of generators, capacitors, transformers and machine tools.

Direct current

Pole connection in series allows applications in the most severe operating conditions and in any type of network (insulated, with earthed polarity, and with median point of the power supply earthed). The circuit-breakers for direct current with thermomagnetic releases are available for operating currents between 10A and 800 A, with rated voltages up to 750 V, with 3 poles in series, and 250 and 500V, with two poles in series.

Centralised supervision and control systems

The reliability, efficiency and quality of a LV electrical power distribution service is considerably increased by constant supervision of users and all the parameters of the installation itself. The information regarding the installations is collected using microprocessor-based field components which can be mounted directly on board the apparatus, such as the SACE PR212/P release, or using the devices in the SACE SD family. Moreover, the use of the SACE SD-View 810 software allows a simple personal computer to be converted into a work station for supervising and controlling electrical power distribution plants.


GSIS9073

The range for applications at 1000V in alternating current and direct current extends the use of the moulded-case circuit-breakers even further and is a good example of the continual evolution of the SACE Isomax S series. They are particularly suitable for installation in special ambients, such as mines, petrochemical plants and for electric traction.

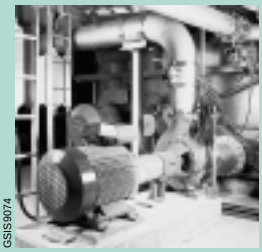

GSIS9074

ABB SACE proposes various solutions, which allow type 2 coordinations to be made for switching and protecting motors, from 0.37kW to 355kW.
It is possible to select either circuit-breakers suited just to protection against short-circuit, or circuit-breakers fitted with the new SACE PR212/MP electronic release, which is technologically advanced and has been specifically studied for motor protection. The latter integrates protection functions on

SACE Isomax S current-limiting circuit-breakers

GSIS9091

The switch-disconnectors are derived from the corresponding circuit-breakers, keeping the overall dimensions, versions and accessories unchanged. They guarantee operation and isolation in maximum safety and their release device can be activated either by the undervoltage release or by the shunt opening release. They can also be fitted with residual current releases, thereby constructing "pure" residual-current circuit-breakers.

SACE Isomax S switch-disconnectors

SACE Isomax S Power distribution

GSIS9075

SACE Isomax S for applications up to 1000V

board the circuit-breaker which are normally carried out by other devices, thereby ensuring numerous installation and service advantages.

GSIS9093

SACE Isomax S according to UL/CSA Standards

Thanks to a specific range of SACE Isomax S circuit-breakers complying with the UL489 and CSA22.2 Standards, there are also greater possibilities for those customers operating on markets subject to the specifications defined in the North American standards. The range consists of seven sizes with rated uninterrupted current from 100A to 2500A and breaking capacities, at 480 V AC, which can reach 100kA.
Within the basic series, there are circuit-breakers with magnetic only releases (MCP - Motor Control Protection) for motor protection, and switches (Moulded-Case Switch - MCS) for use as isolators or switching devices for lines, busbars or plant parts.

SACE Isomax S for motor protection classical and advanced

A world of success

The SACE Isomax S offer has been constantly renewed according to market requirements – and often even anticipating these – and is always to the fore from the technological viewpoint. Meanwhile, the quality and reliability have always remained at the maximum levels expected and the market has shown its appreciation of this.

Behind every reference lies a requirement fulfilled. It is facts which speak for SACE Isomax S. SACE Isomax S is a highly successful product of recognised quality, with many fields of application and it involves different sectors all over the world, with either standard or highly personalised products. There is nowhere electrical power is used where SACE Isomax S is not to be found: manufacturing industries, steelworks, refineries and chemical plants, drilling rigs, gas pipelines, water pipelines, hospitals, airports, trains, railway and underground railway stations, calculation centres, offices, congress centres, theatres, and skyscrapers, as well as the most prestigious buildings worldwide.
ABB SACE has, moreover, acquired knowledge which is practically unsurpassed in application areas where the highest degree of safety is required, and this has qualified it as the world leader in various sectors.
Thousands of ships of all types – cruise ships, container ships, bulk carriers, tankers, etc. – and flying the flags of all nations – are equipped with ABB SACE products, which are also widely used in railway traction and are the favourite product in the depths of mines.

ABB SACE apparatus is also responsible for protection (sometimes also integrated with control functions) of plants of considerable economic and technological importance, constructed within the sphere of large infrastructure projects. Orders are processed which stand out both for their size (such as the pumping stations of gas pipelines thousands of kilometres long) and for their advanced context (astronomical observatories and international research centres).
SACE Isomax S imposes itself on the markets worldwide. For example, apparatus has been supplied to some of the most important European and Middle Eastern electricity boards as well as to North American and Asian electrified transport companies.

Protection and control in installations for electric traction

Particularly severe environmental conditions such as mines and steelworks

Refineries and chemical plants as well as gas pipelines, water pipelines ...

Installation on board ships


SACE S5N
ABB
SACE S5
I
on
O
off
Offices, theatres,
shopping malls and residential
complexes
Underground railway
stations
Off-shore drilling rigs
Protection and control
of motors, generators...
GSIS9076

Selection and design engineering tools, management flexibility, services and consultancy:

an all-round offer

With the aim of guiding and facilitating selection of its products, ABB SACE ensures 360° support, both before and after the sale. For this purpose, to design and size electrical installations, it makes various work tools available, which facilitate calculations, ensure compliance of the installation with the Standards and reduce the risks of any errors.
These are basically divided into calculation, design and estimate software, and manual tools.

– **D.O.C.** (Design Optimization & Computation) is a system which allows correct sizing of industrial low voltage electrical installations, able to propose the most suitable design selections regarding cables, busbars and protection devices. It allows the design engineer to develop clear and complete design documentation rapidly, based on the calculation models provided by the most recent standards.
– **C.A.T.** (Computer Aided Technical Selection) is both an electronic catalogue and a technical aid tool for selecting and applying accessories to each individual circuit-breaker.
By means of a guided pathway, it is possible to select, configure and order the most suitable apparatus for your own installation requirements.

Four **Slide rules** of different colours, which make up the ABB Kits, allow rapid sizing calculations of the electrical installation. The following can be carried out:
- Cable sizing and calculation of the short-circuit currents (yellow slide rule)
- Checking the protections against direct contact and short-circuit of the cables (orange slide rule)
- Selective and back-up coordination (green slide rule)
- Sizing of motor lines and transformer outgoing feeders (blue slide rule)

The calculation methods and data indicated on the slide rules are taken from the CEI, IEC and NFC Standards in force and from installation practice.

The **Guide to low voltage installations** is a brief collection of legal and technical regulations based on the current standards, regarding design, sizing and installation of an electrical plant.
The guide takes into consideration the user plant from the electric power delivery point (MV/LV substation) in 1st category systems.

Immediate ordering and management flexibility
Rapid ordering procedures have been provided for circuit-breakers in the SACE Isomax S series, and the configuration logic of the series enables efficient and flexible warehouse management.
An order file can be generated compatible with the EDIFACT (Metel or ABB) standard, ready to be converted into EDI format and transmitted electronically.

Using EDI (Electronic Data Interchange) to send orders rationalises the logistics chain, thereby reducing transit times and the risk of errors. EDI transmission allows the order to be loaded automatically at ABB SACE so that the request is immediately sent to production, together with the order acknowledgement to the customer.
The availability of standardised accessories for groups of circuit-breakers makes it possible to reduce the number kept in the warehouse and very short procurement times allow limited stocks to be kept as these can be rapidly replenished.

Training:
an indispensable tool
for professionals

By means of its technical training courses, ABB SACE is committed to putting its wealth of experience gained in over more than 60 years of operation at disposal. The courses are an opportunity for all operators in the sector to update their knowledge and compare notes, under the guidance of experts. Information and training have always been success factors for professional growth and development.
Professional refresher training on both technical aspects and product developments, as well as on the standards and legislation, is essential, considering that these have such important implications for the safety of people and plants. The primary aim is to meet the information needs of professionals, especially by converting the technical-standard and legislative concepts into practical terms which can be applied directly to the various products and installations.

“ABB SACE Service”

Training courses are also provided for operators and maintenance personnel who work on ABB SACE apparatus and systems. For this purpose and to meet the need for evaluation and maintenance of existing electrical installations, the company has set up the “Service Division” within its own structure, which acts as a qualified interlocutor working in close collaboration with the managers/users of the plants, to carry out maintenance, repair and overhauling activities at ABB SACE and on the user’s premises. The division also offers a spare parts, assembly and commissioning service for its own switchboards.

Just one product for everyone

SACE Isomax S is a product which has been thought up and constructed for all types of customers: the user, the design engineer, the switchboard builder, the installer, the maintenance technician and the wholesaler.


GSIS9092


GSIS9090

ABB SACE proposes technical solutions to the **user** which fulfil all requirements and are always up to date with technological innovations in the field of electrical power distribution. It offers high quality products, reliability and precision, which guarantee high performances under any conditions, safe products during service and, when necessary, simple replacement of any faulty parts.

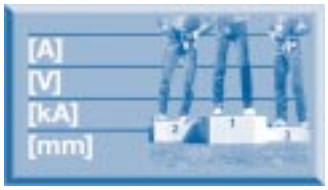
The **design engineer** has products available which comply perfectly with the international technical standards and which are able to do the job simply, safely and reliably at the highest levels of performance. SACE Isomax S circuit-breakers offer the design engineer solutions for sizing, coordination and flexibility of application which allow him to draw up a state-of-the-art project, selecting from among well-known ranges and circuit diagrams to be integrated in a complete system, and satisfying all installation requirements and performances according to the standards.

The requirements of a **switchboard builder** are fully satisfied thanks to careful design of the product. The limited volumes of the pieces of apparatus allow the switchboard dimensions to be kept to a minimum and the modularity and compactness the ranges of products are conceived with allow simple installation inside the switchboard. The whole range of products is divided into eight sizes and constructed in only three depths, thereby allowing standardisation of the supporting structures and of the switchboards and installation in prefabricated structures. The dimensional uniformity and the possibilities of connection, thanks to the variety of terminal available, considerably facilitates connections by means of busbars or cables.

ABB SACE provides the **installer** with products for any type of plant, which are practical to install, simple to use, assemble and connect and easy to check, thanks also to the quality of the accessories supplied with the apparatus and the technical support documentation provided.

GSIS9079

SACE Isomax S circuit-breakers allow easy and safe maintenance to be carried out, enabling the accessories to be inserted conveniently on the front of the circuit-breaker.
Construction rationality as well as modularity of the structure, allow the **maintenance technician** to carry out replacements without the need for any special adaptation, even when changing from one type of circuit-breaker to another (for example from an automatic to a current-limiting circuit-breaker).
Standardisation of Isomax S circuit-breakers and their accessories means simple and economical management of the spare parts warehouse for the **wholesaler**.
Furthermore, the clarity of product coding considerably helps product ordering, reduces procurement times and allows limited stocks to be kept in the warehouse since the products can be replenished rapidly.



Main characteristics

Index

Panorama of the SACE Isomax S family

A single series for all applications **2**/2

Construction characteristics

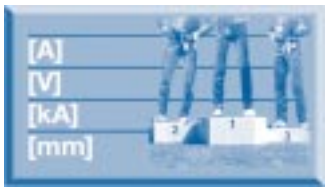
Distinctive features of the series **2**/4

Conditions of use **2**/8

Modularity of the series SACE Isomax S **2**/10

Compliance with the Standards

Standards, Approvals, Certifications and company quality system **2**/12

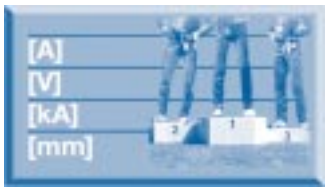


Panorama of the SACE Isomax S family

A single series for all applications

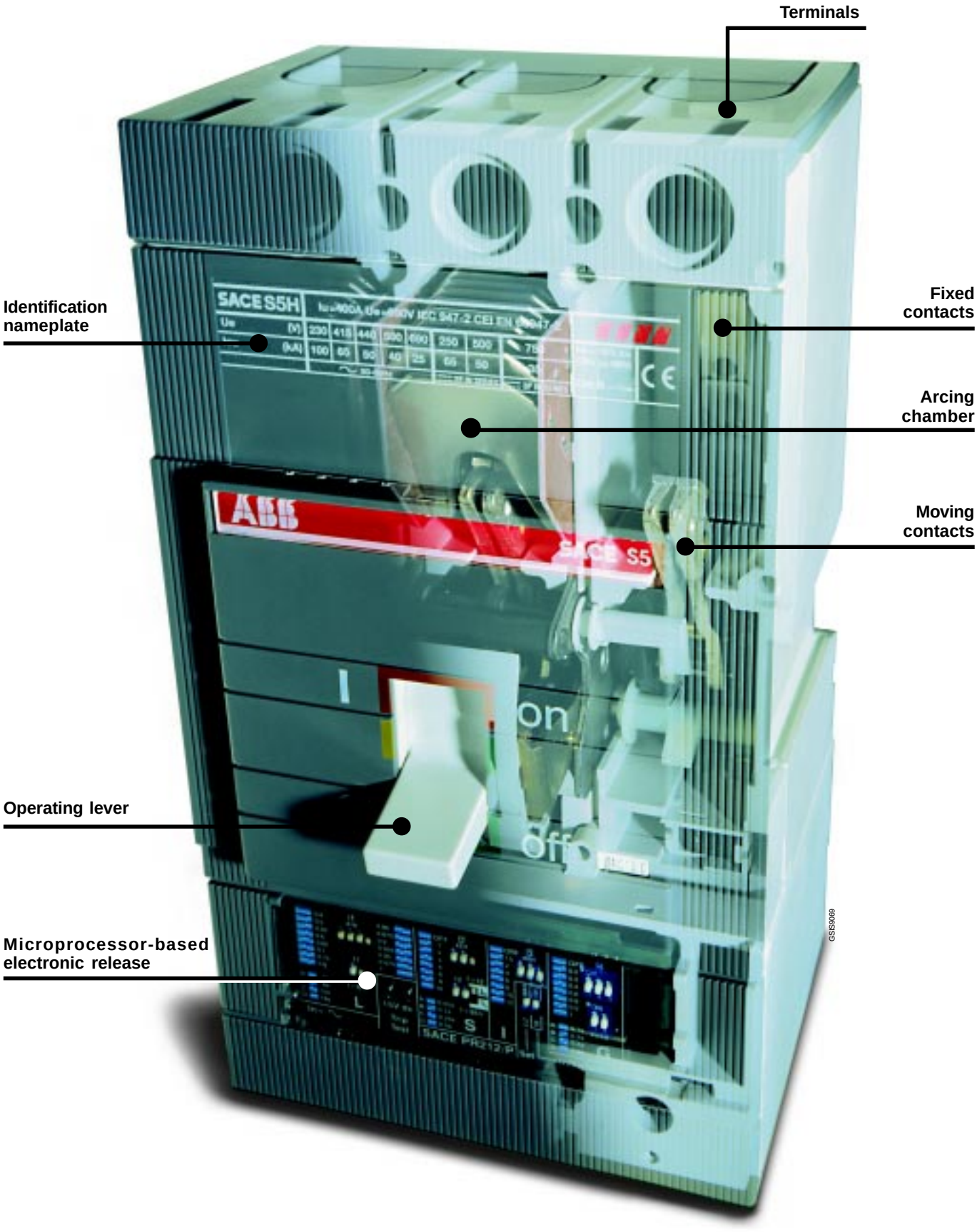
			SACE Isomax S1	SACE Isomax S2
CIRCUIT-BREAKERS FOR AC / DC DISTRIBUTION			**S1**	**S2**
Poles	[nr.]		3 - 4	3 - 4
Iu	[A]		125	160
Ue (AC)	[V~]		500	690
Icu (380/415V AC)	[kA]			
		B	16	16
		N	25	35
		S		50
		H		
		L		
		V		
Ue (DC)	[V–]		250	500
CURRENT-LIMITING CIRCUIT-BREAKERS				**S2X 100**
Poles	[nr.]			3
Iu	[A]			100
Ue	[V~]			690
Icu (380/415V)	[kA]			70
Icu (690V)	[kA]			10
CIRCUIT-BREAKERS FOR MOTOR PROTECTION				**S2X 80**
Poles	[nr.]			3
Iu	[A]			80
In	[A]			1…80
Ue	[V~]			690
Magnetic only release IEC 60947-2				■
Electronic release PR211/P (I), IEC 60947-2				-
Electronic release PR212/MP, IEC 60947-4-1				-
CIRCUIT-BREAKERS FOR APPLICATIONS AT 1000 V AC				
Poles	[nr.]			
Iu	[A]			
Icu (1000V AC)	[kA]			
CIRCUIT-BREAKERS FOR APPLICATIONS AT 1000 V AC				
Poles	[nr.]			
Iu	[A]			
Icu (1000V DC), 4 poles in series	[kA]			
SWITCH-DISCONNECTORS according to IEC 60947-3 Standard				**S2D**
Poles	[nr.]			3 - 4
Ith	[A]			125 - 160
Ue	[V~]			690
Icm	[kA]			3,1
Icw	[kA]			2,2
Circuit-breakers according to UL 489 and CSA 22.2 Standards			**S1N**	
Poles	[no.]		3	
Maximum continuous current (40 °C)	[A]		100	
Maximum Ampere Breaking Capacity (480 V)	[kA]		20	
Thermal-magnetic trip unit			■	
Microprocessor based trip unit			-	
MCP			-	
MCS			-	

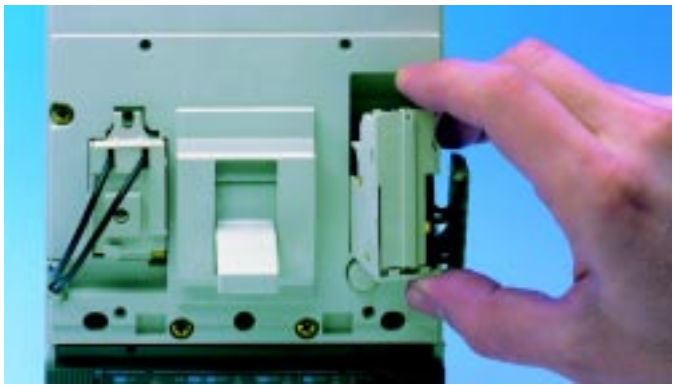
SACE Isomax S3	SACE Isomax S4	SACE Isomax S5	SACE Isomax S6	SACE Isomax S7	SACE Isomax S8
S3	**S4**	**S5**	**S6**	**S7**	**S8**
3 - 4	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4
160-250	160-250	400-630	630-800	1250-1600	2000-2500-3200
690	690	690	690	690	690
35	35	35	35		
			50	50	
65	65	65	65	65	85
85	100	100	100	100	
					120
750	-	750	750	-	-
S3X	**S4X**		**S6X**		
3 - 4	3 - 4		3 - 4		
125-200	250		400-630		
690	690		690		
200	200		200		
75	75		75		
S3 / S3X	**S4 / S4X**	**S5**	**S6 / S6X**	**S7**	
3	3	3	3	3	
160-250 / 125-200	160-250 / 250	400-630	630-800 / 400-630	1250-1600	
25…200	100…250	320…630	320..800	1000…1600	
690	690	690	690	690	
■	-	-	-	-	
-	■	■	■	■	
-	■	■	■	■	
S3L / S3X	**S4L / S4X**	**S5L**	**S6L / S6X**		
3	3	3	3		
160 / 125	160-250 / 250	400	630-800 / 630		
6 / 30	8 / 30	8	12 / 30		
S3L		**S5L**	**S6L**		
4		4	4		
160-250		400	630 / 800		
40		40	40 / 50		
S3D			**S6D**	**S7D**	**S8D**
3 - 4			3 - 4	3 - 4	3 - 4
100 - 160 - 250 - 320			400 - 630 - 800	1000 - 1250 - 1600	2000-2500-3200
690			690	690	690
10			30	52,5	85
6,5			15	25	40
S3 B/N/H/L	**S4 N/H/L**	**S5 N/H/L**	**S6 N/H/L**	**S7H**	**S8V**
2 - 3	2 - 3	2 - 3	2 - 3	2 - 3	3
150 - 225	250	400	800	1200	1600-2000-2500
85	100	100	100	65	100
■	-	■	■	-	-
-	■	■	■	■	■
S3L	**S4 N/H/L**	**S5 N/H/L**	**S6 N/H/L**	**S7H**	**S8V**
S3 H-D 150/225	**S4 H-D**	**S5 H-D**	**S6 H-D**	**S7 H-D**	**S8 V-D**



Construction characteristics

Distinctive features of the series




GSIS9048

Double insulation

The double insulation technique consists of total separation between the power circuits and the auxiliary circuits and is a characteristic of all SACE Isomax S apparatus from size S3 up.
The housing of each electrical accessory is completely segregated from the power circuit, thus avoiding all risk of contact with live parts, thereby increasing operator safety conditions during management and inspection of the installations.
Moreover, the circuit-breaker has redundant insulation between the internal live parts, both regarding thickness of materials and the distances, which are greater than those required by the IEC Standards and are in accordance with American usage.

GSIS9051

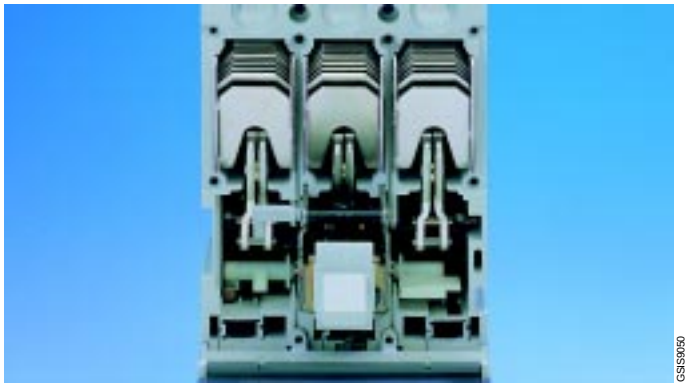
Positive operation

The operating lever always indicates the exact position of the circuit-breaker moving contacts, thereby guaranteeing safe and reliable indications (I = Closed; O = Open; yellow-green line = Open due to release trip). The circuit-breaker operating mechanism has free release, regardless of the pressure on the lever or the speed of operation. Release tripping automatically opens the moving contacts: to close them again, it is necessary to reset the operating mechanism by pushing the operating lever from the intermediate position to the lower limit of the open position.
For plug-in or withdrawable circuit-breakers, the moving part can only be detached from the fixed part with the circuit-breaker open (moving contacts separate from the relative fixed contacts).

GSIS0074

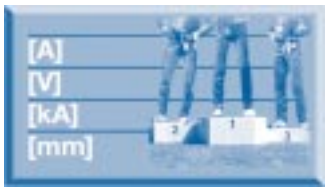
Selectivity

The complete range of releases means that the protection functions of the apparatus can be coordinated according to current-type, time-type, energy-type or residual-current selectivity chains. It is therefore possible to isolate only the areas affected by the fault, ensuring maximum service continuity. Circuit-breakers in category B are available from 400 A up.


GSIS9050

Possibility of inspection

With the circuit-breaker out of service, it is possible to check the state of the internal parts and live components of the circuit-breaker directly. The arcing chambers and the fixed and moving contacts are accessible simply by removing the circuit-breaker cover. The operation, facilitated by the limited number of components, reduces maintenance times and ensures a higher degree of safety.



Construction characteristics

Distinctive features of the series

GSIS9125

GSIS9126

2

Isolation behaviour

In the open position, the circuit-breaker guarantees isolation of the circuit in compliance with the IEC 60947-2 Standard. For plug-in or withdrawable version circuit-breakers, in the racked-out or withdrawn position, the power and auxiliary circuits are isolated, ensuring that no parts are live. Under these conditions and by means of special connectors, it is possible to carry out blank tests, operating the circuit-breaker in complete safety. The redundant insulation distances guarantee the absence of leakage currents and dielectric strength in the event of any overvoltages between the input and output.

Racking-out with the door closed

This system, starting from 160 A, allows the circuit-breaker to be racked in and out with the compartment door closed, increasing operator safety and allowing construction of internal arc proof low voltage switchboards. Racking out can only take place with the circuit-breaker open, using a special racking-out crank handle supplied with the withdrawable version circuit-breaker.

GSIS9127

GSIS9129

Electromagnetic compatibility

By using SACE PR211/P, PR212/P, PR212/MP microprocessor-based overcurrent releases and SACE RC210, RC211, RC212 electronic residual-current releases, the absence of unwarranted trips is guaranteed even in the presence of interference caused by electronic equipment, atmospheric disturbance or discharges of electrical type. Furthermore, the apparatus does not generate interference with other electronic equipment in the vicinity of the installation. This is in compliance with the IEC 60947-2 Appendix F, IEC 1000-4, EN 61000-4, EN 50081-1, EN 50081-2, EN 50082-1, EN 50082-2 European Directive No. 89/336 specifications regarding electromagnetic compatibility EMC.

Tropicalisation

The SACE Isomax S series of circuit-breakers and accessories comply with the strictest regulations for use in hot-humid-saline climates (in compliance with climatograph 8 of the IEC 721-2-1 Standards), thanks to:

- insulating cases made of fibreglass-reinforced synthetic resins;
- anti-corrosion treatment on all main metal parts (C UNI 3564-65 environment);
- Fe/Zn 12 galvanisation (UNI ISO 2081), protected by a conversion layer consisting mainly of chromates (UNI ISO 4520).


GSIS9128

Installation positions

The circuit-breaker can be installed in any position without any effect on its rated characteristics. In compliance with the IEC 60947-2 Standards, SACE Isomax S circuit-breakers can be supplied through either top or bottom terminals, without jeopardising operation of the apparatus.
They can be installed in switchboards, mounted directly on the base plate or on Din rails up to size S5.

GSIS9062

Mounting on DIN rail up to 630 A

The brackets for fixing onto standardised DIN EN 50022 rails for S1, S2 and DIN EN 50023 rails for S3, S4, S5 simplify assembly of the circuit-breakers up to 630 A in standard switchboards. This allows standardised supporting structures to be used and facilitates the stage for designing and constructing the switchboard metalwork structure.


GSIS9131

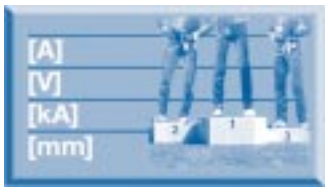
Resistance to vibration

The circuit-breakers are unaffected by vibrations generated mechanically or due to electromagnetic effects, in compliance with the IEC 68-2-6 Standards and the strictest regulations of the major classification organisations:
- RINA
- DET Norske Veritas
- Lloyd's Register of Shipping
- Germanischer Lloyd
- Bureau Veritas.


GSIS9130

Degrees of protection

Different measures have been taken in SACE Isomax S circuit-breakers to achieve IP20 degree of protection for the fixed, plug-in and withdrawable version circuit-breaker, excluding the terminals, and IP30 for the front parts of the circuit-breakers installed in switchboards.
The fixed parts are always provided with IP20 degree of protection. It is possible to achieve IP54 degree of protection in accordance with the IEC 60529 Standard with the circuit-breaker installed in a switchboard fitted with rotary handle operating mechanism transmission on the compartment door and the special insulation gaskets which can be ordered separately.



Construction characteristics

Conditions of use

Degrees of protection (according to CEI EN 60529 Standard file 519)

Circuit-breaker

IP20

without terminal covers

IP30

with terminal covers

IP40

with terminal covers
and direct rotary handle

Circuit-breaker in switchboard

IP30

Direct operating mechanism

IP30

Front for lever operating mechanism

IP40 (1)

Direct rotary handle

IP50

Rotary handle transmission

IP54

Special IP54 protection

IP30 (2)

Motor operator

(1) IP30 for withdrawable circuit-breakers (2) IP40 for S1-S2 and S6-S7 circuit-breakers

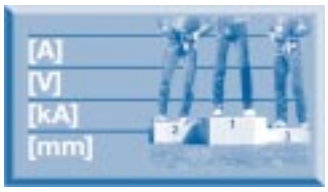
Operating temperature

SACE Isomax S circuit-breakers can be used in ambient conditions where the temperature in the surrounding atmosphere varies between -25 °C and +70 °C and stored in ambients with temperatures between -40 °C and +70 °C.
The circuit-breakers fitted with thermomagnetic overcurrent release have their thermal element set for a reference temperature of +40 °C.
For temperatures between +40 °C and +70 °C, with the same setting, there is lowering of the thermal trip threshold due to the temperature-related behaviour of the bimetallic strip of the release itself.
For temperatures lower than +40 °C, on the other hand, there is an increase in the thermal trip threshold as indicated in the table on page 5/39.
The electronic microprocessor-based overcurrent releases do not undergo any variations in performance with changes in temperature but, in the case of temperatures higher than 40 °C, the maximum setting of the protection against overloads (function L) must be reduced to take into consideration inertial phenomena that occur in the copper parts of the circuit-breaker through which the phase current passes (moving and fixed contacts, and connection terminals) which cause a decrease in the rated uninterrupted current as indicated in the table on page 5/34.
The performances of the circuit-breaker cannot be guaranteed for temperatures above +70 °C.
To ensure service continuity of the installations, careful thought must be given as to how to keep the temperature within acceptable levels for operation of all the various devices and not only the circuit-breakers. For example, forced ventilation in the switchboards and in the areas where they are installed may be necessary.

Altitude

Up to an altitude of 2000 m SACE Isomax S circuit-breaker rated performances are unaffected.
As the altitude increases, the atmospheric properties change in terms of composition, dielectric strength, cooling capacity and pressure.
The circuit-breakers therefore undergo derating, which can basically be measured through the change in significant parameters such as the rated maximum operating voltage and the rated uninterrupted current.

Altitude	[m]	2000	3000	4000
Rated service voltage, **Ue**	[V~]	690	600	500
Rated uninterrupted current, **Iu**	%Iu	100%	95%	90%

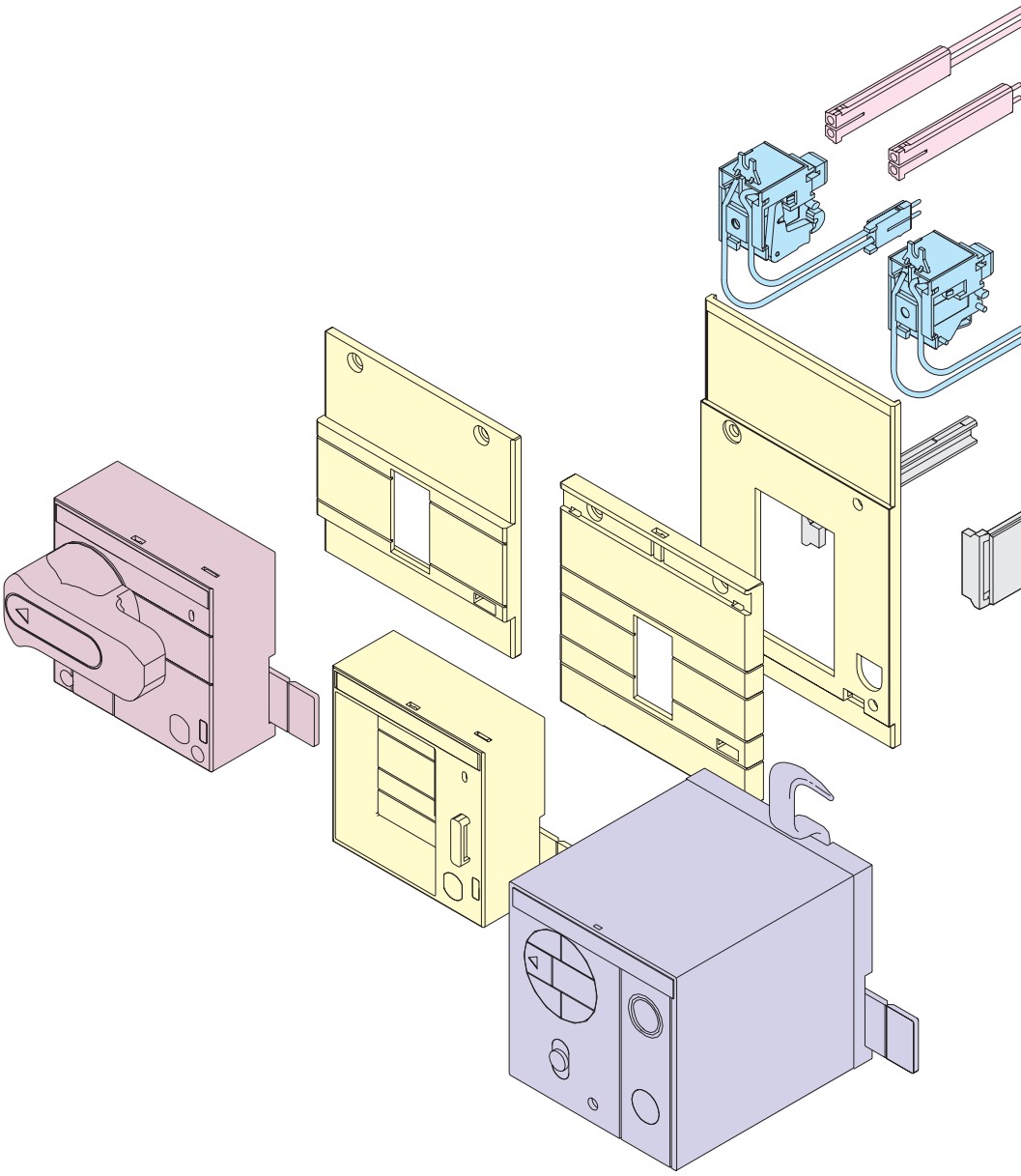


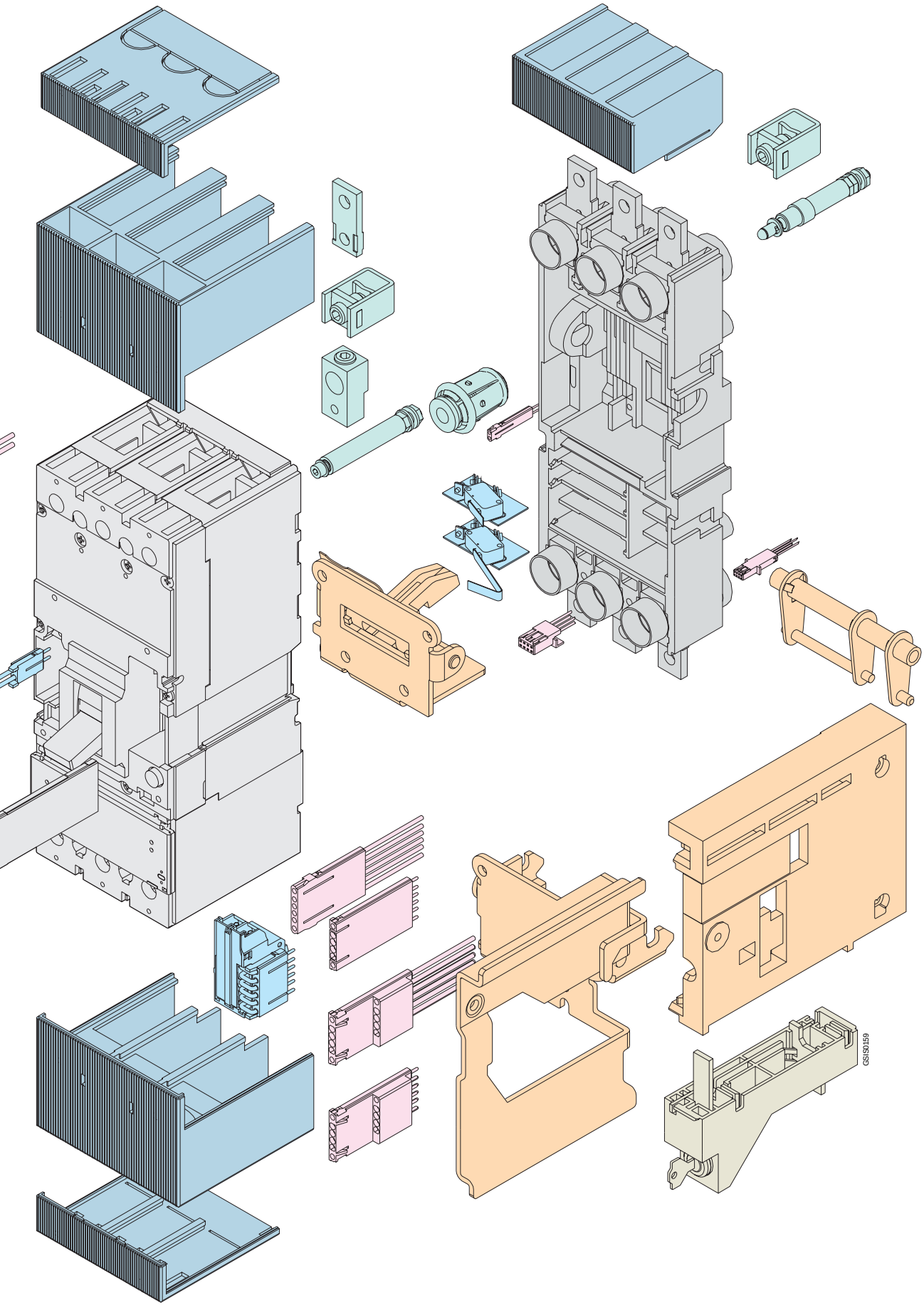
Construction characteristics

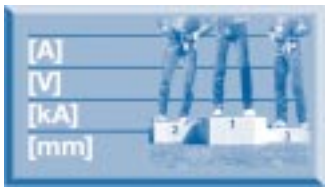
Modularity of the series SACE Isomax S

Starting from the fixed version circuit-breaker and by means of mounting the conversion kit, all the other versions which are used for the various requirements are obtained.
The following are available:
- kit for conversion from fixed circuit-breaker to moving part of a plug-in or withdrawable circuit-breaker
- conversion kit for the connection terminals which make it possible to obtain front and rear terminals for Copper or Aluminium cables, and front and rear terminals for flat bar terminals.

Various accessories are also available:
- shunt opening releases
- undervoltage releases
- auxiliary contacts
- position contacts
- the bracket for rear fixing onto DIN EN 50022 rail for S1-S2 circuit-breakers, DIN EN 50023 rail for S3-S4-S5 circuit-breakers
- direct action motor operator, with stored energy and with solenoid.
- rotary handle operating mechanisms directly on the circuit-breaker and with transmission on the compartment door
- residual-current releases
- accessories for microprocessor-based overcurrent releases such as the signalling, dialogue and actuation unit and external CTs.
- the fixed parts for plug-in or withdrawable circuit-breakers with front terminals for cables or for flat bars and rear terminals for flat bars.

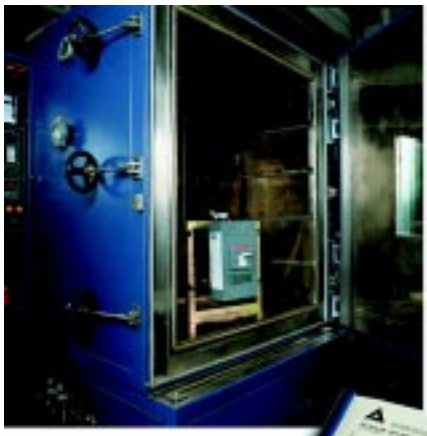



GSIS0159



Compliance with the Standards

Standards, Approvals, Certifications and company quality system



GSIS9119

SACE Isomax S circuit-breakers and their accessories comply with the IEC 60947-2, EN 60947-2 (unified in 17 countries of CENELEC), CEI EN 60947 and IEC 61000 international Standards and conform with the EC directive:

- "Low Voltage Directives" (LVD) no. 73/23 EEC
- "Electromagnetic Compatibility Directive" (EMC) no. 89/336 EEC.

Certification of compliance with the above-mentioned product Standards, is carried out, in respect of the European EN 45011 Standard, by the Italian certification organisation, ACAE (Association for Certification of Electrical Apparatus),- member of the European organisation LOVAG (Low Voltage Agreement Group).

GSIS9118

ISO 9001

GSIS9119

The ABB SACE Quality System complies with the International ISO 9001 Standard (model for assuring quality in design, development, construction, installation and assistance) and to the equivalent European EN ISO 9001 and Italian UNI EN ISO 9001 Standards.
The certification Organisation is RINA-QUACER.

ABB SACE obtained its first certification in 1990.
The ABB SACE Test Room is accredited by SINAL. The apparatus complies with the prescriptions for on-board installations and is approved by major Shipping Registers, such as: LLOYD'S REGISTER OF SHIPPING, GERMANISCHER LLOYD, BUREAU VERITAS, RINA, DET NORSKE VERITAS, POLSKI REIESTR STATKOW and the AMERICAN BUREAU OF SHIPPING.

The attention paid to protecting the environment is another important priority for ABB SACE, and as confirmation of this, the environmental management system has been certified by RINA.

GSIS9132

ABB SACE was the first industrial company in the electro-mechanical sector in Italy to obtain this recognition, and, thanks to a revision of its production process with an eye to ecology, has managed to reduce consumption of raw materials, processing waste and the risk of accidents by 20%.

The attention paid to protecting the environment and to the safety of workers is a priority commitment of ABB SACE and as confirmation of this, the company developed the Environmental Management System in compliance with the International ISO 14001 Standard, certified in 1997, integrating this in 1999 with the Health and Safety in the Workplace Management System in accordance with BS 8800 (British Standards).

The prizes obtained by ABB SACE at the Forum Design in Hannover and at Electro in Paris bear witness to the consideration given to man and the respect for ergonomic criteria.

Please contact ABB SACE for information regarding the types of circuit-breakers approved, the performances approved and their relative validity.

The ranges

Index

SACE Isomax S circuit-breakers for power distribution 3/3

Electrical characteristics IEC 60947-2 ..... **3**/4

General characteristics **3**/6

Thermomagnetic releases **3**/8

Electronic releases **3**/10

SACE Isomax S current-limiting circuit-breakers 3/15

Electrical characteristics IEC 60947-2 ..... **3**/16

General characteristics **3**/18

SACE Isomax S circuit-breakers for motor protection (protection against short-circuit) 3/23

Electrical characteristics IEC 60947-4 ..... **3**/24

General characteristics **3**/26

SACE Isomax S circuit-breakers for motor protection (integrated protection) 3/28

Electrical characteristics IEC 60947-2 and IEC 60947-4 ..... **3**/28

General characteristics **3**/30

SACE Isomax S circuit-breakers for applications up to 1000V 3/35

Electrical and general characteristics IEC 60947-2 ..... **3**/36

SACE Isomax S switch-disconnectors 3/39

Electrical and general characteristics IEC 60947-3 ..... **3**/40

SACE Isomax S circuit-breakers in accordance with UL489 and CSA C22.2 Standards 3/43

Electrical and general characteristics **3**/44

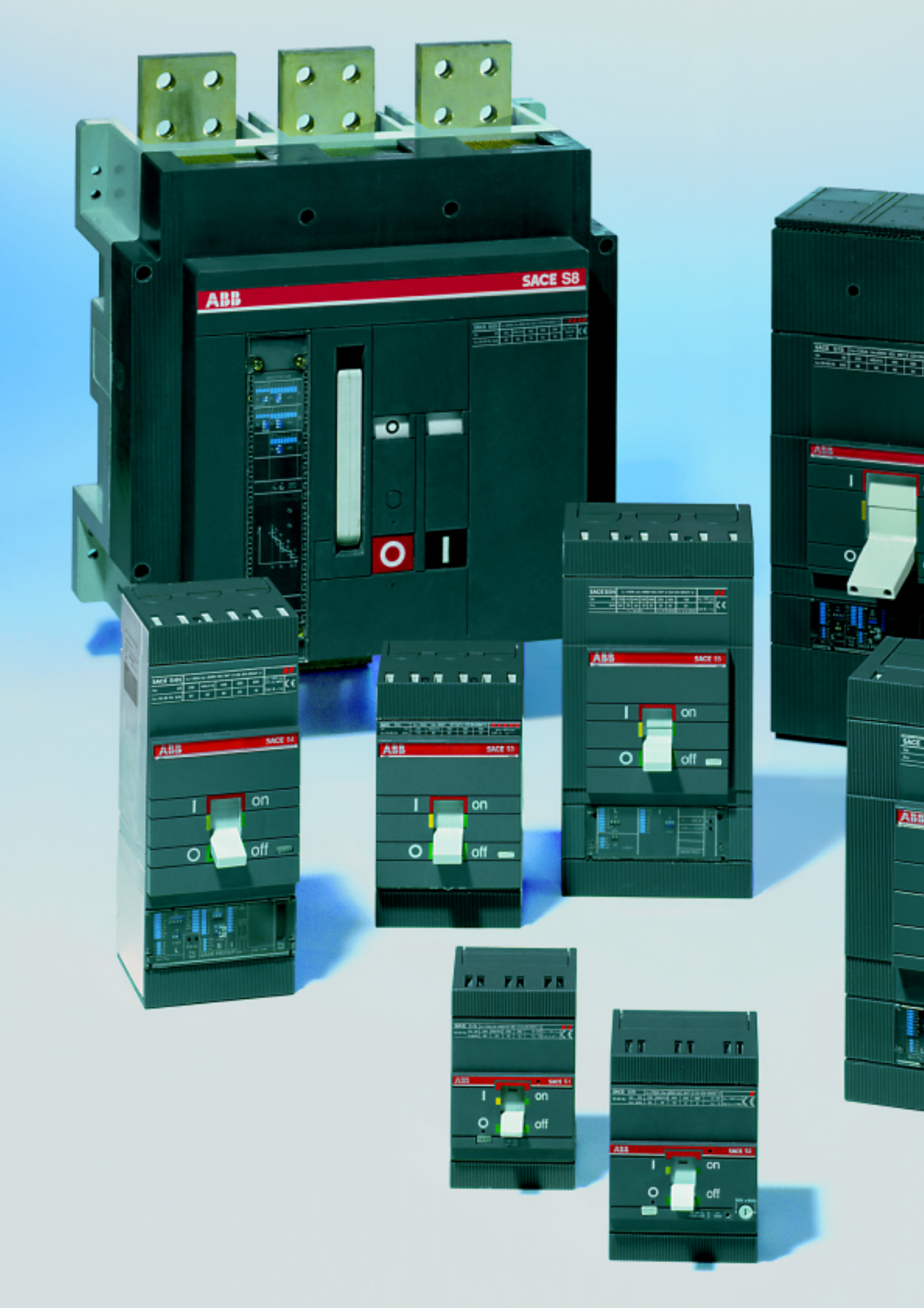
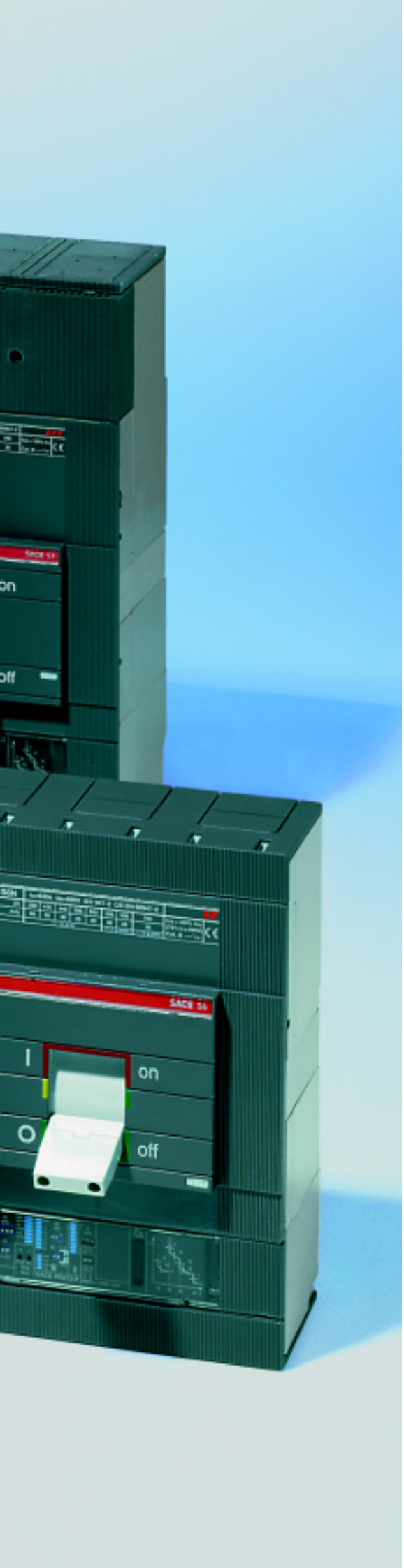


ABB
SACE S8
on
off



Circuit-breakers for power distribution

Eight sizes to optimise use for all plant and installation requirements

690V • 125-3200 A • 16-120 kA (380/415 V)

GSIS9063

SACE Isomax S circuit-breakers for power distribution

Electrical characteristics IEC 60947-2

			SACE Isomax S1		SACE Isomax S2			SACE Isomax S3		
Rated uninterrupted current, Iu		[A]	**125**		**160**			**160 - 250**		
Poles		Nr.	3-4		3-4			3-4		
Rated service voltage, Ue	(AC) 50-60Hz	[V]	500		690			690		
	(DC)	[V]	250		500			750		
Rated impulse withstand voltage, Uimp		[kV]	6		6			8		
Rated insulation voltage, Ui		[V]	500		690			800		
Test voltage at industrial frequency for 1 min.		[V]	3000		3000			3000		
Rated ultimate short-circuit breaking capacity, Icu			**B**	**N**	**B**	**N**	**S**	**N**	**H**	**L**
(AC) 50-60 Hz 220/230 V		[kA]	25	40	25	50	65	65	100	170
(AC) 50-60 Hz 380/415 V		**[kA]**	**16**	**25**	**16**	**35 (1)**	**50**	**35** (1)	**65**	**85**
(AC) 50-60 Hz 440 V		[kA]	10	16	10	20	25	30	50	65
(AC) 50-60 Hz 500 V		[kA]	8	12	8	12	15	25	40	50
(AC) 50-60 Hz 690 V		[kA]	-	-	6	8	10	14	18	20 (5)
(DC) 250 V - 2 poles in series		[kA]	16	25	16	35	50	35	65	85
(DC) 500 V - 2 poles in series		[kA]	-	-	-	-	-	35	50	65
(DC) 500 V - 3 poles in series		[kA]	-	-	16	35	50	-	-	-
(DC) 750 V - 3 poles in series		[kA]	-	-	-	-	-	20	35	50
Rated short-circuit service breaking capacity, Ics (2)		[%Icu]	50%	50%	100%	75%	75%	100%	75%	75%
Rated short-circuit making capacity (415 V)		[kA]	32	52,5	32	74	105	74	143	187
Opening time (415V at Icu)		[ms]	8	6	8	7	6	8	7	6
Rated short-time withstand current for 1 s, Icw		[kA]								
Utilisation category (EN 60947-2)			A		A			A		
Isolation behaviour			■		■			■		
IEC 60947-2, EN 60947-2			■		■			■		
Releases: thermomagnetic	T fixed, M fixed 5 Ith		■	■						
	T fixed, M fixed 10 Ith		■	■						
	T adjustable, M fixed 3 Ith							■	■	
	T adjustable, M fixed 5 Ith				■	■		■	■	■
	T adjustable, M fixed 10 Ith				■	■	■	■	■	■
	T adjustable, M adjustable									
magnetic only	M fixed			■		■	■	■	■	■
with microprocessor	PR211/P (I-LI)									
	PR212/P (LSI-LSIG)									
Interchangeability										
Versions			F - P		F - P			F - P - W		
Terminals	fixed		FC-R		EF - FC - FC CuAl - R			F- EF - ES - FC FC CuAl - RC - R		
	plug-in		FC-R		FC - R			EF - FC - R		
	withdrawable (3)		-		-			EF - FC - R		
Fixing on DIN rail			DIN EN 50022		DIN EN 50022			DIN EN 50023		
Mechanical life	[No. operations / hourly operations]		25000/240		25000/240			25000/120		
Electrical life (at 415 V)	[No. operations / hourly operations]		8000/120		8000/120			10000(160A)-8000(250A)/120		
Basic dimensions, fixed	3/4 poles	L [mm]	78/103		90/120			105/140		
		D [mm]	70		70			103,5		
		H [mm]	120		120			170		
Weights fixed	3/4 poles	[kg]	0,9 /1,2		1,1/1,5			2,6 / 3,5		
plug-in	3/4 poles	[kg]	1 / 1,4		1,3/1,7			3,1 / 4,1		
withdrawable	3/4 poles	[kg]	-		-			3,5 / 4,5		

(1) All the versions with Icu=35kA are certified at 36kA
(2) For S3 N/H/L, S4 N/H/L, S5 N/H, and S6 N/S/H circuit-breakers the performance percentage of Ics at 690V is reduced by 25%.
(3) The withdrawable version circuit-breakers must be fitted with the front flange for the lever operating mechanism or with its alternative accessories, such as the rotary handle or the motor operator
(4) For the S5 circuit-breaker, the plug-in version is only available for the version with 400 A rated current
(5) The SACE S3 circuit-breaker with breaking capacity L at 690 V can only be supplied from above

	SACE Isomax S4			SACE Isomax S5			SACE Isomax S6				SACE Isomax S7			SACE Isomax S8	
	160 - 250			**400 - 630**			**630 - 800**				**1250 - 1600**			**2000 - 2500 - 3200**	
	3-4			3-4			3-4				3-4			3-4	
	690			690			690				690			690	
	-			750			750				-			-	
	8			8			8				8			8	
	800			800			800				800			690	
	3000			3000			3000				3000			2500	
	N	**H**	**L**	**N**	**H**	**L**	**N**	**S**	**H**	**L**	**S**	**H**	**L**	**H**	**V**
	65	100	200	65	100	200	65	85	100	200	85	100	200	85	120
	35 (1)	**65**	**100**	**35** (1)	**65**	**100**	**35** (1)	**50**	**65**	**100**	**50**	**65**	**100**	**85**	**120**
	30	50	80	30	50	80	30	45	50	80	40	55	80	70	100
	25	40	65	25	40	65	25	35	40	65	35	45	70	50	70
	18	22	30	20	25	30	20	22	25	30	20	25	35	40	50
	-	-	-	35	65	100	35	50	65	100	-	-	-	-	-
	-	-	-	35	50	65	20	35	50	65	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	20	35	50	16	20	35	50	-	-	-	-	-
	100%	100%	75%	100%	100%	75%	100%	100%	100%	75%	100%	75%	50%	50%	50%
	74	143	220	74	143	220	74	105	143	220	105	143	220	187	264
	8	7	6	8	7	6	10	9	8	7	22	22	22	20	20
				5 (400A)			7,6 (630A) - 10 (800A)				15 (1250A) - 20 (1600A)			35	
	A			B (400A) - A (630A)			B				B			B	
	■			■			■				■			■	
	■			■			■				■			■	
				■	■	■	■	■	■	■					
	■	■	■	■	■	■	■	■	■	■	■	■	■		
	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
		■			■				■			■			
	F - P - W			F - P (400) - W			F - W				F - W			F	
	F - EF - ES - FC			F - EF(400A) - ES - FC			F - EF - ES - FC CuAl				F - EF - ES - FC CuAl (1250A)			F (2000-2500A) - VR	
	FC CuAl - RC - R			FC CuAl (400A)-RC (400A)-R			RC - R				HR - VR				
	EF - FC - R			EF - FC - R			-				-			-	
	EF - FC - R			EF(400A) - ES - FC (400A)			EF - HR - VR				EF - HR - VR			-	
				R - VR (630A)											
	DIN EN 50023			DIN EN 50023			-				-			-	
	20000/120			20000/120			20000/120				10000/120			10000/20	
	10000(160A)-8000(250A)/120			7000(400A)-5000(630A)/60			7000(630A)-5000(800A)/60				7000(1250A)-5000(1600A)/20			2500(2500A)/20-1500(3200A)/10	
	105/140			140/184			210/280				210/280			406/556	
	103,5			103,5			103,5				138,5			242	
	254			254			268				406			400	
	4 / 5,3			5 / 7			9,5 / 12				17 / 22			57/76	
	4,5 / 5,9			6,1 / 8,4			-				-			-	
	4,9 / 6,3			6,4 / 8,7			12,1 / 15,1				21,8 / 29,2			-	

KEY TO VERSIONS
F = Fixed
P = Plug-in
W = Withdrawable

KEY TO TERMINALS
F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

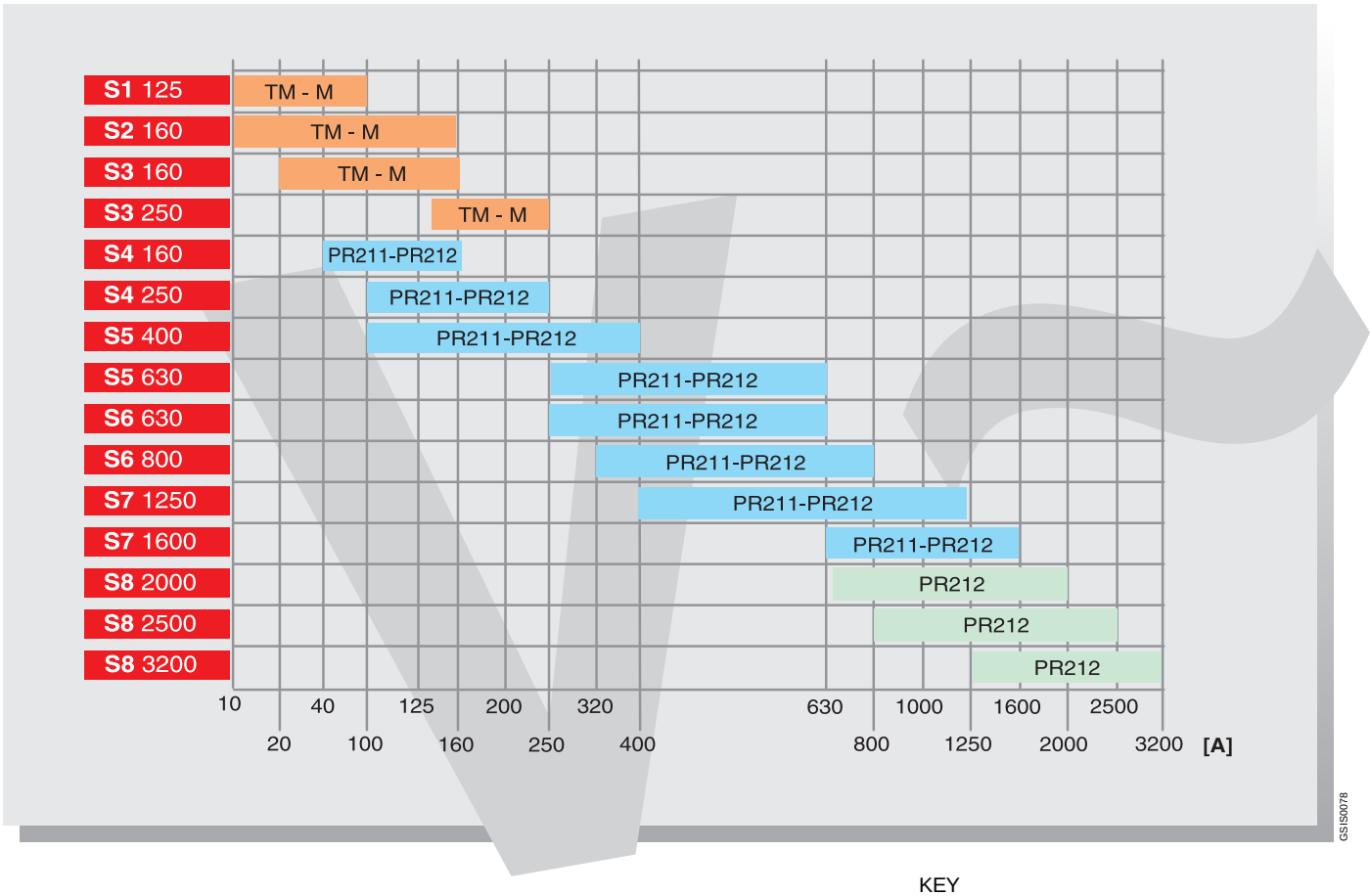
RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar

SACE Isomax S circuit-breakers for power distribution

General characteristics

The SACE Isomax S series of moulded-case circuit-breakers conforming to the IEC 60947-2 Standard, is divided into eight basic sizes, with rated uninterrupted currents from 125 to 3200 A and breaking capacities from 16 to 120 kA (380/415 V).
Selection of the size allows the basic electrical characteristics to be identified simply and immediately, whereas selection of the overcurrent release depends on the type of application required.

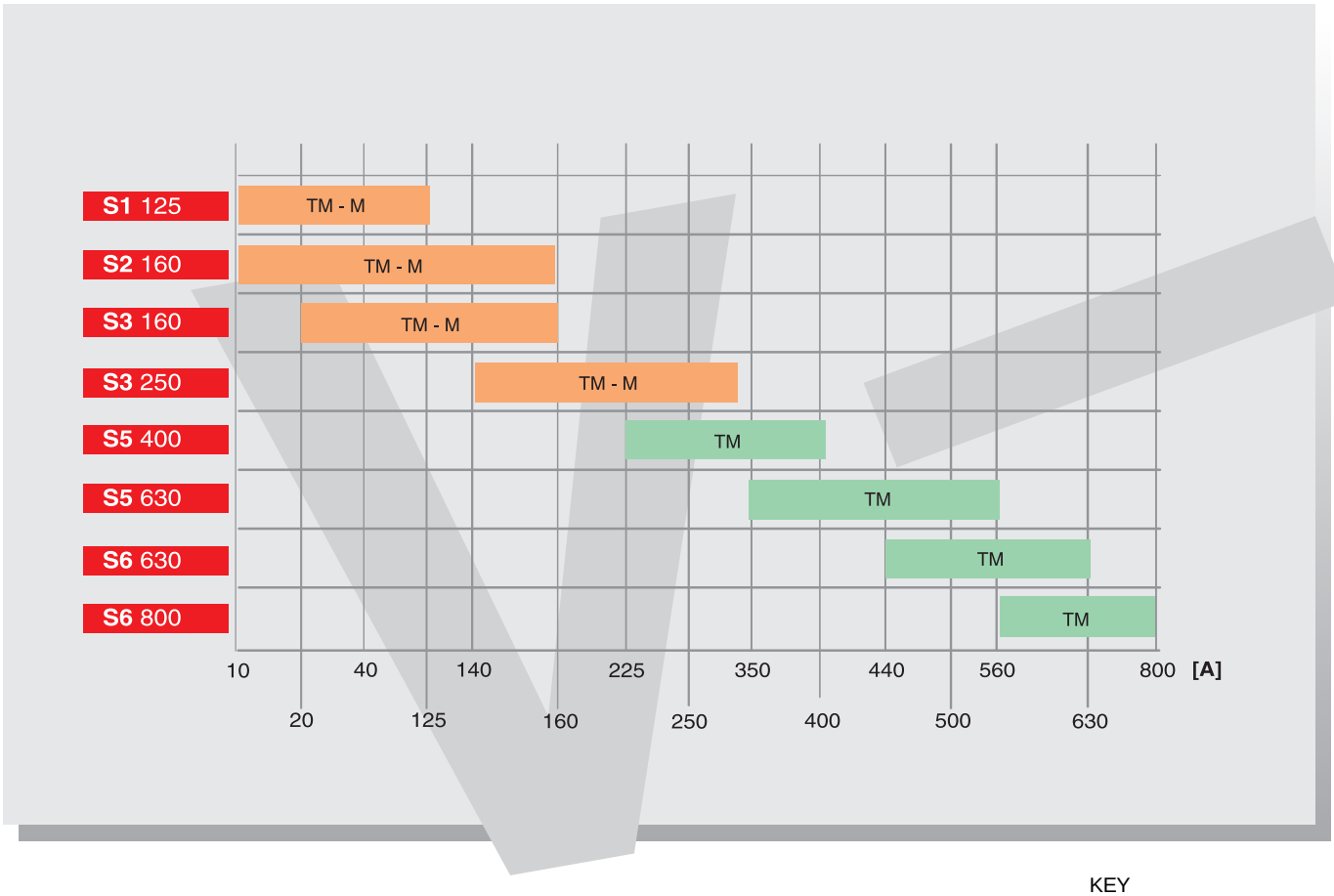
Range of application of the alternating current circuit-breakers



KEY
TM = Thermomagnetic
M = Magnetic only
PR211-PR212 = Electronic releases

For protection of alternating current networks, SACE S1, S2, and S3 circuit-breakers fitted with thermomagnetic releases and SACE S4, S5, S6, S7, and S8 circuit-breakers fitted with SACE PR211/P or PR212/P electronic releases are available. These are characterised by an application range from 10 to 3200 A and by a rated voltage of 690 V.

Range of application of the direct current circuit-breakers



KEY
TM = Thermomagnetic
M = Magnetic only

SACE S1, S2, S3, S5, and S6 circuit-breakers fitted with thermomagnetic releases are used in protection of direct current networks, with an application range from 10 to 800 A and a minimum operating voltage of 24 V DC.
With 2 poles in series, SACE Isomax S circuit-breakers can be used with rated voltage of 250 and 500 V and breaking capacities up to 100 kA (250 V DC) and 65 kA (500 V DC); whereas the SACE S3, S5, and S6 circuit-breakers with 3 poles in series can reach 750 V and breaking capacities up to 50 kA.
The various possible wiring diagrams and the trip threshold correction factors are indicated on page 5/47.

SACE Isomax S circuit-breakers for power distribution

Thermomagnetic releases

SACE Isomax S1, S2, S3, S5, and S6 circuit-breakers can be fitted with thermomagnetic releases and are used for protection of alternating current networks with the S1, S2, and S3 circuit-breakers (for applications from 10A to 250A) and in direct current with the S1, S2, S3, S5, and S6 circuit-breakers (from 10A to 800A). They allow protection against overloads using a thermal device (with fixed threshold for S1 and adjustable threshold for S2, S3, S5, and S6) carried out using the bimetallic strip technique, and protection against short-circuit using a magnetic device (with fixed threshold for S1, S2, and S3 and adjustable threshold for S5 and S6).
The four-pole circuit-breakers are always fitted with the neutral protected by the release.

3

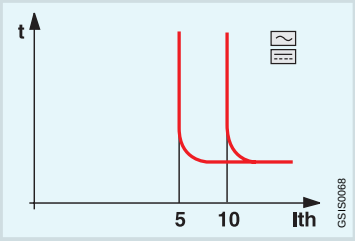
Thermomagnetic releases

L1 - L2 - L3		R10	R12,5	R16	R20	R25	R32	R32	R40	R50	R50	R63	R80	R100	R125	R125
neutral		R10	R12.5	R16	R20	R25	R32	R32	R40	R50	R50	R63	R80	R100	R125	R80
S1 125		■	■	■	■	■	■		■	■		■	■	■	■	
S2 160			■	■	■	■	■		■	■		■	■	■		■
S3 160								■			■		■	■		■
S3 250																
S5 400																
S5 630																
S6 630																
S6 800																
10 x Ith	L1-L2-L3	500	500	500	500	500	500	500	500	500	500	630	800	1000	1250	1250
	neutral	500	500	500	500	500	500	500	500	500	500	630	800	1000	1250	800
5 x Ith	L1-L2-L3	160	160	160	200	200	200	300	200	250	300	320	400	500	630	630
	neutral	160	160	160	200	200	200	300	200	250	300	320	400	500	630	400
3 x Ith	L1-L2-L3													300		375
	neutral													300		240
TM adjustable																
	L1-L2-L3															
	neutral															

Magnetic only releases

L1 - L2 - L3		R16	R40	R50	R50	R63	R80	R100	R125	R125	R125	R160	R200	R250
neutral		R16	R40	R50	R50	R63	R80	R100	R125	R80	R80	R100	R125	R160
S1 125		■	■	■		■	■	■	■					
S2 160		■	■	■		■	■	■		■		■		
S3 160					■		■	■			■	■		
S3 250													■	■
10 x Ith	L1-L2-L3			500	500	630	800	1000	1250	1250	1250	1600	2000	2500
	neutral			500	500	630	800	1000	1250	800	800	1000	1250	1600
5 x Ith	L1-L2-L3	160	200	250	300	320	400				630			
	neutral	160	200	250	300	320	400				400			

The magnetic only releases which equip the SACE S1, S2, and S3 circuit-breakers have a fixed trip threshold as indicated in the table. For S1, the magnetic only release is available in the version with breaking capacity N = 25 kA; for S2, breaking capacities N = 36 kA and S = 50 kA are available. The latter version is only available in the 10 x Ith version.

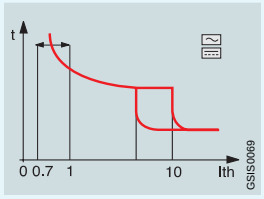


3

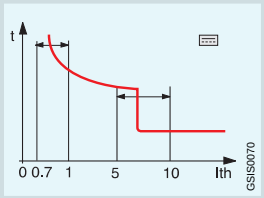
R160	R200	R250	R320	R400	R500	R630	R800
R100	R125	R160	R200	R250	R320	R400	R500
■							
■							
	■	■					
			■	■			
					■		
						■	
							■
1600	2000	2500					
1000	1250	1600					
800	1000	1250					
500	625	800					
480	600	750					
300	375	480					
			3200	4000	5000	6300	8000
			2000	2500	3200	4000	5000

The letter "R" identifies the setting current for phase (L1-L2-L3) and neutral protection (second line). The ones indicated are the combinations provided as standard.
On request, circuit-breakers with neutral at 100% of the phase setting can be supplied.

The thermomagnetic releases which equip the SACE S2 and S3 circuit-breakers have the thermal element with threshold adjustable from 0.7 ÷ 1 x In. The regulated current value which is obtained by using the appropriate selector must be intended as the rated value at 40 °C. The magnetic element has fixed trip threshold, with trip values which vary according to the phase setting.
The S2 circuit-breaker with breaking capacity S = 50 kA is only available in the 10 x Ith version.



The thermomagnetic releases which equip SACE S5 and S6 circuit-breakers have the thermal element with threshold adjustable from 0.7 ÷ 1 x In. The regulated current value which is obtained by using the appropriate selector must be intended as the rated value at 40 °C. The magnetic element can be adjusted from 5 ÷ 10 x In. The table gives the maximum magnetic trip values (10 x In) for protection of the phases (L1 - L2 - L3) and of the neutral.



The trip thresholds of the magnetic protection are a function of the setting used both for protection of the phases (L1 - L2 - L3) and of the neutral. The releases denominated 10 x Ith are indicated for all distribution applications, whereas the releases denominated 5 x Ith and 3 x Ith are used where a low magnetic trip threshold is required. With regard to this, the 3 x Ith are particularly suitable for protection of generators.

SACE Isomax S circuit-breakers for power distribution

Electronic releases

The SACE Isomax S4, S5, S6, S7 and S8 circuit-breakers for protection in alternating current can be fitted with SACE PR211/P or SACE PR212/P overcurrent releases, constructed using electronic microprocessor-based technology. This allows protection functions to be obtained which guarantee a high level of reliability and tripping precision and which are unaffected by the external ambient. The power supply needed for correct operation is supplied directly by the release current transformers, in the presence of a phase current higher than or equal to 18% of their rated current, even with a single phase supplied with voltage. There is only one adjustment for all the phases and the neutral and the release is simultaneous for all the circuit-breaker poles, with trip characteristics which are unaffected by the external ambient. The functions and settings of the release protections can be verified by means of the SACE TT1 and SACE PR010/T Test units.

SACE PR211/P

The SACE PR211/P release (available from S4 to S7) provides protection functions against overload L and instantaneous short-circuit I, and is available in the versions with functions I and LI.
The wide range of adjustments make this release particularly suitable in all distribution where tripping reliability and precision is required and where magnetic only protection is needed (from 1.5 to 12 x In), using the SACE PR211/P version I release.

SACE PR212/P

The SACE PR212/P release (available from S4 to S8) provides protection functions against overload L, delayed short-circuit S and instantaneous short-circuit I, and against earth fault G. It is available in the versions PR212/P with functions LSI and LSIG; both allow use of the PR010/K signalling unit, the PR212/D dialogue unit and the PR212/T actuator unit, which can be used either simultaneously or individually, except for the PR212/T actuator unit which is always supplied when the dialogue unit is required.
It is particularly suitable in applications with selective coordination requirements, for earthing protection against the risk of fire and evolutionary faults, and for remote control and parametrisation, network supervision and centralised load management.

In	100 A	160 A	250 A	320 A
S4 160	■	■		
S4 250			■	
S5 400				■
S5 630				
S6 630				
S6 800				
S7 1250				
S7 1600				
S8 2000				
S8 2500				
S8 3200				
L	40÷100	64÷160	100÷250	128÷320
S	100÷1000	160÷1600	250÷2500	320÷3200
I	150÷1200	240÷1920	375÷3000	480÷3840
G	20÷100	32÷160	50÷250	64÷320
neutral (50%)	20÷50	32÷80	50÷125	64÷160
neutral (100%)	40÷100	64÷160	100÷250	128÷320

For four-pole circuit-breakers fitted with SACE PR212/P release (LSI-LSIG), protection of the neutral can be set to 50% or 100% of the phase protection setting (by means of dip-switches on the front of the release).
For those with SACE PR211/P release (I-LI), protection of the neutral at 100% can be ordered by means of an additional code 1SDA037505R1.
With three-pole and distributed neutral circuit-breakers, external toroids can be used by connecting these directly either to the SACE PR211/P release, or to the SACE PR212/P release. On request, it is possible to obtain full protection of the neutral with setting equal to 100% of the protection.
The SACE PR211/P and SACE PR212/P microprocessor-based releases are self-supplied and ensure correct operation of the protection functions, even with only a single phase supplied with voltage, in the presence of a current higher than or equal to 18% of the rated phase value.

The protection release consists of current transformers (three or four according to the circuit-breaker polarity), the SACE PR211/P or SACE PR212/P protection unit and an OS demagnetising opening solenoid which acts directly on the circuit-breaker operating mechanism group.
The current transformers are housed inside the release box and supply the energy needed for correct operation of the protection and the signal required to determine the current. They are available with primary rated current as indicated in the table below.
When the protection intervenes, the circuit-breaker opens by means of the opening solenoid (OS), which changes over a contact for signalling release tripped. Resetting the signal is of mechanical type and takes place with resetting of the circuit-breaker operating lever.
It is possible to test the opening solenoid (OS) by means of the SACE TT1 test device. A positive result of the test coincides with circuit-breaker opening.
All the protection functions with relative trip times can be verified and tested using the SACE PR010/T accessory unit (only for PR212/P).
In the versions with SACE PR212/P - LSI/LSIG release, it is possible to set the adjustment parameters of the protection functions directly from the front (dip-switch positioned on MAN), or to set the parameters remotely (dip-switch positioned on ELT) thanks to the use of the SACE PR212/D dialogue units.
In case of any anomalies in remote parametrisation, the protection automatically uses the set of parameters set manually on the front of the circuit-breaker.
The PR010/K signalling or PR212/D dialogue units supply the PR212/P (24 VDC ±20%) protection release continuously and this allows the adjustment parameters to be set even with the circuit-breaker open.

	400 A	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
	■								
		■							
		■							
			■						
				■	■				
						■			
						■	■		
								■	
									■
	160÷400	252÷630	320÷800	400÷1000	500÷1250	640÷1600	800÷2000	1000÷2500	1280÷3200
	400÷4000	630÷6300	800÷8000	1000÷10000	1250÷12500	1600÷16000	2000÷20000	2500÷25000	3220÷32000
	600÷4800	945÷7560	1200÷9600	1500÷12000	1875÷15000	2400÷19200	3000÷24000	3750÷30000	4800÷38400
	80÷400	126÷630	160÷800	200÷1000	250÷1250	320÷1600	400÷2000	500÷2500	640÷3200
	80÷200	126÷315	160÷400	200÷500	250÷625	320÷800	400÷1000	500÷1250	640÷1600
	160÷400	252÷630	320÷800	400÷1000	500÷1250	640÷1600	–	–	–

SACE Isomax S circuit-breakers for power distribution

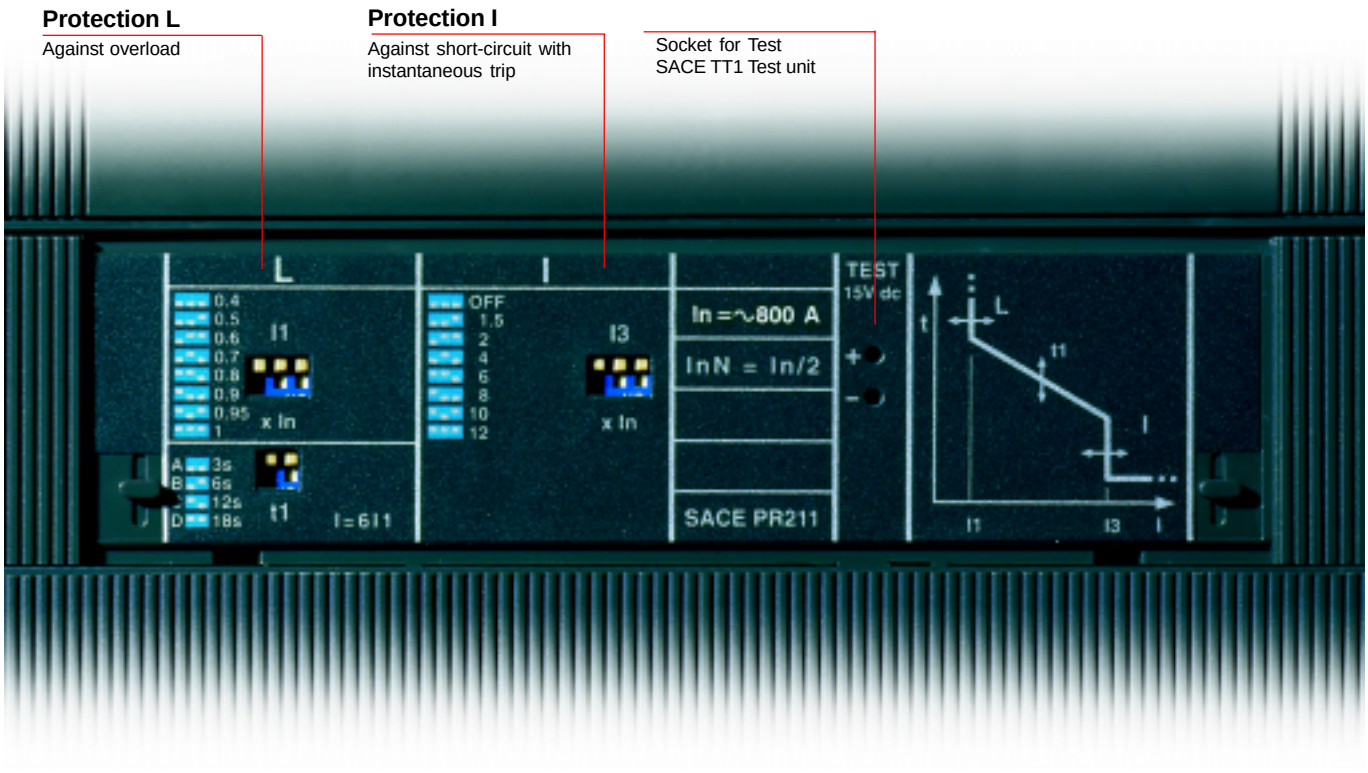
Electronic releases

Protection functions and parametrisation of the SACE PR211/P, PR212/P releases

Protection function		Trip threshold
L CANNOT BE EXCLUDED	Against **overload** with inverse long time delay and trip characteristic according to a time dependent curve (I^2t = constant)	**I1** = 0,4 - 0,5 - 0,6 - 0,7 - 0,8 - 0,95 - 1 x In **PR211/P (I - LI)** **I1** = 0,4 - 0,5 - 0,55 - 0,6 - 0,65 - 0,7 - 0,75 - 0,8 - 0,85 - 0,875 - 0,9 - 0,925 - 0,95 - 0,975 - 1 x In **PR212/P (LSI - LSIG)** Release between 1,05 ... 1,30 x I1 (IEC 60947-2)
S CAN BE EXCLUDED	Against **short-circuit** with inverse short **time delay** and trip characteristic with dependent time (I^2t = constant) or independent time	**I2** = 1 - 2 - 3 - 4 - 6 - 8 - 10 x In Tolerance ± 10%
		I2 = 1 - 2 - 3 - 4 - 6 - 8 - 10 x In Tolerance ± 10%
I CAN BE EXCLUDED	Against **short-circuit** with adjustable **instantaneous** trip	**I3** = 1,5 - 2 - 4 - 6 - 8 - 10 - 12 x In (*) Tolerance ± 20% (*) For S5 630, I3 max = 8 x In
G CAN BE EXCLUDED	Against **earth fault** with short inverse time delay and trip characteristic according to a dependent time curve (I^2t = constant)	**I4** = 0,2 - 0,3 -0,4 - 0,6 - 0,8 - 0,9 - 1xIn Tolerance ± 20%

3

SACE PR211/P electronic release, functions I or LI



GSIS9054

Trip curves			
A	**B**	**C**	**D**
at 6 x I1 **t1** = 3s	at 6 x I1 **t1** = 6s	at 6 x I1 **t1** = 12s	at 6 x I1 **t1** = 18s
(tolerance: ± 10% up to 2 x In; ± 20% above 2 x In)			
at 8 x In **t2** = 0,05s	at 8 x In **t2** = 0,1s	at 8 x In **t2** = 0,25s	at 8 x In **t2** = 0,5s
(tolerance: ± 20%)			
t2 = 0,05s	**t2** = 0,1s	**t2** = 0,25s	**t2** = 0,5s
(tolerance: ± 20%)			
up to 3,25 x I4 **t4** = 100ms	up to 2,25 x I4 **t4** = 200ms	up to 1,6 x I4 **t4** = 400ms	up to 1,25 x I4 **t4** = 800ms
(tolerance: ± 20%)			

Characteristics of SACE PR211/P, SACE PR212/P electronic releases

Operating temperature	**–25 °C ÷ +70 °C**
Relative humidity	**90%**
Service frequency	**45 ... 66 Hz** **able to measure harmonics up to 550 Hz**
Electromagnetic compatibility (LF and HF)	**IEC 60947-2 Annex F**
Electrostatic discharges	**IEC 61000-4-2**
Radiated electromagnetic field	**IEC 61000-4-3**
Short-time transients	**IEC 61000-4-4**
Mean time between failure (MTBF)	**15 years (at 45 °C)**
Characteristics of the signalling contact	
Maximum interrupted current	**0,5 A**
Maximum interrupted voltage	**24 VDC/AC**
Breaking capacity	**3 W/VA**
Contact/contact insulation	**500 VAC**
Contact/coil insulation	**1000 VAC**

3

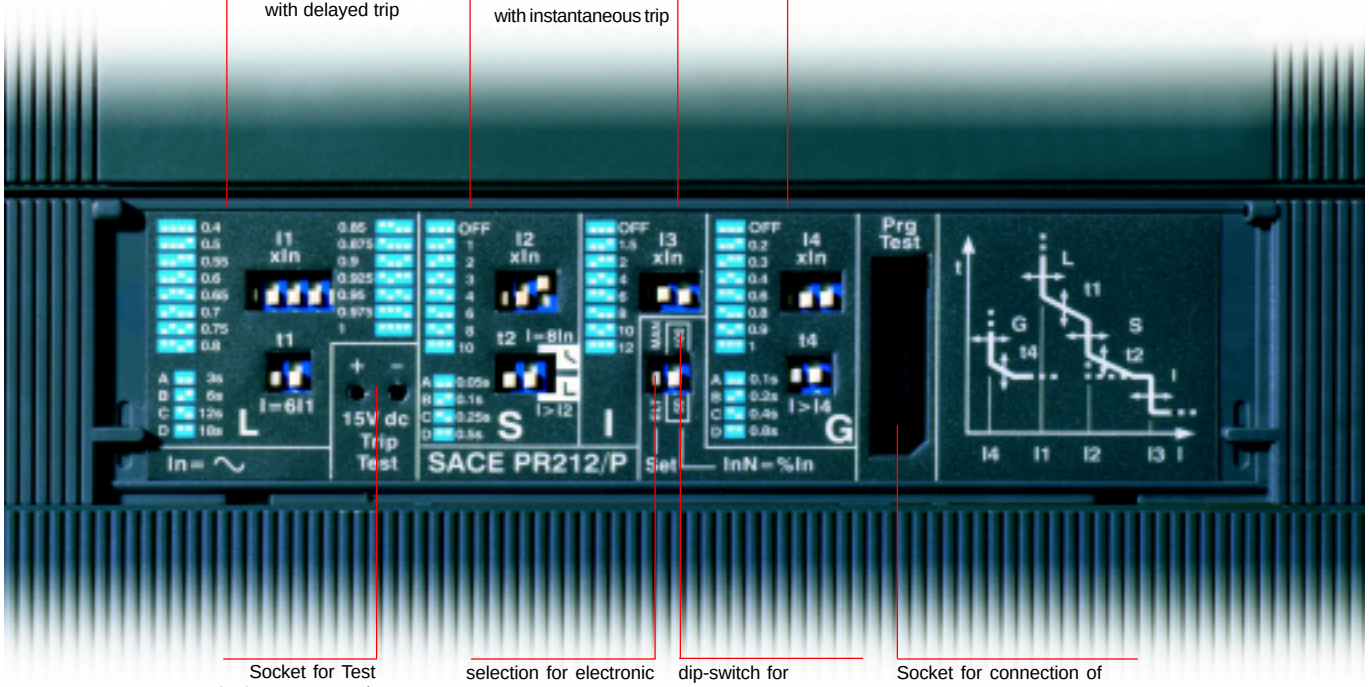
SACE PR212/P electronic release, functions LSI or LSIG

Protection L
Against overload

Protection S
Against short-circuit with delayed trip

Protection I
Against short-circuit with instantaneous trip

Protection G
Against earth fault



Socket for Test SACE TT1 Test unit

selection for electronic or manual setting

dip-switch for setting the neutral

Socket for connection of SACE PR010/T Test unit

GSIS9056


ABB
SACE S6
I
on
O
off
ABB
SACE S6
I
on
O
off
ABB
SACE S3
I
on
O
off
ABB
SACE S2
I
on
O
off

SACE Isomax S current-limiting circuit-breakers

To interrupt and “limit” even the worst faults

690V • 100-630A • 70-200kA (380/415 V)

3

GSIS9064

SACE Isomax S current-limiting circuit-breakers

Electrical characteristics IEC 60947-2

			SACE Isomax S2X 100
Rated uninterrupted current, Iu		[A]	**100**
Poles		No.	3
Rated service voltage, Ue (AC) 50-60Hz		[V]	690
Rated impulse withstand voltage, Uimp		[kV]	6
Rated insulation voltage, Ui		[V]	690
Test voltage at industrial frequency for 1 min.			3000
Rated ultimate short-circuit breaking capacity, Icu			**X**
	(AC) 50-60 Hz 220/230 V	[kA]	100
	(AC) 50-60 Hz 380/415 V	**[kA]**	**70**
	(AC) 50-60 Hz 440 V	[kA]	70
	(AC) 50-60 Hz 500 V	[kA]	50
	(AC) 50-60 Hz 690 V	[kA]	10
Rated service short-circuit breaking capacity, Ics (1)		[%Icu]	75%
Rated short-circuit making capacity (415 V)		[kA]	154
Opening time (415V at Icu)		[ms]	3,5
Utilisation category (EN 60947-2)			A
Isolation behaviour			■
IEC 60947-2, EN 60947-2			■
Releases:	thermomagnetic - T adjustable, M fixed 10 Ith		■
	with microprocessor PR211/P (I-LI)		
	with microprocessor PR212/P (LSI-LSIG)		
Interchangeability			
Versions			F-P
Terminals	fixed		EF - FC - FC CuAl - R
	plug-in		FC-R
	withdrawable		-
Fixing on DIN rail			DIN EN 50022
Mechanical life		[No. operations / hourly operations]	25000/240
Electrical life (at 415 V)		[No. operations / hourly operations]	8000/120
Basic dimensions, fixed	L (3/4 poles)	[mm]	90/120
	D	[mm]	70
	H	[mm]	120
Weights, 3/4 poles	fixed	[kg]	1,1/1,5
	plug-in	[kg]	1,3/1,7
	withdrawable	[kg]	-

(1) The value of Ics at 500V and 690V for S3X, S4X and S6X is reduced by 25%
(2) For S3X with R32 setting: Icu (690V) = 50 kA and Ics = 100% Icu
Icu (500V) = 75 kA and Ics = 100% Icu
(3) S3X at 690V can only be supplied from above

KEY TO VERSIONS
F = Fixed
P = Plug-in
W = Withdrawable

	SACE Isomax S3X	SACE Isomax S4X	SACE Isomax S6X
	125-200	**250**	**400-630**
	3-4	3-4	3-4
	690	690	690
	8	8	8
	800	800	800
	3000	3000	3000
	X	**X**	**X**
	300	300	300
	200	**200**	**200**
	180	180	180
	150	150	150
	75 (2)(3)	**75**	**75**
	100%	100%	100%
	440	440	440
	3,5	3,5	3,5
	A	A	A
	■	■	■
	■	■	■
	■		
		■	■
		■	■
		■	■
	F-P-W	F-P-W	F-W
	F - EF - ES - FC - FC CuAl - RC - R	F - EF - ES - FC - FC CuAl - RC - R	F - EF - ES - FC CuAl - RC - R
	EF - R	EF - R	-
	EF - R	EF - R	EF - HR - VR
	DIN EN 50023	DIN EN 50023	-
	25000/120	20000/120	20000/120
	10000(125A)-8000(200A) / 120	800 / 120	7000(630A)-5000(800A)/60
	105/140	105/140	210/280
	103,5	103,5	103,5
	255	339	268
	3,6 / 4,8	5 / 7	9,5 / 12
	6,3 / 8,7	8,2 / 10,7	-
	7,1 / 9,5	9 / 11,5	12,1 / 15,1

KEY TO TERMINALS
F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar

SACE Isomax S current-limiting circuit-breakers

General characteristics

SACE Isomax S2X 100 - S3X - S4X - S6X current-limiting circuit-breakers

GSIS9028

These pieces of apparatus are characterised by a rated voltage Ue of 690 V AC, by rated uninterrupted currents from 100 A to 630 A, by service currents from 1 to 630 A and by an ultimate short-circuit breaking capacity up to 200 kA at 380/415 V AC and 75 kA at 690 V AC.
The circuit-breakers, which comply with IEC 60947-2 Standards, are available in the three- and four-pole type (only three-pole for S2X 100) in the fixed, plug-in and withdrawable versions.
The function carried out by the current-limiting circuit-breakers is to "limit" the specific let-through energy to a maximum in the case of short-circuit, safeguarding the integrity of the circuits and of the apparatus located on the load side.
The breaking system used, which foresees double interruption per pole, allows very high value short-circuits to be interrupted extremely rapidly.
Moreover, the special shape of the interruptive parts allows the peak values of fault currents to be limited to figures considerably lower than those of the short-circuit current present at the point of installation.
For the circuit-breakers on the load side, the rapidity of opening notably reduces exposure to the electrodynamic stresses which occur in the case of a fault.

3

Integration with the SACE Isomax S family

The range of current-limiting circuit-breakers has been conceived as a product aimed at particularly severe requirements, but comes within the sphere of the general SACE Isomax S project in any case.
The user gains considerable advantages because it means being able to optimise stocks, standardise support and installation structures and rationalise circuit-breaker selection thanks to application flexibility which allows all low voltage application requirements to be covered.
In the SACE Isomax S series, the current-limiting circuit-breakers offer the same benefits of modular construction.
All the other versions can be made from the "basic" version of the current-limiting circuit-breaker by means of special conversion kits.

For S3X, S4X and S6X, conversion from the fixed circuit-breaker into the moving part of plug-in or withdrawable circuit-breaker is carried out by means of special kits listed under the chapter entitled "Ordering codes" (for S2X 100, the kit is the same as the corresponding S2 B/N/S one).
The fixed parts of current-limiting plug-in or withdrawable version circuit-breakers can, on the other hand, be used either for the current-limiting circuit-breakers themselves or for the corresponding SACE S2 - S3 - S4 and S6 automatic circuit-breakers.

With regard to accessories, too, the S2X 100, S3X, S4X and S6X current-limiting circuit-breakers use the same accessories provided for the corresponding automatic circuit-breakers and also keep the same electrical characteristics.


GSIS9114


GSIS9029

SACE Limitor	SACE Isomax S
LN A 32-63-100	**S2X 100**
LN 100 / LN 125	**S3X 125**
LN 160 / LN 200	**S3X 200**
LN 320 (setting 250 A)	**S4X 250**
LN 320	**S6X 400**
LN 500 / LN 630	**S6X 630**

The electrical characteristics of the SACE Isomax S current-limiting circuit-breakers allow a comparison with the circuit-breakers in the previous SACE Limitor series to be established, to determine any replacements in the case of installation upgrading.

Only the following are an exception:
– the mechanical interlocking plate for two superimposed circuit-breakers
– the bracket for fixing onto DIN rail (for S3X and S4X)

The wiring diagrams are those of the corresponding SACE S2, S3, S4 and S6 circuit-breakers.

Apart from S2X 100 which are identical to the corresponding S2 B/N/S, of the circuit-breakers, the S3X, S4X and S6X current-limiting circuit-breakers keep the standardised depth of 103.5 mm, standardised widths of 105 mm (S3X-S4X) / 210mm (S6X) for the three-pole versions and 140 mm (S3X-S4X) / 280mm (S6X) for the four-pole versions, identical drilled fixing holes for the plug-in and withdrawable versions and identical drilled holes for the compartment door in all the versions and for all the accessories.

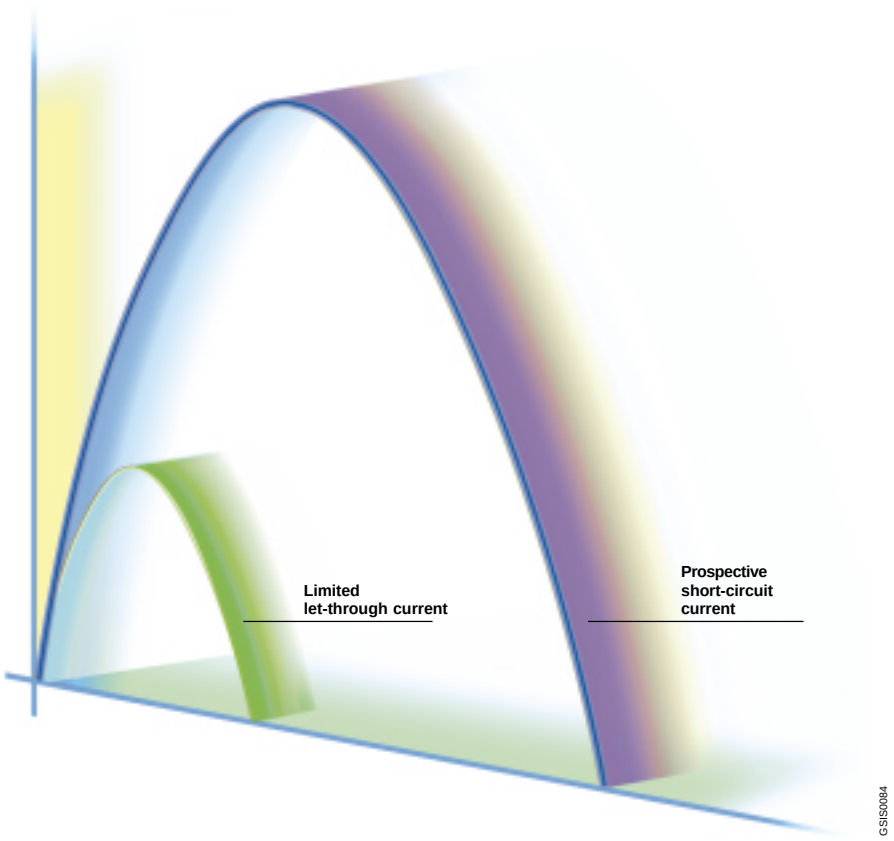
Applications

The current-limiting circuit-breakers are suitable for installation in all types of civil, industrial and service sector plants, as well as in electrical installations on board ships, in mines, on off-shore oil rigs and, generally, wherever very high short-circuit currents can occur due to the high powers of the generators and transformers – up to 200 kA at 380/415 V AC, 180 kA at 440 V AC and 75kA at 690 V AC.

The circuit-breakers can be placed near the power supply source both for general protection (plants, user groups and electrical lines) and for protection of electric machines (motors, generators, transformers, capacitor banks).

They can also be inserted in plants where back-up protection is foreseen, which allows use on the load side of circuit-breakers with breaking capacity lower than the prospective short-circuit current at the point of installation.

The breaking capacities of the SACE Isomax S current-limiting circuit-breakers have exceeded the best performances achieved by other apparatus of this type.



The increased contact opening speed, the dynamic blast action produced by the magnetic field and the structure of the arcing chamber contribute to extinguishing the arc in the shortest possible time, limiting the specific let-through energy value I^2t and the peak current.

SACE Isomax S current-limiting circuit-breakers

General characteristics

Thermomagnetic overcurrent releases

The table below summarises the size values for the different types of releases:
Ith - rated current of the thermomagnetic release, referred to an ambient temperature of 40 °C
Im - magnetic trip current
In - rated current of the electronic release

Thermomagnetic overcurrent releases

Circuit-breaker			L1 - L2 - L3 phases			Neutral
S2X 100	S3X 125	S3X 200	Setting [A]	Thermal adjustment [A] 0.7 ... 1 x Ith	Magnetic trip [A] Im = 10 x Ith	Setting [A]
■			R 1	0.7 ... 1	10	–
■			R 1,6	1.1 ... 1.6	16	–
■			R 2.5	1.75 ... 2.5	25	–
■			R 4	2.8 ... 4	40	–
■			R 6.3	4.4 ... 6.3	63	–
■			R 10	7 ... 10	100	–
■			R 12.5	8.7 ... 12.5	125	–
■			R 16	11 ... 16	160	–
■			R 20	14 ... 20	200	–
■			R 25	17.5 ... 25	250	–
■	■		R 32	22.5 ... 32	320 (S2X 100) - 500 (S3X)	R 32 (S3X)
■			R 40	28 ... 40	400	–
■	■		R 50	35 ... 50	500	R 100 (S3X)
■			R 63	44 ... 63	630	–
■	■		R 80	56 ... 80	800	R 80 (S3X)
■	■		R 100	70 ... 100	1000	R 100 (S3X)
	■	■	R 125	87.5 ... 125	1250	R 80
		■	R 160	112 ... 160	1600	R 100
		■	R 200	140 ... 200	2000	R 125

SACE S2X 100 and S3X circuit-breakers, with thermomagnetic overcurrent releases

Electronic overcurrent releases

SACE PR211/P - PR212/P electronic overcurrent releases

Circuit-breaker			Release current In [A]	L1 - L2 - L3 phases				Neutral (50% Ith) [A]	Neutral (1) (100% Ith) [A]
S4X 250	S6X 400	S6X 630		L I1 [A]	S I2 [A]	I I3 [A]	G I4 [A]		
■			100	40 ... 100	100 ... 1000	150 ... 1200	20 ... 100	20 ... 50	40 ... 100
■			160	64 ... 160	160 ... 1600	240 ... 1920	32 ... 160	32 ... 80	64 ... 160
■			250	100 ... 250	250 ... 2500	375 ... 3000	50 ... 250	50 ... 125	100 ... 250
	■		320	128 ... 320	320 ... 3200	480 ... 3840	64 ... 320	64 ... 160	128 ... 320
	■		400	160 ... 400	400 ... 4000	600 ... 4800	80 ... 400	80 ... 200	160 ... 400
		■	630	252 ... 630	630 ... 6300	945 ... 7560	126 ... 630	126 ... 315	252 ... 630

L = Protection function against overload
S = Protection function against short-circuit with delayed trip
I = Protection function against short-circuit with instantaneous trip
G = Protection function against earth fault with delayed trip
(1) Only for PR212/P. Available on request for PR211/P, with additional ordering code 1SDA037505R1.

N.B. For more detailed information about the protection functions, please see page 3/12.

SACE S4X, S6X circuit-breakers, with microprocessor-based overcurrent releases


ABB
SACE S7
I
on
O
off
ABB
SACE S6
I
on
O
off
ABB
SACE S5
I
on
O
off
ABB
SACE S4
I
on
O
off
ABB
SACE S3
I
on
O
off
ABB
SACE S2
I
on
O
off

SACE Isomax S circuit-breakers for motor protection

Protection against short-circuit

Magnetic only and electronic circuit-breakers for classical switching coordinations and motor protection of any power

690V • 80-1600 A • 70-200 kA (380/415 V)

Integrated protection

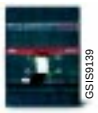
The evolution of motor protection: intelligence on board the circuit-breaker to “design” protection around the motor, optimising space and time

690V • 160-1250 A • 35-200 kA (380/415 V)

GSIS9065

SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)

Electrical characteristics IEC 60947-2 and IEC 60947-4-1



			S2X 80	S3			S3X
Rated uninterrupted current, Iu		[A]	**80**		**160 / 250**		**125 / 200**
Rated service current, In		[A]	1…80		3…160 / 160…200		3… 125 / 125…200
Poles		Nr.	3		3		3
Rated service voltage, Ue (AC) 50-60Hz		[V]	690		690		690
Rated impulse withstand voltage, Uimp		[kV]	6		8		8
Rated insulation voltage, Ui		[V]	690		800		800
Test voltage at industrial frequency for 1 min.		[V]	3000		3000		3000
Rated ultimate short-circuit breaking capacity, Icu			**X**	**N**	**H**	**L**	**X**
	(AC) 50-60 Hz 220/230 V	[kA]	100	65	100	170	300
	(AC) 50-60 Hz 380/415 V	**[kA]**	**70**	**35** (1)	**65**	**85**	**200**
	(AC) 50-60 Hz 440 V	[kA]	70	30	50	65	180
	(AC) 50-60 Hz 500 V	[kA]	50	25	40	50	150
	(AC) 50-60 Hz 690 V	[kA]	10	14	18	20	75 (3)
Rated service short-circuit breaking capacity, Ics (2)		[%Icu]	75%	100%	75%	75%	100%
Rated short-circuit making capacity (415 V)		[kA]	154	74	143	187	440
Opening time (415V at Icu)		[ms]	3,5	8	7	6	3,5
Utilisation category (EN 60947-2)			A		A		A
Isolation behaviour			■		■		■
IEC 60947-2, EN 60947-2			■		■		■
Releases:	magnetic only, fixed 13xIn		■		-		-
	magnetic only, adjustable 4…12xIn		-		■		■
	microprocessor-based, PR211/P (I)		-		-		-
Interchangeability			-		-		-
Versions			F - P		F - P - W		F - P - W
Terminals	fixed		EF - FC		F - EF - ES - FC		F - EF - ES - FC
			FC CuAl - R		FC CuAl - RC - R		FC CuAl - R - RC
	plug-in		FC - R		EF - FC - R		EF - R
	withdrawable		-		EF - FC - R		EF - R
Fixing on DIN rail			DIN EN 50022		DIN EN 50023		DIN EN 50023
Mechanical life		[No. operations / hourly operations]	25000/240		25000/120		25000/120
Basic dimensions fixed, 3 poles		L [mm]	90		105		105
		D [mm]	70		103,5		103,5
		H [mm]	120		170		255
Weights	fixed, 3 poles	[kg]	1,1		2,6		3,6
	plug-in, 3 poles	[kg]	1,3		3,1		6,3
	withdrawable, 3 poles	[kg]	-		3,5		7,1

(1) All the versions with Icu=35kA are certified at 36kA
(2) For S3N/H/L, S4N/H/L, S5N/H, and S6N/H circuit-breakers, the percentage performance of Ics at 690V is reduced by 25%
(3) S3X at 690V can only be supplied from above

KEY TO VERSIONS
F = Fixed
P = Plug-in
W = Withdrawable

	S4			S4X	S5			S6				S6X	S7		
	160 / 250			**250**	**400 / 630**			**630 / 800**				**400 / 630**	**1250 / 1600**		
	100, 160 / 250			100, 160, 250	320, 400 / 630			630 / 800				320, 400 / 630	1000, 1250 / 1600		
	3			3	3			3				3	3		
	690			690	690			690				690	690		
	8			8	8			8				8	8		
	800			800	800			800				800	800		
	3000			3000	3000			3000				3000	3000		
	N	**H**	**L**	**X**	**N**	**H**	**L**	**N**	**S**	**H**	**L**	**X**	**S**	**H**	**L**
	65	100	200	300	65	100	200	65	85	100	200	300	85	100	200
	35 (1)	65	100	200	35 (1)	65	100	35 (1)	50	65	100	200	50	65	100
	30	50	80	180	30	50	80	30	45	50	80	180	40	55	80
	25	40	65	150	25	40	65	25	35	40	65	150	35	45	70
	18	22	30	75	20	25	30	20	22	25	30	75	20	25	35
	100%	100%	75%	100%	100%	100%	75%	100%	100%	100%	75%	100%	100%	75%	50%
	74	143	220	440	74	143	220	74	105	143	220	440	105	143	220
	8	7	6	3,5	8	7	6	10	9	8	7	3,5	22	22	22
	A			A	B(400A) / A(630A)			B				A	B		
	■			■	■			■				■	■		
	■			■	■			■				■	■		
	-			-	-			-				-	-		
	-			-	-			-				-	-		
	■			■	■			■				■	■		
	■			■	■			■				■	■		
	F - P - W			F -P - W	F - P(400A) - W			F - W				F - W	F - W		
	F - EF - ES - FC			F - EF - ES - FC	F - EF - ES - FC			F - EF - ES				F - EF - ES	F - EF - ES -		
	FC CuAl - R - RC			FC CuAl - R - RC	FC CuAl - R - RC(400A)			FC CuAl - R - RC				FC CuAl - R - RC	FC CuAl (1250A) - HR - VR		
	EF - FC - R			EF - R	EF - FC - R			-				-	-		
	EF - FC - R			EF - R	EF - FC - R - VR (630A)			EF - HR - VR				EF - VR - HR	EF - VR - HR		
	DIN EN 50023			DIN EN 50023	DIN EN 50023			-				-	-		
	20000/120			20000/120	20000/120			20000/120				20000/120	10000/120		
	105			105	140			210				210	210		
	103,5			103,5	103,5			103,5				103,5	138,5		
	254			339	254			268				406	406		
	4			5	5			9,5				15	17		
	4,5			8,2	6,1			-				-	-		
	4,9			9	6,4			12,1				25,4	21,8		

KEY TO TERMINALS
F = Front
EF = Extended front
ES = Extended spreaded front

FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded

RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar

SACE Isomax S circuit-breakers for motor protection (protection against short-circuit)

General characteristics IEC 60947-2 and IEC 60947-4-1

Magnetic and electronic overcurrent releases

Three-phase asynchronous motor starting, switching and protection are essential operations for its correct use. The traditional system used for this purpose has three different devices: a circuit-breaker for protection against short-circuit, a thermal relay for protection against overload and lack of or unbalanced phase, and a counter for the motor operations. Everything must necessarily take into account the problems which arise on start-up.
In particular, different factors must be taken into account when selecting these devices, such as:

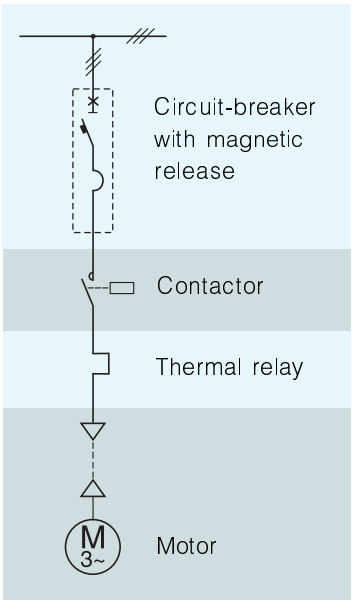
- the motor power
- the starting diagram
- the type of motor: with cage rotor or with wound rotor
- the fault current at the point of motor installation in the network.

ABB SACE proposes a wide range of circuit-breakers, which by implementing the protection against short-circuit exclusively, are suitable for use inside protected starters of traditional type.

The new SACE S2X 80, with fixed magnetic protection at 13 times the rated service current, is an extremely compact circuit-breaker, which stands out for its exceptional performances in terms of breaking capacity and limitation of the specific let-through energy.
Extremely simple and rapid to install, it has the same possibility of mounting accessories and personalisation as the S2B/N/S circuit-breakers. It can be used in a vast range of start-ups, from 0.37kW to 37kW and from 400V-50kA up to 690V-50kA.
SACE S3 N/H/L 160/250 circuit-breakers and the S3X 125/200 current-limiting circuit-breaker are fitted with a magnetic only release adjustable from 4 to 12 times the rated service current. They cover coordinations from 37 to 132kW and allow optimal motor protection thanks to their great flexibility due to the wide setting range of the magnetic threshold.
Finally, SACE S4 160/250, S5 400/630, S6 630/800, and S7 1250/1600, with different N-S-H-L breaking capacity levels, like the current-limiting S4X and S6X, can be fitted with the

Magnetic only fixed overcurrent releases

SACE Isomax S2X 80	
Phases L1 - L2 - L3	
Setting [A]	**Magnetic trip Im = 13 x In [A]**
R1	13
R1.6	21
R2	26
R2.5	32
R3.2	42
R4	52
R5	65
R6.5	84
R8.8	110
R11	145
R12.5	163
R16	210
R20	260
R25	325
R32	415
R42	545
R52	680
R63	820
R80	1040



PR211/P (I) electronic microprocessor-based release. Above all, they are used for protection of high power motors and, thanks to adjustment of the protection against short-circuit from 1.5 to 12 times, allow the optimum trip value to be selected for any type of motor.

Magnetic only adjustable overcurrent releases

Circuit-breaker					Phases L1 - L2 - L3	
S3N 160	S3H 160 S3L 160	S3N 250 S3H 250 S3L 250	S3X 125	S3X 200	Setting [A]	Magnetic adjustment [A] Im = 4 ... 12 x Ith
■					R 3	12 ... 36
■					R 5	20 ... 60
■					R 10	40 ... 120
■			■ (*)		R 25	100 ... 300
■	■		■		R 50	200 ... 600
■	■		■		R 100	400 ... 1200
■	■		■	■	R 125	500 ... 1500
■	■				R 160	640 ... 1600 (10 x Ith)
		■		■	R 160	640 ... 1920
		■		■	R 200	800 ... 2400

(*) Only to be used in coordination with contactors

SACE PR211/P (I) electronic microprocessor-based overcurrent releases for motor protection

Circuit-breaker										Phases L1 - L2 - L3	
S4N 160 S4H 160 S4L 160	S4N 250 S4H 250 S4L 250	S5N 400 S5H 400 S5L 400	S6N 630 S6H 630 S6L 630	S6N 800 S6H 800 S6L 800	S7S 1250 S7H 1250 S7L 1250	S7S 1600 S7H 1600 S7L 1600	S4X 250	S6X 400	S6X 630	Rated current of release In [A]	I (*) I3 [A]
■							■			100	150 ... 1200
■							■			160	240 ... 1920
	■						■			250	375 ... 3000
		■						■		320	480 ... 3840
		■						■		400	600 ... 4800
			■						■	630	945 ... 7560
				■						800	1200 ... 9600
					■					1000	1500 ... 12000
					■					1250	1875 ... 15000
						■				1600	2400 ... 19200

(*) I = Protection function against short-circuit

SACE Isomax S circuit-breakers for motor protection (integrated protection)

Electrical characteristics IEC 60947-2 and IEC 60947-4

			S4		
Rated uninterrupted current, Iu		[A]	**160 / 250**		
Rated service current, In		[A]	100, 160 / 200		
Poles		Nr.	3		
Rated service voltage, Ue (AC) 50-60Hz		[V]	690		
Rated impulse withstand voltage, Uimp		[kV]	8		
Rated insulation voltage, Ui		[V]	800		
Test voltage at industrial frequency for 1 min.		[V]	3000		
Rated ultimate short-circuit breaking capacity, Icu			**N**	**H**	**L**
	(AC) 50-60 Hz 220/230 V	[kA]	65	100	200
	(AC) 50-60 Hz 380/415 V	**[kA]**	**35** (1)	**65**	**100**
	(AC) 50-60 Hz 440 V	[kA]	30	50	80
	(AC) 50-60 Hz 500 V	[kA]	25	40	65
	(AC) 50-60 Hz 690 V	[kA]	18	22	30
Rated service short-circuit breaking capacity, Ics (2)		[%Icu]	100%	100%	75%
Rated short-circuit making capacity (415 V)		[kA]	74	143	220
Opening time (415V at Icu)		[ms]	8	7	6
Utilisation category (EN 60947-2)				A	
Isolation behaviour				■	
IEC 60947-2, EN 60947-2, IEC 60947-4-1, EN 60947-4-1				■	
PR212/MP (LRIU) microprocessor-based releases				■	
Interchangeability				■	
Versions				F - P - W	
Terminals	fixed			F - EF - ES - FC	
				FC CuAl - R - RC	
	plug-in			EF - FC - R	
	withdrawable			EF - FC - R	
Fixing on DIN rail DIN EN 50023				■	
Mechanical life		[No. operations / hourly operations]		20000/120	
Basic dimensions, fixed 3 poles		L [mm]		105	
		D [mm]		103,5	
		H [mm]		254	
Weights	fixed, 3 poles	[kg]		4	
	plug-in, 3 poles	[kg]		4,5	
	withdrawable, 3 poles	[kg]		4,9	

(1) All the versions with Icu=35kA are certified at 36kA
(2) For S4N/H/L, S5N/H, and S6N/H circuit-breakers the percentage performance of Ics at 500V and 690V is reduced by 25%

KEY TO VERSIONS
F = Fixed
P = Plug-in
W = Withdrawable

	S4X	S5			S6			S6X	S7	
	250	**400**			**630**			**400 / 630**	**1250**	
	100, 160, 200	320			630			320, 400 / 630	1000	
	3	3			3			3	3	
	690	690			690			690	690	
	8	8			8			8	8	
	800	800			800			800	800	
	3000	3000			3000			3000	3000	
	X	**N**	**H**	**L**	**N**	**H**	**L**	**X**	**S**	**H**
	300	65	100	200	65	100	200	300	85	100
	200	**35(1)**	**65**	**100**	**35(1)**	**65**	**100**	**200**	**50**	**65**
	180	30	50	80	30	50	80	180	40	55
	150	25	40	65	25	40	65	150	35	45
	75	20	25	30	20	25	30	75	20	25
	100%	100%	100%	75%	100%	100%	75%	100%	100%	75%
	440	74	143	220	74	143	220	440	105	143
	3,5	8	7	6	9	8	7	3,5	22	22
	A	B			B			A	B	
	■	■			■			■	■	
	■	■			■			■	■	
	■	■			■			■	■	
	■	■			■			■	■	
	F - P - W	F - P - W			F - W			F - W	F - W	
	F - EF - ES - FC FC CuAl - R - RC	F - EF - ES - FC FC CuAl - R - RC			F - EF - ES FC CuAl - R - RC			F - EF FC CuAl - R - RC	F - EF - ES FC CuAl - HR - V	
	EF - R	EF - FC - R			-			-	-	
	EF - R	EF - FC - R			EF - HR - VR			EF - VR - HR	EF - VR - HR	
	■	■			-			-	-	
	20000/120	20000/120			20000/120			20000/120	10000/120	
	105	140			210			210	210	
	103,5	103,5			103,5			103,5	138,5	
	339	254			268			406	406	
	5	5			9,5			15	17	
	8,2	6,1			-			-	-	
	9	6,4			12,1			25,4	21,8	

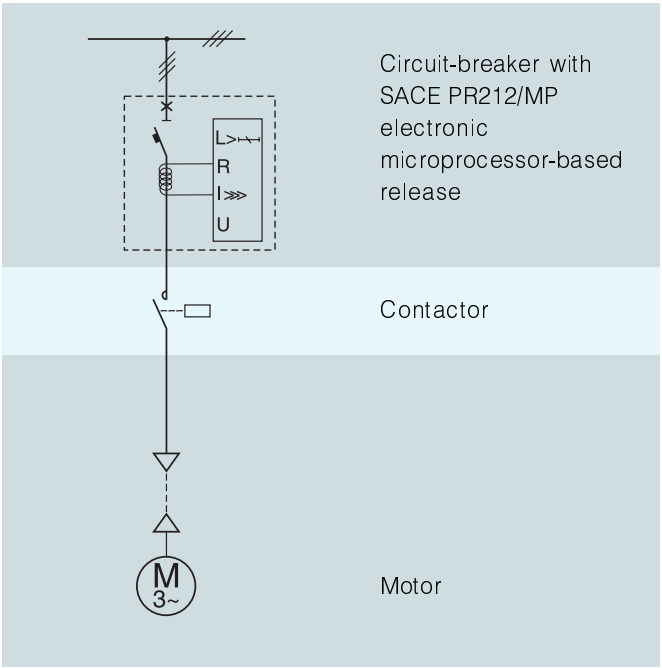
KEY TO TERMINALS
F = Front
EF = Extended front
ES = Extended spreaded front
FC = Front for copper cables
FC CuAl = Front for copper or aluminium cables
R = Rear threaded
RC = Rear for copper or aluminium cables
HR = Rear horizontal flat bar
VR = Rear vertical flat bar

SACE Isomax S circuit-breakers for motor protection (integrated protection)

General characteristics

SACE PR212/MP electronic microprocessor-based releases

SACE Isomax S4N-H-L 160/250, S5N-H-L 400, S6N-H-L 800, S7S-H 1250 and S4X 250, S6X 400/630 circuit-breakers are fitted with SACE PR212/MP electronic releases constructed using microprocessor-based electronic technology. This allows functions to be obtained which guarantee high trip precision, utmost reliability and insensitivity to variations in the external temperature. The SACE PR212/MP electronic release guarantees complete motor protection as is fully integrated on board the circuit-breaker; moreover, it is able to control contactor opening in the case of a fault (except for short-circuit), by means of the SACE PR212/CI contactor accessory operating mechanism unit. Furthermore, the PR010/T unit for testing the release and checking the protection functions, the PR010/K signalling unit and the PR212/D dialogue unit are available.
The electronic microprocessor-based releases are self-supplied and consist of three current transformers, the SACE PR212/MP protection unit and an opening solenoid which acts directly on the circuit-breaker operating mechanism unit. The current transformers – housed inside the release box, supply the energy and the signal required for correct operation of the protection.
The release is temperature-compensated and sensitive to lack of phase according to Table IV of the 60947-4-1 7.2.1.5.2 Standard.



3

SACE PR212/MP electronic microprocessor-based releases for motor protection

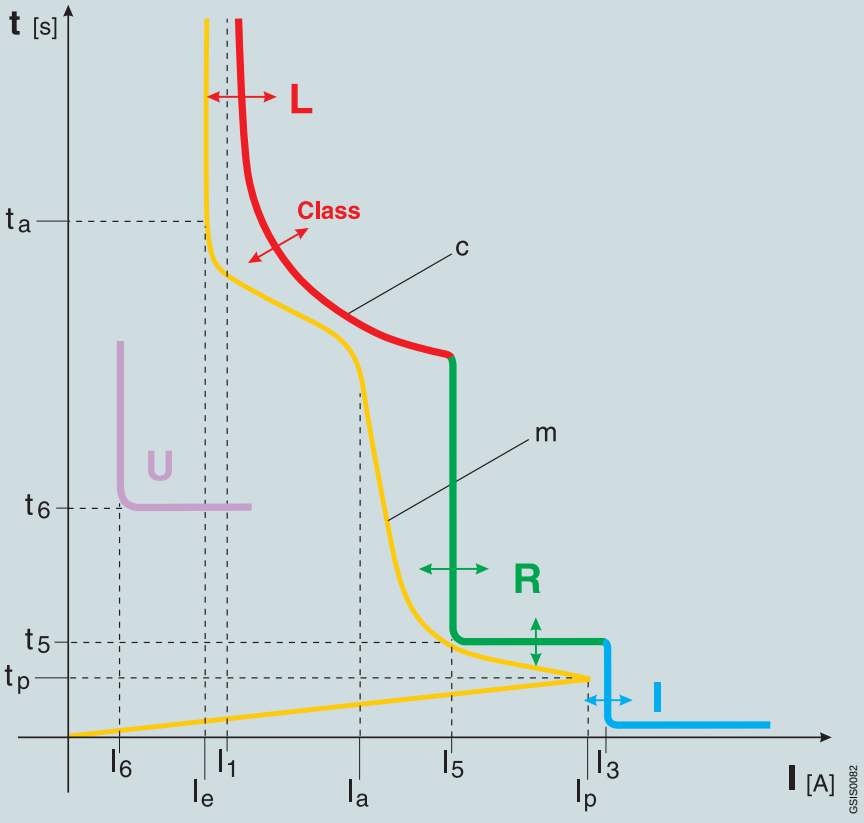
Circuit-breaker								Phases L1 - L2 - L3				
S4N 160 S4H 160 S4L 160	S4N 250 S4H 250 S4L 250	S5N 400 S5H 400 S5L 400	S6N 800 S6H 800 S6L 800	S7S 1250 S7H 1250	S4X 250	S6X 400	S6X 630	Release rated current In [A]	L I1 [A]	R I5 [A]	I I3 [A]	U Iu [A]
■					■			100	40 ... 100	3 ... 10 x I1	600 ... 1300	0,4 x I1
■					■			160	64 ... 160		960 ... 2080	
	■				■			200	80 ... 200		1200 ... 2600	
		■				■		320	128 ... 320		1920 ... 4160	
							■	400	160 ... 400		2400 ... 5200	
			■				■	630	252 ... 630		3780 ... 8190	
				■				1000	400 ... 1000		6000 ... 13000	

L = Protection function against overload with relative setting current (I1 = 0.4 ... 1 x In, with 0.01 steps - Class = 10A, 10, 20, 30)
R = Protection function against rotor block with relative setting current and time (I5 = 3-4-5-6-7-8-10 x I1 - t5 = 1-4-7-10 s)
I = Protection function against short-circuit with relative setting current (I3 = 6-7-8-9-10-11-12-13 x In)
U = Protection function against lack of or unbalance of phase with relative setting current and time (Iu = 0.4 x I1 - t = 4 s)

The SACE Isomax S range of moulded-case circuit-breakers for motor protection is perfectly coordinated with the new ABB line of contactors. The latter, defined as A-Line, together with the line of overload thermal relays and SACE Isomax S moulded-case circuit-breakers, is the basis for the new generation of apparatus specially designed to guarantee a system of products which can be integrated according to the applications required. All this is done with the aim of not only continuously improving the products, but above all to provide designers, installers and end users with the best solutions in terms of performance and reliability, combined with simplicity of the system.
In particular, SACE Isomax S circuit-breakers and the "A" series of contactors are an extraordinary solution in terms of compactness, since they share the same width and design characteristics, thereby saving space, assembly material, installation time and relative cabling operations.
The circuit-breaker-contactor group enhances this characteristic even further with the SACE PR212/MP electronic overcurrent release, which allows construction of an extremely compact protected starter, implementing protection against overload in accordance with the IEC 60947-4-1 Standard.

SACE Isomax S moulded-case circuit-breakers and the new A series contactors share the same width and depth and have been designed to construct a single compact unit

Typical operating characteristic of an asynchronous motor



I1	=	trip current function L
I3	=	trip current function I
I5	=	trip current function R
t5	=	trip time function R
I6	=	trip current function U
t6	=	trip time function U
Ie	=	rated service current of the motor
Ia	=	starting current of the motor
Ip	=	peak value of the subtransient starting current
ta	=	motor starting time
tp	=	duration of the starting subtransient phase
m	=	typical motor starting curve
c	=	example of trip curve of a motor protection circuit-breaker with electronic release

The different curves of the functions, with numerous threshold and time settings, allow an overall trip curve to be drawn which is really close to the motor starting curve, thereby optimising its protection

SACE Isomax S circuit-breakers for motor protection (integrated protection)

General characteristics

Protection functions and parametrisation of the SACE PR212/MP release

Function L

Protection against overload

Function L protects the motor against undesired overloads according to the indications and classes defined in the IEC 60947-4-1 Standards.
Protection is based on a pre-established thermal model (ABB SACE International Patent) which, by simulating the copper and iron overtemperatures inside the motor, allows precise safeguarding of the machine. The protection intervenes when the preset overtemperature is reached. The trip time is fixed by selecting the trip class defined in the above-mentioned Standards.
The function is temperature-compensated and sensitive to phase missing/unbalance in accordance with the IEC 60947-4-1 Standard.
In the case of auxiliary power supply, the thermal memory function is guaranteed, which allows the release to continue calculating the motor temperature even after an opening operation.

Parametrisation of protection L

I1 = 0,4 ... 1 x In with 0.01 x In steps

where I1 is the rated service current of the circuit-breaker, which must be the same or higher than that of the motor to be protected (I1 ≥ Ie), and In is the rated current of the current transformers.

t1 = 4 - 8 - 16 - 24 s

where t1 is the trip at 7.2 x I1 cold, depending on the class selected

Class 10A - 10 - 20 - 30

are the motor starting classes which determine the trip times for overload according to the IEC 60947-4-1 4.7.3 Table II Standards.

Release of the contactor: *in normal operating mode*

Tolerances: *in accordance with the IEC 60947-4-1 Standard.*

Function R

Protection against rotor block

Function R protects the motor against any rotor block during operation. This protection is automatically disabled for the whole of the motor starting phase and is then re-activated.
The protection already provides its function from low current increases (from 3 times the I1 service current of the circuit-breaker) and can also be disabled.
Both the current level to be tripped and the trip time delay can be selected.
The protection intervenes when at least one of the phase currents exceeds the preset value and remains above that threshold for the set t5 time.

Parametrisation of protection R

I5 = OFF - 3 - 4 - 5 - 6 - 7- 8 - 10 x I1

where I5 is the current at which the rotor is considered to be blocked and I1 is the rated service current of the circuit-breaker selected for function L.

t5 = 1 - 4 - 7 - 10 s

where t5 is the preset time threshold above which the release trips.

Release of the contactor: *in normal operating mode*

Tolerances: *± 10% of the trip thresholds*
± 20% of the trip times

Function I

Protection against short-circuit

This protection function intervenes in the case of a short-circuit between phases. It is sufficient for a single phase to exceed the set threshold to cause immediate opening of the circuit-breaker (the protection cannot be excluded).
The trip current can be adjusted up to 13 times the rated current of the release, whereas the time is fixed.
To prevent unwarranted trips during starting, the protection recognises whether the motor to be protected is in the starting phase or whether there is a short-circuit. This is to allow starting under completely safe conditions.

Parametrisation of protection I

I3 = 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 x In

where I3 is the instantaneous trip current for short-circuit and In is the rated current of the current transformers.
To prevent unwarranted trips during the inrush phase of the motor, instantaneous tripping of protection I takes place at 1.5 x I3 (for I3 ≤ 9 x In), whereas for higher values (I3 > 9 x In) tripping takes place at 13.5 x In.

Tolerances: *± 20% of the trip thresholds*
± 20% of the trip times

Function U

Protection against lack of and/or unbalance of a phase

Function U can be used in those cases where particularly precise control is needed regarding lack of and/or unbalance of phase currents. This function can be excluded and intervenes if the effective value of one or two currents drops below the level of 0.4 of the I1 current set with function L and remains there for more than 4 seconds.

Parametrisation of protection U

On, *(with I6 = 0.4 x I1 and t6 = 4 s).*

Off, *in the Off position, the release remains sensitive to the lack of phase according to the IEC 60947-4-1 Standard, modifying the trip curves for protection L.*

Release of the contactor: *in normal operating mode*

Tolerances: *± 20% of the trip thresholds*
± 20% of the trip times

Parametrisation of the release

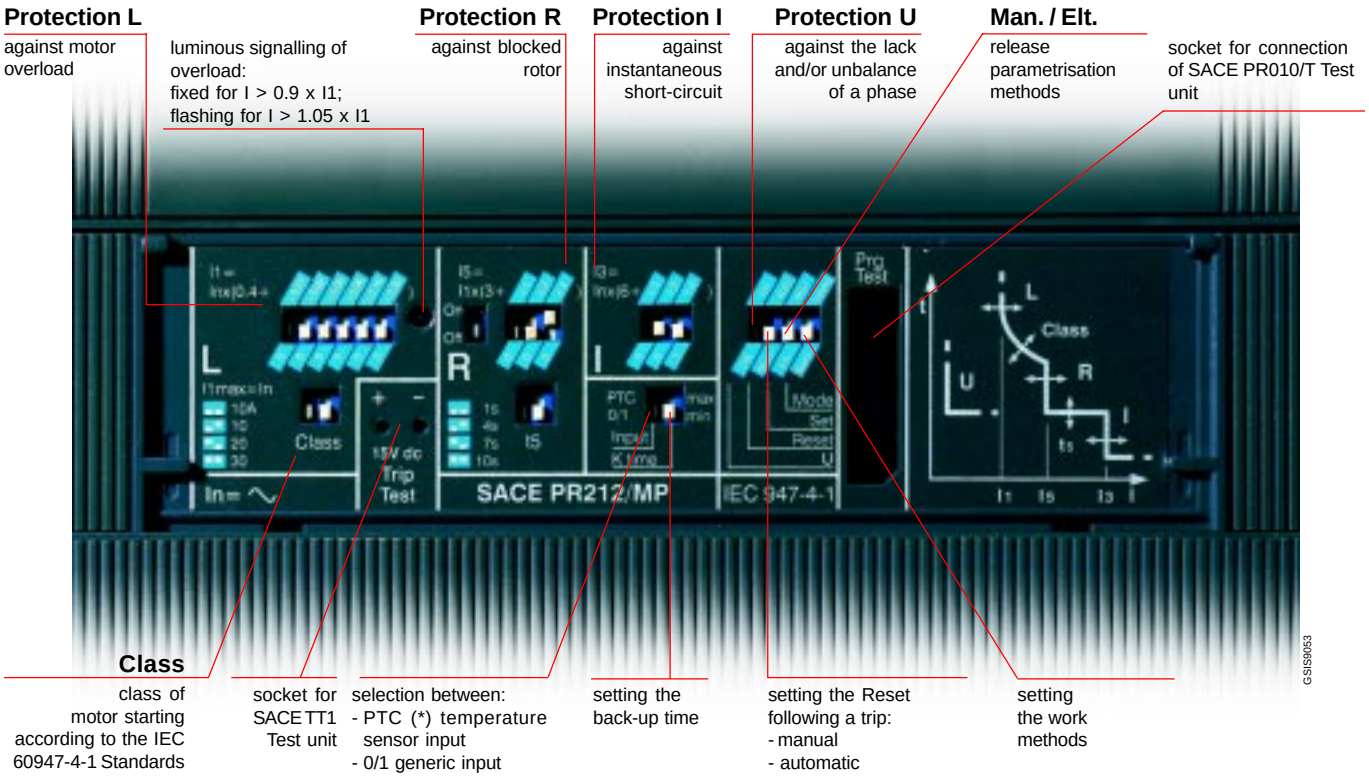
By means of the microswitch located on the front, the release can be fitted for parametrisation:
Man. (manual), thresholds and times are adjusted by using the microswitches on the front of the relay
Elt. (electronic), thresholds and times are adjusted remotely by means of the SACE PR212/D dialogue unit.

Operating methods

Normal mode: in the case of a fault detected by functions L-R-U, contactor opening can be controlled by means of the accessory SACE PR212/CI module or directly, without the need for external modules, with an ABB contactor fitted with an electronic interface with the circuit-breaker.
Heavy duty mode: the circuit-breaker opens for any type of L-R-I-U fault.

Back-up protection

The electronic release verifies whether the circuit-breaker or the contactor is effectively in the open or relay tripped position following an opening command. If this is not so, after a delay set to long or short time, the command for circuit-breaker opening is given again.



(*) A special input is available to connect a PTC temperature probe, inserted in the motor to be protected

Characteristics of the SACE PR212/MP electronic microprocessor-based release

Overloading capacity	**2 x In continuously, 7.2 x In for 35 s at 45 °C**
Operating temperature	**– 25 °C ... + 70 °C**
Maximum relative humidity percentage	**90% without condensation**
Rated service frequency	**45 - 66 Hz, able to measure harmonics up to 550 Hz**
Current measurement methods	**r.m.s. up to 3 x In (functions L, R, U)**
	peak value for values over 3 x In (functions L, R, U)
	peak value for function I
Electromagnetic compatibility	**According to: IEC 60947-2 Standard Annex F**
Electrostatic discharges	**According to: IEC 61000-4-2 Standard**
Radiated electromagnetic field	**According to: IEC 61000-4-3 Standard**
Short-time transients	**According to: IEC 61000-4-4 Standard**
Mean time between failure (MTBF)	**15 years (at 45 °C)**


ABB
SACE S6
I
on
O
off
ABB
SACE S4
I
on
O
off
ABB
SACE S3
I
on
O
off
ABB
SACE S3
I
on
O
off
ABB
SACE S4
I
on
O
off

SACE Isomax S circuit-breakers for applications up to 1000V

Taking the SACE Isomax S limits higher and higher

1000 V • 160-800 A • 6-50 kA

GSIS9066

SACE Isomax S circuit-breakers for applications up to 1000V

Electrical and general characteristics IEC 60947-2

Within the panorama of Isomax proposals, there is also the range of circuit-breakers and switch-disconnectors for direct current and alternating current applications up to 1000V.
The typical application sectors are installations in mines, road or railway tunnels, traction and industrial applications in general.
The circuit-breakers for direct current (connection diagrams on page **5**/47) are available in the four-pole version, whereas those for alternating current are available in the three-pole version, with adjustable or electronic thermomagnetic releases and have the same dimensions as the standard versions.
They can also be combined with all the accessories available for the Isomax series.

Range at 1000 V in a.c.

		S3
Rated uninterrupted current, **Iu**	[A]	**160**
Poles	Nr.	3
Rated service voltage, **Ue** (AC) 50-60Hz	[V]	1000
Rated impulse withstand voltage, **Uimp**	[kV]	8
Rated insulation voltage, **Ui**	[V]	1000
Test voltage at industrial frequency for 1 min.		3000
Rated ultimate short-circuit breaking capacity,		**L**
Icu (AC) 50-60 Hz 1000 V	[kA]	6
Rated short-circuit making capacity	[kA]	9,2
Opening time	[ms]	20
Rated short-time withstand current for 1 s, Icw	[kA]	
Utilisation category (EN 60947-2)		A
Isolation behaviour		■
IEC 60947-2, EN 60947-2		■
Thermomagnetic releases T adjustable, M fixed 10 Ith		■
PR211/P (LI only) microprocessor-based releases		
PR212/P (LSI-LSIG) microprocessor-based releases		
Versions		F
Terminals		F
Fixing on DIN rail		DIN EN 50023
Mechanical life	[No. operations / hourly operations]	25000/120
Dimensions	L [mm]	105
	D [mm]	103,5
	H [mm]	170
Weights	[kg]	2,6

Range at 1000 V in d.c.

		S3	S5	S6	S6
Rated uninterrupted current, **Iu**	[A]	**160-250**	**400**	**630**	**800**
Poles	Nr.	4	4	4	4
Rated service voltage, **Ue**	[V –]	1000	1000	1000	1000
Rated impulse withstand voltage, **Uimp**	[kV]	8	8	8	8
Rated insulation voltage, **Ui**	[V]	1000	1000	1000	1000
Test voltage at industrial frequency for 1 min.		3000	3000	3000	3000
Ultimate rated short-circuit breaking capacity, **Icu**		**L**	**L**	**L**	**L**
(4 poles in series)	[kA]	40	40	40	50
Rated short-circuit making capacity	[kA]	40	40	40	50
Opening time	[ms]	25	35	45	50
Rated short-time withstand current for 1 s, Icw	[kA]	–	5	7,6	10
Utilisation category (EN 60947-2)		A	B	B	B
Isolation behaviour		■	■	■	■
IEC 60947-2, EN 60947-2		■	■	■	■
Thermomagnetic releases, T adjustable - M fixed 10 Ith		■	–	–	–
Thermomagnetic releases, T adjustable - M adjustable		–	■	■	■
Versions		F	F	F	F
Terminals		F	F	F	F
Fixing on DIN rail		DIN EN 50023	DIN EN 50023	–	–
Mechanical life	[No. operations / hourly operations]	25000/120	20000/120	20000/120	20000/120
Basic dimensions, fixed	L [mm]	140	184	280	280
	D [mm]	103,5	103,5	103,5	103,5
	H [mm]	170	254	268	268
Weights, fixed	[kg]	3,5	7	12	12

	S3X	S4	S4X	S5	S6	S6X
	125	160-250	250	400	630-800	630
	3	3	3	3	3	3
	1000	1000	1000	1000	1000	1000
	8	8	8	8	8	8
	1000	1000	1000	1000	1000	1000
	3000	3000	3000	3000	3000	3000
	X	**L**	**X**	**L**	**L**	**X**
	30	8	30	8	12	30
	63	13,6	63	13,6	24	63
	10	30	20	30	30	25
				5	7,6 (630A)-10 (800A)	
	A	A	A	B	B	A
	■	■	■	■	■	■
	■	■	■	■	■	■
	■					
		■	■	■	■	■
		■	■	■	■	■
	F	F	F	F	F	F
	F	F	F	F	F	F
	DIN EN 50023	DIN EN 50023	DIN EN 50023	DIN EN 50023	–	–
	25000/120	20000/120	20000/120	20000/120	20000/120	20000/120
	105	105	105	140	210	210
	103,5	103,5	103,5	103,5	103,5	103,5
	255	254	254	254	268	406
	3,6	4	4	5	9,5	15

Circuit-breakers with electronic release for alternating current

	In100	In250	In400	In630	In800
S4L 160	■	–	–	–	–
S4L 250	–	■	–	–	–
S4X 250	–	■	–	–	–
S5L 400	–	–	■	–	–
S6L 630	–	–	–	■	–
S6X 630	–	–	–	■	–
S6L 800	–	–	–	–	■
Im = 1,5 ...12 x In [A]	150...1200	375...3000	600 ... 4800	945...7560	1200...9600

Circuit-breakers with thermomagnetic release for alternating current

(thermal threshold adjustable from 0.7 to 1 x In; fixed magnetic threshold)

	R32	R50	R80	R100	R125	R160	R200	R250
S3L 160	■	■	■	■	■	■	–	–
S3X 125	■	■	■	■	■	–	–	–
Im AC (10xIn) [A]	500	500	800	1000	1250	1600	2000	2500

Circuit-breakers with thermomagnetic release for direct current

	R32 (1)	R50 (1)	R80 (1)	R100 (1)	R125 (1)	R160 (1)	R200 (1)	R250 (1)	R400 (2)	R630 (2)	R800 (2)
S3L 160	■	■	■	■	■	■	–	–	–	–	–
S3L 250	–	–	–	–	–	–	■	■	–	–	–
S5L 400	–	–	–	–	–	–	–	–	■	–	–
S6L 630	–	–	–	–	–	–	–	–	–	■	–
S6L 800	–	–	–	–	–	–	–	–	–	–	■
Im DC (10xIn) [A]	500	500	800	1000	1250	1600	2000	2500	–	–	–
Im DC (5-10xIn) [A]									2000-4000	3150-6300	4000-8000

(1) Thermal threshold adjustable from 0.7 and 1 x In; fixed magnetic threshold
(2) Thermal threshold adjustable from 0.7 and 1 x In; magnetic threshold adjustable between 5 and 10 x In.


ABB
SACE S8
on
off
on
off
on
off

SACE Isomax S switch-disconnectors

Close, carry and isolate.
The certainty of operating in complete safety.

690 V • 125-3200 A • 3,1-85 KA (Icm) • 2,2-40 kA (Icw)

GSIS9067

SACE Isomax S switch-disconnectors

Electrical and general characteristics IEC 60947-3

				S2D	S3D	
Conventional thermal current at 60 °C, **Ith**			[A]	**125 / 160**	**100 / 160 / 250 / 320**	
Number of poles			Nr.	3/4	3/4	
Rated service voltage, **Ue**		(AC) 50-60Hz	[V~]	690	690	
		(DC)	[V–]	500	750	
Rated current, **Iu**			[A]	125-160	100-160-250-320	
Rated impulse withstand voltage, **Uimp**			[kV]	6	8	
Rated insulation voltage, **Ui**			[V]	690	800	
Test voltage at industrial frequency for 1 min.			[V]	3000	3000	
Rated short-circuit making capacity (415 V~), **Icm**			[kA]	3,1	10	
Rated short-time withstand current for 1 s, **Icw**			[kA]	2,2	6,5	
Isolation behaviour				■	■	
IEC 60947-3				■	■	
Versions				F - P	F - P - W	
Terminals	fixed			EF - FC - FC CuAl R - RC	F - EF - FC FC CuAl - R - RC	
	plug-in			FC - R	F - FC - R	
	withdrawable			-	F - FC - R	
Mechanical life		[No. of operations / hourly operations]		25000/240	25000/120	
Basic dimensions, fixed		L (3/4 poles)	[mm]	90/120	105/140	
		D	[mm]	70	103,5	
		H	[mm]	120	170	
Weights, fixed		3/4 poles	[kg]	1,1/1,5	2,6/3,5	

Coordination with the circuit-breakers (kA at 380-415 V AC)

LOAD SIDE ⇒

SUPPLY SIDE	S2D 125	S2D 160	S3D 100	S3D 160	S3D 250	S3D 320	S6D 400	S6D 630	S6D 800	S7D 1000	
S1B	16		16								
S1N	25		25								
S2B	16	16	16	16							
S2N	35	35	35	35							
S2S	50	50	50	50							
S3N			35	35	35	35					
S3H			65	65	65	65					
S5N							35	35	35		
S5H							35	35	35		
S6N							35	35	35		
S6S							50	50	50		
S6H							65	65	65		
S7S										50	
S7H										65	
S8H											
S8V											

	S6D	S7D	S8D
	400 / 630 / 800	**1000 / 1250 / 1600**	**2000 / 2500 / 3200**
	3/4	3/4	3/4
	690	690	690
	750	750	750
	400-630-800	1000-1250-1600	2000-2500-3200
	8	8	8
	800	800	800
	3000	3000	3000
	30	52,5	85
	15	25	40
	■	■	■
	■	■	■
	F - W	F - W	F
	F - EF - FC CuAl R - RC	F - EF - FC CuAl (1250A) HR - VR	EF (2500A)-R
	-	-	-
	F - HR - VR	F - HR - VR	-
	20000/120	10000/120	10000/20
	210/280	210/280	406/556
	103,5	138,5	242
	268	406	400
	9,5/12	17/22	57/76

	S7D 1250	S7D 1600	S8D 2000	S8D 2500	S8D 3200
	50	50			
	65	65			
			85	85	85
			120	120	120

The switch-disconnectors derive from the corresponding circuit-breakers, of which they keep the same overall dimensions, versions, fixing systems and possibility of mounting accessories.
They are characterised by a rated voltage of 690 V in alternating current and 750 V in direct current.

Applications

They can be used as general circuit-breakers in sub-switchboards, as switching and isolating parts for lines, busbars or groups of apparatus, or as bus-ties. They can be part of general isolation devices of groups of machines or units for motor switching and protection.

Isolation

The main function carried out by these circuit-breakers consists of isolating the circuit they are inserted in.
Once open, the contacts are at a sufficient distance to prevent an arc striking, in accordance with the standard prescriptions relative to isolation behaviour. The position of the operating lever corresponds with certainty to that of the contacts (positive operation).

Protection

Each switch-disconnector must be protected on the supply side by a coordinated device which safeguards it against short-circuits. The coordination table at the side shows the SACE Isomax S circuit-breaker which can carry out the protection function for each switch-disconnector. These are always pieces of apparatus of a size corresponding to or lower than that of the switch-disconnector.

Making capacity

The making capacity, Icm, is of considerable importance, since a switch-disconnector must be able to withstand the dynamic, thermal and current stresses that can occur during closing without being destroyed, up to and including closing under short-circuit conditions.

Endurance in the closed position

This identifies the capacity for maintaining the closed position for short-time overcurrents. It is an important parameter which qualifies the performances of these pieces of apparatus.


ABB
SACE S8
ABB
SACE S6
I
on
O
off
ABB
SACE S5
I
on
O
off
ABB
SACE S3
I
on
O
off
ABB
SACE S1
I
on
O
off

SACE Isomax S circuit-breakers according to UL489 and CSA C22.2 Standards

SACE Isomax S quality to conquer “New worlds”

480/600 V • 100-2500 A • 25-100 kA (480V)

3

GSIS9068

SACE Isomax S circuit-breakers according to UL489 and CSA C22.2 Standards

Electrical and general characteristics

Circuit-breaker type			S1	S3 150			S3 225			
Maximum frame continuous current 40 °C		[A]	100	150			225			
Number of poles		Nr.	3	2 - 3			2 - 3			
Rated operational voltage (AC) 50-60 Hz		[V]	277/480	600			240 (B); 480 (N/H/L)			
	(DC)	[V]		600			500			
Test voltage (1min.) 50-60 Hz		[V]	3000	3000			3000			
UL/CSA short-circuit interrupting capacity		[kA rms]	**N**	**N**	**H**	**L**	**B**	**N**	**H**	**L**
	240 V AC	[kA rms]	50	65	100	150	150	65	100	150
	480 V AC	[kA rms]	14 (R15)			65 (R15, R30)				
			20 (R20-R100)	25	50	85	-	25	50	65
	600 V AC	[kA rms]	-	14	14	25	-	-	-	-
	500 V DC (2 poles in series)	[kA rms]	-	35	50	65	50	20	35	50
	600 V DC (3 poles in series)	[kA rms]	-	20	35	50	-	-	-	-
Overcurrent trip relays										
Thermal-magnetic			■	■			■			
Microprocessor based			-	-			-			
Interchangeability			-	-			-			
Dimensions	H	[in/mm]	4,72 / 120	6,70 / 170			6,70 / 170			
fixed version	W	[in/mm]	3,07 / 78	4,13 / 105			4,13 / 105			
	D	[in/mm]	2,75 / 70	4,07 / 103,5			4,07 / 103,5			
Mechanical duration		[op./ frequency]	25000 / 240	25000 / 120			25000 /120			
Weights (fixed - 3P)		[lbs.]	2,42	6,75			6,75			

3

In the field of moulded-case circuit-breakers, complying with the UL489 and CSA22.2 standards, the SACE Isomax S offer is enriched by the following ranges:

– circuit-breakers for power distribution (fitted with thermomagnetic or electronic releases)
– circuit-breakers with magnetic only releases for motor protection (Motor Control Protection – MCP)
– switch-disconnectors for use as isolators or switching devices for lines, busbars or parts of a plant circuit-breakers (Moulded Case Switch – MCS).

The SACE Isomax S offer in compliance with UL/CSA Standards is completed with the introduction of three new sizes. There are therefore increasing possibilities for those customers who also operate on markets subject to the standards defined in the UL/CSA Standards, with a whole range of moulded-case circuit-breakers available, with rated currents which go from 100A to 2500A and breaking capacities, at 480 V AC, which can reach 100kA.

Apart from lowering the range of rated currents, introduction of the S1 size allows all those applications typical of power sub-distribution where a circuit-breaker characterised by limited dimensions, but guaranteeing great versatility of application of accessories and installation, is particularly convenient.

They further increase the possibility of selection, thanks to the introduction of the new rating for S3, Iu=225A, with three levels of breaking capacity (N/H/L), up to service voltage values of Ue=480V AC and 500 V DC.

Finally, the S8 circuit-breaker according to the UL/CSA Standard also allows completion towards higher rated currents. Isomax S8V 1600, 2000 and 2500 are suited to installation immediately to the load side of power supply sources of low voltage systems and can operate safely under the most severe service conditions required by modern installations. Their high performances, great flexibility in mounting accessories, simple coordination with the devices on the load side and the possibility of limiting the depth of the switchboards thanks to their compact overall dimensions, make Isomax S8 a particularly advantageous choice.

	S4			S5			S6			S7	S8
	250			400			800			1200	1600-2000-2500
	2 - 3			2 - 3			2 - 3			2 - 3	3
	600			600			600			600	600
	-			600			600			-	-
	3000			3000			3000			3000	3000
	N	H	L	N	H	L	N	H	L	H	V
	65	150	200	65	150	200	65	150	200	100	120
	25	65	100	35	65	100	50	65	100	65	100
	18	22	35	22	22	35	25	35	42	50	85
	-	-	-	35	50	65	35	50	65	-	-
	-	-	-	20	35	50	20	35	50	-	-
	-			■			■			-	-
	■			■			■			■	■
	■			■			■			■	■
	10,00 / 254			10,00 / 254 (300A); 13,62 / 346 (400A)			14,25 / 268			16 / 406	15,75 / 400
	4,13 / 105			5,51 / 140			8,27 / 210			8,27 / 210	15,98 / 406
	4,07 / 103,5			4,07 / 103,5			4,07 / 103,5			5,45 / 138.5	9,25 / 235
	20000 / 120			20000 / 120			20000 / 120			10000 / 120	10000 / 20
	8,8			11			22			37,5	135

Motor Control protection - MCP

Type		S3L		S4 N/H/L			S5 N/H/L			S6 N/H/L			S7H	S8V
Poles		3		3			3			3			3	3
Trip Unit														
Adjustable magnetic only														
(4...12xIn)		■												
PR211/P - I				■			■			■			■	■
Rating	[A]	3…25	50…150	100-250			400	400	400	600-800	600-800	600-800	1000-1200	1600-2000-2500
Interrupting capacity		L	L	N	H	L	N	H	L	N	H	L	H	V
	240 V AC	50	150	65	150	200	65	150	200	65	150	200	100	120
	480 V AC	25	85	25	65	100	35	65	100	50	65	100	65	100
	600 V AC	10	25	18	22	35	22	22	35	25	35	42	50	85
	500 V DC	65 (1)	65	-	-	-	-	-	-	-	-	-	-	-
	600 V DC	50 (1)	50	-	-	-	-	-	-	-	-	-	-	-

(1) Performance available only for the 25 A rating version

Moulded Case Switches - MCS

Type		S3 H-D 150	S3 H-D 225	S4 H-D	S5 H-D	S6 H-D	S7 H-D	S8 V-D
Rating	[A]	150	225	250	400	800	1200	2500
Poles		3	3	3	3	3	3	3
Magnetic trip	[A]	1500	2250	3000	5000	10000	20000	35000
Rated voltage								
(AC) 50-60 Hz	[V~]	600	480	600	600	600	600	600
(DC) 3 poles in series	[V–]	600	500	600	600	600	600	600

Accessories

Index

Versions **4**/3

Connection terminals **4**/6

Service releases **4**/10

Electric signals **4**/14

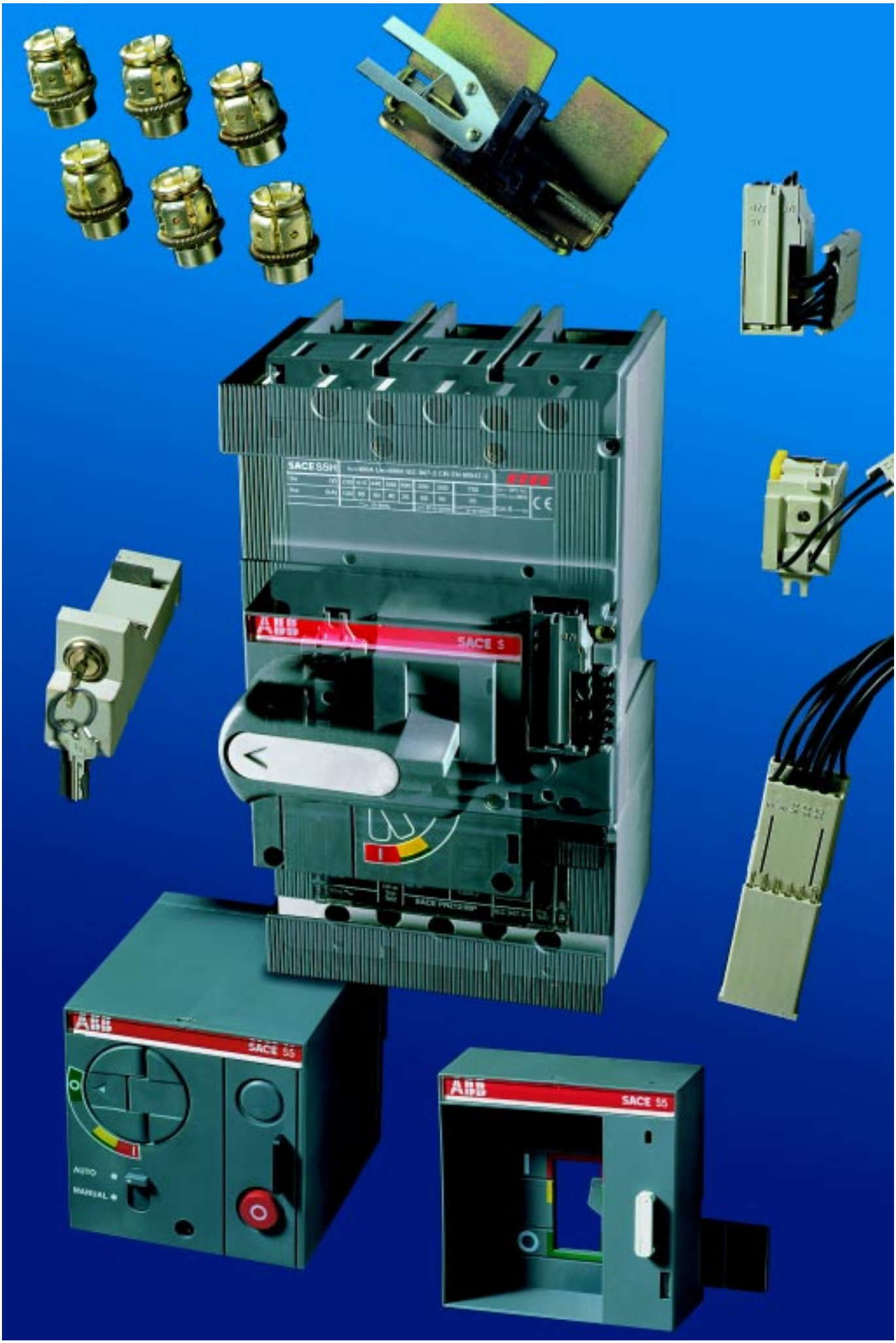
Remote controls **4**/17

Operating mechanisms and locks **4**/22

Residual current releases **4**/26

Accessories for electronic releases **4**/30

Installation accessories and spare parts **4**/35



GSIS9070

Accessories

Versions

SACE Isomax S circuit-breakers are available in the FIXED, PLUG-IN or WITHDRAWABLE, three-pole or four-pole versions.

F
FIXED

The FIXED version circuit-breaker with three or four-poles has:
- the same upper and lower terminals
- lever operating mechanism
- thermomagnetic or electronic release
- flange for the front door of the switchboard
- possibility of assembly on base plate or on DIN rail (up to 630A)
- circuit-breakers featuring only four depths (70mm for S1-S2, 103.5 for S3...S6, 138.5 for S7 and 242 for S8)
- standardised front for groups of circuit-breakers (45mm for S1...S5, 105mm for S3...S7).

P
PLUG-IN

The PLUG-IN version circuit-breaker consists of:
- fixed part to be installed directly on the base plate of the cubicle
- moving part obtained from the fixed circuit-breaker with the addition of the isolating contacts in correspondence with the connection terminals, of the rear frame for fixing to the fixed part and of the terminal covers.

Circuit-breaker racking out is carried out by unscrewing the top and bottom fixing screws. A special lock prevents the circuit-breaker from being racked in and out with the contacts in the closed position.

W
WITHDRAWABLE

The WITHDRAWABLE version circuit-breaker is made up of:
- fixed part, to be installed directly on the base plate of the cubicle with the side group mounted on the fixed part to allow the racking-out/racking-in movement
- moving part obtained from the fixed circuit-breaker with the addition of the isolating contacts in correspondence with the connection terminals, of the rear frame (which is coupled with the side piece provided on the fixed part for sliding) for fixing to the fixed part, and of the terminal covers.
- accessory to be applied on the front of the circuit-breaker with selection between front for lever operating mechanism, motor operator and rotary handle operating mechanism; application of one of these accessories allows the circuit-breaker lock to be made in the withdrawn position.

Racking-in/out of the moving part is carried out by means of the special operating lever supplied with the circuit-breaker in the moving part for withdrawable version or with the conversion kit of the fixed circuit-breaker into moving part of withdrawable circuit-breaker. The special mechanism allows the circuit-breaker to be put into the isolated position (with power and auxiliary circuits disconnected) with the compartment door closed, providing increased operator safety. The lever can only be inserted with the circuit-breaker open.

Once racked out or withdrawn, the circuit-breaker can be operated in the open/closed position and, by means of the special connection extensions, blank operating tests of the auxiliary control circuits can be carried out.

	F	P	W
	Fixed	Plug-in	Withdrawable
S1 125	■	■	–
S2 160	■	■	–
S3 160	■	■	■
S3 250	■	■	■
S4 160	■	■	■
S4 250	■	■	■
S5 400	■	■	■
S5 630	■	–	■
S6 630	■	–	■
S6 800	■	–	■
S7 1250	■	–	■
S7 1600	■	–	■
S8 2000	■	–	–
S8 2500	■	–	–
S8 3200	■	–	–

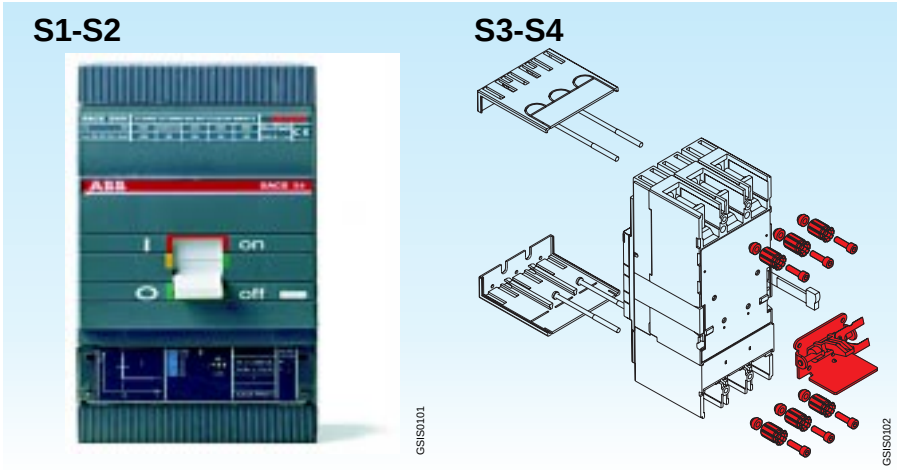
Accessories

Versions

Starting from the fixed version with front terminals, SACE Isomax S circuit-breakers can be converted into the various versions using the Conversion kits. This makes management of the product, its versions and stocks as a whole highly flexible. It is, in any case, always possible to ask for the circuit-breaker in the required version fully prepared in the factory.

Conversion kit into moving part for plug-in circuit-breaker

This allows the fixed circuit-breaker with front terminals to be converted into the moving part of a plug-in circuit-breaker. The kit consists of:
– tulip isolating contacts
– frame
– assembly screws and nuts.
The fixed part is needed to complete the circuit-breaker.



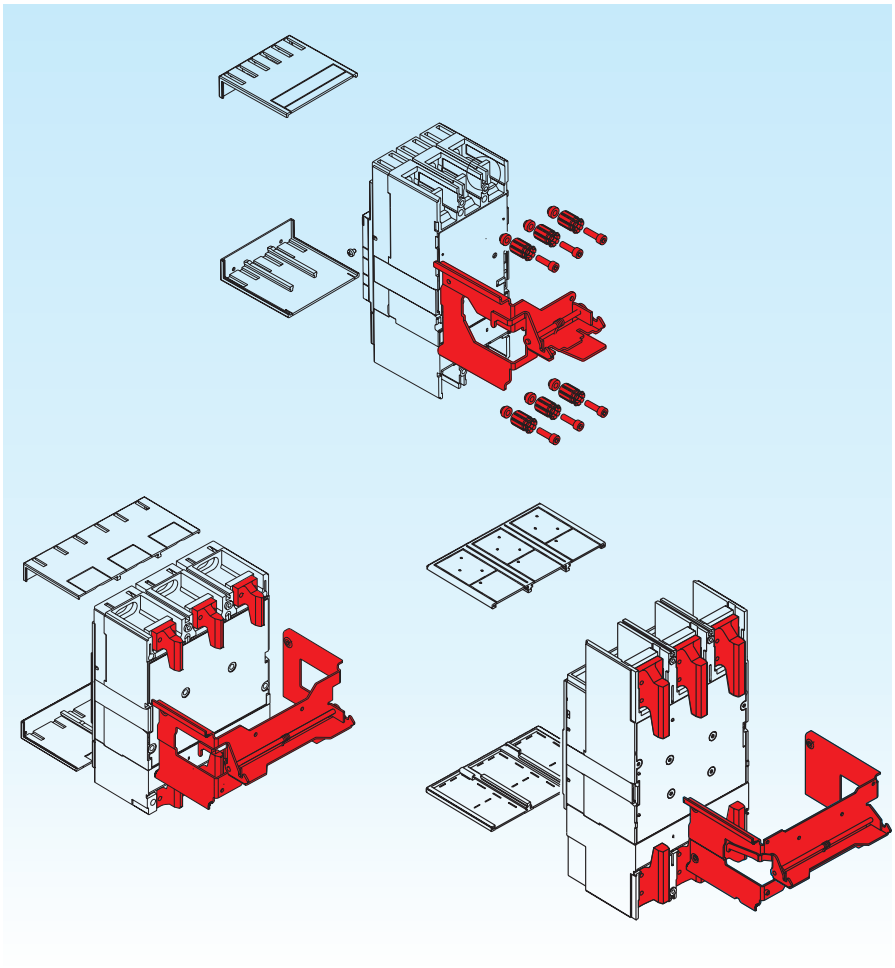
4

Fixed part

The fixed part allows the circuit-breaker to be constructed in the plug-in or withdrawable version. It can also be provided in the switchboard as a reserve power supply to be completed with a circuit-breaker at the appropriate time. For plug-in or withdrawable version circuit-breakers, different circuit-breaker positions are possible:
– Plug-in: racked-in – racked-out
– Withdrawable: racked-in – racked-out - withdrawn.
The fixed part for withdrawable version circuit-breaker is fitted with a guide for supporting the moving part during the isolation or withdrawal operations of the moving part. For SACE S6-S7 circuit-breakers, there are two guides.

Conversion kit into moving part for withdrawable circuit-breaker

This allows the fixed circuit-breaker with front terminals to be converted into the moving part of a withdrawable circuit-breaker. The kit consists of isolating contacts, frame, assembly screws and nuts.
The circuit-breakers in the withdrawable version must always be completed, alternatively, with one of the following accessories:
– front for lever operating mechanism
– rotary handle operating mechanism
– motor operator,
in order to make the racking-out lock if necessary.
The fixed part is needed to complete the circuit-breaker.



Conversion kit for fixed part of plug-in into fixed part of withdrawable

A guide for converting the fixed part of a plug-in version circuit-breaker into the fixed part of a withdrawable version circuit-breaker is available for SACE S3-S4-S5 circuit-breakers.

Racking-out handle

This allows racking-out and racking-in – even with the door closed – of the circuit-breaker in the fixed part.
The handle is the same for the whole range of circuit-breakers and is supplied as standard with the Conversion kit or with the circuit-breakers supplied in the withdrawable version.

Accessories

Connection terminals

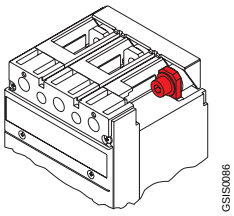
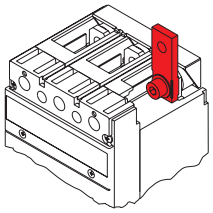
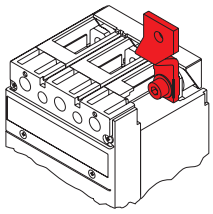
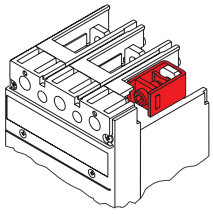
The basic version of the circuit-breaker is supplied with:
– front terminals for SACE S3, S4, S5, S6, S7, and S8 circuit-breakers
– front terminals for copper cables for SACE S1, and S2 circuit-breakers.

Different types of terminals are available, which can be combined in different ways (upper of one type, lower of another type), allows the circuit-breaker to be connected to the plant in the most suitable way for installation requirements.
The following distinctions can be made between:
– **front terminals** which allow connection of cables or busbars by acting directly from the front of the circuit-breaker.
– **rear terminals** which allow installation of the circuit-breakers in switchboards with rear access to both cable and busbar connections.

Terminals for connection of busbars or cables terminated with cable terminals and terminals for direct connection of bare cable are available.

The information needed to make the connections is summarised for each type of terminal on pages **4**/8-9. Flat bars of different dimensions and composition are recommended for connection with busbars. Furthermore, the minimum depth the flat bar to be connected must have is also indicated, if it is of a different composition to the one recommended. The minimum and maximum cross-section of the cables which can be tightened in the terminals and the diameter of the terminal are indicated for connection with bare cables
The torque values to be applied to the tightening screws of the terminals for cable and to the screws used for connecting the busbars to the flat bar terminals are given.

The circuit-breakers can be ordered complete with the terminals required, mounted directly in the factory, or the terminals can be ordered individually in packs of 3 - 4 - 6 - 8 pieces. Codes for ordering circuit-breakers directly in the configuration with upper / lower terminals of the same type are available.

	F	EF	ES	FC Cu	
	 GSIS0086	 GSIS0087	 GSIS0088	 GSIS0089	
	Front terminals	Front extended terminals	Front extended spreaded terminals	Front terminals for copper cables	
S1 125	—	—	—	F - P	
S2 160	—	F	—	F - P	
S2X 80, S2X 100	—	F	—	F - P	
S3 160 / 250	F	F - P - W	F	F - P - W	
S3X 125 / 200	F	F - P - W	F	F - P - W	
S4 160 / 250	F	F - P - W	F	F - P - W	
S4X 250	F	F - P - W	F	F - P - W	
S5 400 / 630	F	F(400A)-P(400A)-W(400A)	F - W(630A)	F - P(400A) - W(400A)	
S6 630 / 800	F	F - W	F	—	
S6X 400 / 630	F	F - W (only at the bottom)	F	—	
S7 1250 / 1600	F	F - W	F	—	
S8 2000 / 2500 / 3200	F (2000A / 2500A)	—	—	—	

F = Fixed P = Plug-in W = Withdrawable

Insulating terminal covers

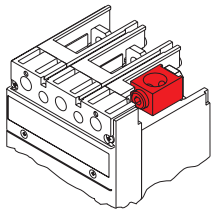
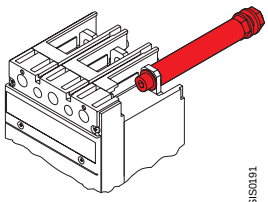
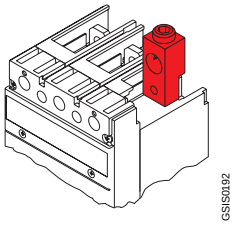
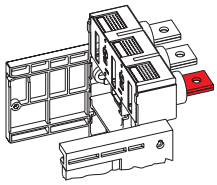
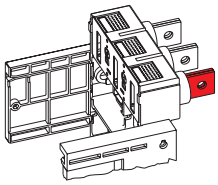
The terminal covers are applied to the terminals of the circuit-breaker to prevent accidental contacts with live parts and thereby guarantee protection against indirect contacts. The following are available:

– **lower terminal covers,** which guarantee IP40 degree of protection for fixed circuit-breakers with rear terminals and for moving parts of plug-in or withdrawable circuit-breakers.
– **upper terminal covers** for fixed circuit-breakers with front terminals, front terminals for cables and rear terminals, which guarantee IP40 degree of protection.
– **terminal covers for fixed parts** of plug-in or withdrawable circuit-breakers, guarantee IP40 degree of protection on the front with moving part connected. They are available in a single version.

The degrees of protection indicated are valid for circuit-breakers installed in switchboards.

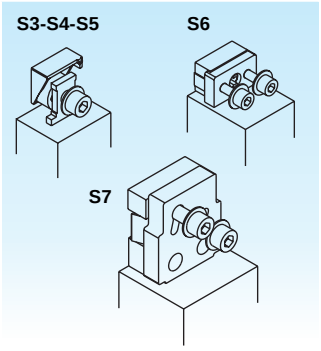
Screws for sealing the terminal covers

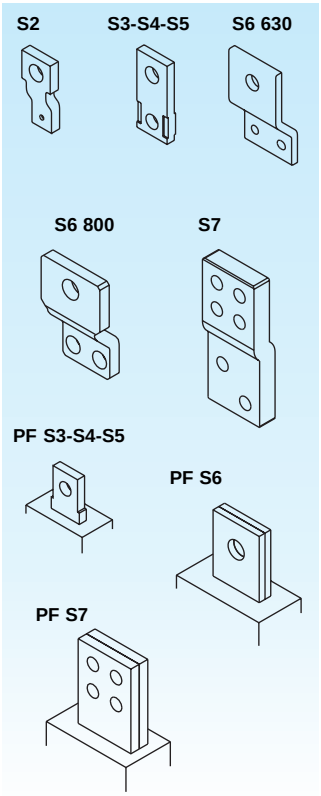
These are applied to the terminal covers of fixed circuit-breakers or to the moving parts of plug-in or withdrawable circuit-breakers. They prevent removal of the upper or lower terminal covers, and can be locked with wire and a lead seal.

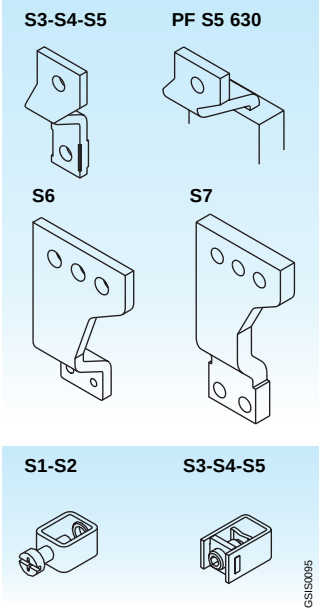
	FC CuAl	R	RC	HR	VR
	 GSIS0190	 GSIS0191	 GSIS0192	 GSIS0193	 GSIS0194
	Front terminals for Cu/Al cables	Rear threaded terminals	Rear terminals for Cu/Al cables	Rear terminals in horizontal flat bar	Rear terminals in vertical flat bar
	—	F - P	—	—	—
	F	F - P	—	—	—
	F	F - P	—	—	—
	F	F - P - W	F	—	—
	F	F - P - W	F	—	—
	F	F - P - W	F	—	—
	F	F - P - W	F	—	—
	F(400A)	F - P(400A) - W	F(400A)	—	W(630A)
	—	F	F	W	W
	F	F	F	W	W
	F(1250A)	—	—	F - W	F - W
	—	—	—	—	F

Accessories

Connection terminals







GSIS0095

Front terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm] L	H	P	hole	tightening B [Nm]	terminal covers upper	lower	fixed part
S3 160, S3X 125	F	1	20	10	4	9	9	R	R	
S3 250, S3X 200	F	1	20	10	6	9	9	R	R	
S4 160	F	1	20	10	4	9	9	R	R	
S4 250, S4X 250	F	1	20	10	6	9	9	R	R	
S5 400	F	2	25	12	5	11	18	R	R	
S5 630	F	2	25	12	8	11	18	R	R	
S6 630, S6X 400-630	F	2	40	12	5	2 x 7	9	R	R	
S6 800	F	2	50	12	5	2 x 7	9	R	R	
S7 1250	F	2	50	20	8	2 x 11	18		R	
S7 1600	F	2	50	20	10	2 x 11	18		R	
S8 2000	F	3	100		5	4 x 15	70 (2)		R	
S8 2500	F	4	100		5	4 x 15	70 (2)			

Front extended terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm] L	P	hole	cable term. [mm] L	hole	tightening [Nm] A	B	terminal covers upper	lower	fixed p.
S2 160	F	1	20	4	8	20	8	5	9	R	R	
S3 160, S3X 125	F-P-W	1	20	4	8.5	20	8.5	9	9	R	R	R
S3 250, S3X 200	F-P-W	1	20	6	8.5	20	8.5	9	9	R	R	R
S4 160	F-P-W	1	20	4	8.5	20	8.5	9	9	R	R	R
S4 250, S4X 250	F-P-W	1	20	6	8.5	20	8.5	9	9	R	R	R
S5 400	F-P-W	2	25	5	11	25	11	18	18	R	R	R
S6 630, S6X 400-630	F-W	2	40	5	11	40	11	9	18		R	
S6 800	F-W	2	50	5	14	50	14	9	30		R	
S7 1250	F-W	2	50	8	4x11(4)			45	18		R	
S7 1600	F-W	2	50	10	4x11(4)			45	18		R	

Front extended spreaded terminals

These allow busbars or cables terminated with a cable terminal to be connected

Type	version	pieces	busbars [mm] L	P	hole	cable term. [mm] L	hole	tightening [Nm] A	B	terminal covers upper	lower	fixed p.
S3	F	1	30	4	8.5	30	8.5	9	9		S	
S4	F	1	30	4	8.5	30	8.5	9	9		S	
S5 400	F	2	40	5	11	40	11	18	18		S	
S5 630	F-W	2	40	5	11	40	11	18	18		S	
S6	F	2	50	5	3 x 13	4 x 45	13	9	30			
S7 1600	F	2	50	10	3 x 13	4 x 45	13	45	20			

Front terminals for copper cables

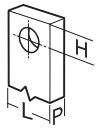
These allow bare copper cables to be connected directly to the circuit-breaker. They are not suitable for tube cable terminals

Type	version	pieces	cable [mm^2]	busbars L [mm]	cable term. L [mm]	tightening B [Nm]	Ø clamps [mm]	terminal covers upper	lower	fixed p.
S1 125	F-P	1	1.5...50	max.10	max.10	2.5-5 (1)	11	R	R	
S2 160	F-P	1	1.5...70	max.12	max.12	2.5-5 (1)	12.5	R	R	
S3 160, S3X 125	F-P-W	1	6...185			16	18	R	R	S
S3 250, S3X 200	F-P-W	1	6...185			16	18	R	R	S
S4 160	F-P-W	1	6...185			16	18	R	R	S
S4 250, S4X 250	F-P-W	1	6...185			16	18	R	R	S
S5 400	F-P-W	1	16...240			25	24	R	R	S
S5 630	F-W	2	50...185			31	20	S		

Key

(1) Tightening torque of 2.5 Nm for < 10 mm^2 cable cross-section
(2) M12 class 8.8 screws
(3) M16 class 8.8 screws
(4) Only use two holes diagonally

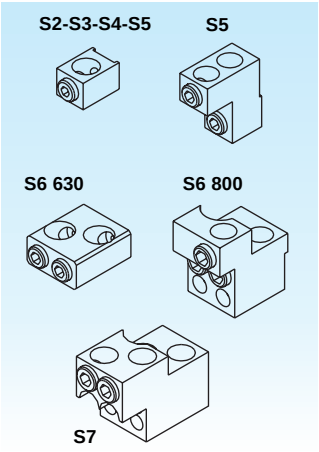
A = Tightening of the terminal onto the circuit-breaker
B = Tightening the cable/busbar or cable terminal onto the terminal
R = On request
S = Standard



Front terminals for copper or aluminium cables

These allow copper or aluminium cables to be connected directly to the circuit-breaker (it is not possible to use solid aluminium cables). For the SACE S2 circuit-breaker, these terminals must be connected to the front extended terminals, which are supplied if the circuit-breaker is ordered fitted directly in the factory, whereas the front extended terminal kit must be specified if they are ordered as loose parts..

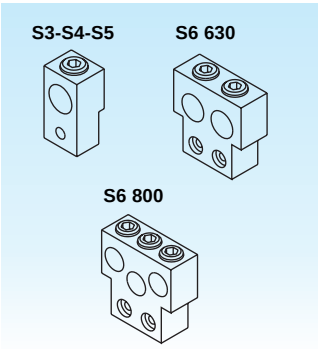
Type	version	pieces	cable [mm^2]	tightening A [Nm]	tightening B [Nm]	Ø clamps [mm]	terminal covers upper	lower	fixed	p.
S2 160	F	1	2.5...50	9	5.6	9.5	S			
	F	1	35...95	9	13.5	13.5	S			
S3 160 (R100A)	F	1	2.5...50	9	5.6	10	R			
S3 160, S3X 125	F	1	35...95	9	13.5	14.2	R			
S3 250, S3X 200	F	1	25...150	9	31	17	R			
S4 160	F	1	35...95	9	13.5	14.2	R			
S4 250, S4X 250	F	1	25...150	9	31	17	R			
S5 400	F	2	95...120	18	31	15.5	S			
	F	1	120...240	18	43	21.5	R			
S6 630, S6X400-630	F	2	120...240	5	31	21.5	R			
S6 800	F	3	70...185	9	43	19	S			
S7 1250	F	4	95...240	37	43	21.5	S			



Rear terminals for copper or aluminium cables

These allow copper or aluminium cables to be connected directly to the circuit-breaker.

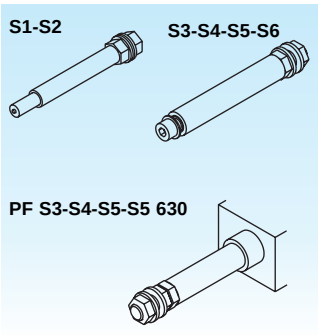
Type	version	pieces	tightening A [Nm]	tightening B [Nm]	Ø clamps [mm]	terminal covers upper	lower	fixed	p.
S3 160, S3X 125	F	1	9	31	16	S			
S3 250, S3X 200	F	1	9	31	16	S			
S4 160	F	1	9	31	16	S			
S4 250, S4X 250	F	1	9	31	16	S			
S5 400	F	1	18	43	21	S			
S6 630, S6X400-630	F	2	9	43	21	S			
S6 800	F	3	9	31	17.5	S			



Rear threaded terminals

These allow rear connection of busbars.

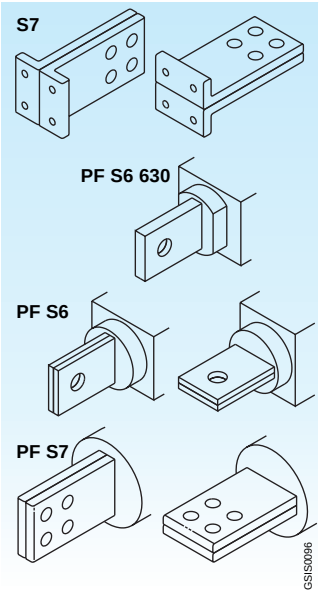
Type	version	pieces	busbars [mm] L	P	hole	cable term. [mm] L	hole	tightening A	B	terminal covers upper	lower	fixed	p.
S1 125	F	1	16	3				5	8	S			
	P	1	16	3					8				
S2 160	F	1	18	4				5	8	S			
	P	1	18	4					8				
S3 160, S3X 125	F	1	20	4	12.5	20	12.5	10	20	S			
	P-W	1	20	4	12.5	20	12.5	10	20				
S3 250, S3X 200	F	1	20	6	12.5	20	12.5	10	20	S			
	P-W	1	20	6	12.5	20	12.5	10	20				
S4 160	F	1	20	4	12.5	20	12.5	10	20	S			
	P-W	1	20	4	12.5	20	12.5	10	20				
S4 250, S4X 250	F	1	20	6	12.5	20	12.5	10	20	S			
	P-W	1	20	6	12.5	20	12.5	10	20				
S5 400	F	2	25	5	16.5	25	16.5	18	40	S			
	P-W	2	25	5	16.5	25	16.5	18	40				
S5 630	F	2	40	5	25	40	25	18	100	S			
	P-W	2	40	5	25	40	25	18	100				
S6 630, S6X 400-630	F	2	40	5	25	40	25	18	100	S			
S6 800	F	2	50	5	25	50	25	18	100	S			



Rear terminals in horizontal and vertical flat bar

These allow rear connection of busbars.

Type	version	pieces	busbars [mm] L	P	hole	cable term. [mm] L	hole	tightening B [Nm]	terminal covers upper	lower	fixed	p.
S5 630	W	2	40	5	11	40	11	20				
S6 630, S6X 400-630	W	2	40	5	14	40	14	30				
S6 800	W	2	50	5	14	50	14	30				
S7 1250	F-W	2	50	8	4x11 (4)			20	S			
S7 1600	F-W	2	50	10	4x11 (4)			20	S			
S8 2000	F	3	100	5	4x15			70 (2)				
S8 2500	F	4	100	5	4x15			70 (2)				
S8 3200	F	6	100	5	4x18			100 (3)				



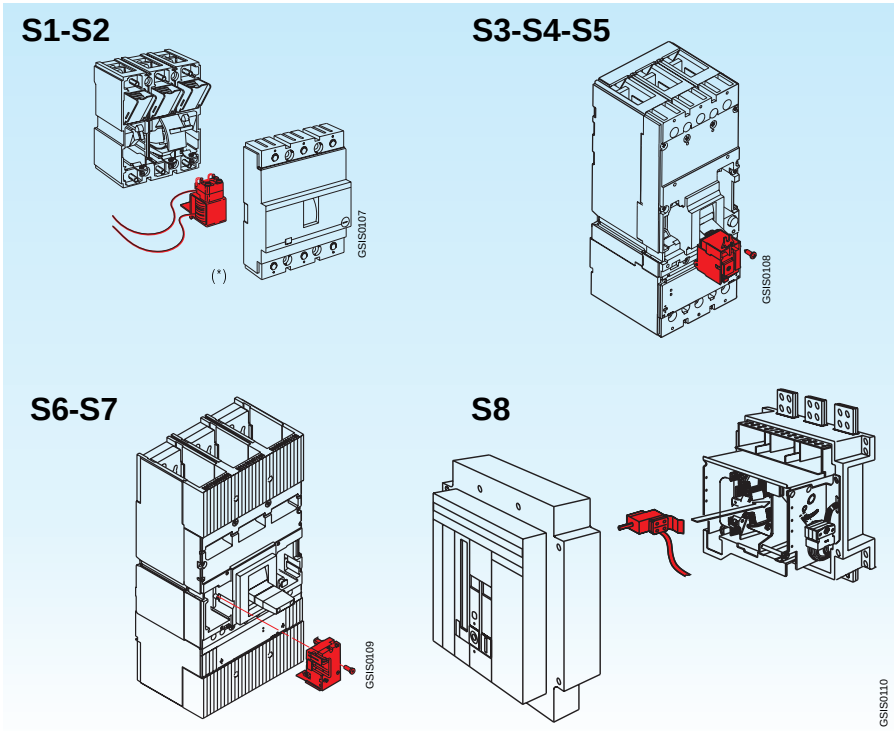
Accessories

Service releases

The service releases, shunt opening and undervoltage releases, housed and fixed in a slot in the left part of the circuit-break er are always alternative to each other. The power supply is made by means of special connectors for sizes S3 to S7, whereas for S1-S2, it is made by means of free wires 0.6 m long or with plug-socket connectors which can be supplied on request. Assembly is carried out by pressure into the appropriate housing in the left part of the circuit-breaker.

Shunt opening release

This allows circuit-breaker opening by means of an electric command. Release operation is guaranteed for a voltage between 70% and 110% of the rated power supply voltage Un, both in AC and in DC. It is always fitted with an auxiliary limit contact.



(*) For the SACE S1-S2 circuit-breakers , the service releases are fixed to the circuit-breaker cover

4

Power supply voltages

S1 - S2		S3 -S4 - S5		S6 - S7		S8	
50-60 Hz [V~]	DC [V–]	50-60 Hz [V~]	DC [V–]	50-60 Hz [V~]	DC [V–]	50-60 Hz [V~]	DC [V–]
24 ... 30			12		12		24
48	60	24	24	24	24	24	30
100 ... 130		48	48	48	48	48	48
220 ... 250		60	60 ... 72	60	60		60
380 ... 440		110 ... 120	110 ... 125	110 ... 120	110 ... 125	100 ... 127	100 ... 27
	24	220 ... 240	220 ... 250	220 ... 240	220 ... 250	127 ... 150	
	48	380 ... 400		380 ... 400		150 ... 180	160
	110	480		480		200 ... 255	200 ... 250
	220					380 ... 500	
	250						

Powers absorbed on inrush

S1...S5		S6...S7		S8	
AC [VA]	DC [W]	AC [VA]	DC [W]	AC [VA]	DC [W]
100	120	150	150	200	150

Circuit-breaker opening times

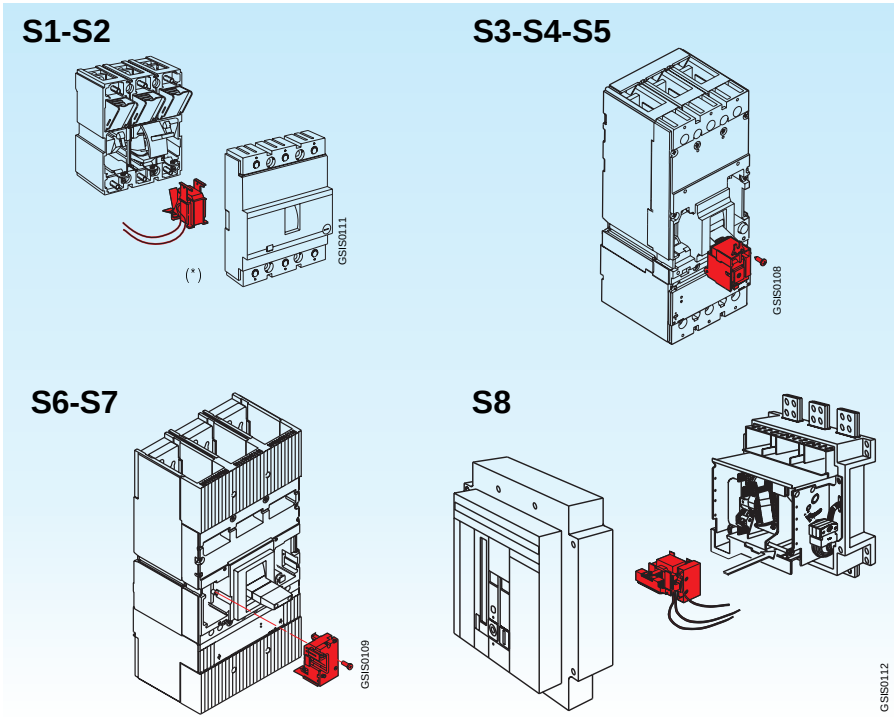
S3	S4...S7	S8
[ms]	[ms]	[ms]
≤ 15	≤ 15	≤ 20

Number of operations

S3-S4	S5	S6-S7
[nr.]	[nr.]	[nr.]
10000	7500	2500

Undervoltage release

This opens the circuit-breaker due to a power supply failure to the release, or voltage drops to minimum values of 0.7 x Un with a trip range from 0.7 to 0.35 x Un.
After tripping, the circuit-breaker can be closed again, starting with a voltage higher than 0.85 x Un. With the under-voltage release de-energised, neither circuit-breaker nor main contact closure is possible.



(*) For the SACE S1-S2 circuit-breakers , the service releases are fixed to the cover of the circuit-breaker

Power supply voltages

S1 - S2			S3 -S4 - S5		S6 - S7		S8		
50 Hz [V~]	60 Hz [V~]	DC [V–]	50-60 Hz [V~]	DC [V–]	50-60 Hz [V~]	DC [V–]	50 Hz [V~]	60 Hz [V~]	DC [V–]
24			24		24		24		
48	48		48		48				24
110			60		60		30		
	110		110 ... 127		110 ... 127				30
220			220 ... 250		220 ... 250		48		
380	380 ... 440		380 ... 440		380 ... 440				48
			480		480		60		
		24		24		24			60
		48		48		48	100	110...115	
		60		60		60	110...115	125 .. 127	
		110		110 ... 125		110 ... 125			110...125
							120		
		220		220 ... 250		220 ... 250	127...130		
								208...220	
									220...250
							220		
							230...240	277	
								240	
									310
								380	
							380...400	440	
							415...440	480	
							500		

Powers absorbed during continuous service

S1...S5		S6 - S7		S8	
AC [VA]	DC [W]	AC [VA]	DC [W]	AC [VA]	DC [W]
6	3	10	4	30	15

Circuit-breaker opening times

S1...S2	S3	S4...S7	S8
[ms]	[ms]	[ms]	[ms]
≤ 15	≤ 18	≤ 25	≤ 25

Number of operations

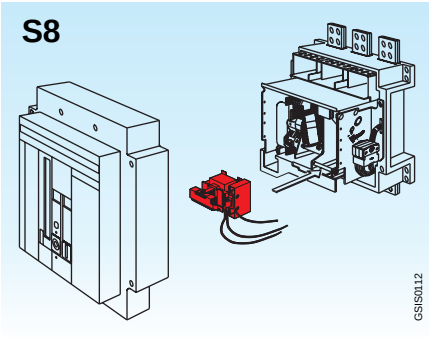
S3-S4	S5	S6-S7
[nr.]	[nr.]	[nr.]
10000	7500	2500

Time-delayed undervoltage release

The undervoltage release can be combined with an external electronic power supply time-delay device, which allows circuit-breaker opening to be delayed in the case of a power cut to the release itself, according to fixed time-delays of 0.5-1-2-3 [s], so as to avoid unwarranted trips caused by temporary malfunctions. It is available for the SACE S3, S4, S5, S6, and S7 circuit-breakers with power supply voltages at 110-220 V (50-60 Hz) only coupled with an undervoltage release at 310 V DC. Different power supply voltages are possible for S8.

Shunt closing release

This allows circuit-breaker closure by means of an electric command. Operation of the release is guaranteed for a voltage between 80% and 110% of the rated power supply voltage Un, both in AC and in DC.



Power supply voltages

S8		
50 Hz [V~]	60 Hz [V~]	DC [V–]
24		
	24	
		24
		30
30		
48		
		48
60		
		60
100	110...115	
		110...125
110...115	125...127	
	120	
127...130		
220		
	208...220	
		220...250
230...240	277	
	240	
		310
380...400	440	
	380	
415 ... 440	480	
500		

Powers absorbed on inrush

S8	
AC [VA]	DC [W]
200	220

Circuit-breaker closing times

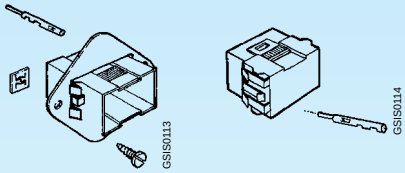
S8
[ms]
≤ 55

Connectors for service releases

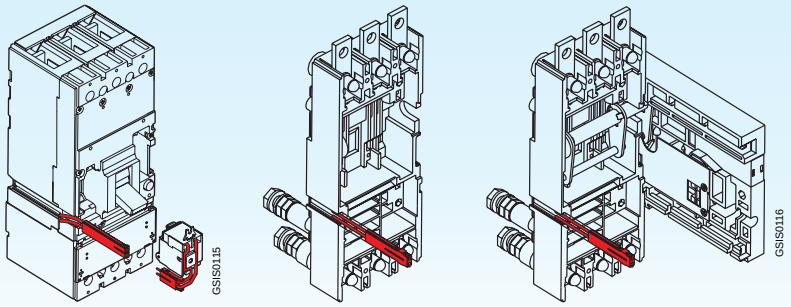
These allow the shunt opening release or the undervoltage release to be connected to the power supply circuit. They are available in the following versions:
- plug-socket for S1-S2 circuit-breakers (free cables always supplied)
- for fixed S3 ... S7 circuit-breakers
- for plug-in/withdrawable S3 ... S7 circuit-breakers.

Assembly is by means of pressure into special slots in the left side of the circuit-breaker.
Cables of different lengths are available.

S1 - S2



S3 ... S7



Extension for testing service releases

Available for SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows supply to the service releases with the circuit-breaker in the racked-out position. It is therefore possible to carry out blank operating tests of the circuit-breaker with the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits.

Accessories

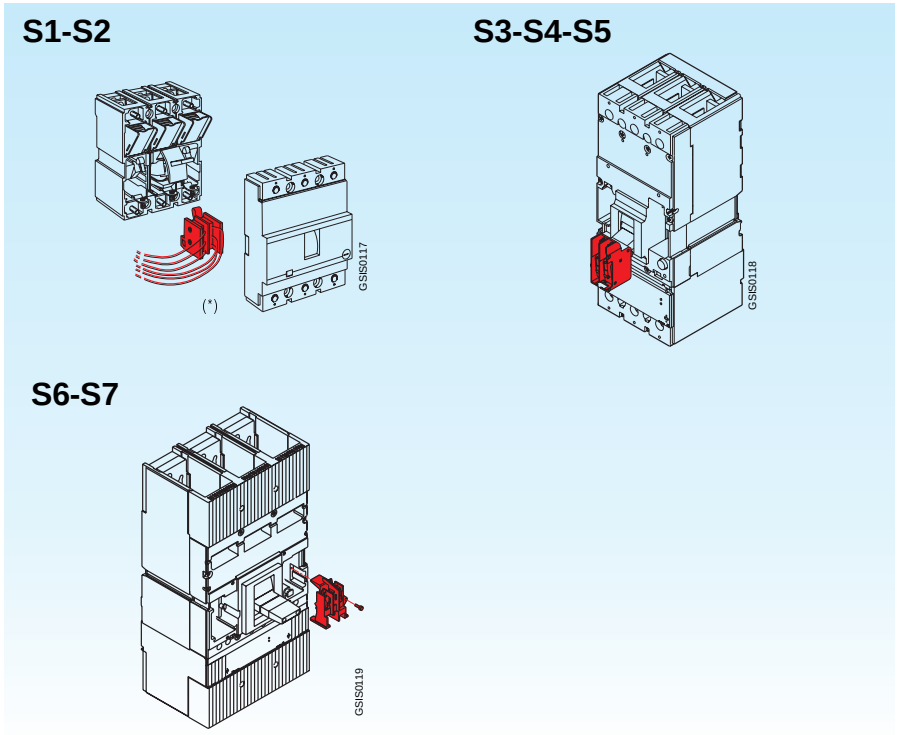
Electric signals

These allow information relative to the circuit-breaker state of operation to be taken outside the circuit-breaker.
Installation of these accessories is carried out directly from the front of the circuit-breaker in special slots, completely se gregated from the live parts, with increased operator safety.

Auxiliary contacts

These carry out electrical signalling of the operating state of the circuit-breaker:
- Open/closed: indicates the position of the circuit-breaker contacts.
- Release trip: signals circuit-breaker opening because the overcurrent release has tripped (for an overload or short-circuit), the residual current, shunt opening or undervoltage release has tripped, or the emergency opening pushbutton of the motor operator or the test pushbutton has been pressed. Signalling is reset when the circuit-breaker is reset (recovery).

For SACE S3, S4, S5, S6, and S7 circuit-breakers the auxiliary contacts of the circuit-breaker are also available in the gold-plated version for digital signals, also suitable for use with voltages Un < 24 V with the same type of signalling and versions.
The signals indicated in the table are available:



(*) For SACE S1-S2 circuit-breakers the auxiliary contacts are fixed to the cover of the circuit-breaker

Signals	S1...S2	S3	S4...S7	S8
2 contacts during open/closed changeover	■	■	■	–
1 contact during open/closed changeover + 1 contact during release tripped changeover	■	■	■	–
1 circuit-breaker open signal + 1 circuit-breaker closed signal + 1 release tripped signal	–	–	■	–
3 NO or NC contacts	–	–	–	■
release tripped signal	–	–	–	■
microswitch for signalling closing springs charged	–	–	–	■

S1-S2

Rated voltage Un V ~ (50-60 Hz)	V –	ohmic load In [A]	inductive In [A]
–	30	4	–
127	–	4	2A (cosφ = 0,3)
220	–	4	2A (cosφ = 0,3)

S3-S4-S5-S6-S7

Rated voltage Un V ~ (50-60 Hz)	V –	ohmic load In [A]
–	125	0,3
–	250	0,15
250		6
400		3

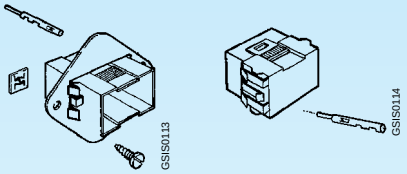
S8

Rated voltage Un V ~ (50-60 Hz)	V –	ohmic load In [A]
–	220	1
380		6
500		3

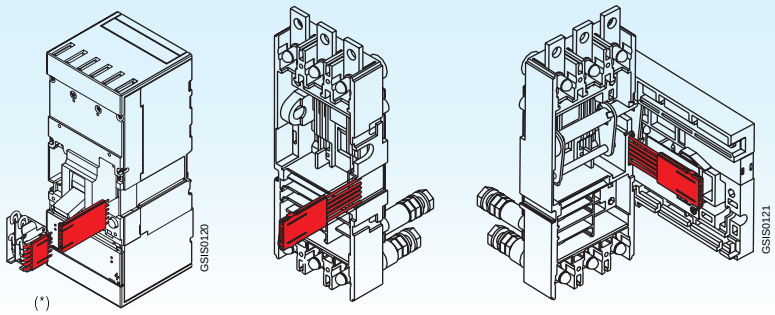
Connectors for auxiliary contacts

These allow the auxiliary contacts to be connected to the relative power supply circuit. For S1, S2 circuit-breakers, the power supply is made by means of free wires or with mobile plug-socket connectors. For SACE S3, S4, S5, S6, and S7 circuit-breakers, the auxiliary contacts (fitted with plug connector) can only be supplied by means of the specific connection connectors to be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable). Assembly is carried out by pressure into special slots in the right side of the circuit-breaker.

S1 - S2



S3 ... S7



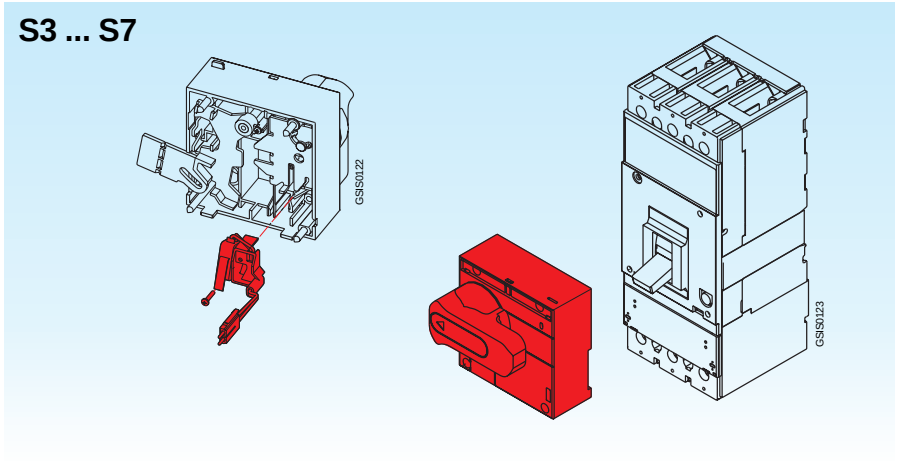
(*) Connectors for auxiliary contacts, for fixed, plug-in or withdrawable circuit-breakers

Extension for testing auxiliary contacts

Available for SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows the auxiliary contacts to be connected to the relative power supply circuit with the circuit-breaker in the racked-out position. With the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits, blank tests of circuit-breaker operation can be carried out.

Early auxiliary contact for undervoltage release

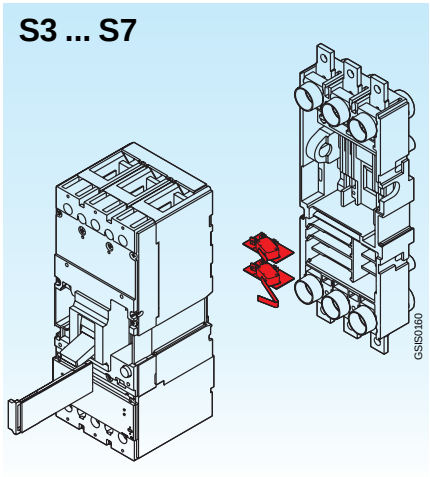
The early auxiliary contact for the undervoltage release, interlocked with the rotary handle operating mechanism, keeps the release de-energised with the circuit-breaker open.
It is supplied complete with socket connector of the type with double slide for simultaneous connection of the undervoltage release and the accept contact.



Circuit-breaker position contacts

For the fixed part of the SACE S2, S3, S4, S5, S6, and S7 circuit-breakers, these carry out electrical position signalling of the circuit-breaker in relation to the fixed part: racked-in, racked-out. They can only be connected by means of free wires and are available in the following versions:
- Contacts for signalling circuit-breaker racked in
- Contacts for signalling circuit-breaker racked out.

A maximum of three contacts for S2, two contacts for S3, three contacts for S4-S5 and five contacts for S6-S7 can be installed on the fixed part, in any combination.
The circuit-breaker position contacts are also available in the gold-plated version for digital signals also suitable for use with voltages Un < 24 V with the same type of signals and combinations.



S2			
Rated voltage Un		ohmic load	
V ~ (50-60 Hz)	V –	In [A]	inductive In [A]
–	30	4	–
127	–	4	2A (cosφ = 0,3)
220	–	4	2A (cosφ = 0,3)

S3-S4-S5-S6-S7		
Rated voltage Un		ohmic load
V ~ (50-60 Hz)	V –	In [A]
–	125	0,3
–	250	0,15
250		6
400		3

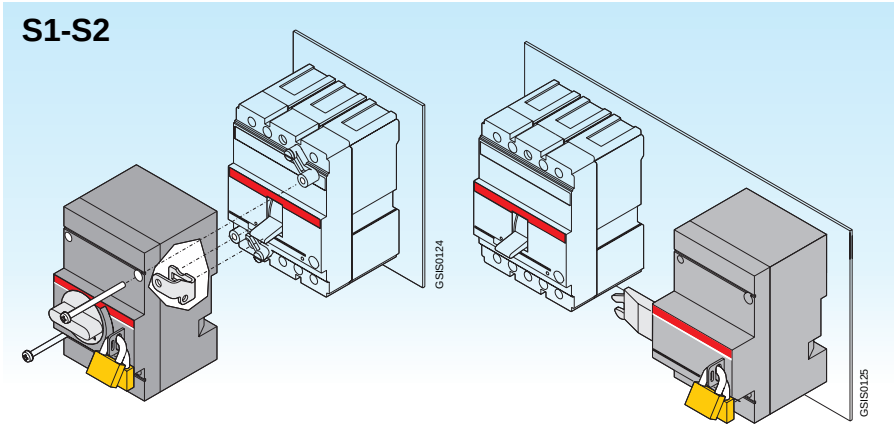
Accessories

Remote controls

These allow remote control of circuit-breaker opening and closing and are particularly suitable for use in electrical network supervision and control systems. They are complete with manual operating lever and emergency opening pushbutton (starting from S3). A selector allows changeover from automatic to manual operation. They are always fitted with a padlock and, on request, can be fitted with a key lock in the open position.

Solenoid operating mechanism for SACE S1-S2 circuit-breakers

This operates both opening and closing of the circuit-breaker, acting directly on its lever.
There are two versions available, one placed “beside” the circuit-breaker (for installation on a panel or DIN EN 50022 rail), the other on the “front”, suitable for being installed directly on the front of the circuit-breaker.
Both versions can be used either for S1 or for S2 and in the three- and four-pole version.

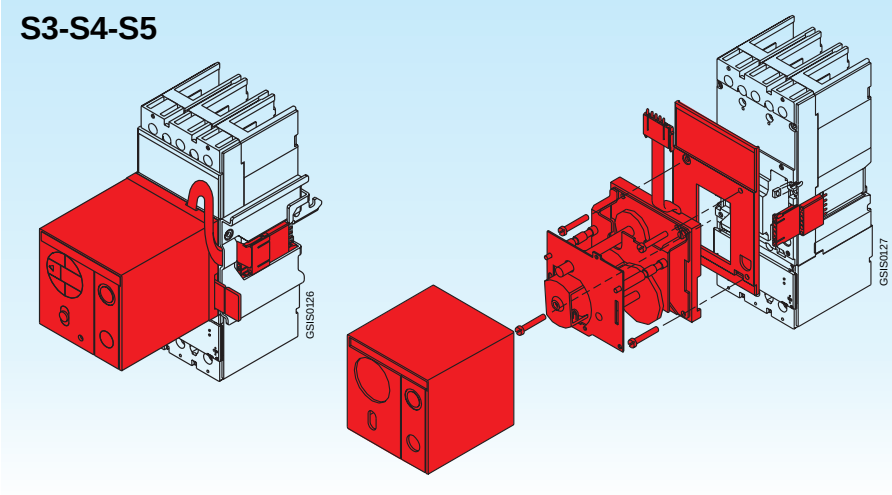


Rated voltage, Un		AC	DC
	[V]	–	48
	[V]	110	60
	[V]	220 ... 230	110
	[V]	–	220
Operating voltage		85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps		2300-2500 [VA]	700-900 [W]
Duration	opening [s]	< 0.1	
	closing [s]	< 0.1	
Mechanical life	[no. operations]	25000	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse	[ms]	≥ 100	

4

Direct action motor operator for SACE S3-S4 and S5 circuit-breakers

Both the opening and closing command is controlled by the motor, which acts directly on the circuit-breaker lever. The table shows the power supply voltage values Un [V].

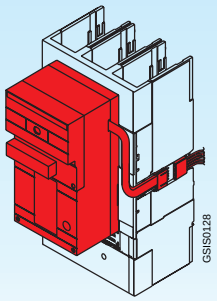


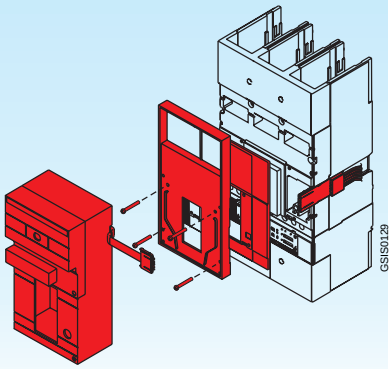
Rated voltage, Un		AC	DC
	[V]	–	24
	[V]	–	48-60
	[V]	110-127	110-125
	[V]	220-240	220-250
	[V]	380	–
	[V]	440	–
Operating voltage		85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps		500 [VA]	500 [W]
Service power absorption, Pc		350 [VA]	350 [W]
Operating frequency	[Hz]	50-60	
Time constant	[ms]	18	
Duration	opening [s]	0.1	
	closing [s]	0.1	
Mechanical life	[no. operations]	15000 (S3-S4) / 10000 (S5)	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse	[ms]	≥ 150	

Stored energy motor operator for SACE S6-S7 circuit-breakers

With the stored energy operating mechanism, during circuit-breaker opening the release mechanism automatically precharges a system of springs: the stored energy is exploited for closing the circuit-breaker. It is supplied complete with shunt closing release (Ps=100VA~/100W–) and flange for the compartment door. The table shows the power supply voltage values Un [V].
In the case of interlocked circuit-breakers, the key lock against manual operation is necessary.

S6-S7





Rated voltage, Un		AC	DC
	[V]	–	24
	[V]	–	48
	[V]	–	60
	[V]	110	110
	[V]	120-127	120-127
	[V]	220-250	220-250
	[V]	380	–
	[V]	–	–
Operating voltage		85 ... 110% Un	85 ... 110% Un
Inrush power absorption, Ps		660 [VA]	600 [W]
Service power absorption, Pc		180 [VA]	180 [W]
Operating frequency	[Hz]	50-60	
Time constant	[ms]	22	
Duration	closing	0.09	
	opening	1.2	
	resetting	2	
Mechanical life	[no. operations]	10000 (S6) / 5000 (S7)	
Degree of protection, on the front		IP 30	
Minimum duration of the opening and closing command impulse	[ms]	≥ 100	

4

Geared motor for SACE S8 circuit-breaker

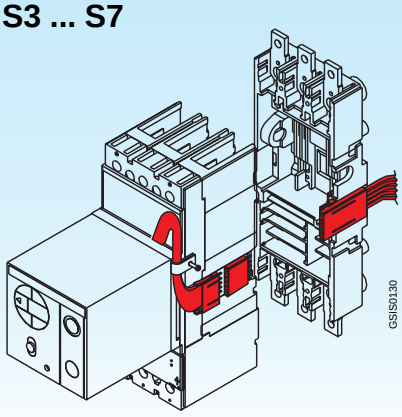
This allows the springs of the circuit-breaker closing mechanism to be charged automatically, immediately following an closing operation. It includes a limit microswitch for electrical signalling of closing springs charged.

Rated voltage, Un		AC	DC
	[V]	–	24-30
	[V]	–	48-60
	[V]	100-130	100-130
	[V]	220-250	220-250
Inrush power absorption, Ps		1000 [VA]	1000 [W]
Service power absorption, Pc		230 [VA]	230 [W]
Charging time	[s]	7 ... 10	
Mechanical life	[no. operations]	5000	

Connectors for motor operators

The motor operators, from S3 to S7, can only be supplied by means of the specific connection connectors. They are of the slide type and allow simultaneous connection of both the motor operator and the auxiliary contacts to the relative power supply circuit. They are an alternative to the corresponding connectors for the auxiliary contacts only since they are housed in the same seat. They must be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable).

S3 ... S7



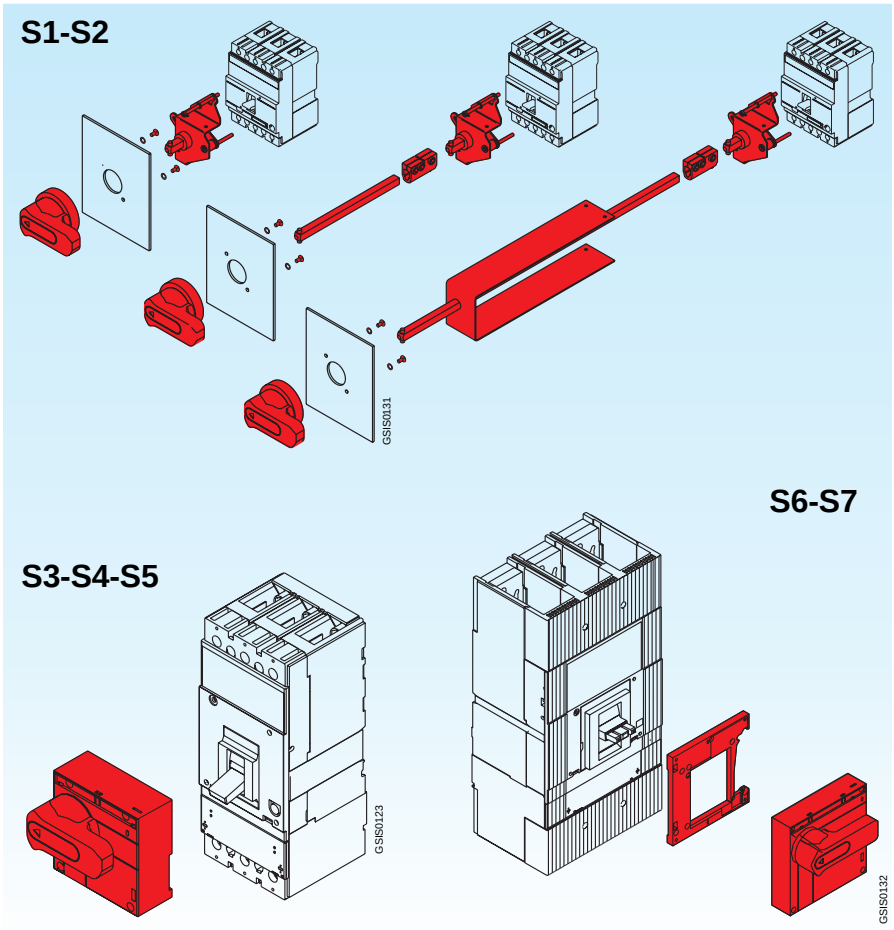
Extension for testing motor operators

For the SACE S3, S4, S5, S6, and S7 circuit-breakers, this allows both motor operators and the auxiliary contacts to be connected to the relative power supply circuit with the circuit-breaker in the racked-out position. With the circuit-breaker in safe conditions, i.e. isolated in relation to the power circuits, blank operating tests of the circuit-breaker can be carried out. It must be ordered specifying the size and version of the circuit-breaker (fixed or plug-in/withdrawable) and automatically excludes the corresponding extension for testing the auxiliary contacts

S3 ... S7

Rotary handle operating mechanism

The rotary handle operating mechanism facilitates operation thanks to its ergonomic handle. It is always fitted with a padlock in the open position, which prevents the circuit-breaker being closed. The lock slot can take up to 3 padlocks – stem Ø 6 mm (not supplied). On request it can be fitted with a compartment door lock or a key lock in the open position. For SACE S2, S3, S4, S5, S6, and S7 circuit-breakers, application of the rotary handle operating mechanism is an alternative to the front flange for the lever operating mechanism and for the motor operator. Different types of rotary handle operating mechanism are available.
The position of the rotary handle indicates with certainty the position of the contacts: open, closed, relay tripped. The release settings and the nameplate data remain accessible to the user. For the SACE S6, S7 circuit-breakers, the direct rotary handle operating mechanism on the circuit-breaker is always supplied complete with flange for the compartment door.
The rotary handle operating mechanism in the emergency version, complete with red-yellow handle and yellow plate, suitable for machine tool control, is also available for all the circuit-breakers.

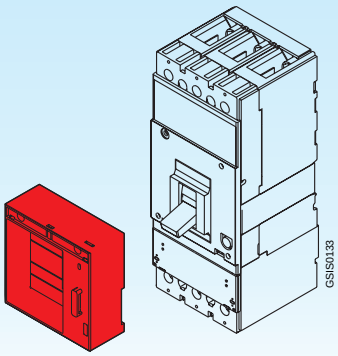


	S1-S2	S3-S4-S5		S6-S7	
	F / P	F / P	W	F	W
Direct	–	●	●	●	●
Direct emergency	–	●	–	●	–
Transmitted with fixed distance	119,5 mm	–	–	–	–
Transmitted with fixed emergency distance	119,5 mm	–	–	–	–
Transmitted with adjustable distance	–	300 mm	300 mm	500 mm	500 mm
Transmitted with adjustable emergency distance	–	300 mm	–	500 mm	–
Extension for transmitted handle	180/500 mm	500 mm	–	–	–

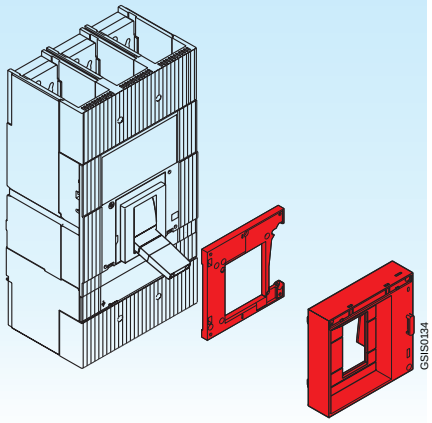
Front flange for lever operating mechanism

This can be installed on SACE S3, S4, S5, S6, and S7 fixed, plug-in or withdrawable circuit-breakers. In the case of withdrawable circuit-breakers installed in compartments, it allows the IP40 degree of protection to be kept for the whole isolation run of the circuit-breaker. It is always fitted with a padlock in the open position (stem Ø 6 mm - up to three padlocks - not supplied) which prevents closing of the circuit-breaker. On request, it can be fitted with a key lock in the open position for one or more circuit-breakers and with the compartment door lock.
It is available in the following versions:
– for fixed or plug-in circuit-breaker.
– for withdrawable circuit-breaker.
For the SACE S6, S7 circuit-breakers, it is always supplied complete with flange for the compartment door, whereas for the SACE S3, S4, and S5 circuit-breakers the flange supplied with the circuit-breaker can be used.

S3-S4-S5



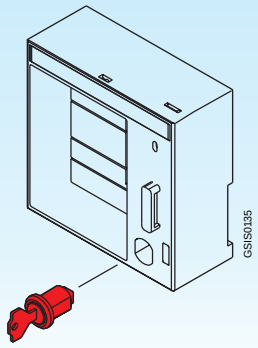
S6-S7

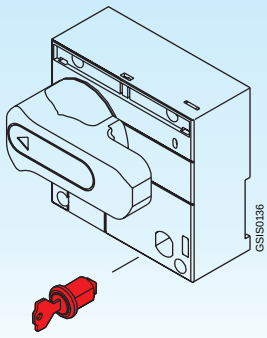


Key lock in open position

This allows the mechanical closing operation of the circuit-breaker to be locked.
The following versions are available:
– lock with different key for each circuit-breaker
– lock with the same key for groups of circuit-breakers.
Different locks are supplied for direct action motor operator, for stored energy motor operator, and for rotary handle or front flange for lever operating mechanism. The circuit-breaker lock in the open position ensures circuit isolation in compliance with the IEC 947-2 Standard.

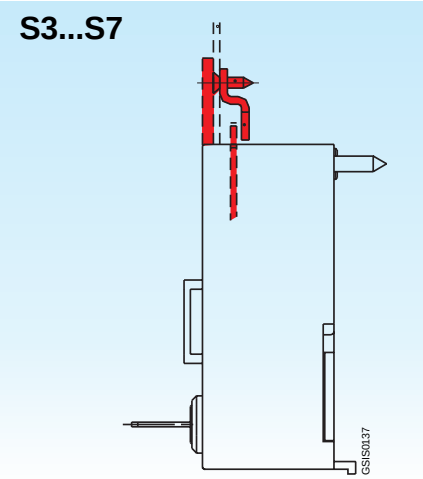
S3 ... S7

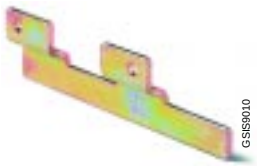




Compartment door lock

This prevents the compartment door being opened with the circuit-breaker closed. It can be used with the SACE S3, S4, S5, S6, and S7 circuit-breakers in the fixed, plug-in or withdrawable version and fitted with rotary handle operating mechanism or front flange for lever operating mechanism. It consists of two elements: one applied to the rotary handle operating mechanism or to the front flange for the lever operating mechanism, the other, consisting of a metal striker, to be applied onto the compartment door. For the SACE S1-S2 circuit-breakers it is an integral part of the rotary handle operating mechanism.

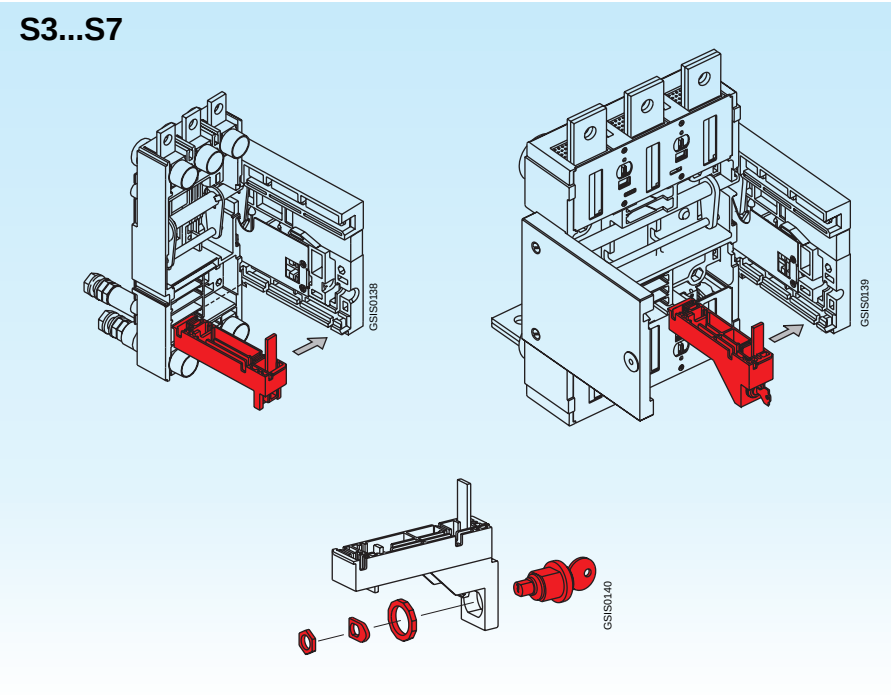




Lock for fixed part of withdrawable circuit-breaker

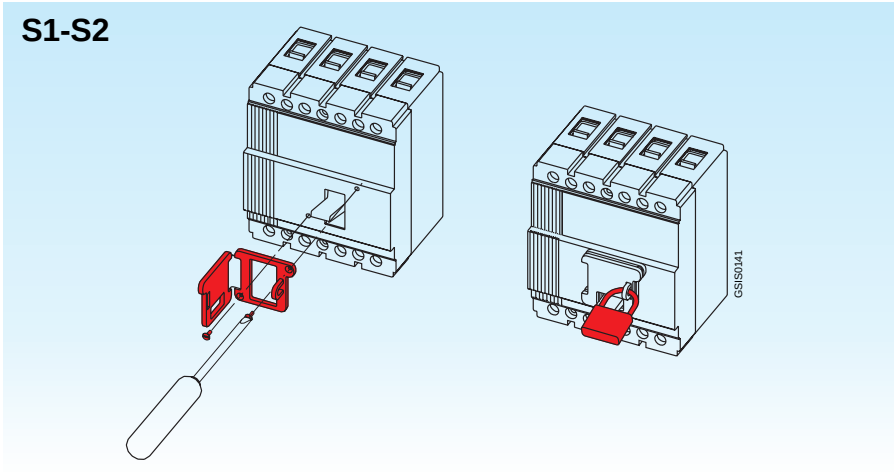
Key locks or padlocks are available to be applied to the guide of the fixed part of a withdrawable circuit-breaker to prevent the moving part from being racked-in. The following different versions are available:

- Padlock, which can take up to three padlocks with stem Ø 6 mm (not supplied).
- Key lock in the open position with different key for each circuit-breaker
- Key lock in the open position between two or more circuit-breakers with the same key for groups of circuit-breakers
- Key lock of Ronis type (without key).



Padlock for operating lever

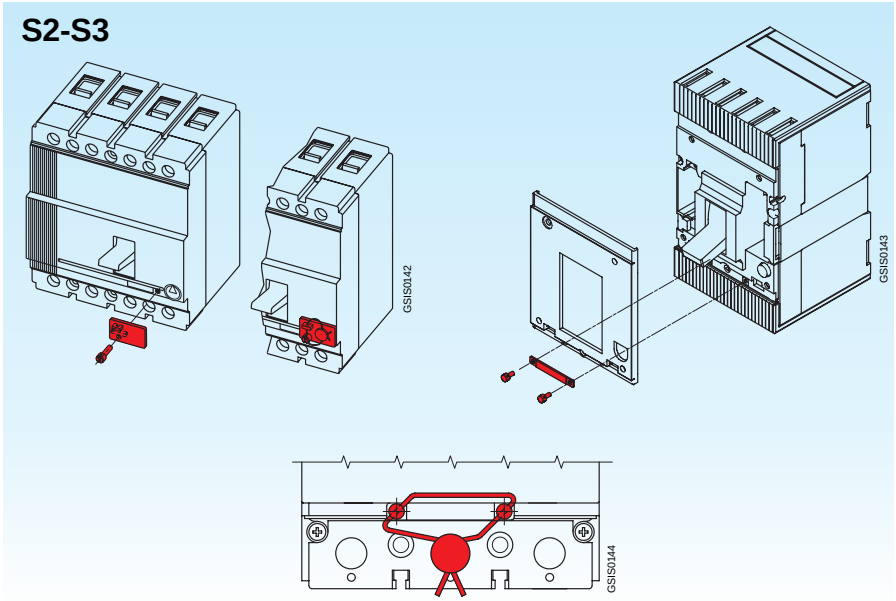
This is applied on the cover of the SACE S1-S2 circuit-breakers to prevent the operating lever movement. If activated, the circuit-breaker remains locked in the open position, guaranteeing circuit isolation in compliance with the IEC 947-2 Standard.



4

Anti-tampering lock

This is applied on the cover of the SACE S2, S3 circuit-breakers in correspondence with the regulator of the thermal element of the thermomagnetic release and prevents it being tampered with.

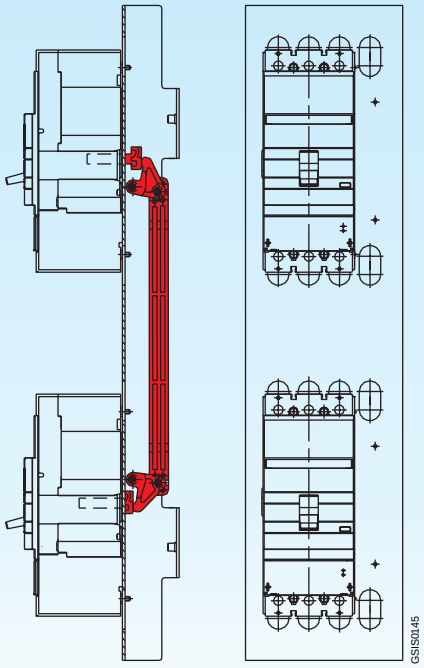


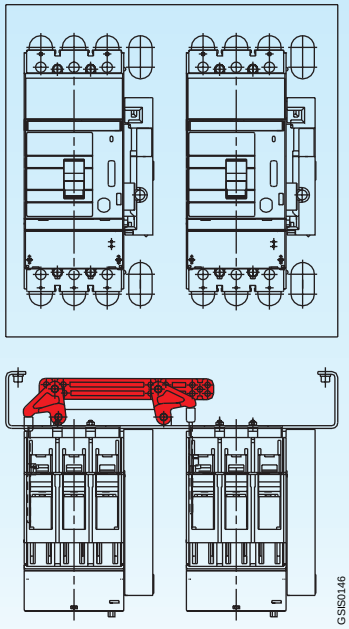
Mechanical interlock between two circuit-breakers

This allows installation of two circuit-breakers on a single support and, by means of special lever mechanism, makes them mechanically inter-dependent. It prevents operation in parallel of two power supply sources (e.g.: normal - emergency). It consists of a kit with levers and assembly accessories and a metallic support.
The circuit-breakers and any operating mechanism accessories must be ordered separately. The mechanical interlock is available for SACE S3, S4, S5, S6, and S7 circuit-breakers in side by side and superimposed versions.
To be able to take the circuit-breakers mounted directly on the interlocking plate, the code “1SDA050093R1” must be specified as an accessory of the second circuit-breaker (or fixed part) which is to be interlocked.

N.B. for the S3X, S4X , S6X circuit-breakers, only the version side by side can be used.

S3 ... S7





4

Accessories

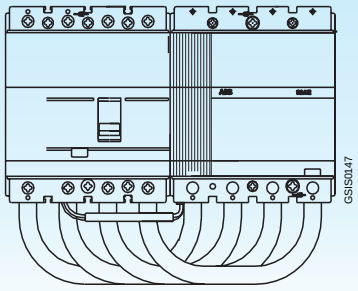
Residual current releases

All the circuit-breakers in the SACE Isomax S series are preset for combined assembly with residual current releases. In partic ular, the SACE S1, S2, and S3 circuit-breakers can be combined with residual current releases in the SACE RC210, RC211 or RC212 series, in the version side by side or underneath the circuit-breaker.
Apart from the protection against overloads and short-circuits typical of circuit-breakers, the residual current circuit-breake rs which are derived from them also guarantee protection against earth fault currents, thereby ensuring protection against the ris k of fire. The residual current releases can also be mounted on the SACE S2D and S3D switch-disconnectors. In that case, the derived apparatus is a “pure” residual-current circuit-breaker, which therefore guarantees only residual current protection an d not the protections typical of circuit-breakers. The “pure” residual-current circuit-breakers are only sensitive to the earth f ault current and are generally applied as main isolators in small distribution switchboards towards end users.
The use of “pure” and “non-pure” residual-current circuit-breakers allows continuous monitoring of the state of insulation of t he installation, ensuring effective protection against the risk of fire and explosion and, in the case of devices with $I_{\Delta n} \leq 30mA$, they guarantee protection of people against indirect and direct contacts to integrate the compulsory measures foreseen by the standards and by the accident prevention regulations.
The residual-current releases are constructed in compliance with the following standards:
– IEC 947-2 appendix B
– IEC 255-3 and IEC 1000: for protection against unwarranted trips.

SACE RC210 polarised residual-current release

The SACE RC210/1 polarised residual-current release is available for four-pole SACE Isomax S1 circuit-breakers for assembly side by side on DIN 50022 rail.
The release is constructed using polarised type technology and acts directly on the release operating mechanism of the circuit-breaker, by means of a small piston which passes through a pre-cut window on the side of the circuit-breaker.
It is fitted with a test button for periodically checking the circuit-breaker.

S1



SACE RC211, RC212 electronic residual current releases

The SACE RC211 and RC212 residual current releases can be installed both on the SACE S1, S2 and S3 circuit-breakers and on the SACE S2D and S3D switch-disconnectors, in the fixed four-pole version, and can be supplied in two versions as follows:
– for assembly in position beside the circuit-breaker
– for assembly in position under the circuit-breaker.

The following releases are available:
– SACE RC211/1, RC212/1 for S1 circuit-breakers
– SACE RC211/2, RC212/2 for S2 circuit-breakers
– SACE RC211/3, RC212/3 for S3 circuit-breakers.

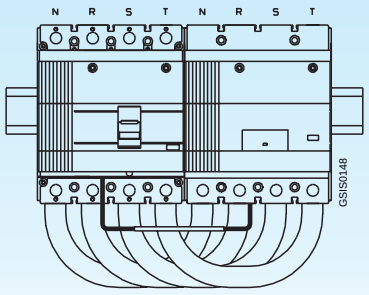
They are constructed using analogue technology and act directly on the circuit-breaker by means of an opening solenoid, supplied with the release, to be housed in the special slot made in the area of the third pole.
They do not require an auxiliary power supply since they are supplied directly from the network and their operation is guaranteed even with only a single phase supplied with voltage and in the presence of one-direction pulsating currents with continuous components.
The operating conditions of the apparatus can be controlled constantly by means of the test pushbutton of the electronic circuit and the residual current trip magnetic indicator.
The circuit-breaker complete with residual current release can be fitted with the electrical accessories normally available for the circuit-breaker. The opening and undervoltage releases are housed in the special slot made in the fourth pole.

Residual current release beside the four-pole version circuit-breaker

This is supplied complete with:
- power cables for connection to the lower terminals of the circuit-breaker (respecting correspondence with the neutral and phases)
- an opening solenoid to be housed in the area of the third pole, complete with plug-socket connector for connection to the residual current release
- 2 brackets for fixing on DIN rail (one for the circuit-breaker and one for the residual current release)
- plug connector to make the connection of the remote opening pushbutton (to be provided by the customer).

For SACE S1-S2 circuit-breakers the residual current release is fitted with front terminals for cables.
For the SACE S3 circuit-breaker, the residual current release is fitted with front terminals and is also supplied with a front flange H= 45 mm for the circuit-breaker.

S1-S2-S3



beside

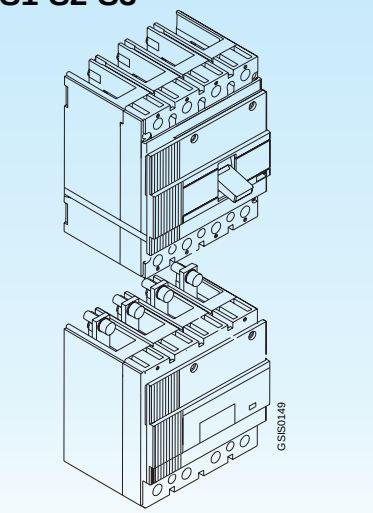
On request, the front terminals for cables can be mounted, using the standard circuit-breaker kit.

Residual current release under the four-pole version circuit-breaker

This is supplied complete with:
- an opening solenoid to be housed in the area of the third pole, complete with plug-socket connector for connection to the residual current release
- plug connector to make the connection of the remote opening pushbutton (to be provided by the customer) with the SACE RC212 residual current release
- flange for compartment door (one for SACE S1, S2; two for SACE S3)
- protection for assembly in the area between the circuit-breaker and residual current release.

For SACE S1, S2 circuit-breakers, the residual current release is supplied with front terminals for cables On request, the rear threaded terminals can be mounted, using standard kit of the circuit-breaker.
For SACE S3 circuit-breakers, the residual current release is supplied with front terminals (together with a front flange H= 45mm for circuit-breaker). On request, using the standard kit of the circuit-breaker, front terminals for cables, extended front terminals, or rear terminals for cables can be mounted or the rear terminals using the kit with 4 pieces for the circuit-breaker can be mounted (code 1SDA023365R1) and the kit for residual current release (code 1SDA025543R1).

S1-S2-S3



under

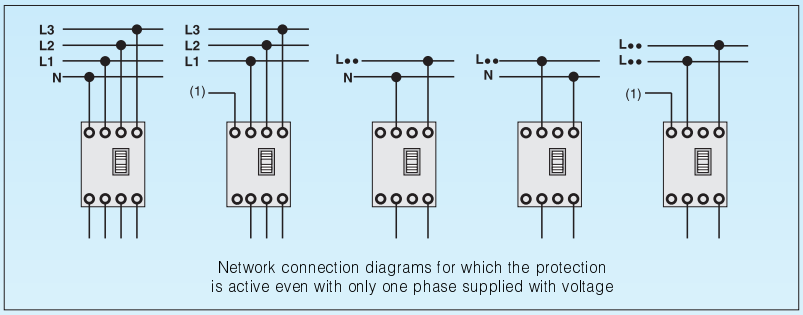
Accessories

Residual current releases

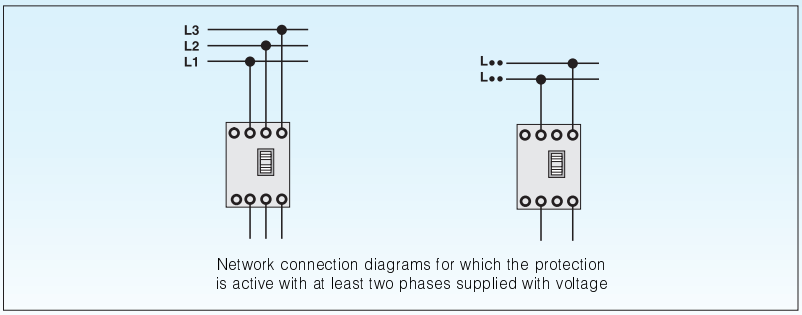
Technical characteristics

Residual current releases		SACE RC210	SACE RC211	SACE RC212
Technology		polarised type	electronic	electronic
Action		direct	with solenoid	with solenoid
Primary operating voltage	[V]	up to 500	220 ... 500	50 ... 500
Operation frequency	[Hz]	50 ÷ 60 Hz ± 10%	50 ÷ 60 Hz ± 10%	50 ÷ 60 Hz ± 10%
Range of test operation	[V]	230 ... 500	220 ... 500	50 ... 500
Rated service current	[A]	up to 125	up to 250	up to 250
Trip thresholds IΔn	[A]	0,3 - 0,5	0,03 - 0,1 - 0,3	0,03 - 0,1 - 0,3 - 0,5 - 3
Tolerance for IΔn	[%]		+0, -25	+0, -20
Trip times	[s]	instantaneous	instantaneous	0 - 0,1 - 0,25 - 0,5 - 1 - 1,5
Tolerance over trip times	[%]			± 20
Trip signalling		■	■	■
Self-supply		■	■	■
Input for remote opening				■
Indication of pre-alarm at 50%				■
AC type only for alternating current		■	■	■
Type A for alternating current, pushbutton			■	■
Low sensitivity		■	■	■
High sensitivity			■	■
Mounting under the circuit-breaker			■	■
Mounting beside the circuit-breaker		■	■	■
Dimensions (L x H x P)	[mm]	103 x 120 x 70	120 x 120 x 70	140 x 170 x 108

Connection to the residual current circuit-breaker network



Network connection diagrams for which the protection is active even with only one phase supplied with voltage



Network connection diagrams for which the protection is active with at least two phases supplied with voltage

(1) Terminal to be connected to the neutral or to the earthing conductor.

4

SACE RCQ switchboard residual-current relays

The SACE Isomax S4, S5, S6, and S7 circuit-breakers can be combined with the SACE RCQ switchboard residual-current relay with separate toroid (to be installed externally on the line conductors) and satisfies requirements with trip thresholds up to 30 A and times up to 5 s or where the installation conditions are particularly restrictive, such as circuit-breakers already installed, limited space in the circuit-breaker compartment.

Thanks to its wide setting range, the SACE RCQ switchboard residual-current relay is suitable for applications where a coordinated residual current protection system is to be constructed at the various distribution levels, from the main switchboard to the end user. It is particularly suitable where low sensitivity residual current protection is required, for example in partial (current-type) or total (time-type) selective chains, and for high sensitivity applications (with physiological sensitivity) to realise protection of people against direct contacts

On a drop in the auxiliary power supply voltage, the opening command intervenes after a minimum time of 100 ms and after the time set plus 100 ms.

The SACE RCQ relay is suitable for use in the presence of earth currents of alternating type only (AC Type), for alternating current and/or pushbutton with continuous components (Type A) and is suitable for carrying out residual current selectivity .

The SACE RCQ relay is of the type with indirect action and acts on the release mechanism of the circuit-breaker by means of the circuit-breaker shunt opening release (to be ordered by the user) to be housed in the special slot made on the third pole of the circuit-breaker.

Residual-current relay		SACE RCQ
Power supply voltage	AC [V]	80 ... 500
	DC [V]	48 ... 125
Operation frequency	[Hz]	50 ÷ 60 Hz ± 10%
Trip threshold adjustment IΔn		
- 1ª range of adjustments	[A]	0,03 - 0,05 - 0,1 - 0,3 - 0,5
- 2ª range of adjustments	[A]	1 - 3 - 5 - 10 - 30
Trip time adjustment	[s]	0 - 0,1 - 0,2 - 0,3 - 0,5 - 0,7 - 1 - 2 - 3 - 5
Pre-alarm threshold adjustment	[%] x IΔn	25 ... 75% x IΔn
Range of use of the closed transformers	IΔn	
- Toroidal transformer Ø 60 [mm]	[A]	0,03 ... 30
- Toroidal transformer Ø 110 [mm]	[A]	0,03 ... 30
- Toroidal transformer Ø 185 [mm]	[A]	0,1 ... 30
Range of use of the transformers which can be opened		IΔn
- Toroidal transformer Ø 110 [mm]	[A]	0,3 ... 30
- Toroidal transformer Ø 180 [mm]	[A]	0,3 ... 30
- Toroidal transformer Ø 230 [mm]	[A]	1 ... 30
Alarm pre-threshold signalling		Yellow flashing LED
		1 N.O. changeover contact
		6 A - 250 V AC 50/60 Hz
Residual-current relay trip signalling		Yellow flashing LED
		2 changeover contacts (N.O. N.C.; N.O.)
		6 A - 250 VAC 50/60 Hz
Remote opening command		N.O. Contact
		Trip time 15 ms
Connection to the toroidal transformer		By means of 4 twisted conductors
		Maximum length 5 m
Dimensions L x H x D	[mm]	96 x 96 x 131,5
Drilling for assembly on door	[mm]	92 x 92

SACE PR212/D-M Modbus and SACE PR212/D-L Lon dialogue unit

The dialogue unit is a device which allows two-way communication from the circuit-breaker to the outside and vice versa. ABB SACE has built two distinct dialogue units able to support two different standard market protocols: SACE PR212/D-M (Modbus RTU protocol) and SACE PR212/D-L (LonTalk protocol by Echelon). Both units are housed in external modules, which can be installed on DIN rails, and can be used with the S4, S5, S6, and S7 circuit-breakers fitted with SACE PR212/P electronic release, both in the LSI and LSIG versions, or SACE PR212/MP release. They must be supplied with a stabilised voltage of 24 VDC (±20% with maximum ripple ±5%) and be earthed. Communication towards the outside is generally addressed to a supervision and control unit, which has the task of collecting and storing the information regarding the part of the plant controlled.

In the case of an error in the serial communication due to a fault in the dialogue unit or lack of auxiliary power supply, the SACE PR212/P protection unit works according to the last parameters set and, in any case, in accordance with what has been set manually. The SACE PR212/D-M and SACE PR212/D-L dialogue units are always fitted in combination with the SACE PR212/T actuator unit, which allows remote closing or opening operation of the circuit-breaker (Remote Control) by means of two digital outputs which can be disabled thanks to the dip-switch (LOC/REM) positioned on LOC.

Information available

- State of the circuit-breaker: open; closed; tripped
- Installation alarms: pre-alarm L; tripped L-S-I-G-R-V-PTC
- Measurements: currents; N° operations; N° trips
- Reading and writing curves and trip thresholds: only manual reading (MAN), electronic reading and writing (ELT)
- Circuit-breaker commands: opening; closing; reset.

	PR212/D-M	PR212/D-L
Protocol	Modbus RTU	LonTalk
Physical means of transmission	EIA RS485	TP (Twisted Pair)
Speed	9600 – 19200 bit/s	78Kbit/s
Architecture	bus	bus

SACE PR212/T actuator unit

The SACE PR212/T actuator unit allows circuit-breaker opening and closing by means of the motor operator mounted on the circuit-breaker. It is always supplied in combination with the SACE PR212/D dialogue unit. An auxiliary power supply with a stabilised voltage of 24 VDC (±20%, with maximum ripple - ±5%) and earthed is required for operation of the unit.

The PR212/D dialogue unit sends the digital opening and closing commands, received from the supervision and control system, to the inputs of the SACE PR212/T actuator unit, which carries out circuit-breaker closing and opening by means of a power relay. The motor operator of the circuit-breaker (use the versions with power supply voltage at 110 V AC/DC or 220 V AC) must be connected to these relays.

SACE TT1 Test unit

This allows control of tripping of the SACE PR211/P, SACE PR212/P, and SACE PR212/MP electronic releases and the trip test of the opening solenoid OS. The device is supplied by means of a 12 V replaceable battery and is fitted with a two-pole polarised connector-tracer point housed on the bottom of the box, which allows connection of the device to the test input bushings located on the front of the SACE PR211/P, SACE PR212/P, or SACE PR212/MP releases.
The limited dimensions of the accessory make it practically pocket-type. The trip test device can be used on the SACE Isomax S4, S5, S6, S7, and S8 circuit-breakers.

SACE PR212/K signalling unit

The SACE PR212/K signalling unit, only available for S8, is able to convert the digital signals supplied by the SACE PR212/P - (LSIG) protection unit into electric signals by means of normally open electrical contacts. An auxiliary power supply is needed to operate the unit. It is connected to the internal bus of the protection unit by means of a dedicated serial line over which the information regarding the state of activation of the protection functions passes, on the basis of which the relative power contacts are closed to signal:

- pre-alarm for protection function L (I>0.9 x I1)
- protection function L, S, I, G trip
- release trip
- communication error with protection unit.

	PR212/K
Auxiliary power supply	24 V DC ±20% maximum ripple 5%
Maximum current interrupted	5 A
Maximum voltage interrupted	250 V AC / 130 V DC
Breaking capacity – resistive load	50 W / 800 VA (48 V DC and 220 V AC)
Breaking capacity - inductive load	25 W / 500 VA (48 V DC and 220 V AC)
Contact/contact insulation	1000 Veff
Contact/coil insulation	2000 Veff

SACE PR010/K signalling unit

The SACE PR010/K signalling unit can convert the signals received via the bus from the SACE PR212/P (LSI or LSIG) and SACE PR212/MP (LRIU) protection units into electric signals by means of normally open electrical power contacts.
An auxiliary power supply with a voltage stabilised at 24V DC (±20% with maximum ripple - ±5%) and earthed is needed to operate the unit.
It is connected to the Internal Bus of the protection unit by means of a dedicated serial line over which the information regarding the state of activation of the protection functions passes, on the basis of which the relative power contacts are closed.
In particular, the following signals are available:

Alarm signalling remains active for the whole duration of the overload up to any release trip.
The protection trip signals remain active during the timing phase and remain that way even after release trip.
A Reset pushbutton on the front of the unit allows the state of all signals to be reset.
There are also two LEDs available on the unit for visually signalling the following information:
– "Power ON": auxiliary power supply present
– "TX (Int Bus)": flashing synchronised with the communication activity with the Internal Bus
The table below shows the characteristics of the signalling relays available in the SACE PR010/K unit.

K51	PR212/P (LSI-LSIG)
1	Protection L alarm
2	Protection S alarm
3	Protection I alarm
4	Protection G alarm
5	Bus K.O.
7	Release trip
8	Protection L pre-alarm

K51	PR212/MP (LRIU)
1	Protection L alarm
2	Protection R alarm
3	Protection I alarm
4	Protection U alarm Welded contactor alarm contacts
5	Bus K.O.
6	PTC alarm (temperature sensor on motor) (*) Generic input 0/1
7	Release trip
8	Protection L pre-alarm Back-up protection alarm

(*) alternatively by means of dip-switch

	PR010/K
Auxiliary power supply	24 V DC ±20% maximum ripple 5%
Maximum current interrupted	5 A
Maximum voltage interrupted	250 V AC / 130 V DC
Breaking capacity – resistive load	50 W / 800 VA (48 V DC and 220 V AC)
Breaking capacity – inductive load	25 W / 500 VA (48 V DC and 220 V AC)
Contact/contact insulation	1000 Veff
Contact/coil insulation	2000 Veff

SACE PR010/T Test and Configuration Unit

The SACE PR010/T unit is an instrument able to carry out the Test, programming and parameter readout functions for the protection units which equip the SACE Isomax S moulded-case circuit-breakers and the SACE Emax air circuit-breakers.
In particular, for circuit-breakers fitted with SACE PR212/P or SACE PR212/MP releases, the test, programming and readout parameter functions are available.
All the functions mentioned can be carried out ON BOARD by connection of the SACE PR010/T unit to the multipin front flange connector on the protection unit; connection is guaranteed by means of special interfacing cables supplied as standard with the unit.
The man-machine interface is guaranteed by using a membrane keyboard and a multi-line alphanumerical display.
There are also two LEDs on the unit which signal the following respectively:
– POWER-ON and STAND BY situation
– situation of the battery charging state.
Two different types of Test are provided: automatic and manual.
By means of connection to the PC (with software provided by ABB SACE), it is possible to upgrade the SW of the SACE PR010/T unit to allow adaptation of the Test unit to evolution of new products.
The results of most importance regarding the test can also be stored in the unit itself and sent to the Personal Computer on explicit request for "issue of report".
Both in automatic and manual mode, the SACE PR010/T unit is able to test the following:
– protection functions L, S, I, G;
– protection functions LRIU for SACE PR212/MP;
– monitoring of correct operation of the microprocessor.
The SACE PR010/T unit is of the portable type and operates with rechargeable batteries and/or with an external power supply.
In its standard supply, the unit includes:
– SACE PR010/T Test unit complete with rechargeable batteries
– SACE TT1 Test unit
– 100...240 V AC/12 V DC external power supply
– connection cables between the unit and the multipin connector present on the ranges of releases which equip the SACE Isomax S and the SACE Emax series

– connection cable between the unit and the PC (serial RS232)
– power supply cable
– instruction manual and diskette with application SW
– plastic container.

SACE PR212/CI contactor control unit

The SACE PR212/CI accessory unit can be associated with all the circuit-breakers fitted with SACE PR212/MP electronic release for motor protection. When the appropriate dip-switch on the front of the release is positioned on the "Normal mode", it allows the contactor to be opened in the case of fault for overload L, blocked rotor R or phase missing/unbalance U.
The SACE PR212/CI unit can always be installed both on a DIN rail and on the rear of the door.

CT for external neutral

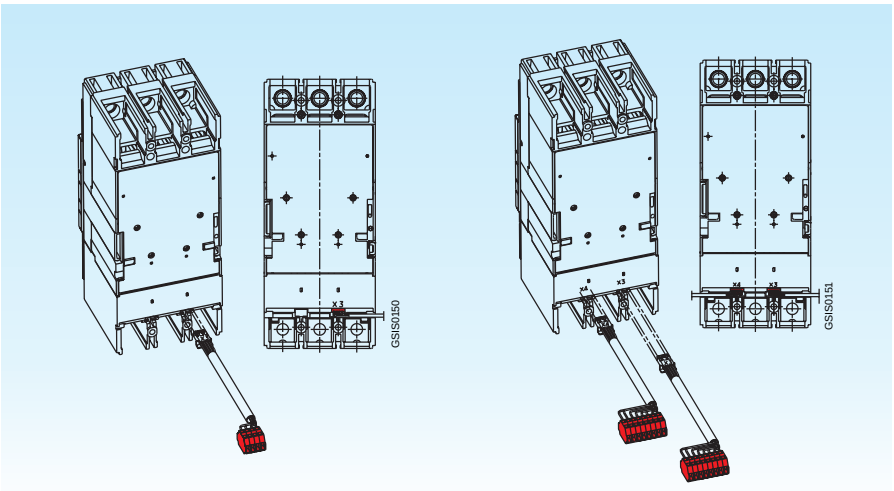
This is applied to the neutral conductor and allows protection against earth faults with three-pole circuit-breakers to be realised. The circuit-breaker must be fitted with SACE PR212/P – LSIG release. The transformer must be connected to the release by means of the specific X3-X4 connectors, selected according to the version of the circuit-breaker and the type of protection release used.

S4	S5	S6	S7	S8
[A]	[A]	[A]	[A]	[A]
100	320	630	1000	1600
160	400	800	1250	2000
250	630		1600	2500
				3200

Connectors

These allow connection of the microprocessor-based release to units or components of external plants. They are, in fact, used to make the relay tripped signal available outside and to connect the protection transformer of the neutral conductor outside the circuit-breaker or to the actuator, dialogue and signalling units, if these are provided.

- Connector X3 for circuit-breaker fixed fitted with releases SACE PR211/P
- Connector X3 for plug-in/withdrawable circuit-breaker (to be applied in the fixed part) fitted with SACE PR211/P release
- Connectors X3-X4 for fixed circuit-breaker fitted with SACE PR212/P release
- Connectors X3-X4 for plug-in/withdrawable circuit-breaker fitted with SACE PR212/P release



Connectors X3 Connectors X4

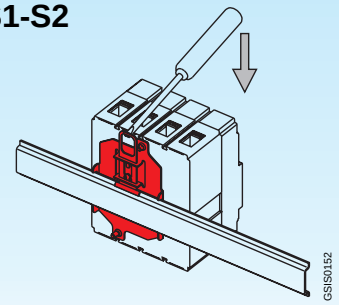
Bracket for fixing on DIN rail

This is applied to the fixed circuit-breaker and allows installation on standardised DIN rails. It simplifies assembly of circuit-breakers up to 630 A in standard switchboards.

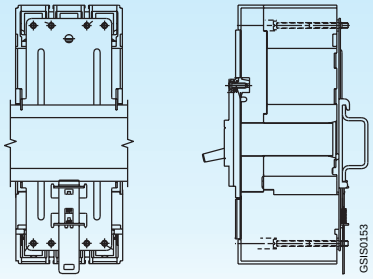
- Bracket for fixing on DIN EN 50022 rail for SACE S1-S2 circuit-breakers.
- Bracket for fixing on DIN EN 50023 rail for SACE S3-S4-S5 circuit-breakers.

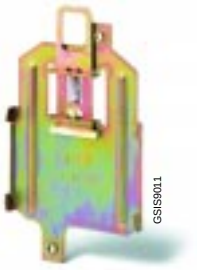
The fixing bracket kit for SACE S3-S4-S5 circuit-breakers also includes the front flange H = 45mm.

S1-S2



S3-S4-S5

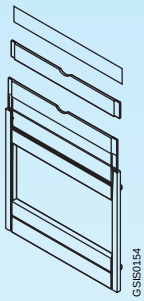




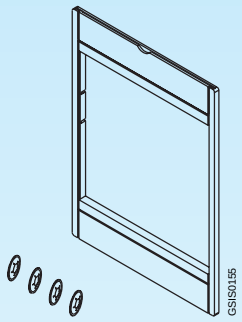
Flange for compartment door

This is always supplied with the circuit-breaker and can also be used with the rotary handle operating mechanism for the SACE S3, S4, S5, S6, and S7 circuit-breakers, the front flange for lever operating mechanism and the motor operator. In case of use of these accessories with SACE S6, S7 circuit-breakers, a flange is supplied to be used instead of the one supplied with the circuit-breaker. It is not supplied for SACE S1, S2, and S3 circuit-breakers which are complete with SACE RC210, RC211, RC212 residual current releases in the version beside the circuit-breaker.

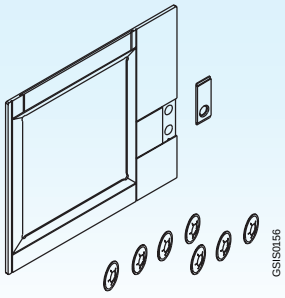
S1-S2



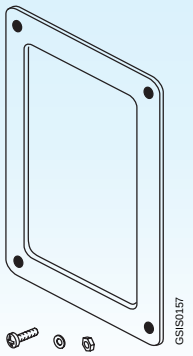
S3 ... S7 fixed



S3 ... S7 withdrawable



S8

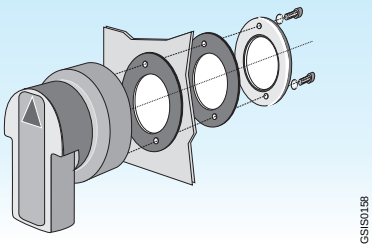


IP54 protection for rotary handle

This allows IP54 degree of protection to be attained. It is available in the following versions:

- for rotary handle operating mechanism on compartment door with fixed distance for SACE S1-S2 circuit-breakers
- for rotary handle operating mechanism on compartment door with adjustable distance for circuit-breakers SACE S3-S4-S5-S6 and S7 circuit-breakers.

S1-S2



Spare parts

The following spare parts are available:

- operating lever
- cover group
- arcing chambers
- isolating contacts
- opening solenoid for the SACE RC211and RC212 residual current releases
- kit with washers, screws and dowels for assembly of the connection terminals.

For further details, please ask the Service Division of ABB SACE for the spare parts catalogue.

Characteristic curves and technical information

Index

Characteristic curves

Trip curves for distribution

Circuit-breakers with thermomagnetic releases **5**/2

Circuit-breakers with SACE PR211/P, SACE PR212/P electronic releases **5**/7

Trip curves for motor protection

Circuit-breakers with magnetic only releases **5**/9

Use of the trip curves of circuit-breakers with SACE PR212/MP electronic release **5**/10

Circuit-breakers with electronic release SACE PR212/MP **5**/12

Limitation curves

230 V **5**/14

400-440 V **5**/17

500 V **5**/20

690 V **5**/21

Specific let-through energy curves

230 V **5**/24

400-440 V **5**/27

500 V **5**/30

690 V **5**/31

Technical information

Temperature performance

Circuit-breakers with electronic releases **5**/34

Circuit-breakers with thermomagnetic releases **5**/39

Power loss values **5**/40

Operation and protection of the low-voltage side of three-phase transformers .. **5**/42

Operation and protection of three-phase AC capacitors **5**/44

Protection of three-phase AC generators **5**/46

Applications in direct current **5**/47

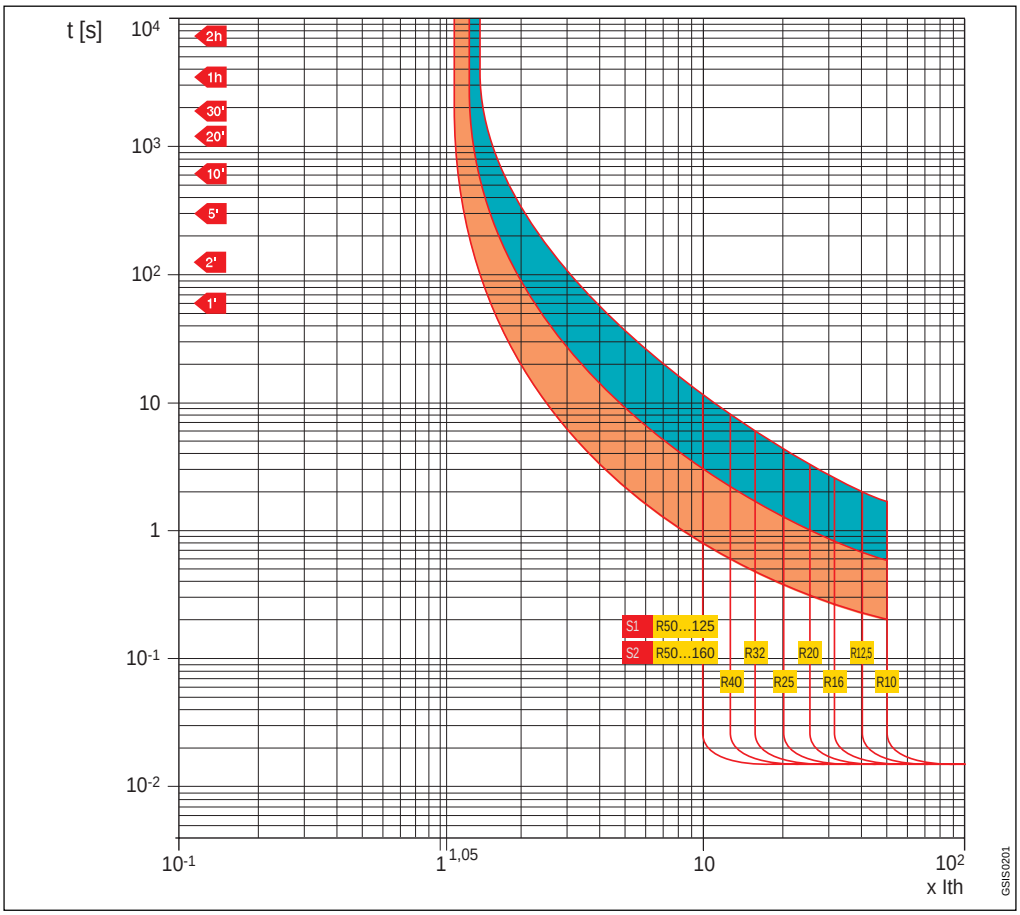
Backup protection (backup table) **5**/50

Trip curves for distribution

Circuit-breakers with thermomagnetic releases

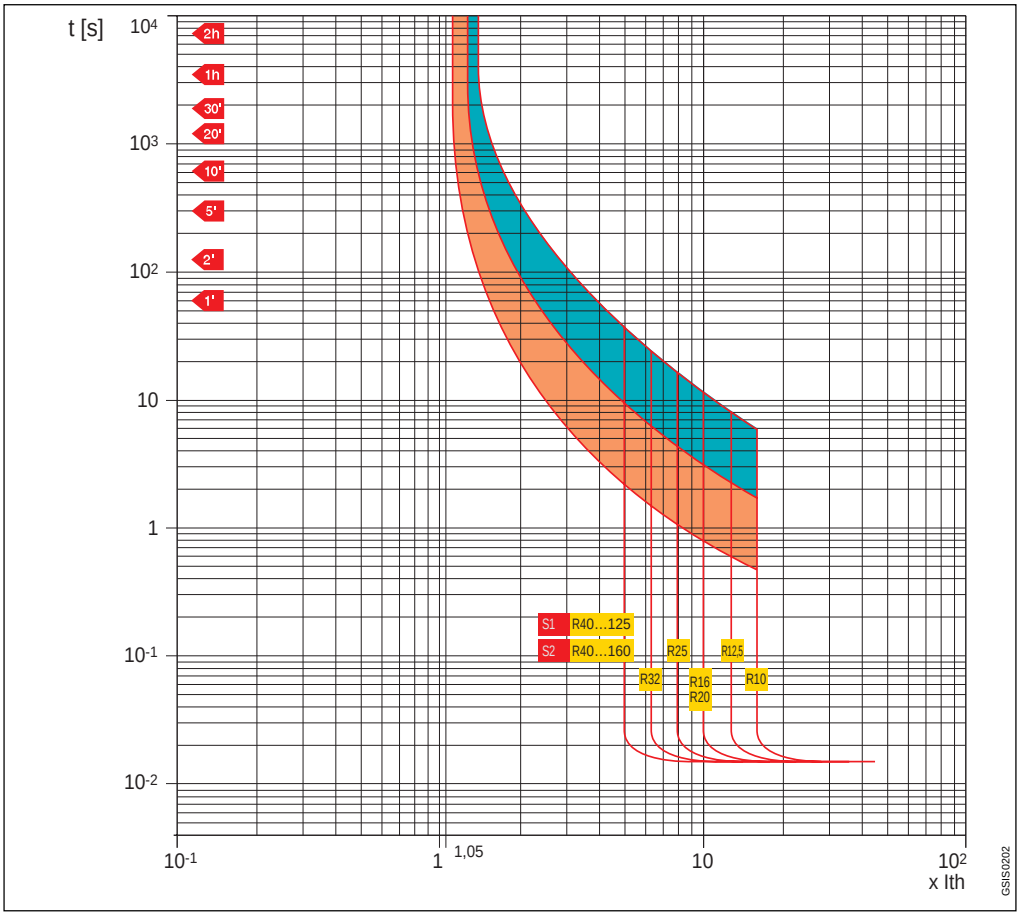
SACE
S1 125 - S2 160

Magnetic tripping threshold
Im = 10 x Ith



SACE
S1 125 - S2 160

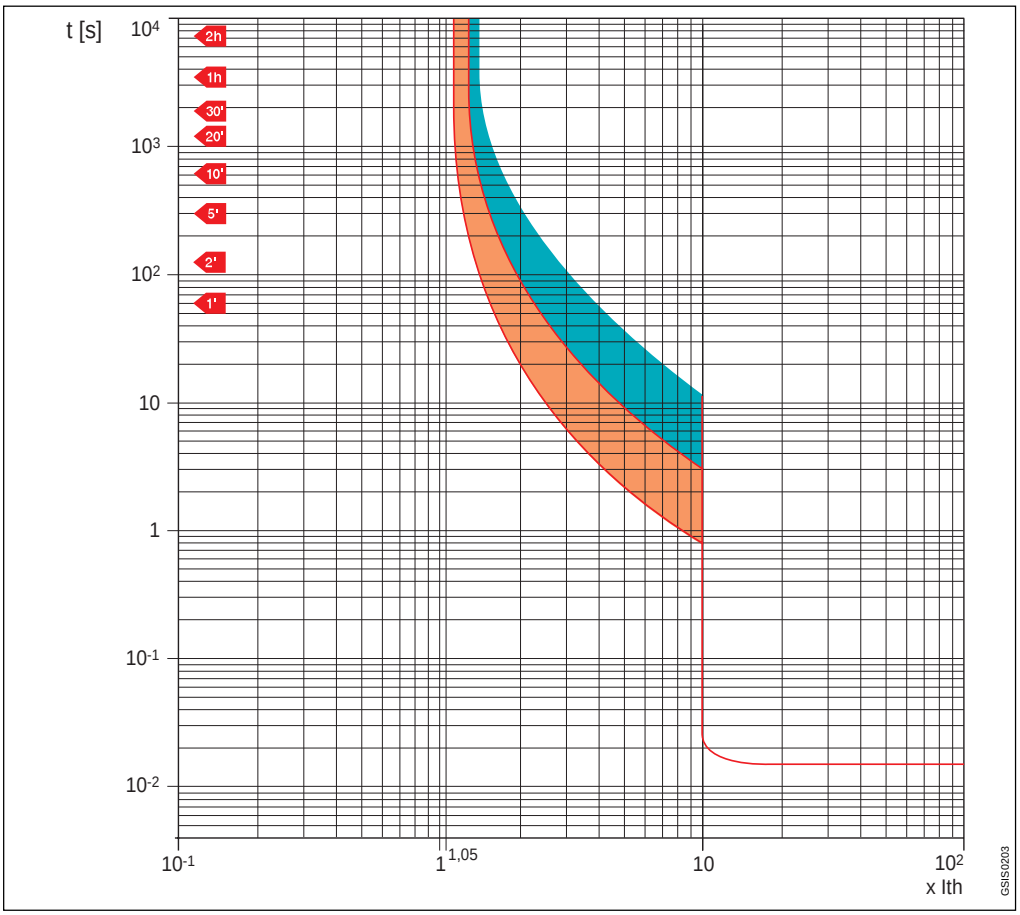
Magnetic tripping threshold
Im = 5 x Ith



5

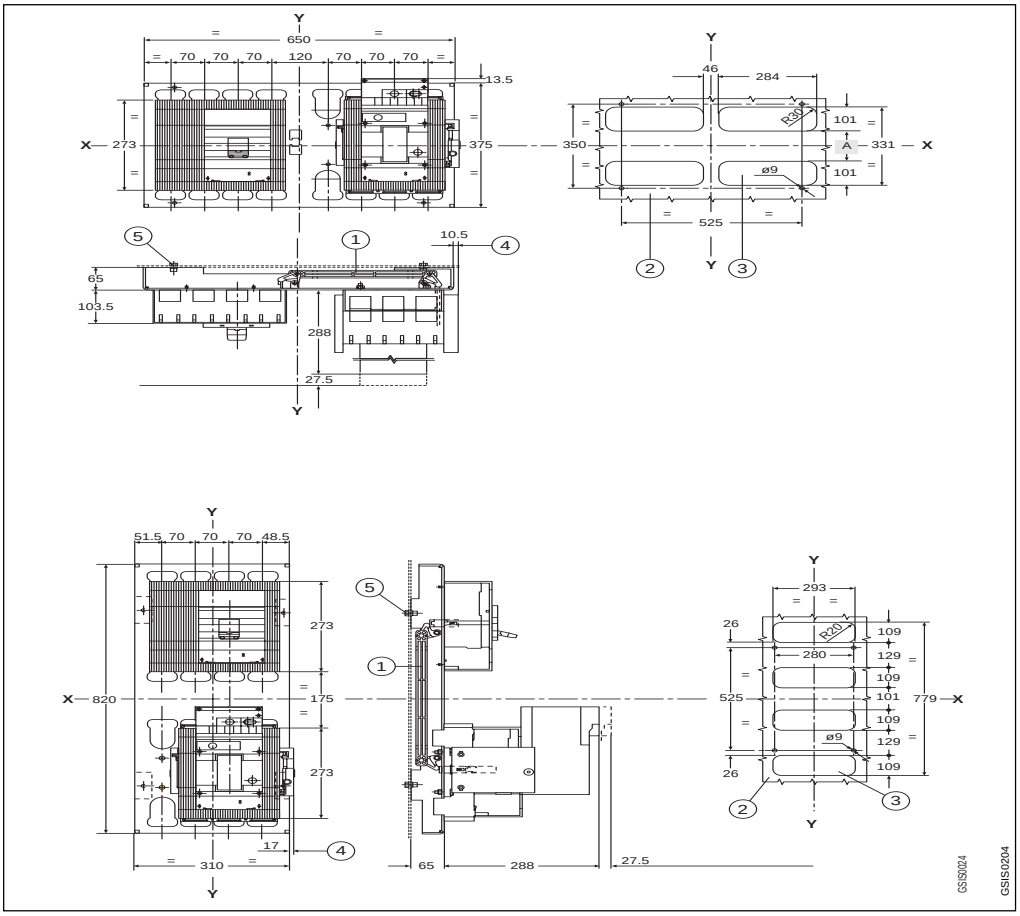
SACE S2X 100

Magnetic tripping threshold
Im = 10 x Ith



SACE S3 160

Magnetic tripping threshold
Im = 10 x Ith



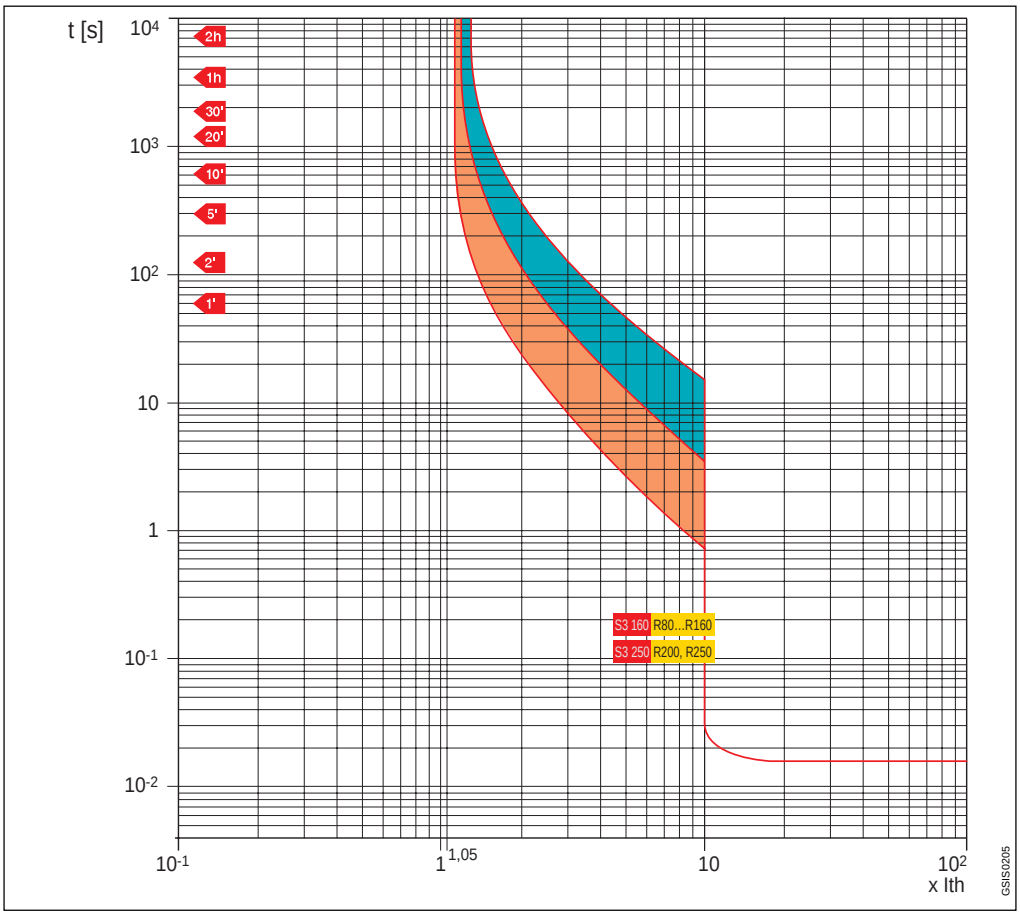
5

Trip curves for distribution

Circuit-breakers with thermomagnetic releases

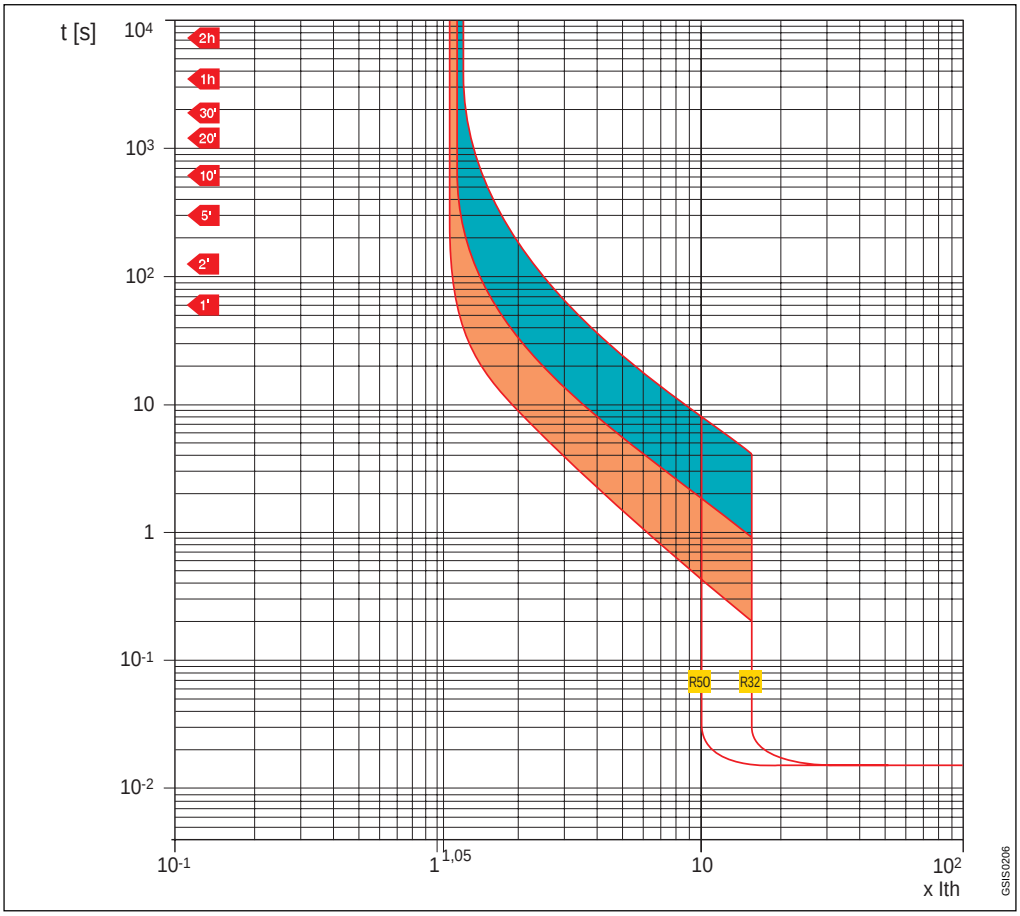
SACE S3 160 - S3 250

Magnetic tripping threshold
Im = 10 x Ith



SACE S3 160

Magnetic tripping threshold
Im = 5 x Ith

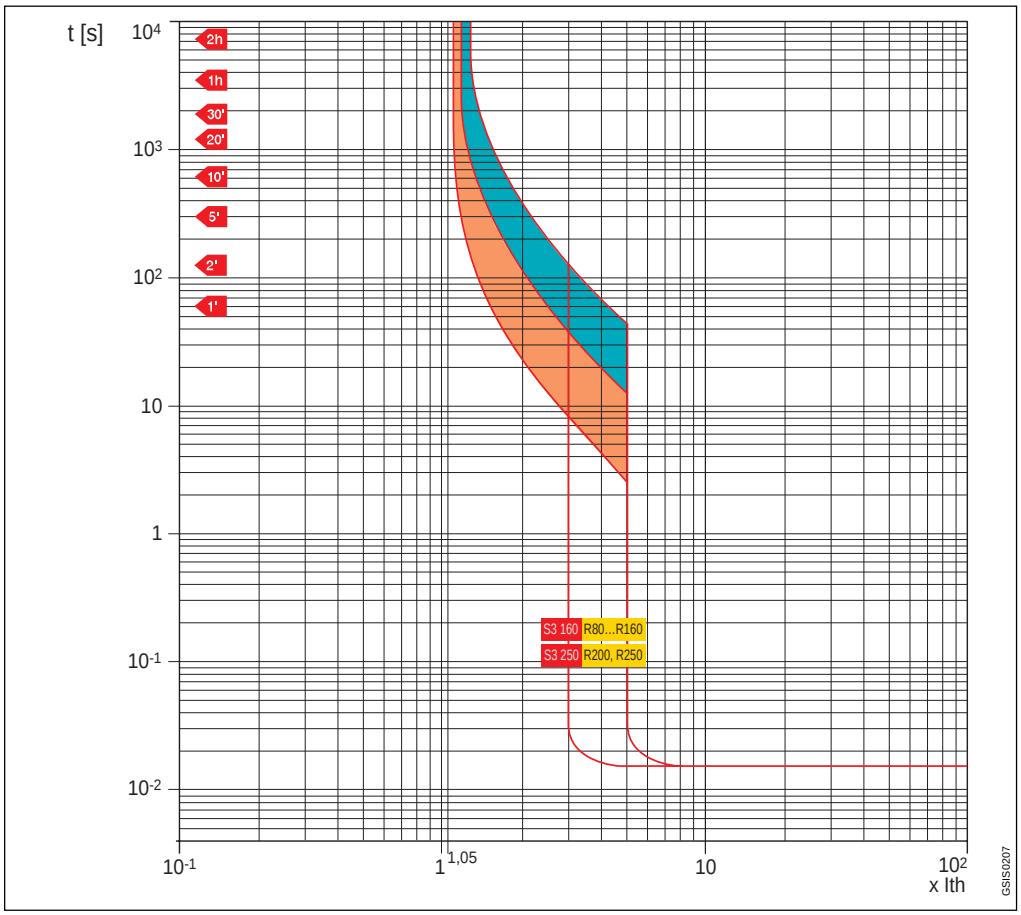


5

SACE
S3 160 - S3 250

Magnetic tripping threshold
Im = 3 x Ith

Magnetic tripping threshold
Im = 5 x Ith

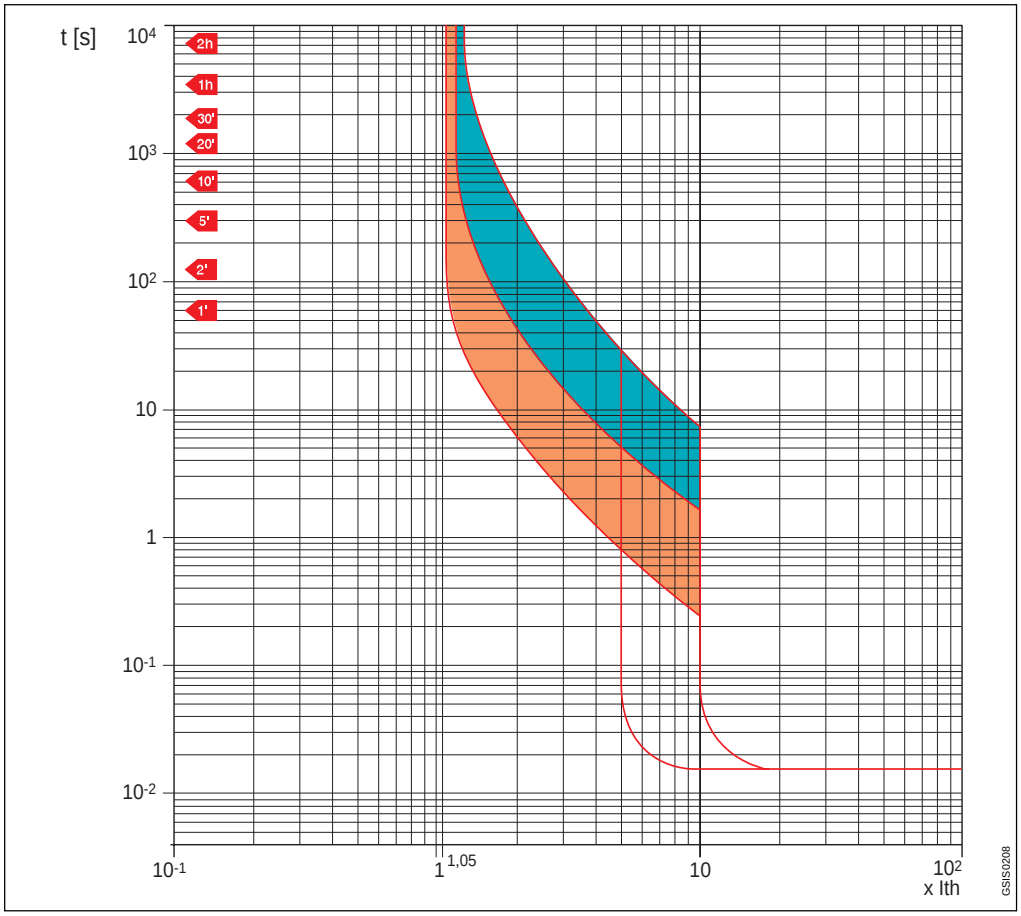


SACE S5 400 (R320-400)

SACE S5 630 (R500)

Thermal tripping threshold
In = 0,7÷1 x Ith

Magnetic tripping threshold
Im = 5÷10 x Ith



5

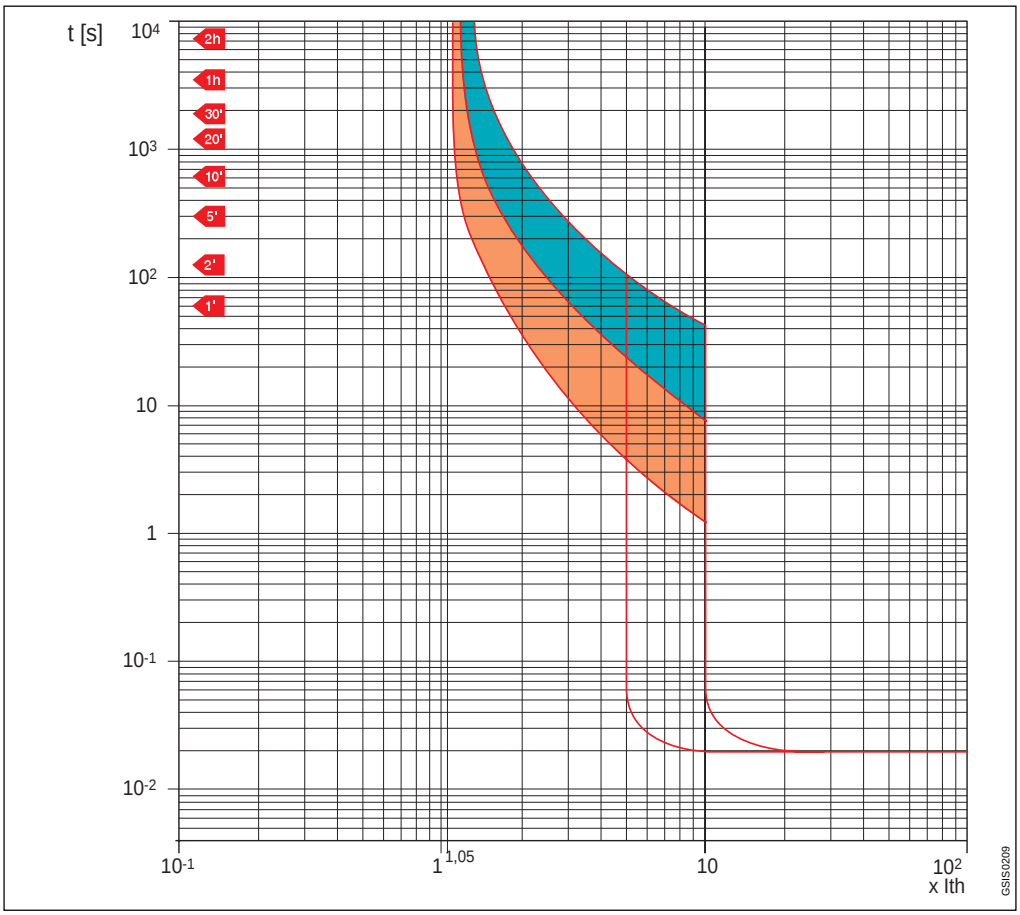
Trip curves for distribution

Circuit-breakers with thermomagnetic releases

SACE S6 630 (R630)

Thermal tripping threshold
In = 0,7÷1 x Ith

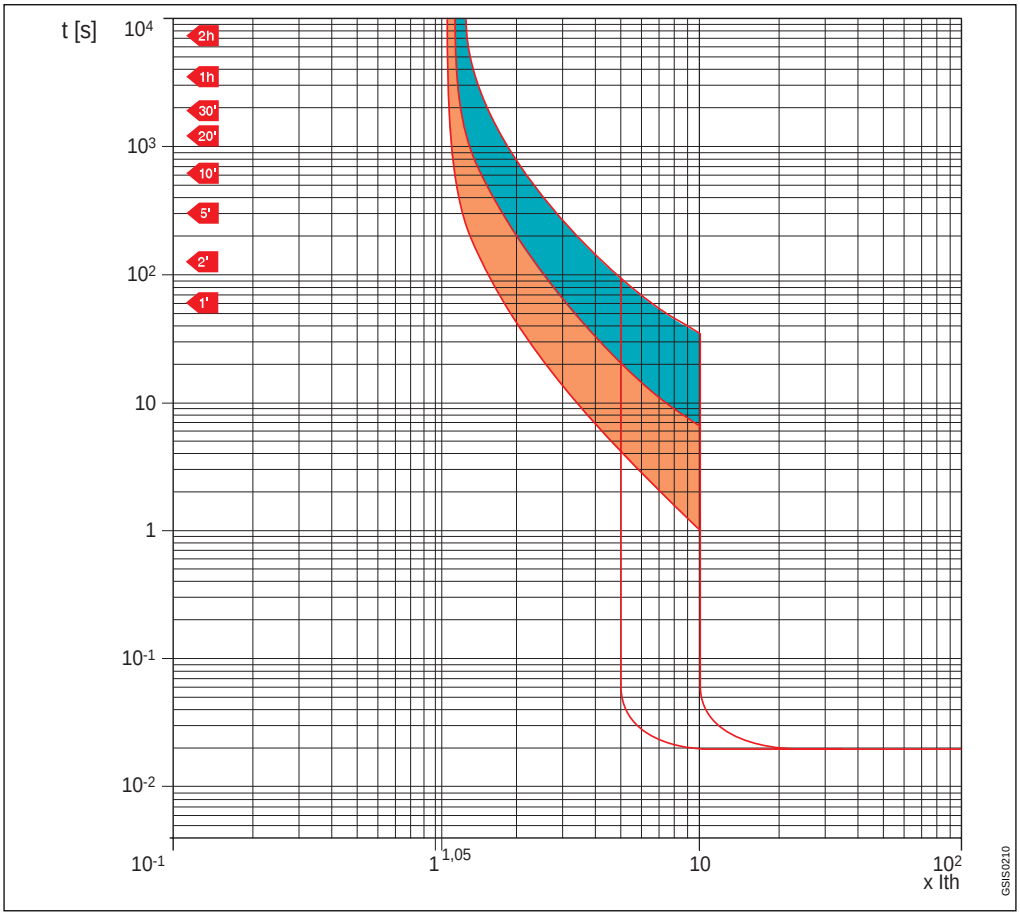
Magnetic tripping threshold
Im = 5÷10 x Ith



SACE S6 800 (R800)

Thermal tripping threshold
In = 0,7÷1 x Ith

Magnetic tripping threshold
Im = 5÷10 x Ith



5

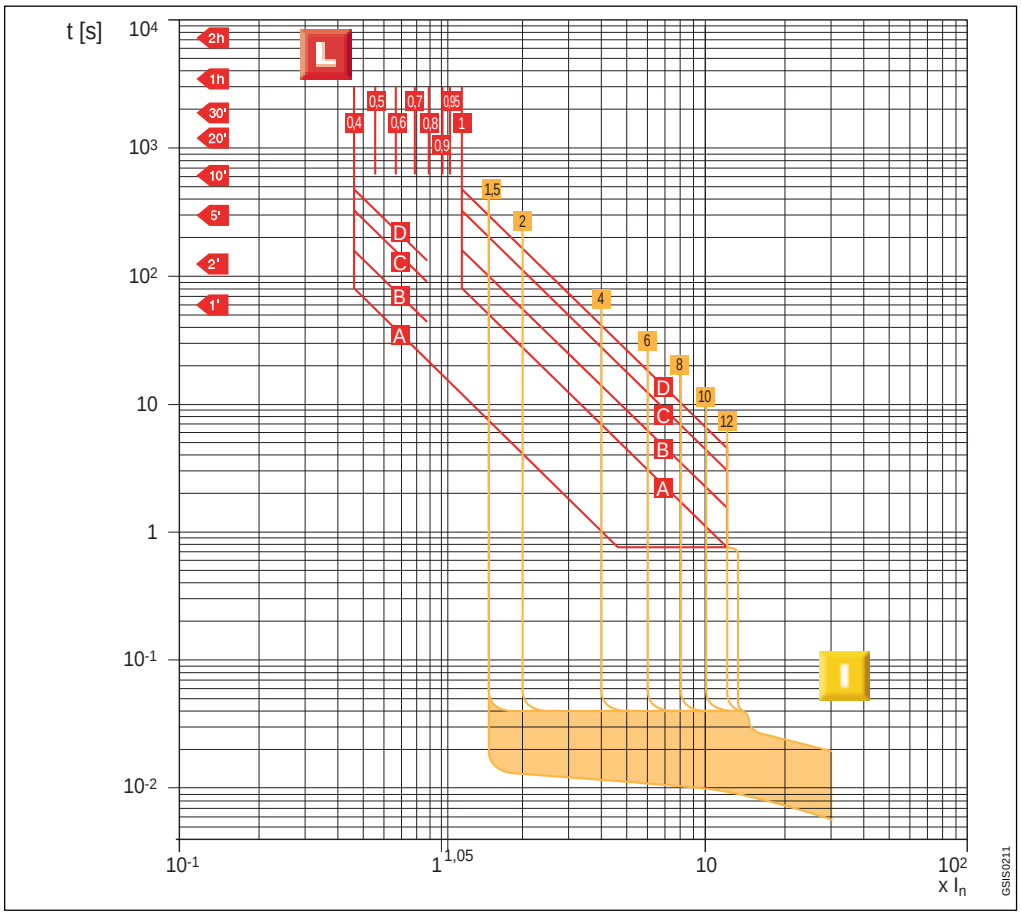
Trip curves for distribution

Circuit-breakers with electronic releases

SACE S4-S5-S6-S7

SACE PR211/P
Functions LI - I

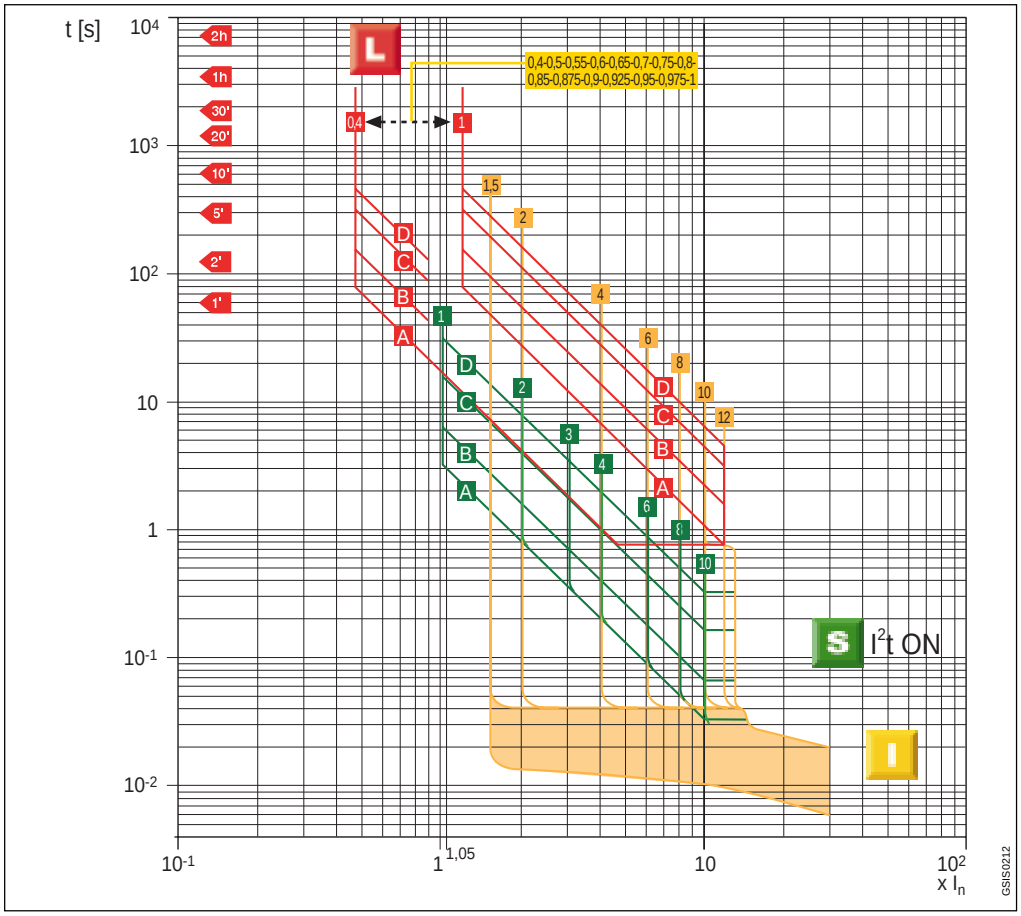
N.B. For **S5** 630
The maximum threshold that can be set for the I function is 8 x I_n



SACE S4-S5-S6-S7-S8

SACE PR212/P
Function LSI,
S inverse short delay
(I^2t = constant ON)

N.B. For **S5** 630
The maximum threshold that can be set for the I function is 8 x I_n



5

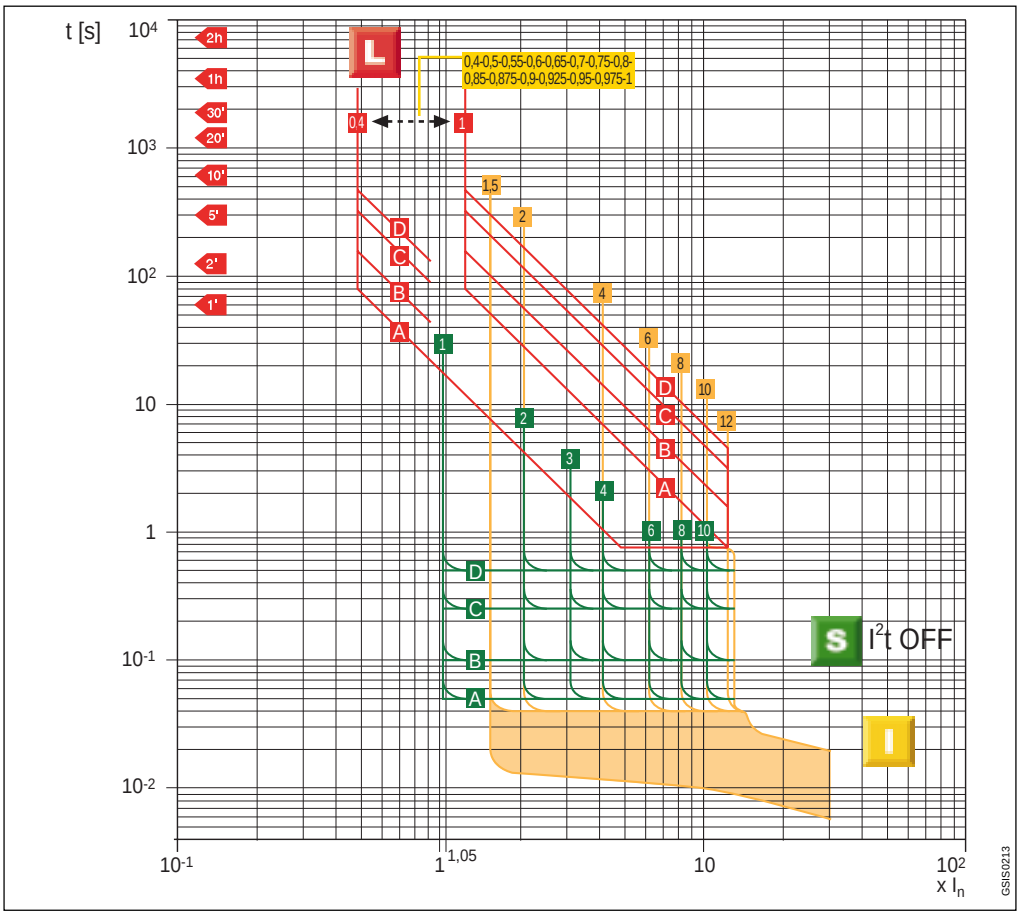
Trip curves for distribution

Circuit-breakers with electronic releases

SACE S4-S5-S6-S7-S8

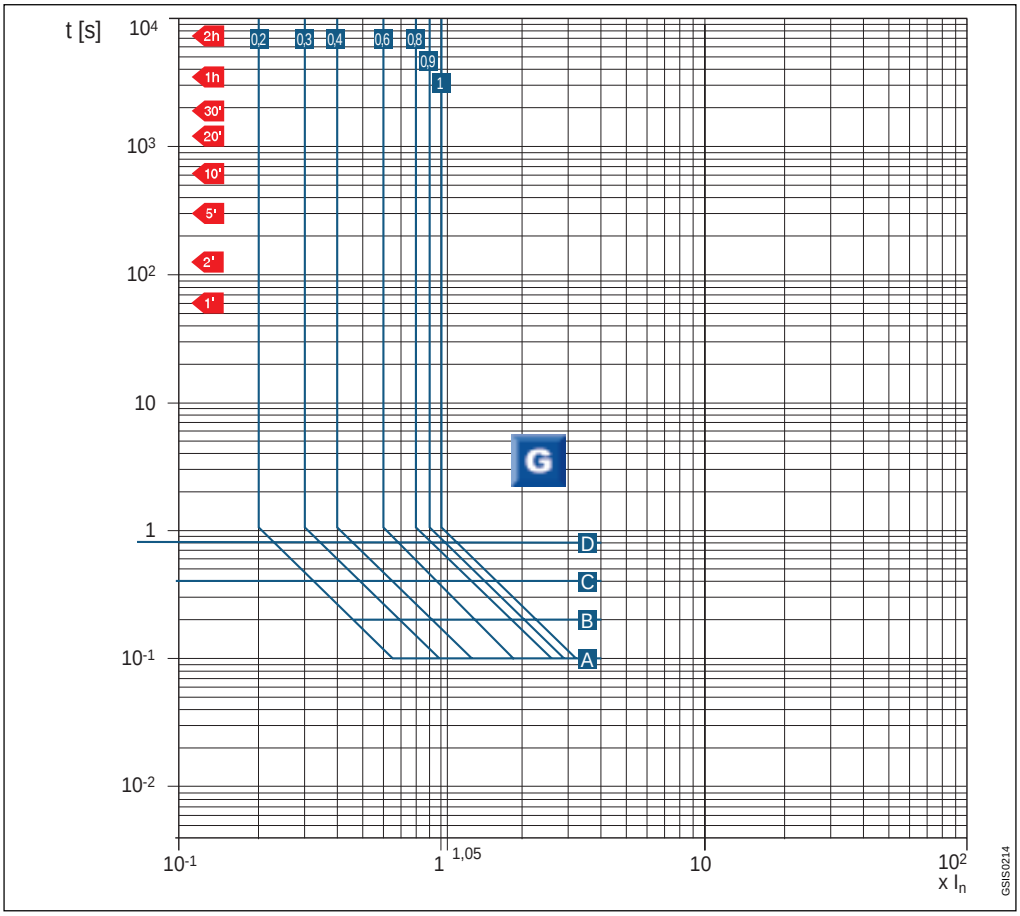
SACE PR212/P
Function LSI,
S definite short delay
(I^2t = constant OFF)

N.B. For **S5** 630
The maximum threshold that can be set for the I function is 8 x I_n



SACE S4-S5-S6-S7-S8

SACE PR212/P
Function G



5

Trip curves for motor protection

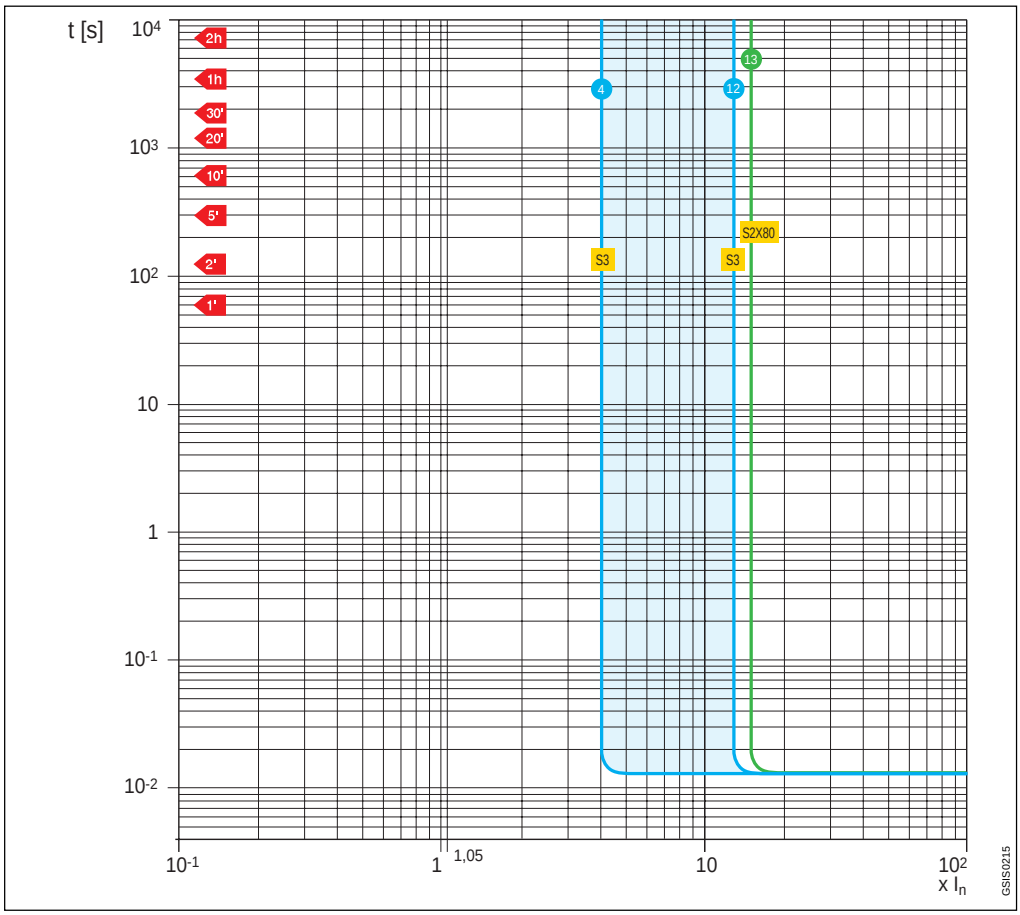
Circuit-breakers with magnetic only releases

SACE S2X 80

Fixed magnetic tripping threshold
Im = 13 x Ith

SACE S3

Adjustable magnetic tripping threshold
Im = 4÷12 x Ith



5

Trip curves for motor protection

Use of the trip curves of circuit-breakers with SACE PR212/MP electronic release

For correct parameter setting of the SACE PR212/MP electronic release, it may be useful to compare the overall circuit-breaker curve with the motor starting curve.
For this purpose, with the protection function graphics shown on the following pages, it is possible to draw the overall curve required for the circuit-breaker fitted with SACE PR212/MP release simply and immediately.

N.B. For function L, as for all the other functions, make sure you place a glossy tracing sheet over the curve so that the time s on the axis of the co-ordinates coincide.

- **Function L (cannot be excluded) - Protection against overload**

  To protect the motor against any overloads, as a first step it is necessary to adjust function L to a current **I1** higher than or equal to the rated current of the motor Ie: **I1 ≥ Ie**.
  For example, if Ie = 135 A, an S4H160 circuit-breaker can be selected with In = 160 A and the following adjustment carried out: I1 = 0.85 x In = 136 A.
  The second step is to select the trip class according to the motor starting time **ta**. For a motor with a start-up overload of 6 seconds, class 10 can be selected, with a trip time of 8s at 7.2 x I1.
  To trace the curve correctly on the glossy sheet, according to **I/In**, simply place the glossy sheet over the graph of function L so that I/In = 0.85 (on the glossy sheet) corresponds to I/I1 = 1 (on the graph) and draw the curve relative to class 10.

- **Function R (can be excluded) - Protection against rotor blockage**

  Protection against rotor blockage can be set both with regard to the trip current **I5** = 3 ... 10xI1 (in this case I5 = 3 ... 10 x 0.85 x 160), and with regard to the trip time **t5**.
  To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function R so that I/In = I1/In (on the glossy sheet) corresponds to I/I1 = 1 (on the graph). In this case I/In = I1/In = 0.85, and draw the desired curve.

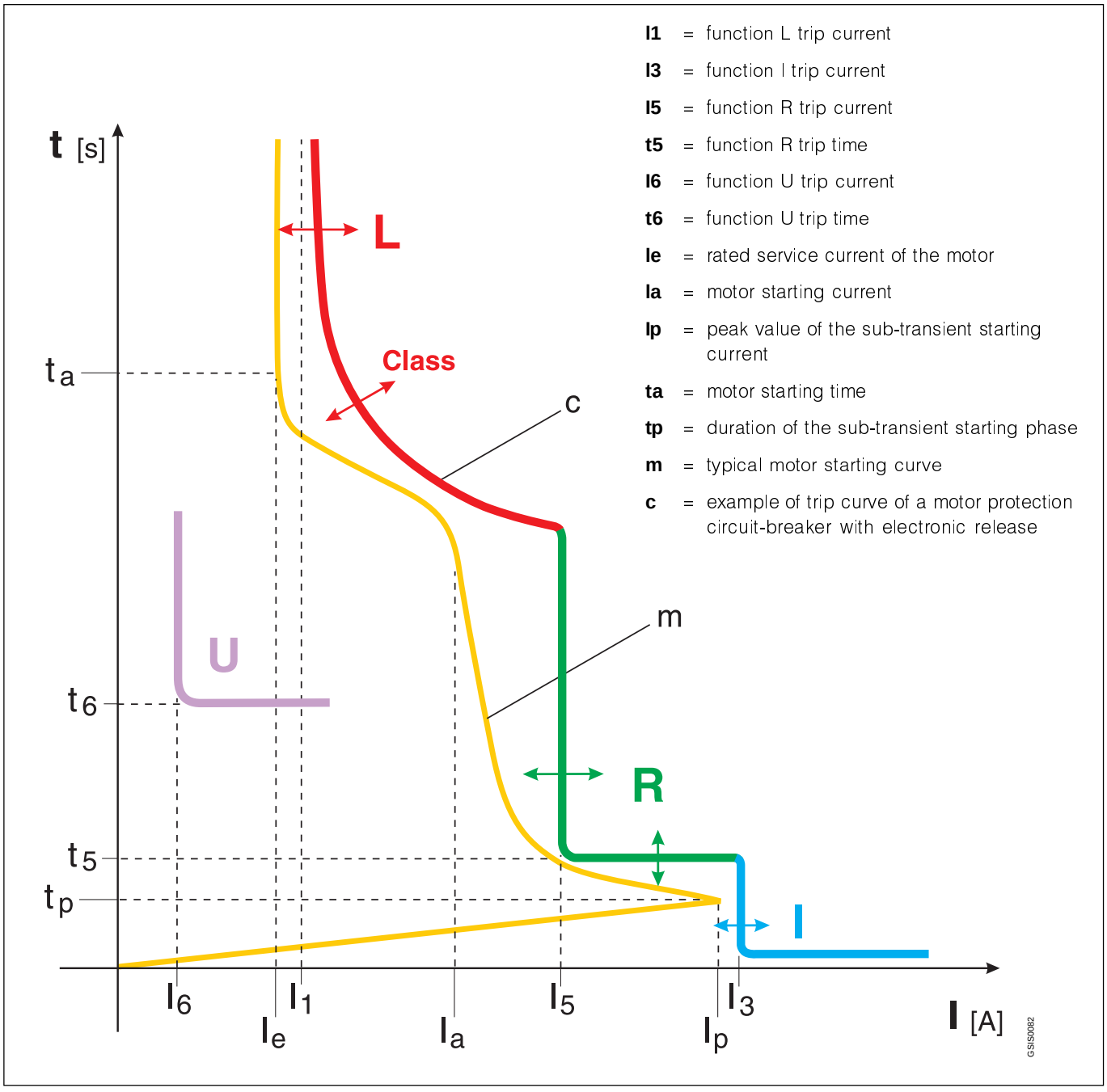
- **Function I (cannot be excluded) - Protection against short-circuit**

  This protection function against short-circuit recognises whether the motor is in the starting phase, thereby avoiding unwarranted trips; the trip threshold can be set from 6 x In to 13 x In.
  To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function I so that I/In = 1 (on the glossy sheet) corresponds to I/In = 1 (on the graph) and draw the desired curve.

- **Function U (can be excluded) - Protection against loss and/or unbalance of a phase**

  Protection against loss or unbalance of a phase, if set to ON, intervenes when one or two phases have a current lower than 0.4xI1 (0.4 x 0.85 x In = 0.4 x 0.85 x 160 A = 54.4A in this case).
  To trace the curve correctly on the glossy sheet, simply place the glossy sheet over the graph of function U so that I/In = I1/In (on the glossy sheet) corresponds to I/I1 = 1 (on the graph). In this case I/In = I1/In = 0.85, and draw the desired curve.

Typical operating characteristic of an asynchronous motor



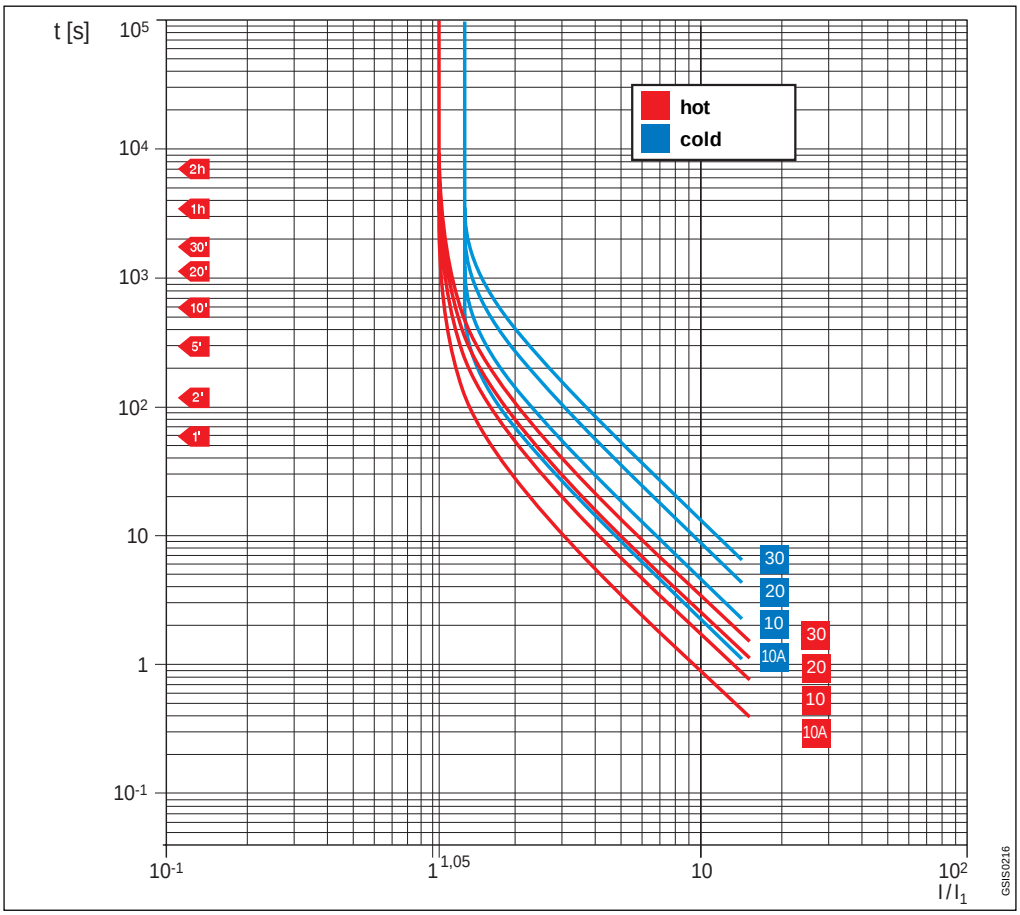
5

Trip curves for motor protection

Circuit-breakers with electronic releases SACE PR212/MP

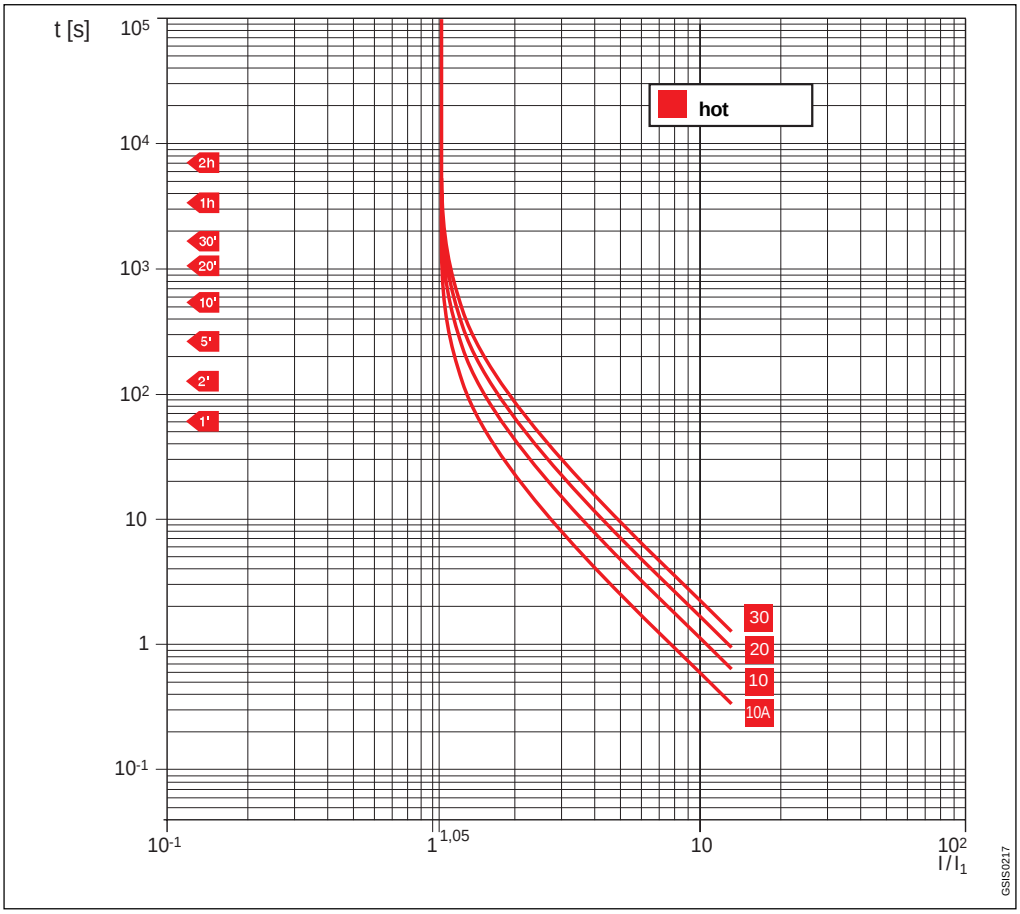
SACE S4-S5-S6-S7

SACE PR212/MP
Function L (hot and cold trip)



SACE S4-S5-S6-S7

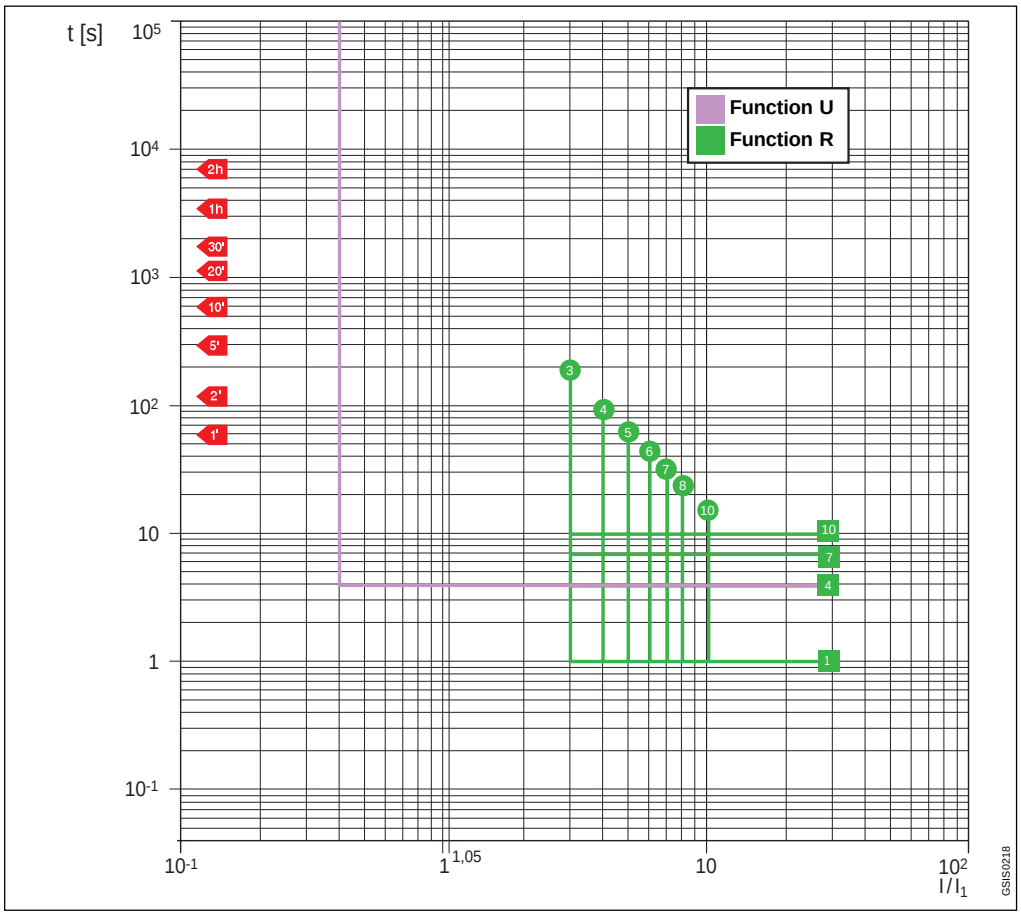
SACE PR212/MP
Function L (hot trip with 1 or 2 phases supplied)



5

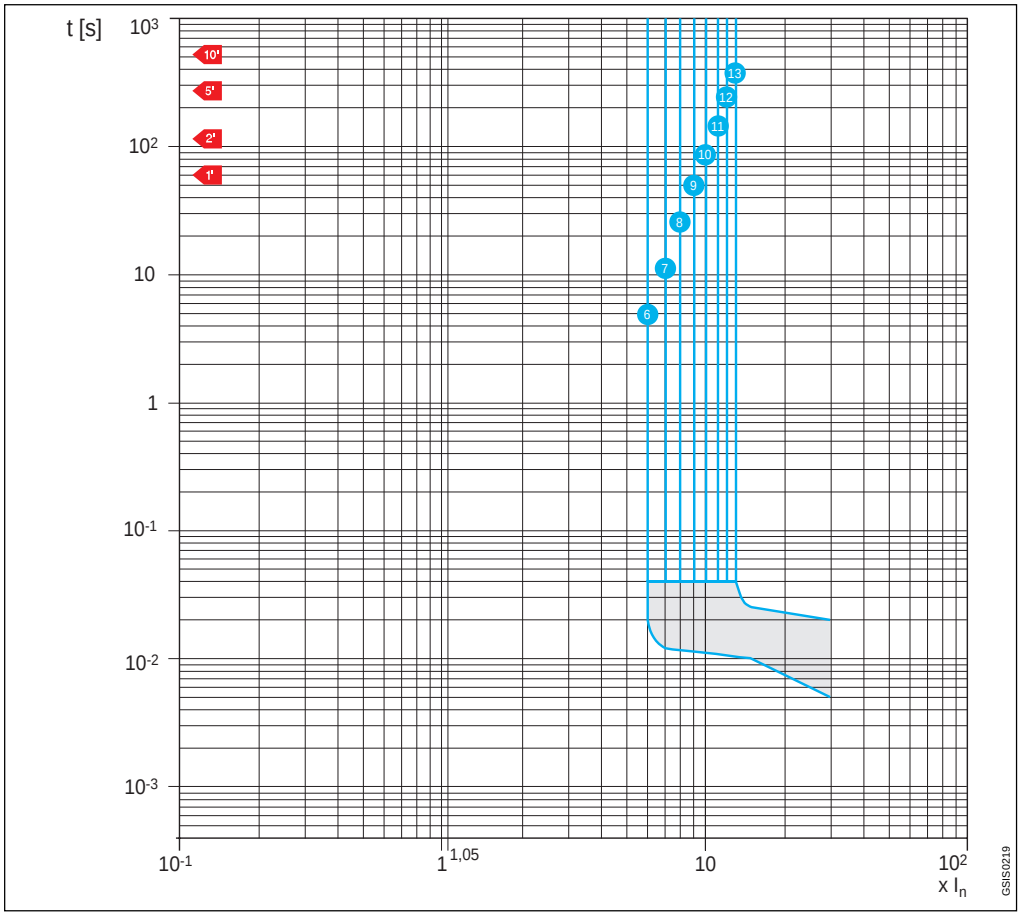
SACE S4-S5-S6-S7

SACE PR212/MP
Function R - U



SACE S4-S5-S6-S7

SACE PR212/MP
Function I

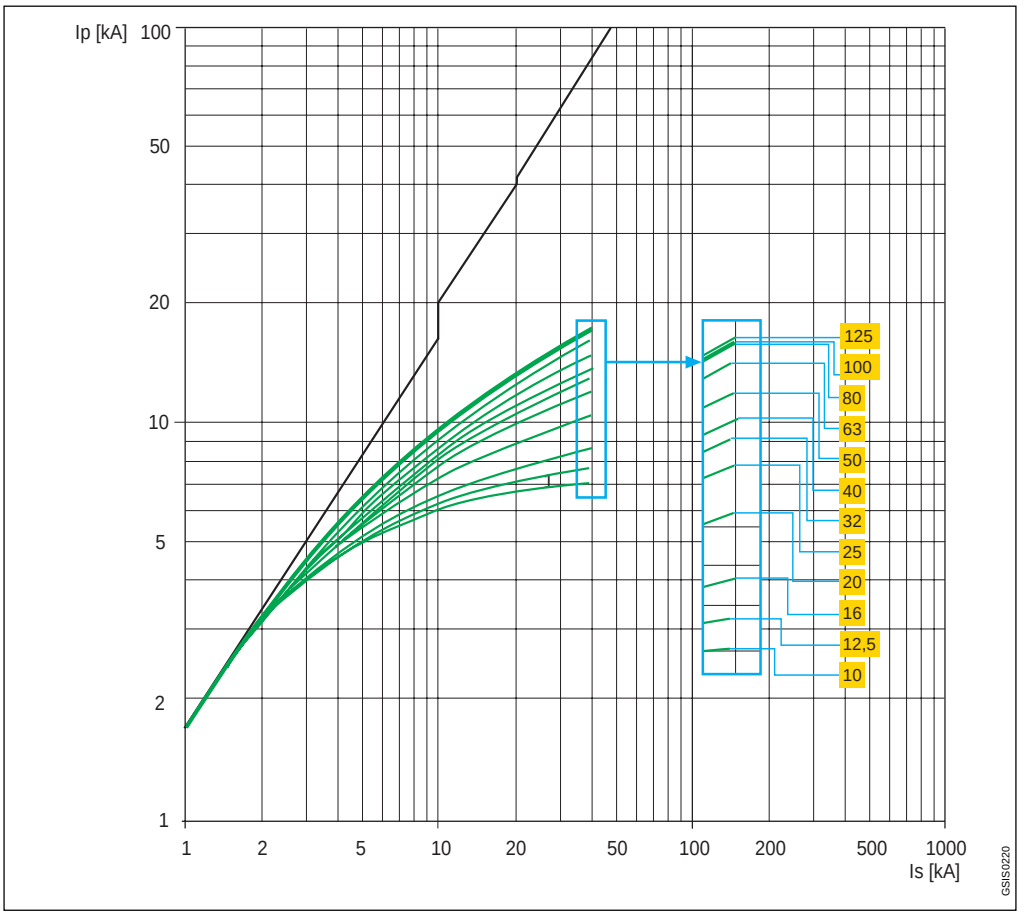


5

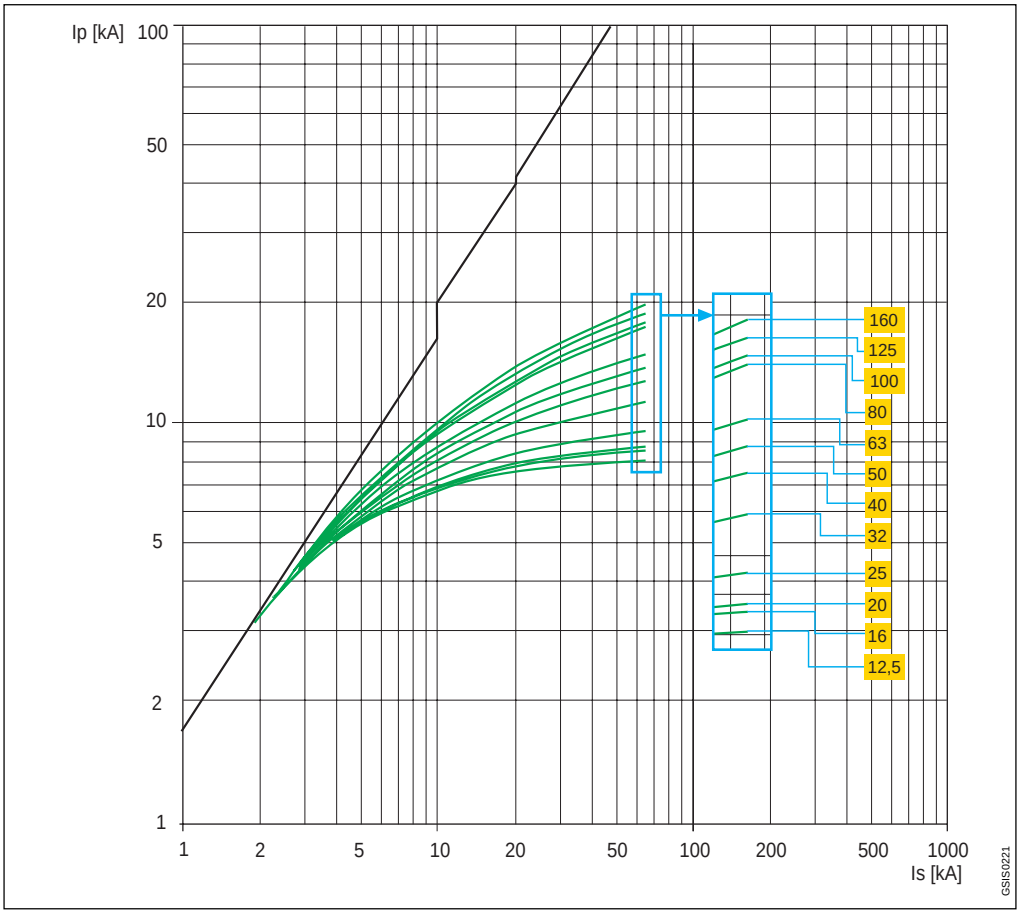
Limitation curves

230 V

SACE S1

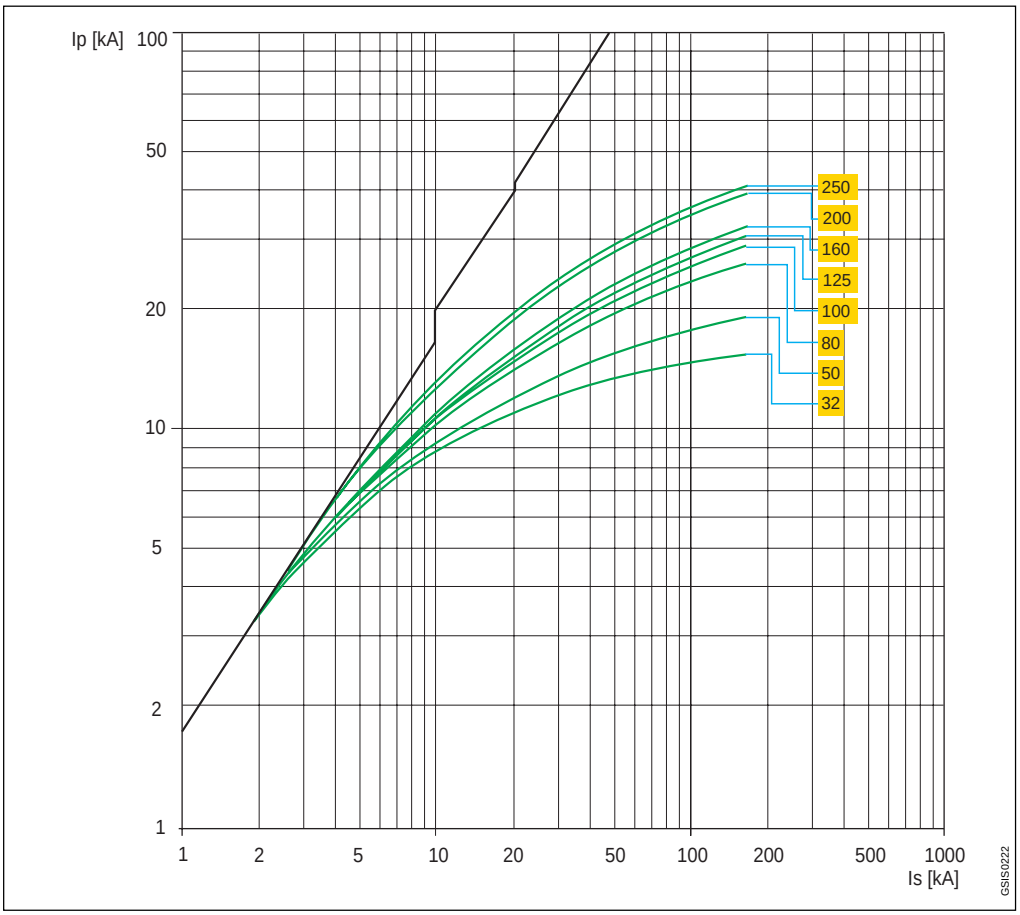


SACE S2

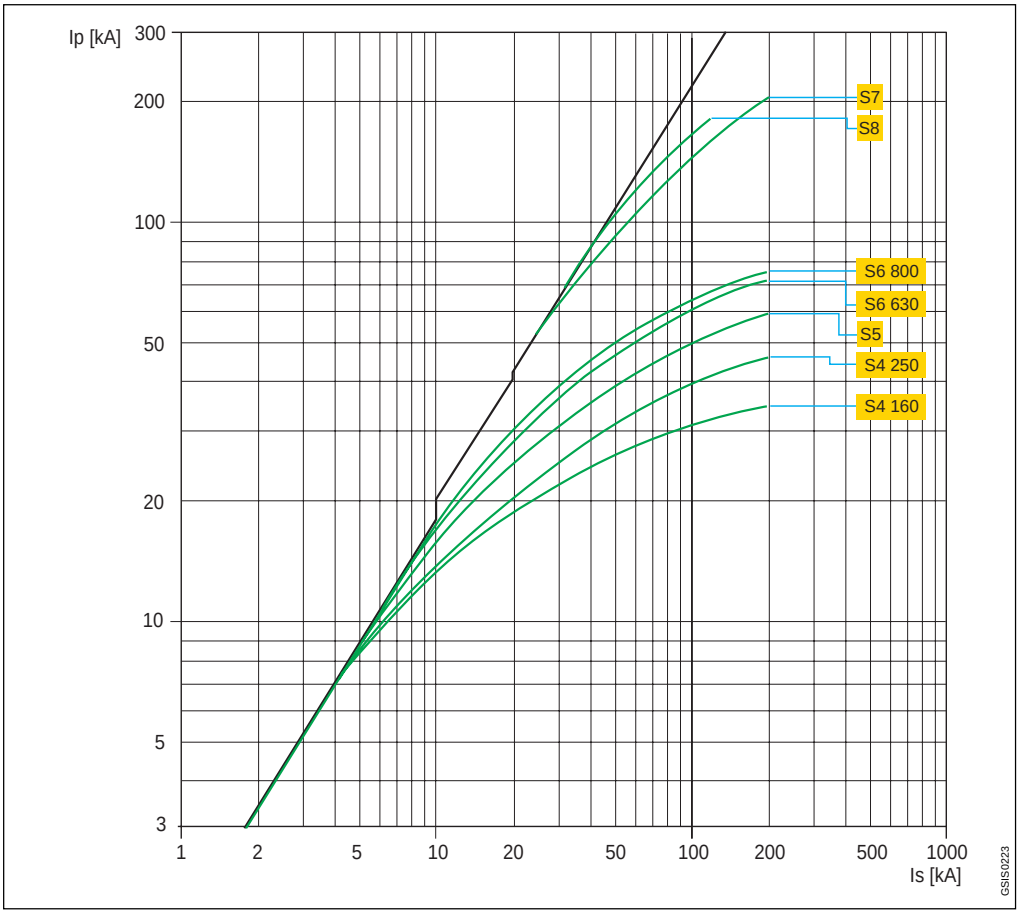


5

SACE S3 160, S3 250



SACE S4 160, S4 250, S5, S6 630, S6 800, S7, S8

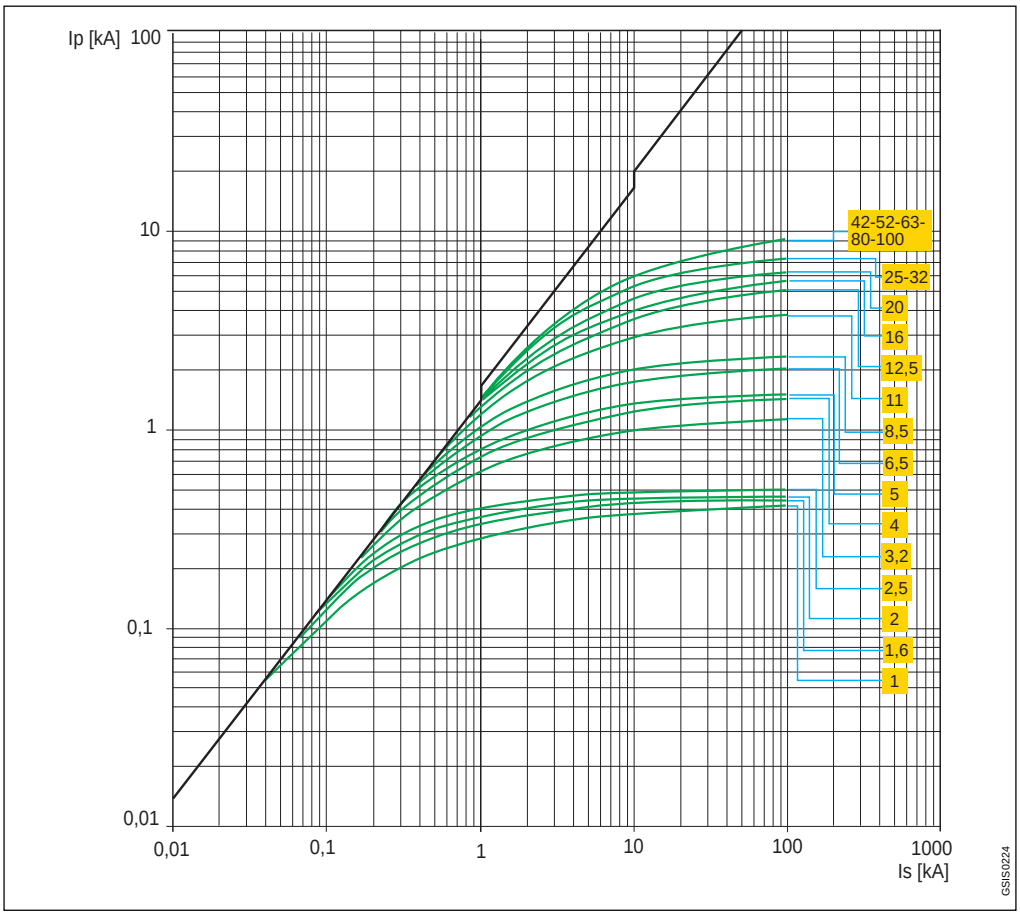


5

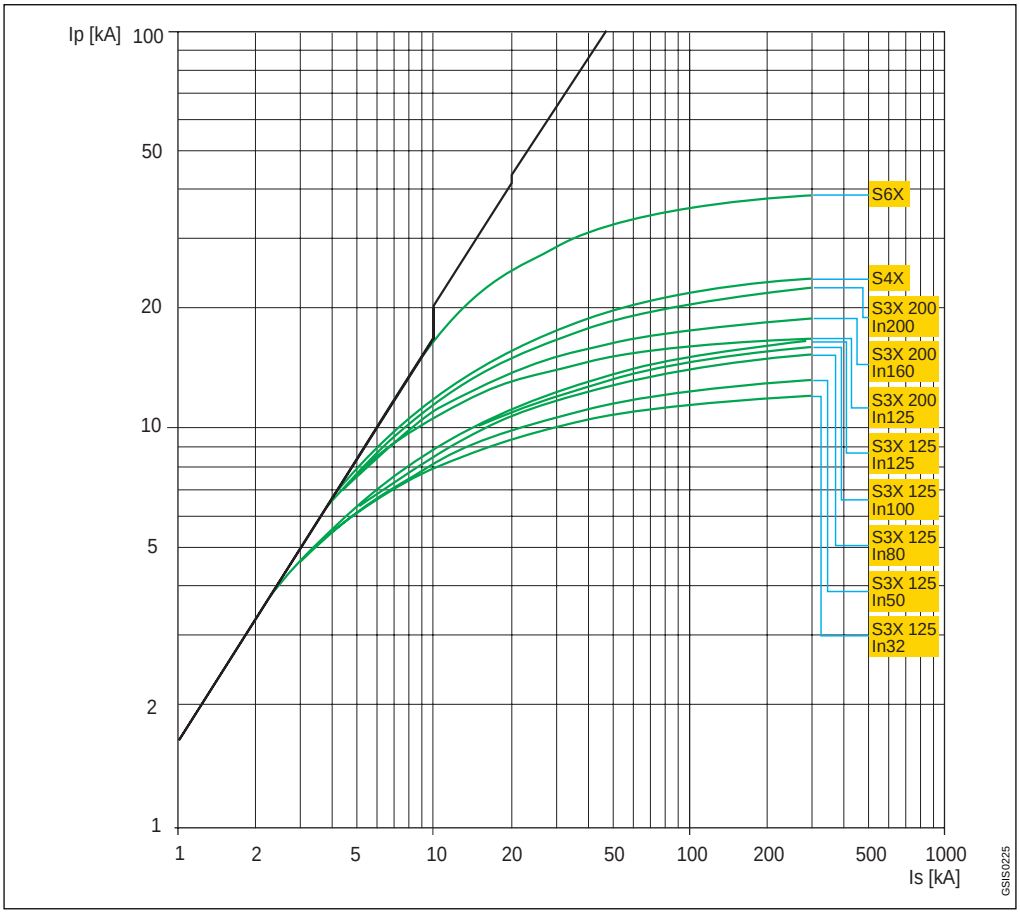
Limitation curves

230 V

SACE S2X 80, S2X 100



SACE S3X 125, S3X 200, S4X, S6X

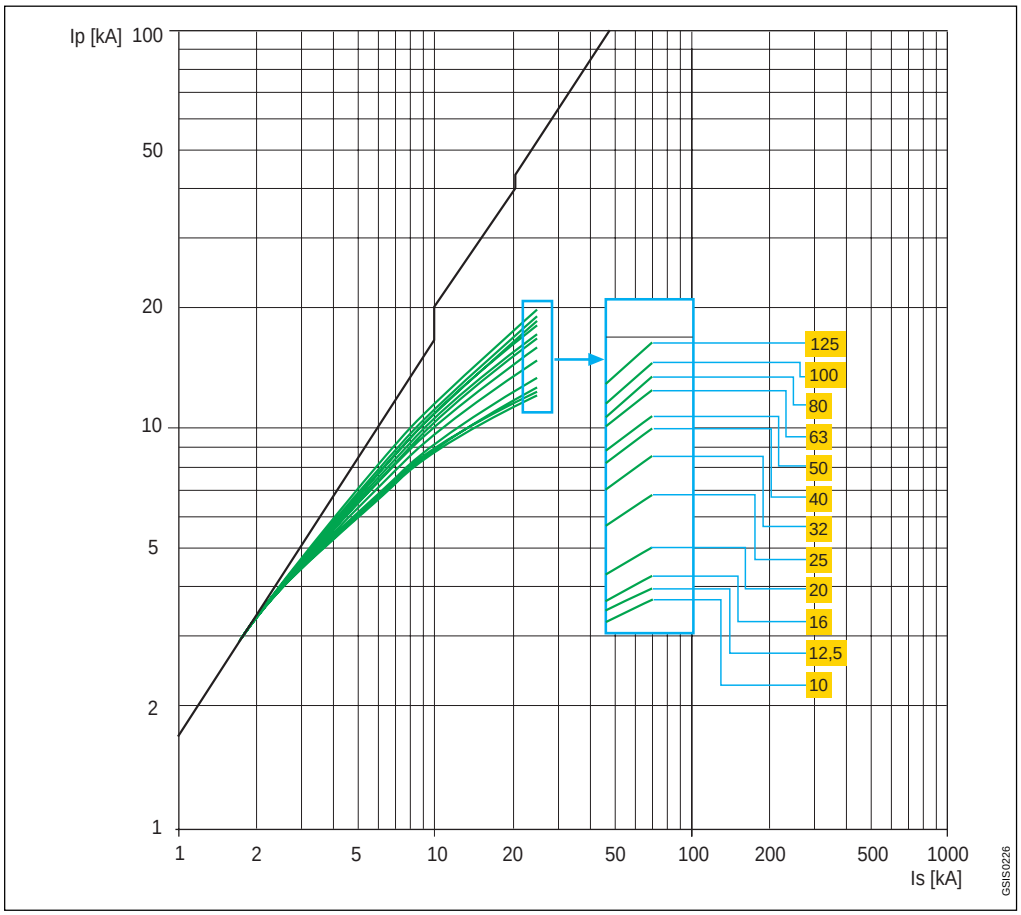


5

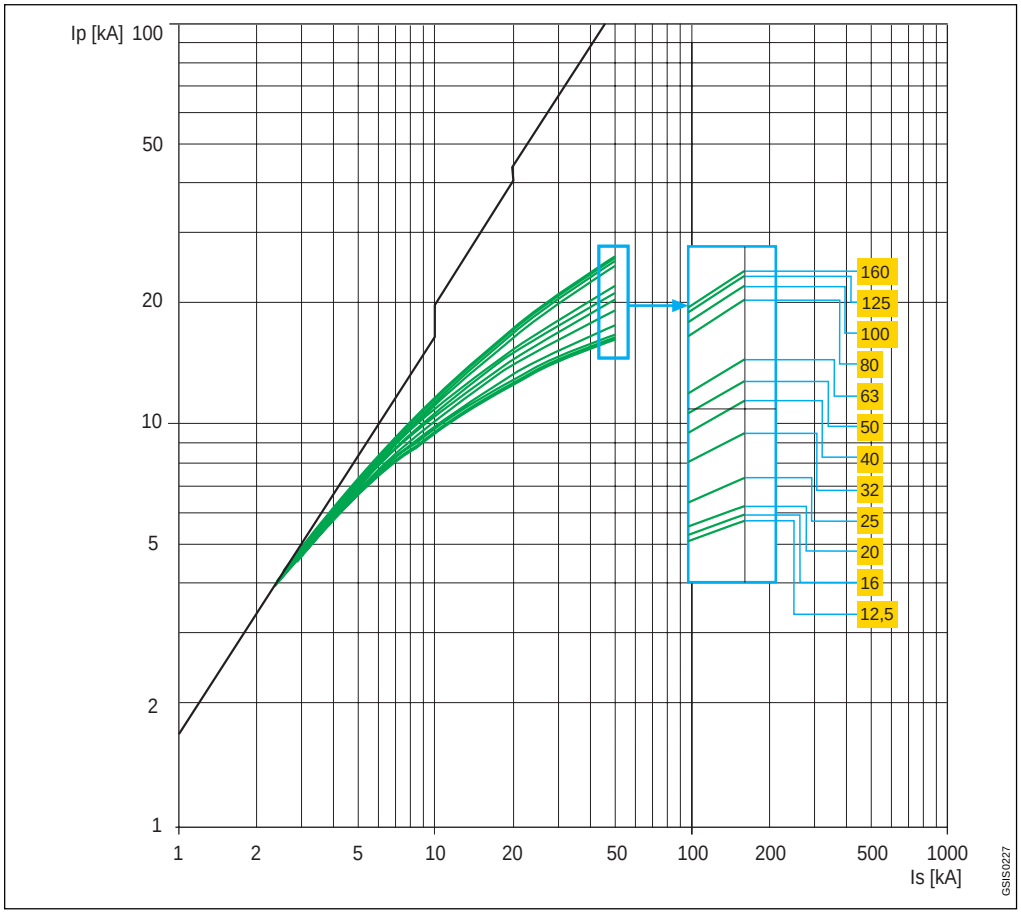
Limitation curves

400-440 V

SACE S1



SACE S2

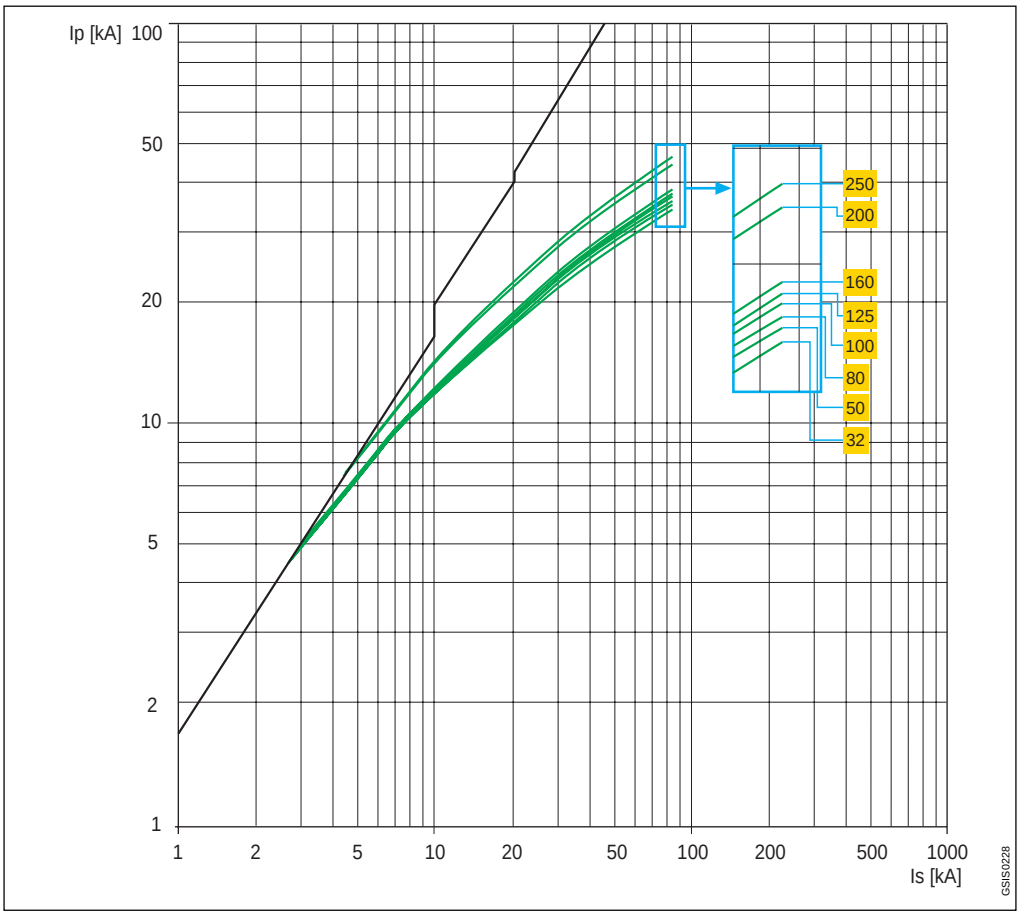


5

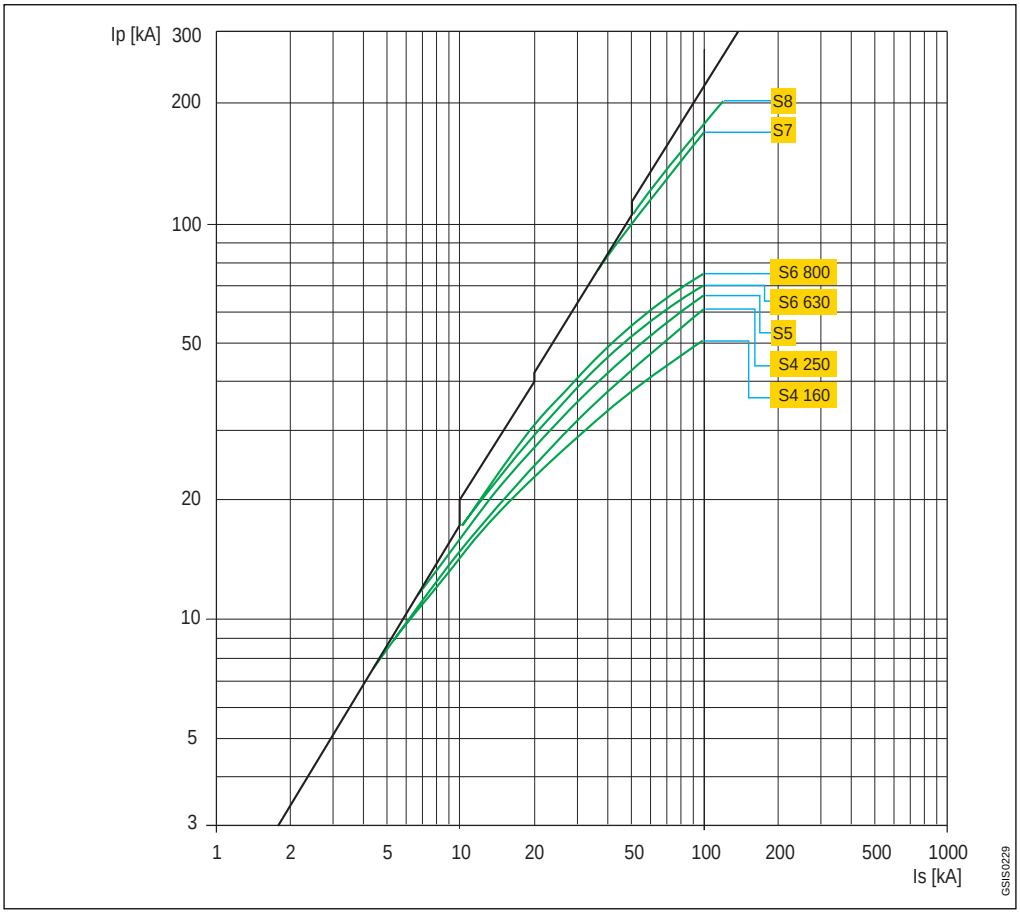
Limitation curves

400-440 V

SACE S3 160, S3 250

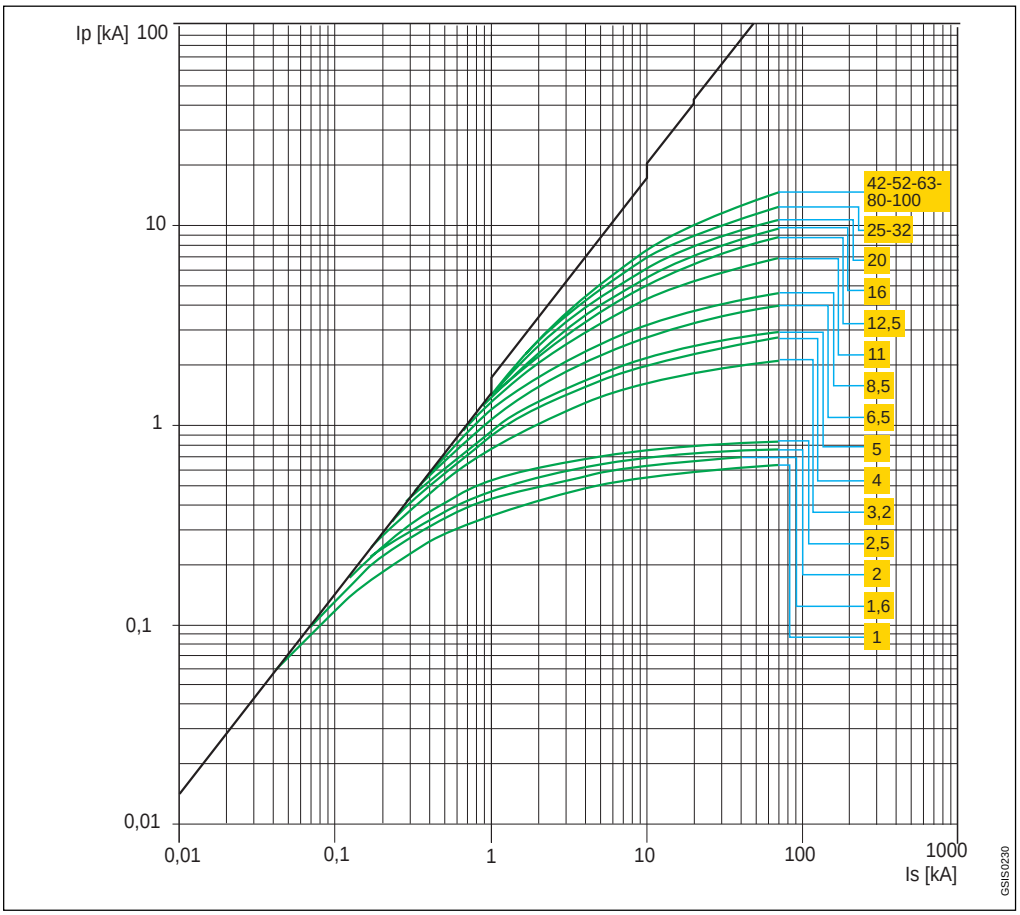


SACE S4 160, S4 250, S5, S6 630, S6 800, S7, S8

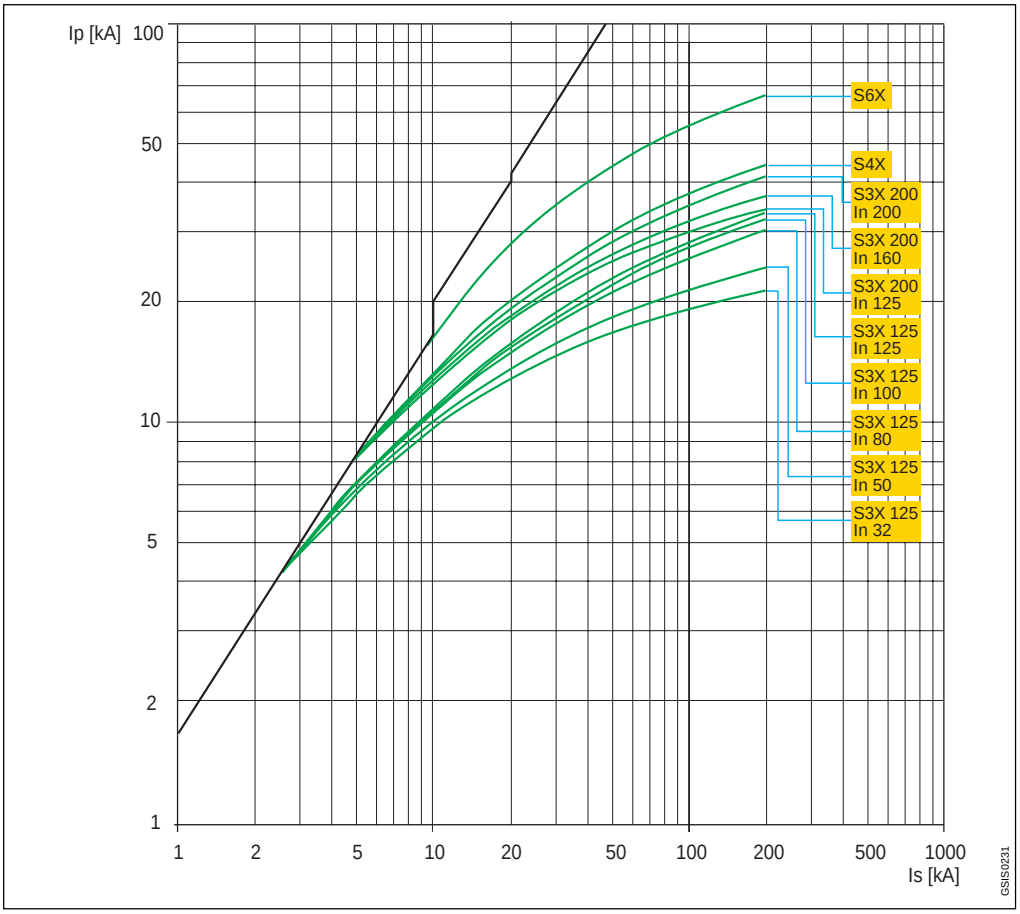


5

SACE S2X 80, S2X 100



SACE S3X 125, S3X 200, S4X, S6X

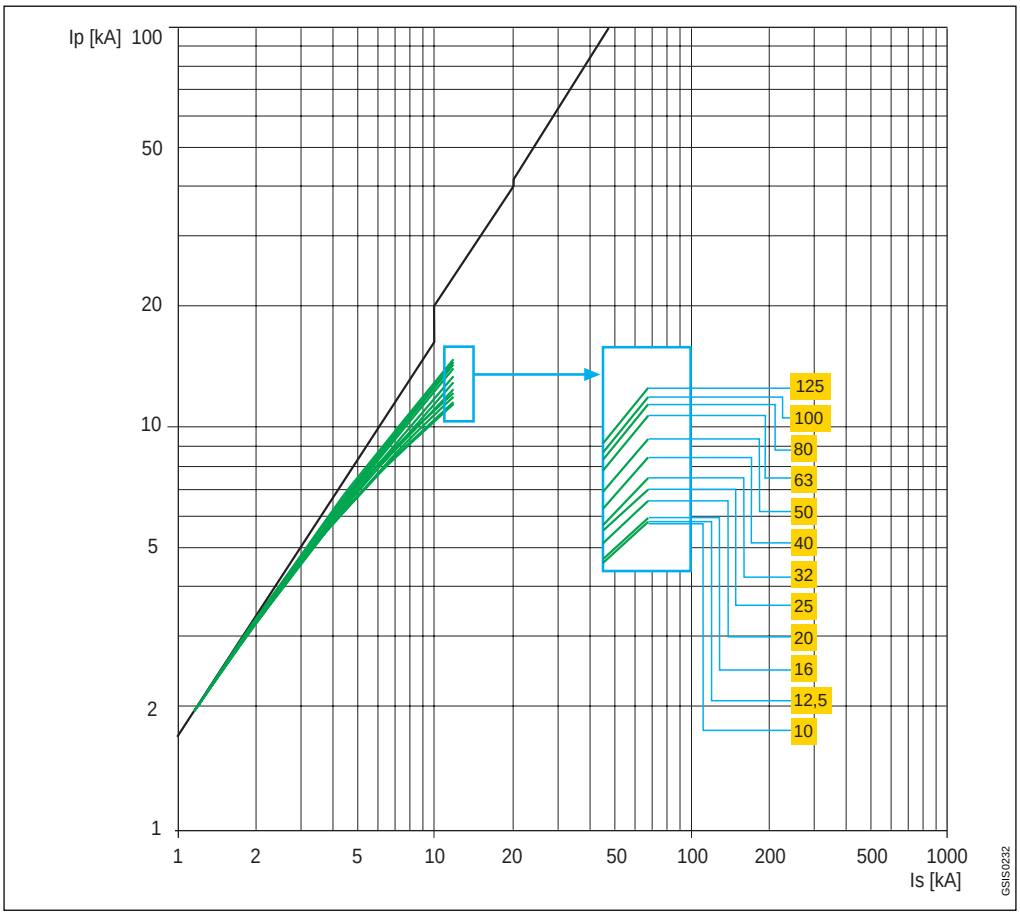


5

Limitation curves

500 V

SACE S1

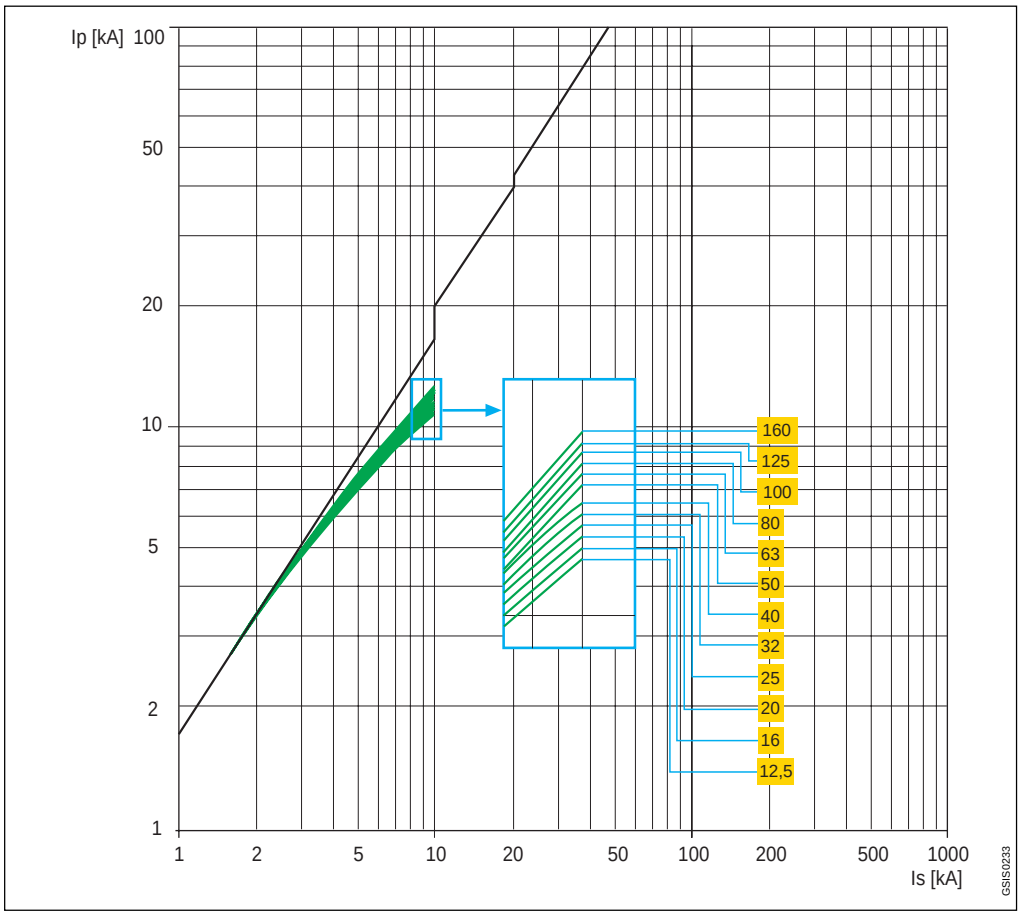


5

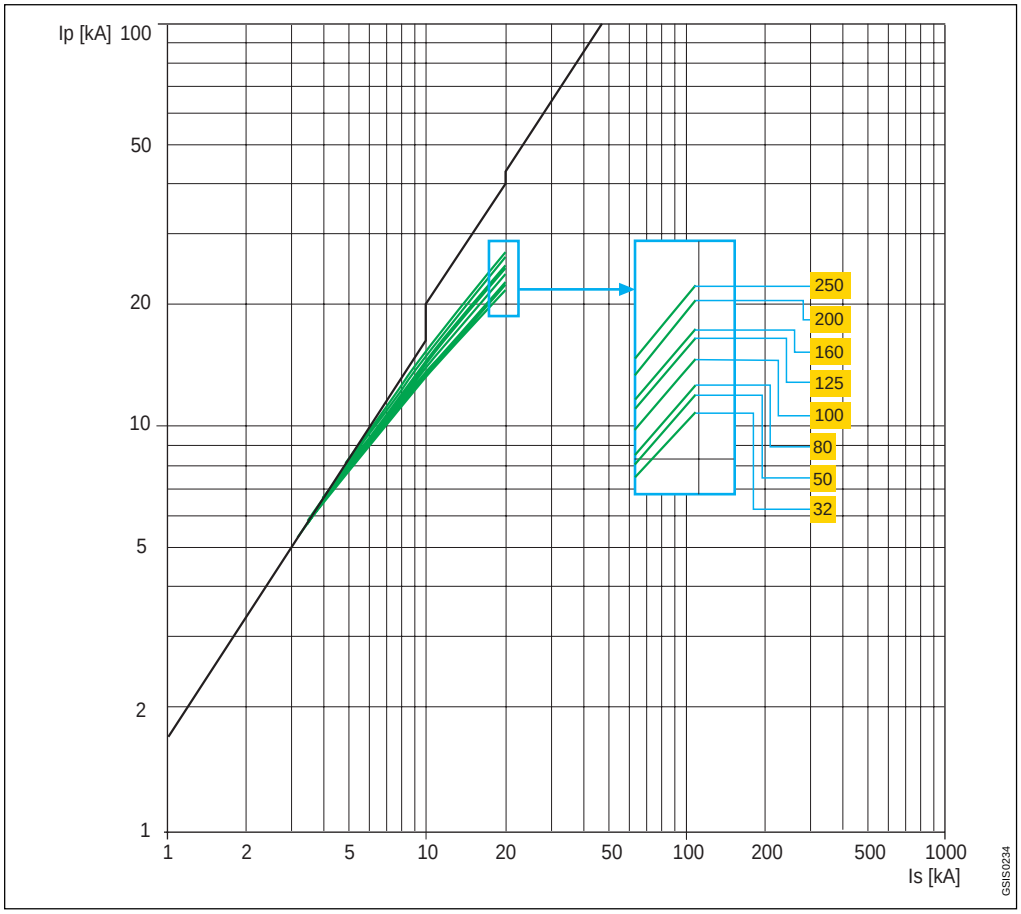
Limitation curves

690 V

SACE S2



SACE S3 160, S3 250

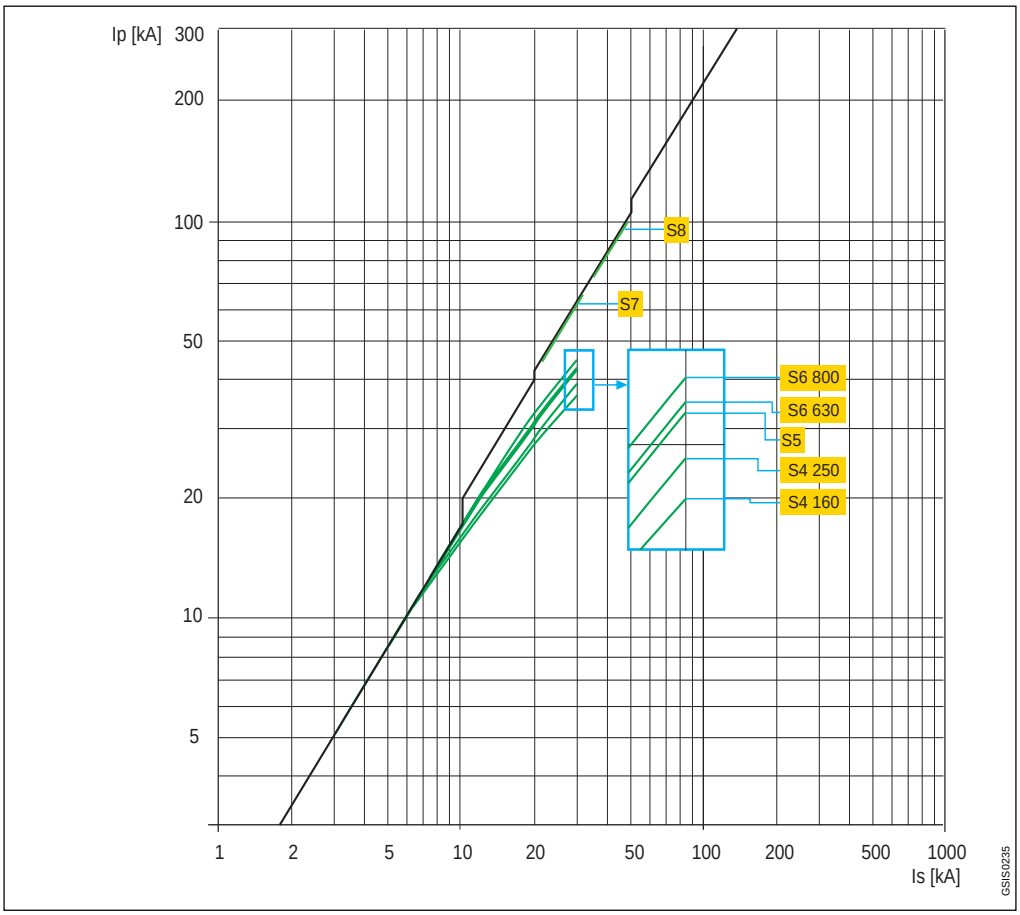


5

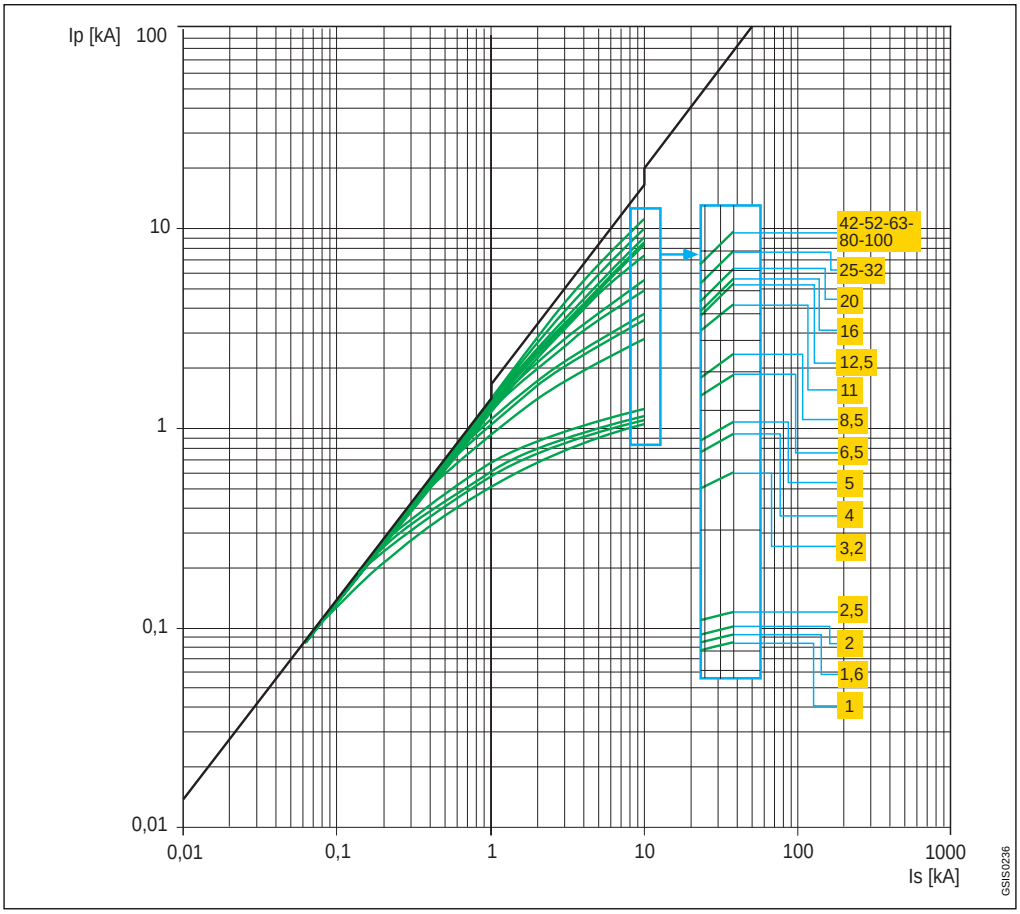
Limitation curves

690 V

SACE S4 160, S4 250, S5, S6 630, S6 800, S7, S8

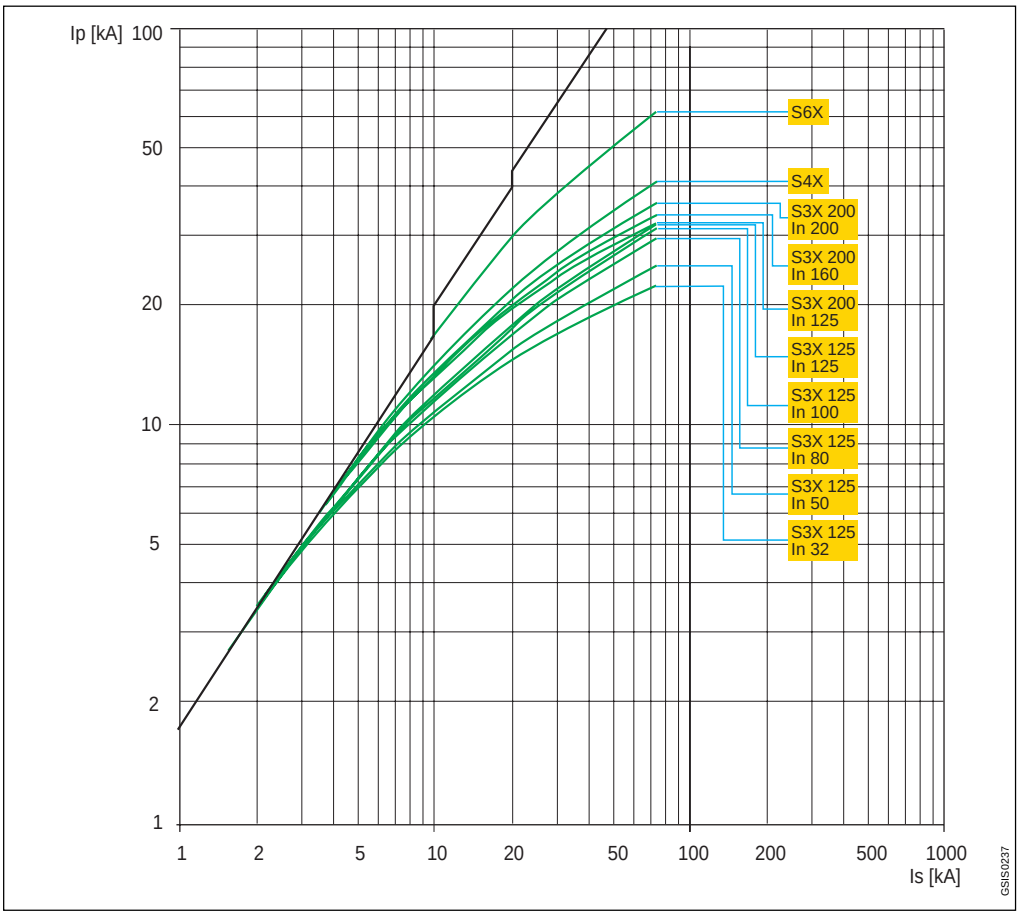


SACE S2X 80, S2X 100



5

SACE S3X 125, S3X 200, S4X, S6X

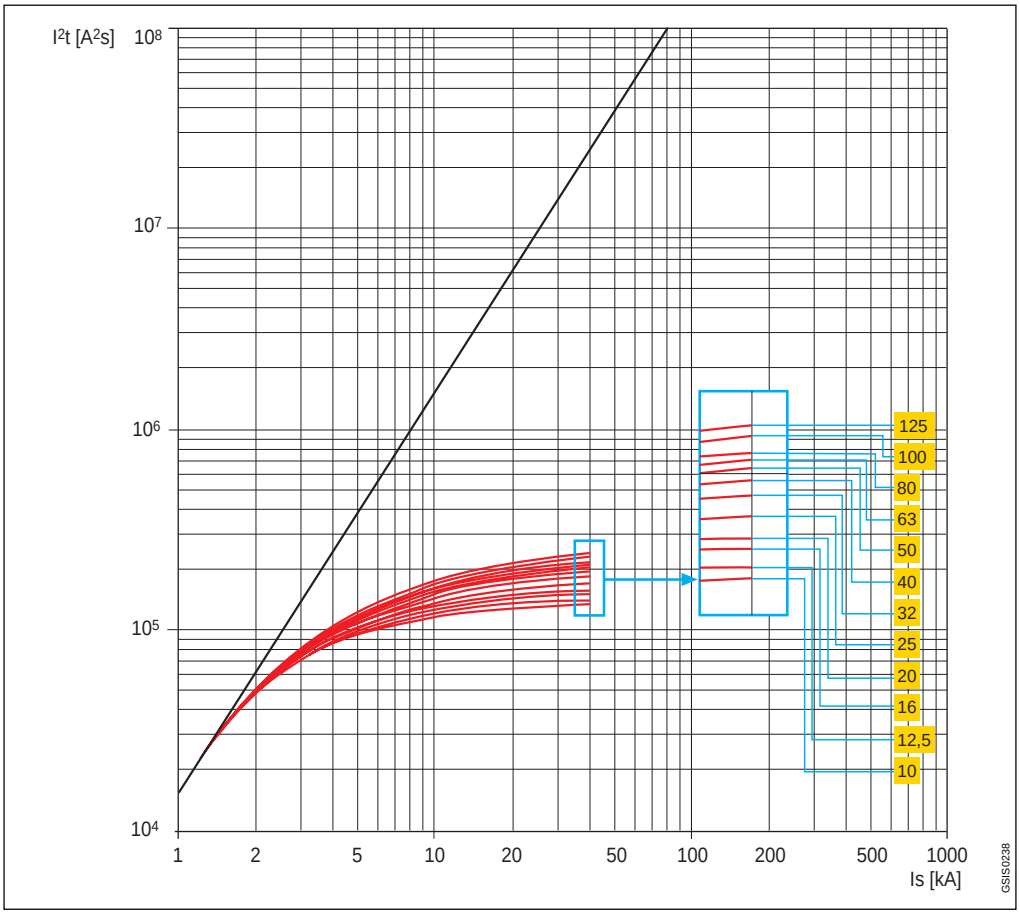


5

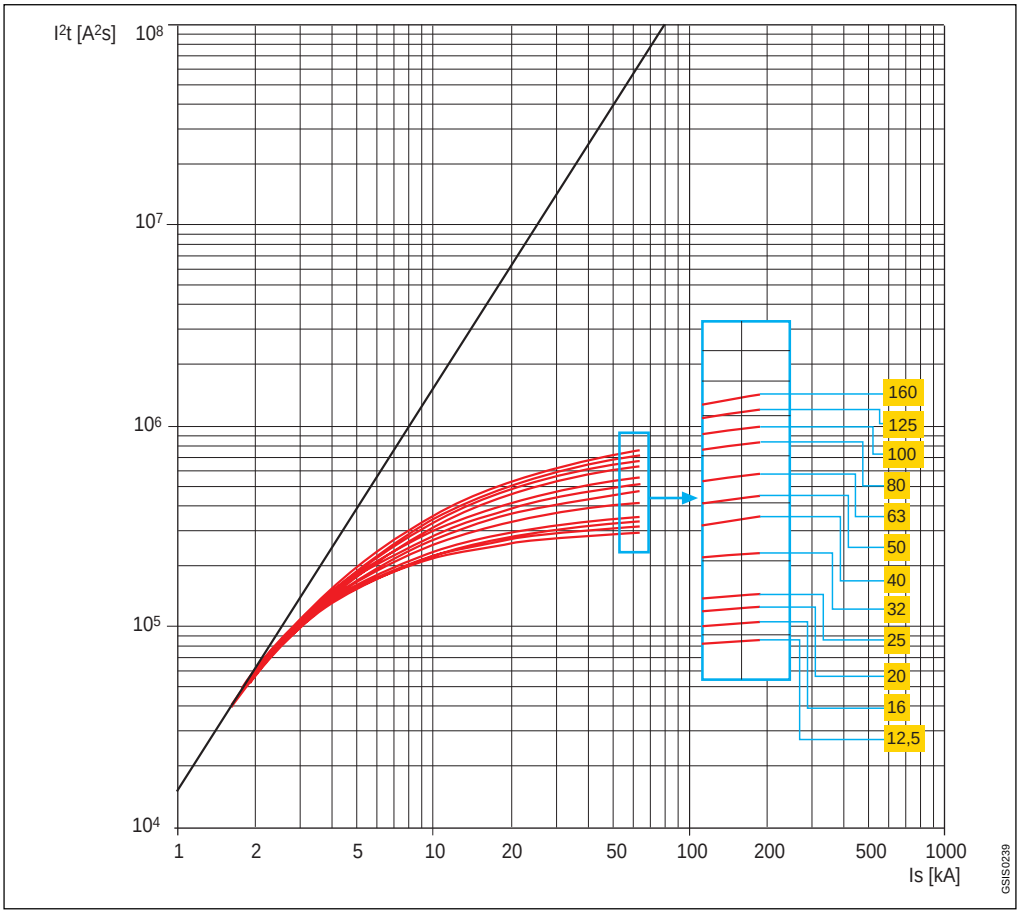
Specific let-through energy curves

230 V

SACE S1

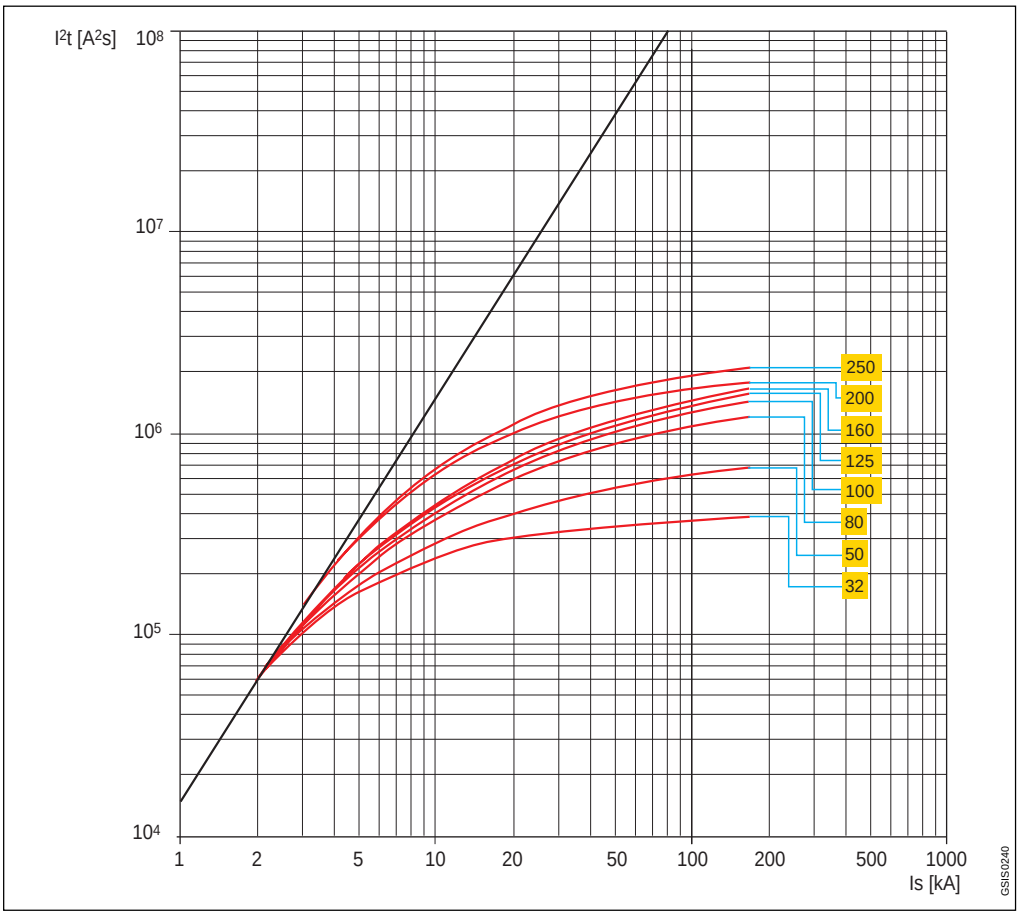


SACE S2

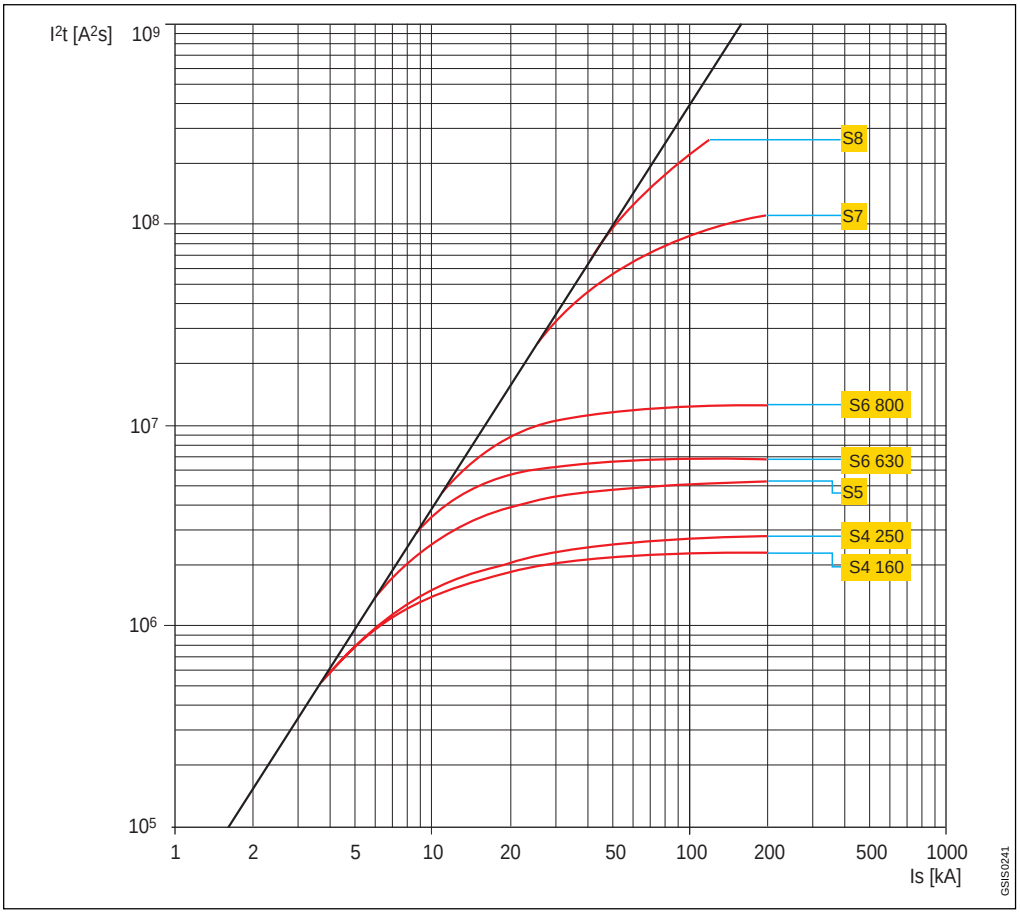


5

SACE S3 160, S3 250



SACE S4 160, S4 250, S5, S6 630, S6 800, S7, S8

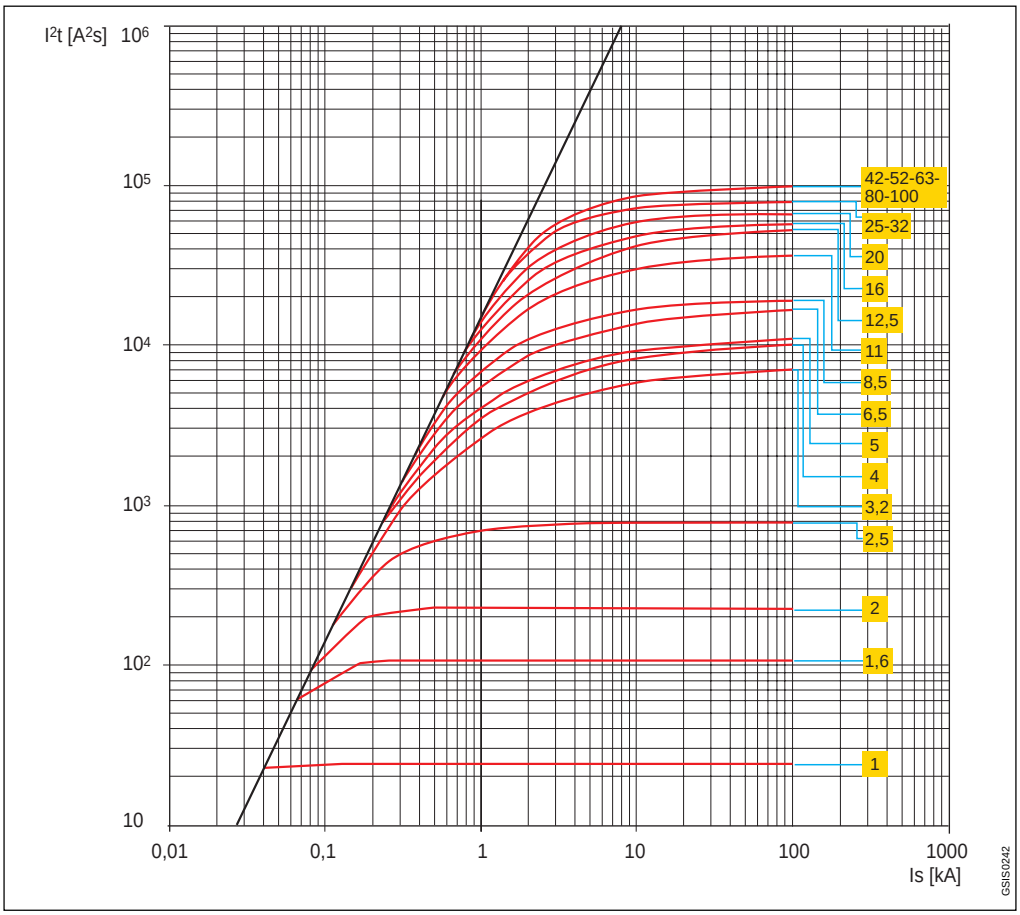


5

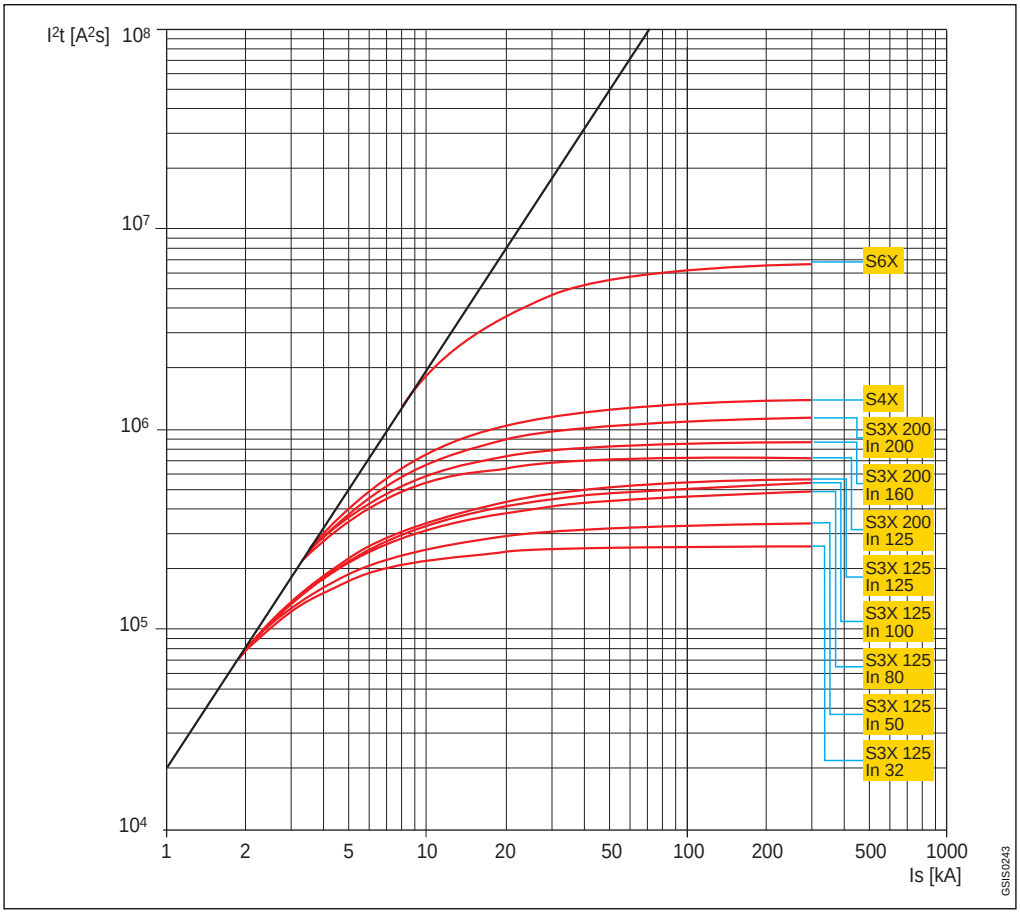
Specific let-through energy curves

230 V

SACE S2X 80, S2X 100



SACE S3X 125, S3X 200, S4X, S6X

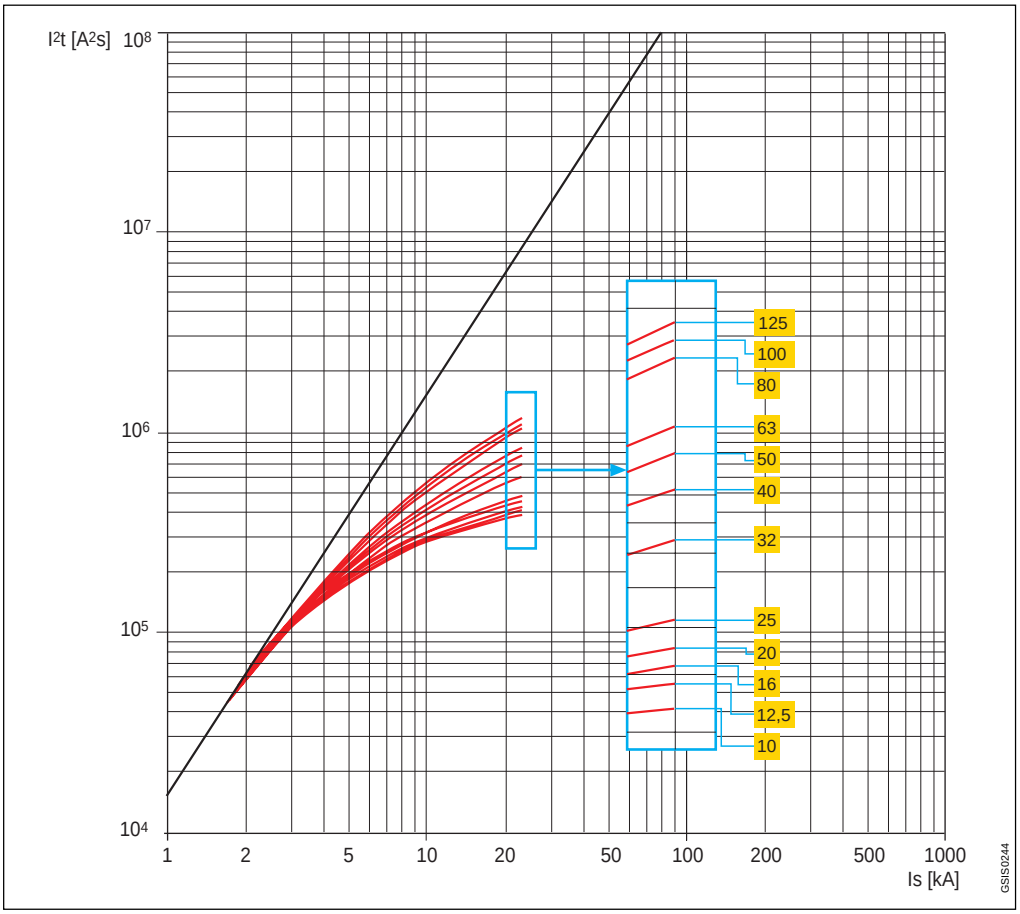


5

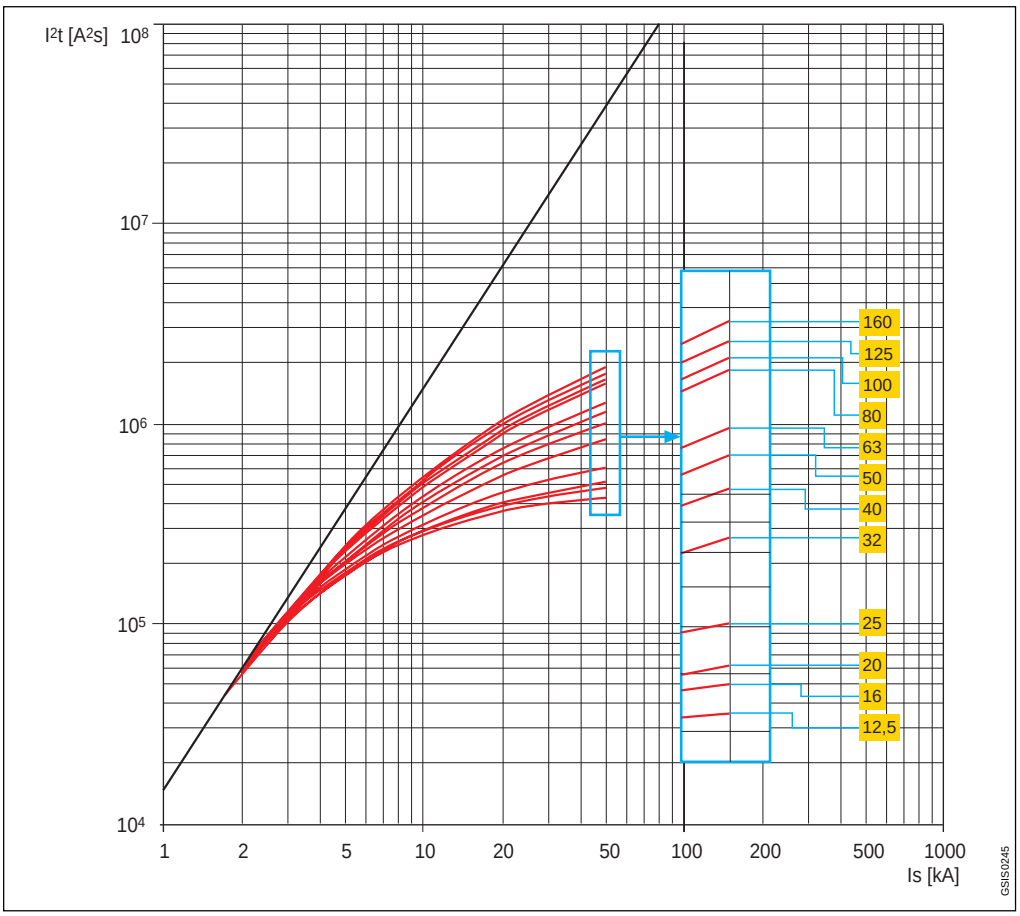
Specific let-through energy curves

400-440 V

SACE S1



SACE S2

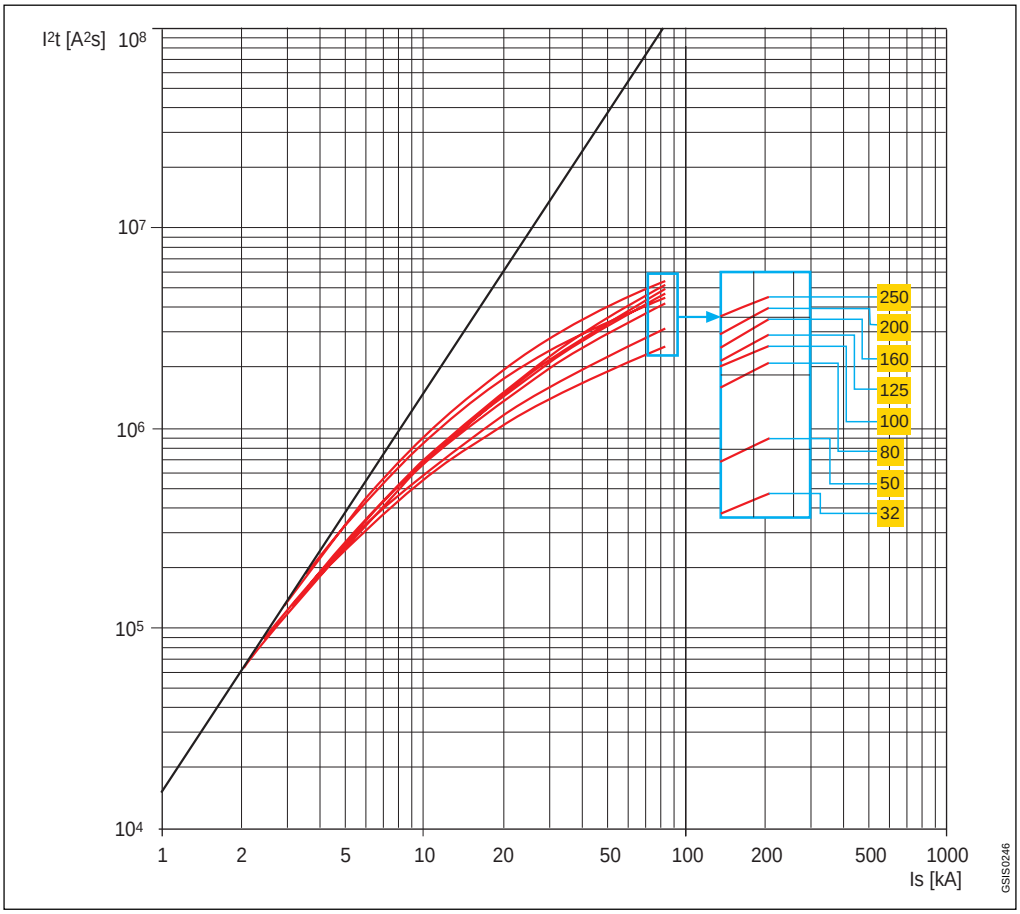


5

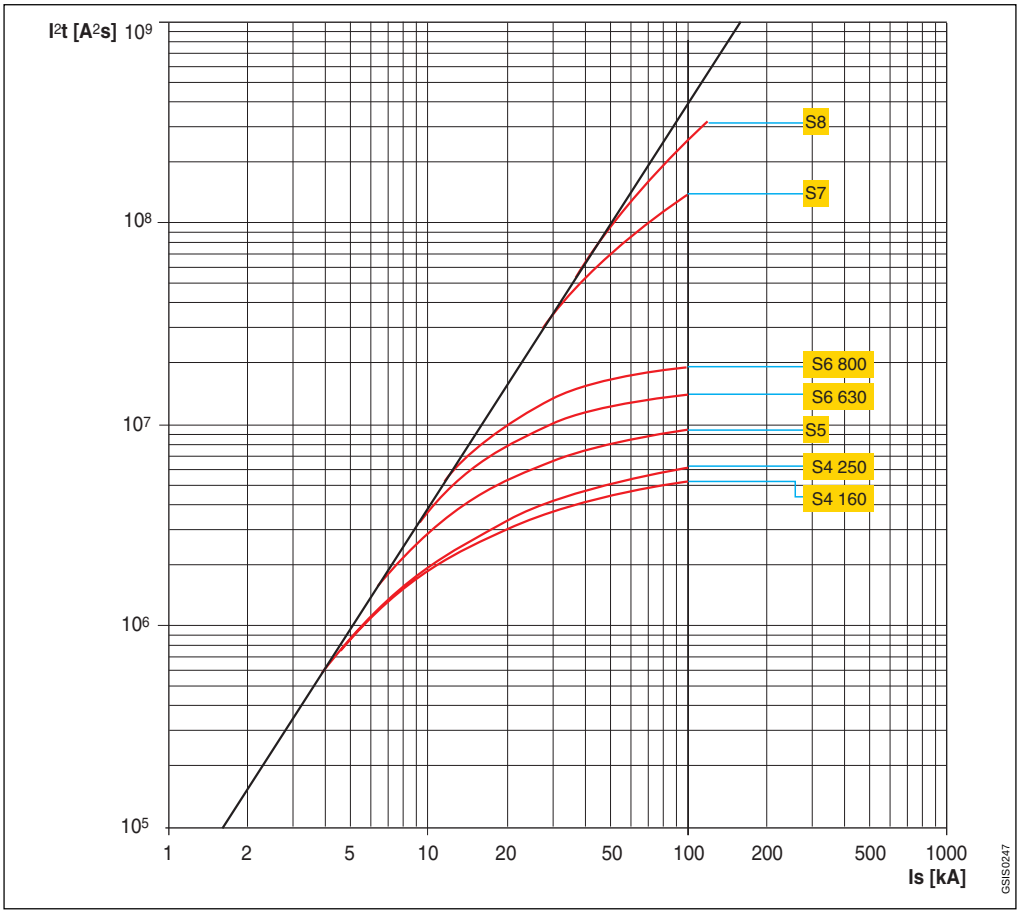
Specific let-through energy curves

400-440 V

SACE S3 160, S3 250

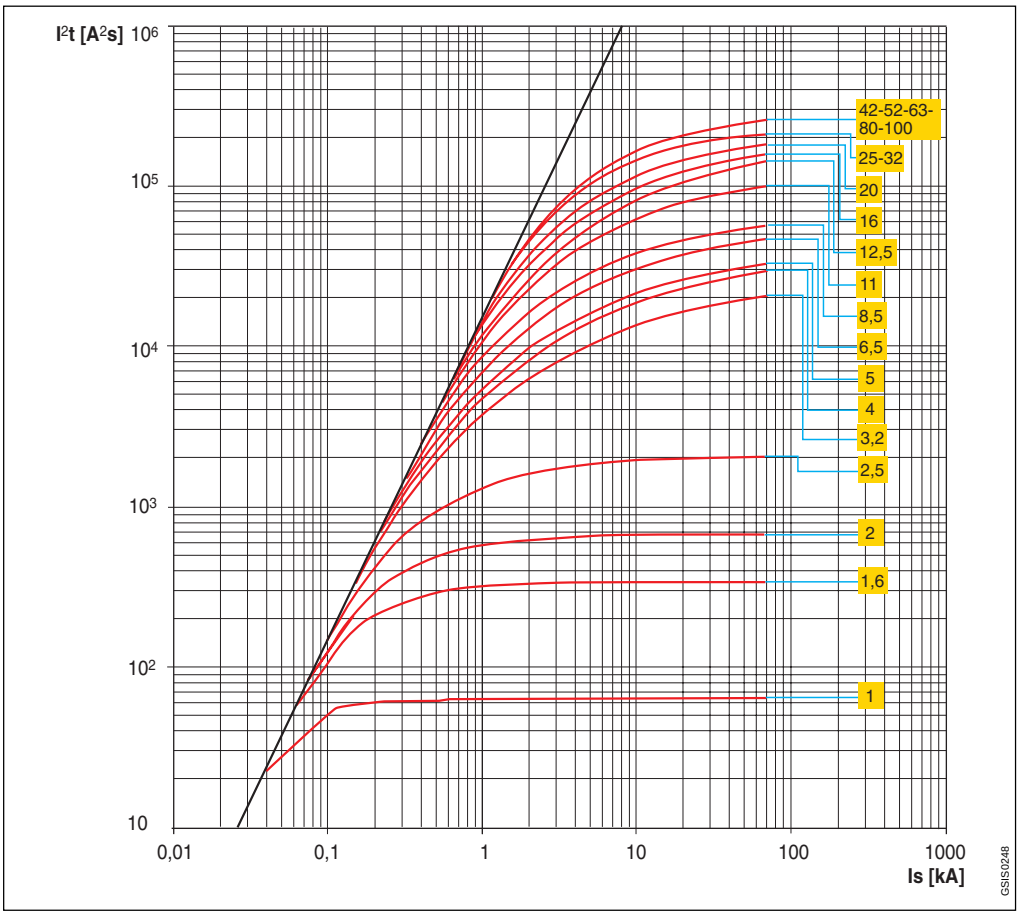


SACE S4 160, S4 250, S5, S6 630, S6 800, S7, S8

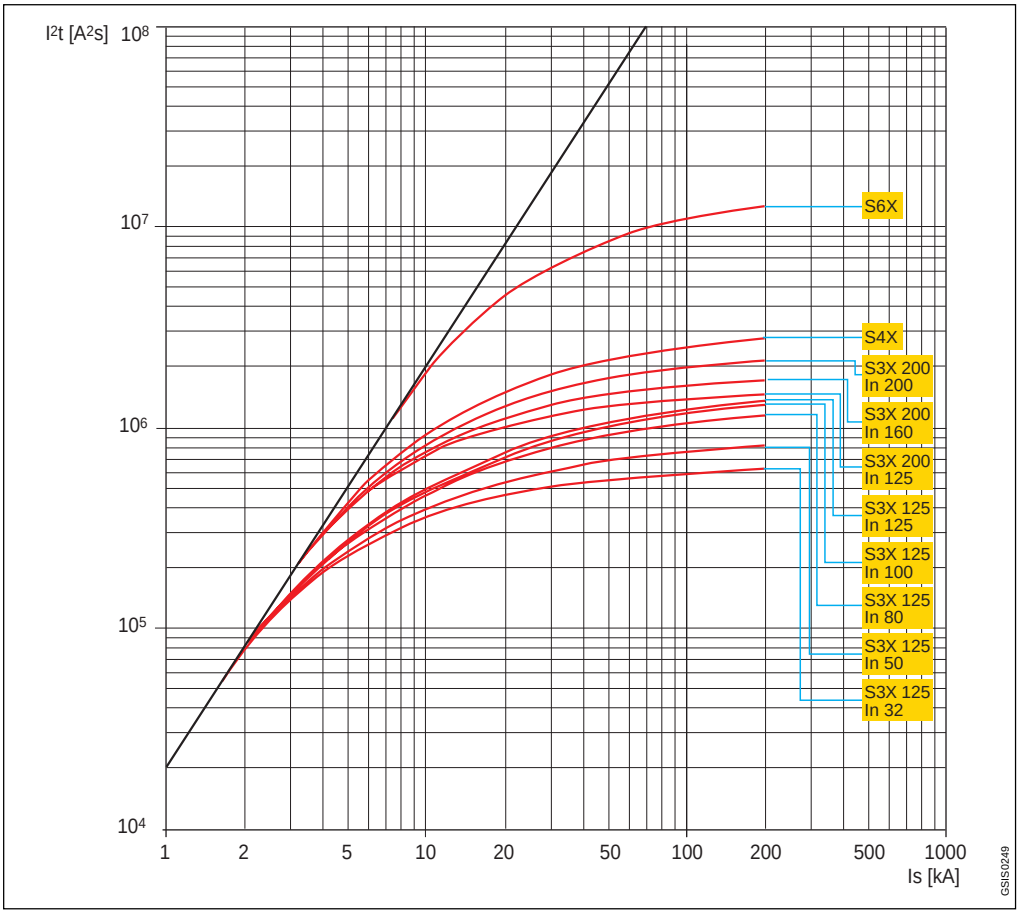


5

SACE S2X 80, S2X 100



SACE S3X 125, S3X 200, S4X, S6X

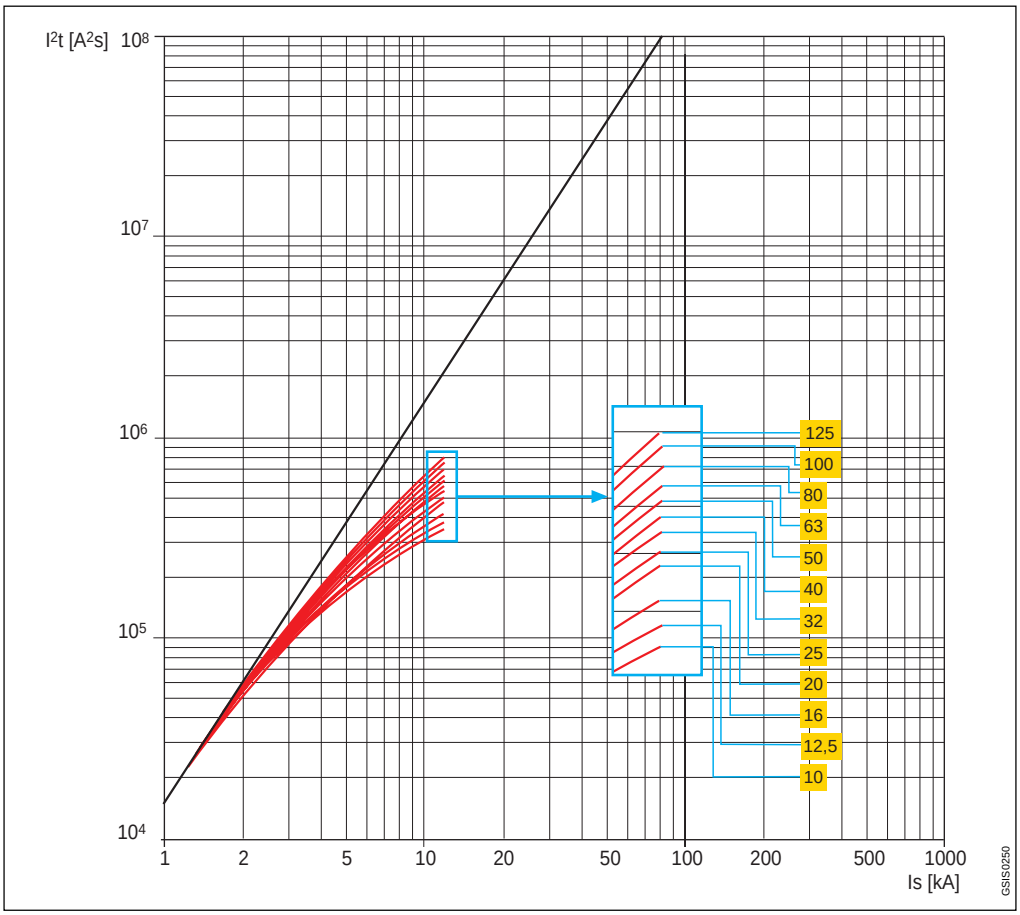


5

Specific let-through energy curves

500 V

SACE S1

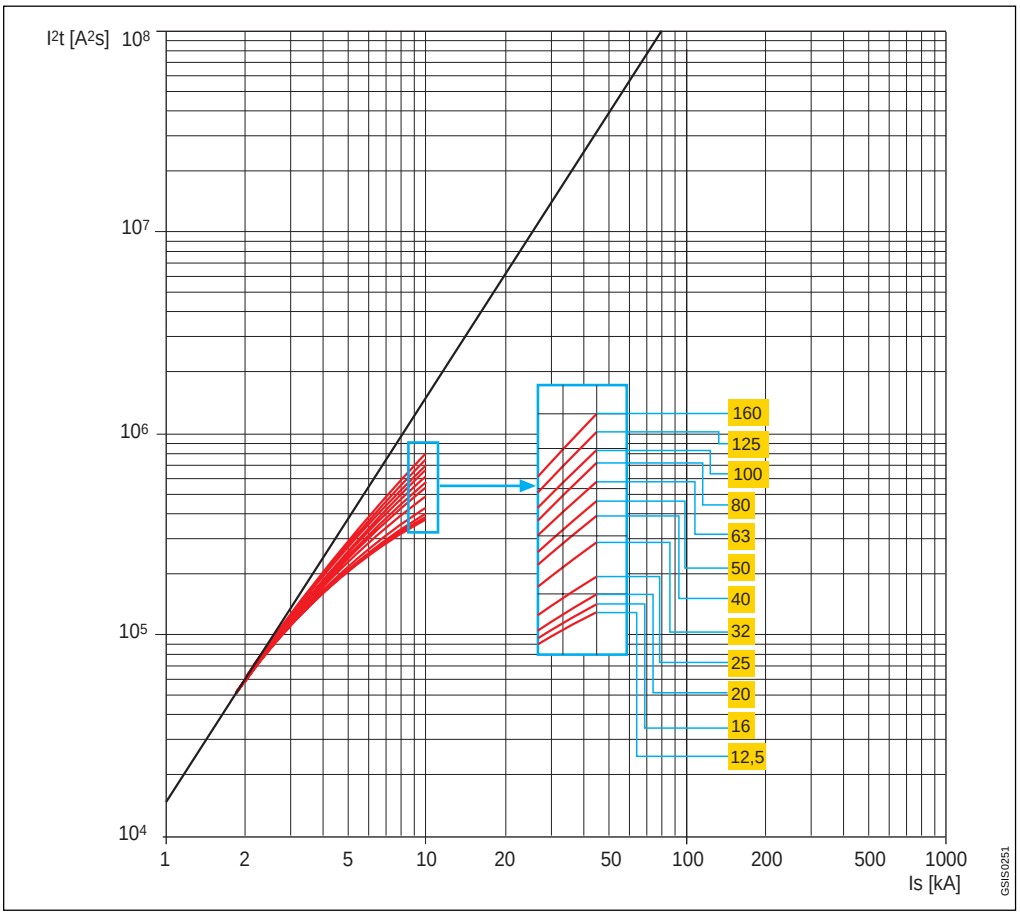


5

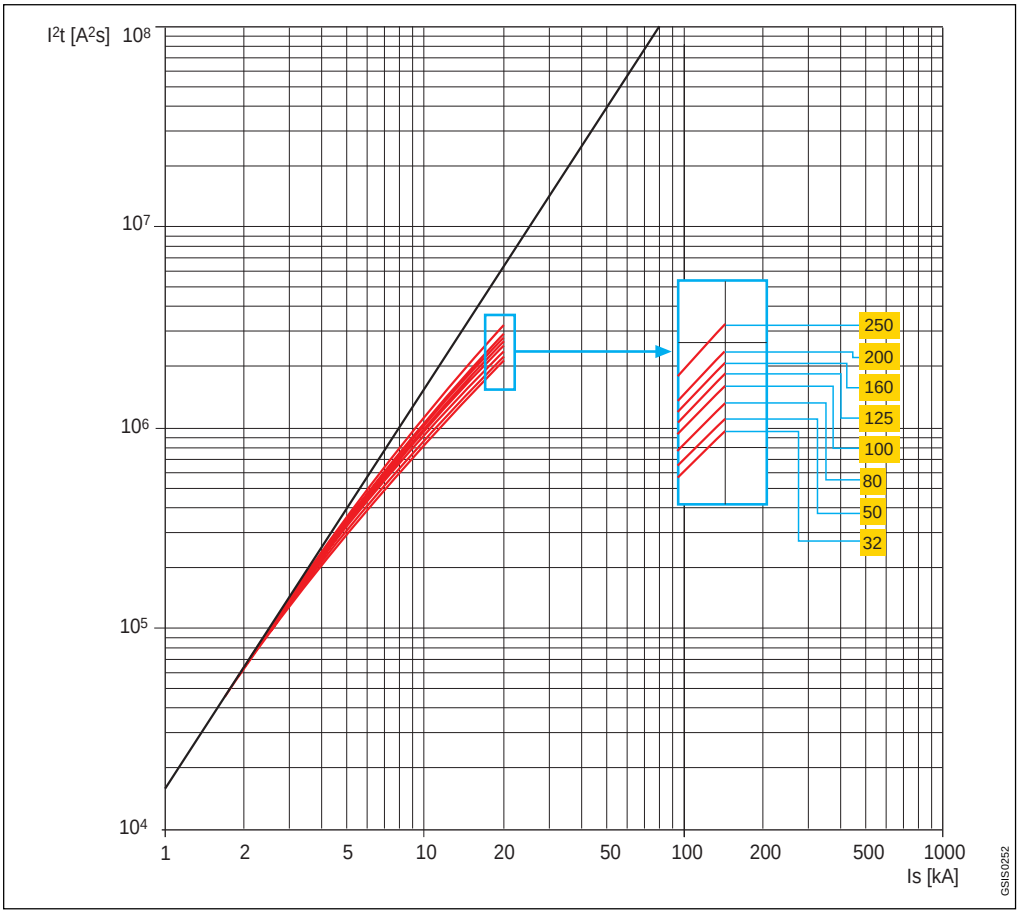
Specific let-through energy curves

690 V

SACE S2



SACE S3 160, S3 250

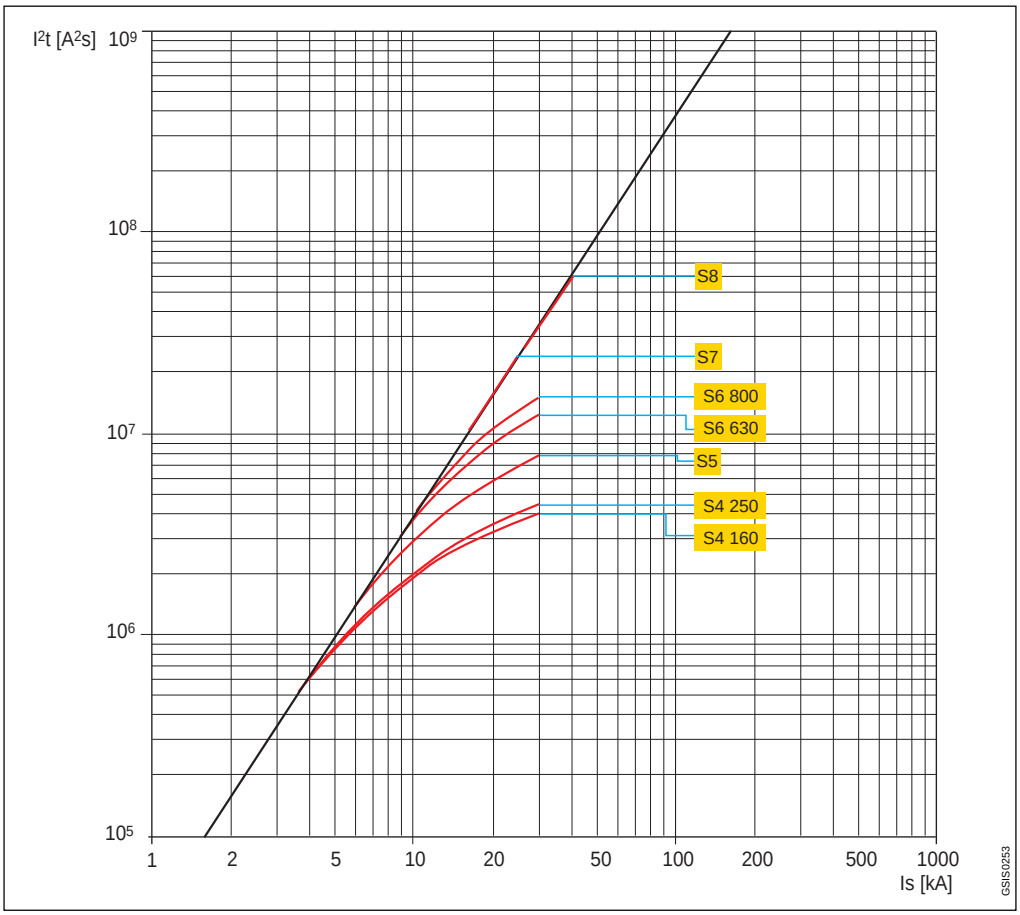


5

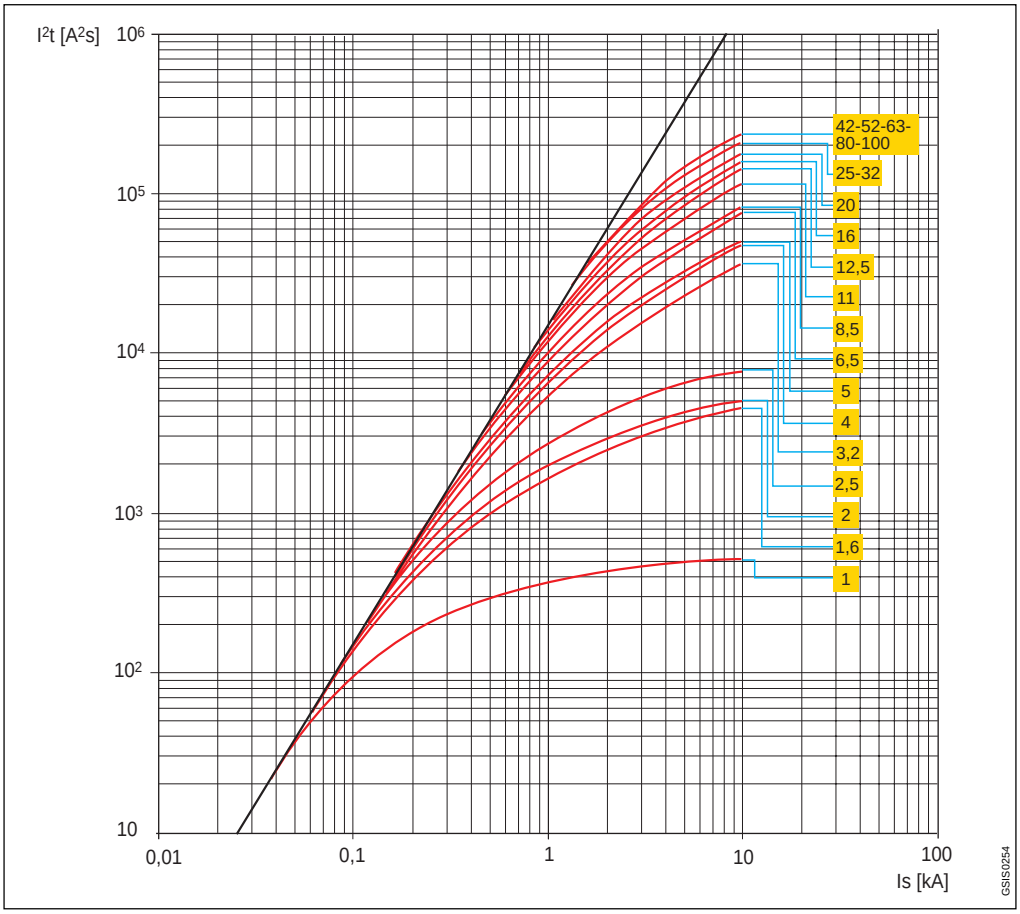
Specific let-through energy curves

690 V

SACE S4 160, S4 250, S5, S6 630, S6 800, S7, S8

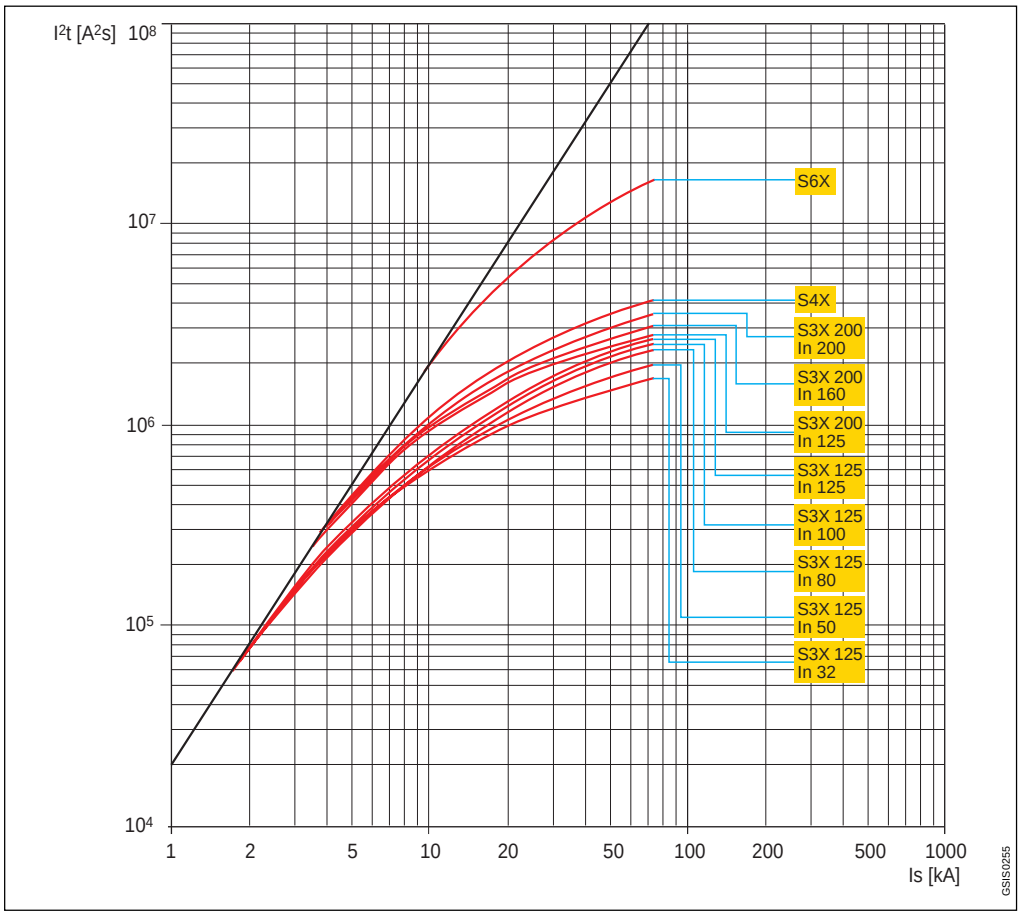


SACE S2X 80, S2X 100



5

SACE S3X 125, S3X 200, S4X, S6X



5

Temperature performance

Circuit-breakers with electronic releases

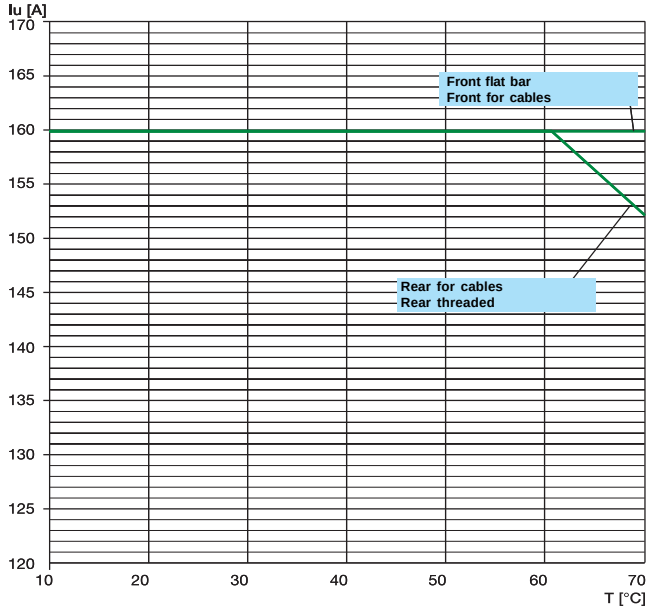
SACE S4 160

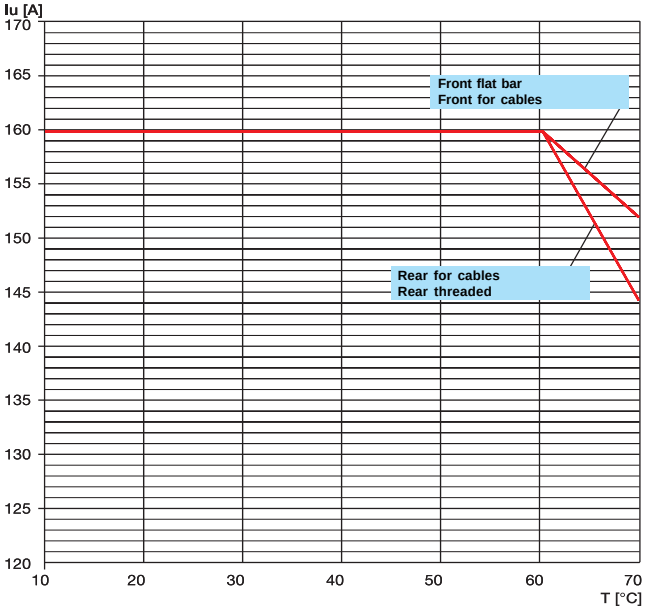
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**160**	1	160	1	160	1	160	1
Front for cables	**160**	1	160	1	160	1	160	1
Rear for cables	**160**	1	160	1	160	1	152	0.95
Rear threaded	**160**	1	160	1	160	1	152	0.95

Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**160**	1	160	1	160	1	152	0.95
Front for cables	**160**	1	160	1	160	1	152	0.95
Rear for cables	**160**	1	160	1	160	1	144	0.9
Rear threaded	**160**	1	160	1	160	1	144	0.9





GSIS0256

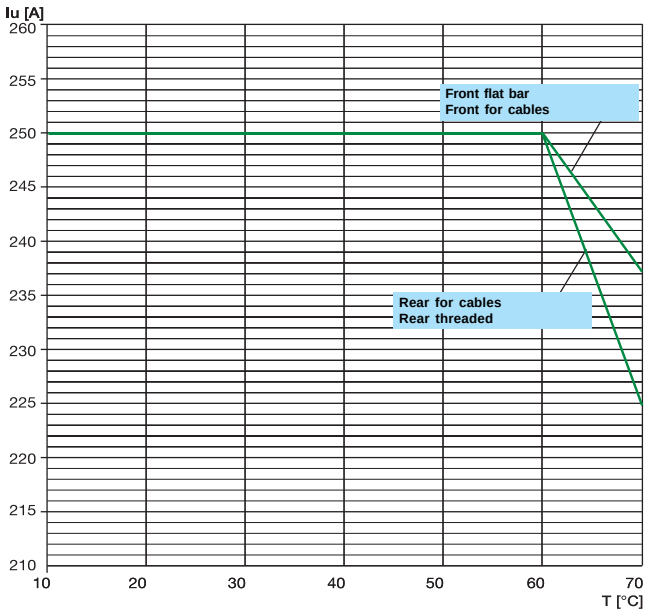
SACE S4 250

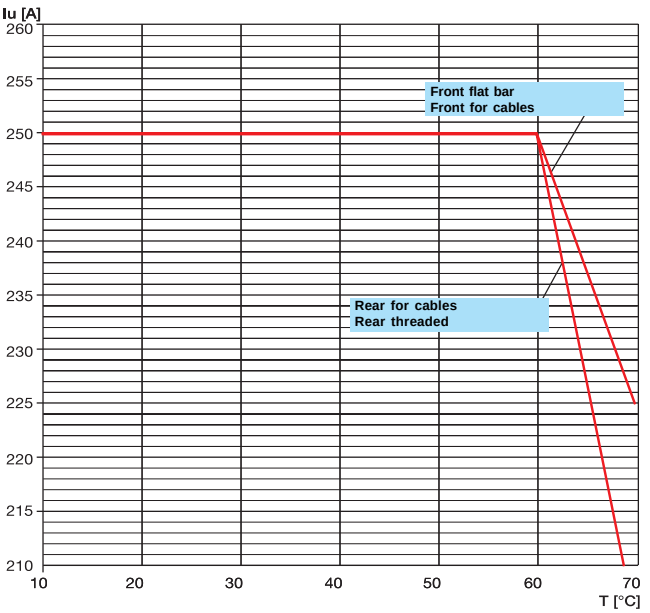
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**250**	1	250	1	250	1	237.5	0.95
Front for cables	**250**	1	250	1	250	1	237.5	0.95
Rear for cables	**250**	1	250	1	250	1	225	0.9
Rear threaded	**250**	1	250	1	250	1	225	0.9

Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**250**	1	250	1	250	1	225	0.9
Front for cables	**250**	1	250	1	250	1	225	0.9
Rear for cables	**250**	1	250	1	250	1	200	0.8
Rear threaded	**250**	1	250	1	250	1	200	0.8



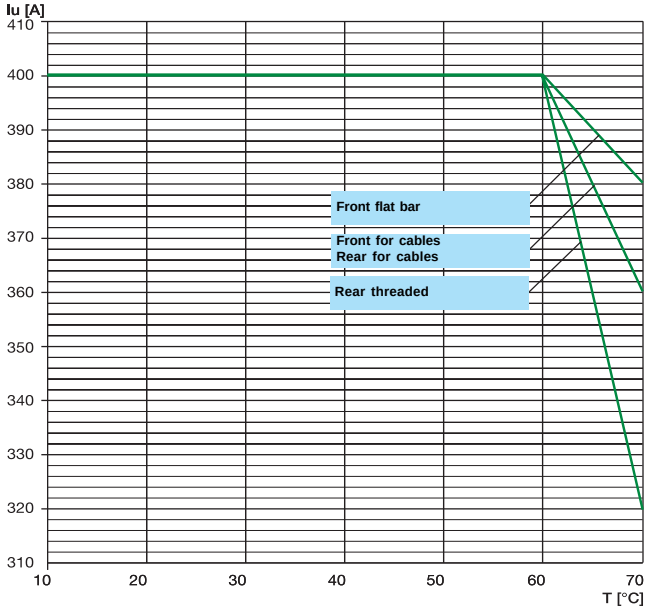


GSIS0257

SACE S5 400

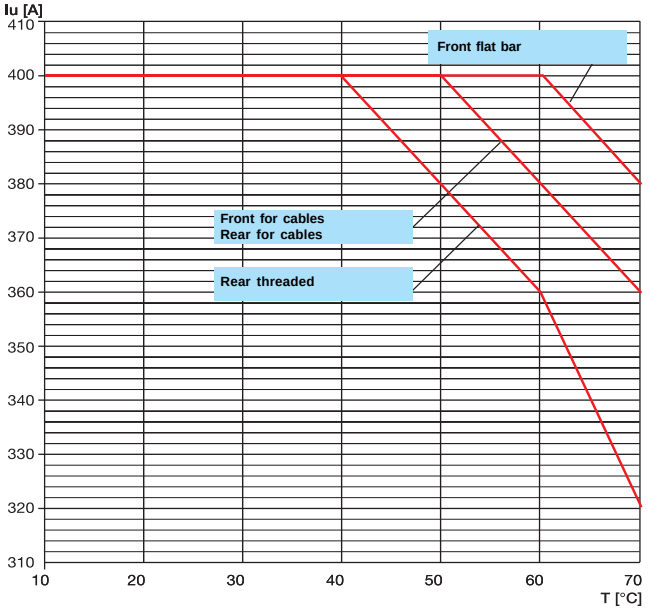
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**400**	1	400	1	400	1	380	0.95
Front for cables	**400**	1	400	1	400	1	380	0.9
Rear for cables	**400**	1	400	1	400	1	360	0.9
Rear threaded	**400**	1	400	1	400	1	320	0.8



Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**400**	1	400	1	400	1	380	0.95
Front for cables	**400**	1	400	1	380	0.95	360	0.9
Rear for cables	**400**	1	400	1	380	0.95	360	0.9
Rear threaded	**400**	1	380	0.95	360	0.9	320	0.8

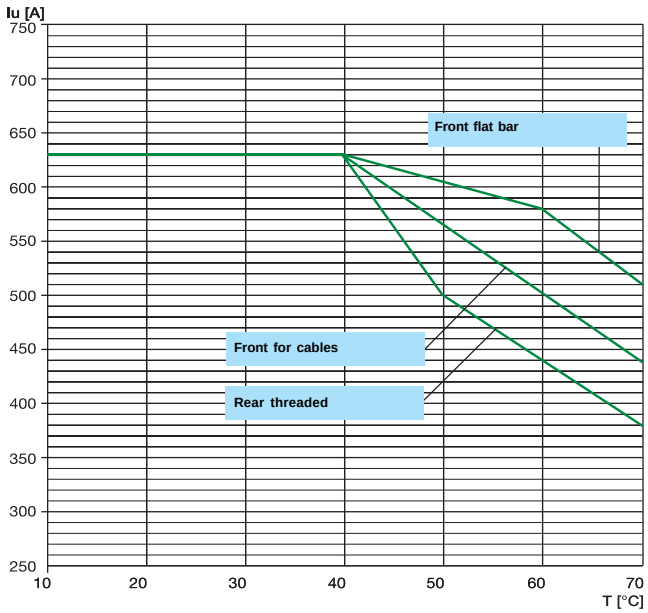


GSIS0258

SACE S5 630

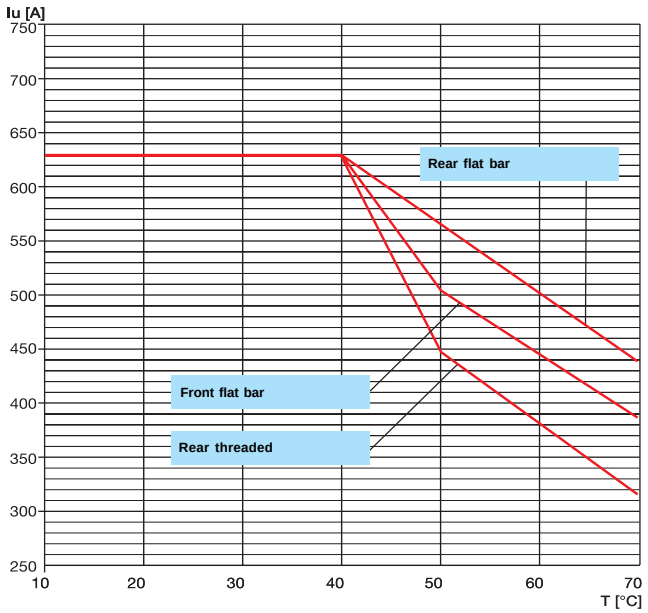
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**630**	1	598.5	0.95	567	0.9	504	0.8
Front for cables	**630**	1	567	0.9	504	0.8	441	0.7
Rear threaded	**630**	1	504	0.8	441	0.7	378	0.6



Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**630**	1	504	0.8	441	0.7	378	0.6
Rear flat bar	**630**	1	567	0.9	504	0.8	441	0.7
Rear threaded	**630**	1	441	0.7	378	0.6	315	0.5



GSIS0259

5

Temperature performance

Circuit-breakers with electronic releases

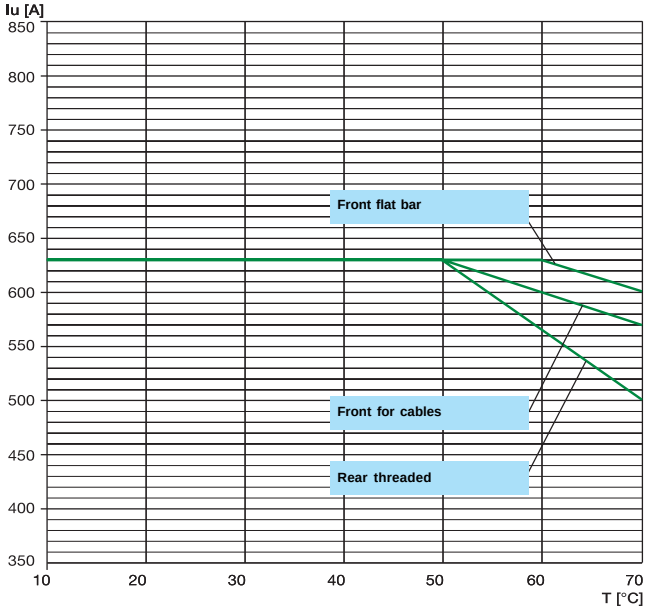
SACE S6 630

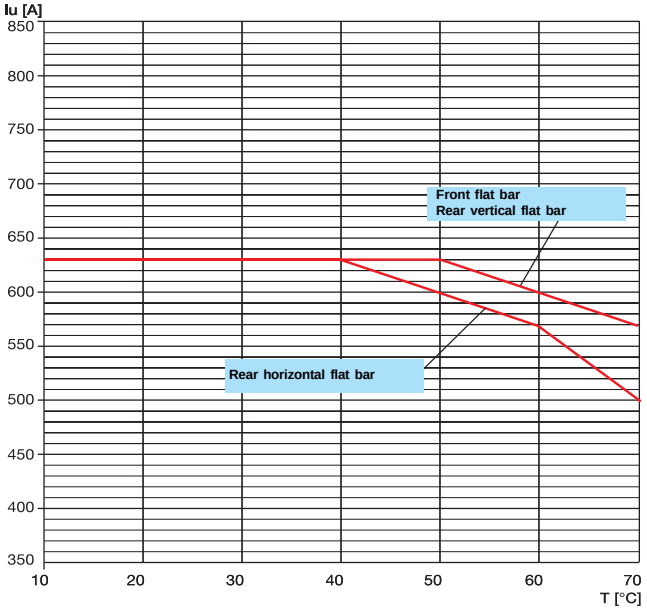
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**630**	1	630	1	630	1	598.5	0.95
Front for cables	**630**	1	630	1	598.5	0.95	567	0.9
Rear for cables	**630**	1	630	1	598.5	0.95	567	0.9
Rear threaded	**630**	1	630	1	567	0.9	504	0.8

Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**630**	1	630	1	598.5	0.95	567	0.9
Rear vertical flat bar	**630**	1	630	1	598.5	0.95	567	0.9
Rear horizontal flat bar	**630**	1	598.5	0.95	567	0.9	504	0.8





GSIS0260

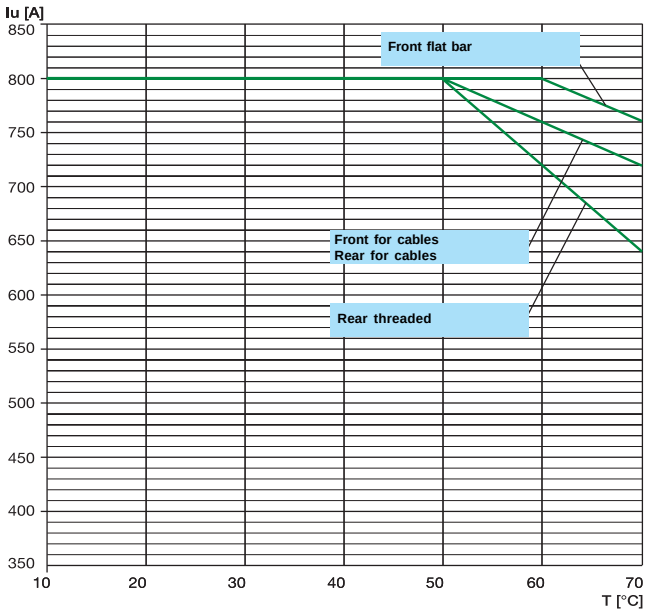
SACE S6 800

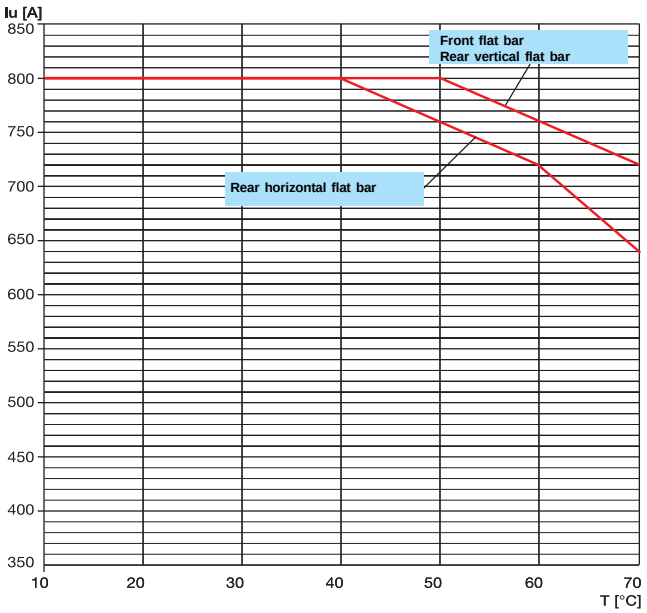
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**800**	1	800	1	800	1	760	0.95
Front for cables	**800**	1	800	1	760	0.95	720	0.9
Rear for cables	**800**	1	800	1	760	0.95	720	0.9
Rear threaded	**800**	1	800	1	720	0.9	640	0.8

Plug-in - Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**800**	1	800	1	760	0.95	720	0.9
Rear vertical flat bar	**800**	1	800	1	760	0.95	720	0.9
Rear horizontal flat bar	**800**	1	760	0.95	720	0.9	640	0.8





GSIS0261

5

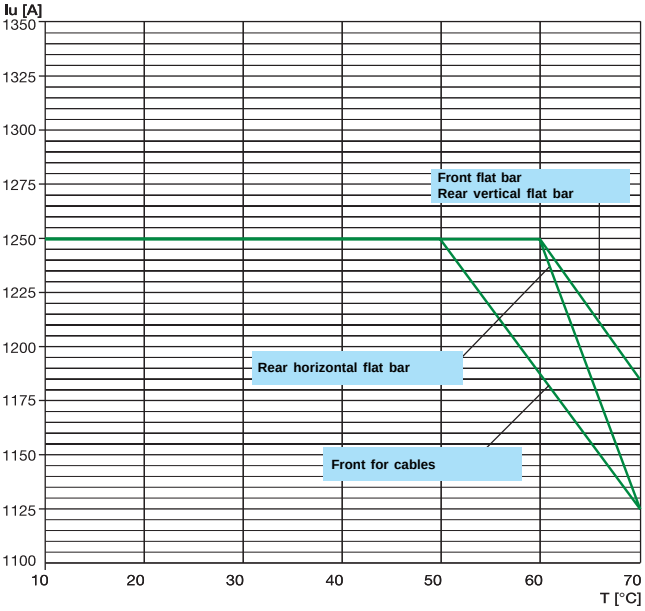
SACE S7 1250

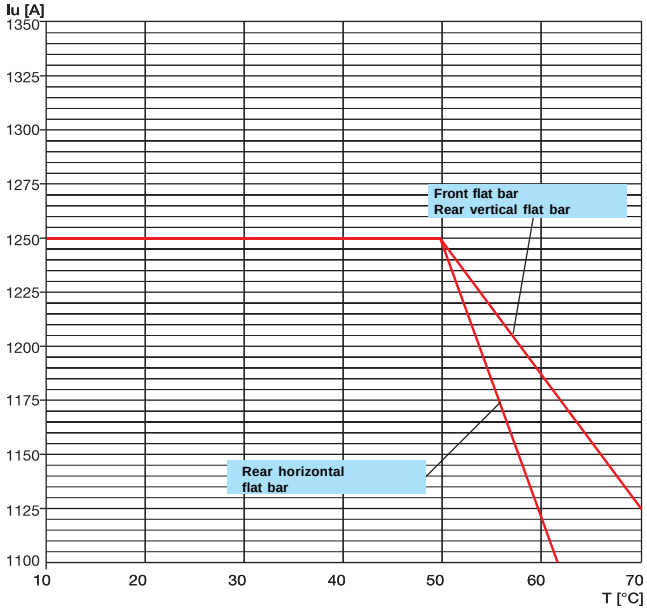
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**1250**	1	1250	1	1250	1	1187.5	0.95
Rear vertical flat bar	**1250**	1	1250	1	1250	1	1187.5	0.95
Front for cables	**1250**	1	1250	1	1187.5	0.95	1125	0.9
Rear horizontal flat bar	**1250**	1	1250	1	1250	1	1125	0.9

Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**1250**	1	1250	1	1187.5	0.95	1125	0.9
Rear vertical flat bar	**1250**	1	1250	1	1187.5	0.95	1125	0.9
Rear horizontal flat bar	**1250**	1	1250	1	1125	0.9	1000	0.8





GSIS0262

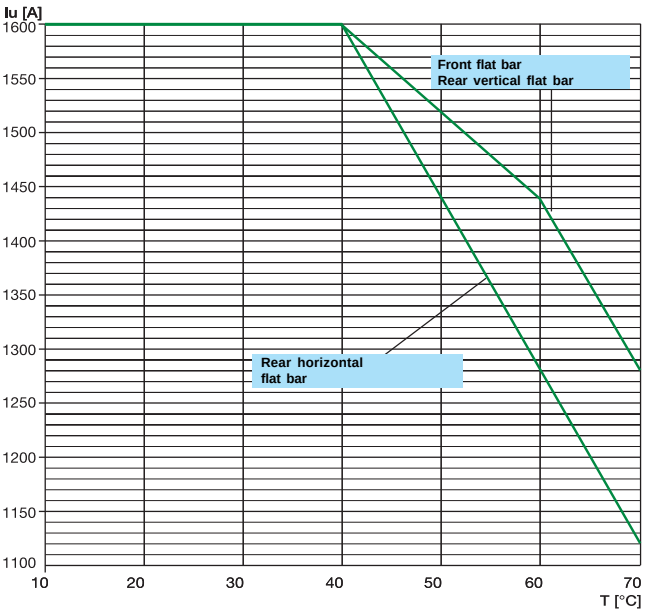
SACE S7 1600

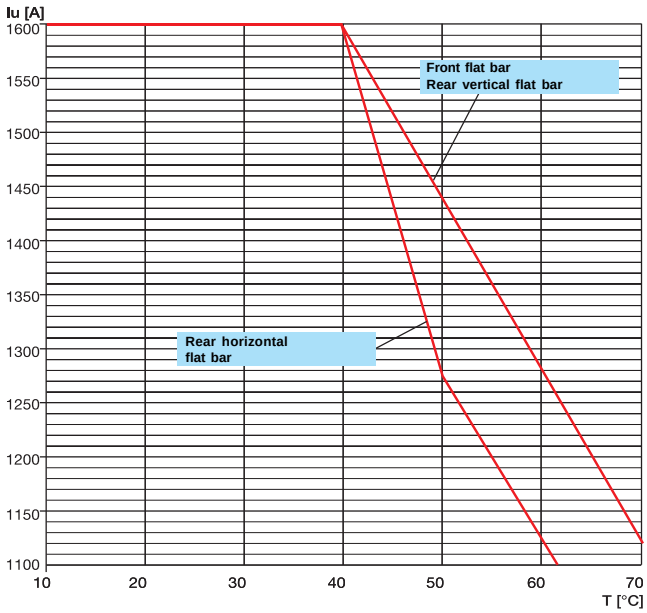
Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**1600**	1	1520	0.95	1440	0.9	1280	0.8
Rear vertical flat bar	**1600**	1	1520	0.95	1440	0.9	1280	0.8
Rear horizontal flat bar	**1600**	1	1440	0.9	1280	0.8	1120	0.7

Withdrawable

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**1600**	1	1440	0.9	1280	0.8	1120	0.7
Rear vertical flat bar	**1600**	1	1440	0.9	1280	0.8	1120	0.7
Rear horizontal flat bar	**1600**	1	1280	0.8	1120	0.7	906	0.6





GSIS0263

5

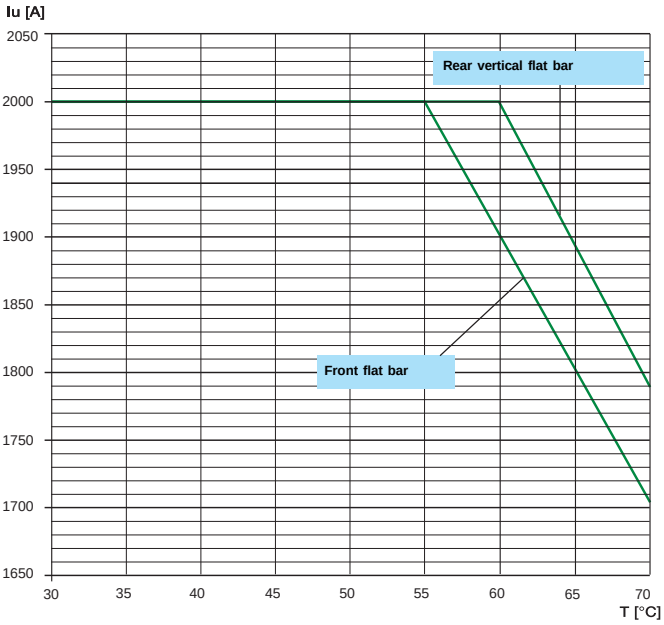
Temperature performance

Circuit-breakers with electronic releases

SACE S8 2000

Fixed

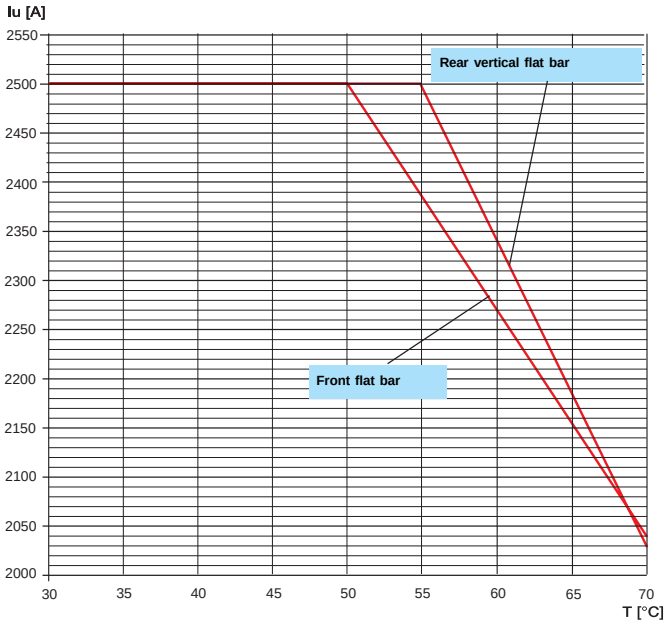
	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**2000**	1	2000	1	1900	0,95	1715	0,85
Rear vertical flat bar	**2000**	1	2000	1	2000	1	1785	0,9



SACE S8 2500

Fixed

	up to 40 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Front flat bar	**2500**	1	2500	1	2270	0,9	2040	0,8
Rear vertical flat bar	**2500**	1	2500	1	2375	0,95	2130	0,85

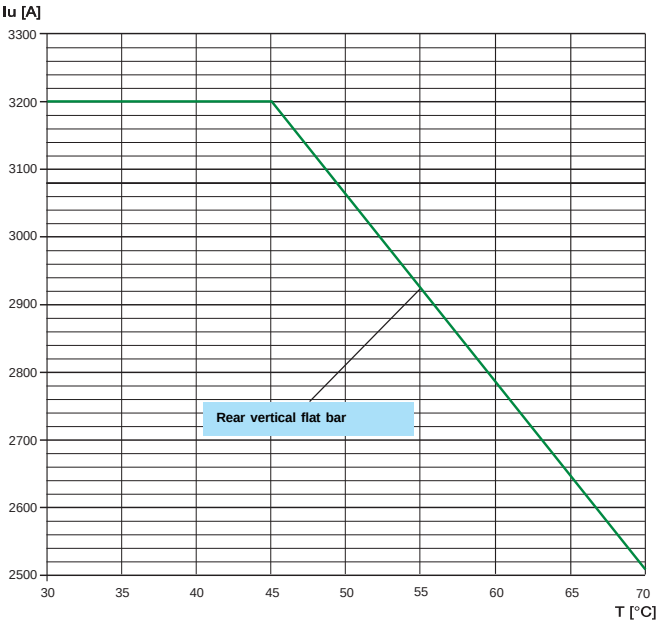


GSIS0264

SACE S8 3200

Fixed

	up to 45 °C		50 °C		60 °C		70 °C	
	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1	I_{max} [A]	I_1
Rear vertical flat bar	**3200**	1	3060	0,95	2780	0,85	2510	0,8



GSIS0265

5

Temperature performance

Circuit-breakers with thermomagnetic releases

SACE S1

	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C
R 10	13	12	11	10	9	8	7
R 12,5	13	12	11	10	9	8	7
R 16	20	18,5	17	16	15	14	13
R 20	24	22,5	21	20	19	18	17
R 25	30	28	26,5	25	23	21	19
R 32	38	36	34	32	30	28	26
R 40	49	45	43	40	37	35	34
R 50	60	56	53	50	47	44	41
R 63	75	71	67	63	59	55	51
R 80	96	91	86	80	74	68	62
R 100	120	114	108	100	94	88	82
R 125	145	138	132	125	120	112	104

SACE S2

R 12,5	11...15,5	10...14,5	9,5...13	9...12,5	8...11,5	7,5...10,5	6,5...9,5
R 16	14...19	13...18	11,5...17	11...16	10,5...15	9,5...14	8,5...13
R 20	18...24,5	16,5...23	15...21,5	14...20	13...18	12...17	11...16
R 25	21...30	19,5...28	18,5...26,5	17,5...25	16,5...23	15...21	13...19
R 32	28...38	25,5...36	24...34	22,5...32	20,5...29	19...27	17...25
R 40	33...47	32...45	30...42	28...40	26...37	24...34	21...31
R 50	44...58	39...56	38...53	35...50	33...47	30...43	27...40
R 63	53...74	50...70	47...66	44...63	42...60	38...56	34...52
R 80	66...94	63...90	59...85	56...80	52...75	49...70	44...65
R 100	84...118	80...112	76...106	70...100	65...94	59...85	49...75
R 125	102...145	100...140	93...133	88...125	81...116	75...108	58...101
R 160	130...184	125...176	120...168	112...160	106...150	100...140	90...130

SACE S3

R 32	26...43	24...39	22...36	19...32	16...27	14...24	11...21
R 50	37...62	35...58	33...54	30...50	27...46	25...42	22...39
R 80	59...98	55...92	52...86	48...80	44...74	40...66	32...58
R 100	83...118	80...113	74...106	70...100	66...95	59...85	49...75
R 125	103...145	100...140	94...134	88...125	80...115	73...105	63...95
R 160	130...185	124...176	118...168	112...160	106...150	100...104	90...130
R 200	162...230	155...220	147...210	140...200	133...190	122...175	107...160
R 250	200...285	193...275	183...262	175...250	168...240	160...230	150...220

SACE S5 400/630

R 320	260...368	245...350	234...335	224...320	212...305	200...285	182...263
R 400	325...465	310...442	295...420	280...400	265...380	250...355	230...325
R 500	435...620	405...580	380...540	350...500	315...450	280...400	240...345

SACE S6 630/800

R 630	520...740	493...705	462...660	441...630	405...580	380...540	350...500
R 800	685...965	640...905	605...855	560...800	520...740	470...670	420...610

Power loss values

Power [W]		S1		S2		S3		S4		S5		S6		S7		S8
Setting	Iu [A]	F	P	F	P	F	P-W	F	P-W	F	P-W	F	W	F	W	F
R 10	10	4	4,5													
R 12,5	12,5	6	6,5	6	6,5											
R 16	16	8	8,5	7,5	8,5											
R 20	20	8	8,5	8	9											
R 25	25	9	9,5	10	11											
R 32	32	13	14	14	15	12	13									
R 40	40	11	12	10	11											
R 50	50	13	14	13	14	16	18									
R 63	63	15	16	16	17											
R 80	80	19	20	21	23	18	21									
R 100	100	16	17	18	20	21	25									
R 125	125	20	22	24	26	20	26									
R 160	160			30	35	30	40									
R 200	200					36	46									
R 250	250					50	65									
R 320	320									60	90					
R 400	400									65	96					
R 500	500									–	–					
R 630	630											92	117			
R 800	800											93	119			
In= 100	100							5	8							
In= 160	160							15	22							
In= 250	250							40	55							
In= 320	320									45	65					
In= 400	400									60	90					
In= 630	630									170	200	90	115			
In= 800	800											96	125			
In= 1000	1000													102	140	
In= 1250	1250													160	220	
In= 1600	1600													260	360	
In= 2000	2000															200
In= 2500	2500															315
In= 3200	3200															500

The values indicated in the table refer to balanced loads, with a current flow equal to the Iu and to both three-pole and fourpole fixed version apparatus. For the latter, the current of the neutral is nil by definition.

Power [W]		S2X 80		S2X 100		S3X		S4X		S6X	
Setting	Iu [A]	F	P	F	P	F	P-W	F	P-W	F	W
R 1	1	8	8,2	8	8,2						
R 1,6	1,6	8	8,2	8	8,2						
R 2,5	2,5	11	11,2	11	11,2						
R 4,3	4,3	11	11,2	11	11,2						
R 6,3	6,3	11	11,2	11	11,2						
R 10	10	16	16,3	16	16,3						
R 12,5	12,5	20	20,3	20	20,3						
R 16	16	10	10,6	10	10,6						
R 20	20	13	13,6	13	13,6						
R 25	25	13	13,7	13	13,7						
R 32	32	26	26,6	26	26,6						
R 40	40	26	26,9	26	26,9						
R 50	50	22	23,3	22	23,3						
R 63	63	22	24,1	22	24,1						
R 80	80	26	29,1	26	29,1						
R 100	100			30	34,4						
R 125	125					30,8	37,8				
R 200	200					48	58				
In= 250	250							60	75		
In= 400	400									80,4	101
In= 630	630									126,6	151,6

The values indicated in the table refer to balanced loads, with a current flow equal to the Iu and to both three-pole and four-pole fixed version apparatus. For the latter, the current of the neutral is nil by definition.

Shock resistance

Tests according to IEC 60068-2-27

	Shock value [g]
S1 **	12
S2 **	12
S3-S3X *	12
S4X-S4X *	12
S5 *	12
S6-S6X *	12
S7 *	12

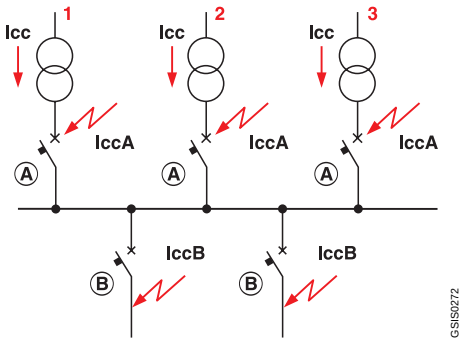
* for fixed/plug-in/withdrawable circuit-brakekers with motor operator, undervoltage release and auxiliary contacts

** for fixed/plug-in circuit-brakekers with undervoltage release and auxiliary contacts

Operation and protection of the low-voltage side of three-phase transformers

In order to choose the SACE Isomax S circuit-breakers to install both on the transformer risers and on the lines branching downstream of them, reference can be made to the following table dealing with transformers with no-load voltage on the secondary equal to 400 V which is the most common condition of use. The table has been drawn up considering infinite power upstream and the most unfavourable case has been assumed, that is, that the short circuit occurs on the transformer clamps. As regards users, the short circuit is considered downstream of the user circuit-breaker clamps.

Power supply transformers				Circuit-breaker "A"(secondary of transformer)			
P	U_{cc}	I_b riser	I_b total	I_{cc} riser	SACE Isomax S	Release TM / PR211-212	
[kVA]	%	[A]	[A]	[kA]	type	type	settings
1 x 63	4	91	91	2,2	S1B125	R100	0,95
2 x 63		91	182	2,2	S1B125	R100	0,95
1 x 100	4	144	144	3,6	S2B160	R160	0,95
2 x 100		144	288	3,6	S2B160	R160	0,95
1 x 125	4	180	180	4,5	S3N/S4N250	R200/I_n = 250 A	0,95/0,8
2 x 125		180	360	4,5	S3N/S4N250	R200/I_n = 250 A	0,95/0,8
1 x 160	4	231	231	5,8	S3N/S4N250	R250/I_n = 250 A	0,95/0,95
2 x 160		231	462	5,8	S3N/S4N250	R250/I_n = 250 A	0,95/0,95
1 x 200	4	289	289	7,2	S5N400	I_n = 320 A	0,95
2 x 200		289	578	7,2	S5N400	I_n = 320 A	0,95
1 x 250	4	361	361	9	S5N400	I_n = 400 A	0,95
2 x 250		361	722	9	S5N400	I_n = 400 A	0,95
1 x 315	4	455	455	11,3	S6N630	I_n = 630 A	0,8
2 x 315		455	910	11,3	S6N630	I_n = 630 A	0,8
1 x 400	4	577	577	14,4	S6N630/S6N800	I_n = 630/800 A	0,95/0,8
2 x 400		577	1154	14,4	S6N630/S6N800	I_n = 630/800 A	0,95/0,8
1 x 500	4	722	722	18	S6N800/S7S1250	I_n = 800/1000 A	0,95/0,8
2 x 500		722	1444	18	S6N800/S7S1250	I_n = 800/1000 A	0,95/0,8
1 x 630	4	909	909	23	S7S1250	I_n = 1000 A	0,95
2 x 630		909	1818	23	S7S1250	I_n = 1000 A	0,95
3 x 630		909	2727	46	S7S1250	I_n = 1000 A	0,95
1 x 800	5	1155	1155	23	S7S1250/S7S1600	I_n = 1250/1600 A	0,95/0,8
2 x 800		1155	2310	23	S7S1250/S7S1600	I_n = 1250/1600 A	0,95/0,8
3 x 800		1155	3465	46	S7S1250/S7S1600	I_n = 1250/1600 A	0,95/0,8
1 x 1000	5	1443	1443	29	S7S1600	I_n = 1600 A	0,95
2 x 1000		1443	2886	29	S7S1600	I_n = 1600 A	0,95
3 x 1000		1443	4329	58	S7H1600	I_n = 1600 A	0,95
1 x 1250	5	1804	1804	36	S8H2000	I_n = 2000 A	0,95
2 x 1250		1804	3608	36	S8H2000	I_n = 2000 A	0,95
3 x 1250		1804	5412	72	S8H2000	I_n = 2000 A	0,95
1 x 1600	6,25	2309	2309	37	S8H2500	I_n = 2500 A	0,95
2 x 1600		2309	4618	37	S8H2500	I_n = 2500 A	0,95
3 x 1600		2309	6927	74	S8H2500	I_n = 2500 A	0,95
1 x 2000	6,25	2887	2887	46	S8H3200	I_n = 3200 A	0,95
2 x 2000		2887	5774	46	S8H3200	I_n = 3200 A	0,95
3 x 2000		2887	8661	92	S8V3200	I_n = 3200 A	0,95



Circuit-breaker "B" (user outgoing)

I_{cu} user	User rated current and type of circuit-breaker									
[kA]	32 A	63 A	125 A	160 A	250 A	400 A	630 A	800 A	1250 A	1600 A
2,2	S250	S250								
4,4	S250	S250	S1B125							
3,6	S250	S250	S1B125							
7,2	S250	S250	S1B125							
4,5	S250	S250	S1B125	S2B160						
9	S250	S250	S1B125	S2B160						
5,8	S250	S250	S1B125	S2B160						
11,6	S1B125	S1B125	S1B125	S2B160	S3N250					
7,2	S250	S250	S1B125	S2B160	S3N250					
14,4	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400				
9	S250	S250	S1B125	S2B160	S3N250	–				
18	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400				
11,3	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400				
22,6	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630			
14,4	S1B125	S1B125	S1B125	S2B160	S3N250	S5N400	–			
28,8	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630			
18	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630			
36	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630	S6N800		
23	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630	S6N800		
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H / S6S630	S6S800	S7S1250	
69	S2X100	S2X100	S3L160	S3L160	S3L250	S5L400	S5L / S6L630	S6L800	S7L1250	
23	S1N125	S1N125	S1N125	S2N160	S3N250	S5N400	S5N / S6N630	S6N800	–	
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H / S6S630	S6S800	S7S1250	
69	S2X100	S2X100	S3L160	S3L160	S3L250	S5L400	S5L / S6L630	S6L800	S7L1250	
29	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N / S6N630	S6N800	S7S1250	
58	S2X100	S2X100	S3H160	S3H160	S3H250	S5H400	S5H / S6H630	S6H800	S7H1250	S7H1250
87	S4L160	S4L160	S4L160	S4L160	S4L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1250
36	S2N160	S2N160	S2N160	S2N160	S3N250	S5N400	S5N/S6N630	S6N800	S7S1250	S7S1600
72	S3L160	S4L160	S3L160	S3L160	S3L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1250
108	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	S8V2000	S8V2000	S8V2000
37	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H/S6S630	S6S800	S7S1250	S7S1600
74	S3L160	S3L160(R80)	S3L160	S3L160	S3L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1600
111	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	S8V2000	S8V2000	S8V2000
46	S2S160	S2S160	S2S160	S2S160	S3H250	S5H400	S5H/S6S630	S6S800	S7S1250	S7S1600
92	S4L160	S4L160	S4L160	S4L160	S4L250	S5L400	S5L/S6L630	S6L800	S7L1250	S7L1600
138	S3X125	S3X125(R80)	S3X125	S3X200	S4X250	S6X400	S6X630	–	–	–

Operation and protection of three-phase AC capacitors

Table for choosing SACE Isomax S circuit-breakers in relation to the rated current of the bank and the power of the transformer installed.

Circuit-breaker	Icu 380/415 V	Rated current of release	Rated current of capacitor	Max electronic/ magnetic release setting	Maximum rating of capacitor bank in kVAR-50 Hz				Mechanical endurance		Electrical endurance	
					400	440	500	690				
Type	[kA]	[A]	[A]	PR... / TM	[V]	[V]	[V]	[V]	man	man/h	man	man/h
S1 B/N 125	16 / 25	125	83	- / Im=10 In	58	64	72	100	25000	240	8000	120
S2 B/N/S 160	16 / 35 / 50	160	107	- / Im=10 In	74	81	92	127	25000	240	8000	120
S3 N/H/L 160	35 / 65 / 85	160	107	- / Im=10 In	74	81	92	127	25000	120	10000	120
S3 N/H/L 250	35 / 65 / 85	250	167	- / Im=10 In	115	127	144	199	25000	120	8000	120
S4 N/H/L 160	35 / 65 / 100	160	107	I_3=OFF / -	74	81	92	127	20000	120	10000	120
S4 N/H/L 250	35 / 65 / 100	250	167	I_3=OFF / -	115	127	144	199	20000	120	8000	120
S5 N/H/L 400	35 / 65 / 100	400	267	I_3=OFF / Im=10 In	185	203	231	319	20000	120	7000	60
S5 N/H/L 630	35 / 65 / 100	500/630	333	I_3=OFF / Im=10 In	231	254	288	398	20000	120	5000	60
S6 N/S/H/L 630	35/50/65/100	630	420	I_3=OFF / Im=10 In	291	320	364	502	20000	120	7000	60
S6 N/S/H/L 800	35/50/65/100	800	533	I_3=OFF / Im=10 In	369	406	462	637	20000	120	5000	60
S7 S/H/L 1250	50 / 65 / 100	1250	833	I_3=OFF / -	577	635	722	996	10000	120	7000	20
S7 S/H/L 1600	50 / 65 / 100	1600	1067	I_3=OFF / -	739	813	924	1275	10000	120	5000	20
S8 H/V 2000	85 / 120	2000	1333	I_3=OFF / -	924	1016	1155	1593	10000	120	3000	20
S8 H/V 2500	85 / 120	2500	1667	I_3=OFF / -	1155	1270	1443	1992	10000	120	2500	20
S8 H/V 3200	85 / 120	3200	2133	I_3=OFF / -	1478	1626	1847	2550	10000	120	1500	10

Coefficient for calculating capacitor bank power in kVAR/kW to increase the cosφ value.

	Cosφ to be obtained												
Initial Cosφ	0,81	0,85	0,9	0,91	0,92	0,93	0,94	0,95	0,96	0,97	0,98	0,99	1
0,60	0,584	0,714	0,849	0,878	0,905	0,939	0,971	1,005	1,043	1,083	1,131	1,192	1,334
0,61	0,549	0,679	0,815	0,843	0,870	0,904	0,936	0,970	1,008	1,048	1,096	1,157	1,299
0,62	0,515	0,645	0,781	0,809	0,836	0,870	0,902	09,36	0,974	1,014	1,062	1,123	1,265
0,63	0,483	0,613	0,749	0,777	0,804	0,838	0,870	0,904	0,942	0,982	1,030	1,091	10233
0,64	0,450	0,580	0,716	0,744	0,771	0,805	0,837	0,871	0,909	0,949	0,997	1,058	1,200
0,65	0,419	0,549	0,685	0,713	0,740	0,774	0,806	0,840	0,878	0,918	0,966	1,007	1,169
0,66	0,388	0,518	0,654	0,682	0,709	0,743	0,775	0,809	0,847	0,887	0,935	0,996	1,138
0,67	0,358	0,488	0,624	0,652	0,679	0,713	0,745	0,779	0,817	0,857	0,905	0,966	1,108
0,68	0,329	0,459	0,595	0,623	0,650	0,984	0,716	0,750	0,788	0,828	0,876	0,937	1,079
0,69	0,299	0,429	0,565	0,593	0,620	0,654	0,686	0,720	0,758	0,798	0,840	0,907	1,049
0,70	0,270	0,400	0,536	0,564	0,591	0,625	0,657	0,691	0,729	0,769	0,811	0,878	1,020
0,71	0,242	0,372	0,508	0,536	0,563	0,597	0,629	0,663	0,701	0,741	0,783	0,850	0,992
0,72	0,213	0,343	0,479	0,507	0,534	0,568	0,600	0,634	0,672	0,712	0,754	0,821	0,963
0,73	0,186	0,316	0,452	0,400	0,507	0,541	0,573	0,607	0,645	0,685	0,727	0,794	0,936
0,74	0,159	0,289	0,425	0,453	0,480	0,514	0,546	0,580	0,618	0,658	0,700	0,767	0,909
0,75	0,132	0,262	0,398	0,426	0,453	0,487	0,519	0,553	0,591	0,631	0,673	0,740	0,882
0,76	0,105	0,235	0,371	0,399	0,426	0,460	0,492	0,526	0,564	0,604	0,652	0,713	0,855
0,77	0,079	0,209	0,345	0,373	0,400	0,434	0,466	0,500	0,538	0,578	0,620	0,687	0,829
0,78	0,053	0,182	0,319	0,347	0,374	0,408	0,440	0,474	0,512	0,552	0,594	0,661	0,803
0,79	0,026	0,156	0,292	0,320	0,347	0,381	0,413	0,447	0,485	0,525	0,567	0,634	0,776
0,80		0,130	0,266	0,294	0,321	0,355	0,387	0,421	0,459	0,499	0,541	0,608	0,750
0,81		0,104	0,240	0,268	0,295	0,329	0,361	0,395	0,433	0,473	0,515	0,582	0,724
0,82		0,078	0,214	0,242	0,269	0,303	0,335	0,369	0,407	0,447	0,489	0,556	0,698
0,83		0,052	0,188	0,216	0,243	0,277	0,309	0,343	0,381	0,421	0,462	0,530	0,672
0,84		0,026	0,162	0,190	0,217	0,251	0,283	0,317	0355	0,395	0,437	0,504	0,645
0,85			0,136	0,164	0,191	0,225	0,257	0,291	0,329	0,369	0,417	0,478	0,620
0,86			0,109	0,140	0,167	0,198	0,230	0,264	0,301	0,343	0,390	0,450	0,593
0,87			0,083	0,114	0,141	0,172	0,204	0,238	0,275	0,317	0,364	0,424	0,567
0,88			0,054	0,085	0,112	0,143	0,175	0,209	0,246	0,288	0,335	0,395	0,538
0,89			0,028	0,059	0,086	0,117	0,149	0,183	0,230	0262	0,309	0,369	0,512
0,90				0,031	0,058	0,089	0,121	0,155	0,192	0,234	0,281	0,341	0,484

Protection of three-phase AC generators (Ue = 400 V)

Power generator	In	S1 125	S2 160	S3 160	S3 250	S4 160	S4 250	S5 400	S5 630	S6 630	S6 800	S7 1250	S7 1600	S8 2000	S8 2500	S8 3200
[kVA]	[A]	R	R	R	R	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]	In [A]
40						100										
50						100										
63	91	100	100	100		100										
100	144,5		160	160	200	160	250	320								
160	231,2				250		250	320								
200	289							320	630	630						
250	361							400	630	630	800					
315	455								630	630	800	1000				
400	578								630	630	800	1000				
500	723										800	1000	1600			
630	910											1000	1600			
800	1156											1250	1600			
1000	1445												1600			
1120	1617												1600			
1250	1804													2000		
1400	2021														2500	
1600	2309														2500	
2000	2887															3200

5

Applications in direct current

Connection diagrams

Suitable connection arrangements must be adopted to obtain the number of poles in series necessary to guarantee the breaking capacity required at the various operating voltages.

Circuit protection and isolation with three-pole circuit-breakers

Diagram A: breaking with 1 pole per polarity

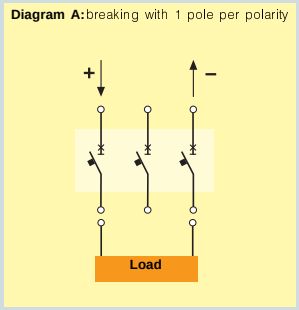


Diagram B: breaking with 2 poles in series per polarity and 1 pole for the other polarity

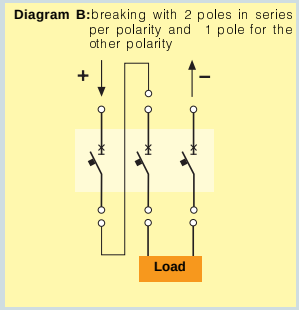
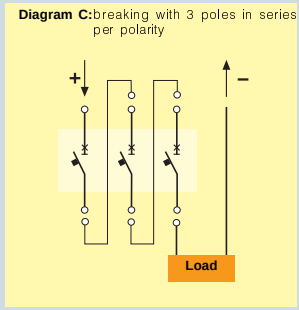


Diagram C: breaking with 3 poles in series per polarity



Poles in parallel

Diagram D: breaking with 2 poles in parallel per polarity

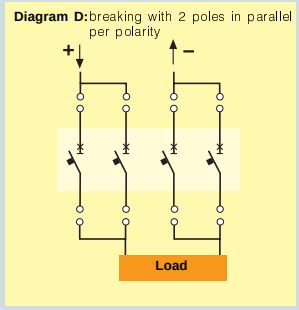
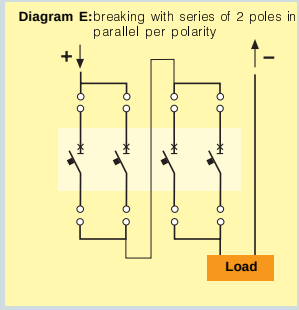


Diagram E: breaking with series of 2 poles in parallel per polarity



Use at 1000 V DC with four-pole circuit-breakers

Diagram F: breaking with 4 poles in series for one polarity

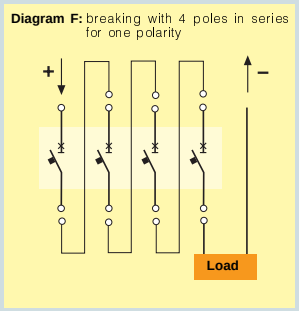


Diagram G: 3+1 poles in series

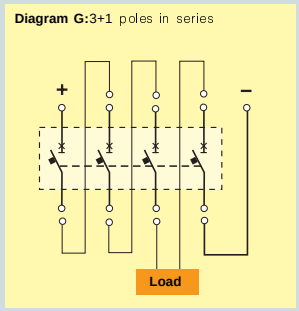
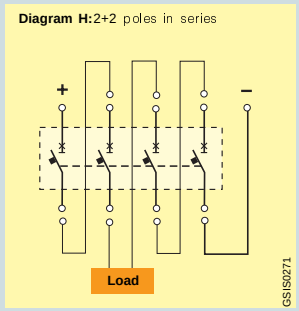


Diagram H: 2+2 poles in series



The following table shows which connection arrangement to adopt according to the number of poles to connected in series to obtain the required breaking capacity for the type of distribution network.

Rated voltage	Function		Distribution network		
	Protection	Isolation	isolated from earth	with one polarity* to earth	with median point to earth
≤ 250	■ ■	■	A, D -	A, D E	A, D -
≤ 500	■ ■	■	A, D -	B C, E	A, D -
≤ 750	■ ■	■	B -	G C	H -
≤ 1000	■ ■	■	G, H -	- F	H -

* The negative pole is assumed to be earthed.

Notes

1) The risk of a double fault to earth being sufficient for the fault current to affect only one side of the circuit breaking poles is considered negligible.

2) For rated voltages greater than 750V the 1000 VDC range is required.

3) Diagram D and diagram E only for S6.

Applications in direct current

Connection diagrams

Example of tripping threshold adjustment in DC - diagram A

Setting	S1 125			S2 160			S3 160			S3 250		
	I_{th}	$I_m=10_{Ith}$	$I_m=5_{Ith}$	I_{th}	$I_m=10_{Ith}$	$I_m=5_{Ith}$	I_{th}	$I_m=10_{Ith}$	$I_m=5_{Ith}$	I_{th}	$I_m=10_{Ith}$	$I_m=5_{Ith}$
R 10	10		208									
R 12.5	12,5		208	9÷12,5		208						
R 16	16		208	11,2÷16		208						
R 20	20	650	260	14÷20	650	260						
R 25	25	650	260	17,5÷25	650	260						
R 32	32	650	260	22,5÷32	650	260	19÷32	650	390			
R 40	40	650	260	28÷40	650	260						
R 50	50	650	325	35÷50	650	325	30÷50	650	390			
R 63	63	819	416	44÷63	819	416						
R 80	80	1040	520	56÷80	1040	520	48÷80	1040	520			
R 100	100	1300	650	70÷100	1300	650	70÷100	1300	650			
R 125	125	1625	819	87,5÷125	1625	819	87,5÷125	1625	819			
R 160				112÷160	2080	1040	112÷160	2080	1040			
R 200										140÷200	2600	1300
R 250										175÷250	3250	1625

N.B. For the lower settings R10, R12.5, R16 only the version $I_m= 5_{Ith}$ can be used

The correction value to adopt for the protection thresholds of each circuit-breaker is shown in the following table.

Circuit-breaker	Diagram A	Diagram B	Diagram C	Diagram F	Diagram G	Diagram H
S1	$k_m= 1$	$k_m= 1$	$k_m= 1$	–	–	–
S2	$k_m= 1$	$k_m= 1$	$k_m= 1$	–	–	–
S3	$k_m= 1$	$k_m= 1,15$	$k_m= 1,15$	$k_m= 1$	$k_m= 1$	$k_m= 1$
S5	$k_m= 1,1$	$k_m= 1$	$k_m= 1$	$k_m= 1,1$	$k_m= 1,1$	$k_m= 1,1$
S6	$k_m= 1,1$	$k_m= 1$	$k_m= 1$	$k_m= 0,9$	$k_m= 0,9$	$k_m= 0,9$

Setting	S5 400		S5 630		S6 630		S6 800	
	I_{th}=0,7÷1xI_n	I_m=5÷10xI_n	I_{th}=0,7÷1xI_n	I_m=5÷10xI_n	I_{th}=0,7÷1xI_n	I_m=5÷10xI_n	I_{th}=0,7÷1xI_n	I_m= 5÷10xI_n
R 320	225÷320	1760÷3520						
R 400	280÷400	2200÷4400						
R 500			350÷500	2750÷5500				
R 630					440÷630	3065÷6930		
R 800							560÷800	4400÷8800

Using these the correction factors means that the tripping current values will be higher for the same tripping threshold, or, vice versa, that having identified the tripping value one needs to set the tripping threshold following the reclassified scale range.

Example

- Operating current: Ib = 600 A
- Magnetic protection required: Im = 5000 A
- Magnetic protection required to set:

$$\text{set} = \frac{I_m}{k_m \times I_n}$$

therefore in this specific case, having chosen circuit-breaker S6 R630 (In = 630 A), the magnetic threshold setting value will be:

$$\text{set} = \frac{5000}{1{,}1 \times 630} \approx 7$$

5

Backup protection

(backup table with Ue = 400 V~)

The table below shows the backup protection available, with the related breaking capacities for the rated voltage Ue=400V~, between ABB moulded-case and air low voltage circuit-breakers (SACE Isomax S, SACE Limitor LNA and SACE Emax) and pro *M* system modular circuit-breakers.

	CIRCUIT-BREAKER UPSTREAM																
	S270	S280/20	S280/20	S290	S500	S1B	S2B	S1N	S2N	S3N	S4N	S5N	S6N	S2S	S6S	S7S	
In [A] ≤						125	160	125	160	250	250	630	800	160	800	1600	
Icu [kA]	15	20	25	15	50	16	16	25	35	35	35	35	35	50	50	50	
	CIRCUIT-BREAKER DOWNSTREAM																
10						S240	S240	S240	S240					S240			
15	S240 S250			S240 S250													
16						S250	S250			S250	S250						
20		S240 S250 S270						S250	S250		S270	S1B S2B	S1B S2B	S250	S1B S2B		
25			S240 S250 S270					S270 S280/20 S280/25 S1B	S270	S270 S280/20	S280/20 S1B S2B			S270			
30					S240				S280/20	S280/25	S280/25			S280/20			
35									S280/25 S1B S1N S2B	S1B S1N S2B	S1N	S1N	S1N	S280/25			
40					S250										S1N	S3N S4N S5N S6N	
50					S270 S280/20 S280/25 S1B S1N									S1B S1N S2B S2N	S2N S3N S4N S5N		
65																	
85																	
100																	
130																	
150																	
170																	
200																	

In the interest of facilitating clear representation, the latter must be read using the follow key:

S250: S250, S260, S270K
S270: S270 (B-C-D), S280 (In = 3 ... 8 A), S280 (In = 50 ... 63 A), S290
S280/20: S280 (In = 32 ... 40 A)
S280/25: S280 (In = 10... 25 A)

	S3H	S4H	S5H	S6H	S7H	S2X	S3L	S4L	S5L	S6L	S7L	S3X	S3X	S4X	S6X	E2L	E3L
	250	250	630	800	1600	100	250	250	630	800	1600	125	200	250	630	1600	2500
	65	65	65	65	65	70	85	100	100	100	100	200	200	200	200	130	130
												S240					
	S250	S250					S250	S250									
		S270	S1B	S1B		S240		S270	S1B	S1B		S250	S250	S250	S1B		
			S2B	S2B					S2B	S2B					S2B		
	S270	S280/20				S250	S270	S280/20				S270	S270	S270			
	S280/20						S280/20						S280/20	S280/20			
	S280/25	S280/25				S240	S280/25	S280/25				S280/20		S280/25			
		S1B															
		S2B										S280/25	S280/25				
	S1B		S1N	S1N	S3N	S270		S1B	S1N	S1N	S3N					S5N	S6N
	S2B				S4N			S2B			S4N						
					S5N						S5N						
					S6N												
		S1N					S2B				S6N				S1N	S6N	
						S280/20	S1B										
						S280/25											
						S1B											
						S1N											
	S1N	S2N	S2N	S2N					S2N	S2N				S1B			S6S
	S2N	S2S	S2S	S2S					S3N	S3N				S2B			
	S2S	S3N	S3N	S3N					S4N	S4N							
	S3N		S4N	S4N													
				S5N													
							S1N	S1N		S5N	S5H		S1B				
							S2N				S6S						
							S2S				S6H						
							S3N										
							S3H										
								S2N	S2S	S2S			S2B		S2N	S5H	S6H
								S2S	S3H	S3H					S3N	S6S	S7S
								S3N	S3L	S3L					S4N	S6H	S7H
								S3H	S4H	S4H						S7S	
								S3L		S5H						S7H	
												S1B		S1N	S2S	S5L	S6L
												S2B				S6L	S7L
																S7L	
													S1N				
												S1N			S5N		
												S500	S500	LNA	S3H		
												LNA	LNA	S2N	S3L		
												S2N	S2N	S2S	S4H		
												S2S	S2S	S3N	S4L		
													S3N	S3H	S5H		
													S3H	S3L	S5L		
													S3L		S6S		
															S6H		
															S6L		

5

Overall dimensions and circuit diagrams

Index

Overall dimensions

SACE Isomax S1-S2

Fixed circuit-breaker **6**/2
Plug-in circuit-breaker **6**/3
Circuit-breaker with SACE RC210-RC211-RC212 residual current releases **6**/4
Accessories **6**/5

SACE Isomax S3-S4-S5-S3X-S4X

Fixed circuit-breaker **6**/7
Mounting parts for fixed circuit-breaker **6**/9
Plug-in circuit-breaker - withdrawable circuit-breaker **6**/10
Mounting parts for plug-in circuit-breaker - withdrawable circuit-breaker **6**/11
SACE S3 circuit-breaker with SACE RC211/3 - RC212/3 residual current releases **6**/12
Accessories **6**/14

SACE Isomax S6-S6X

Fixed circuit-breaker **6**/18
Mounting parts for fixed circuit-breaker **6**/20
Withdrawable circuit-breaker **6**/22
Mounting parts for withdrawable circuit-breaker **6**/23
Accessories **6**/24

SACE Isomax S7

Fixed circuit-breaker **6**/28
Mounting parts for fixed circuit-breaker **6**/29
Withdrawable circuit-breaker **6**/30
Mounting parts for withdrawable circuit-breaker **6**/31
Accessories **6**/32

SACE Isomax S8

Fixed circuit-breaker **6**/36
Mounting parts for fixed circuit-breaker **6**/37

Distances to be respected **6**/38
Minimum distance between centres **6**/39

Circuit diagrams

Index **6**/41

Overall dimensions

SACE S1-S2

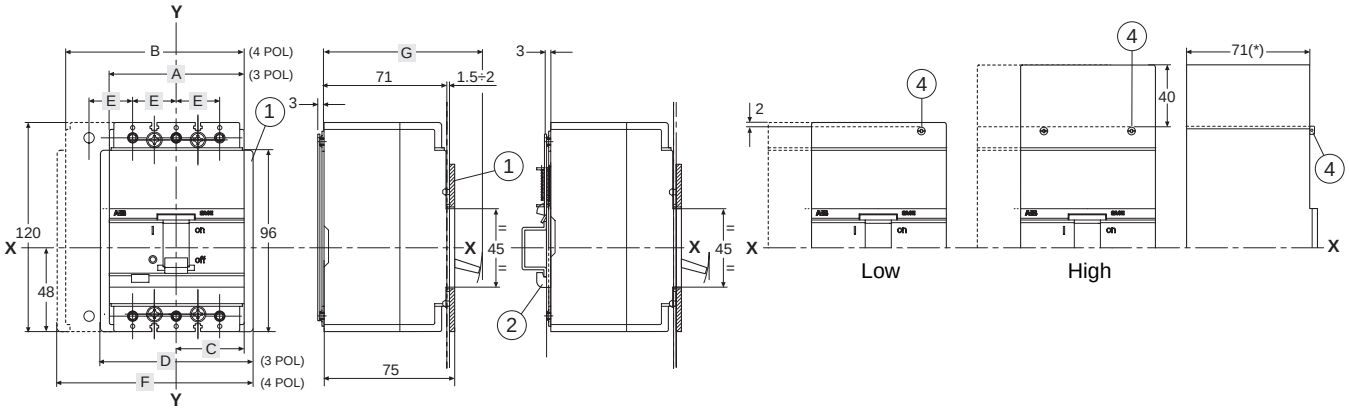
Fixed circuit-breaker

Mounting on sheet metal

Mounting on DIN EN 50022 channel

Terminal covers
(to order when not included in supply)

(*) 75 with sealable screws



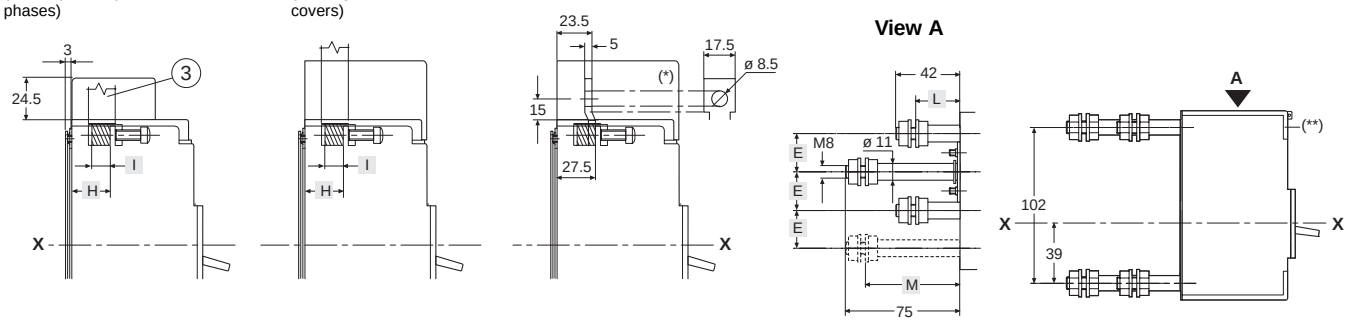
Terminals

Front for Cu cables or flat bars
(with separator plates between the phases)

Front for Cu cables or flat bars
(with high or low terminal covers)

Extended front for S2
(*) high terminal covers included in supply

Threaded rear
(**) low terminal covers included in supply (protection class IP20)



Template for drilling sheet metal support

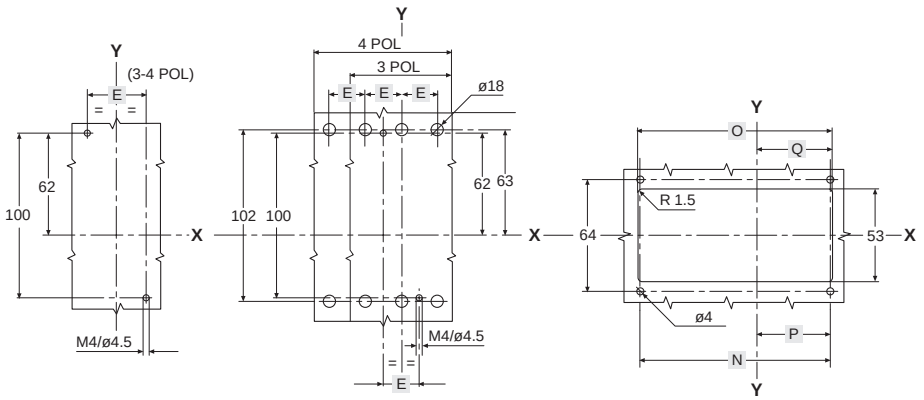
(minimum thickness of sheet metal: 3 mm)

For front terminals

For threaded rear terminals

Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



Key

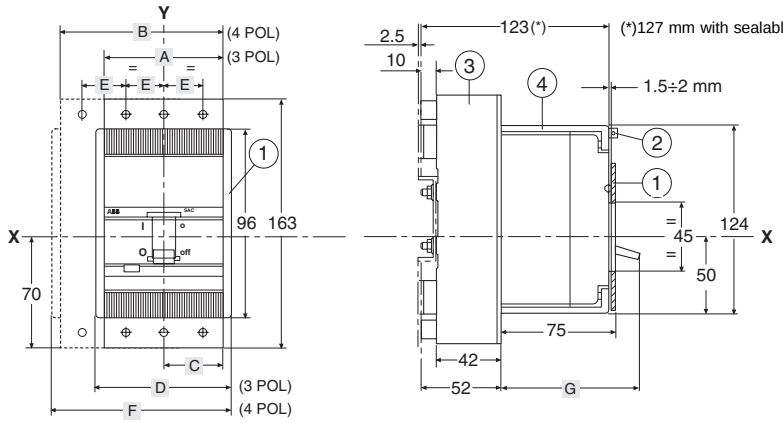
1. Flange for compartment door
2. Bracket for fitting circuit-breaker on DIN channel (to order)
3. Separator plate
4. Sealable screws

GSIS0001

	A	B	C	D	E	F	G	H	I	L	M	N 3 POL	N 4 POL	O 3 POL	O 4 POL	P	Q	...	...	...
S1	78	103	39	91	25	116	91	25.5	10.5 x 11	29	62	83.5	108.5	86	111	42	43	...	...	...
S2	90	120	45	103	30	133	93	27.5	12.5 x 12.5	27	60	95.5	125.5	98	128	48	49	...	...	...

Plug-in circuit-breaker

Fixed parts mounted on sheet metal or channel
(terminal covers for mobile part with IP20 always included in supply)

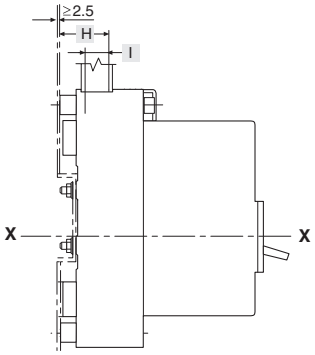


Key

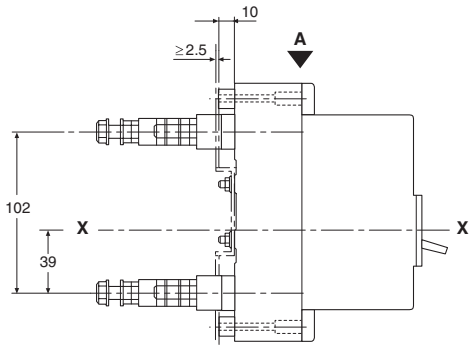
1. Flange for compartment door
2. Sealable screws
3. Fixed part
4. Moving part complete with terminal covers

Terminals

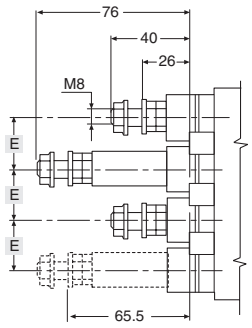
Front



Threaded rear



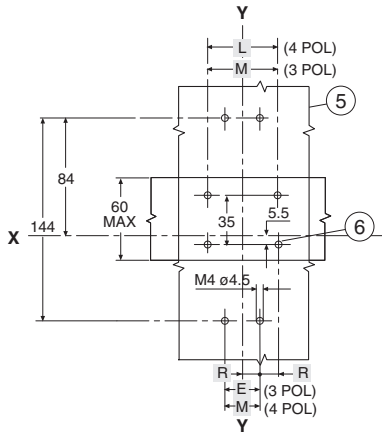
View A



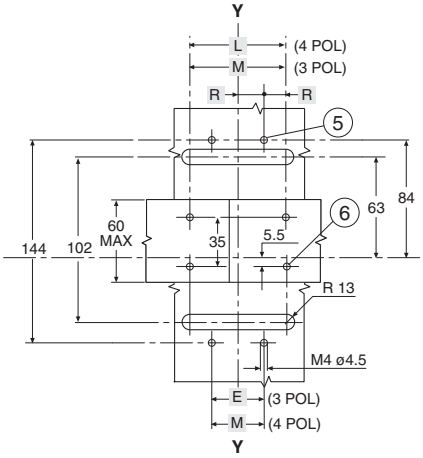
Drilling template for support (5) or channel (6)

(minimum thickness of sheet metal: 2.5 mm)

For front terminals

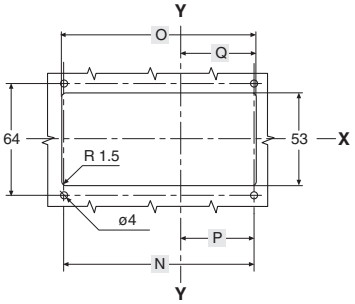


For threaded rear terminals



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 1.5 - 2 mm)



GSIS0002

	A	B	C	D	E	F	G	H	I	L	M	N 3 POL 4 POL	O 3 POL 4 POL	P	Q	R	...	...
S1	78	103	39	91	25	116	91	28	10.5 x 11	75	50	83.5 108.5	86 111	42	43	12.5	...	...
S2	90	120	45	103	30	133	93	28	12.5 x 12.5	90	60	95.5 125.5	98 128	48	49	15	...	...

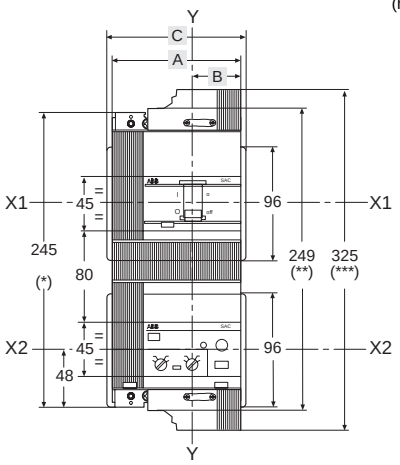
Overall dimensions

SACE S1-S2

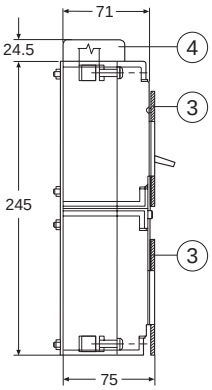
Circuit-breaker with SACE RC210-RC211-RC212 residual current release

Vertical installation RC211-RC212 (mounting on sheet metal)

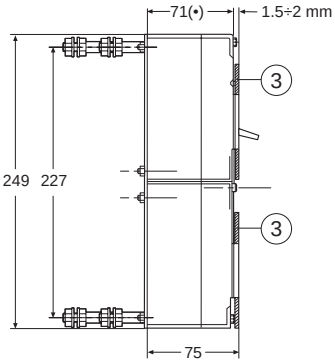
(*) Without terminal covers
(**) With low terminal covers
(***) With high terminal covers



Front terminals for Cu cables or flat bars
(high terminal covers to order)

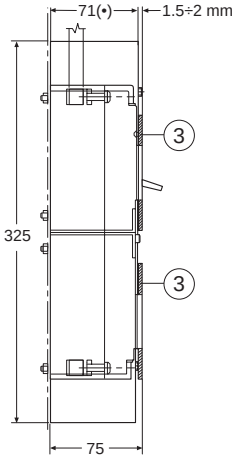


Threaded rear terminals
(low terminal covers included in supply)



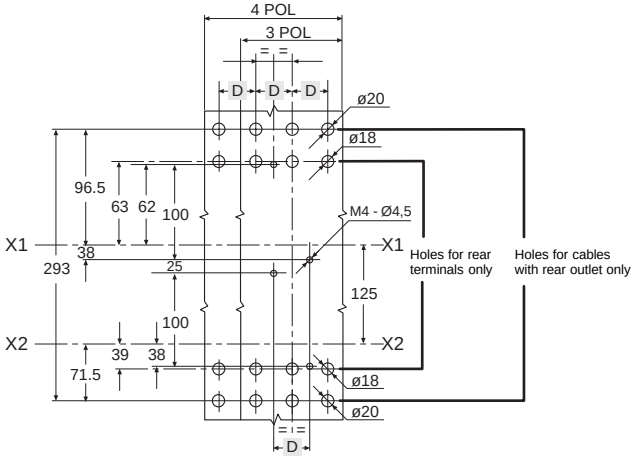
(•) 75 with sealable screws

Version with high terminal covers: front or rear output cables

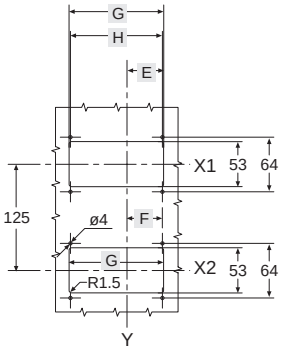


Template for drilling sheet metal support

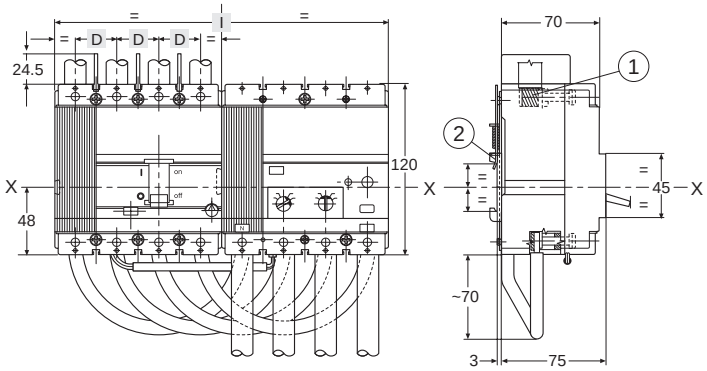
(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange (thickness of sheet metal: 1.5 - 2 mm)



Horizontal installation SACE RC210-RC211-RC212



Key

1. Front terminals for cables and flat bars
2. Bracket for mounting on DIN EN 50022 channel
3. Flange for compartment door
4. Separator plate

Note

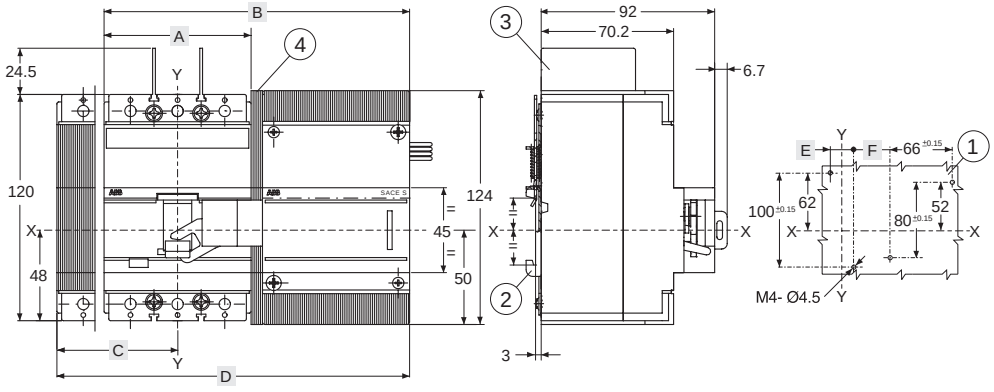
See the various different versions for the dimensions of the terminals

GSIS00034

	A	B	C	D	E	F	G	H	I
S1 - RC210	–	–	–	25	–	–	–	–	206
S1 - RC211/RC212	103	39	116	25	43	41.7	111	108.5	206
S2 - RC211/RC212	120	45	133	30	49	47.7	128	125.5	240

Accessories

Solenoid operator at the side of the circuit-breaker

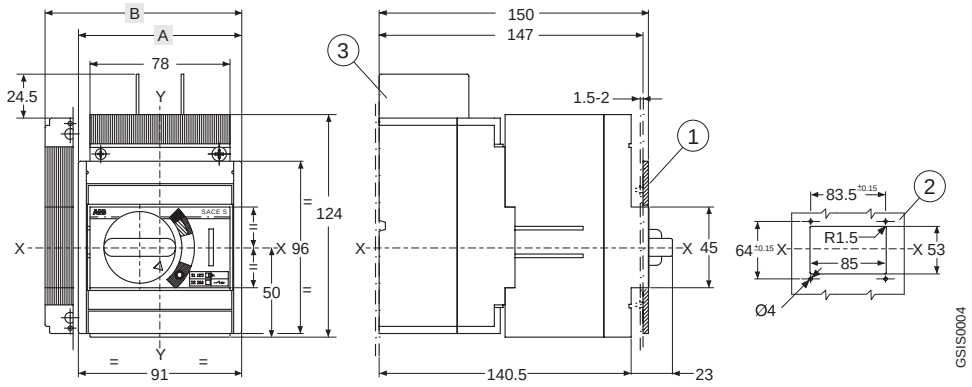


	A 3 POL	B 3 POL	C 4 POL	D 4 POL	E	F
S1	78	162	64	187	25 ± 0.15	38.5 ± 0.2
S2	90	168	75	198	30 ± 0.1	36 ± 0.2

Key

1. Drilling for fixing the circuit-breaker and solenoid operator assembly onto sheet
2. Plate for fixing circuit-breaker onto DIN EN 50022 rail (a richiesta)
3. Separator plates between the phases
4. Spacer (for SACE S1 only)

Solenoid operator on the front of the circuit-breaker

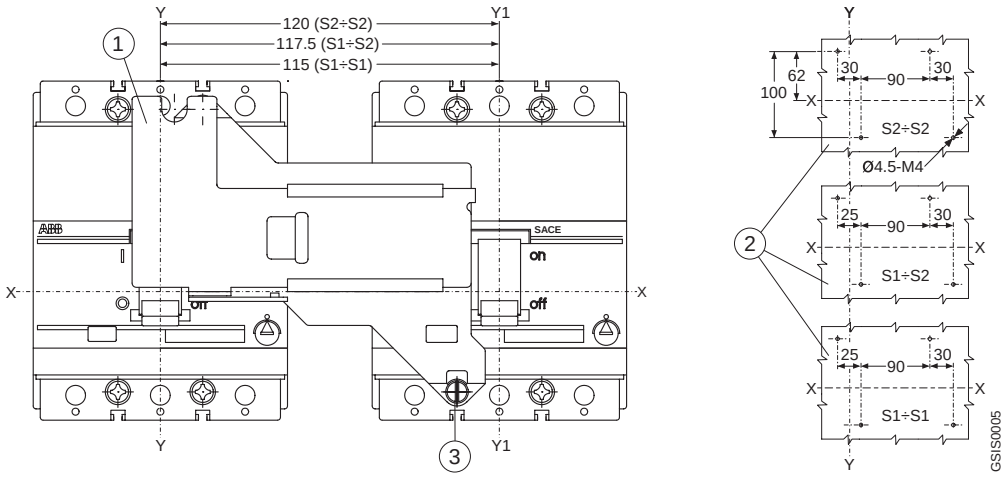


Key

1. Flange for compartment door
2. Template for drilling compartment door and fitting flange
3. Separator plates between the phases

	A 3 POL	B 4 POL
S1	78	103
S2	90	120

Interlock across two horizontally-installed circuit-breakers



Note
See the various different versions for the dimensions of the circuit-breakers

Key

1. Interlock device
2. Template for drilling sheet metal support
3. Tightening torque 1,1 Nm Remove the screws for stirruping the cover and replace them with the ones in the KIT.

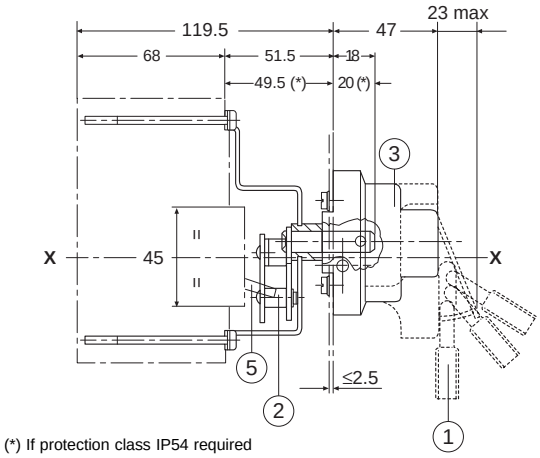
Overall dimensions

SACE S1-S2

Accessories

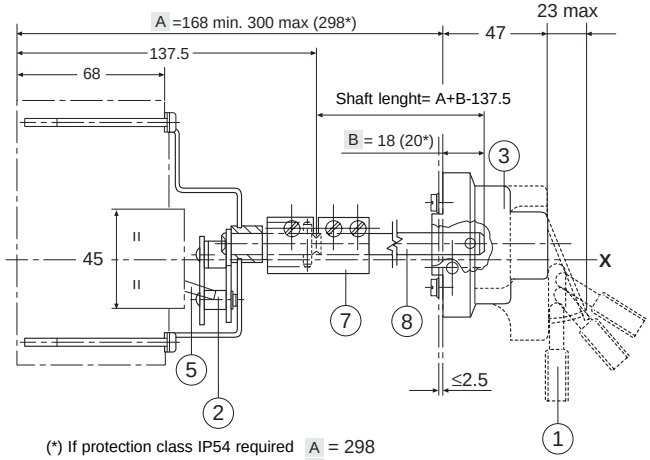
Compartment door-mounted rotary handle operating mechanism for fixed or plug-in circuit-breakers

Fixed depth

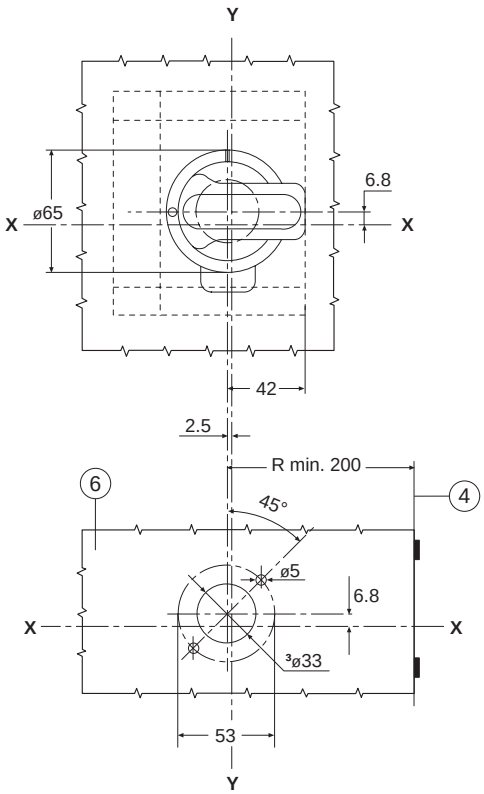


(*) If protection class IP54 required

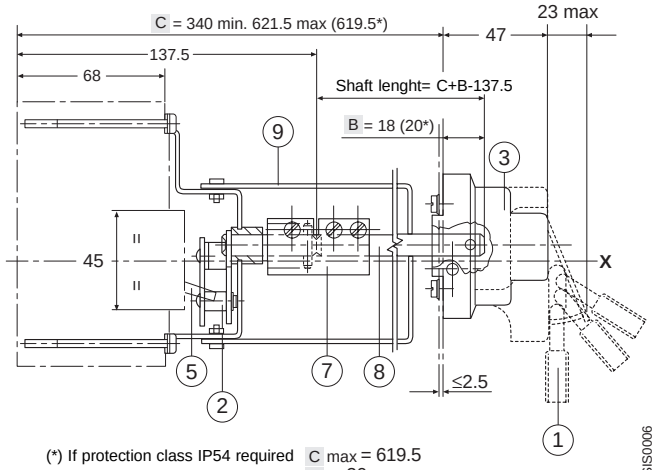
Adjustable depth (max 300 mm)



(*) If protection class IP54 required A = 298
B = 20



Adjustable depth (max 621,5 mm)



(*) If protection class IP54 required C max = 619.5
B = 20

GSIS0006

Key

1. Padlock device for open position (max 3 padlocks with ø 6 to be provided by customer)
2. Transmission assembly
3. Rotary handle assembly
4. Minimum radius of rotation for fulcrum of compartment door
5. Circuit-breaker operating lever
6. Drilling of compartment door
7. Joint
8. Shaft
9. Support

Note
See the various different versions for the circuit-breaker mounting holes

Overall dimensions

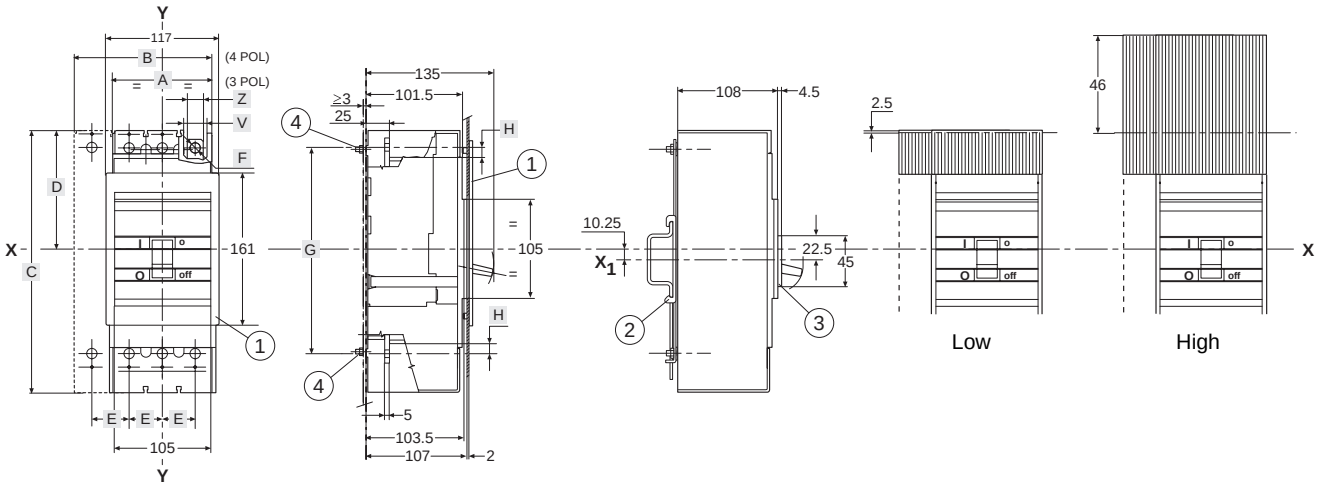
SACE S3-S4-S5-S3X-S4X

Fixed circuit-breaker

Mounting on sheet metal

Mounting on DIN EN 50023 channel

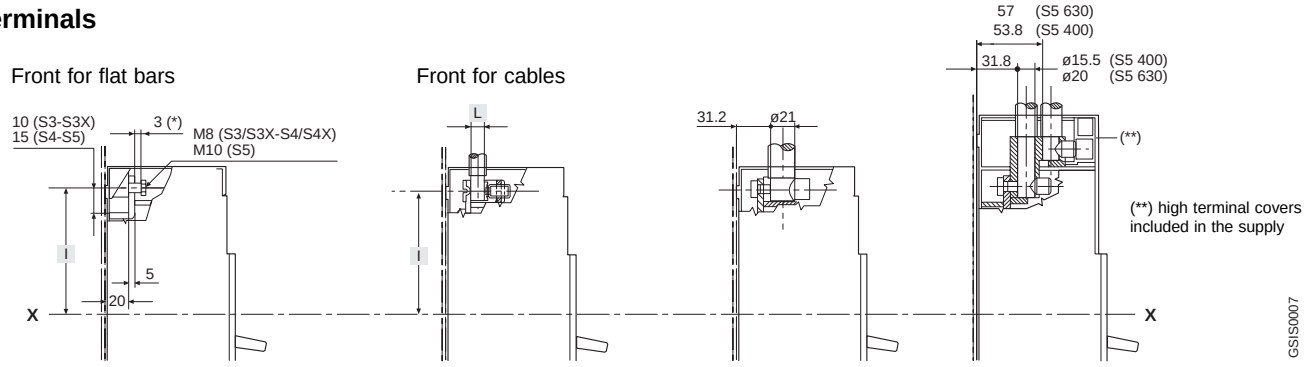
Terminal covers
(to order when not included in supply)



Terminals

Front for flat bars

Front for cables



(*) 3 mm = minimum admissible thickness for S5 400

For SACE S3 - S4
S5 400 - S3X - S4X only

1 x 240 mm² (S5 400)

2 x 120 mm²

For SACE S5 400 - S5 630 only

Key

1. Flange for compartment door
2. Bracket for mounting on DIN EN 50023 channel
3. 45 mm front flange
4. Tightening torque 2 Nm

	A	B	C	D	E	F	G	H	I	L	V	Z
S3	105	140	170	87.25	35	Ø 8	143	10	73.75	18x18	24	17.5
S4	105	140	254	125.25	35	Ø 8	218	11	107.25	18x18	24	17.5
S5 400	140	183.75	254	125.25	43.75	Ø 10	218	12	107.25	24x24	31	19.5
S5 630	140	183.75	254	125.25	43.75	Ø 10	218	12	107.25	–	31	19.5
S3X	100	140	255	175.25	35	Ø 8	228	10	158.75	18x18	24	17.5
S4X	105	140	359	210.25	35	Ø 8	307.5	11	196.75	18x18	24	17.5

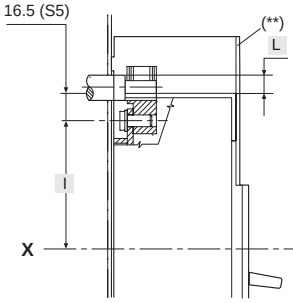
Overall dimensions

SACE S3-S4-S5-S3X-S4X

Fixed circuit-breaker

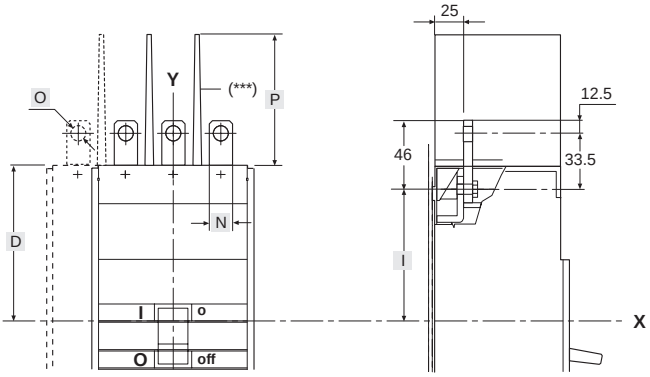
Terminals

For rear Cu/Al cables



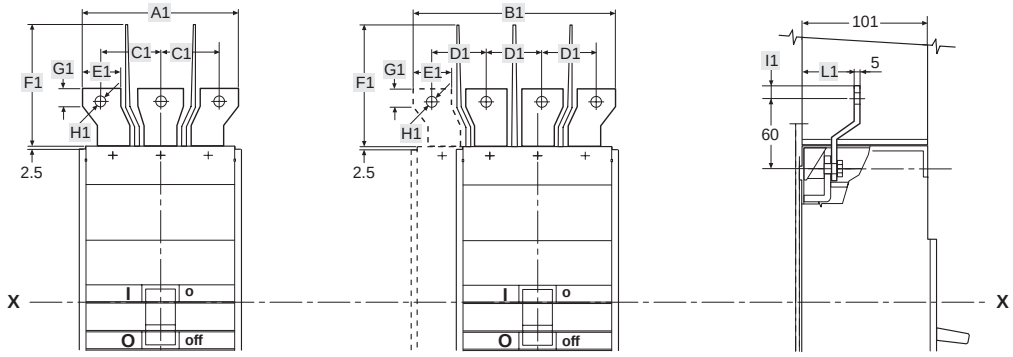
(**) high terminal covers included in supply

Extended front



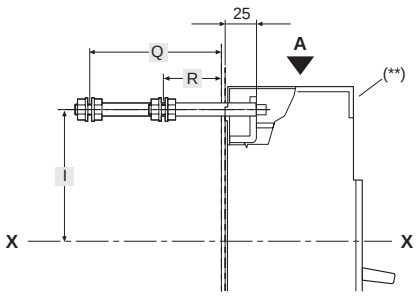
(***) Separator plates between the phases to order

Extended front spreaded

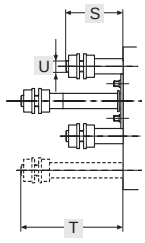


3 POL 4 POL

Threaded rear



View A



GSIS0008

(**) low terminal covers included in supply

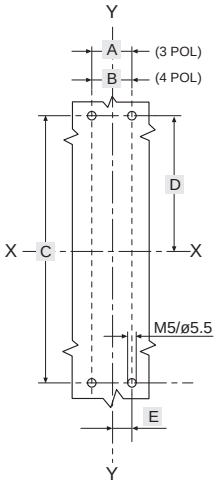
	D	I	L	N	O	P	Q	R	S	T	U	A1	B1	C1	D1	E1	F1	G1	H1	I1	L1
S3	87.25	73.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S4	125.25	107.25	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S5 400	125.25	107.25	Ø 21	25	Ø 11	100	86.5	39.5	62	108	M 16	...	...	...	...	...	...	...	...	...	...
S5 630	125.25	107.25	–	–	–	–	106	41	70	135	M 24	158	202	59	54	40	189 max	...	Ø 11	15	49
S3X	175.25	158.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45
S4X	210.25	196.75	Ø 16	20	Ø 8.5	100	81.5	36.5	55	100	M 12	130	165	50	45	30	155	...	Ø 8.5	12.5	45

Mounting parts for fixed circuit-breaker

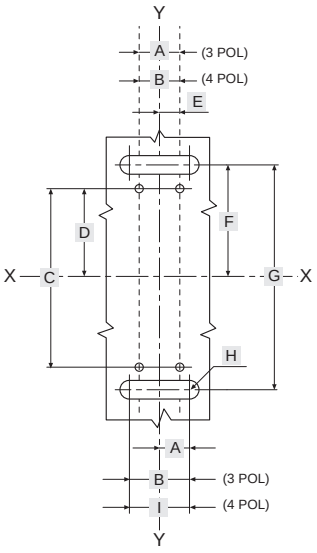
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

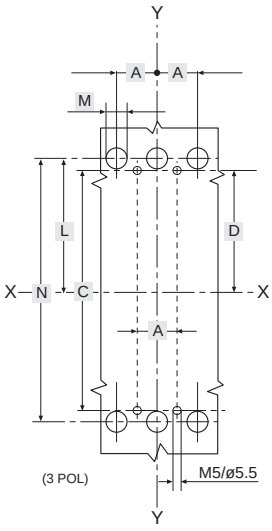
For terminals:
Front for flat bars
Extended front
Front for cables

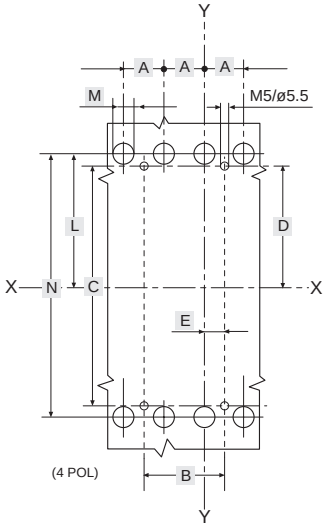


For terminals for rear
Cu/Al cables



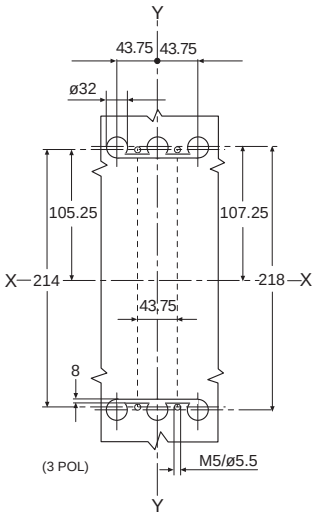
For threaded rear terminals

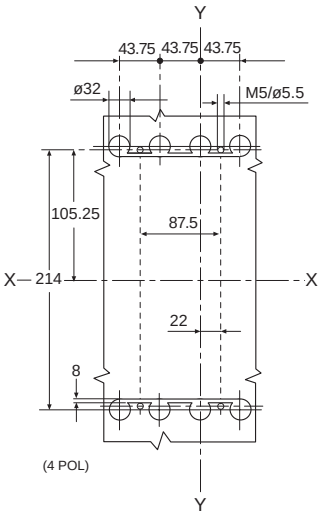




For SACE S3 - S4 - S5 400 -S3X - S4X only

For threaded rear terminals

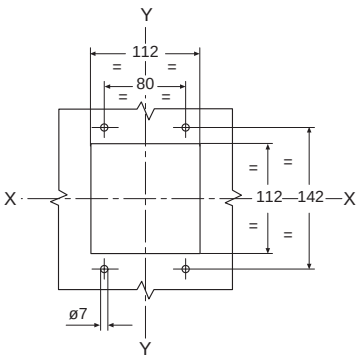




For SACE S5 630 only

Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



GSIS0009

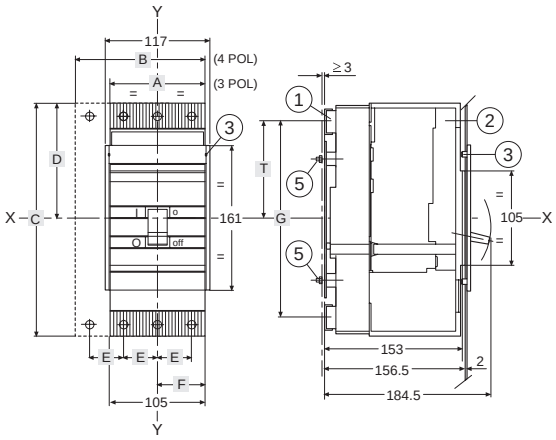
	A	B	C	D	E	F	G	H	I	L	M	N
S3	35	70	139	71.75	17.5	94.75	185	R15	105	73.75	Ø 24	143
S4	35	70	214	105.25	17.5	128.25	260	R15	105	107.25	Ø 24	218
S5	43.75	87.5	214	105.25	22	134.25	272	R20	131.25	107.25	Ø 30	218
S3X	35	70	224	156.75	17.5	179.75	270	R15	105	158.5	Ø 24	228
S4X	35	70	303.5	194.75	17.5	218	350	R15	105	196.75	Ø 24	307.5

Overall dimensions

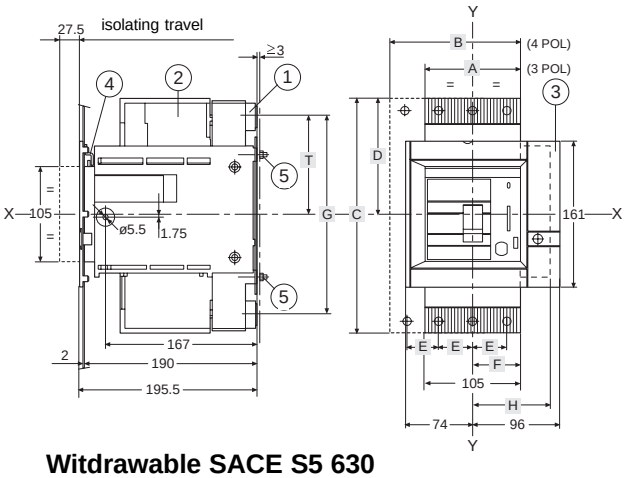
SACE S3-S4-S5-S3X-S4X

Plug-in circuit-breaker - withdrawable circuit-breaker

Plug-in SACE S3-S4-S5 400-S3X-S4X



Witdrawable SACE S3-S4-S5 400-S3X-S4X

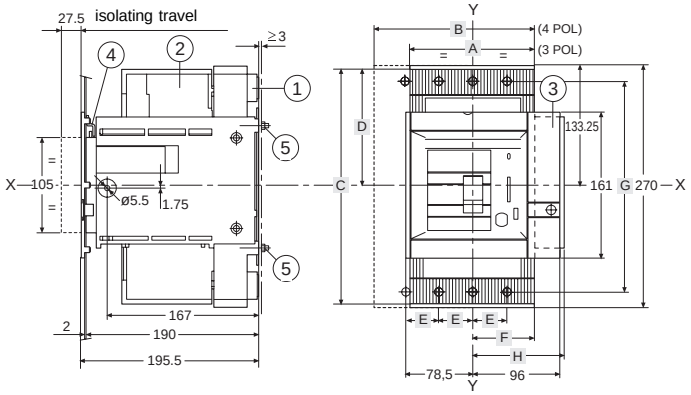


Key

1. Fixed part
2. Moving part complete with IP20 protection class terminal covers
3. Flange for compartment door (included in supply)
4. Lock for compartment door (to order)
5. Tightening torque 1,1 Nm (S3-S4-S3X-S4X) - 2 Nm (S5)

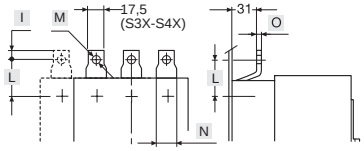
Note The withdrawable circuit-breaker must be completed with one of the following accessories:
– front flange for operating lever mechanism
– rotary handle operating mechanism
– motor operator

Witdrawable SACE S5 630

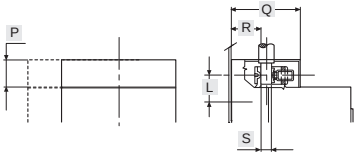


Terminals

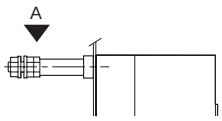
Front for flat bars (up to 400 A and S5 630-400A)



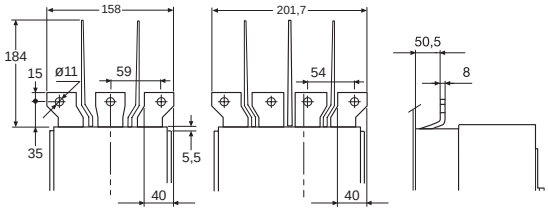
Front for cables (up to 400 A)



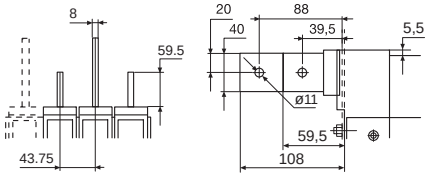
Threaded rear



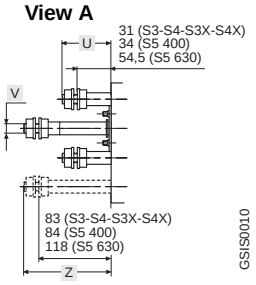
Front spreaded for SACE S5 630



Vertical flat bar rear terminals for SACE S5 630



View A



	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V	Z
S3	105	140	175	89.75	35	52.5	143	84	10	33.5	Ø 8.2	20	5	37.5	79.5	36	18x18	73.75	48	M12	100
S4	105	140	259	127.75	35	52.5	218	84	10	33.5	Ø 8.2	20	5	37.5	79.5	36	18x18	107.25	48	M12	100
S5 400	140	183.75	259	127.75	43.75	70	218	101.5	14	43.5	Ø 10.2	25	6	47.5	91.5	37	24x24	107.25	58	M16	108
S5 630	140	183.75	259	127.75	43.75	70	218	101.5	14	49	Ø 10.2	25	6	55.75	91.5	37	24x24	109.25	80	M24x2	143
S3X	105	140	260	174.5	35	52.5	143	84	10	33.5	Ø 8.2	20	5	–	–	–	–	73.75	48	M12	100
S4X	105	140	344	212.75	35	52.5	218	84	10	33.5	Ø 8.2	20	5	–	–	–	–	107.25	48	M12	100

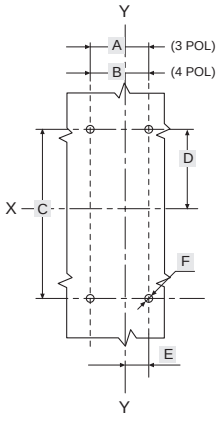
Mounting parts for plug-in circuit-breaker - withdrawable circuit-breaker

Template for drilling sheet metal support

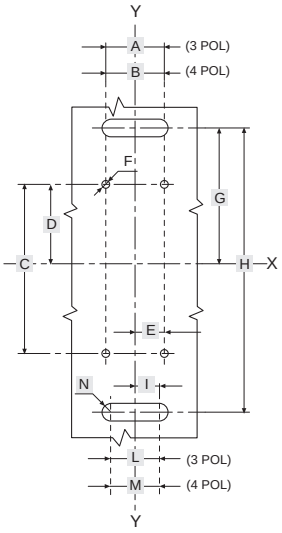
(minimum thickness of sheet metal: 3 mm)

SACE S3-S4-S5 400-S3X-S4X

For terminals:
Front for flat bars
Front for cables

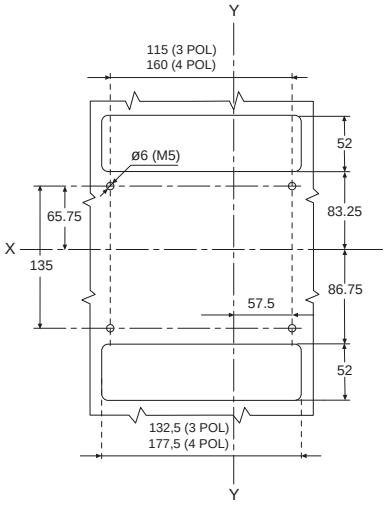


For terminals
Threaded rear

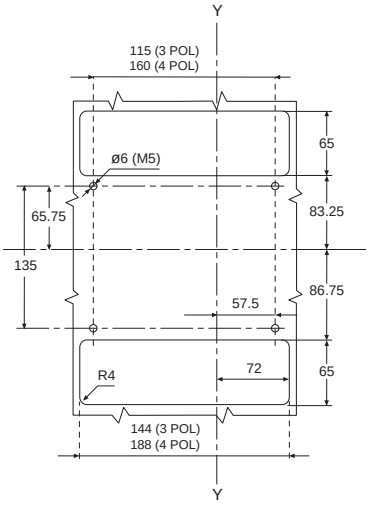


SACE S5 630

For terminals:
Vertical flat bar rear terminals
Threaded rear

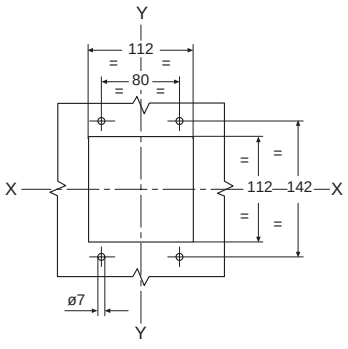


For terminals:
Front
Front for Cu cables
Front spreaded

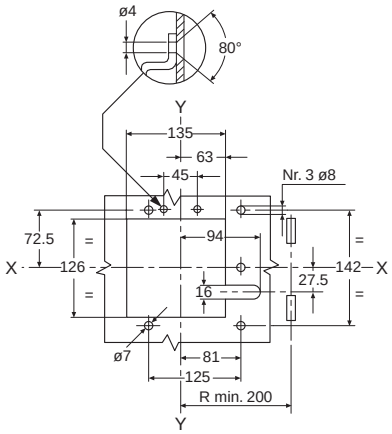


Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



For plug in circuit-breaker



For withdrawable circuit-breaker

GSIS0011

6

	A	B	C	D	E	F	G	H	I	L	M	N
S3 - S3X	70	105	100	52.25	25	M4-Ø5	73.75	143	35	70	105	R14
S4 - S4X	82	117	135	65.75	41	M4-Ø5	107.25	218	35	70	105	R14
S5	115	160	135	65.75	58	M5-Ø6	107.25	218	43.75	87.5	131.25	R18

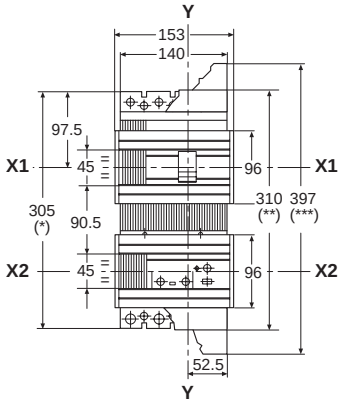
Overall dimensions

SACE S3-S4-S5-S3X-S4X

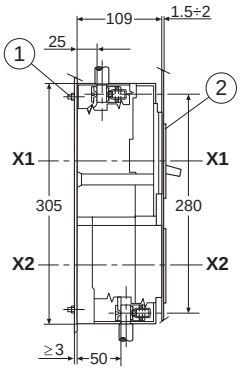
SACE S3 circuit-braker with SACE RC211/3 - RC212/3 residual current release

Vertical installation (mounting on sheet metal)

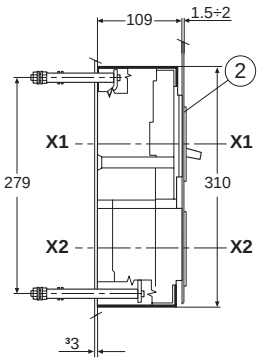
(*) Without terminal covers
(**) with low terminal covers
(***) with high terminal covers

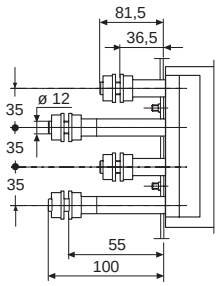


Front terminals for cables
(terminal covers to order)

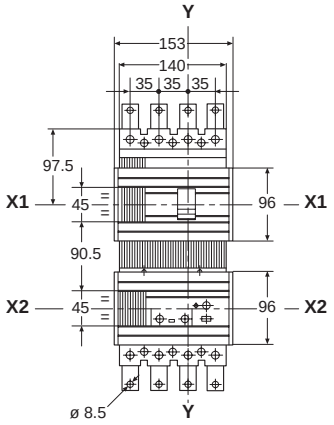


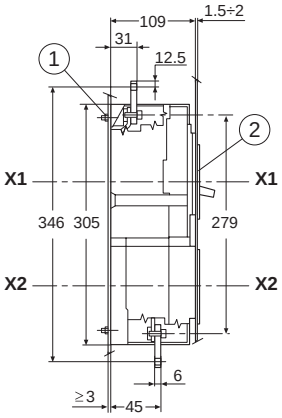
Rear terminals
(low terminal covers included in supply)



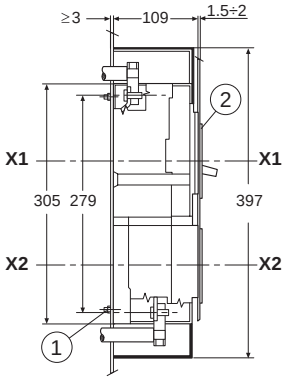


Version with extended front terminals





Terminals for rear Cu/Al cables
(high terminal covers included in supply)



Key

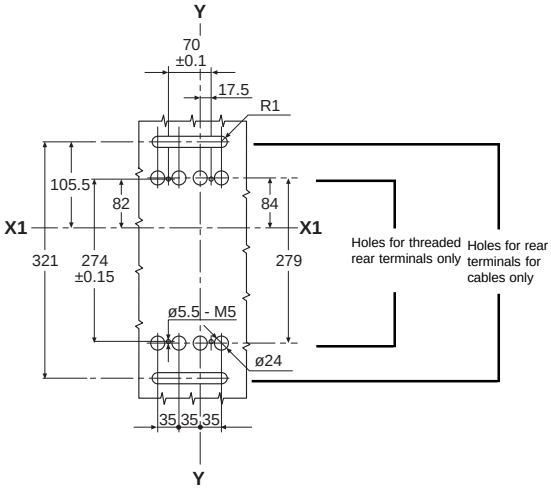
(1) Tightening torque 2 Nm

(2) Flange for compartment door

Note
See the various different versions for the dimensions of the terminals

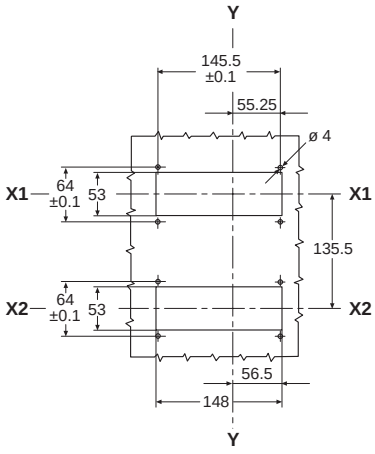
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

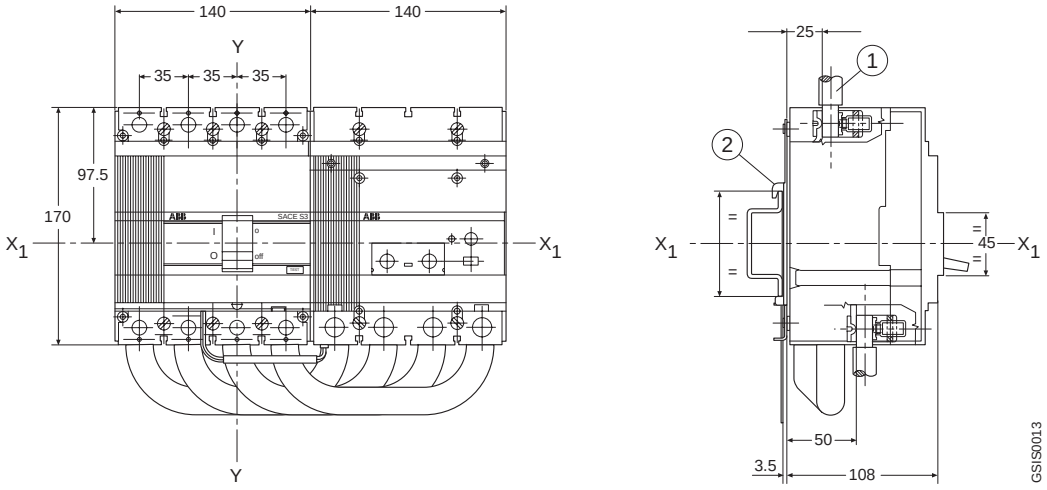
(thickness of sheet metal: 1.5 - 2 mm)



GSIS0012

SACE S3 circuit-braker with SACE RC211/3 - RC212/3 residual current release

Horizontal installation



Key

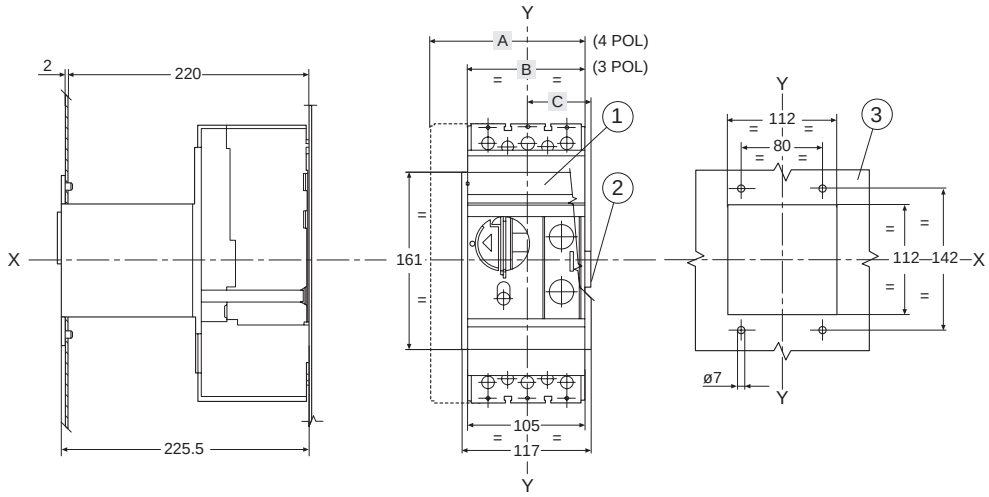
1. Front terminals for cables
2. Bracket for mounting on DIN EN 50023 channel

Overall dimensions

SACE S3-S4-S5-S3X-S4X

Accessories

Motor operator for fixed circuit-breaker



Key

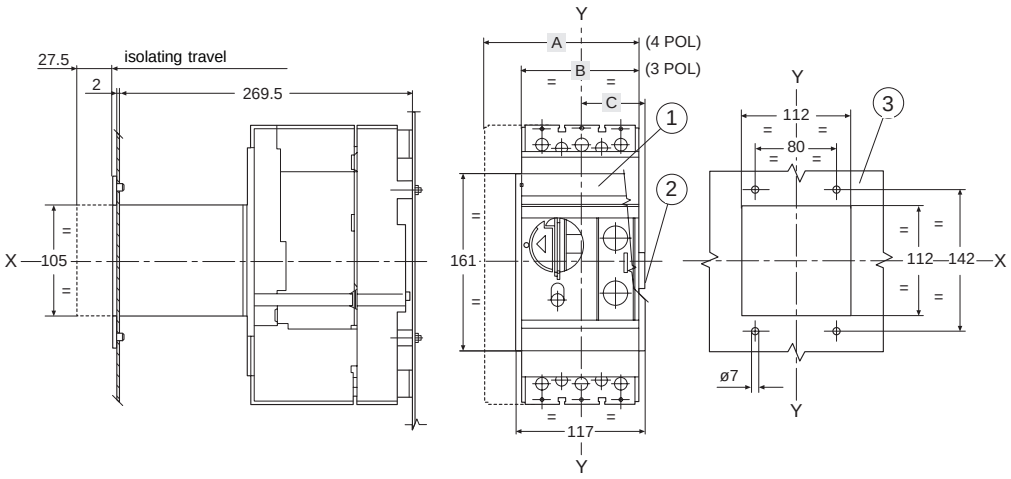
1. Flange for compartment door (included in supply)
2. Dimensions with connectors
3. Drilling of compartment door

Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	75.5

Motor operator for plug in circuit-breakers



Key

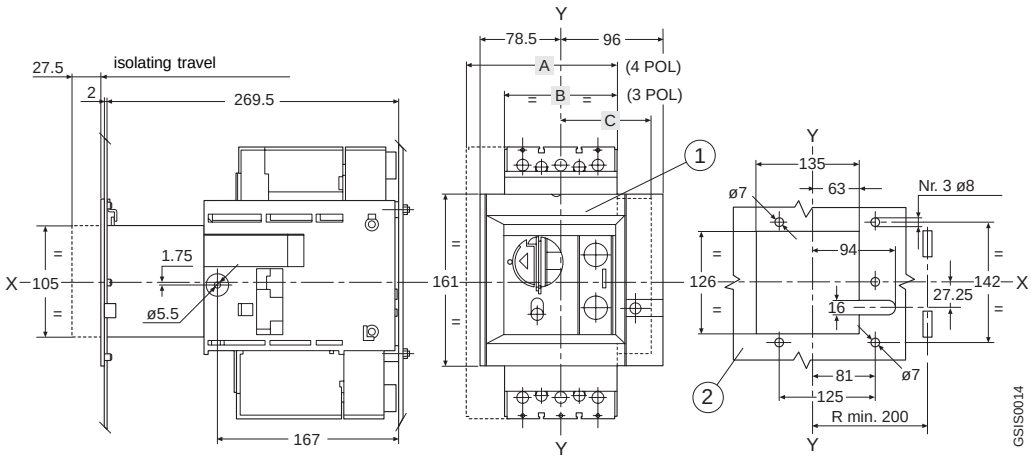
1. Flange for compartment door (included in supply)
2. Dimensions with connectors
3. Drilling of compartment door

Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	75.5

Motor operator for withdrawable circuit-breaker



Key

1. Flange for compartment door (included in supply)
2. Drilling of compartment door

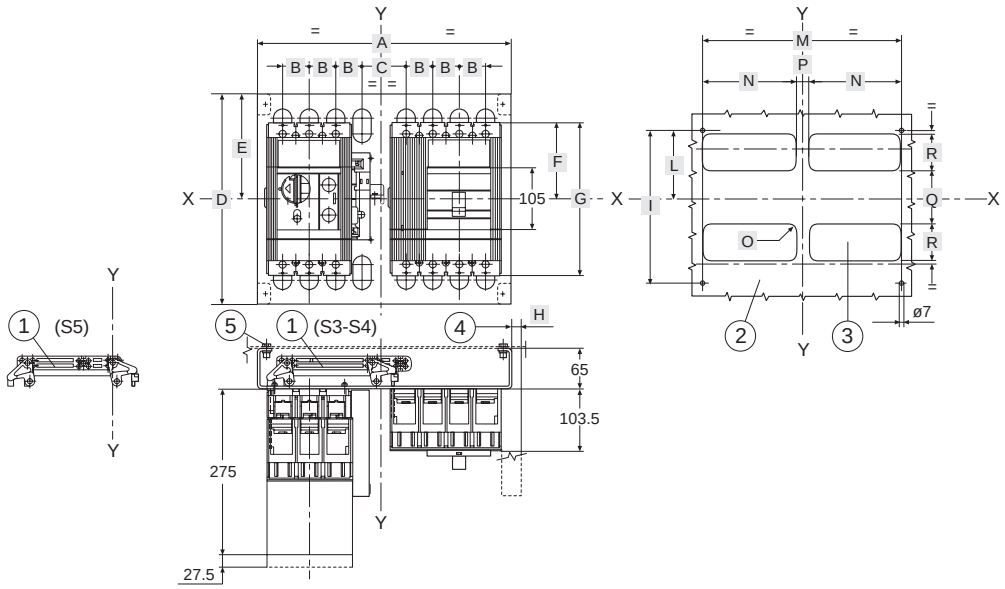
Note

See the various different versions for the circuit-breaker mounting holes

	A	B	C
S3-S4 S3X-S4X	140	105	58
S5	183.75	140	101.5

Accessories

Interlock across two horizontally-installed circuit-breakers



Key

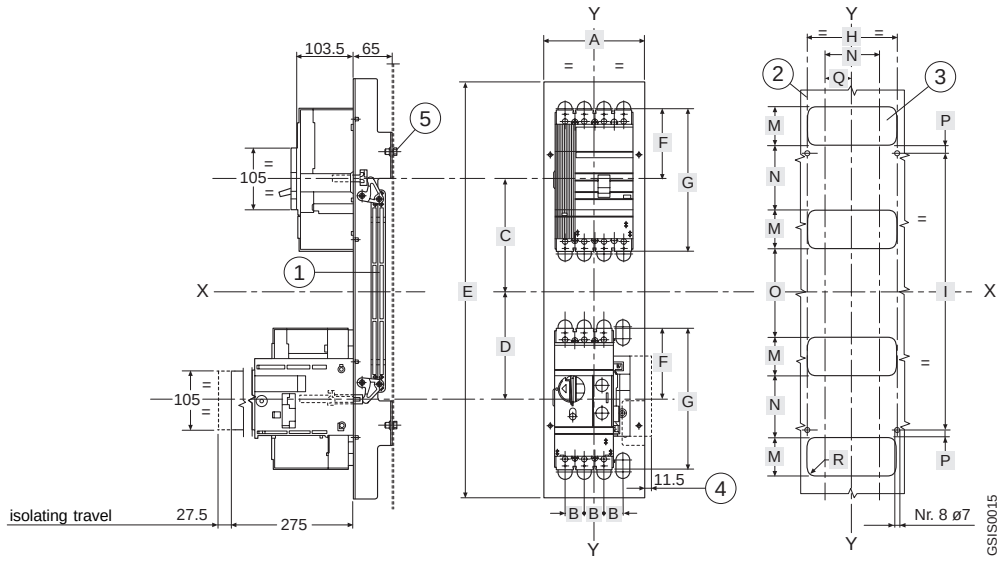
1. Interlock device
2. Template for drilling mounting holes in sheet metal
3. Drilling template for all versions with rear terminals
4. Dimensions with four-pole withdrawable version mounted on right
5. Tightening torque 3,7 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R
S3	350	35	66	265	134.5	87.2	170	12	227.5	116	324	155	R15	16	68	75
S4	350	35	66	350	173.5	125.3	254	12	315	156	324	155	R15	16	143	75
S5	500	43.75	119	350	173.3	125.3	254	16	315	156	472	202	R15	48	114	117
S3X	350	35	66	265	135	172	255	12	227.5	116	324	155	R15	16	68*, 153**	75
S4X	350	35	66	350	173.3	210	339	12	315	156	324	155	R15	16	143*, 232.5**	75

* Per interruttore estraibile con terminals posteriori
** Per interruttore fisso con terminals posteriori (uscita posteriore)

Interlock across two vertically-installed circuit-breakers (S3-S4-S5)



Key

1. Interlock device
2. Drilling template for mounting circuit-breakers on sheet metal
3. Drilling template for all versions with rear terminals
4. Dimensions with four-pole withdrawable version
5. Tightening torque 3,7 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

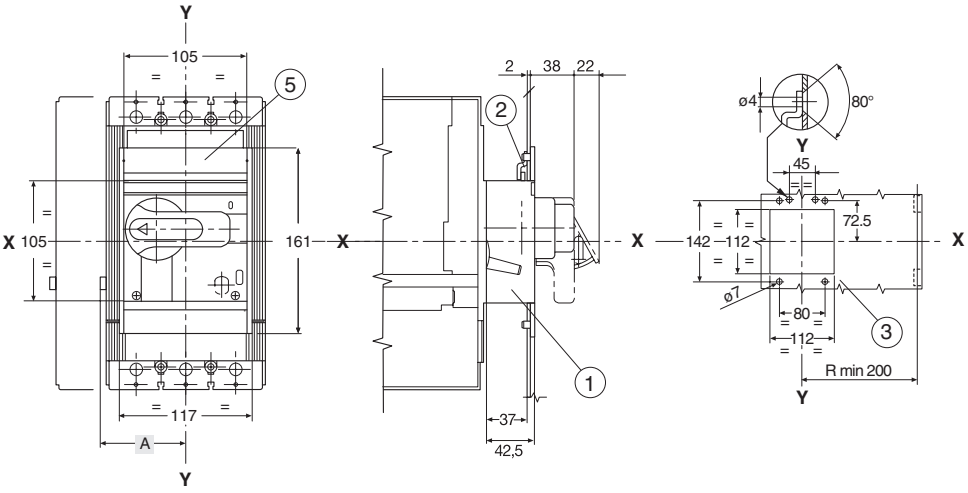
	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R
S3	180	35	152.5	157.5	578	87.5	170	157.5	350	155	75	68	92	14	77.5	R15
S4	180	35	198.5	195.5	750	125.3	254	157.5	490	155	75	143	101	23.5	77.5	R15
S5	220	43.75	198.5	195.5	750	125.3	254	201	490	202	107	114	66	9	98.5	R15

Overall dimensions

SACE S3-S4-S5-S3X-S4X

Accessories

Rotary handle operating mechanism on fixed or plug in circuit-breaker



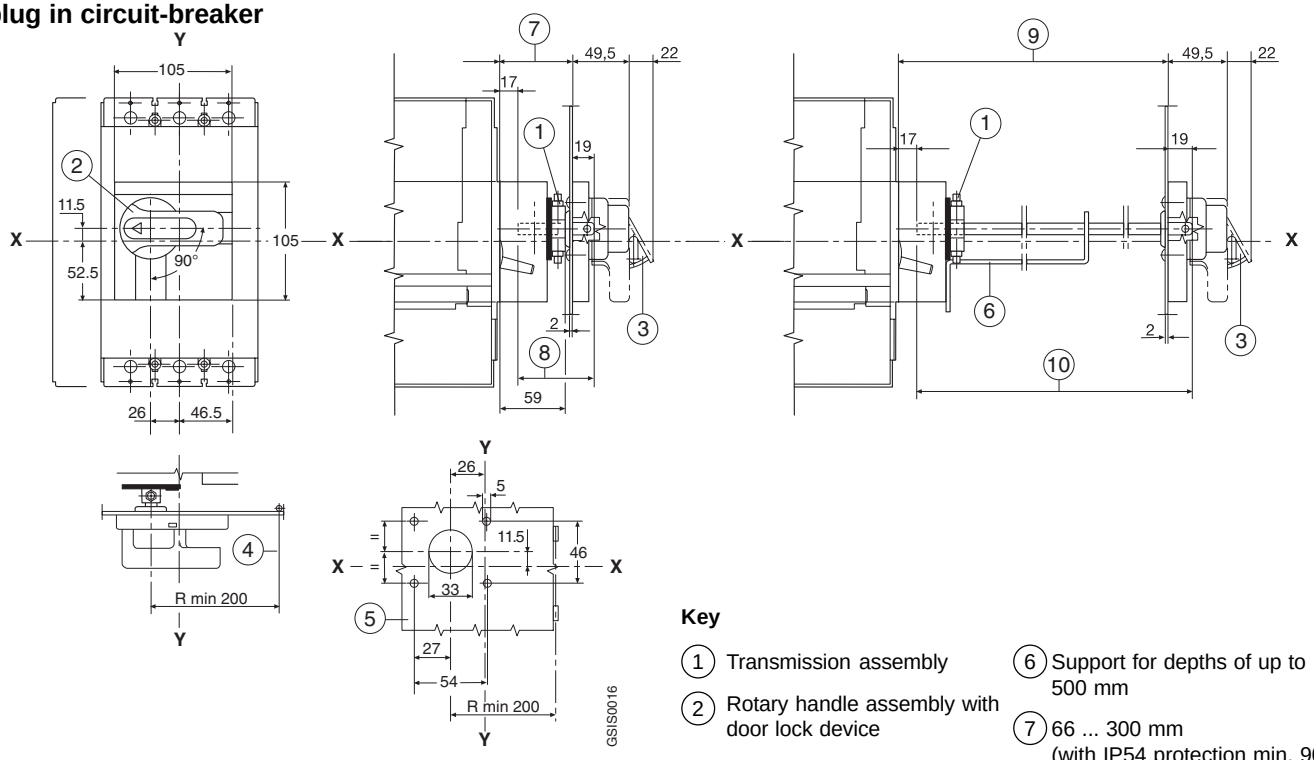
Key

1. Rotary handle operating mechanism
2. Lock for compartment door (to order)
3. Drilling of compartment door
4. Dimensions for connector for early contact for undervoltage release
5. Flange for compartment door (included in supply)

		A (4)
S3-S4 S3X-S4X	III	58
S3-S4 S3X-S4X	IV	93
S5	III	75.5
S5	IV	119.25

Note
See the various different versions for the circuit-breaker mounting holes

Compartment door-mounted rotary handle operating mechanism with adjustable depth for fixed or plug in circuit-breaker



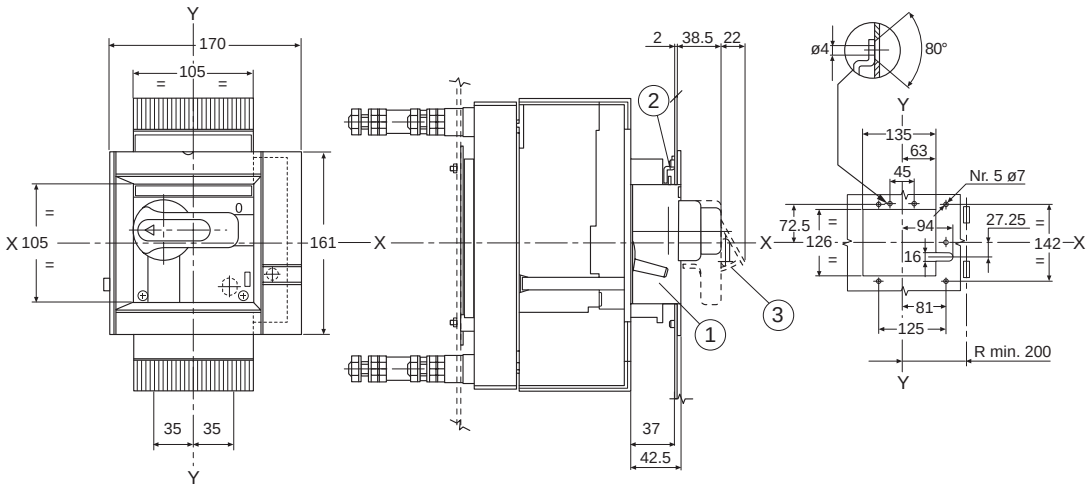
Key

1. Transmission assembly
2. Rotary handle assembly with door lock device
3. Padlock device for open position (maximum 3 padlocks with max ø6mm to be provided by customer)
4. Minimum radius of rotation for fulcrum of door
5. Drilling of door
6. Support for depths of up to 500 mm
7. 66 ... 300 mm (with IP54 protection min. 90)
8. Distance (7) + 2 mm (shaft length)
9. 301...500 mm (with IP54 protection min.325)
10. Distance (9) + 2 mm (Shaft length)

Note
See the various different versions for the circuit-breaker mounting holes

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker

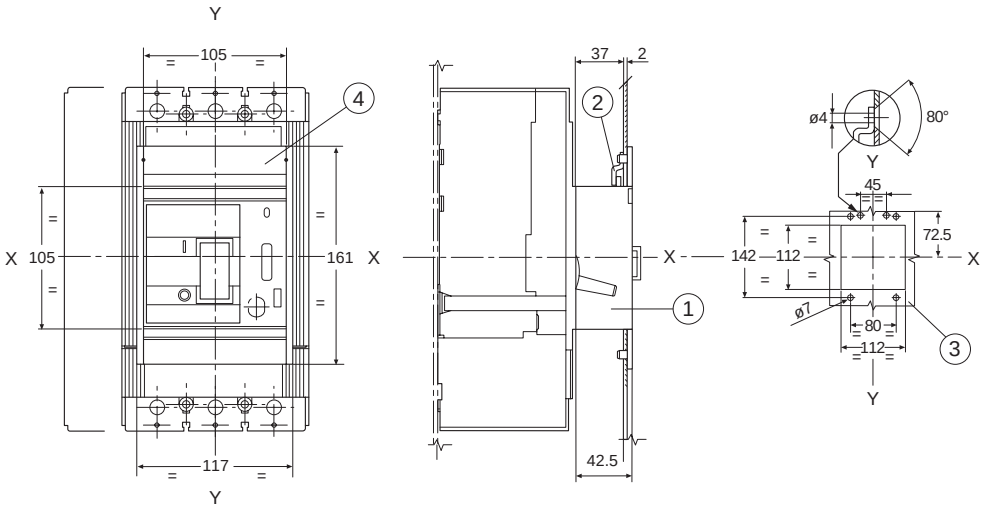


Key

1. Rotary handle operating mechanism
2. Lock for compartment door (to order)
3. Padlock device for open position (maximum 3 padlocks max. ø 6 mm to be provided by user)

Note
See the various different versions for the circuit-breaker mounting holes

Front flange for operating lever mechanism

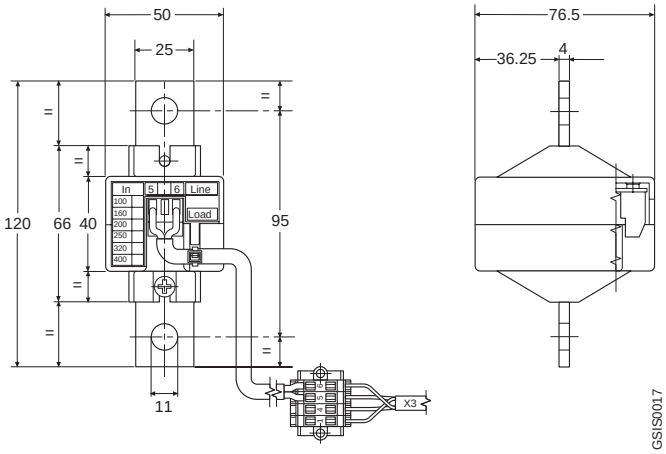


Key

1. Front flange for lever operating mechanism
2. Lock for compartment door (to order)
3. Drilling of compartment door
4. Flange for compartment door (included in supply)

Note
See the various different versions for the circuit-breaker mounting holes

External neutral for SACE S4-S5 circuit-breakers

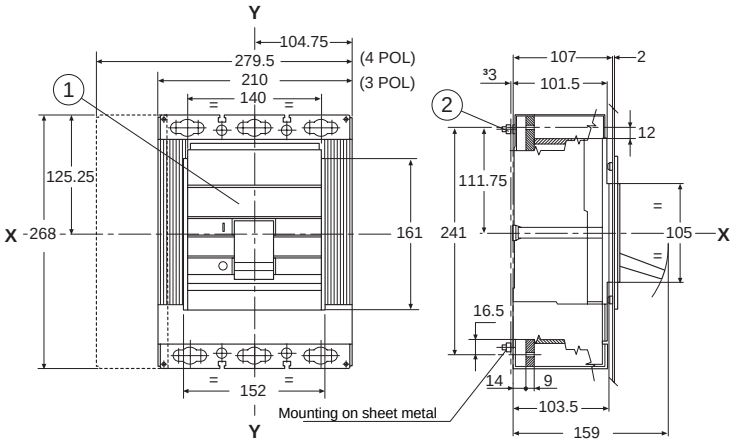


6

Overall dimensions

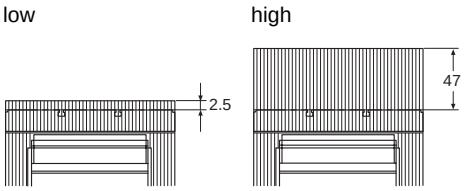
SACE S6 - S6X

Fixed circuit-breaker (S6)



Terminal covers

(to order when not included in the supply)

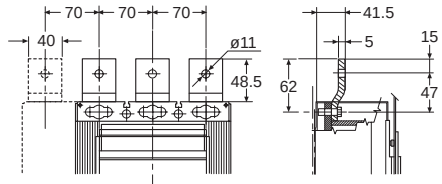


Key

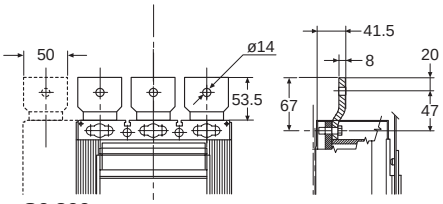
1. Flange for compartment door (included in supply)
2. Tightening torque 2 Nm

Terminals

Front extended

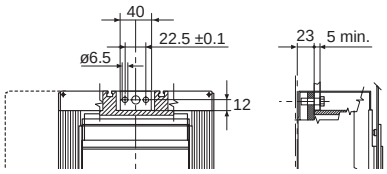


S6 630



S6 800

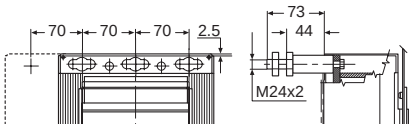
Front



S6 630 - S6 800

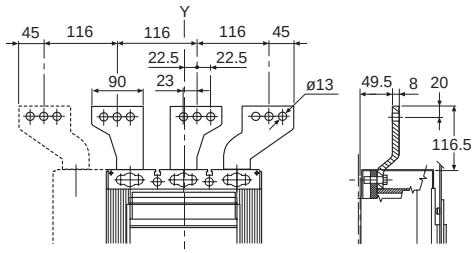
Threaded rear

(low terminal covers included in supply)



S6 630 - S6 800

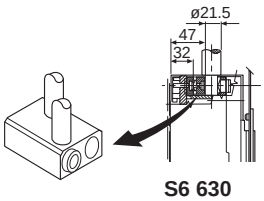
Front extended spreaded



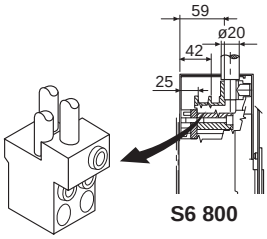
S6 630 - S6 800

Front for Cu/Al cables

(IP20 high terminal covers included in the supply for S6 800)



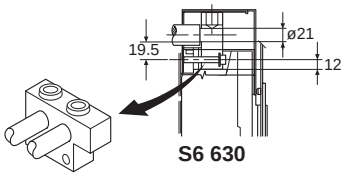
S6 630



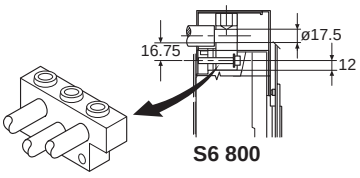
S6 800

For rear Cu/Al cables

(IP20 high terminal covers included in the supply)



S6 630

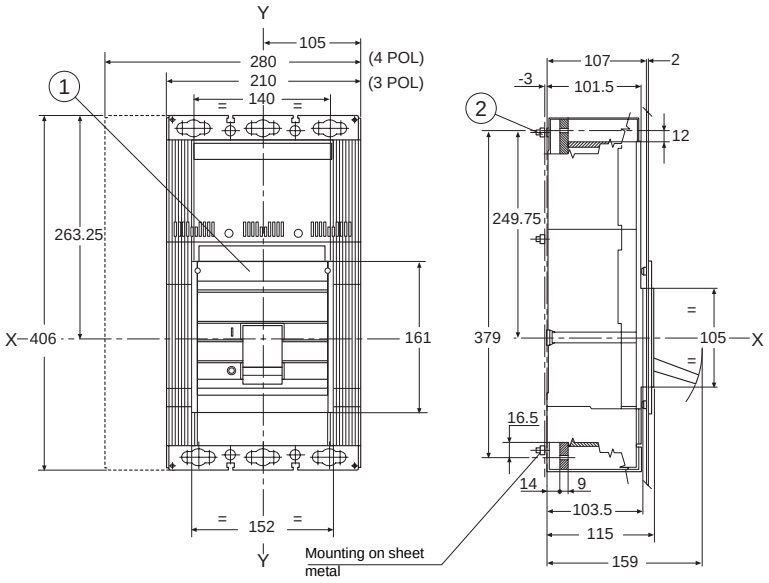


S6 800

GSIS0018

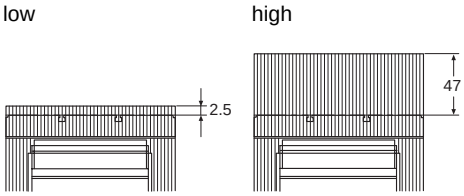
6

Fixed circuit-breaker (S6X)



Terminal covers

(to order when not included in the supply)

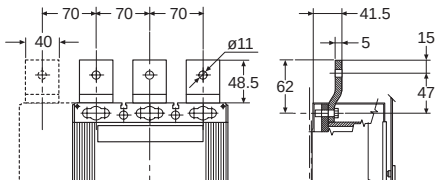


Key

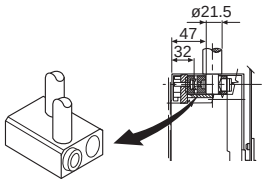
1. Flange for compartment door (included in supply)
2. Tightening torque 2 Nm

Terminals

Extended front

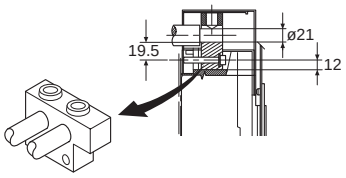


Front for Cu/Al cables

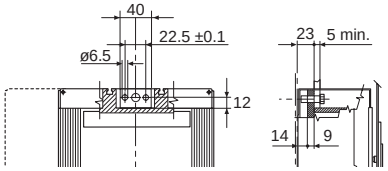


For rear Cu/Al cables

(IP54 high terminal covers included in the supply)

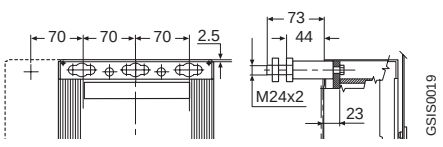


Front



Threaded rear

(low terminal covers included in supply)



6

Overall dimensions

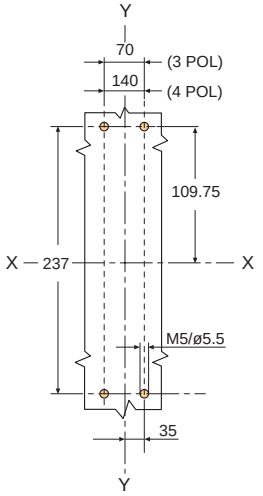
SACE S6 - S6X

Mounting parts for fixed circuit-breaker (S6)

Template for drilling sheet metal support

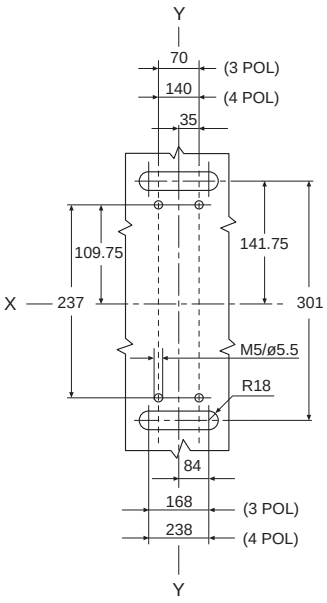
(minimum thickness of sheet metal: 3 mm)

For terminals:
Front for flat bars
Front extended
Front for cables

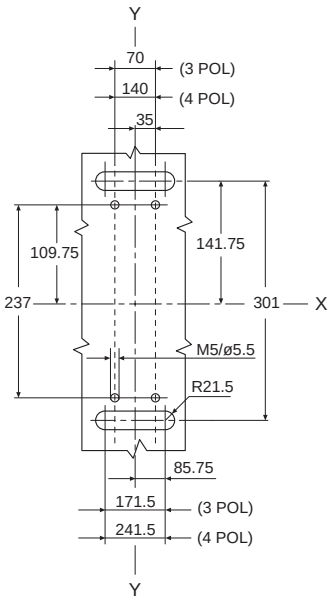


For terminals for rear Cu/Al cables

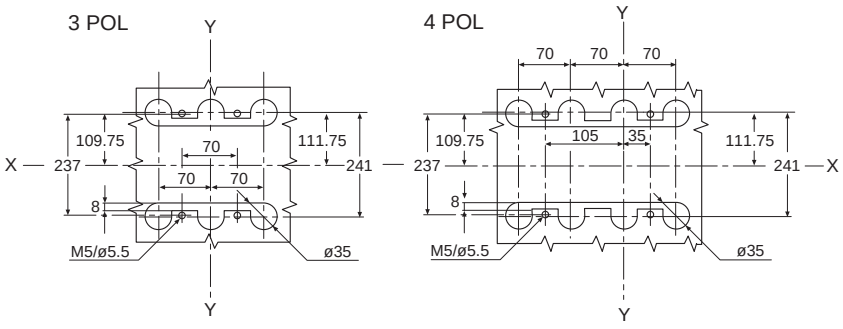
SACE S6 630



SACE S6 800

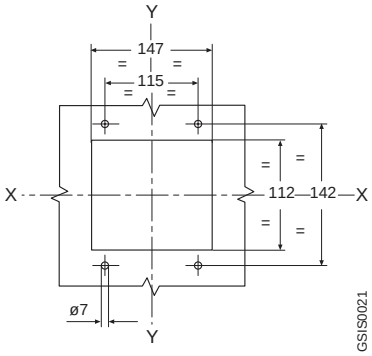


For terminals threaded rear



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



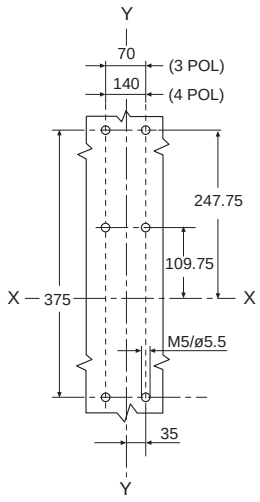
6

Mounting parts for fixed circuit-breaker (S6X)

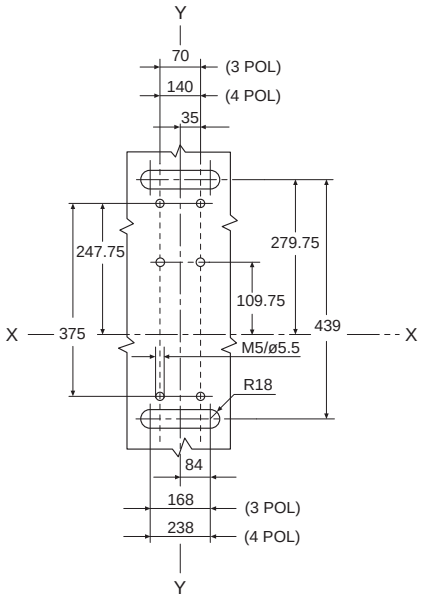
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)

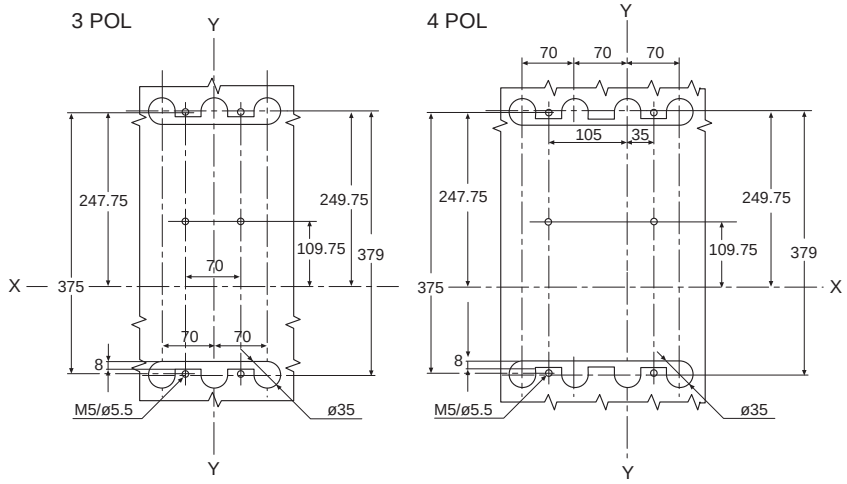
For terminals:
Front for flat bars
Front extended
Front for cables



For terminals for rear Cu/Al cables

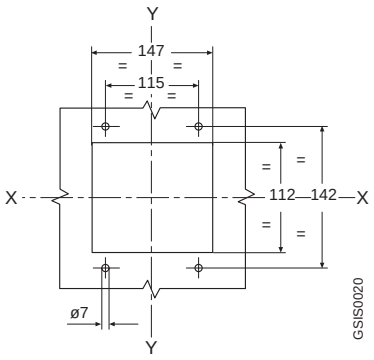


For terminals threaded rear



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)

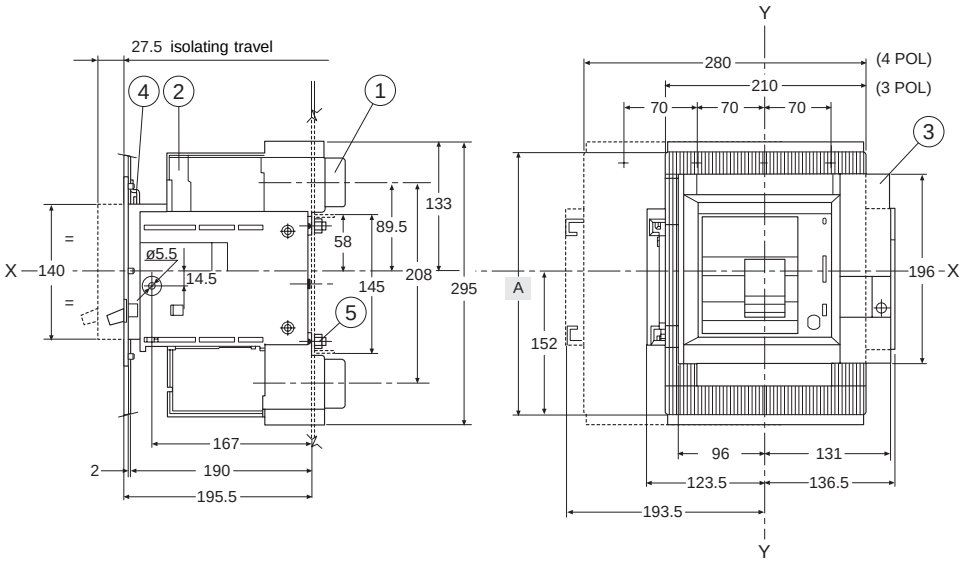


6

Overall dimensions

SACE S6 - S6X

Withdrawable circuit-breaker



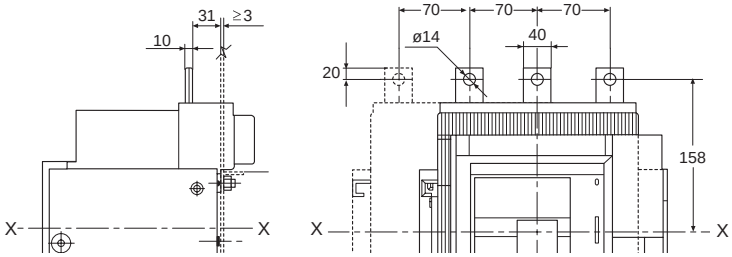
Key

1. Fixed part
2. Moving part
3. Flange for compartment door (included in supply)
4. Lock for compartment door (to order)
5. Tightening torque 9 Nm

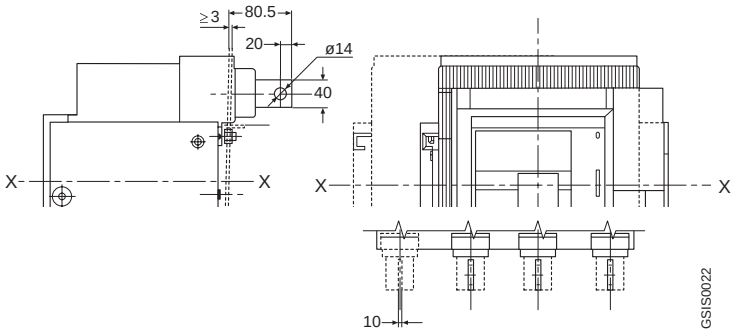
	A
S6	273
S6X	411

Terminals

Front for SACE S6 630, S6 800



Horizontal or vertical rear flat bar for SACE S6 630, S6 800

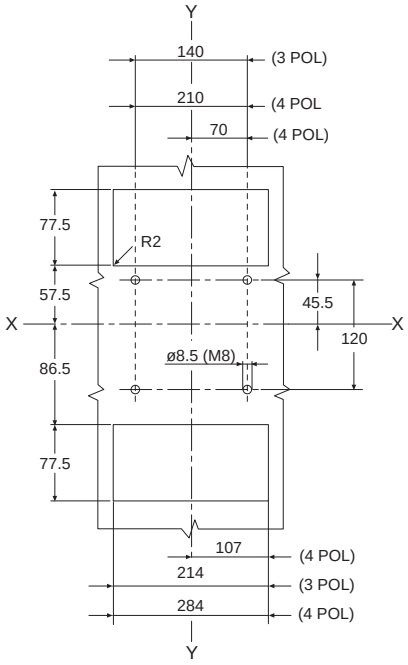


6

Mounting parts for withdrawable circuit-breaker

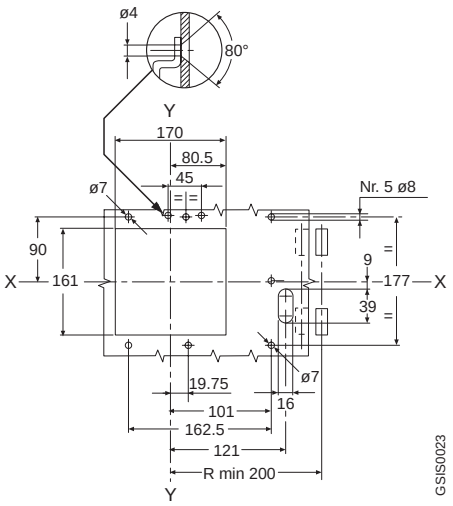
Template for drilling sheet metal support

(minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)

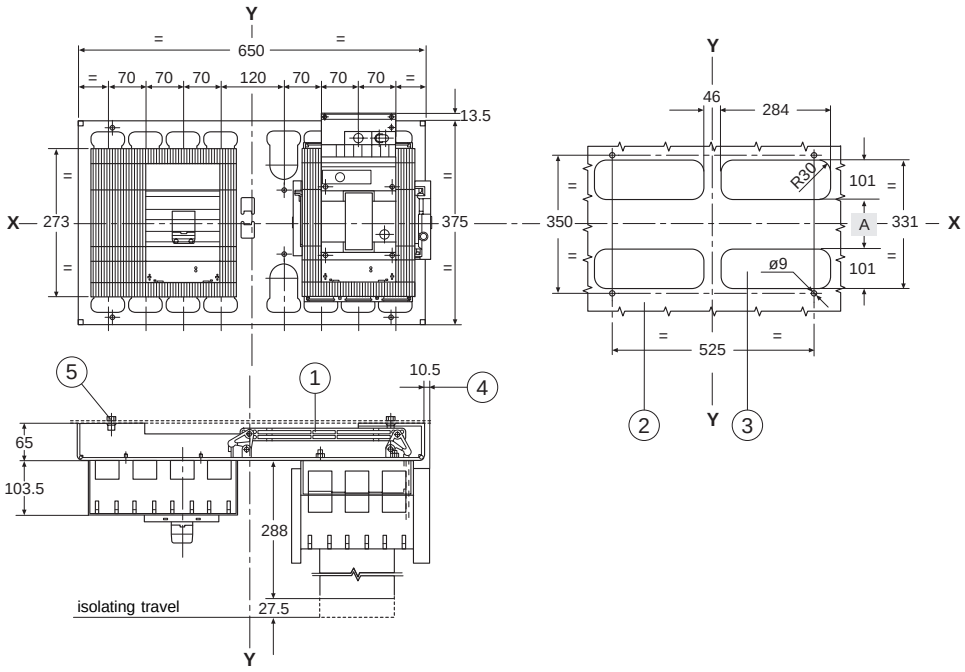


Overall dimensions

SACE S6 - S6X

Accessories

Interlock across two horizontally-installed circuit-breakers



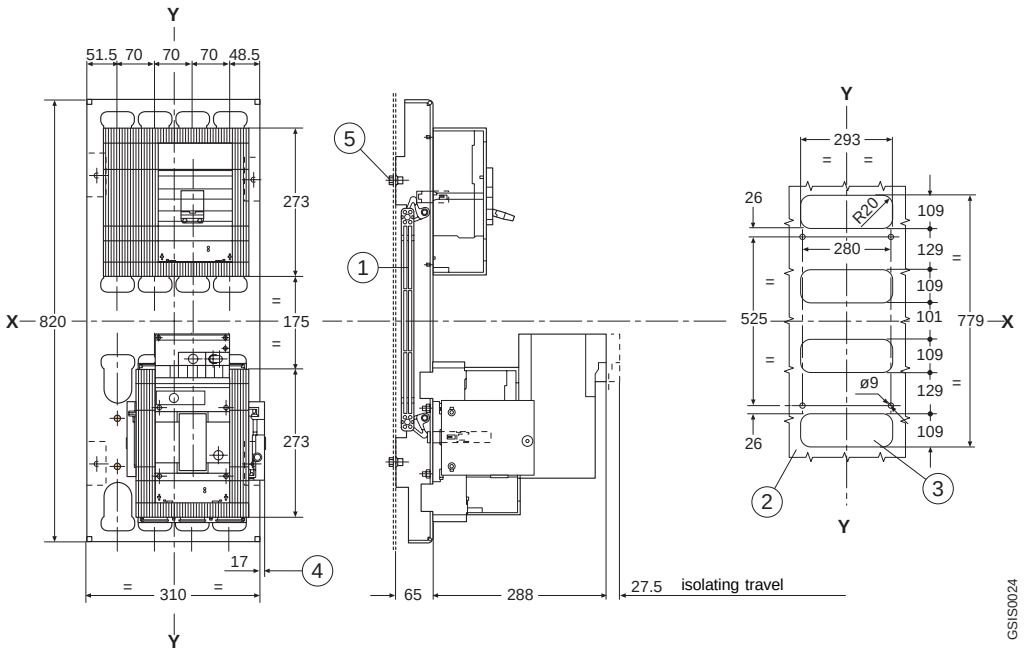
Key

1. Interlock device
2. Drilling template for mounting circuit-breaker on sheet metal
3. Drilling template for all versions with rear terminals
4. Dimensions with withdrawable version mounted on right
5. Tightening torque 9 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

	A mm
S6	129 (fixed, withdrawable)
S6X	267 (fixed) 129 (withdrawable)

Interlock across two vertically-installed circuit-breakers (for S6 only)



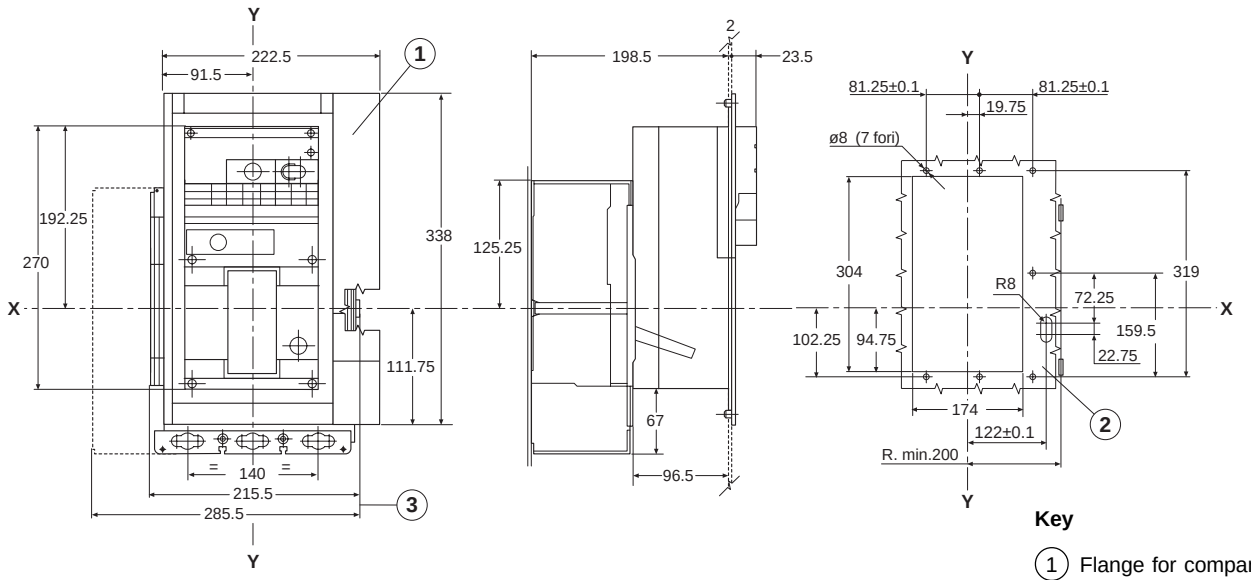
Key

1. Interlock device
2. Drilling template for mounting circuit-breaker on sheet metal
3. Drilling template for all versions with rear terminals
4. Dimensions with withdrawable version mounted underneath
5. Tightening torque 9 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

Accessories

Motor operator for fixed circuit-breaker

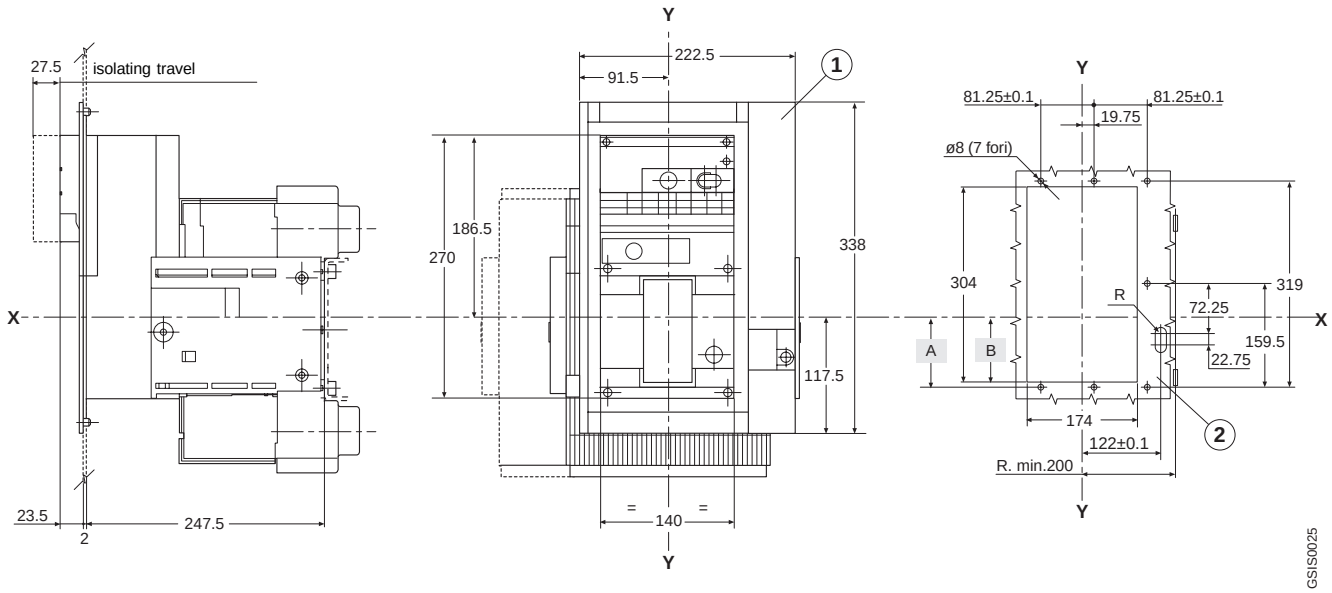


Note
See the various different versions for the circuit-breaker mounting holes

Key

1. Flange for compartment door (included in supply)
2. Template for drilling compartment door
3. Dimensions with connectors

Motor operator for withdrawable circuit-breakers



	A	B
S6	108	100.5
S6X	102.25	94.75

Note
See the various different versions for the circuit-breaker mounting holes

Key

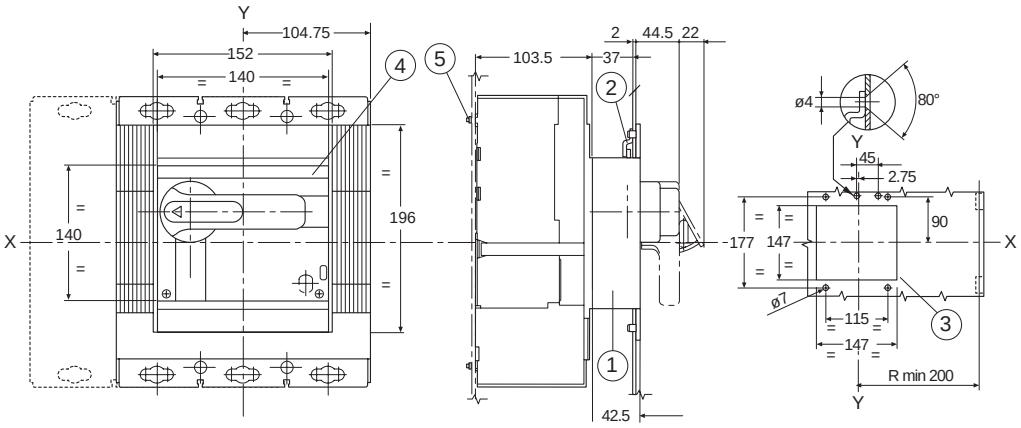
1. Flange for compartment door (included in supply)
2. Template for drilling compartment door

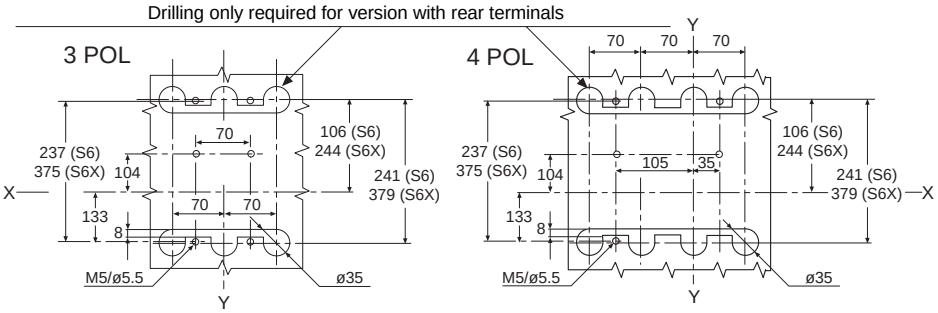
Overall dimensions

SACE S6 - S6X

Accessories

Rotary handle operating mechanism on fixed circuit-breaker



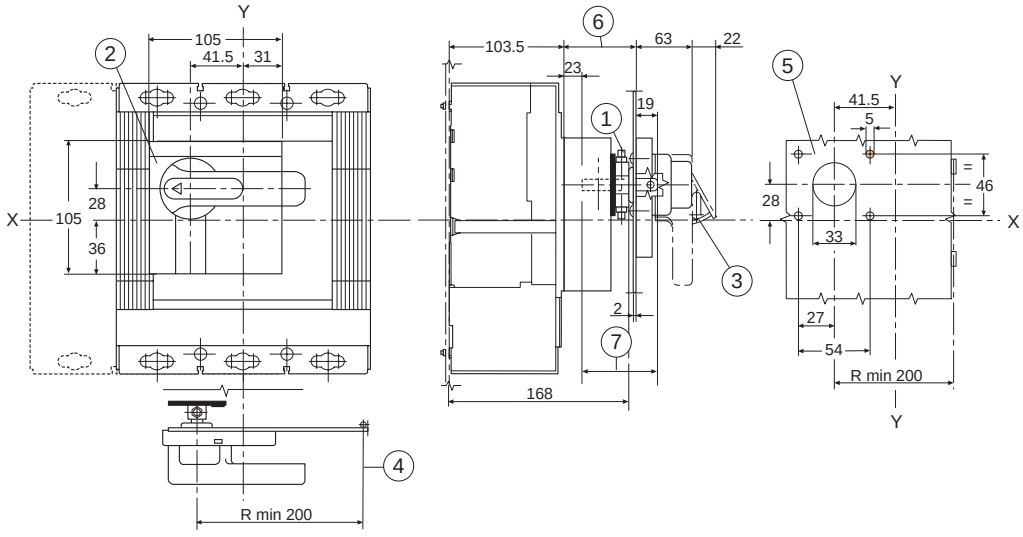


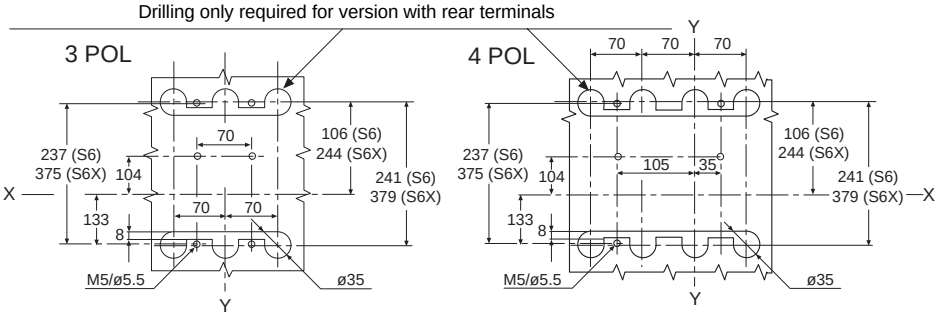
Key

1. Rotary handle operating mechanism on circuit-breaker
2. Lock for compartment door (to order)
3. Drilling of compartment door
4. Flange for compartment door (included in supply)
5. Tightening torque 2 Nm

Note
See the various different versions for the circuit-breaker mounting holes

Compartment door-mounted rotary handle mechanism with adjustable depth for fixed circuit-breaker





Key

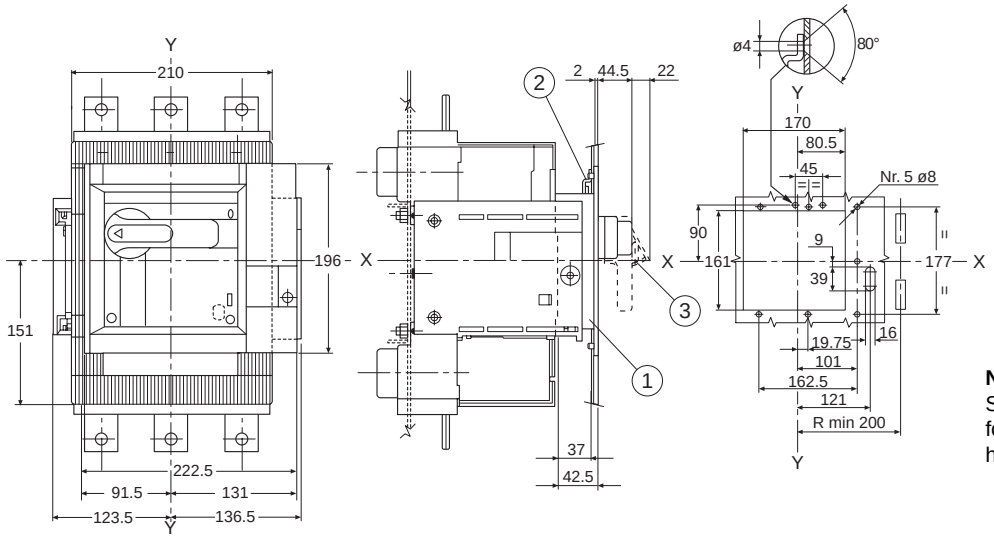
1. Transmission assembly
2. Rotary handle assembly with door lock device
3. Padlock device (maximum 3 padlocks max ø 6 mm to be provided by customer only for circuit-breaker open position)
4. Minimum radius of rotation for fulcrum of door
5. Drilling template for mounting circuit-breaker on sheet metal
6. 72...506 mm (with IP54 protection min. 96)
7. Distance (6) -4 mm (shaft length)

Note
See the various different versions for the circuit-breaker mounting holes

GSIS0026

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker

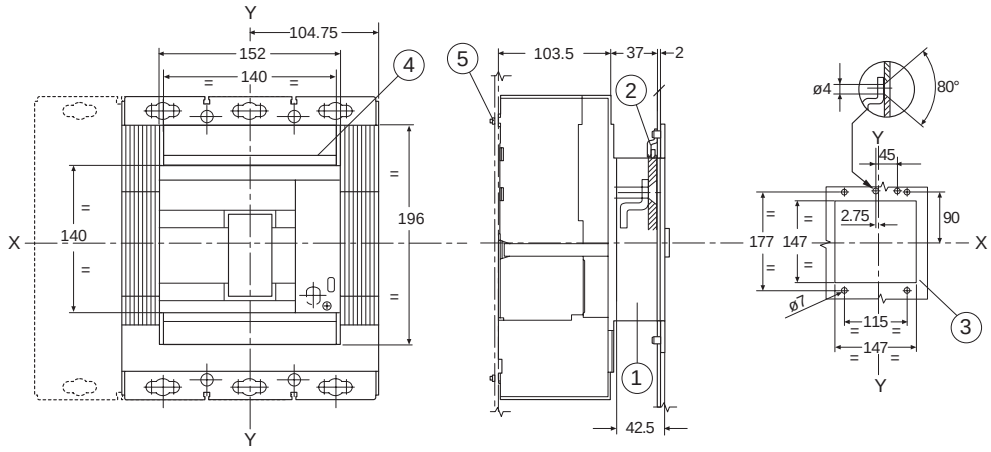


Key

1. Rotary handle on circuit-breaker
2. Lock for compartment door (to order)
3. Padlock device for open position (maximum 3 padlocks max. ø 6 mm to be provided by user)

Note
See the various different versions for the circuit-breaker mounting holes

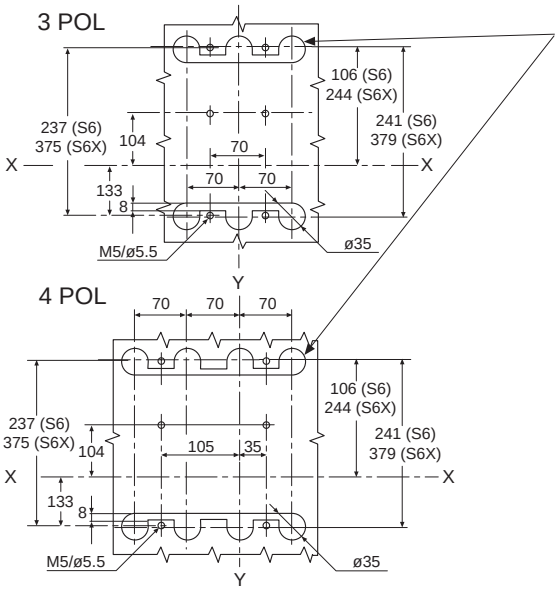
Front flange for operating lever mechanism



Key

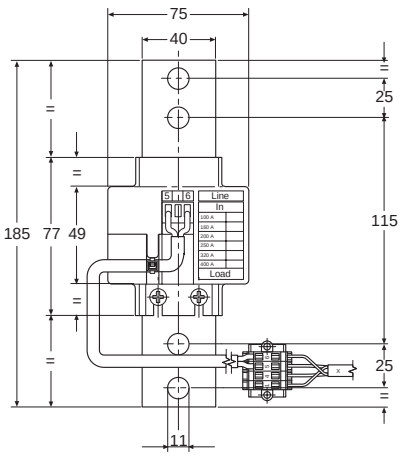
1. Front flange for operating lever mechanism
2. Lock for compartment door (to order)
3. Drilling of compartment door
4. Flange for compartment door (included in supply)
5. Tightening torque 2 Nm

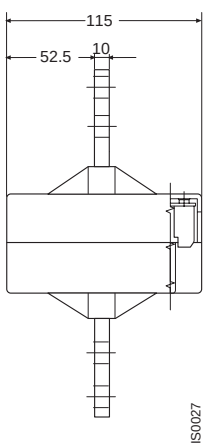
Note
See the various different versions for the circuit-breaker mounting holes



Drilling only required for version with rear terminals

External neutral





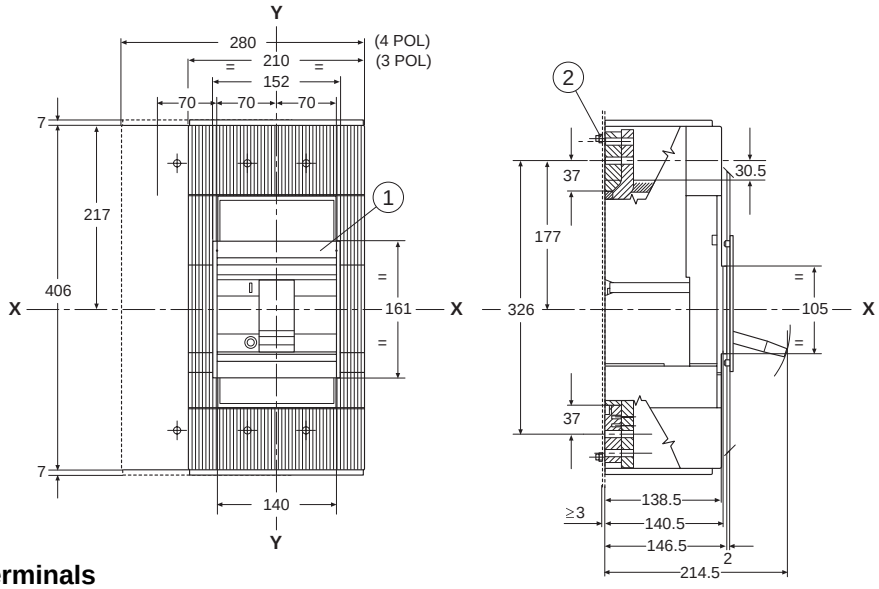
GSIS0027

6

Overall dimensions

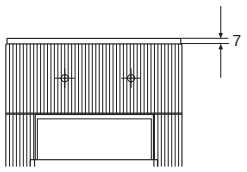
SACE S7

Fixed circuit-breaker



Terminal covers

low



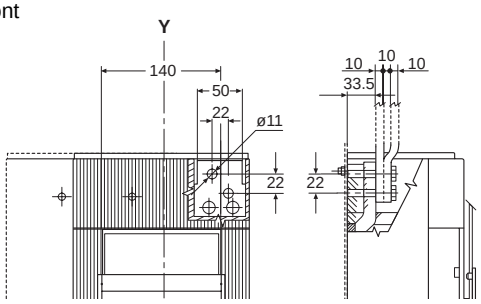
Key

(1) Flange for compartment door (included in supply)

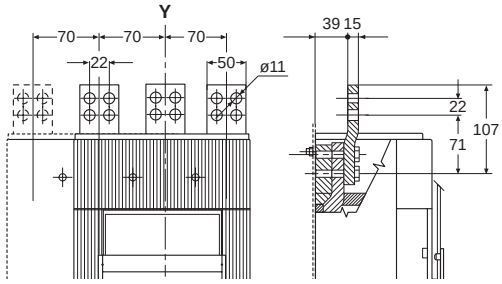
(2) Tightening torque 2 Nm

Terminals

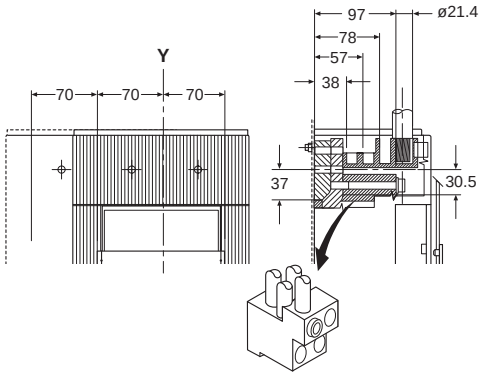
Front



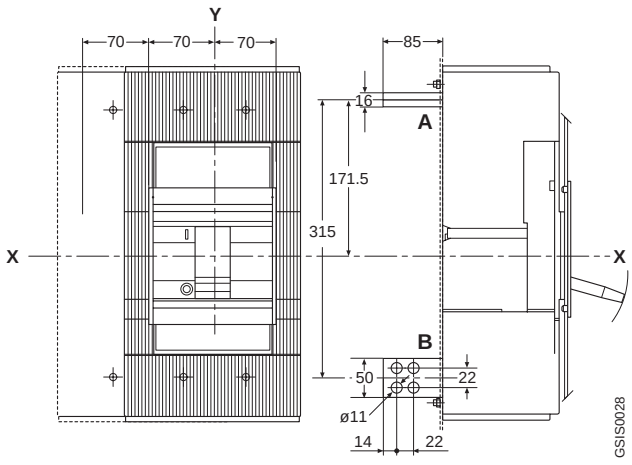
Front extended



Front for Cu/Al cables for S7 1250

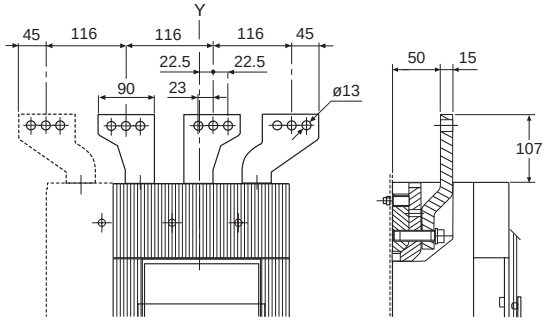


Horizontal or vertical flat bar rear terminals



A = horizontal installation
B = vertical installation

Front extended spreaded



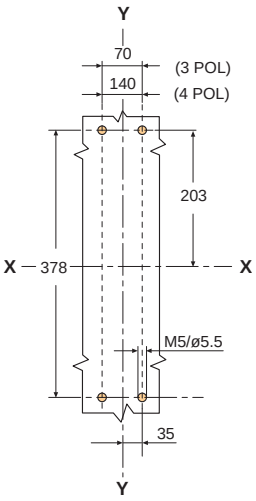
6

Mounting parts for fixed circuit-breaker

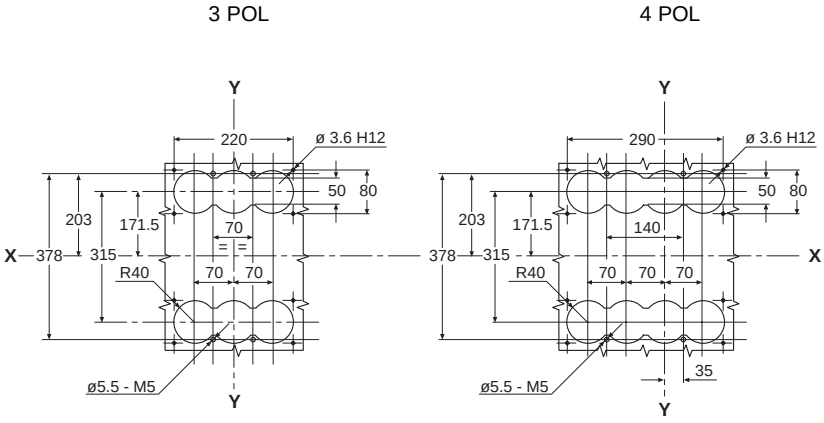
Template for drilling sheet metal support

(Minimum thickness of sheet metal:3 mm)

For terminals:
Front
Front extended
Front for Cu/Al cables

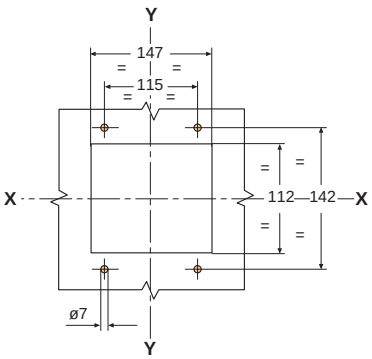


For flat bar rear terminals



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)



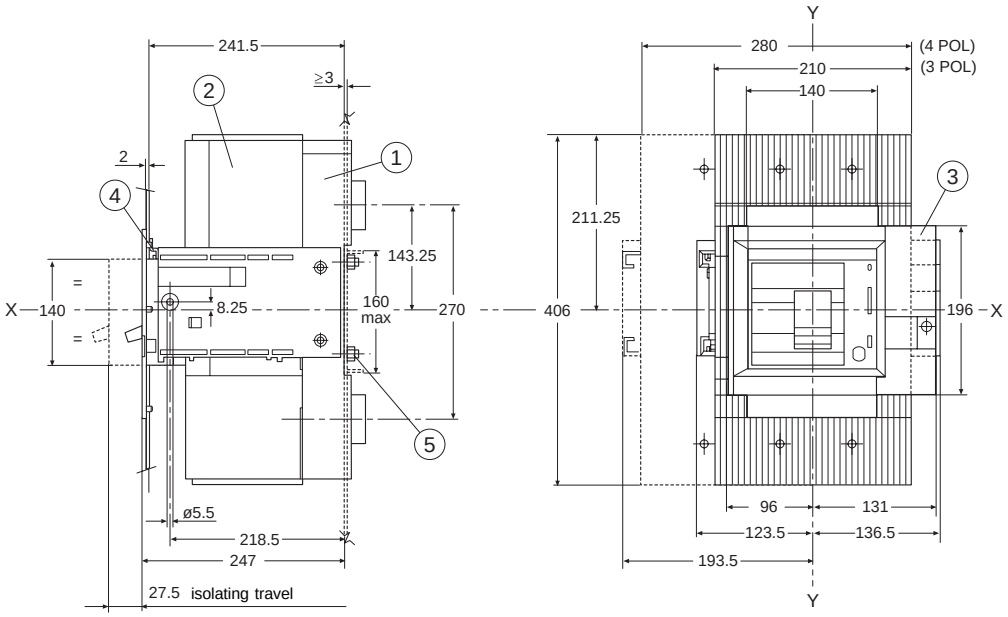
GSIS0029

6

Overall dimensions

SACE S7

Withdrawable circuit-breaker

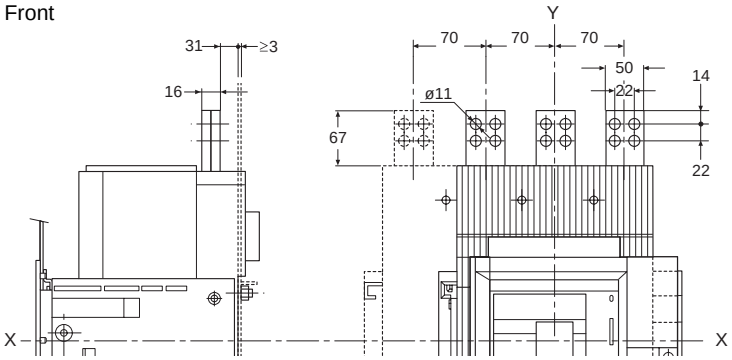


Key

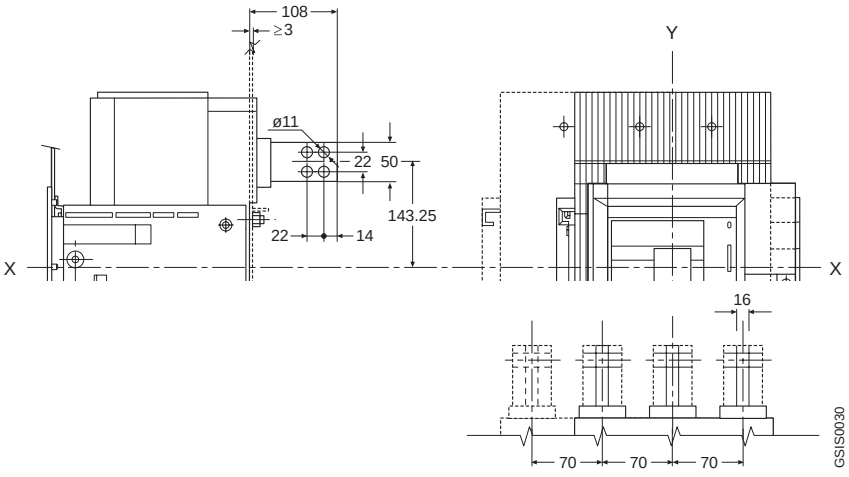
1. Fixed part
2. Moving part
3. Flange for compartment door (included in supply)
4. Lock for compartment door (to order)
5. Tightening torque 9 Nm

Terminals

Front



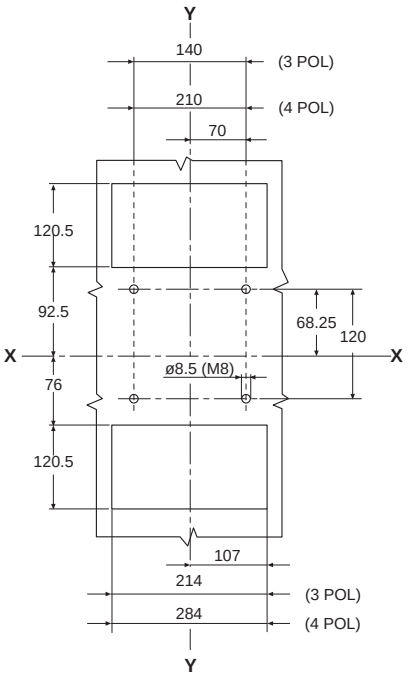
Horizontal or vertical flat bar rear terminals



Mounting parts for withdrawable circuit-breaker

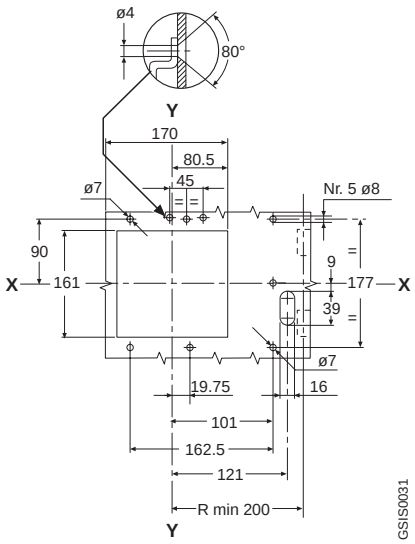
Template for drilling sheet metal support or channel

(Minimum thickness of sheet metal: 3 mm)



Template for drilling compartment door and fitting flange

(thickness of sheet metal: 2 mm)

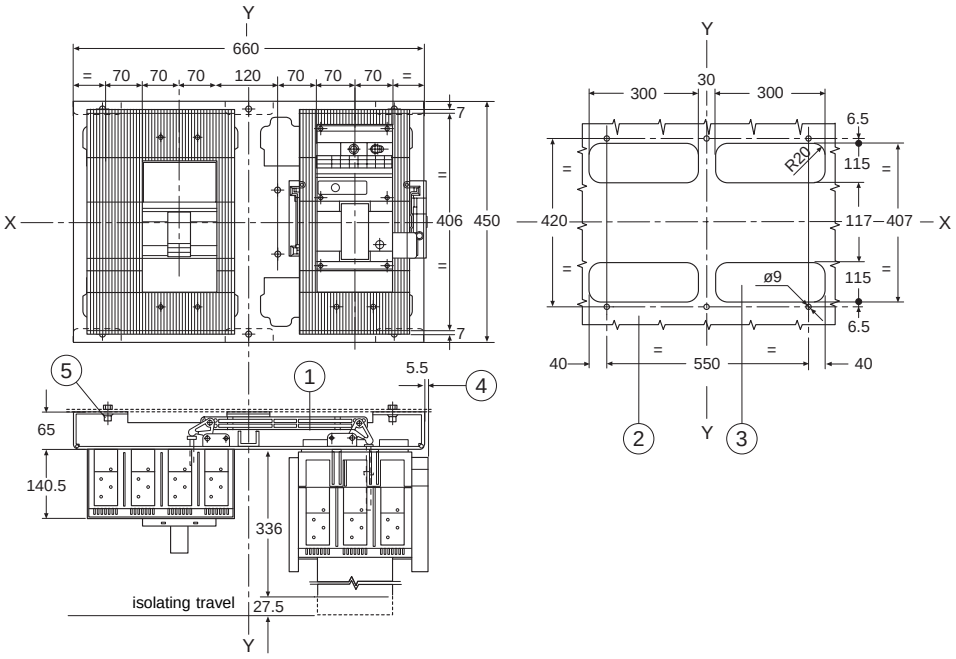


Overall dimensions

SACE S7

Accessories

Interlock across two horizontally-installed circuit-breakers

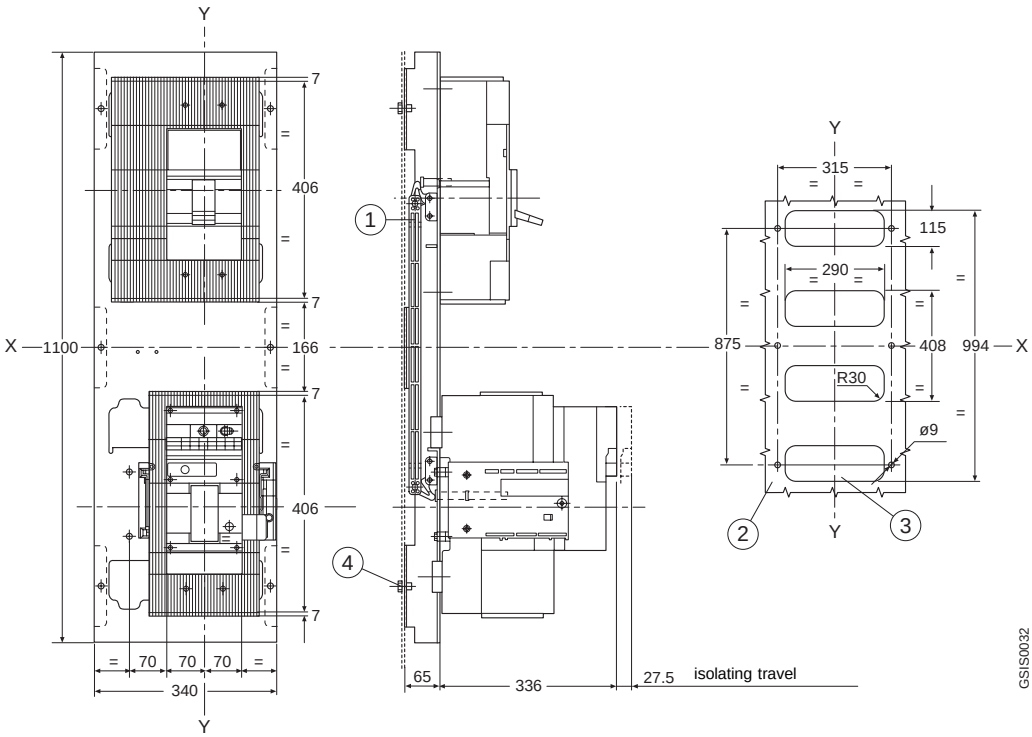


Key

1. Interlock device
2. Drilling template for mounting circuit-breaker on sheet metal
3. Drilling template for all versions with rear terminals
4. Dimensions with withdrawable version mounted on right
5. Tightening torque 9 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

Interlock across two vertically-installed circuit-breakers



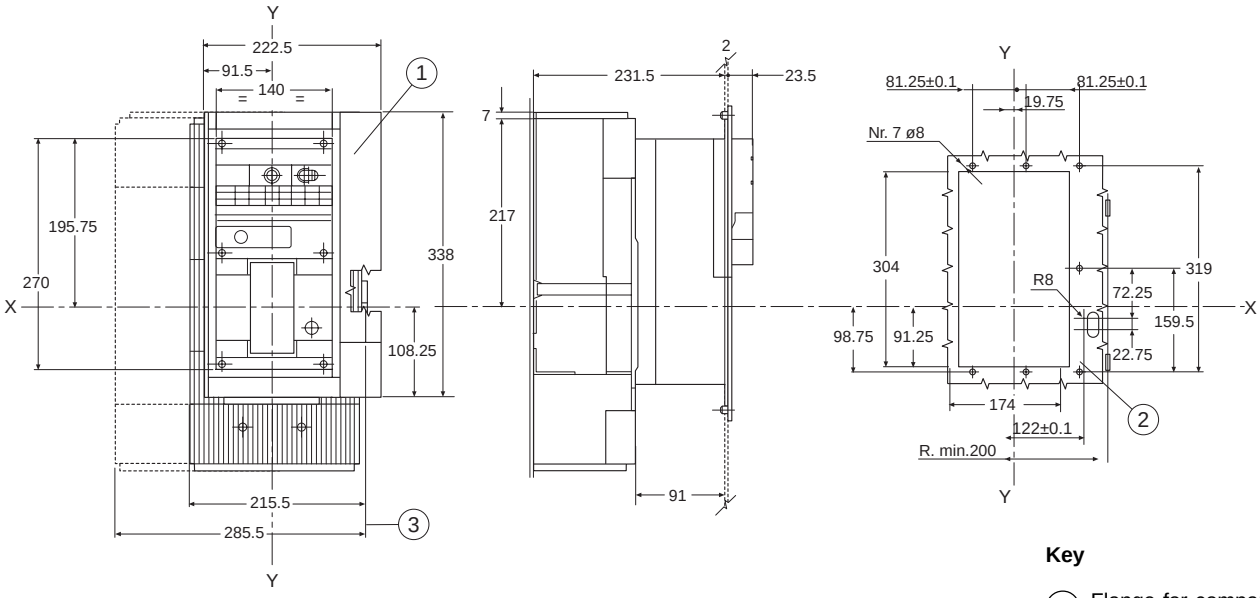
Key

1. Interlock device
2. Drilling template for mounting circuit-breaker on sheet metal
3. Drilling template for all versions with rear terminals
4. Tightening torque 9 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

Accessories

Motor operator for fixed circuit-breaker

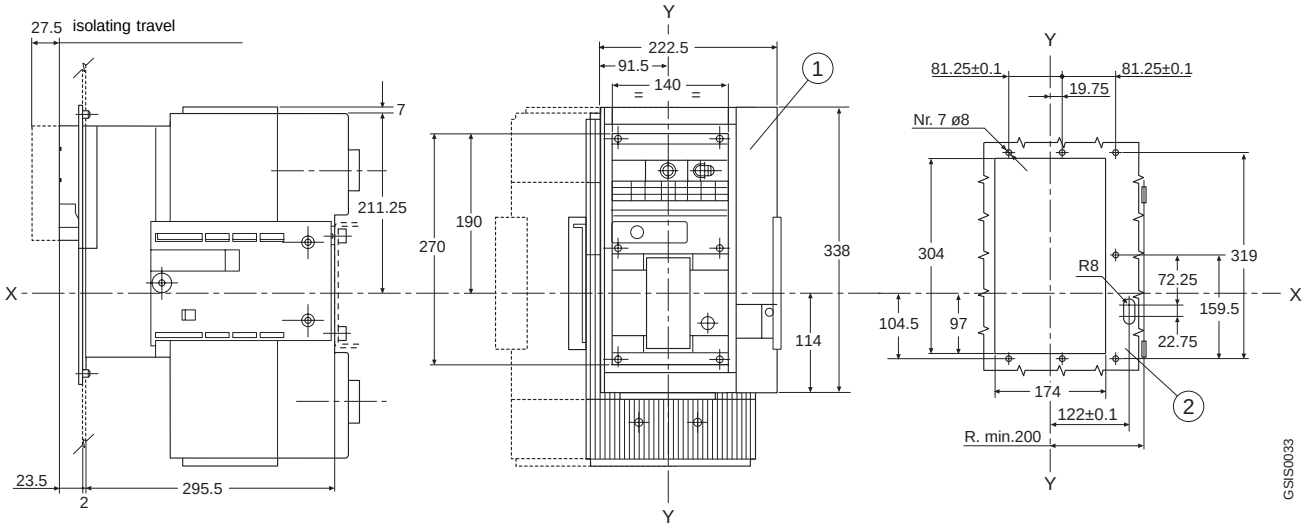


Note
See the various different versions for the circuit-breaker mounting holes

Key

1. Flange for compartment door (included in supply)
2. Template for drilling compartment door
3. Dimensions with connectors

Motor operator for withdrawable circuit-breaker



Note
See the various different versions for the circuit-breaker mounting holes

Key

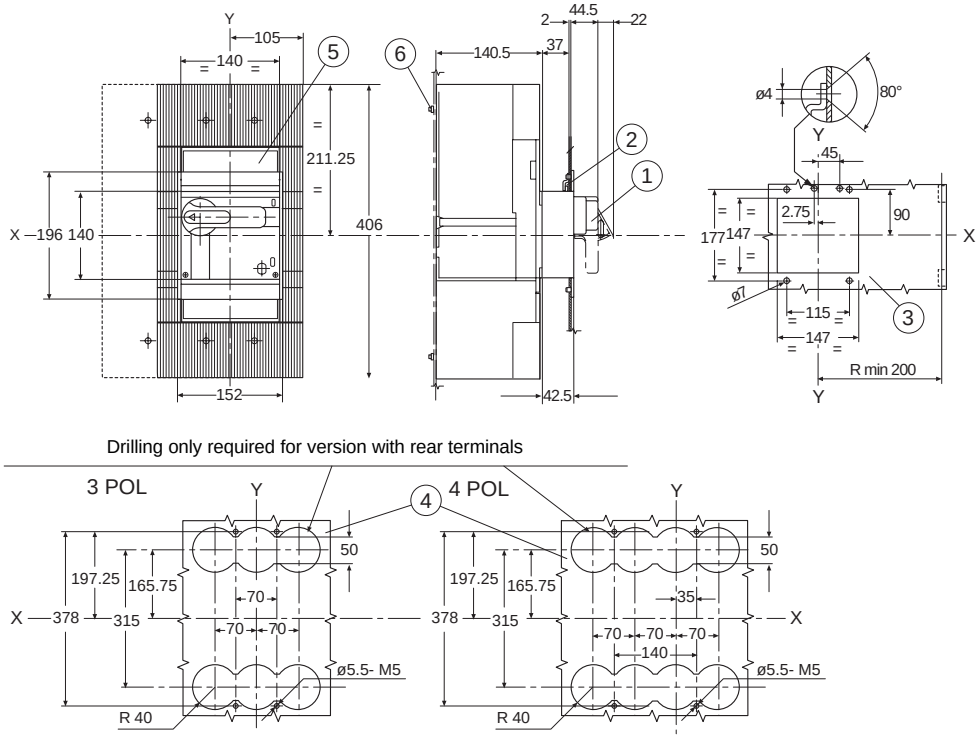
1. Flange for compartment door (included in supply)
2. Template for drilling compartment door

Overall dimensions

SACE S7

Accessories

Rotary handle operating mechanism on fixed circuit-breaker

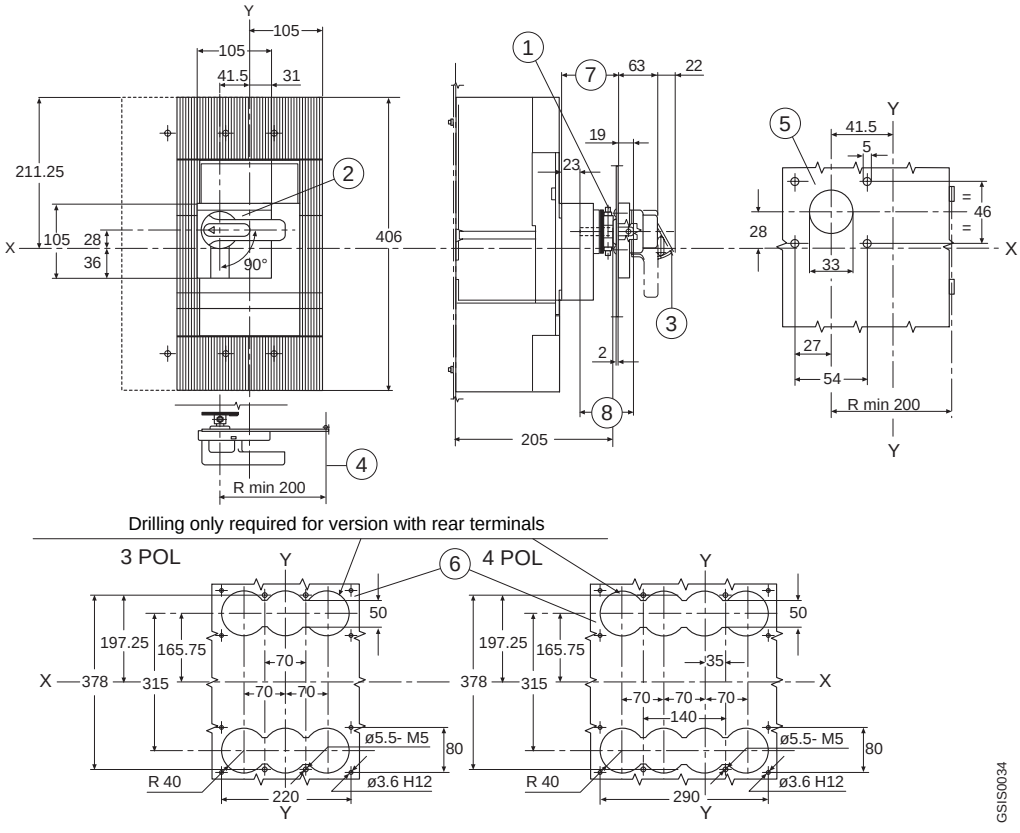


Key

1. Rotary handle operating mechanism on circuit-breaker
2. Lock for compartment door (to order)
3. Drilling of compartment door
4. Drilling template for mounting circuit-breaker on sheet metal
5. Flange for compartment door (included in supply)
6. Tightening torque 2 Nm

Note
See the various different versions for the dimensions of the circuit-breakers

Compartment door-mounted rotary handle operating mechanism for fixed circuit-breaker



Key

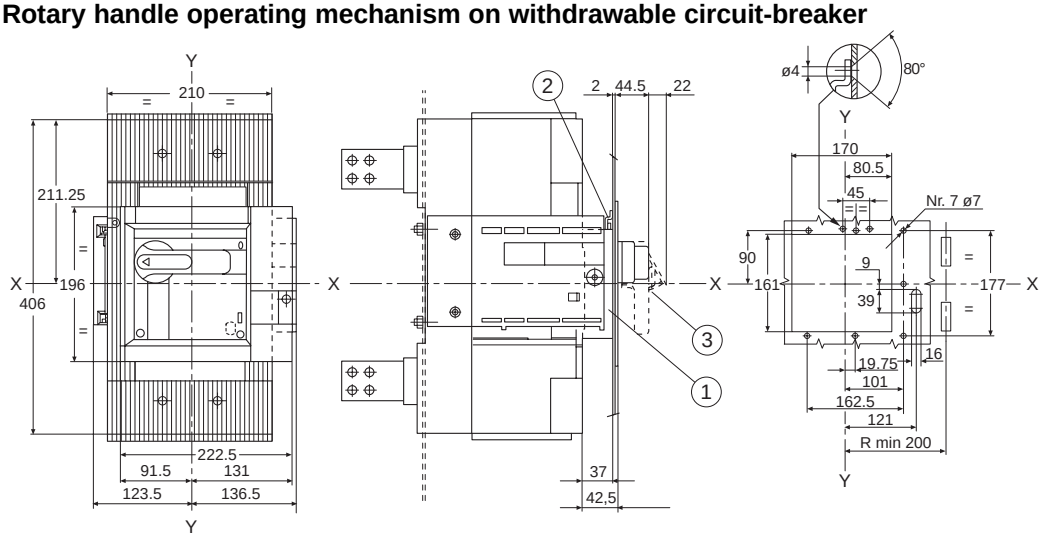
1. Transmission assembly
2. Rotary handle assembly with door lock device
3. Padlock device (maximum 3 padlocks max ø 6 mm to be provided by customer only for circuit-breaker open position)
4. Minimum radius of rotation for fulcrum of door
5. Template for drilling compartment door
6. Drilling template for mounting circuit-breaker on sheet metal
7. 72 ... 506 mm (with IP54 protection min. 96)
8. Distance (7) - 4 mm (shaft lenght)

Note
See the various different versions for the dimensions of the circuit-breakers

GSIS0034

Accessories

Rotary handle operating mechanism on withdrawable circuit-breaker

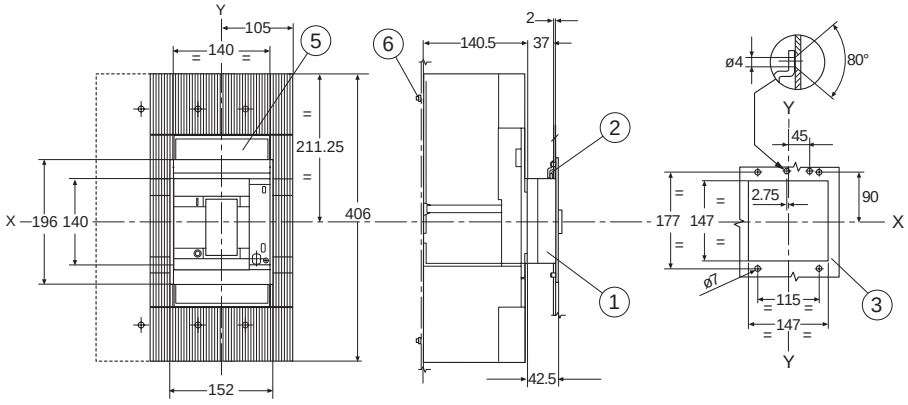


Key

1. Rotary handle operating mechanism on circuit-breaker
2. Lock for compartment door (to order)
3. Padlock device for open position (maximum 3 padlocks max. ø 6 mm to be provided by user)

Note
See the various different versions for the circuit-breaker mounting holes

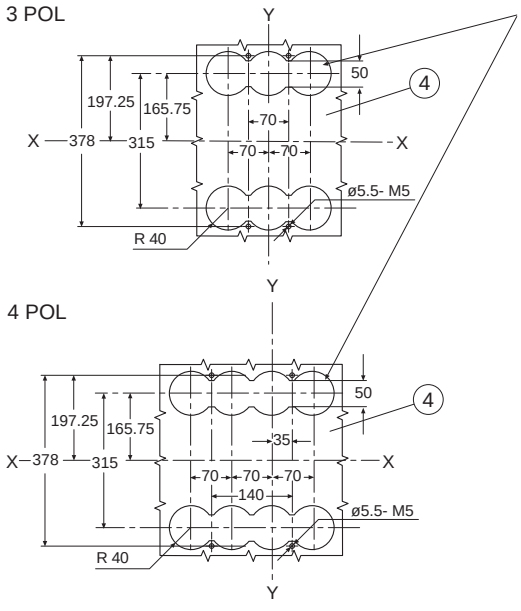
Front flange for operating lever mechanism



Key

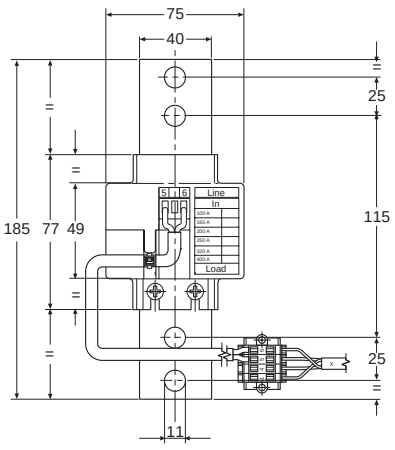
1. Front flange for lever operating mechanism
2. Lock for compartment door (to order)
3. Drilling of compartment door
4. Drilling template for mounting circuit-breaker on sheet metal
5. Flange for compartment door (included in supply)
6. Tightening torque 2 Nm

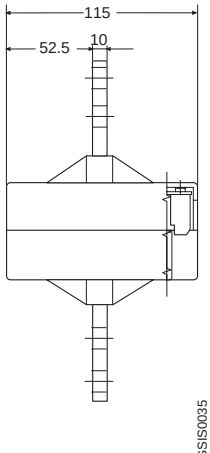
Note
See the various different versions for the circuit-breaker mounting holes



Drilling only required for version with rear terminals

External neutral



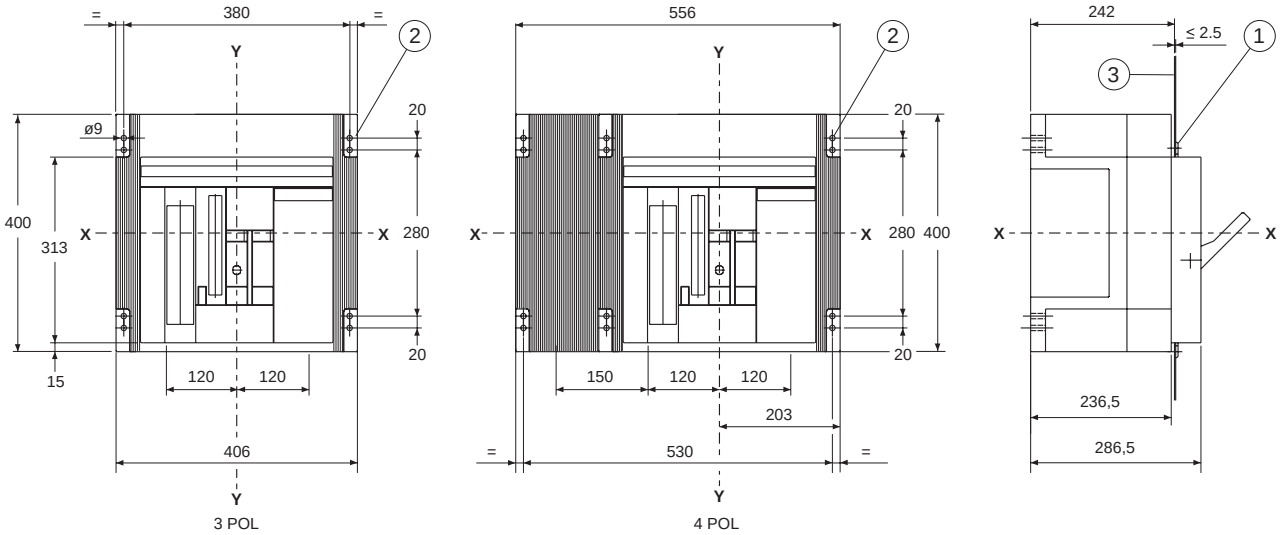


GSIS0035

Overall dimensions

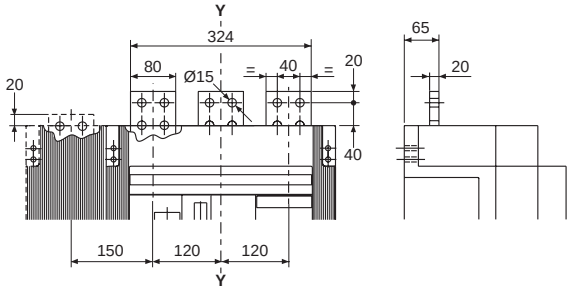
SACE S8

Fixed circuit-breaker

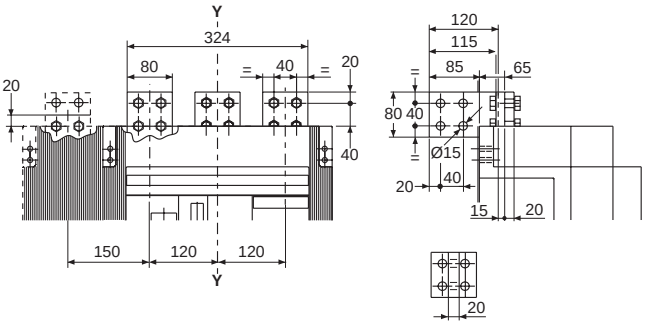


Terminals

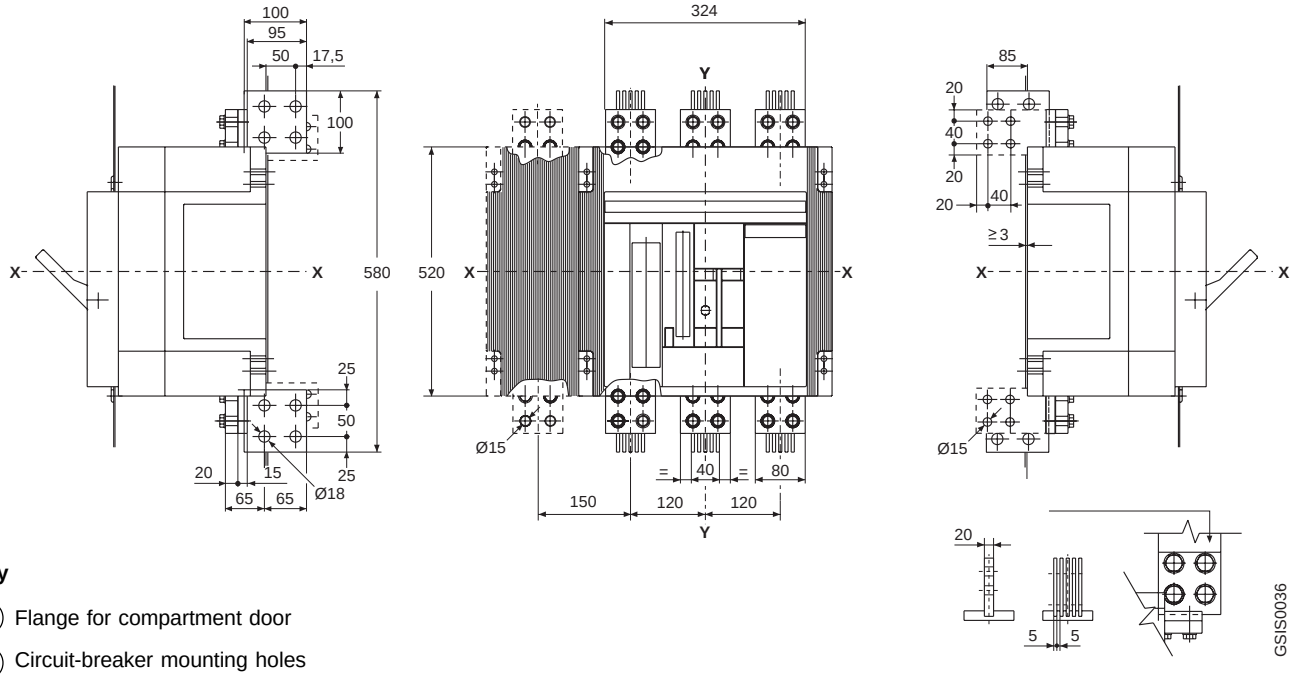
Front (S8 2000-2500)



Rear (S8 2000-2500)



Rear (S8 3200)



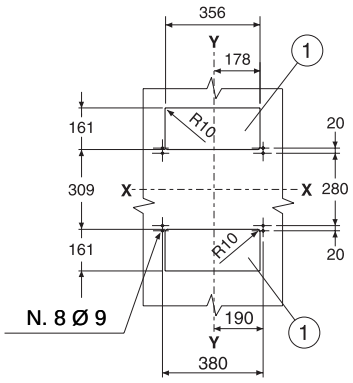
Key

1. Flange for compartment door
2. Circuit-breaker mounting holes
3. Internal side of compartment door

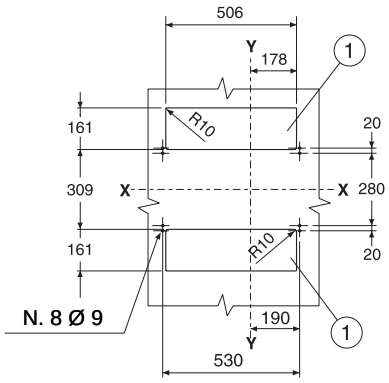
Mounting parts for fixed circuit-breaker

Template for drilling sheet metal support

(Minimum thickness of sheet metal: 3mm)



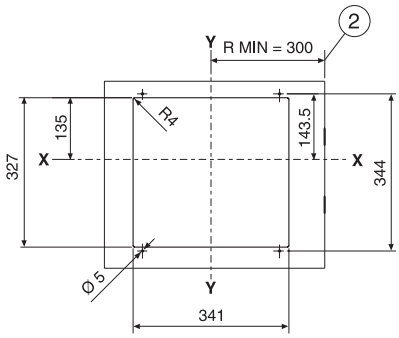
3 POL



4 POL

Template for drilling compartment door and fitting flange

(Minimum thickness of sheet metal: < 2,5mm)



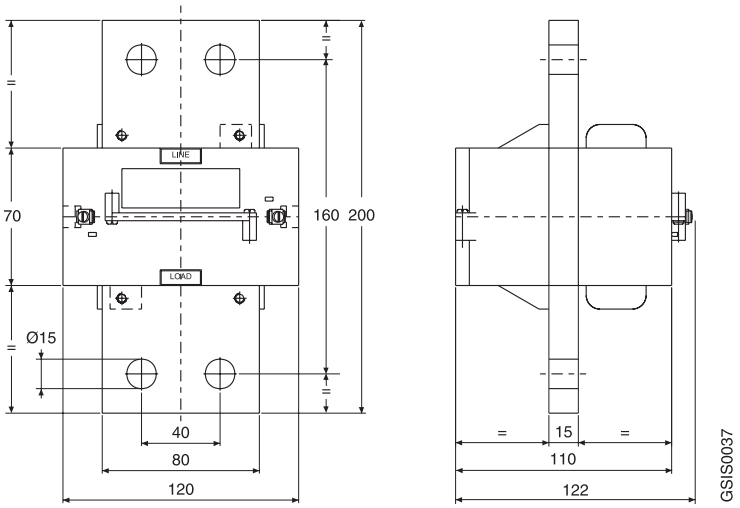
Key

(1) Hole for rear terminals only

(2) Minimum radius of rotation of compartment door

Accessories

External neutral



Overall dimensions

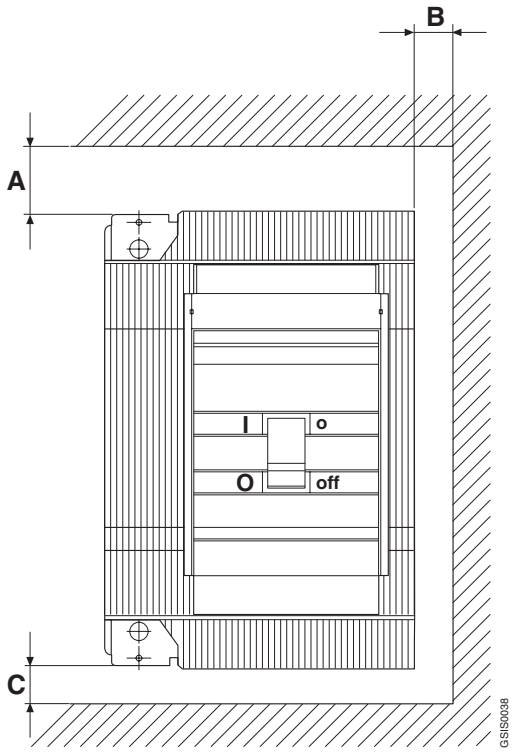
Distances to be respected

Insulation distances for installation in metal compartment with wall to chassis ground or wall to chassis ground protected with insulating plate

Wall to chassis ground [mm]

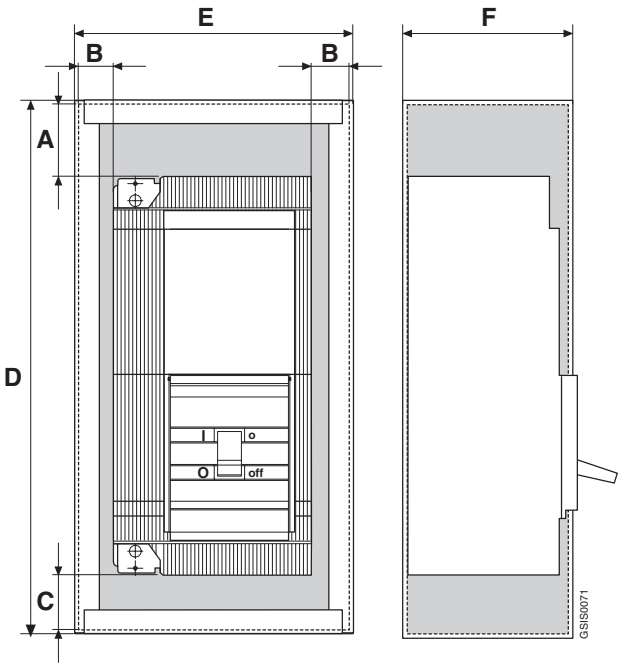
	A ($U_b \leq 415V$)	A(*) ($U_b \geq 440V$)	B	C
S1	25	50	20	20
S2	25	50	20	20
S3	35	100	25	20
S4	35	100	25	20
S5	35	100	25	20
S6	35	100	25	20
S7	50	100	30	20
S8	200	200	30	120

(*) these distances are valid for operating voltages of > 440 V and for circuit-breakers with breaking capacity level L.



	A	B	C	D	E		F
					3 POL	3 POL	
S2X100	25	20	20	169	135	–	73
S3X	50	25.5	30	340	161	196	112
S4X	60	25.5	30	430	161	196	112
S6X	60	30.5	30	500	275	345	152

A - B - C = Distances inside compartment walls
D - E - F = Distances outside compartment



Insulation distances for installation in insulated compartment

Insulated wall [mm]

	A	B	C
S1	25	0	20
S2	25	0	20
S3	35	0	20
S4	35	0	20
S5	35	0	20
S6	35	10	20
S7	50	10	20
S8	120	15	120

The dimensions shown apply for operating voltages Ub of up to 690 V.
The dimensions to be respected must be added to the maximum dimensions of the various different versions of the circuit-breakers, including the terminals.

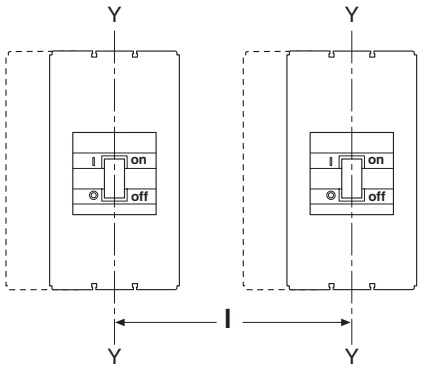
Minimum distance between centres for two horizontally or vertically-installed circuit-breakers

For horizontal or vertical installation, make sure that the connection busbars or cables don't reduce the air insulation distan ces.

Minimum distance between centres for horizontally-installed circuit-breakers

	Circuit-breaker width [mm]		I [mm]	
	3 POL	**4** POL	**3** POL	**4** POL
S1	78	103	78/93(*)	103/118(*)
S2	90	120	90/105(*)	120/135(*)
S3	105	140	105/119(*)	140
S4	105	140	105/119(*)	140
S5	140	184	140	185
S6	210	280	210	280
S7	210	280	210	280
S8	435	585	435	585

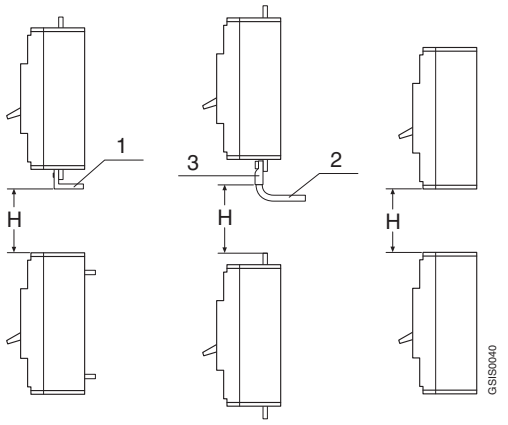
(*) these are the distances to be respected for circuit-breakers fitted with a flange for the compartment door or side conductor outlets.



The distances between centres are for the installation of fixed and plug in circuit-breakers. When installing withdrawable SACE S3, S4, S5, S6, S7 circuit-breakers you should also take into account the dimensions of the metal supporting channel that needs to be fitted between the guides of the fixed parts of two adjacent circuit-breakers.

Minimum distance between centres for vertically-installed circuit-breakers

	H [mm]
S1	60
S2	90
S3	140
S4	140
S5	140
S6	180
S7	180
S8	300



1 Connection not insulated
2 Insulated cable
3 Cable terminals

Circuit-diagrams

Index

Operating status shown **6**/42

Duty releases **6**/44

Auxiliary contacts **6**/46

Position contacts **6**/48

Auxiliary circuits of electronic releases **6**/50

Motor operators **6**/53

Graphic symbols for circuit-diagrams (IEC 617 and CEI 3-14 ... 3-26) **6**/54

Key and reference notes **6**/55

Circuit diagrams

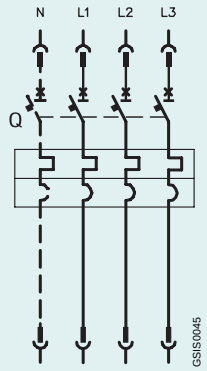
Operating status shown

The circuit is shown in the following conditions:
- fixed, plug in or withdrawable circuit-breaker (depending on type of circuit-breaker), open and racked in
- circuits de-energised
- releases not tripped
- motor operator with springs loaded (for S6-S7 circuit-breakers)

The circuit-breaker is only fitted with those accessories specified in the ABB SACE confirmation of order. Consult this catalogue for information on how to make out an order.

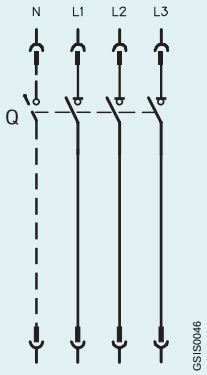
SACE S1-S2-S3-S5-S6

Three-pole or four-pole circuit-breaker
with thermomagnetic release



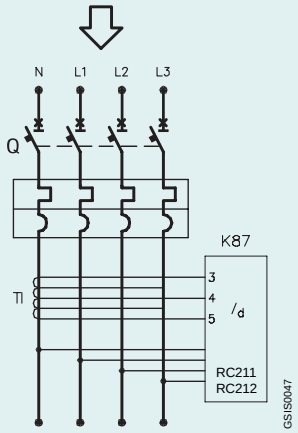
SACE S3D-S6D-S7D-S8D

Three-pole or four-pole
switch-disconnector

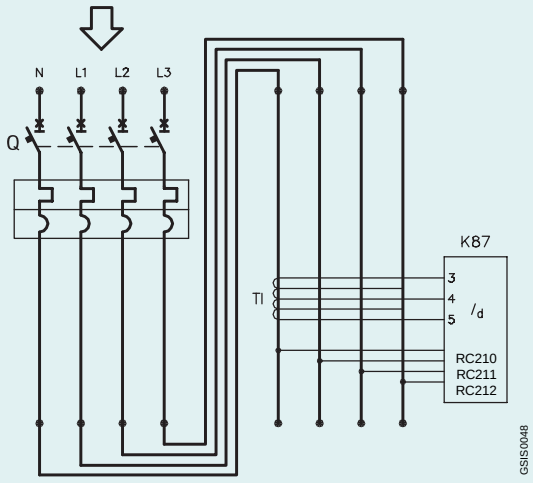


SACE S1-S2-S3

Four-pole fixed circuit-breaker
with vertically-installed residual-current release
SACE RC211 o RC212



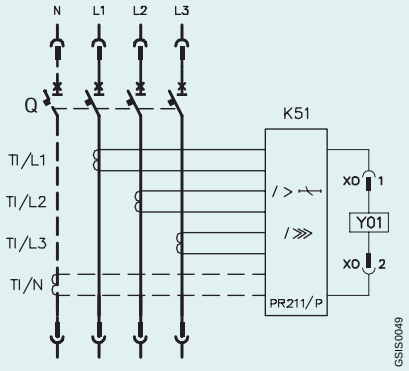
Four-pole fixed circuit-breaker with
horizontally-installed residual-current release
SACE RC210, RC211 o RC212



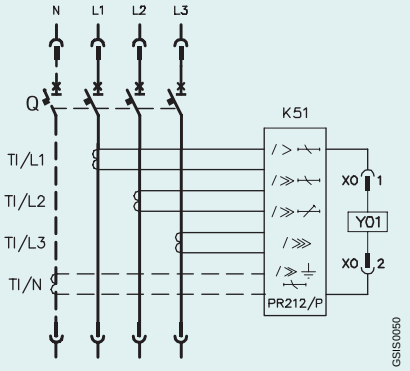
6

SACE S4-S5-S6-S7

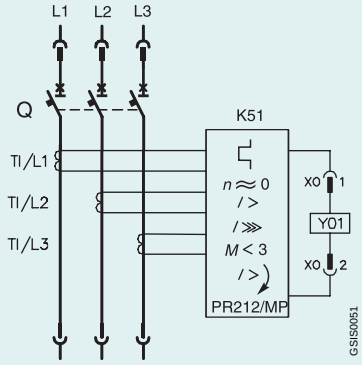
Three-pole or four-pole circuit-breaker with SACE PR211/P microprocessor-based release



Three-pole or four-pole circuit-breaker with SACE PR212/P microprocessor-based release

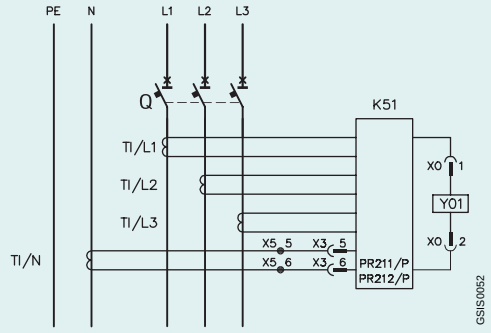


Three-pole circuit-breaker with SACE PR212/MP microprocessor-based release



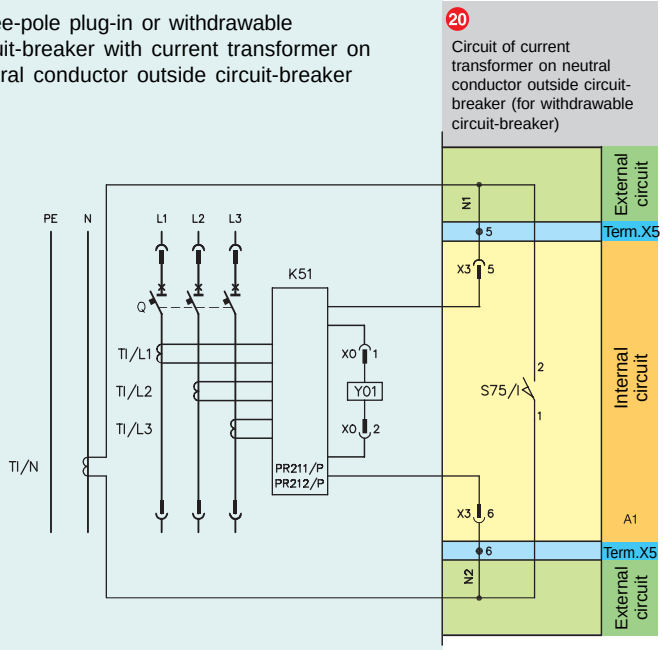
SACE S4-S5-S6-S7

Three-pole fixed circuit-breaker with current transformer on neutral conductor outside circuit-breaker



N.B. If using a fixed circuit-breaker with a current transformer on the neutral conductor outside the circuit-breaker, you must short-circuit the terminals of the TI/N transformer when you want to remove the circuit-breaker.

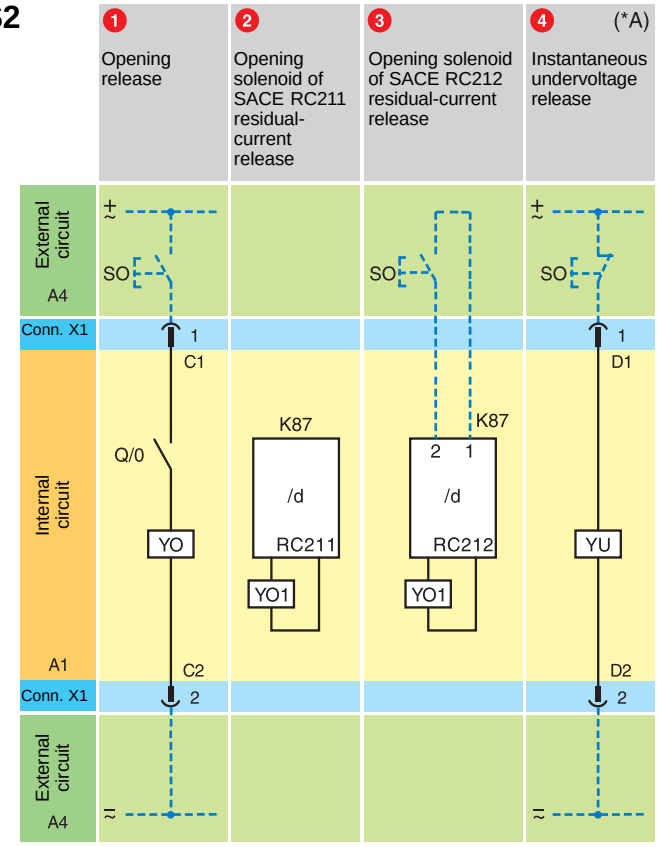
Three-pole plug-in or withdrawable circuit-breaker with current transformer on neutral conductor outside circuit-breaker



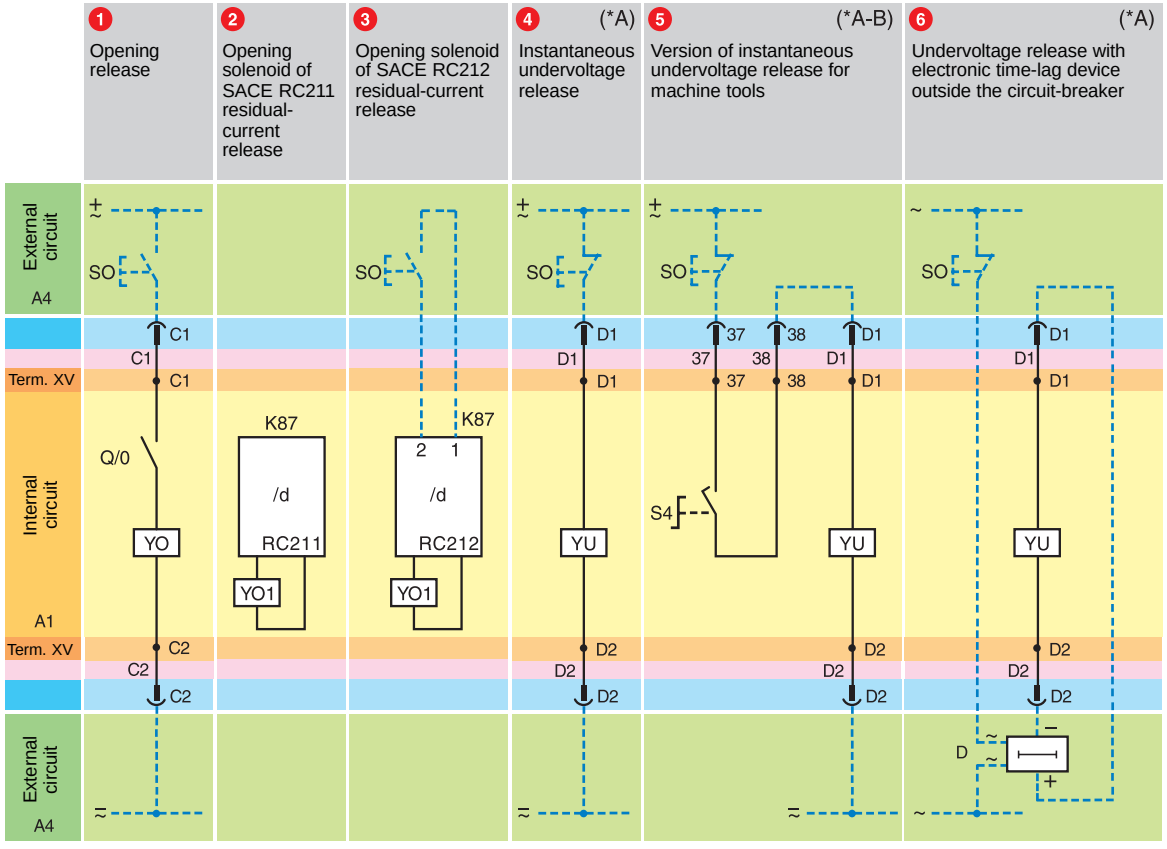
Circuit diagrams

Duty releases

SACE S1-S2

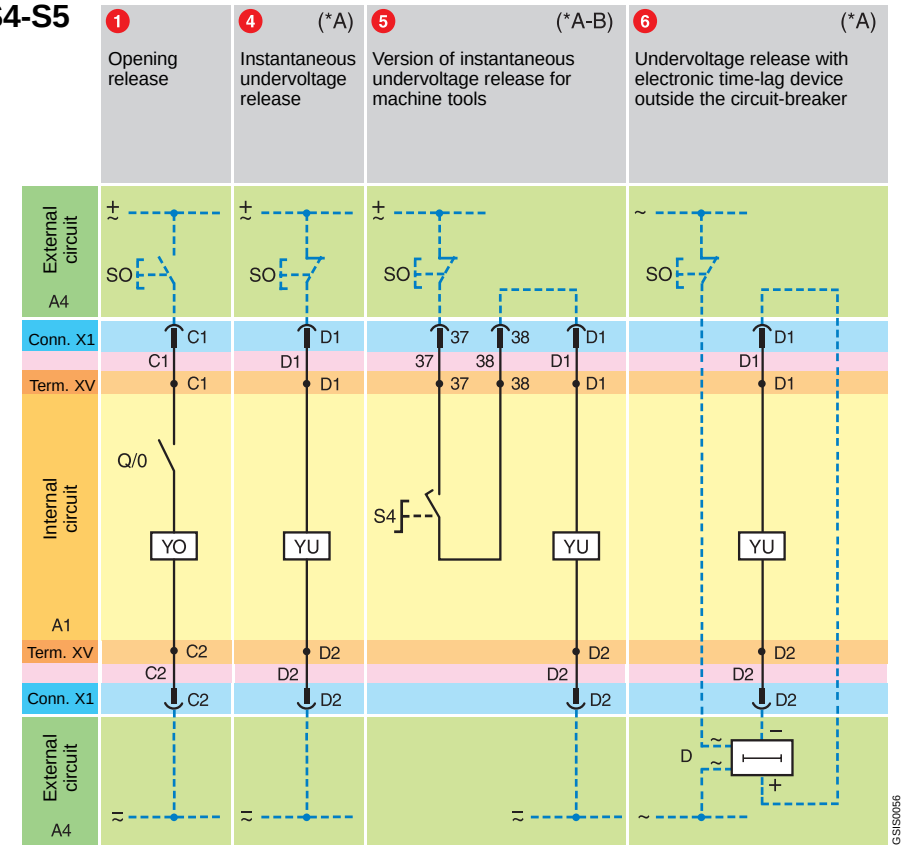


SACE S3



6

SACE S4-S5



Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker

1 - 4 - 5 - 6 2 - 3

Availability

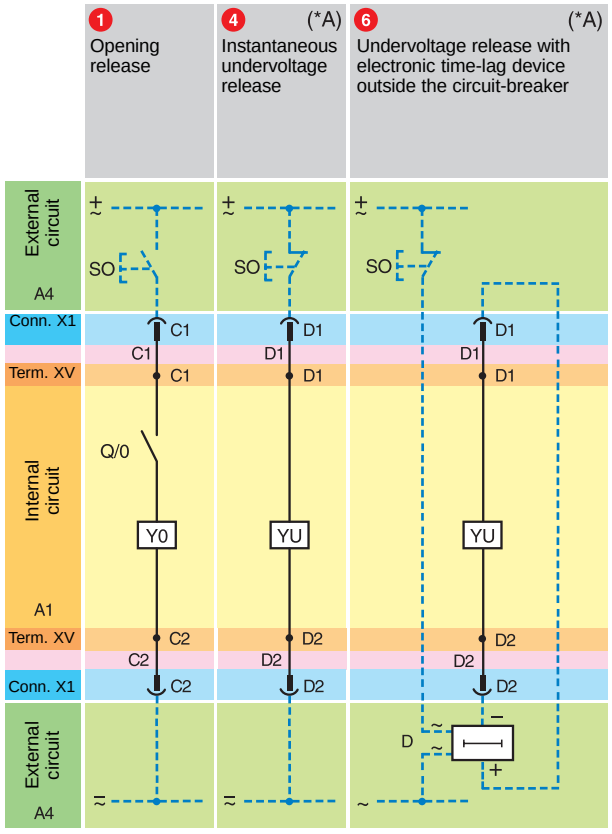
Connectors X1 and X2 are only supplied to order for circuit-breakers S1 - S2.

Notes

(*A) The undervoltage release is powered from upstream of the circuit-breaker or by an independent power supply: closing of the circuit-breaker is only allowed when the release is energised (the closing lock is implemented mechanically).

(*B) Contact S4 shown in Fig. 5 opens the circuit when the circuit-breaker is open and closes it again upon a manual closing command from the rotary handle, in conformity with the Standards governing machine tools (the circuit-breaker will not close, however, if the undervoltage release is not powered).

SACE S6-S7



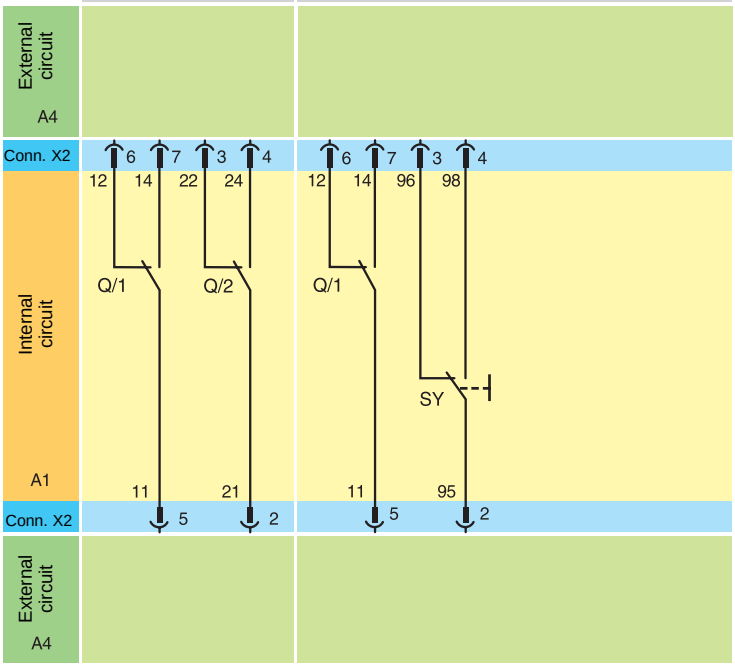
Circuit diagrams

Auxiliary contacts

SACE S1-S2

11 Two change-over contacts for electrical signalling of circuit-breaker open/closed

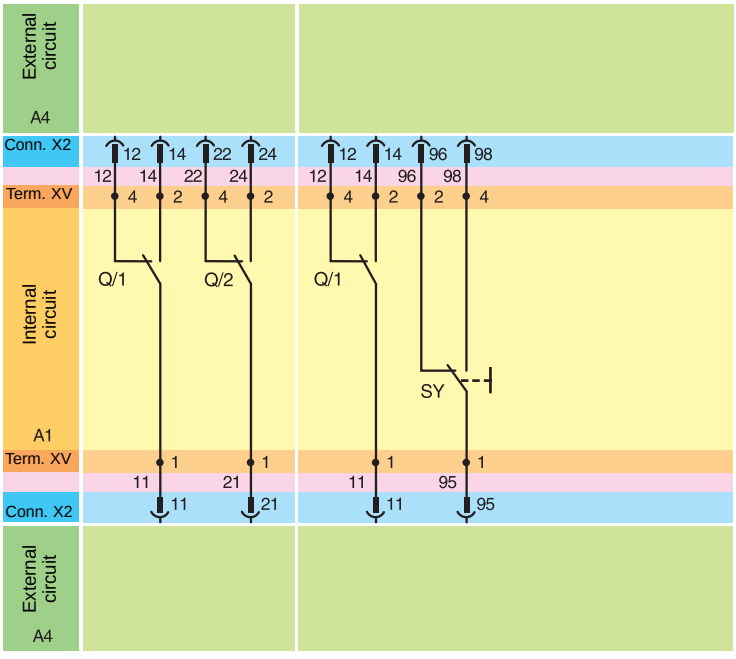
12 One change-over contact for electrical signalling of circuit-breaker open or closed and one change-over contact for electrical signalling of circuit-breaker open due to tripping of thermomagnetic releases YO, YO1, YU (tripped position)



SACE S3-S4-S5-S6-S7

11 Two change-over contacts for electrical signalling of circuit-breaker open/closed

12 One change-over contact for electrical signalling of circuit-breaker open or closed and one change-over contact for electrical signalling of circuit-breaker open due to tripping of thermomagnetic releases YO, YO1, YU (tripped position)

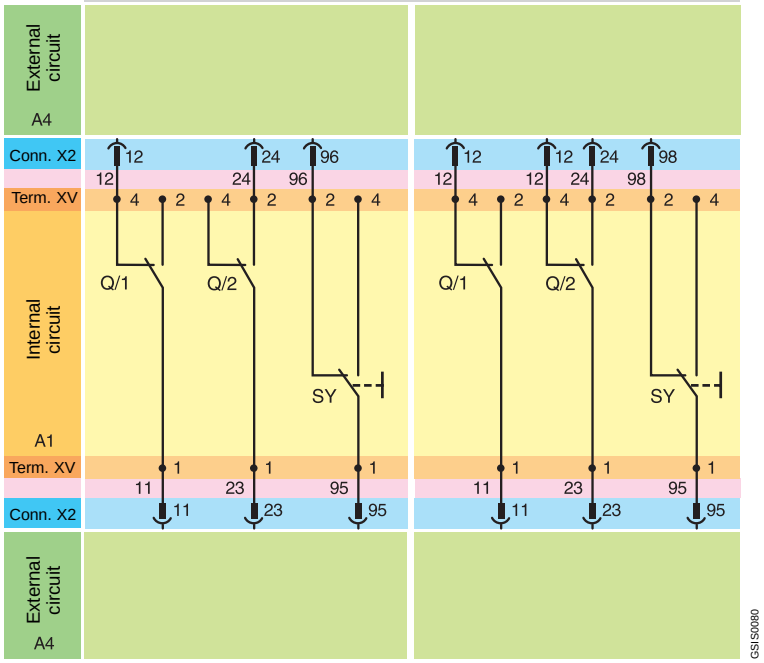


6

SACE S6-S7

13 14

One contact for electrical signalling of circuit-breaker open, one change-over contact for electrical signalling of circuit-breaker closed and one contact for electrical signalling of circuit-breaker not open due to tripping of thermomagnetic releases YO1, YO1, YU (not tripped/tripped position) to be used, for example,
for the enabling shown in Fig.8



Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker:
11-12-13-14

Availability

Connectors X1 and X2 are only supplied to order for circuit-breakers S1 - S2.

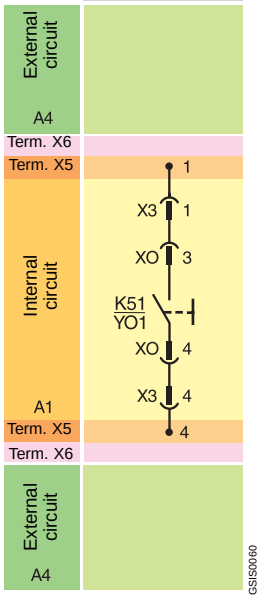
Notes

(*C) The electrical signalling contact for the microprocessor-based overcurrent release, shown in Fig. 41, has the following electrical characteristics:
- rated voltage = 125V AC / 30V DC
- breaking capacity (resistive load = 3 W/VA)
- maximum interrupted current = 0.5 A

SACE S4-S5-S6-S7

41 (*C)

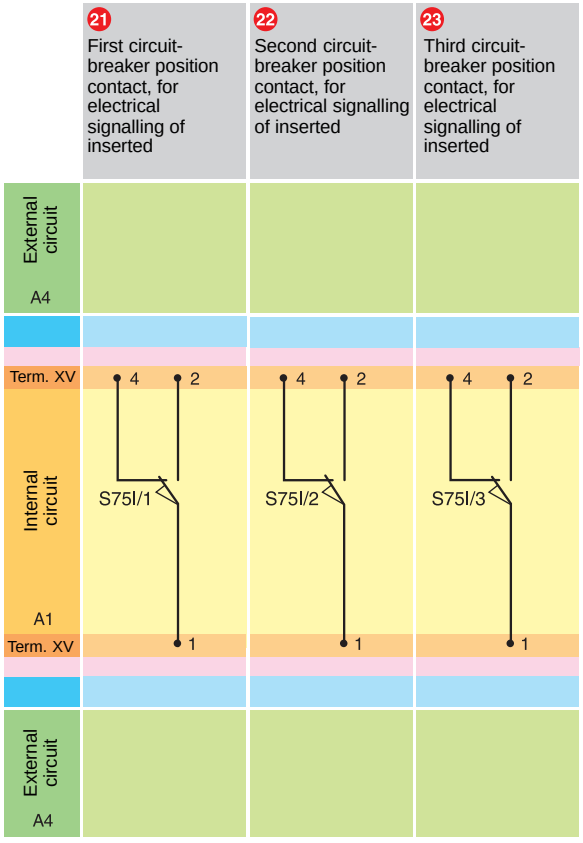
Contact for signalling release Y01 tripped



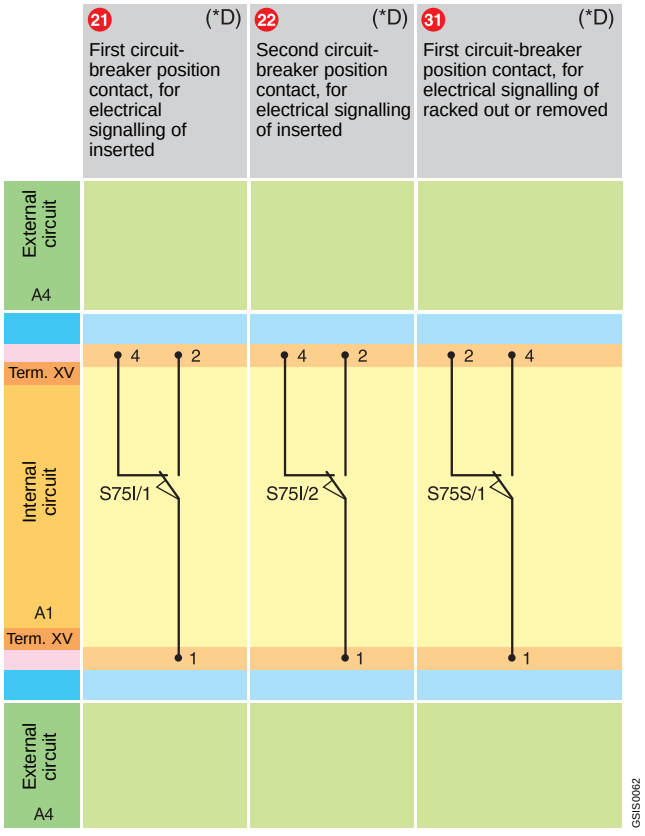
Circuit diagrams

Position contacts

SACE S2

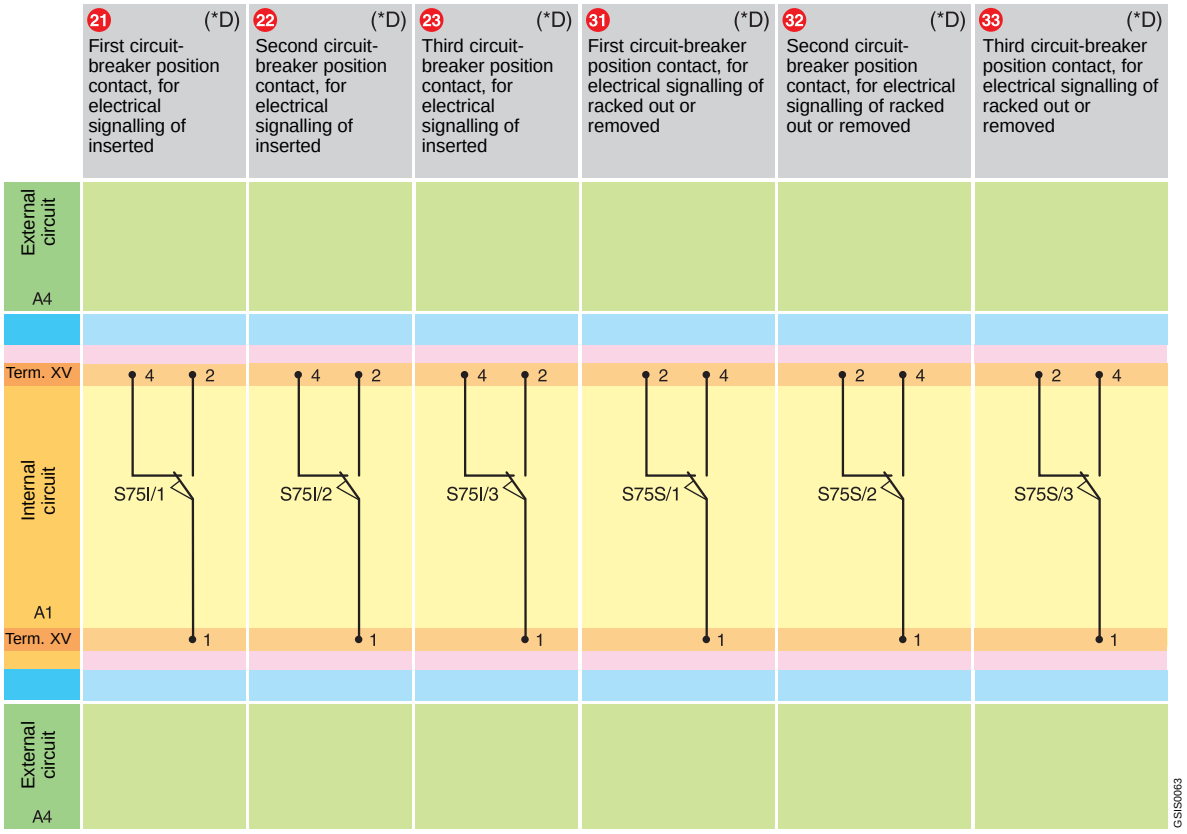


SACE S3

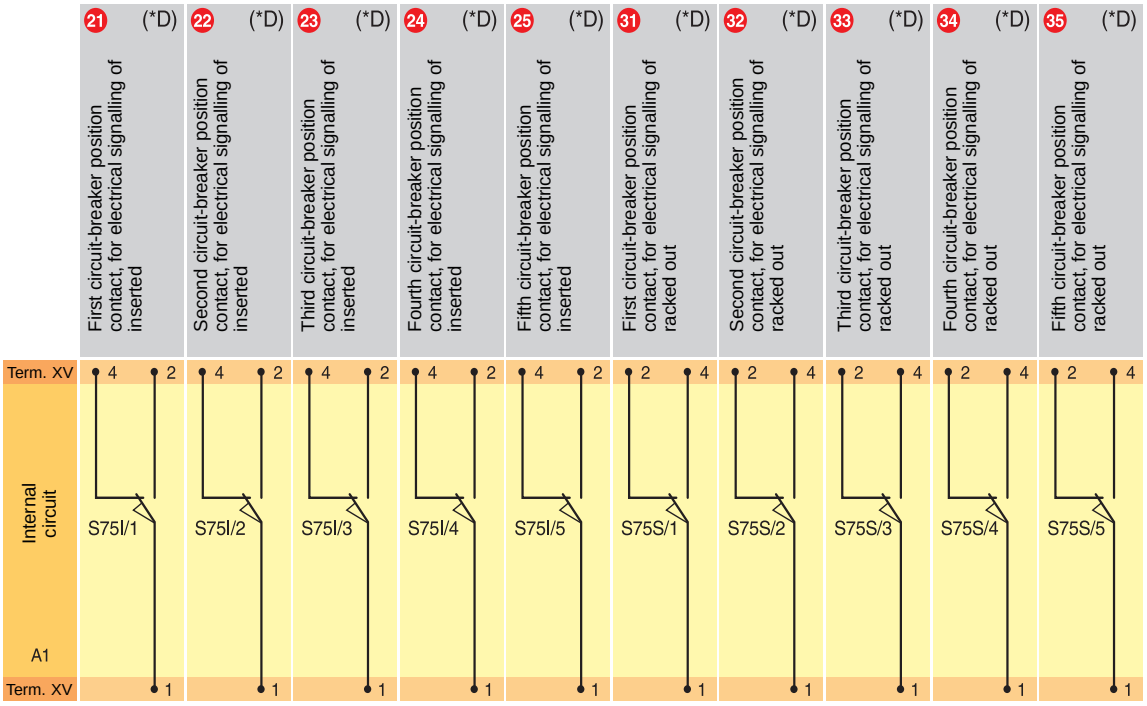


6

SACE S4-S5



SACE S6-S7



Incompatibility

The circuits indicated in the following figures cannot be powered simultaneously on the same circuit-breaker:

20 - 21 - 31
22 - 32 23 - 33
24 - 34 25 - 35

Notes

(*D) The circuit-breaker can be fitted with position contacts S75I and S75S in any combination up to a maximum of
- total of 2 contacts for S3
- total of 3 contacts for S4, S5
- total of 5 contacts for S6, S7

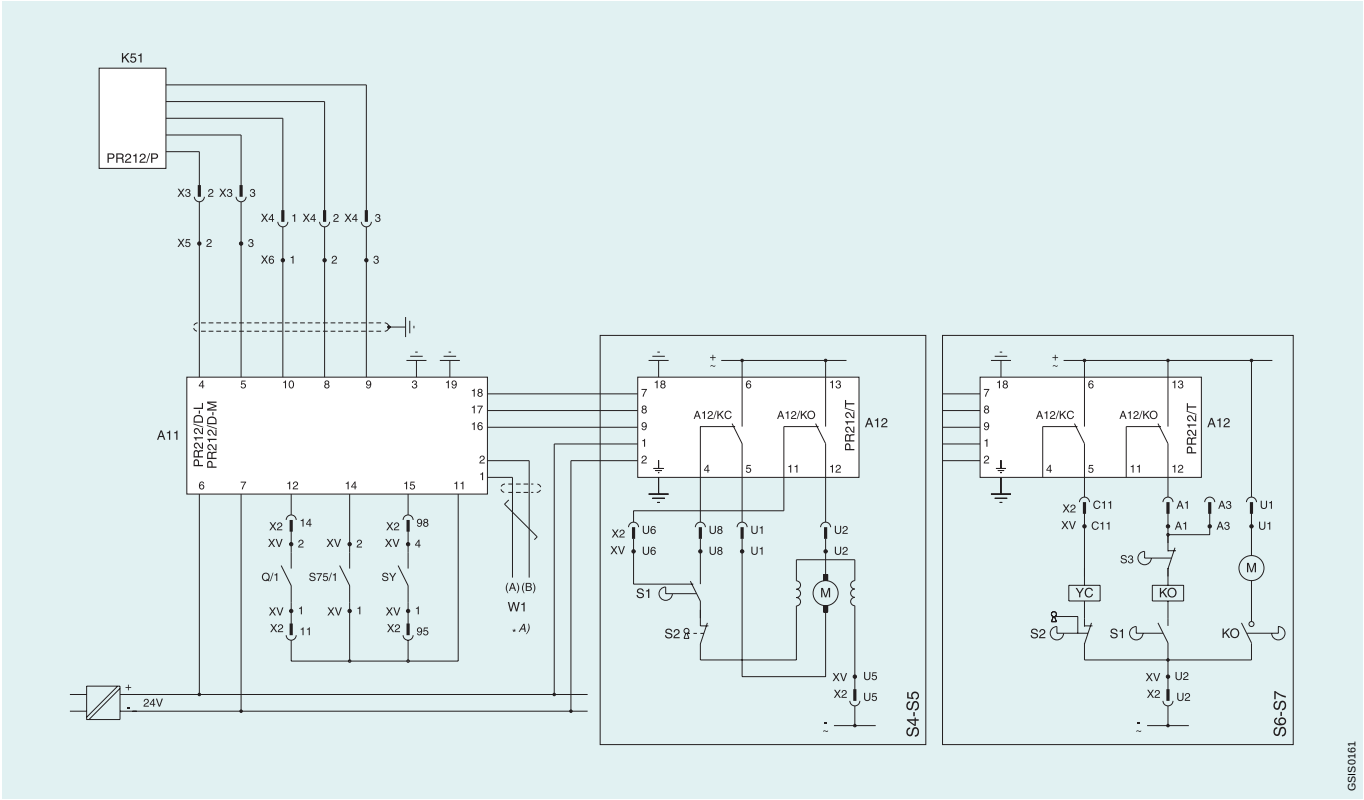
6

Circuit diagrams

Auxiliary circuits of SACE PR212/P electronic releases

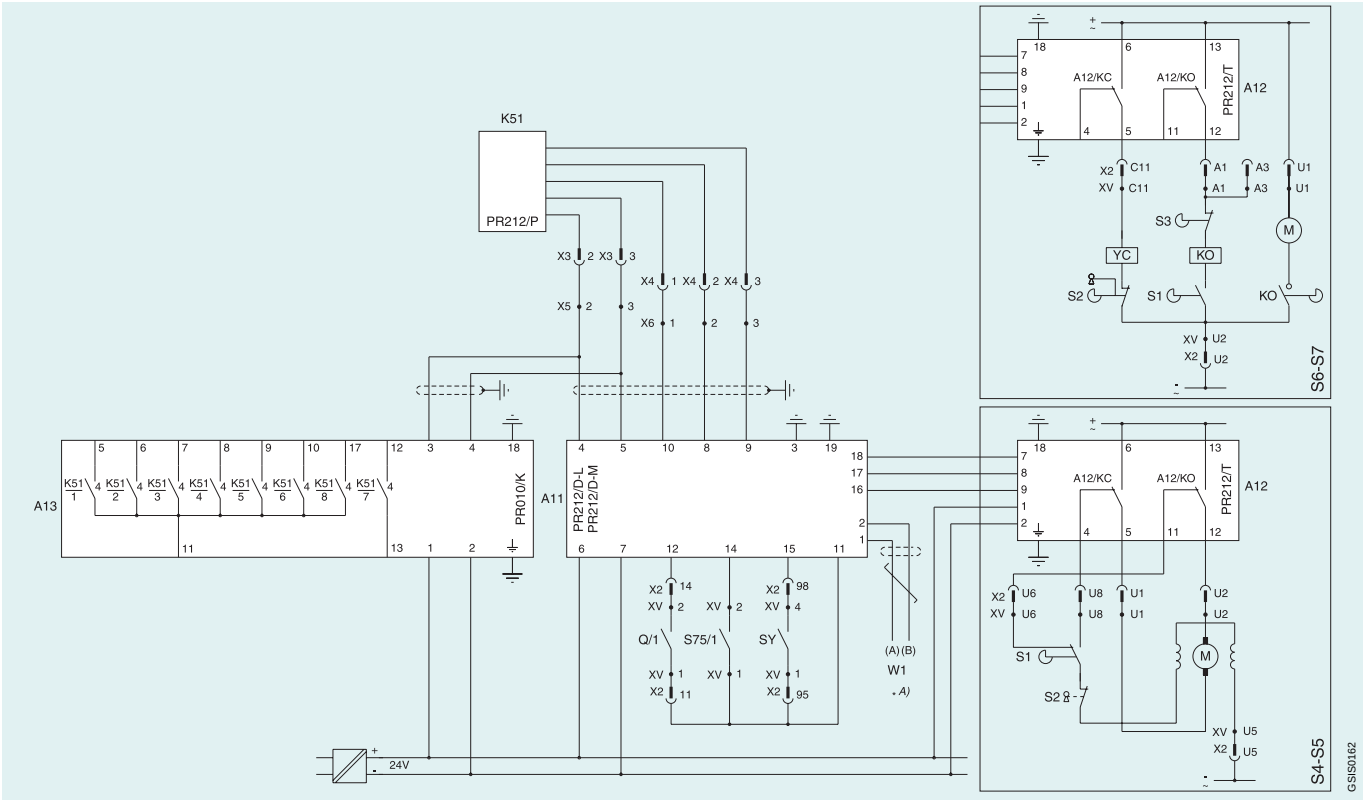
SACE S4-S5-S6-S7

SACE PR212/P release connected to the dialogue unit SACE PR212/D and actuator unit SACE PR212/T



SACE S4-S5-S6-S7

SACE PR212/P release connected to the dialogue unit SACE PR212/D, signalling unit SACE PR010/K and actuator unit SACE PR212/T

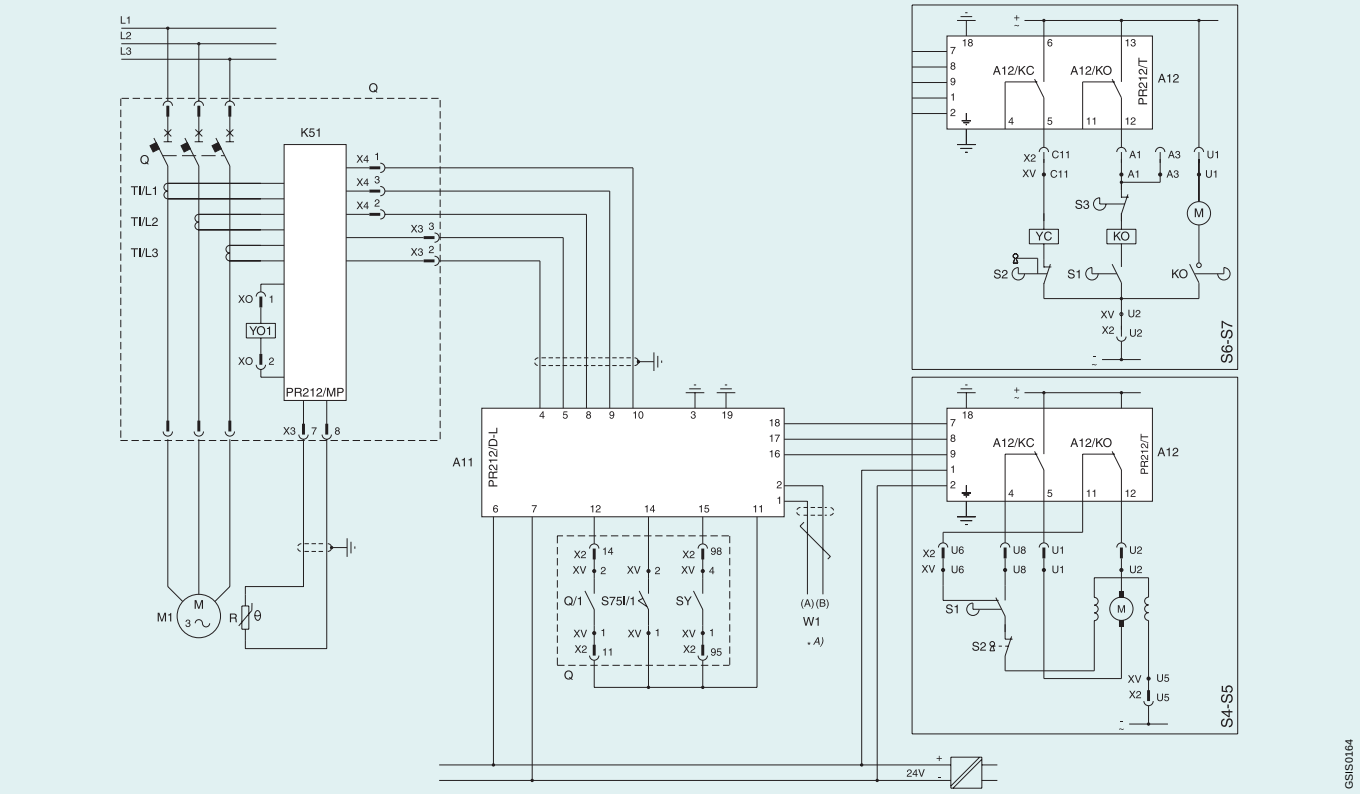


Circuit diagrams

Auxiliary circuits of SACE PR212/MP electronic releases for motor protection

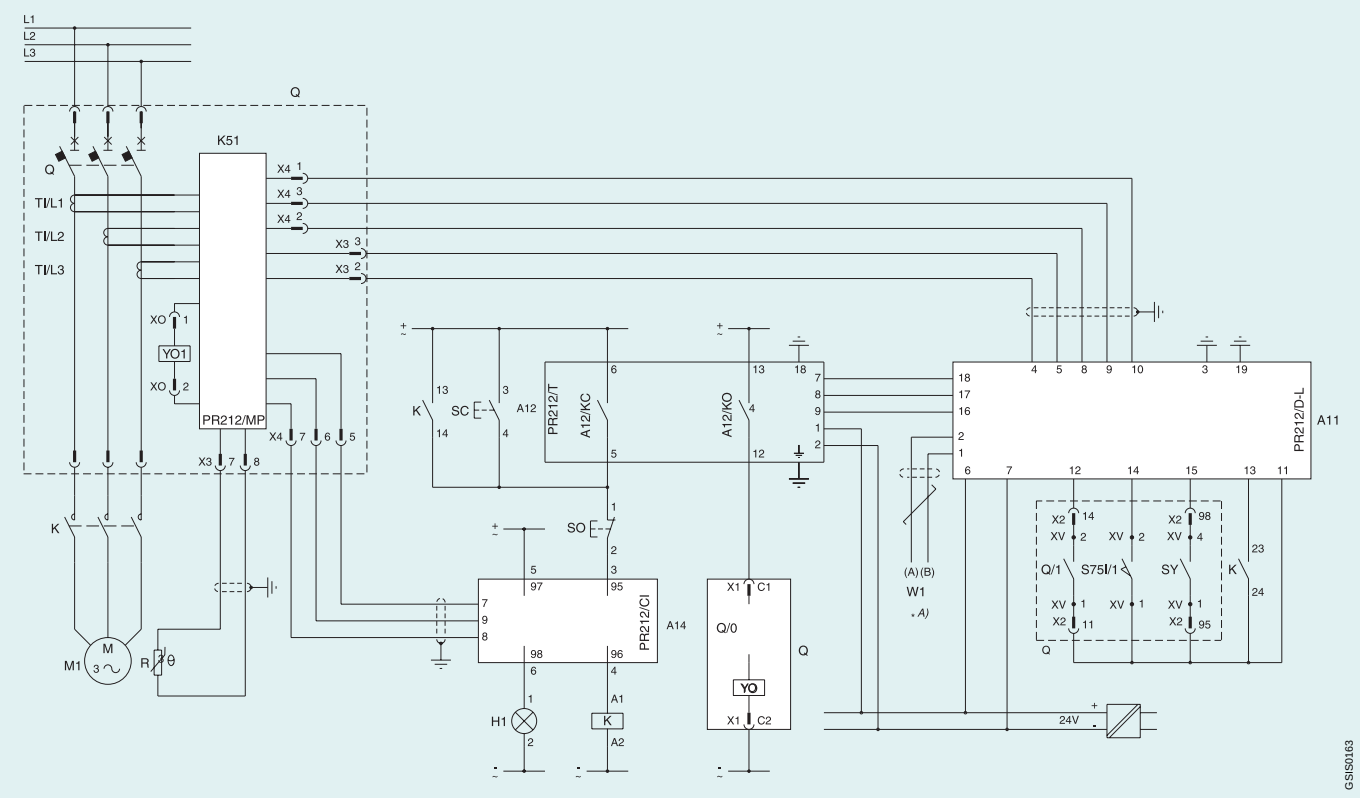
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L and actuator unit SACE PR212/T



SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L, actuator unit SACE PR212/T and contactor operator unit SACE PR212/CI

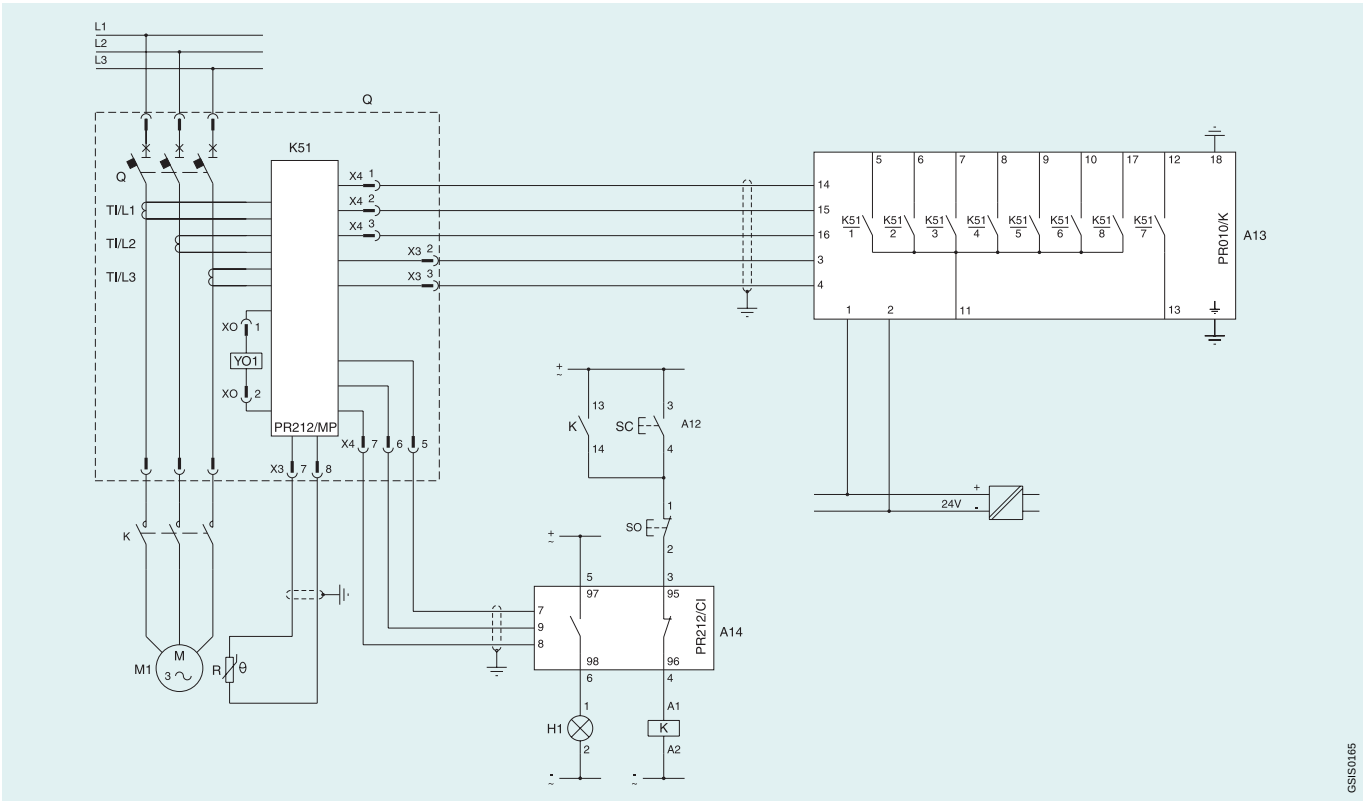


Circuit diagrams

Auxiliary circuits of SACE PR212/MP electronic releases for motor protection

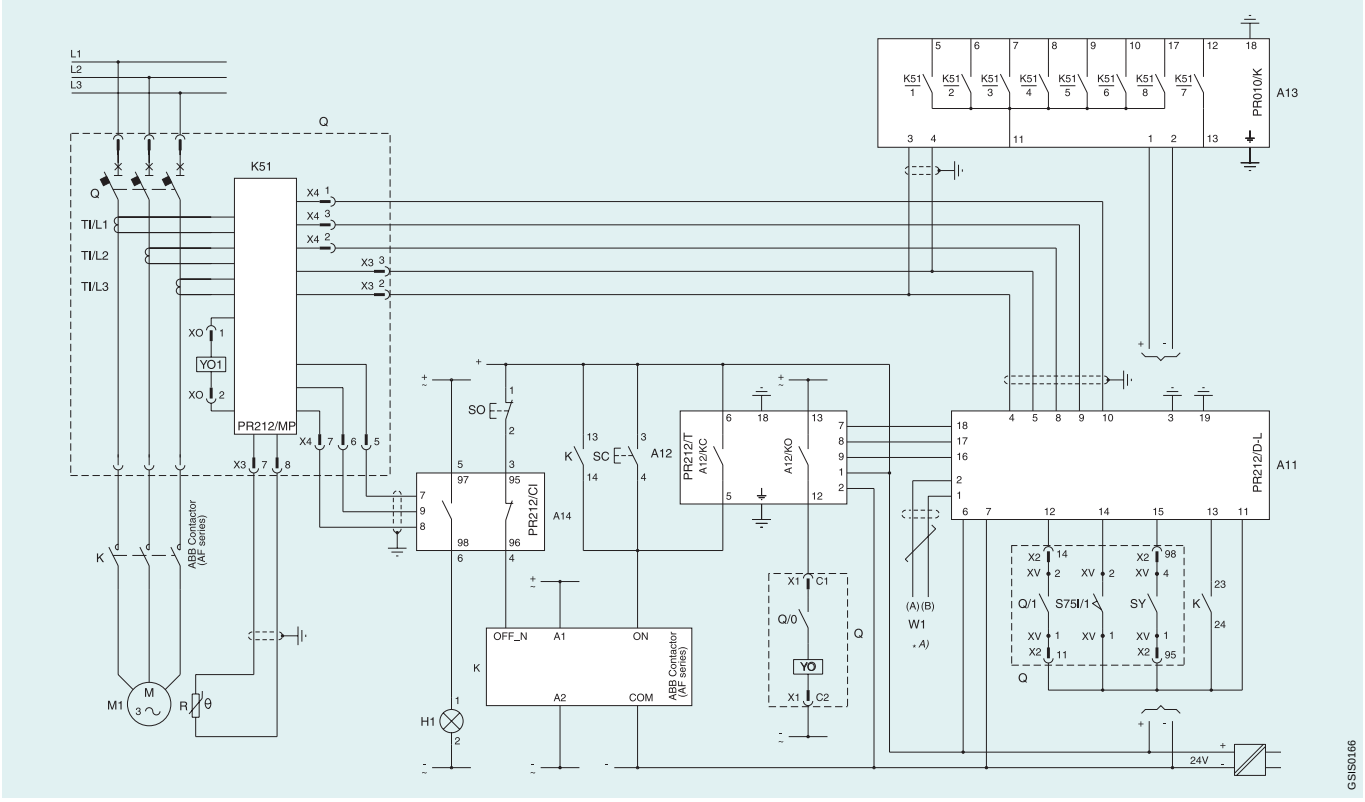
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the signalling unit SACE PR010/K and contactor operator unit SACE PR212/CI



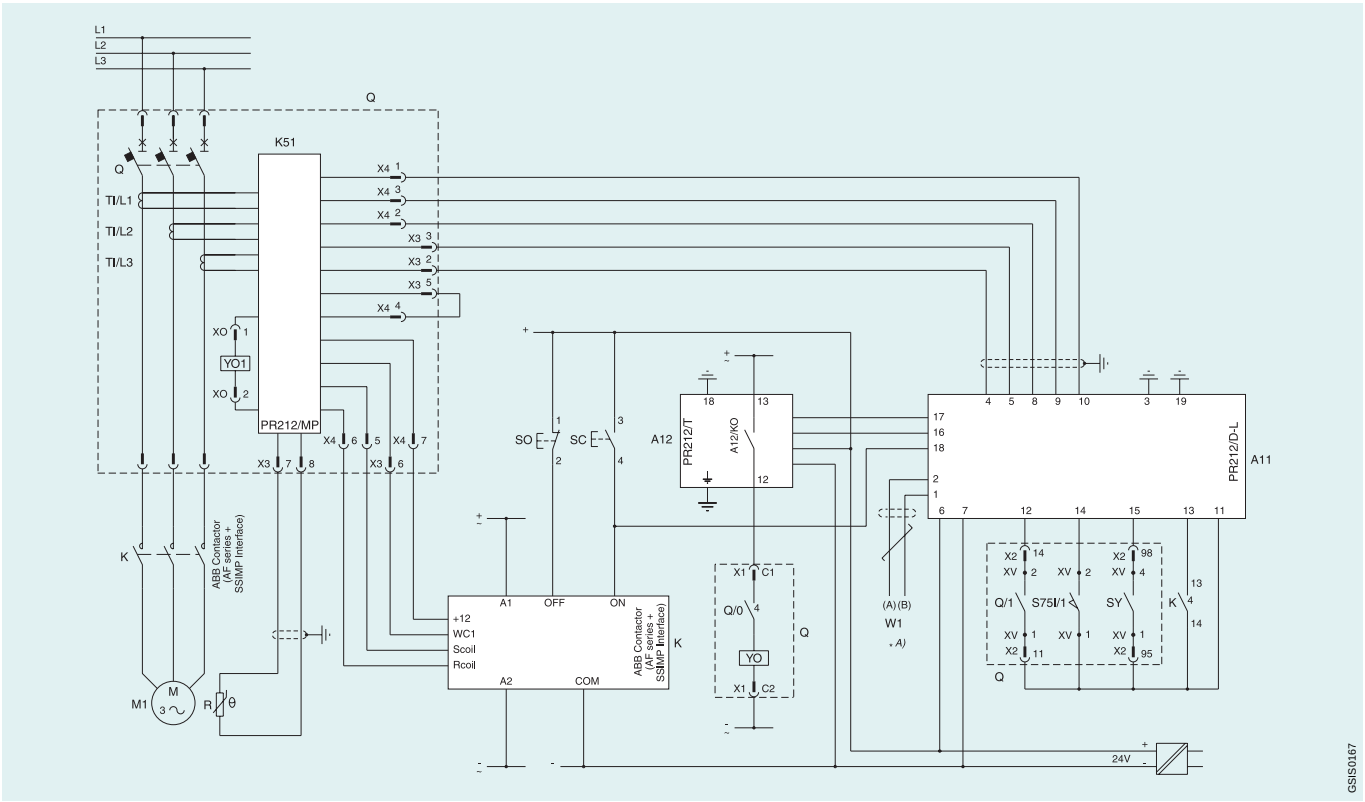
SACE S4-S5-S6-S7

SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L, actuator unit SACE PR212/T, signalling unit SACE PR010/K and contactor operator unit SACE PR212/CI



SACE S4-S5-S6-S7

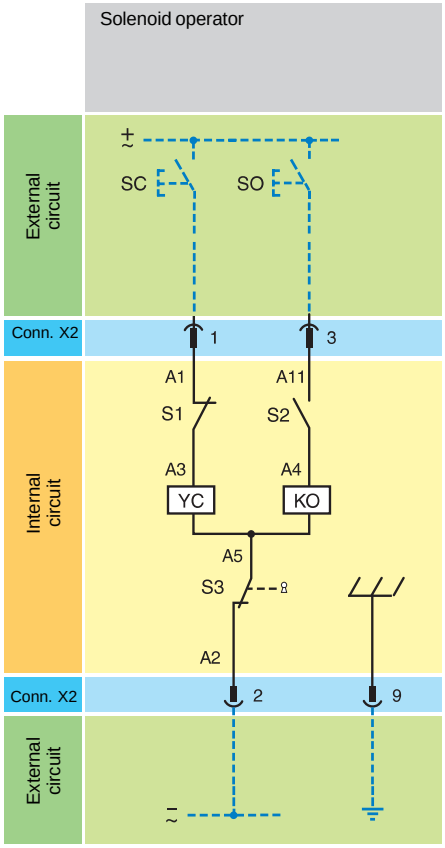
SACE PR212/MP release connected to the dialogue unit SACE PR212/D-L and actuator unit SACE PR212/T



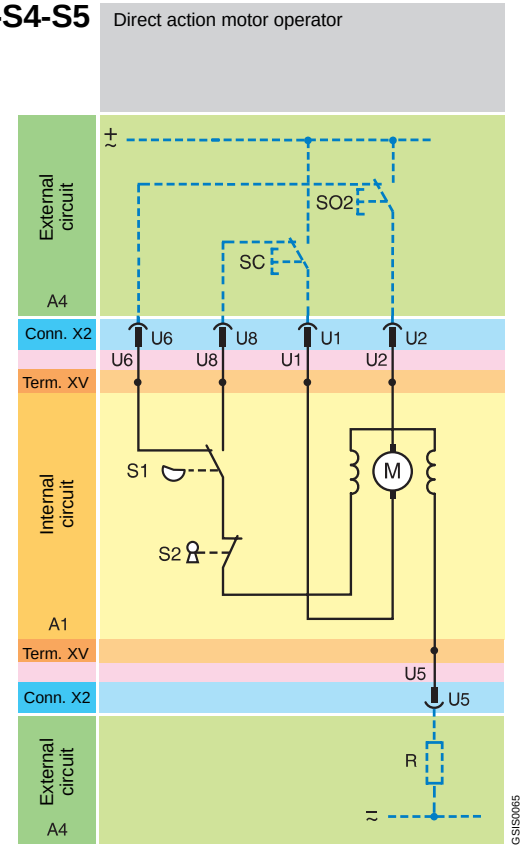
Circuit diagrams

Motor operators

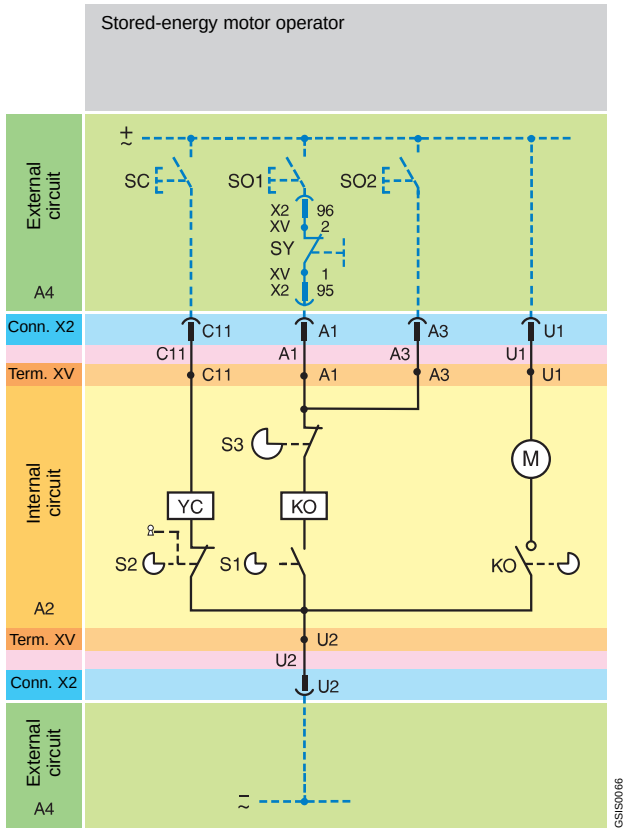
SACE S1-S2



SACE S3-S4-S5



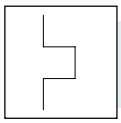
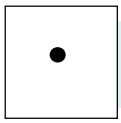
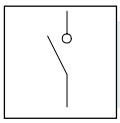
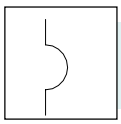
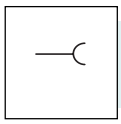
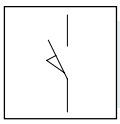
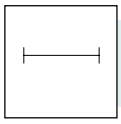
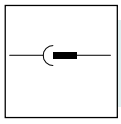
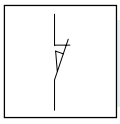
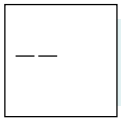
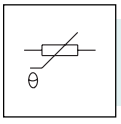
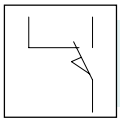
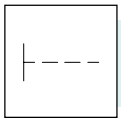
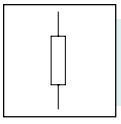
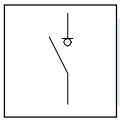
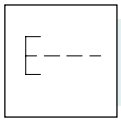
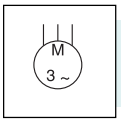
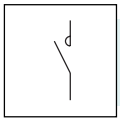
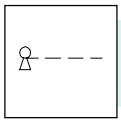
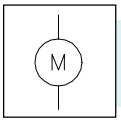
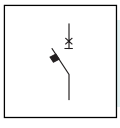
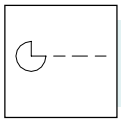
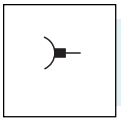
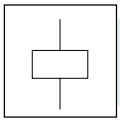
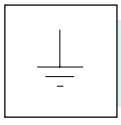
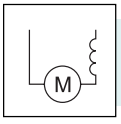
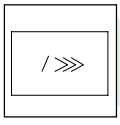
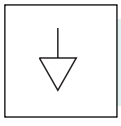
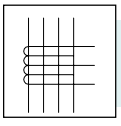
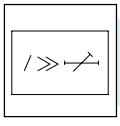
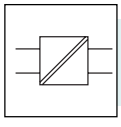
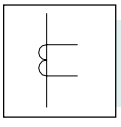
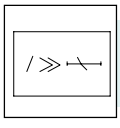
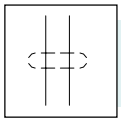
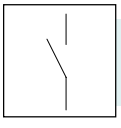
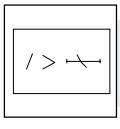
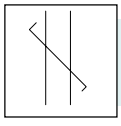
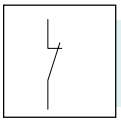
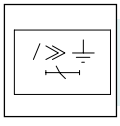
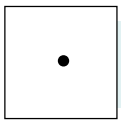
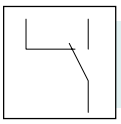
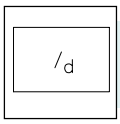
SACE S6-S7



6

Circuit diagrams

Graphic symbols for circuit diagrams (Standards IEC 617 and CEI 3-14...3-26)

 Thermal effect	 Terminal or clamp	 Make contact with held position
 Electromagnetic effect	 Socket (female) or pole of a socket	 Make position contact (limit contact)
 Time delay	 Socket and plug (female and male)	 Opening position contact (limit contact)
 Mechanical connection	 Temperature dependent resistor	 Change-over position contact with temporary interruption (limit contact)
 Manual mechanical control (general case)	 Resistor (general symbol)	 Switch-disconnector
 Pushbutton actuator	 Induction motor, threephase, squirrel cage	 Contactor (closing contact)
 Key control	 Motor (general symbol)	 Circuit-breaker with automatic release
 Cam control	 Brush	 Control coil (general symbol)
 Earth (general symbol)	 Motor energised in series	 Instantaneous overcurrent relay
 Equipotentiality	 Current transformer with primary formed by 4 through conductors and wound secondary, with socket	 Overcurrent relay with adjustable short time-delay trip
 Galvanically separated converter	 Current transformer	 Overcurrent relay with short inverse time-delay trip
 Shielded cable conductors (example: two conductors)	 Make contact	 Overcurrent relay with inverse long time delay
 Conductors or stranded cables (example: two conductors)	 Break contact	 Earth fault overcurrent relay with inverse short time-delay trip
 Connection of conductors	 Change-over contact with temporary interruption	 Residual current relay

6

Circuit diagrams

Key and notes

● = Figure number of diagram
* = See the note indicated by the letter
A1 = Applications of the circuit-breaker
A2 = Applications of the motor operators
A4 = Example switchgear and connections for control and signalling, outside the circuit-breaker
A11 = PR212/D-L dialogue unit, for connection to a centralised control system
A12 = PR212/T actuator unit, with auxiliary relays for executing commands from the dialogue unit
A12/KC = Actuator unit closing control
A12/KO = Actuator unit opening control
A13 = PR010/K signalling unit with auxiliary relays for electrical signalling of the protection functions of the microprocessor-based overcurrent release
A14 = Interface unit with SACE PR212/CI operator unit
D = Electronic time-lag device of undervoltage release (outside the circuit-breaker)
K51 = PR211, PR212/P or PR212/MP microprocessor-based overcurrent release with the following protection functions:
- L overload protection with inverse long time-delay trip
- S short-circuit protection with inverse or definite short time-delay trip (only available with PR212/P release)
- I short-circuit protection with instantaneous trip
- G earth fault protection with inverse short time-delay trip (only available with PR212/P release)

K51/X = Electrical signalling of alarm for internal communication fault
K51/X = Electrical signalling of alarm for protection function G in tripping zone
K51/X = Electrical signalling of alarm for protection function I in tripping zone
K51/X = Electrical signalling of alarm for protection function L in tripping zone
K51/X = Electrical signalling for protection function L in pre-alarm zone
K51/X = Electrical signalling of alarm for protection function S in tripping zone
K51/X = Electrical signalling of alarm for release YO1 tripped due to overcurrent or 'trip test' (Fig. 41)
K87 = RC211-RC212 residual-current release (for circuit-breakers S1-S2-S3) or RC210 (for circuit-breaker S1)
KO = For S3 - S4 - S5: auxiliary opening relay.
For S6 - S7: opening and spring-loading relay with held-position make contact, released by a cam of the motor operator when the circuit-breaker reaches its open position and the closing springs have been loaded
M = For S3 - S4 - S5: motor with energising in series for opening and closing of the circuit-breaker. For S6 - S7: motor for opening the circuit-breaker and loading the closing springs of the circuit-breaker
M1 = Three-phase asinchronous motor
Q = Main switch
Q/0 ... 2 = Auxiliary contacts of the circuit-breaker
R = Resistor outside the circuit-breaker, supplied for motor power supply voltages of more than 220 V
S1 = For S3 - S4 - S5: position contact operated by a circuit-breaker cam For S6 - S7: contact controlled by the motor operator cam: closes when the circuit-breaker reaches its closed position and opens when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position)
S2 = For S3 - S4 - S5: safety contact operated by:
- key lock (if fitted)
- padlock device
- manual control selector.

For S6 - S7: contact controlled by the motor operator cam: opens when the circuit-breaker reaches its closed position and closes when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position).The contact is also operated by the key lock device (if present)
S3 = Contact controlled by the motor operator cam: opens after contact KO has closed and closes when the circuit-breaker reaches its open position (doesn't switch when the circuit-breaker goes into its tripped position)
S4 = Contact operated by the circuit-breaker rotary handle
S75I/1...5 = Contacts for electrical signalling of circuit-breaker in inserted position (only for plug in or withdrawable circuit-breakers)
S75S/1...5 = Contacts for electrical signalling of circuit-breaker in removed or racked-out position (only for plug in or withdrawable circuit-breakers)
SC = Pushbutton or contact for closing the circuit-breaker or for motor start. For circuit-breakers S3 - S4 - S5, the operating mechanism must have a time of not less than 100ms
SO = Pushbutton or contact for opening the circuit-breaker or for motor stop
SO1, S02 = Pushbuttons or contacts for opening the circuit-breaker. For circuit-breakers S3 - S4 - S5, the operating mechanism must have a time of not less than 100 ms (see "Instructions for resetting the circuit-breaker after the releases have tripped")
SY = Contact for electrical signalling of circuit-breaker open due to tripping of thermomagnetic releases, YO, YO1, YU (tripped position)
TI = Toroidal current transformer
TI/L1 = Current transformer located on phase L1
TI/L2 = Current transformer located on phase L2
TI/L3 = Current transformer located on phase L3
TI/N = Current transformer located on neutral

Circuit diagrams

Graphic symbols for circuit diagrams (Standards IEC 617 and CEI 3-14...3-26)

W1 = Serial interface with monitoring system (EIA RS485 interface)
X1, X2 = Connectors for the auxiliary circuits of the circuit-breaker. For circuit-breakers S1 - S2 supplied to order only.
X3, X4 = Connectors for the circuits of the microprocessor-based overcurrent release (with plug in or withdrawable circuit-breakers, the connectors are pulled out at the same time as the circuit-breaker)
X5, X6 = Terminal delivery block for microprocessor-based overcurrent release circuits
XO = Connector for the opening solenoid YO1
XV = Terminal blocks for accessories
YC = Closing release
YO = Opening release
YO1 = Opening solenoid of the RC211 or RC212 residual current release (for S1 - S2 - S3) and of the overcurrent release (for S4 ... S8)
YU = Undervoltage release

Instructions for resetting the circuit-breaker after the releases have tripped

The circuit-breaker can open both through the action of the motor operator and due to the following releases tripping:
– overcurrent
– undervoltage
– opening
with consequent opening of contact SY (if fitted) in series with relay KO.
A reset operation involving manual or electric opening will have to be carried out in order to close the circuit-breaker again after tripping. Contact SY closes again at the end of the operation. The type of resetting should be chosen to suit the design requirements and duty conditions. A number of possible solutions are suggested below:

1) Manual resetting only

The electrical opening control (contact SO1) must be connected in series with contact SY. Opening (for S3 - S4 - S5 using the auxiliary relay KO) is therefore prevented until the circuit-breaker is in its tripped position. To reset the circuit-breaker one needs to operate the related lever until the circuit-breaker is in its open position and the closing springs are fully loaded.

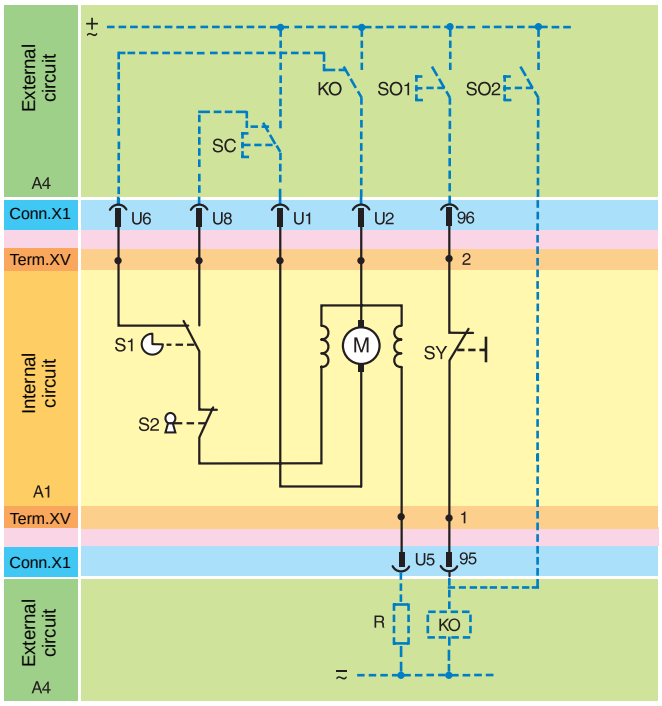
2) Electrical resetting, responsibility of the operator

The normal electric opening control (contact SO1) must be connected in series with contact SY.
Another opening control is provided (contact SO2), connected in series directly to relay KO for S3 - S4 - S5 or connected directly to pole A3 of connector X2 for S6 - S7.
This control must be protected by, for example, a pushbutton keyswitch. It should only be used if the information relayed to the control station manager allows one to rule out the possibility of the tripping having been caused by a short circuit, or if the causes of the short circuit have been removed.

3) Electrical resetting always enabled

The electrical opening control (contact SO2) is connected in series directly to relay KO for S3 - S4 - S5 or connected directly to pole A3 of connector X2 (for S6 - S7) and is therefore always enabled.
Example of use: automatic resetting of the circuit-breaker immediately after the releases have been tripped
N.B. If an overcurrent release is fitted, it will be necessary to identify the causes that brought it to its tripped position in order to prevent it from closing again in short-circuit conditions.

Manual resetting is always allowed in each of these examples.



Order codes

Index

General information **7**/2

Circuit-breakers for power distribution
- SACE Isomax S1 ..... **7**/3
- SACE Isomax S2 ..... **7**/6
- SACE Isomax S3 ..... **7**/13
- SACE Isomax S4 ..... **7**/26
- SACE Isomax S5 ..... **7**/32
- SACE Isomax S6 ..... **7**/41
- SACE Isomax S7 ..... **7**/47
- SACE Isomax S8 ..... **7**/51

Current-limiting circuit-breakers
- SACE Isomax S2X 100 ..... **7**/52
- SACE Isomax S3X **7**/53
- SACE Isomax S4X **7**/56
- SACE Isomax S6X **7**/58

Circuit-breakers for motor protection
- SACE Isomax S2X 80 ..... **7**/60
- SACE Isomax S3 ..... **7**/61
- SACE Isomax S4 ..... **7**/62
- SACE Isomax S5 ..... **7**/63
- SACE Isomax S6 ..... **7**/63
- SACE Isomax S7 ..... **7**/63
- SACE Isomax S3X-S4X-S6X **7**/64

Circuit-breakers for applications up to 1000 V **7**/65

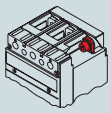
Switch-disconnectors
- SACE Isomax S2D **7**/67
- SACE Isomax S3D **7**/68
- SACE Isomax S6D **7**/70
- SACE Isomax S7D **7**/71
- SACE Isomax S8D **7**/72

Accessories **7**/73

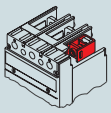
Order codes

General information

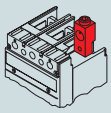
Interpretation of abbreviations used for article description



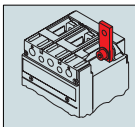
F = Front terminals



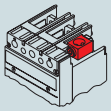
FC Cu = Front terminals for copper cables



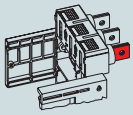
RC = Rear terminals for cables



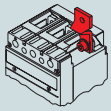
EF = Extended front terminals



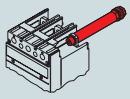
FC CuAl = Front terminals for copper / aluminium cables



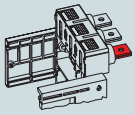
VR = Vertical flat-bar rear terminals



ES = Spreaded extended front terminals



R = Threaded rear terminals



HR = Horizontal flat-bar rear terminals

Im — Magnetic trip current

- Im = 3 Ith
- Im = 5 Ith
- Im = 10 Ith
- Im = 5...10 Ith

PR211 P — Microprocessor-based electronic release SACE PR211/P (functions I - LI)

PR212 P — Microprocessor-based electronic release SACE PR212/P (functions LSI - LSIG)

PR212 MP — Microprocessor-based electronic release for motor protection SACE PR212/MP (functions LRIU)

DC – — Direct current circuit-breakers for applications up to 1000V

AC ~ — Alternate current circuit-breakers for applications up to 1000V

Iu — Rated uninterrupted current of the circuit-breaker

In — Rated current of electronic release

Ith — Rated current of thermomagnetic release

Icw — Rated short-time withstand current

Icu — Rated ultimate short-circuit breaking capacity

Icm — Rated duty short-circuit making capacity (peak value)

7

Order codes

SACE Isomax S1 circuit-breaker

F = FIXED

S1B 125 Iu (40 °C) = 125 A Icu (415 V) = 16 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
FC Cu = Front terminals for copper cables							
S1**B** 125 F **FC Cu**	R 10	160A	**23645**	**24245**	500A	**00002**	**00052**
S1**B** 125 F **FC Cu**	R 12.5	160A	**23647**	**24247**	500A	**00004**	**00054**
S1**B** 125 F **FC Cu**	R 16	160A	**23649**	**24249**	500A	**00006**	**00056**
S1**B** 125 F **FC Cu**	R 20	200A	**23651**	**24251**	500A	**00008**	**00058**
S1**B** 125 F **FC Cu**	R 25	200A	**23653**	**24253**	500A	**00010**	**00060**
S1**B** 125 F **FC Cu**	R 32	200A	**23655**	**24255**	500A	**00012**	**00062**
S1**B** 125 F **FC Cu**	R 40	200A	**23657**	**24257**	500A	**00014**	**00064**
S1**B** 125 F **FC Cu**	R 50	250A	**23659**	**24259**	500A	**00016**	**00066**
S1**B** 125 F **FC Cu**	R 63	320A	**23661**	**24261**	630A	**00018**	**00068**
S1**B** 125 F **FC Cu**	R 80	400A	**23663**	**24263**	800A	**00020**	**00070**
S1**B** 125 F **FC Cu**	R 100	500A	**23665**	**24265**	1000A	**00022**	**00072**
S1**B** 125 F **FC Cu**	R 125	630A	**23667**	**24267**	1250A	**00024**	**00074**
R = Terminali posteriori filettati							
S1**B** 125 F **R**	R 10	160A	**23765**	**23885**	500A	**00027**	**00077**
S1**B** 125 F **R**	R 12.5	160A	**23767**	**23887**	500A	**00029**	**00079**
S1**B** 125 F **R**	R 16	160A	**23769**	**23889**	500A	**00031**	**00081**
S1**B** 125 F **R**	R 20	200A	**23771**	**23891**	500A	**00033**	**00083**
S1**B** 125 F **R**	R 25	200A	**23773**	**23893**	500A	**00035**	**00085**
S1**B** 125 F **R**	R 32	200A	**23775**	**23895**	500A	**00037**	**00087**
S1**B** 125 F **R**	R 40	200A	**23777**	**23897**	500A	**00039**	**00089**
S1**B** 125 F **R**	R 50	250A	**23779**	**23899**	500A	**00041**	**00091**
S1**B** 125 F **R**	R 63	320A	**23781**	**23901**	630A	**00043**	**00093**
S1**B** 125 F **R**	R 80	400A	**23783**	**23903**	800A	**00045**	**00095**
S1**B** 125 F **R**	R 100	500A	**23785**	**23905**	1000A	**00047**	**00097**
S1**B** 125 F **R**	R 125	630A	**23787**	**23907**	1250A	**00049**	**00099**

Order codes

SACE Isomax S1 circuit-breaker

F = FIXED

S1N 125 Iu (40 °C) = 125 A Icu (415 V) = 25 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles
FC Cu = Front terminals for copper cables							
S1N 125 F **FC Cu**	R 10	160A	**23669**	**24269**	500A	**00152**	**00202**
S1N 125 F **FC Cu**	R 12.5	160A	**23671**	**24271**	500A	**00154**	**00204**
S1N 125 F **FC Cu**	R 16	160A	**23673**	**24273**	500A	**00156**	**00206**
S1N 125 F **FC Cu**	R 20	200A	**23675**	**24275**	500A	**00158**	**00208**
S1N 125 F **FC Cu**	R 25	200A	**23677**	**24277**	500A	**00160**	**00210**
S1N 125 F **FC Cu**	R 32	200A	**23679**	**24279**	500A	**00162**	**00212**
S1N 125 F **FC Cu**	R 40	200A	**23681**	**24281**	500A	**00164**	**00214**
S1N 125 F **FC Cu**	R 50	250A	**23683**	**24283**	500A	**00166**	**00216**
S1N 125 F **FC Cu**	R 63	320A	**23685**	**24285**	630A	**00168**	**00218**
S1N 125 F **FC Cu**	R 80	400A	**23687**	**24287**	800A	**00170**	**00220**
S1N 125 F **FC Cu**	R 100	500A	**23689**	**24289**	1000A	**00172**	**00222**
S1N 125 F **FC Cu**	R 125	630A	**23691**	**24291**	1250A	**00174**	**00224**
R = Threaded rear terminals							
S1N 125 F **R**	R 10	160A	**23789**	**23909**	500A	**00177**	**00227**
S1N 125 F **R**	R 12.5	160A	**23791**	**23911**	500A	**00179**	**00229**
S1N 125 F **R**	R 16	160A	**23793**	**23913**	500A	**00181**	**00231**
S1N 125 F **R**	R 20	200A	**23795**	**23915**	500A	**00183**	**00233**
S1N 125 F **R**	R 25	200A	**23797**	**23917**	500A	**00185**	**00235**
S1N 125 F **R**	R 32	200A	**23799**	**23919**	500A	**00187**	**00237**
S1N 125 F **R**	R 40	200A	**23801**	**23921**	500A	**00189**	**00239**
S1N 125 F **R**	R 50	250A	**23803**	**23923**	500A	**00191**	**00241**
S1N 125 F **R**	R 63	320A	**23805**	**23925**	630A	**00193**	**00243**
S1N 125 F **R**	R 80	400A	**23807**	**23927**	800A	**00195**	**00245**
S1N 125 F **R**	R 100	500A	**23809**	**23929**	1000A	**00197**	**00247**
S1N 125 F **R**	R 125	630A	**23811**	**23931**	1250A	**00199**	**00249**

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles
FC Cu = Front terminals for copper cables							
S1N 125 F **FC Cu**	In 16A	160A	**33676**	**33772**			
S1N 125 F **FC Cu**	In 40A	200A	**33684**	**33780**			
S1N 125 F **FC Cu**	In 50A	250A	**33686**	**33782**	500A	**33662**	**33758**
S1N 125 F **FC Cu**	In 63A	320A	**33688**	**33784**	630A	**33664**	**33760**
S1N 125 F **FC Cu**	In 80A	400A	**33690**	**33786**	800A	**33666**	**33762**
S1N 125 F **FC Cu**	In 100A				1000A	**33668**	**33764**
S1N 125 F **FC Cu**	In 125A				1250A	**33670**	**33766**
R = Threaded rear terminals							
S1N 125 F **R**	In 16A	160A	**33724**	**33820**			
S1N 125 F **R**	In 40A	200A	**33732**	**33828**			
S1N 125 F **R**	In 50A	250A	**33734**	**33830**	500A	**33710**	**33806**
S1N 125 F **R**	In 63A	320A	**33736**	**33832**	630A	**33712**	**33808**
S1N 125 F **R**	In 80A	400A	**33738**	**33834**	800A	**33714**	**33810**
S1N 125 F **R**	In 100A				1000A	**33716**	**33812**
S1N 125 F **R**	In 125A				1250A	**33718**	**33814**

S1N 125 Curva D Iu (40 °C) = 125 A Icu (415 V) = 25 kA

Thermomagnetic release		Im = 10 Ith	code 1SDA0 . . . . . R1 4 poles
FC Cu = Front terminals for copper cables			
S1N 125 F **FC Cu**	R 63A	1250A	**45084**
S1N 125 F **FC Cu**	R 80A	1250A	**45087**
S1N 125 F **FC Cu**	R 100A	1400A	**45089**
S1N 125 F **FC Cu**	R 125A	1500A	**45091**
R = Threaded rear terminals			
S1N 125 F **R**	R 63A	1250A	**45093**
S1N 125 F **R**	R 80A	1250A	**45095**
S1N 125 F **R**	R 100A	1400A	**45097**
S1N 125 F **R**	R 125A	1500A	**45099**

Order codes

SACE Isomax S1 circuit-breaker

P = PLUG-IN

Moving part

S1B 125 Iu (40 °C) = 125 A Icu (415 V) = 16 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S1**B** 125 P MP	R 10	160A	**24005**	**24125**	500A	**00102**	**00127**
S1**B** 125 P MP	R 12.5	160A	**24007**	**24127**	500A	**00104**	**00129**
S1**B** 125 P MP	R 16	160A	**24009**	**24129**	500A	**00106**	**00131**
S1**B** 125 P MP	R 20	200A	**24011**	**24131**	500A	**00108**	**00133**
S1**B** 125 P MP	R 25	200A	**24013**	**24133**	500A	**00110**	**00135**
S1**B** 125 P MP	R 32	200A	**24015**	**24135**	500A	**00112**	**00137**
S1**B** 125 P MP	R 40	200A	**24017**	**24137**	500A	**00114**	**00139**
S1**B** 125 P MP	R 50	250A	**24019**	**24139**	500A	**00116**	**00141**
S1**B** 125 P MP	R 63	320A	**24021**	**24141**	630A	**00118**	**00143**
S1**B** 125 P MP	R 80	400A	**24023**	**24143**	800A	**00120**	**00145**
S1**B** 125 P MP	R 100	500A	**24025**	**24145**	1000A	**00122**	**00147**
S1**B** 125 P MP	R 125	630A	**24027**	**24147**	1250A	**00124**	**00149**

S1N 125 Iu (40 °C) = 125 A Icu (415 V) = 25 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S1**N** 125 P MP	R 10	160A	**24029**	**24149**	500A	**00252**	**00277**
S1**N** 125 P MP	R 12.5	160A	**24031**	**24151**	500A	**00254**	**00279**
S1**N** 125 P MP	R 16	160A	**24033**	**24153**	500A	**00256**	**00281**
S1**N** 125 P MP	R 20	200A	**24035**	**24155**	500A	**00258**	**00283**
S1**N** 125 P MP	R 25	200A	**24037**	**24157**	500A	**00260**	**00285**
S1**N** 125 P MP	R 32	200A	**24039**	**24159**	500A	**00262**	**00287**
S1**N** 125 P MP	R 40	200A	**24041**	**24161**	500A	**00264**	**00289**
S1**N** 125 P MP	R 50	250A	**24043**	**24163**	500A	**00266**	**00291**
S1**N** 125 P MP	R 63	320A	**24045**	**24165**	630A	**00268**	**00293**
S1**N** 125 P MP	R 80	400A	**24047**	**24167**	800A	**00270**	**00295**
S1**N** 125 P MP	R 100	500A	**24049**	**24169**	1000A	**00272**	**00297**
S1**N** 125 P MP	R 125	630A	**24051**	**24171**	1250A	**00274**	**00299**

Magnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S1**N** 125 P MP	In 16A	160A	**33964**	**34012**			
S1**N** 125 P MP	In 40A	200A	**33972**	**34020**			
S1**N** 125 P MP	In 50A	250A	**33974**	**34022**	500A	**33950**	**33998**
S1**N** 125 P MP	In 63A	320A	**33976**	**34024**	630A	**33952**	**34000**
S1**N** 125 P MP	In 80A	400A	**33978**	**34026**	800A	**33954**	**34002**
S1**N** 125 P MP	In 100A				1000A	**33956**	**34004**
S1**N** 125 P MP	In 125A				1250A	**33958**	**34006**

S1N 125 Curva D Iu (40 °C) = 125 A Icu (415 V) = 25 kA

Thermomagnetic release			Im = 10 Ith	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
FC Cu = Front terminals for copper cables				
S1**N** 125 P MP	R 63A		1250A	**45101**
S1**N** 125 P MP	R 80A		1250A	**45103**
S1**N** 125 P MP	R 100A		1400A	**45105**
S1**N** 125 P MP	R 125A		1500A	**45107**

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

S2B 160 Iu (40 °C) = 160 A Icu (415 V) = 16 kA

Thermomagnetic release		Im = 5 Ith code 1SDA0 . . . . . R1		Im = 10 Ith code 1SDA0 . . . . . R1	
		3 poles	4 poles	3 poles	4 poles
EF = Extended front terminals					
S2**B** 160 F **EF**	R 12.5	160A	**34056**	**34440**	500A	**34032**	**34416**
S2**B** 160 F **EF**	R 16	160A	**34058**	**34442**	500A	**34034**	**34418**
S2**B** 160 F **EF**	R 20	200A	**34060**	**34444**	500A	**34036**	**34420**
S2**B** 160 F **EF**	R 25	200A	**34062**	**34446**	500A	**34038**	**34422**
S2**B** 160 F **EF**	R 32	200A	**34064**	**34448**	500A	**34040**	**34424**
S2**B** 160 F **EF**	R 40	200A	**34066**	**34450**	500A	**34042**	**34426**
S2**B** 160 F **EF**	R 50	250A	**34068**	**34452**	500A	**34044**	**34428**
S2**B** 160 F **EF**	R 63	320A	**34070**	**34454**	630A	**34046**	**34430**
S2**B** 160 F **EF**	R 80	400A	**34072**	**34456**	800A	**34048**	**34432**
S2**B** 160 F **EF**	R 100	500A	**34074**	**34458**	1000A	**34050**	**34434**
S2**B** 160 F **EF**	R 125	630A	**34076**	**34460**	1250A	**34052**	**34436**
S2**B** 160 F **EF**	R 160	800A	**34078**	**34462**	1600A	**34054**	**34438**
FC Cu = Front terminals for copper cables					
S2**B** 160 F **FC Cu**	R 12.5	160A	**23693**	**24293**	500A	**00302**	**00352**
S2**B** 160 F **FC Cu**	R 16	160A	**23695**	**24295**	500A	**00304**	**00354**
S2**B** 160 F **FC Cu**	R 20	200A	**23697**	**24297**	500A	**00306**	**00356**
S2**B** 160 F **FC Cu**	R 25	200A	**23699**	**24299**	500A	**00308**	**00358**
S2**B** 160 F **FC Cu**	R 32	200A	**23701**	**24301**	500A	**00310**	**00360**
S2**B** 160 F **FC Cu**	R 40	200A	**23703**	**24303**	500A	**00312**	**00362**
S2**B** 160 F **FC Cu**	R 50	250A	**23705**	**24305**	500A	**00314**	**00364**
S2**B** 160 F **FC Cu**	R 63	320A	**23707**	**24307**	630A	**00316**	**00366**
S2**B** 160 F **FC Cu**	R 80	400A	**23709**	**24309**	800A	**00318**	**00368**
S2**B** 160 F **FC Cu**	R 100	500A	**23711**	**24311**	1000A	**00320**	**00370**
S2**B** 160 F **FC Cu**	R 125	630A	**23713**	**24313**	1250A	**00322**	**00372**
S2**B** 160 F **FC Cu**	R 160	800A	**23715**	**24315**	1600A	**00324**	**00374**
FC CuAl = Front terminals for copper/aluminium cables					
S2**B** 160 F **FC CuAl***	R 12.5	160A	**34200**	**34584**	500A	**34176**	**34560**
S2**B** 160 F **FC CuAl***	R 16	160A	**34202**	**34586**	500A	**34178**	**34562**
S2**B** 160 F **FC CuAl***	R 20	200A	**34204**	**34588**	500A	**34180**	**34564**
S2**B** 160 F **FC CuAl***	R 25	200A	**34206**	**34590**	500A	**34182**	**34566**
S2**B** 160 F **FC CuAl***	R 32	200A	**34208**	**34592**	500A	**34184**	**34568**
S2**B** 160 F **FC CuAl***	R 40	200A	**34210**	**34594**	500A	**34186**	**34570**
S2**B** 160 F **FC CuAl***	R 50	250A	**34212**	**34596**	500A	**34188**	**34572**
S2**B** 160 F **FC CuAl***	R 63	320A	**34214**	**34598**	630A	**34190**	**34574**
S2**B** 160 F **FC CuAl***	R 80	400A	**34216**	**34600**	800A	**34192**	**34576**
S2**B** 160 F **FC CuAl***	R 100	500A	**34218**	**34602**	1000A	**34194**	**34578**
S2**B** 160 F **FC CuAl***	R 125	630A	**34220**	**34604**	1250A	**34196**	**34580**
S2**B** 160 F **FC CuAl***	R 160	800A	**34222**	**34606**	1600A	**34198**	**34582**
S2**B** 160 F **FC CuAl****	R 12.5	160A	**34296**	**34680**	500A	**34272**	**34656**
S2**B** 160 F **FC CuAl****	R 16	160A	**34298**	**34682**	500A	**34274**	**34658**
S2**B** 160 F **FC CuAl****	R 20	200A	**34300**	**34684**	500A	**34276**	**34660**
S2**B** 160 F **FC CuAl****	R 25	200A	**34302**	**34686**	500A	**34278**	**34662**
S2**B** 160 F **FC CuAl****	R 32	200A	**34304**	**34688**	500A	**34280**	**34664**
S2**B** 160 F **FC CuAl****	R 40	200A	**34306**	**34690**	500A	**34282**	**34666**
S2**B** 160 F **FC CuAl****	R 50	250A	**34308**	**34692**	500A	**34284**	**34668**
S2**B** 160 F **FC CuAl****	R 63	320A	**34310**	**34694**	630A	**34286**	**34670**
S2**B** 160 F **FC CuAl****	R 80	400A	**34312**	**34696**	800A	**34288**	**34672**
S2**B** 160 F **FC CuAl****	R 100	500A	**34314**	**34698**	1000A	**34290**	**34674**
S2**B** 160 F **FC CuAl****	R 125	630A	**34316**	**34700**	1250A	**34292**	**34676**
S2**B** 160 F **FC CuAl****	R 160	800A	**34318**	**34702**	1600A	**34294**	**34678**
R = Threaded rear terminals					
S2**B** 160 F **R**	R 12.5	160A	**23813**	**23933**	500A	**00327**	**00377**
S2**B** 160 F **R**	R 16	160A	**23815**	**23935**	500A	**00329**	**00379**
S2**B** 160 F **R**	R 20	200A	**23817**	**23937**	500A	**00331**	**00381**
S2**B** 160 F **R**	R 25	200A	**23819**	**23939**	500A	**00333**	**00383**
S2**B** 160 F **R**	R 32	200A	**23821**	**23941**	500A	**00335**	**00385**
S2**B** 160 F **R**	R 40	200A	**23823**	**23943**	500A	**00337**	**00387**
S2**B** 160 F **R**	R 50	250A	**23825**	**23945**	500A	**00339**	**00389**
S2**B** 160 F **R**	R 63	320A	**23827**	**23947**	630A	**00341**	**00391**
S2**B** 160 F **R**	R 80	400A	**23829**	**23949**	800A	**00343**	**00393**
S2**B** 160 F **R**	R 100	500A	**23831**	**23951**	1000A	**00345**	**00395**
S2**B** 160 F **R**	R 125	630A	**23833**	**23953**	1250A	**00347**	**00397**
S2**B** 160 F **R**	R 160	800A	**23835**	**23955**	1600A	**00349**	**00399**

* Cable section = 1 x 2.5...50 mm²
** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

S2N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
EF = Extended front terminals							
S2N 160 F **EF**	R 12.5	160A	**34826**	**35210**	500A	**34802**	**35186**
S2N 160 F **EF**	R 16	160A	**34828**	**35212**	500A	**34804**	**35188**
S2N 160 F **EF**	R 20	200A	**34830**	**35214**	500A	**34806**	**35190**
S2N 160 F **EF**	R 25	200A	**34832**	**35216**	500A	**34808**	**35192**
S2N 160 F **EF**	R 32	200A	**34834**	**35218**	500A	**34810**	**35194**
S2N 160 F **EF**	R 40	200A	**34836**	**35220**	500A	**34812**	**35196**
S2N 160 F **EF**	R 50	250A	**34838**	**35222**	500A	**34814**	**35198**
S2N 160 F **EF**	R 63	320A	**34840**	**35224**	630A	**34816**	**35200**
S2N 160 F **EF**	R 80	400A	**34842**	**35226**	800A	**34818**	**35202**
S2N 160 F **EF**	R 100	500A	**34844**	**35228**	1000A	**34820**	**35204**
S2N 160 F **EF**	R 125	630A	**34846**	**35230**	1250A	**34822**	**35206**
S2N 160 F **EF**	R 160	800A	**34848**	**35232**	1600A	**34824**	**35208**
FC Cu = Front terminals for copper cables							
S2N 160 F **FC Cu**	R 12.5	160A	**23717**	**24317**	500A	**00452**	**00502**
S2N 160 F **FC Cu**	R 16	160A	**23719**	**24319**	500A	**00454**	**00504**
S2N 160 F **FC Cu**	R 20	200A	**23721**	**24321**	500A	**00456**	**00506**
S2N 160 F **FC Cu**	R 25	200A	**23723**	**24323**	500A	**00458**	**00508**
S2N 160 F **FC Cu**	R 32	200A	**23725**	**24325**	500A	**00460**	**00510**
S2N 160 F **FC Cu**	R 40	200A	**23727**	**24327**	500A	**00462**	**00512**
S2N 160 F **FC Cu**	R 50	250A	**23729**	**24329**	500A	**00464**	**00514**
S2N 160 F **FC Cu**	R 63	320A	**23731**	**24331**	630A	**00466**	**00516**
S2N 160 F **FC Cu**	R 80	400A	**23733**	**24333**	800A	**00468**	**00518**
S2N 160 F **FC Cu**	R 100	500A	**23735**	**24335**	1000A	**00470**	**00520**
S2N 160 F **FC Cu**	R 125	630A	**23737**	**24337**	1250A	**00472**	**00522**
S2N 160 F **FC Cu**	R 160	800A	**23739**	**24339**	1600A	**00474**	**00524**
FC CuAl = Front terminals for copper/aluminium cables							
S2N 160 F **FC CuAl***	R 12.5	160A	**34970**	**35354**	500A	**34946**	**35330**
S2N 160 F **FC CuAl***	R 16	160A	**34972**	**35356**	500A	**34948**	**35332**
S2N 160 F **FC CuAl***	R 20	200A	**34974**	**35358**	500A	**34950**	**35334**
S2N 160 F **FC CuAl***	R 25	200A	**34976**	**35360**	500A	**34952**	**35336**
S2N 160 F **FC CuAl***	R 32	200A	**34978**	**35362**	500A	**34954**	**35338**
S2N 160 F **FC CuAl***	R 40	200A	**34980**	**35364**	500A	**34956**	**35340**
S2N 160 F **FC CuAl***	R 50	250A	**34982**	**35366**	500A	**34958**	**35342**
S2N 160 F **FC CuAl***	R 63	320A	**34984**	**35368**	630A	**34960**	**35344**
S2N 160 F **FC CuAl***	R 80	400A	**34986**	**35370**	800A	**34962**	**35346**
S2N 160 F **FC CuAl***	R 100	500A	**34988**	**35372**	1000A	**34964**	**35348**
S2N 160 F **FC CuAl***	R 125	630A	**34990**	**35374**	1250A	**34966**	**35350**
S2N 160 F **FC CuAl***	R 160	800A	**34992**	**35376**	1600A	**34968**	**35352**
S2N 160 F **FC CuAl****	R 12.5	160A	**35066**	**35450**	500A	**35042**	**35426**
S2N 160 F **FC CuAl****	R 16	160A	**35068**	**35452**	500A	**35044**	**35428**
S2N 160 F **FC CuAl****	R 20	200A	**35070**	**35454**	500A	**35046**	**35430**
S2N 160 F **FC CuAl****	R 25	200A	**35072**	**35456**	500A	**35048**	**35432**
S2N 160 F **FC CuAl****	R 32	200A	**35074**	**35458**	500A	**35050**	**35434**
S2N 160 F **FC CuAl****	R 40	200A	**35076**	**35460**	500A	**35052**	**35436**
S2N 160 F **FC CuAl****	R 50	250A	**35078**	**35462**	500A	**35054**	**35438**
S2N 160 F **FC CuAl****	R 63	320A	**35080**	**35464**	630A	**35056**	**35440**
S2N 160 F **FC CuAl****	R 80	400A	**35082**	**35466**	800A	**35058**	**35442**
S2N 160 F **FC CuAl****	R 100	500A	**35084**	**35468**	1000A	**35060**	**35444**
S2N 160 F **FC CuAl****	R 125	630A	**35086**	**35470**	1250A	**35062**	**35446**
S2N 160 F **FC CuAl****	R 160	800A	**35088**	**35472**	1600A	**35064**	**35448**
R = Threaded rear terminals							
S2N 160 F **R**	R 12.5	160A	**23837**	**23957**	500A	**00477**	**00527**
S2N 160 F **R**	R 16	160A	**23839**	**23959**	500A	**00479**	**00529**
S2N 160 F **R**	R 20	200A	**23841**	**23961**	500A	**00481**	**00531**
S2N 160 F **R**	R 25	200A	**23843**	**23963**	500A	**00483**	**00533**
S2N 160 F **R**	R 32	200A	**23845**	**23965**	500A	**00485**	**00535**
S2N 160 F **R**	R 40	200A	**23847**	**23967**	500A	**00487**	**00537**
S2N 160 F **R**	R 50	250A	**23849**	**23969**	500A	**00489**	**00539**
S2N 160 F **R**	R 63	320A	**23851**	**23971**	630A	**00491**	**00541**
S2N 160 F **R**	R 80	400A	**23853**	**23973**	800A	**00493**	**00543**
S2N 160 F **R**	R 100	500A	**23855**	**23975**	1000A	**00495**	**00545**
S2N 160 F **R**	R 125	630A	**23857**	**23977**	1250A	**00497**	**00547**
S2N 160 F **R**	R 160	800A	**23859**	**23979**	1600A	**00499**	**00549**

* Cable section = 1 x 2.5...50 mm²
** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

Thermomagnetic release			Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles
EF = Extended front terminals								
S2**N** 160 F **EF**	In	16A	160A	**34876**	**35260**			
S2**N** 160 F **EF**	In	40A	200A	**34884**	**35268**			
S2**N** 160 F **EF**	In	50A	250A	**34886**	**35270**	500A	**34862**	**35246**
S2**N** 160 F **EF**	In	63A	320A	**34888**	**35272**	630A	**34864**	**35248**
S2**N** 160 F **EF**	In	80A	400A	**34890**	**35274**	800A	**34866**	**35250**
S2**N** 160 F **EF**	In	100A				1000A	**34868**	**35252**
S2**N** 160 F **EF**	In	125A				1250A	**34870**	**35254**
S2**N** 160 F **EF**	In	160A				1600A	**34872**	**35256**
FC Cu = Front terminals for copper cables								
S2**N** 160 F **FC Cu**	In	16A	160A	**34924**	**35308**			
S2**N** 160 F **FC Cu**	In	40A	200A	**34932**	**35316**			
S2**N** 160 F **FC Cu**	In	50A	250A	**34934**	**35318**	500A	**34910**	**35294**
S2**N** 160 F **FC Cu**	In	63A	320A	**34936**	**35320**	630A	**34912**	**35296**
S2**N** 160 F **FC Cu**	In	80A	400A	**34938**	**35322**	800A	**34914**	**35298**
S2**N** 160 F **FC Cu**	In	100A				1000A	**34916**	**35300**
S2**N** 160 F **FC Cu**	In	125A				1250A	**34918**	**35302**
S2**N** 160 F **FC Cu**	In	160A				1600A	**34920**	**35304**
FC CuAl = Front terminals for copper/aluminium cables								
S2**N** 160 F **FC CuAl***	In	16A	160A	**35020**	**35404**			
S2**N** 160 F **FC CuAl***	In	40A	200A	**35028**	**35412**			
S2**N** 160 F **FC CuAl***	In	50A	250A	**35030**	**35414**	500A	**35006**	**35390**
S2**N** 160 F **FC CuAl***	In	63A	320A	**35032**	**35416**	630A	**35008**	**35392**
S2**N** 160 F **FC CuAl***	In	80A	400A	**35034**	**35418**	800A	**35010**	**35394**
S2**N** 160 F **FC CuAl***	In	100A				1000A	**35012**	**35396**
S2**N** 160 F **FC CuAl***	In	125A				1250A	**35014**	**35398**
S2**N** 160 F **FC CuAl***	In	160A				1600A	**35016**	**35400**
S2**N** 160 F **FC CuAl****	In	16A	160A	**35116**	**35500**			
S2**N** 160 F **FC CuAl****	In	40A	200A	**35124**	**35508**			
S2**N** 160 F **FC CuAl****	In	50A	250A	**35126**	**35510**	500A	**35102**	**35486**
S2**N** 160 F **FC CuAl****	In	63A	320A	**35128**	**35512**	630A	**35104**	**35488**
S2**N** 160 F **FC CuAl****	In	80A	400A	**35130**	**35514**	800A	**35106**	**35490**
S2**N** 160 F **FC CuAl****	In	100A				1000A	**35108**	**35492**
S2**N** 160 F **FC CuAl****	In	125A				1250A	**35110**	**35494**
S2**N** 160 F **FC CuAl****	In	160A				1600A	**35112**	**35496**
R = Threaded rear terminals								
S2**N** 160 F **R**	In	16A	160A	**35164**	**35548**			
S2**N** 160 F **R**	In	40A	200A	**35172**	**35556**			
S2**N** 160 F **R**	In	50A	250A	**35174**	**35558**	500A	**35150**	**35534**
S2**N** 160 F **R**	In	63A	320A	**35176**	**35560**	630A	**35152**	**35536**
S2**N** 160 F **R**	In	80A	400A	**35178**	**35562**	800A	**35154**	**35538**
S2**N** 160 F **R**	In	100A				1000A	**35156**	**35540**
S2**N** 160 F **R**	In	125A				1250A	**35158**	**35542**
S2**N** 160 F **R**	In	160A				1600A	**35160**	**35544**

***** Cable section = 1 x 2.5...50 mm²
****** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

S2S 160 Iu (40 °C) = 160 A Icu (415 V) = 50 kA

Thermomagnetic release		Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
EF = Extended front terminals				
S2**S** 160 F **EF**	R 12.5	500A	**35570**	**35762**
S2**S** 160 F **EF**	R 16	500A	**35572**	**35764**
S2**S** 160 F **EF**	R 20	500A	**35574**	**35766**
S2**S** 160 F **EF**	R 25	500A	**35576**	**35768**
S2**S** 160 F **EF**	R 32	500A	**35578**	**35770**
S2**S** 160 F **EF**	R 40	500A	**35580**	**35772**
S2**S** 160 F **EF**	R 50	500A	**35582**	**35774**
S2**S** 160 F **EF**	R 63	630A	**35584**	**35776**
S2**S** 160 F **EF**	R 80	800A	**35586**	**35778**
S2**S** 160 F **EF**	R 100	1000A	**35588**	**35780**
S2**S** 160 F **EF**	R 125	1250A	**35590**	**35782**
S2**S** 160 F **EF**	R 160	1600A	**35592**	**35784**
FC Cu = Front terminals for copper cables				
S2**S** 160 F **FC Cu**	R 12.5	500A	**00602**	**00652**
S2**S** 160 F **FC Cu**	R 16	500A	**00604**	**00654**
S2**S** 160 F **FC Cu**	R 20	500A	**00606**	**00656**
S2**S** 160 F **FC Cu**	R 25	500A	**00608**	**00658**
S2**S** 160 F **FC Cu**	R 32	500A	**00610**	**00660**
S2**S** 160 F **FC Cu**	R 40	500A	**00612**	**00662**
S2**S** 160 F **FC Cu**	R 50	500A	**00614**	**00664**
S2**S** 160 F **FC Cu**	R 63	630A	**00616**	**00666**
S2**S** 160 F **FC Cu**	R 80	800A	**00618**	**00668**
S2**S** 160 F **FC Cu**	R 100	1000A	**00620**	**00670**
S2**S** 160 F **FC Cu**	R 125	1250A	**00622**	**00672**
S2**S** 160 F **FC Cu**	R 160	1600A	**00624**	**00674**
FC CuAl = Front terminals for copper/aluminium cables				
S2**S** 160 F **FC CuAl***	R 12.5	500A	**36197**	**35834**
S2**S** 160 F **FC CuAl***	R 16	500A	**36199**	**35836**
S2**S** 160 F **FC CuAl***	R 20	500A	**36201**	**35838**
S2**S** 160 F **FC CuAl***	R 25	500A	**36203**	**35840**
S2**S** 160 F **FC CuAl***	R 32	500A	**36205**	**35842**
S2**S** 160 F **FC CuAl***	R 40	500A	**36207**	**35844**
S2**S** 160 F **FC CuAl***	R 50	500A	**36209**	**35846**
S2**S** 160 F **FC CuAl***	R 63	630A	**36211**	**35848**
S2**S** 160 F **FC CuAl***	R 80	800A	**36213**	**35850**
S2**S** 160 F **FC CuAl***	R 100	1000A	**36215**	**35852**
S2**S** 160 F **FC CuAl***	R 125	1250A	**36217**	**35854**
S2**S** 160 F **FC CuAl***	R 160	1600A	**36219**	**35856**
S2**S** 160 F **FC CuAl****	R 12.5	500A	**36221**	**35882**
S2**S** 160 F **FC CuAl****	R 16	500A	**36223**	**35884**
S2**S** 160 F **FC CuAl****	R 20	500A	**36225**	**35886**
S2**S** 160 F **FC CuAl****	R 25	500A	**36227**	**35888**
S2**S** 160 F **FC CuAl****	R 32	500A	**36229**	**35890**
S2**S** 160 F **FC CuAl****	R 40	500A	**36231**	**35892**
S2**S** 160 F **FC CuAl****	R 50	500A	**36233**	**35894**
S2**S** 160 F **FC CuAl****	R 63	630A	**36235**	**35896**
S2**S** 160 F **FC CuAl****	R 80	800A	**36237**	**35898**
S2**S** 160 F **FC CuAl****	R 100	1000A	**36239**	**35900**
S2**S** 160 F **FC CuAl****	R 125	1250A	**36241**	**35902**
S2**S** 160 F **FC CuAl****	R 160	1600A	**36243**	**35904**
R = Threaded rear terminals				
S2**S** 160 F **R**	R 12.5	500A	**00627**	**00677**
S2**S** 160 F **R**	R 16	500A	**00629**	**00679**
S2**S** 160 F **R**	R 20	500A	**00631**	**00681**
S2**S** 160 F **R**	R 25	500A	**00633**	**00683**
S2**S** 160 F **R**	R 32	500A	**00635**	**00685**
S2**S** 160 F **R**	R 40	500A	**00637**	**00687**
S2**S** 160 F **R**	R 50	500A	**00639**	**00689**
S2**S** 160 F **R**	R 63	630A	**00641**	**00691**
S2**S** 160 F **R**	R 80	800A	**00643**	**00693**
S2**S** 160 F **R**	R 100	1000A	**00645**	**00695**
S2**S** 160 F **R**	R 125	1250A	**00647**	**00697**
S2**S** 160 F **R**	R 160	1600A	**00649**	**00699**

* Cable section = 1 x 2.5...50 mm²
** Cable section = 1 x 35...95 mm²

7

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

Magnetic release			Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
EF = Extended front terminals					
S2**S** 160 F **EF**	In	50A	500A	**35631**	**35798**
S2**S** 160 F **EF**	In	63A	630A	**35633**	**35800**
S2**S** 160 F **EF**	In	80A	800A	**35635**	**35802**
S2**S** 160 F **EF**	In	100A	1000A	**35636**	**35804**
S2**S** 160 F **EF**	In	125A	1250A	**35638**	**35806**
S2**S** 160 F **EF**	In	160A	1600A	**35640**	**35808**
FC Cu = Front terminals for copper cables					
S2**S** 160 F **FC Cu**	In	50A	500A	**35678**	**35822**
S2**S** 160 F **FC Cu**	In	63A	630A	**35680**	**35824**
S2**S** 160 F **FC Cu**	In	80A	800A	**35682**	**35826**
S2**S** 160 F **FC Cu**	In	100A	1000A	**35684**	**35828**
S2**S** 160 F **FC Cu**	In	125A	1250A	**35686**	**35830**
S2**S** 160 F **FC Cu**	In	160A	1600A	**35688**	**35832**
FC CuAl = Front terminals for copper/aluminium cables					
S2**S** 160 F **FC CuAl***	In	50A	500A	**35702**	**35870**
S2**S** 160 F **FC CuAl***	In	63A	630A	**35704**	**35872**
S2**S** 160 F **FC CuAl***	In	80A	800A	**35706**	**35874**
S2**S** 160 F **FC CuAl***	In	100A	1000A	**35708**	**35876**
S2**S** 160 F **FC CuAl***	In	125A	1250A	**35710**	**35878**
S2**S** 160 F **FC CuAl***	In	160A	1600A	**35712**	**35880**
S2**S** 160 F **FC CuAl****	In	50A	500A	**35726**	**35918**
S2**S** 160 F **FC CuAl****	In	63A	630A	**35728**	**35920**
S2**S** 160 F **FC CuAl****	In	80A	800A	**35730**	**35922**
S2**S** 160 F **FC CuAl****	In	100A	1000A	**35732**	**35924**
S2**S** 160 F **FC CuAl****	In	125A	1250A	**35734**	**35926**
S2**S** 160 F **FC CuAl****	In	160A	1600A	**35736**	**35928**
R = Threaded rear terminals					
S2**S** 160 F **R**	In	50A	500A	**35750**	**35942**
S2**S** 160 F **R**	In	63A	630A	**35752**	**35944**
S2**S** 160 F **R**	In	80A	800A	**35754**	**35946**
S2**S** 160 F **R**	In	100A	1000A	**35756**	**35948**
S2**S** 160 F **R**	In	125A	1250A	**35758**	**35950**
S2**S** 160 F **R**	In	160A	1600A	**35760**	**35952**

***** Cable section = 1 x 2.5...50 mm²
****** Cable section = 1 x 35...95 mm²

Order codes

SACE Isomax S2 circuit-breaker

P = PLUG-IN

Moving part

S2B 160 Iu (40 °C) = 160 A Icu (415 V) = 16 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S2**B** 160 P MP	R 12.5	160A	**24053**	**24173**	500A	**00402**	**00427**
S2**B** 160 P MP	R 16	160A	**24055**	**24175**	500A	**00404**	**00429**
S2**B** 160 P MP	R 20	200A	**24057**	**24177**	500A	**00406**	**00431**
S2**B** 160 P MP	R 25	200A	**24059**	**24179**	500A	**00408**	**00433**
S2**B** 160 P MP	R 32	200A	**24061**	**24181**	500A	**00410**	**00435**
S2**B** 160 P MP	R 40	200A	**24063**	**24183**	500A	**00412**	**00437**
S2**B** 160 P MP	R 50	250A	**24065**	**24185**	500A	**00414**	**00439**
S2**B** 160 P MP	R 63	320A	**24067**	**24187**	630A	**00416**	**00441**
S2**B** 160 P MP	R 80	400A	**24069**	**24189**	800A	**00418**	**00443**
S2**B** 160 P MP	R 100	500A	**24071**	**24191**	1000A	**00420**	**00445**
S2**B** 160 P MP	R 125	630A	**24073**	**24193**	1250A	**00422**	**00447**
S2**B** 160 P MP	R 160	8000A	**24075**	**24195**	1600A	**00424**	**00449**

S2N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S2**N** 160 P MP	R 12.5	160A	**24077**	**24197**	500A	**00552**	**00577**
S2**N** 160 P MP	R 16	160A	**24079**	**24199**	500A	**00554**	**00579**
S2**N** 160 P MP	R 20	200A	**24081**	**24201**	500A	**00556**	**00581**
S2**N** 160 P MP	R 25	200A	**24083**	**24203**	500A	**00558**	**00583**
S2**N** 160 P MP	R 32	200A	**24085**	**24205**	500A	**00560**	**00585**
S2**N** 160 P MP	R 40	200A	**24087**	**24207**	500A	**00562**	**00587**
S2**N** 160 P MP	R 50	250A	**24089**	**24209**	500A	**00564**	**00589**
S2**N** 160 P MP	R 63	320A	**24091**	**24211**	630A	**00566**	**00591**
S2**N** 160 P MP	R 80	400A	**24093**	**24213**	800A	**00568**	**00593**
S2**N** 160 P MP	R 100	500A	**24095**	**24215**	1000A	**00570**	**00595**
S2**N** 160 P MP	R 125	630A	**24097**	**24217**	1250A	**00572**	**00597**
S2**N** 160 P MP	R 160	800A	**24099**	**24219**	1600A	**00574**	**00599**

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S2**N** 160 P MP	In 16A	160A	**36076**	**36124**			
S2**N** 160 P MP	In 40A	200A	**36084**	**36132**			
S2**N** 160 P MP	In 50A	250A	**36086**	**36134**	500A	**36062**	**36110**
S2**N** 160 P MP	In 63A	320A	**36088**	**36136**	630A	**36064**	**36112**
S2**N** 160 P MP	In 80A	400A	**36090**	**36138**	800A	**36066**	**36114**
S2**N** 160 P MP	In 100A				1000A	**36068**	**36116**
S2**N** 160 P MP	In 125A				1250A	**36070**	**36118**
S2**N** 160 P MP	In 150A				1600A	**36072**	**36120**

Order codes

SACE Isomax S2 circuit-breaker

P = PLUG-IN

Moving part

S2S 160 Iu (40 °C) = 160 A Icu (415 V) = 50 kA

Thermomagnetic release		Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S2**S** 160 P MP	R 12.5	500A	**00702**	**00727**
S2**S** 160 P MP	R 16	500A	**00704**	**00729**
S2**S** 160 P MP	R 20	500A	**00706**	**00731**
S2**S** 160 P MP	R 25	500A	**00708**	**00733**
S2**S** 160 P MP	R 32	500A	**00710**	**00735**
S2**S** 160 P MP	R 40	500A	**00712**	**00737**
S2**S** 160 P MP	R 50	500A	**00714**	**00739**
S2**S** 160 P MP	R 63	630A	**00716**	**00741**
S2**S** 160 P MP	R 80	800A	**00718**	**00743**
S2**S** 160 P MP	R 100	1000A	**00720**	**00745**
S2**S** 160 P MP	R 125	1250A	**00722**	**00747**
S2**S** 160 P MP	R 160	1600A	**00724**	**00749**

Magnetic release			code 1SDA0 . . . . . R1 3 poles	4 poles
S2**S** 160 P MP	In 50A	500A	**36158**	**36182**
S2**S** 160 P MP	In 63A	630A	**36160**	**36184**
S2**S** 160 P MP	In 80A	800A	**36162**	**36186**
S2**S** 160 P MP	In 100A	1000A	**36164**	**36188**
S2**S** 160 P MP	In 125A	1250A	**36166**	**36190**
S2**S** 160 P MP	In 150A	1600A	**36168**	**36192**

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

S3N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Thermomagnetic release			Im = 3 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3N 160 F **F**	R 100	300A	**48539**	**48549**
S3N 160 F **F**	R 125	375A	**48540**	**48550**
S3N 160 F **F**	R 160	I480A	**48541**	**48551**
S3N 160 F **F** (N50%)	R 160	I480A		**48559**

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals						
S3N 160 F **F**	R 32	250A	**13359**	**13383**	500A **13346**	**13371**
S3N 160 F **F**	R 50	250A	**13361**	**13385**	500A **13348**	**13373**
S3N 160 F **F**	R 80	400A	**13363**	**13387**	800A **13350**	**13375**
S3N 160 F **F**	R 100	500A	**13365**	**13389**	1000A **13352**	**13377**
S3N 160 F **F**	R 125	625A	**13367**	**13391**	1250A **13354**	**13379**
S3N 160 F **F**	R 160	800A	**13369**	**13393**	1600A **13356**	**13381**
EF = Extended front terminals						
S3N 160 F **EF**	R 32	250A	**00764**	**01389**	500A **00752**	**01377**
S3N 160 F **EF**	R 50	250A	**00766**	**01391**	500A **00754**	**01379**
S3N 160 F **EF**	R 80	400A	**00768**	**01393**	800A **00756**	**01381**
S3N 160 F **EF**	R 100	500A	**00770**	**01395**	1000A **00758**	**01383**
S3N 160 F **EF**	R 125	625A	**00772**	**01397**	1250A **00760**	**01385**
S3N 160 F **EF**	R 160	800A	**00774**	**01399**	1600A **00762**	**01387**
FC Cu = Front terminals for copper cables						
S3N 160 F **FC Cu**	R 32	250A	**00914**	**01539**	500A **00902**	**01527**
S3N 160 F **FC Cu**	R 50	250A	**00916**	**01541**	500A **00904**	**01529**
S3N 160 F **FC Cu**	R 80	400A	**00918**	**01543**	800A **00906**	**01531**
S3N 160 F **FC Cu**	R 100	500A	**00920**	**01545**	1000A **00908**	**01533**
S3N 160 F **FC Cu**	R 125	625A	**00922**	**01547**	1250A **00910**	**01535**
S3N 160 F **FC Cu**	R 160	800A	**00924**	**01549**	1600A **00912**	**01537**
FC CuAl = Front terminals for copper/aluminium cables						
S3N 160 F **FC CuAl**	R 32	250A	**01064**	**01689**	500A **01052**	**01677**
S3N 160 F **FC CuAl**	R 50	250A	**01066**	**01691**	500A **01054**	**01679**
S3N 160 F **FC CuAl**	R 80	400A	**01068**	**01693**	800A **01056**	**01681**
S3N 160 F **FC CuAl**	R 100	500A	**01070**	**01695**	1000A **01058**	**01683**
S3N 160 F **FC CuAl**	R 125	625A	**01072**	**01697**	1250A **01060**	**01685**
S3N 160 F **FC CuAl**	R 160	800A	**01074**	**01699**	1600A **01062**	**01687**
R = Threaded rear terminals						
S3N 160 F **R**	R 32	250A	**01364**	**14243**	500A **01352**	**14231**
S3N 160 F **R**	R 50	250A	**01366**	**14245**	500A **01354**	**14233**
S3N 160 F **R**	R 80	400A	**01368**	**14247**	800A **01356**	**14235**
S3N 160 F **R**	R 100	500A	**01370**	**14249**	1000A **01358**	**14237**
S3N 160 F **R**	R 125	625A	**01372**	**14251**	1250A **01360**	**14239**
S3N 160 F **R**	R 160	800A	**01374**	**14253**	1600A **01362**	**14241**
RC = Rear terminals for cables						
S3N 160 F **RC**	R 32	250A	**01214**	**01839**	500A **01202**	**01827**
S3N 160 F **RC**	R 50	250A	**01216**	**01841**	500A **01204**	**01829**
S3N 160 F **RC**	R 80	400A	**01218**	**01843**	800A **01206**	**01831**
S3N 160 F **RC**	R 100	500A	**01220**	**01845**	1000A **01208**	**01833**
S3N 160 F **RC**	R 125	625A	**01222**	**01847**	1250A **01210**	**01835**
S3N 160 F **RC**	R 160	800A	**01224**	**01849**	1600A **01212**	**01837**
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker						
S3N 160 F **R Res. Cur**	R 32	250A		**25459**	500A	**25447**
S3N 160 F **R Res. Cur**	R 50	250A		**25461**	500A	**25449**
S3N 160 F **R Res. Cur**	R 80	400A		**25463**	800A	**25451**
S3N 160 F **R Res. Cur**	R 100	500A		**25465**	1000A	**25454**
S3N 160 F **R Res. Cur**	R 125	625A		**25467**	1250A	**25455**
S3N 160 F **R Res. Cur**	R 160	800A		**25469**	1600A	**25457**

Order codes

SACE Isomax S2 circuit-breaker

F = FIXED

Magnetic release			Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals								
S3**N** 160 F **F**	In 50A	250A		**25817**	**25889**	500A	**25804**	**25877**
S3**N** 160 F **F**	In 80A	400A		**25819**	**25891**	800A	**25807**	**25879**
S3**N** 160 F **F**	In 100A					1000A	**25809**	**25881**
S3**N** 160 F **F**	In 125A	625A		**25823**	**25895**	1250A	**25811**	**25883**
S3**N** 160 F **F**	In 160A					1600A	**25813**	**25885**
EF = Extended front terminals								
S3**N** 160 F **EF**	In 50A	250A		**27930**	**29706**	500A	**27918**	**29694**
S3**N** 160 F **EF**	In 80A	400A		**27932**	**29708**	800A	**27920**	**29696**
S3**N** 160 F **EF**	In 100A					1000A	**27922**	**29698**
S3**N** 160 F **EF**	In 125A	625A		**27936**	**29712**	1250A	**27924**	**29700**
S3**N** 160 F **EF**	In 160A					1600A	**27926**	**29702**
FC Cu = Front terminals for copper cables								
S3**N** 160 F **FC Cu**	In 50A	250A		**28074**	**29850**	500A	**28062**	**29838**
S3**N** 160 F **FC Cu**	In 80A	400A		**28076**	**29852**	800A	**28064**	**29840**
S3**N** 160 F **FC Cu**	In 100A					1000A	**28066**	**29842**
S3**N** 160 F **FC Cu**	In 125A	625A		**28080**	**29856**	1250A	**28068**	**29844**
S3**N** 160 F **FC Cu**	In 160A					1600A	**28070**	**29846**
FC CuAl = Front terminals for copper/aluminium cables								
S3**N** 160 F **FC CuAl**	In 50A	250A		**28218**	**29994**	500A	**28206**	**29982**
S3**N** 160 F **FC CuAl**	In 80A	400A		**28220**	**29996**	800A	**28208**	**29984**
S3**N** 160 F **FC CuAl**	In 100A					1000A	**28210**	**29986**
S3**N** 160 F **FC CuAl**	In 125A	625A		**28224**	**30000**	1250A	**28212**	**29988**
S3**N** 160 F **FC CuAl**	In 160A					1600A	**28214**	**29990**
R = Threaded rear terminals								
S3**N** 160 F **R**	In 50A	250A		**28506**	**30282**	500A	**28494**	**30270**
S3**N** 160 F **R**	In 80A	400A		**28508**	**30284**	800A	**28496**	**30272**
S3**N** 160 F **R**	In 100A					1000A	**28498**	**30274**
S3**N** 160 F **R**	In 125A	625A		**28512**	**30288**	1250A	**28500**	**30276**
S3**N** 160 F **R**	In 160A					1600A	**28502**	**30278**
RC = Rear terminals for cables								
S3**N** 160 F **RC**	In 50A	250A		**28362**	**30138**	500A	**28350**	**30126**
S3**N** 160 F **RC**	In 80A	400A		**28364**	**30140**	800A	**28352**	**30128**
S3**N** 160 F **RC**	In 100A					1000A	**28354**	**30130**
S3**N** 160 F **RC**	In 125A	625A		**28368**	**30144**	1250A	**28356**	**30132**
S3**N** 160 F **RC**	In 160A					1600A	**28358**	**30134**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

S3H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Thermomagnetic release			Im = 3 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**H** 160 F **F**	R 100	300A	**48542**	**48552**
S3**H** 160 F **F**	R 125	375A	**48543**	**48553**
S3**H** 160 F **F**	R 160	480A	**48544**	**48554**
S3**H** 160 F **F** (N50%)	R 160	480A		**48560**

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals						
S3**H** 160 F **F**	R 32	250A	**13407**	**13431**	500A **13395**	**13419**
S3**H** 160 F **F**	R 50	250A	**13409**	**13433**	500A **13397**	**13421**
S3**H** 160 F **F**	R 80	400A	**13411**	**13435**	800A **13399**	**13423**
S3**H** 160 F **F**	R 100	500A	**13413**	**13437**	1000A **13401**	**13425**
S3**H** 160 F **F**	R 125	625A	**13415**	**13439**	1250A **13403**	**13427**
S3**H** 160 F **F**	R 160	800A	**13417**	**13441**	1600A **13405**	**13429**
EF = Extended front terminals						
S3**H** 160 F **EF**	R 32	250A	**02089**	**02689**	500A **02077**	**02677**
S3**H** 160 F **EF**	R 50	250A	**02091**	**02691**	500A **02079**	**02679**
S3**H** 160 F **EF**	R 80	400A	**02093**	**02693**	800A **02081**	**02681**
S3**H** 160 F **EF**	R 100	500A	**02095**	**02695**	1000A **02083**	**02683**
S3**H** 160 F **EF**	R 125	625A	**02097**	**02697**	1250A **02085**	**02685**
S3**H** 160 F **EF**	R 160	800A	**02099**	**02699**	1600A **02087**	**02687**
FC Cu = Front terminals for copper cables						
S3**H** 160 F **FC Cu**	R 32	250A	**02239**	**14268**	500A **02227**	**14256**
S3**H** 160 F **FC Cu**	R 50	250A	**02241**	**14270**	500A **02229**	**14258**
S3**H** 160 F **FC Cu**	R 80	400A	**02243**	**14272**	800A **02231**	**14260**
S3**H** 160 F **FC Cu**	R 100	500A	**02245**	**14274**	1000A **02233**	**14262**
S3**H** 160 F **FC Cu**	R 125	625A	**02247**	**14276**	1250A **02235**	**14264**
S3**H** 160 F **FC Cu**	R 160	800A	**02249**	**14278**	1600A **02237**	**14266**
FC CuAl = Front terminals for copper/aluminium cables						
S3**H** 160 F **FC CuAl**	R 32	250A	**02364**	**14343**	500A **02352**	**14331**
S3**H** 160 F **FC CuAl**	R 50	250A	**02366**	**14345**	500A **02354**	**14333**
S3**H** 160 F **FC CuAl**	R 80	400A	**02368**	**14347**	800A **02356**	**14335**
S3**H** 160 F **FC CuAl**	R 100	500A	**02370**	**14349**	1000A **02358**	**14337**
S3**H** 160 F **FC CuAl**	R 125	625A	**02372**	**14351**	1250A **02360**	**14339**
S3**H** 160 F **FC CuAl**	R 160	800A	**02374**	**14353**	1600A **02362**	**14341**
R = Threaded rear terminals						
S3**H** 160 F **R**	R 32	250A	**02664**	**03139**	500A **02652**	**03127**
S3**H** 160 F **R**	R 50	250A	**02666**	**03141**	500A **02654**	**03129**
S3**H** 160 F **R**	R 80	400A	**02668**	**03143**	800A **02656**	**03131**
S3**H** 160 F **R**	R 100	500A	**02670**	**03145**	1000A **02658**	**03133**
S3**H** 160 F **R**	R 125	625A	**02672**	**03147**	1250A **02660**	**03135**
S3**H** 160 F **R**	R 160	800A	**02674**	**03149**	1600A **02662**	**03137**
RC = Rear terminals for cables						
S3**H** 160 F **RC**	R 32	250A	**02514**	**02989**	500A **02502**	**02977**
S3**H** 160 F **RC**	R 50	250A	**02516**	**02991**	500A **02504**	**02979**
S3**H** 160 F **RC**	R 80	400A	**02518**	**02993**	800A **02506**	**02981**
S3**H** 160 F **RC**	R 100	500A	**02520**	**02995**	1000A **02508**	**02983**
S3**H** 160 F **RC**	R 125	625A	**02522**	**02997**	1250A **02510**	**02985**
S3**H** 160 F **RC**	R 160	800A	**02524**	**02999**	1600A **02512**	**02987**
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker						
S3**H** 160 F **R Res. Cur**	R 32	250A		**25483**	500A	**25471**
S3**H** 160 F **R Res. Cur**	R 50	250A		**25485**	500A	**25473**
S3**H** 160 F **R Res. Cur**	R 80	400A		**25487**	800A	**25475**
S3**H** 160 F **R Res. Cur**	R 100	500A		**25489**	1000A	**25477**
S3**H** 160 F **R Res. Cur**	R 125	625A		**25491**	1250A	**25479**
S3**H** 160 F **R Res. Cur**	R 160	800A		**25493**	1600A	**25481**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1		Im = 10 Ith	code 1SDA0 . . . . . R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S3**H** 160 F **F**	In 50A	250A	**25841**	**25913**	500A	**25829**	**25901**
S3**H** 160 F **F**	In 80A	400A	**25843**	**25915**	800A	**25831**	**25903**
S3**H** 160 F **F**	In 100A				1000A	**25833**	**25905**
S3**H** 160 F **F**	In 125A	625A	**25847**	**25919**	1250A	**25835**	**25907**
S3**H** 160 F **F**	In 160A				1600A	**25837**	**25909**
EF = Extended front terminals							
S3**H** 160 F **EF**	In 50A	250A	**28530**	**30306**	500A	**28518**	**30294**
S3**H** 160 F **EF**	In 80A	400A	**28532**	**30308**	800A	**28520**	**30296**
S3**H** 160 F **EF**	In 100A				1000A	**28522**	**30298**
S3**H** 160 F **EF**	In 125A	625A	**28536**	**30312**	1250A	**28524**	**30300**
S3**H** 160 F **EF**	In 160A				1600A	**28526**	**30302**
FC Cu = Front terminals for copper cables							
S3**H** 160 F **FC Cu**	In 50A	250A	**28674**	**30450**	500A	**28662**	**30438**
S3**H** 160 F **FC Cu**	In 80A	400A	**28676**	**30452**	800A	**28664**	**30440**
S3**H** 160 F **FC Cu**	In 100A				1000A	**28666**	**30442**
S3**H** 160 F **FC Cu**	In 125A	625A	**28680**	**30456**	1250A	**28668**	**30444**
S3**H** 160 F **FC Cu**	In 160A				1600A	**28670**	**30446**
FC CuAl = Front terminals for copper/aluminium cables							
S3**H** 160 F **FC CuAl**	In 50A	250A	**28818**	**30594**	500A	**28806**	**30582**
S3**H** 160 F **FC CuAl**	In 80A	400A	**28820**	**30596**	800A	**28808**	**30584**
S3**H** 160 F **FC CuAl**	In 100A				1000A	**28810**	**30586**
S3**H** 160 F **FC CuAl**	In 125A	625A	**28824**	**30600**	1250A	**28812**	**30588**
S3**H** 160 F **FC CuAl**	In 160A				1600A	**28814**	**30590**
R = Threaded rear terminals							
S3**H** 160 F **R**	In 50A	250A	**29106**	**30882**	500A	**29094**	**30870**
S3**H** 160 F **R**	In 80A	400A	**29108**	**30884**	800A	**29096**	**30872**
S3**H** 160 F **R**	In 100A				1000A	**29098**	**30874**
S3**H** 160 F **R**	In 125A	625A	**29112**	**30888**	1250A	**29100**	**30876**
S3**H** 160 F **R**	In 160A				1600A	**29102**	**30878**
RC = Rear terminals for cables							
S3**H** 160 F **RC**	In 50A	250A	**28962**	**30738**	500A	**28950**	**30726**
S3**H** 160 F **RC**	In 80A	400A	**28964**	**30740**	800A	**28952**	**30728**
S3**H** 160 F **RC**	In 100A				1000A	**28954**	**30730**
S3**H** 160 F **RC**	In 125A	625A	**28968**	**30744**	1250A	**28956**	**30732**
S3**H** 160 F **RC**	In 160A				1600A	**28958**	**30734**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

S3L 160 Iu (40 °C) = 160 A Icu (415 V) = 85 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S3L 160 F **F**	R 32	250A	**13455**	**13479**	500A	**13443**	**13467**
S3L 160 F **F**	R 50	250A	**13457**	**13481**	500A	**13445**	**13469**
S3L 160 F **F**	R 80	400A	**13459**	**13483**	800A	**13447**	**13471**
S3L 160 F **F**	R 100	500A	**13461**	**13485**	1000A	**13449**	**13473**
S3L 160 F **F**	R 125	625A	**13463**	**13487**	1250A	**13451**	**13475**
S3L 160 F **F**	R 160	800A	**13465**	**13489**	1600A	**13453**	**13477**
EF = Extended front terminals							
S3L 160 F **EF**	R 32	250A	**03264**	**03864**	500A	**03252**	**03852**
S3L 160 F **EF**	R 50	250A	**03266**	**03866**	500A	**03254**	**03854**
S3L 160 F **EF**	R 80	400A	**14486**	**14511**	800A	**03256**	**03856**
S3L 160 F **EF**	R 100	500A	**03269**	**03869**	1000A	**03258**	**03858**
S3L 160 F **EF**	R 125	625A	**03271**	**03871**	1250A	**03260**	**03860**
S3L 160 F **EF**	R 160	800A	**03273**	**03873**	1600A	**03262**	**03862**
FC Cu = Front terminals for copper cables							
S3L 160 F **FC Cu**	R 32	250A	**03408**	**04008**	500A	**03396**	**03996**
S3L 160 F **FC Cu**	R 50	250A	**03410**	**04010**	500A	**03398**	**03998**
S3L 160 F **FC Cu**	R 80	400A	**14492**	**14517**	800A	**03400**	**04000**
S3L 160 F **FC Cu**	R 100	500A	**03413**	**04013**	1000A	**03402**	**04002**
S3L 160 F **FC Cu**	R 125	625A	**03415**	**04015**	1250A	**03404**	**04004**
S3L 160 F **FC Cu**	R 160	800A	**03417**	**04017**	1600A	**03406**	**04006**
FC CuAl = Front terminals for copper/aluminium cables							
S3L 160 F **FC CuAl**	R 32	250A	**03552**	**04152**	500A	**03540**	**04140**
S3L 160 F **FC CuAl**	R 50	250A	**03554**	**04154**	500A	**03542**	**04142**
S3L 160 F **FC CuAl**	R 80	400A	**14498**	**14523**	800A	**03544**	**04144**
S3L 160 F **FC CuAl**	R 100	500A	**03557**	**04157**	1000A	**03546**	**04146**
S3L 160 F **FC CuAl**	R 125	625A	**03559**	**04159**	1250A	**03548**	**04148**
S3L 160 F **FC CuAl**	R 160	800A	**03561**	**04161**	1600A	**03550**	**04150**
R = Threaded rear terminals							
S3L 160 F **R**	R 32	250A	**03840**	**04440**	500A	**03828**	**04428**
S3L 160 F **R**	R 50	250A	**03842**	**04442**	500A	**03830**	**04430**
S3L 160 F **R**	R 80	400A	**14510**	**14535**	800A	**03832**	**04432**
S3L 160 F **R**	R 100	500A	**03845**	**04445**	1000A	**03834**	**04434**
S3L 160 F **R**	R 125	625A	**03847**	**04447**	1250A	**03836**	**04436**
S3L 160 F **R**	R 160	800A	**03849**	**04449**	1600A	**03838**	**04438**
RC = Rear terminals for cables							
S3L 160 F **RC**	R 32	250A	**03696**	**04296**	500A	**03684**	**04284**
S3L 160 F **RC**	R 50	250A	**03698**	**04298**	500A	**03686**	**04286**
S3L 160 F **RC**	R 80	400A	**14504**	**14529**	800A	**03688**	**04288**
S3L 160 F **RC**	R 100	500A	**03701**	**04301**	1000A	**03690**	**04290**
S3L 160 F **RC**	R 125	625A	**03703**	**04303**	1250A	**03692**	**04292**
S3L 160 F **RC**	R 160	800A	**03705**	**04305**	1600A	**03694**	**04294**
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3L 160 F **R Res. Cur**	R 32	250A		**25507**	500A		**25495**
S3L 160 F **R Res. Cur**	R 50	250A		**25509**	500A		**25497**
S3L 160 F **R Res. Cur**	R 80	400A		**25511**	800A		**25499**
S3L 160 F **R Res. Cur**	R 100	500A		**25513**	1000A		**25501**
S3L 160 F **R Res. Cur**	R 125	625A		**25515**	1250A		**25503**
S3L 160 F **R Res. Cur**	R 160	800A		**25517**	1600A		**25505**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1		Im = 10 Ith	code 1SDA0 . . . . . R1	
			3 poles	4 poles		3 poles	4 poles
F = Front terminals							
S3**L** 160 F **F**	In 50A	250A	**25865**	**25937**	500A	**25853**	**25925**
S3**L** 160 F **F**	In 80A	400A	**25867**	**25939**	800A	**25855**	**25927**
S3**L** 160 F **F**	In 100A				1000A	**25857**	**25929**
S3**L** 160 F **F**	In 125A	625A	**25871**	**25943**	1250A	**25859**	**25931**
S3**L** 160 F **F**	In 160A				1600A	**25861**	**25933**
EF = Extended front terminals							
S3**L** 160 F **EF**	In 50A	250A	**29130**	**30906**	500A	**29118**	**30894**
S3**L** 160 F **EF**	In 80A	400A	**29132**	**30908**	800A	**29120**	**30896**
S3**L** 160 F **EF**	In 100A				1000A	**29122**	**30898**
S3**L** 160 F **EF**	In 125A	625A	**29136**	**30912**	1250A	**29124**	**30900**
S3**L** 160 F **EF**	In 160A				1600A	**29126**	**30902**
FC Cu = Front terminals for copper cables							
S3**L** 160 F **FC Cu**	In 50A	250A	**29274**	**31050**	500A	**29262**	**31038**
S3**L** 160 F **FC Cu**	In 80A	400A	**29276**	**31052**	800A	**29264**	**31040**
S3**L** 160 F **FC Cu**	In 100A				1000A	**29266**	**31042**
S3**L** 160 F **FC Cu**	In 125A	625A	**29280**	**31056**	1250A	**29268**	**31044**
S3**L** 160 F **FC Cu**	In 160A				1600A	**29270**	**31046**
FC CuAl = Front terminals for copper/aluminium cables							
S3**L** 160 F **FC CuAl**	In 50A	250A	**29418**	**31170**	500A	**29406**	**31158**
S3**L** 160 F **FC CuAl**	In 80A	400A	**29420**	**31172**	800A	**29408**	**31160**
S3**L** 160 F **FC CuAl**	In 100A				1000A	**29410**	**31162**
S3**L** 160 F **FC CuAl**	In 125A	625A	**29424**	**31176**	1250A	**29412**	**31164**
S3**L** 160 F **FC CuAl**	In 160A				1600A	**29414**	**31166**
R = Threaded rear terminals							
S3**L** 160 F **R**	In 50A	250A	**44388**	**31458**	500A	**44376**	**31446**
S3**L** 160 F **R**	In 80A	400A	**44390**	**31460**	800A	**44378**	**31448**
S3**L** 160 F **R**	In 100A				1000A	**44380**	**31450**
S3**L** 160 F **R**	In 125A	625A	**44394**	**31464**	1250A	**44382**	**31452**
S3**L** 160 F **R**	In 160A				1600A	**44384**	**31454**
RC = Rear terminals for cables							
S3**L** 160 F **RC**	In 50A	250A	**29562**	**31314**	500A	**29550**	**31302**
S3**L** 160 F **RC**	In 80A	400A	**29564**	**31316**	800A	**29552**	**31304**
S3**L** 160 F **RC**	In 100A				1000A	**29554**	**31306**
S3**L** 160 F **RC**	In 125A	625A	**29568**	**31320**	1250A	**29556**	**31308**
S3**L** 160 F **RC**	In 160A				1600A	**29558**	**31310**

Order codes

SACE Isomax S3 circuit-breaker

P = PLUG-IN

Moving part

S3N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**N** 160 P MP	R 32	250A	**01989**	**02039**	500A	**01977**	**02027**
S3**N** 160 P MP	R 50	250A	**01991**	**02041**	500A	**01979**	**02029**
S3**N** 160 P MP	R 80	400A	**01993**	**02043**	800A	**01981**	**02031**
S3**N** 160 P MP	R 100	500A	**01995**	**02045**	1000A	**01983**	**02033**
S3**N** 160 P MP	R 125	625A	**01997**	**02047**	1250A	**01985**	**02035**
S3**N** 160 P MP	R 160	800A	**01999**	**02049**	1600A	**01987**	**02037**

Magnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**N** 160 P MP	In 50A	250A	**31482**	**31530**	500A	**31470**	**31518**
S3**N** 160 P MP	In 80A	400A	**31484**	**31532**	800A	**31472**	**31520**
S3**N** 160 P MP	In 100A				1000A	**31474**	**31522**
S3**N** 160 P MP	In 125A	625A	**31488**	**31536**	1250A	**31476**	**31524**
S3**N** 160 P MP	In 160A				1600A	**31478**	**31526**

S3H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**H** 160 P MP	R 32	250A	**03164**	**03214**	500A	**03152**	**03202**
S3**H** 160 P MP	R 50	250A	**03166**	**03216**	500A	**03154**	**03204**
S3**H** 160 P MP	R 80	400A	**03168**	**03218**	800A	**03156**	**03206**
S3**H** 160 P MP	R 100	500A	**03170**	**03220**	1000A	**03158**	**03208**
S3**H** 160 P MP	R 125	625A	**03172**	**03222**	1250A	**03160**	**03210**
S3**H** 160 P MP	R 160	800A	**03174**	**03224**	1600A	**03162**	**03212**

Magnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**H** 160 P MP	In 50A	250A	**31578**	**31626**	500A	**31566**	**31614**
S3**H** 160 P MP	In 80A	400A	**31580**	**31628**	800A	**31568**	**31616**
S3**H** 160 P MP	In 100A				1000A	**31570**	**31618**
S3**H** 160 P MP	In 125A	625A	**31584**	**31632**	1250A	**31572**	**31620**
S3**H** 160 P MP	In 160A				1600A	**31574**	**31622**

S3L 160 Iu (40 °C) = 160 A Icu (415 V) = 85 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**L** 160 P MP	R 32	250A	**04464**	**04512**	500A	**04452**	**04500**
S3**L** 160 P MP	R 50	250A	**04466**	**04514**	500A	**04454**	**04502**
S3**L** 160 P MP	R 80	400A	**14536**	**14538**	800A	**04456**	**04504**
S3**L** 160 P MP	R 100	500A	**04469**	**04517**	1000A	**04458**	**04506**
S3**L** 160 P MP	R 125	625A	**04471**	**04519**	1250A	**04460**	**04508**
S3**L** 160 P MP	R 160	800A	**04473**	**04521**	1600A	**04462**	**04510**

Magnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**L** 160 P MP	In 50A	250A	**31674**	**31722**	500A	**31662**	**31710**
S3**L** 160 P MP	In 80A	400A	**31676**	**31724**	800A	**31664**	**31712**
S3**L** 160 P MP	In 100A				1000A	**31666**	**31714**
S3**L** 160 P MP	In 125A	625A	**31680**	**31728**	1250A	**31668**	**31716**
S3**L** 160 P MP	In 160A				1600A	**31670**	**31718**

Order codes

SACE Isomax S3 circuit-breaker

W = WITHDRAWABLE

Moving part

S3N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**N** 160 W MP	R 32	250A	**02014**	**02064**	500A	**02002**	**02052**
S3**N** 160 W MP	R 50	250A	**02016**	**02066**	500A	**02004**	**02054**
S3**N** 160 W MP	R 80	400A	**02018**	**02068**	800A	**02006**	**02056**
S3**N** 160 W MP	R 100	500A	**02020**	**02070**	1000A	**02008**	**02058**
S3**N** 160 W MP	R 125	625A	**02022**	**02072**	1250A	**02010**	**02060**
S3**N** 160 W MP	R 160	800A	**02024**	**02074**	1600A	**02012**	**02062**

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**N** 160 W MP	In 50A	250A	**31506**	**31554**	500A	**31494**	**31542**
S3**N** 160 W MP	In 80A	400A	**31508**	**31556**	800A	**31496**	**31544**
S3**N** 160 W MP	In 100A				1000A	**31498**	**31546**
S3**N** 160 W MP	In 125A	625A	**31512**	**31560**	1250A	**31500**	**31548**
S3**N** 160 W MP	In 160A				1600A	**31502**	**31550**

S3H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**H** 160 W MP	R 32	250A	**03189**	**03239**	500A	**03177**	**03227**
S3**H** 160 W MP	R 50	250A	**03191**	**03241**	500A	**03179**	**03229**
S3**H** 160 W MP	R 80	400A	**03193**	**03243**	800A	**03181**	**03231**
S3**H** 160 W MP	R 100	500A	**03195**	**03245**	1000A	**03183**	**03233**
S3**H** 160 W MP	R 125	625A	**03197**	**03247**	1250A	**03185**	**03235**
S3**H** 160 W MP	R 160	800A	**03199**	**03249**	1600A	**03187**	**03237**

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**H** 160 W MP	In 50A	250A	**31602**	**31650**	500A	**31590**	**31638**
S3**H** 160 W MP	In 80A	400A	**31604**	**31652**	800A	**31592**	**31640**
S3**H** 160 W MP	In 100A				1000A	**31594**	**31642**
S3**H** 160 W MP	In 125A	625A	**31608**	**31656**	1250A	**31596**	**31644**
S3**H** 160 W MP	In 160A				1600A	**31598**	**31646**

S3L 160 Iu (40 °C) = 160 A Icu (415 V) = 85 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**L** 160 W MP	R 32	250A	**04488**	**04536**	500A	**04476**	**04524**
S3**L** 160 W MP	R 50	250A	**04490**	**04538**	500A	**04478**	**04526**
S3**L** 160 W MP	R 80	400A	**14537**	**14539**	800A	**04480**	**04528**
S3**L** 160 W MP	R 100	500A	**04493**	**04541**	1000A	**04482**	**04530**
S3**L** 160 W MP	R 125	625A	**04495**	**04543**	1250A	**04484**	**04532**
S3**L** 160 W MP	R 160	800A	**04497**	**04545**	1600A	**04486**	**04534**

Magnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**L** 160 W MP	In 50A	250A	**31698**	**31746**	500A	**31686**	**31734**
S3**L** 160 W MP	In 80A	400A	**31700**	**31748**	800A	**31688**	**31736**
S3**L** 160 W MP	In 100A				1000A	**31690**	**31738**
S3**L** 160 W MP	In 125A	625A	**31704**	**31752**	1250A	**31692**	**31740**
S3**L** 160 W MP	In 160A				1600A	**31694**	**31742**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

S3N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Thermomagnetic release			Im = 3 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**N** 250 F **F**	R 200	600A	**48545**	**48555**
S3**N** 250 F **F**	R 250	750A	**48546**	**48556**
S3**N** 250 F **F** (N50%)	R 200	600A		**48561**
S3**N** 250 F **F** (N50%)	R 250	750A		**48562**

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals						
S3**N** 250 F **F**	R 200	1000A	**13495**	**13503**	2000A **13491**	**13499**
S3**N** 250 F **F**	R 250	1250A	**13497**	**13505**	2500A **13493**	**13501**
EF = Extended front terminals						
S3**N** 250 F **EF**	R 200	1000A	**04552**	**04777**	2000A **04548**	**04773**
S3**N** 250 F **EF**	R 250	1250A	**04554**	**04779**	2500A **04550**	**04775**
FC Cu = Front terminals for copper cables						
S3**N** 250 F **FC Cu**	R 200	1000A	**04606**	**14419**	2000A **04602**	**14415**
S3**N** 250 F **FC Cu**	R 250	1250A	**04608**	**14421**	2500A **04604**	**14417**
FC CuAl = Front terminals for copper/aluminium cables						
S3**N** 250 F **FC CuAl**	R 200	1000A	**04660**	**14455**	2000A **04656**	**14451**
S3**N** 250 F **FC CuAl**	R 250	1250A	**04662**	**14457**	2500A **04658**	**14453**
R = Threaded rear terminals						
S3**N** 250 F **R**	R 200	1000A	**04768**	**04912**	2000A **04764**	**04908**
S3**N** 250 F **R**	R 250	1250A	**04770**	**04914**	2500A **04766**	**04910**
RC = Rear terminals for cables						
S3**N** 250 F **RC**	R 200	1000A	**04714**	**04858**	2000A **04710**	**04854**
S3**N** 250 F **RC**	R 250	1250A	**04716**	**04860**	2500A **04712**	**04856**
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker						
S3**N** 250 F **R Res. Cur**	R 200	1000A		**25523**	2000A	**25519**
S3**N** 250 F **R Res. Cur**	R 250	1250A		**25525**	2500A	**25521**

Magnetic release			Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**N** 250 F **F**	In	200A	2000A **27388**	**27476**
S3**N** 250 F **F**	In	250A	2500A **27390**	**27478**
EF = Extended front terminals				
S3**N** 250 F **EF**	In	200A	2000A **31756**	**32337**
S3**N** 250 F **EF**	In	250A	2500A **31758**	**32339**
FC Cu = Front terminals for copper cables				
S3**N** 250 F **FC Cu**	In	200A	2000A **31804**	**32385**
S3**N** 250 F **FC Cu**	In	250A	2500A **31806**	**32387**
FC CuAl = Front terminals for copper/aluminium cables				
S3**N** 250 F **FC CuAl**	In	200A	2000A **31844**	**32433**
S3**N** 250 F **FC CuAl**	In	250A	2500A **31846**	**32435**
R = Threaded rear terminals				
S3**N** 250 F **R**	In	200A	2000A **31940**	**32529**
S3**N** 250 F **R**	In	250A	2500A **31942**	**32531**
RC = Rear terminals for cables				
S3**N** 250 F **RC**	In	200A	2000A **31892**	**32481**
S3**N** 250 F **RC**	In	250A	2500A **31894**	**32483**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

S3H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Thermomagnetic release			Im = 3 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**H** 250 F **F**	R 200	600A	**48547**	**48557**
S3**H** 250 F **F**	R 250	750A	**48548**	**48558**
S3**H** 250 F **F** (N50%)	R 200	600A		**48563**
S3**H** 250 F **F** (N50%)	R 250	750A		**48564**

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals						
S3**H** 250 F **F**	R 200	1000A	**13511**	**13519**	2000A **13507**	**13515**
S3**H** 250 F **F**	R 250	1250A	**13513**	**13521**	2500A **13509**	**13517**
EF = Extended front terminals						
S3**H** 250 F **EF**	R 200	1000A	**04957**	**05182**	2000A **04953**	**05178**
S3**H** 250 F **EF**	R 250	1250A	**04959**	**05184**	2500A **04955**	**05180**
FC Cu = Front terminals for copper cables						
S3**H** 250 F **FC Cu**	R 200	1000A	**05011**	**05236**	2000A **05007**	**05232**
S3**H** 250 F **FC Cu**	R 250	1250A	**05013**	**05238**	2500A **05009**	**05234**
FC CuAl = Front terminals for copper/aluminium cables						
S3**H** 250 F **FC CuAl**	R 200	1000A	**05065**	**05290**	2000A **05061**	**05286**
S3**H** 250 F **FC CuAl**	R 250	1250A	**05067**	**05292**	2500A **05063**	**05288**
R = Threaded rear terminals						
S3**H** 250 F **R**	R 200	1000A	**05173**	**05398**	2000A **05169**	**05394**
S3**H** 250 F **R**	R 250	1250A	**05175**	**05400**	2500A **05171**	**05396**
RC = Rear terminals for cables						
S3**H** 250 F **RC**	R 200	1000A	**05119**	**05344**	2000A **05115**	**05340**
S3**H** 250 F **RC**	R 250	1250A	**05121**	**05346**	2500A **05117**	**05342**
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker						
S3**H** 250 F **R Res. Cur**	R 200	1000A		**25531**	2000A	**25527**
S3**H** 250 F **R Res. Cur**	R 250	1250A		**25533**	2500A	**25529**

Magnetic release			Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**H** 250 F **F**	In	200A	2000A **27564**	**27652**
S3**H** 250 F **F**	In	250A	2500A **27566**	**27654**
EF = Extended front terminals				
S3**H** 250 F **EF**	In	200A	2000A **31948**	**32537**
S3**H** 250 F **EF**	In	250A	2500A **31950**	**32539**
FC Cu = Front terminals for copper cables				
S3**H** 250 F **FC Cu**	In	200A	2000A **31996**	**32585**
S3**H** 250 F **FC Cu**	In	250A	2500A **31998**	**32587**
FC CuAl = Front terminals for copper/aluminium cables				
S3**H** 250 F **FC CuAl**	In	200A	2000A **32044**	**32633**
S3**H** 250 F **FC CuAl**	In	250A	2500A **32046**	**32635**
R = Threaded rear terminals				
S3**H** 250 F **R**	In	200A	2000A **32097**	**32729**
S3**H** 250 F **R**	In	250A	2500A **32099**	**32732**
RC = Rear terminals for cables				
S3**H** 250 F **RC**	In	200A	2000A **32089**	**32681**
S3**H** 250 F **RC**	In	250A	2500A **32091**	**32683**

Order codes

SACE Isomax S3 circuit-breaker

F = FIXED

S3L 250 Iu (40 °C) = 250 A Icu (415 V) = 85 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S3L 250 F **F**	R 200	1000A	**13527**	**13535**	2000A	**13523**	**13531**
S3L 250 F **F**	R 250	1250A	**13529**	**13537**	2500A	**13525**	**13533**
EF = Extended front terminals							
S3L 250 F **EF**	R 200	1000A	**05443**	**05668**	2000A	**05439**	**05664**
S3L 250 F **EF**	R 250	1250A	**05445**	**05670**	2500A	**05441**	**05666**
FC Cu = Front terminals for copper cables							
S3L 250 F **FC Cu**	R 200	1000A	**05497**	**05722**	2000A	**05493**	**05718**
S3L 250 F **FC Cu**	R 250	1250A	**05499**	**05724**	2500A	**05495**	**05720**
FC CuAl = Front terminals for copper/aluminium cables							
S3L 250 F **FC CuAl**	R 200	1000A	**05551**	**05776**	2000A	**05547**	**05772**
S3L 250 F **FC CuAl**	R 250	1250A	**05553**	**05778**	2500A	**05549**	**05774**
R = Threaded rear terminals							
S3L 250 F **R**	R 200	1000A	**05659**	**05884**	2000A	**05655**	**05880**
S3L 250 F **R**	R 250	1250A	**05661**	**05886**	2500A	**05657**	**05882**
RC = Rear terminals for cables							
S3L 250 F **RC**	R 200	1000A	**05605**	**05830**	2000A	**05601**	**05826**
S3L 250 F **RC**	R 250	1250A	**05607**	**05832**	2500A	**05603**	**05828**
R Res. Cur = Threaded rear terminals + kit of threaded rear terminals for residual-current release installed below the circuit-breaker							
S3L 250 F **R Res. Cur**	R 200	1000A		**25539**	2000A		**25535**
S3L 250 F **R Res. Cur**	R 250	1250A		**25541**	2500A		**25537**

Magnetic release			Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3L 250 F **F**	In	200A	2000A	**27748**	**27828**
S3L 250 F **F**	In	250A	2500A	**27750**	**27830**
EF = Extended front terminals				
S3L 250 F **EF**	In	200A	2000A	**32137**	**32737**
S3L 250 F **EF**	In	250A	2500A	**32139**	**32739**
FC Cu = Front terminals for copper cables				
S3L 250 F **FC Cu**	In	200A	2000A	**32185**	**32785**
S3L 250 F **FC Cu**	In	250A	2500A	**32187**	**32787**
FC CuAl = Front terminals for copper/aluminium cables				
S3L 250 F **FC CuAl**	In	200A	2000A	**32233**	**32833**
S3L 250 F **FC CuAl**	In	250A	2500A	**32235**	**32835**
R = Threaded rear terminals				
S3L 250 F **R**	In	200A	2000A	**32329**	**32921**
S3L 250 F **R**	In	250A	2500A	**32331**	**32923**
RC = Rear terminals for cables				
S3L 250 F **RC**	In	200A	2000A	**32281**	**32761**
S3L 250 F **RC**	In	250A	2500A	**32283**	**32763**

Order codes

SACE Isomax S3 circuit-breaker

P = PLUG-IN

Moving part

S3N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**N** 250 P MP	R 200	1000A	**04921**	**04939**	2000A	**04917**	**04935**
S3**N** 250 P MP	R 250	1250A	**04923**	**04941**	2500A	**04919**	**04937**

Magnetic release		Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**N** 250 P MP	In 200A	2000A	**32929**	**32945**
S3**N** 250 P MP	In 250A	2500A	**32931**	**32947**

S3H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**H** 250 P MP	R 200	1000A	**05407**	**05425**	2000A	**05403**	**05421**
S3**H** 250 P MP	R 250	1250A	**05409**	**05427**	2500A	**05405**	**05423**

Magnetic release		Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**H** 250 P MP	In 200A	2000A	**32961**	**32977**
S3**H** 250 P MP	In 250A	2500A	**32963**	**32979**

S3L 250 Iu (40 °C) = 250 A Icu (415 V) = 85 kA

Thermomagnetic release		Im = 5 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles	Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**L** 250 P MP	R 200	1000A	**05893**	**05911**	2000A	**05889**	**05907**
S3**L** 250 P MP	R 250	1250A	**05895**	**05913**	2500A	**05891**	**05909**

Magnetic release		Im = 10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**L** 250 P MP	In 200A	2000A	**32993**	**33009**
S3**L** 250 P MP	In 250A	2500A	**32995**	**33011**

Order codes

SACE Isomax S3 circuit-breaker

W = WITHDRAWABLE

Moving part

S3N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**N** 250 W MP	R 200	1000A	**04930**	**04948**	2000A	**04926**	**04944**
S3**N** 250 W MP	R 250	1250A	**04932**	**04950**	2500A	**04928**	**04946**

Magnetic release			Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**N** 250 W MP	In 200A	2000A	**32937**	**32953**
S3**N** 250 W MP	In 250A	2500A	**32939**	**32955**

S3H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**H** 250 W MP	R 200	1000A	**05416**	**05434**	2000A	**05412**	**05430**
S3**H** 250 W MP	R 250	1250A	**05418**	**05436**	2500A	**05414**	**05432**

Magnetic release			Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**H** 250 W MP	In 200A	2000A	**32969**	**32985**
S3**H** 250 W MP	In 250A	2500A	**32971**	**32987**

S3L 250 Iu (40 °C) = 250 A Icu (415 V) = 85 kA

Thermomagnetic release			Im = 5 Ith code 1SDA0 . . . . . R1 3 poles	Im = 5 Ith code 1SDA0 . . . . . R1 4 poles		Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**L** 250 W MP	R 200	1000A	**05902**	**05920**	2000A	**05898**	**05916**
S3**L** 250 W MP	R 250	1250A	**05904**	**05922**	2500A	**05900**	**05918**

Magnetic release			Im = 10 Ith code 1SDA0 . . . . . R1 3 poles	Im = 10 Ith code 1SDA0 . . . . . R1 4 poles
S3**L** 250 W MP	In 200A	2000A	**33001**	**33017**
S3**L** 250 W MP	In 250A	2500A	**33003**	**33019**

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED

S4N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S4**N** 160 F **F**	In 100 A	I	**15548**	**15836**	LSI	**15553**	**15841**
		LI	**15550**	**15838**	LSIG	**15558**	**15846**
S4**N** 160 F **F**	In 160 A	I	**15549**	**15837**	LSI	**15554**	**15842**
		LI	**15551**	**15839**	LSIG	**15559**	**15847**
EF = Extended front terminals							
S4**N** 160 F **EF**	In 100 A	I	**15632**	**15920**	LSI	**15635**	**15923**
		LI	**15633**	**15921**	LSIG	**15637**	**15925**
S4**N** 160 F **EF**	In 160 A	I	**05924**	**06080**	LSI	**05926**	**06082**
		LI	**05925**	**06081**	LSIG	**05929**	**06085**
FC Cu = Front terminals for copper cables							
S4**N** 160 F **FC Cu**	In 100 A	I	**15680**	**15968**	LSI	**15683**	**15971**
		LI	**15681**	**15969**	LSIG	**15685**	**15973**
S4**N** 160 F **FC Cu**	In 160 A	I	**05960**	**06116**	LSI	**05962**	**06118**
		LI	**05961**	**06117**	LSIG	**05965**	**06121**
FC CuAl = Front terminals for copper/aluminium cables							
S4**N** 160 F **FC CuAl**	In 100 A	I	**15728**	**16016**	LSI	**15731**	**16019**
		LI	**15729**	**16017**	LSIG	**15733**	**16021**
S4**N** 160 F **FC CuAl**	In 160 A	I	**05996**	**06152**	LSI	**05998**	**06154**
		LI	**05997**	**06153**	LSIG	**06001**	**06157**
R = Threaded rear terminals							
S4**N** 160 F **R**	In 100 A	I	**15830**	**16112**	LSI	**15833**	**16115**
		LI	**15831**	**16113**	LSIG	**15835**	**16117**
S4**N** 160 F **R**	In 160 A	I	**06074**	**06224**	LSI	**06076**	**06226**
		LI	**06075**	**06225**	LSIG	**06079**	**06229**
RC = Rear terminals for cables							
S4**N** 160 F **RC**	In 100 A	I	**15782**	**16064**	LSI	**15785**	**16067**
		LI	**15783**	**16065**	LSIG	**15787**	**16069**
S4**N** 160 F **RC**	In 160 A	I	**06038**	**06188**	LSI	**06040**	**06190**
		LI	**06039**	**06189**	LSIG	**06043**	**06193**

S4H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S4**H** 160 F **F**	In 100 A	I	**16142**	**16424**	LSI	**16146**	**16428**
		LI	**16144**	**16426**	LSIG	**16152**	**16434**
S4**H** 160 F **F**	In 160 A	I	**16143**	**16425**	LSI	**16147**	**16429**
		LI	**16145**	**16427**	LSIG	**16153**	**16435**
EF = Extended front terminals							
S4**H** 160 F **EF**	In 100 A	I	**16226**	**16508**	LSI	**16228**	**16510**
		LI	**16227**	**16509**	LSIG	**16231**	**16513**
S4**H** 160 F **EF**	In 160 A	I	**06254**	**06404**	LSI	**06256**	**06406**
		LI	**06255**	**06405**	LSIG	**06259**	**06409**
FC Cu = Front terminals for copper cables							
S4**H** 160 F **FC Cu**	In 100 A	I	**16274**	**16556**	LSI	**16276**	**16558**
		LI	**16275**	**16557**	LSIG	**16279**	**16561**
S4**H** 160 F **FC Cu**	In 160 A	I	**06290**	**06440**	LSI	**06292**	**06442**
		LI	**06291**	**06441**	LSIG	**06295**	**06445**
FC CuAl = Front terminals for copper/aluminium cables							
S4**H** 160 F **FC CuAl**	In 100 A	I	**16322**	**16604**	LSI	**16324**	**16606**
		LI	**16323**	**16605**	LSIG	**16327**	**16609**
S4**H** 160 F **FC CuAl**	In 160 A	I	**06326**	**06476**	LSI	**06328**	**06478**
		LI	**06327**	**06477**	LSIG	**06331**	**06481**

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles	PR212 P	PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
R = Threaded rear terminals							
S4**H** 160 F **R**	In 100 A	I	**16418**	**16700**	LSI	**16420**	**16702**
		LI	**16419**	**16701**	LSIG	**16423**	**16705**
S4**H** 160 F **R**	In 160 A	I	**06398**	**06548**	LSI	**06400**	**06550**
		LI	**06399**	**06549**	LSIG	**06403**	**06553**
RC = Rear terminals for cables							
S4**H** 160 F **RC**	In 100 A	I	**16370**	**16652**	LSI	**16372**	**16654**
		LI	**16371**	**16653**	LSIG	**16375**	**16657**
S4**H** 160 F **RC**	In 160 A	I	**06362**	**06512**	LSI	**06364**	**06514**
		LI	**06363**	**06513**	LSIG	**06367**	**06517**

S4L 160 Iu (40 °C) = 160 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles	PR212 P	PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S4**L** 160 F **F**	In 100 A	I	**16730**	**17012**	LSI	**16734**	**17016**
		LI	**16732**	**17014**	LSIG	**16740**	**17022**
S4**L** 160 F **F**	In 160 A	I	**16731**	**17013**	LSI	**16735**	**17017**
		LI	**16733**	**17015**	LSIG	**16741**	**17023**
EF = Extended front terminals							
S4**L** 160 F **EF**	In 100 A	I	**16814**	**17096**	LSI	**16816**	**17098**
		LI	**16815**	**17097**	LSIG	**16819**	**17101**
S4**L** 160 F **EF**	In 160 A	I	**06578**	**06728**	LSI	**06580**	**06730**
		LI	**06579**	**06729**	LSIG	**06583**	**06733**
FC Cu = Front terminals for copper cables							
S4**L** 160 F **FC Cu**	In 100 A	I	**16862**	**17144**	LSI	**16864**	**17146**
		LI	**16863**	**17145**	LSIG	**16867**	**17149**
S4**L** 160 F **FC Cu**	In 160 A	I	**06614**	**06764**	LSI	**06616**	**06766**
		LI	**06615**	**06765**	LSIG	**06619**	**06769**
FC CuAl = Front terminals for copper/aluminium cables							
S4**L** 160 F **FC** CuAl	In 100 A	I	**16910**	**17192**	LSI	**16912**	**17194**
		LI	**16911**	**17193**	LSIG	**16915**	**17197**
S4**L** 160 F **FC** CuAl	In 160 A	I	**06650**	**06800**	LSI	**06652**	**06802**
		LI	**06651**	**06801**	LSIG	**06655**	**06805**
R = Threaded rear terminals							
S4**L** 160 F **R**	In 100 A	I	**17006**	**17288**	LSI	**17008**	**17290**
		LI	**17007**	**17289**	LSIG	**17011**	**17293**
S4**L** 160 F **R**	In 160 A	I	**06722**	**06872**	LSI	**06724**	**06874**
		LI	**06723**	**06873**	LSIG	**06727**	**06877**
RC = Rear terminals for cables							
S4**L** 160 F **RC**	In 100 A	I	**16958**	**17240**	LSI	**16960**	**17242**
		LI	**16959**	**17241**	LSIG	**16963**	**17245**
S4**L** 160 F **RC**	In 160 A	I	**06686**	**06836**	LSI	**06688**	**06838**
		LI	**06687**	**06837**	LSIG	**06691**	**06841**

Order codes

SACE Isomax S4 circuit-breaker

P = PLUG-IN

Moving part

S4N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**N** 160 P MP	In 100 A	I	**16118**	**16130**	LSI	**16121**	**16133**
		LI	**16119**	**16131**	LSIG	**16123**	**16135**
S4**N** 160 P MP	In 160 A	I	**06230**	**06242**	LSI	**06232**	**06244**
		LI	**06231**	**06243**	LSIG	**06235**	**06247**

S4H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**H** 160 P MP	In 100 A	I	**16706**	**16718**	LSI	**16708**	**16720**
		LI	**16707**	**16719**	LSIG	**16711**	**16723**
S4**H** 160 P MP	In 160 A	I	**06554**	**06566**	LSI	**06556**	**06568**
		LI	**06555**	**06567**	LSIG	**06559**	**06571**

S4L 160 Iu (40 °C) = 160 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**L** 160 P MP	In 100 A	I	**17294**	**17306**	LSI	**17296**	**17308**
		LI	**17295**	**17307**	LSIG	**17299**	**17311**
S4**L** 160 P MP	In 160 A	I	**06878**	**06890**	LSI	**06880**	**06892**
		LI	**06879**	**06891**	LSIG	**06883**	**06895**

W = WITHDRAWABLE

Moving part

S4N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**N** 160 W MP	In 100 A	I	**16124**	**16136**	LSI	**16127**	**16139**
		LI	**16125**	**16137**	LSIG	**16129**	**16141**
S4**N** 160 W MP	In 160 A	I	**06236**	**06248**	LSI	**06238**	**06250**
		LI	**06237**	**06249**	LSIG	**06241**	**06253**

S4H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**H** 160 W MP	In 100 A	I	**16712**	**16724**	LSI	**16714**	**16726**
		LI	**16713**	**16725**	LSIG	**16717**	**16729**
S4**H** 160 W MP	In 160 A	I	**06560**	**06572**	LSI	**06562**	**06574**
		LI	**06561**	**06573**	LSIG	**06565**	**06577**

S4L 160 Iu (40 °C) = 160 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**L** 160 W MP	In 100 A	I	**17300**	**17312**	LSI	**17302**	**17314**
		LI	**17301**	**17313**	LSIG	**17305**	**17317**
S4**L** 160 W MP	In 160 A	I	**06884**	**06896**	LSI	**06886**	**06898**
		LI	**06885**	**06897**	LSIG	**06889**	**06901**

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED

S4N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S4**N** 250 F **F**	In 250 A	I	**17318**	**17384**	LSI	**17320**	**17386**
		LI	**17319**	**17385**	LSIG	**17323**	**17389**
EF = Extended front terminals							
S4**N** 250 F **EF**	In 250 A	I	**06902**	**07052**	LSI	**06904**	**07054**
		LI	**06903**	**07053**	LSIG	**06907**	**07057**
FC Cu = Front terminals for copper cables							
S4**N** 250 F **FC Cu**	In 250 A	I	**06938**	**07088**	LSI	**06940**	**07090**
		LI	**06939**	**07089**	LSIG	**06943**	**07093**
FC CuAl = Front terminals for copper/aluminium cables							
S4**N** 250 F **FC** CuAl	In 250 A	I	**06974**	**07124**	LSI	**06976**	**07126**
		LI	**06975**	**07125**	LSIG	**06979**	**07129**
R = Threaded rear terminals							
S4**N** 250 F **R**	In 250 A	I	**07046**	**07196**	LSI	**07048**	**07198**
		LI	**07047**	**07197**	LSIG	**07051**	**07201**
RC = Rear terminals for cables							
S4**N** 250 F **RC**	In 250 A	I	**07010**	**07160**	LSI	**07012**	**07162**
		LI	**07011**	**07161**	LSIG	**07015**	**07165**

S4H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S4**H** 250 F **F**	In 250 A	I	**17450**	**17516**	LSI	**17452**	**17518**
		LI	**17451**	**17517**	LSIG	**17455**	**17521**
EF = Extended front terminals							
S4**H** 250 F **EF**	In 250 A	I	**07226**	**07376**	LSI	**07228**	**07378**
		LI	**07227**	**07377**	LSIG	**07231**	**07381**
FC Cu = Front terminals for copper cables							
S4**H** 250 F **FC Cu**	In 250 A	I	**07262**	**07412**	LSI	**07264**	**07414**
		LI	**07263**	**07413**	LSIG	**07267**	**07417**
FC CuAl = Front terminals for copper/aluminium cables							
S4**H** 250 F **FC** CuAl	In 250 A	I	**07298**	**07448**	LSI	**07300**	**07450**
		LI	**07299**	**07449**	LSIG	**07303**	**07453**
R = Threaded rear terminals							
S4**H** 250 F **R**	In 250 A	I	**07370**	**07520**	LSI	**07372**	**07522**
		LI	**07371**	**07521**	LSIG	**07375**	**07525**
RC = Rear terminals for cables							
S4**H** 250 F **RC**	In 250 A	I	**07334**	**07484**	LSI	**07336**	**07486**
		LI	**07335**	**07485**	LSIG	**07339**	**07489**

Order codes

SACE Isomax S4 circuit-breaker

F = FIXED

S4L 250 Iu (40 °C) = 250 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S4**L** 250 F **F**	In 250 A	I	**17582**	**17648**	LSI	**17584**	**17650**
		LI	**17583**	**17649**	LSIG	**17587**	**17653**
EF = Extended front terminals							
S4**L** 250 F **EF**	In 250 A	I	**07550**	**07700**	LSI	**07552**	**07702**
		LI	**07551**	**07701**	LSIG	**07555**	**07705**
FC Cu = Front terminals for copper cables							
S4**L** 250 F **FC Cu**	In 250 A	I	**07586**	**07736**	LSI	**07588**	**07738**
		LI	**07587**	**07737**	LSIG	**07591**	**07741**
FC CuAl = Front terminals for copper/aluminium cables							
S4**L** 250 F **FC CuAl**	In 250 A	I	**07622**	**07772**	LSI	**07624**	**07774**
		LI	**07623**	**07773**	LSIG	**07627**	**07777**
R = Threaded rear terminals							
S4**L** 250 F **R**	In 250 A	I	**07694**	**07844**	LSI	**07696**	**07846**
		LI	**07695**	**07845**	LSIG	**07699**	**07849**
RC = Rear terminals for cables							
S4**L** 250 F **RC**	In 250 A	I	**07658**	**07808**	LSI	**07660**	**07810**
		LI	**07659**	**07809**	LSIG	**07663**	**07813**

Order codes

SACE Isomax S4 circuit-breaker

P = PLUG-IN

Moving part

S4N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**N** 250 P MP	In 250 A	I	**07202**	**07214**	LSI	**07204**	**07216**
		LI	**07203**	**07215**	LSIG	**07207**	**07219**

S4H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**H** 250 P MP	In 250 A	I	**07526**	**07538**	LSI	**07528**	**07540**
		LI	**07527**	**07539**	LSIG	**07531**	**07543**

S4L 250 Iu (40 °C) = 250 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**L** 250 P MP	In 250 A	I	**07850**	**07862**	LSI	**07852**	**07864**
		LI	**07851**	**07863**	LSIG	**07855**	**07867**

W = WITHDRAWABLE

Moving part

S4N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**N** 250 W MP	In 250 A	I	**07208**	**07220**	LSI	**07210**	**07222**
		LI	**07209**	**07221**	LSIG	**07213**	**07225**

S4H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**H** 250 W MP	In 250 A	I	**07532**	**07544**	LSI	**07534**	**07546**
		LI	**07533**	**07545**	LSIG	**07537**	**07549**

S4L 250 Iu (40 °C) = 250 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**L** 250 W MP	In 250 A	I	**07856**	**07868**	LSI	**07858**	**07870**
		LI	**07857**	**07869**	LSIG	**07861**	**07873**

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED

S5N 400 Iu (40 °C) = 400 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S5**N** 400 F **F**	R 320	3200A	**38438**	**38440**
S5**N** 400 F **F**	R 400	4000A	**38439**	**38441**
EF = Extended front terminals				
S5**N** 400 F **EF**	R 320	3200A	**38442**	**38444**
S5**N** 400 F **EF**	R 400	4000A	**38443**	**38445**
FC Cu = Front terminals for copper cables				
S5**N** 400 F **FC Cu**	R 320	3200A	**38446**	**38448**
S5**N** 400 F **FC Cu**	R 400	4000A	**38447**	**38449**
FC CuAl = Front terminals for copper/aluminium cables				
S5**N** 400 F **FC CuAl***	R 320	3200A	**38450**	**38452**
S5**N** 400 F **FC CuAl***	R 400	4000A	**38451**	**38453**
S5**N** 400 F **FC CuAl****	R 320	3200A	**38466**	**38480**
S5**N** 400 F **FC CuAl****	R 400	4000A	**38467**	**38481**
R = Threaded rear terminals				
S5**N** 400 F **R**	R 320	3200A	**38486**	**38488**
S5**N** 400 F **R**	R 400	4000A	**38487**	**38489**
RC = Rear terminals for cables				
S5**N** 400 F **RC**	R 320	3200A	**38482**	**38484**
S5**N** 400 F **RC**	R 400	4000A	**38483**	**38485**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S5**N** 400 F **F**	In 320 A	I	**17714**	**17846**	LSI	**17718**	**17850**
		LI	**17716**	**17848**	LSIG	**17724**	**17856**
S5**N** 400 F **F**	In 400 A	I	**17715**	**17847**	LSI	**17719**	**17851**
		LI	**17717**	**17849**	LSIG	**17725**	**17857**
EF = Extended front terminals							
S5**N** 400 F **EF**	In 320 A	I	**07874**	**08174**	LSI	**07878**	**08178**
		LI	**07876**	**08176**	LSIG	**07884**	**08184**
S5**N** 400 F **EF**	In 400 A	I	**07875**	**08175**	LSI	**07879**	**08179**
		LI	**07877**	**08177**	LSIG	**07885**	**08185**
FC Cu = Front terminals for copper cables							
S5**N** 400 F **FC Cu**	In 320 A	I	**07946**	**08246**	LSI	**07950**	**08250**
		LI	**07948**	**08248**	LSIG	**07956**	**08256**
S5**N** 400 F **FC Cu**	In 400 A	I	**07947**	**08247**	LSI	**07951**	**08251**
		LI	**07949**	**08249**	LSIG	**07957**	**08257**
FC CuAl = Front terminals for copper/aluminium cables							
S5**N** 400 F **FC CuAl***	In 320 A	I	**08018**	**08318**	LSI	**08022**	**08322**
		LI	**08020**	**08320**	LSIG	**08028**	**08328**
S5**N** 400 F **FC CuAl***	In 400 A	I	**08019**	**08319**	LSI	**08023**	**08323**
		LI	**08021**	**08321**	LSIG	**08029**	**08329**
S5**N** 400 F **FC CuAl****	In 320 A	I	**38454**	**38468**	LSI	**38458**	**38472**
		LI	**38456**	**38470**	LSIG	**38464**	**38478**
S5**N** 400 F **FC CuAl****	In 400 A	I	**38455**	**38469**	LSI	**38459**	**38473**
		LI	**38457**	**38471**	LSIG	**38465**	**38479**
R = Threaded rear terminals							
S5**N** 400 F **R**	In 320 A	I	**08162**	**08450**	LSI	**08166**	**08454**
		LI	**08164**	**08452**	LSIG	**08172**	**08460**
S5**N** 400 F **R**	In 400 A	I	**08163**	**08451**	LSI	**08167**	**08455**
		LI	**08165**	**08453**	LSIG	**08173**	**08461**
RC = Rear terminals for cables							
S5**N** 400 F **RC**	In 320 A	I	**08090**	**08390**	LSI	**08094**	**08394**
		LI	**08092**	**08392**	LSIG	**08100**	**08400**
S5**N** 400 F **RC**	In 400 A	I	**08091**	**08391**	LSI	**08095**	**08395**
		LI	**08093**	**08393**	LSIG	**08101**	**08401**

* Cable section = 1 x 240 mm²
** Cable section = 2 x 120 mm²

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED

S5H 400 Iu (40 °C) = 400 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S5**H** 400 F **F**	R 320	3200A	**38522**	**38524**
S5**H** 400 F **F**	R 400	4000A	**38523**	**38525**
EF = Extended front terminals				
S5**H** 400 F **EF**	R 320	3200A	**38526**	**38528**
S5**H** 400 F **EF**	R 400	4000A	**38527**	**38529**
FC Cu = Front terminals for copper cables				
S5**H** 400 F **FC Cu**	R 320	3200A	**38530**	**38532**
S5**H** 400 F **FC Cu**	R 400	4000A	**38531**	**38533**
FC CuAl = Front terminals for copper/aluminium cables				
S5**H** 400 F **FC CuAl***	R 320	3200A	**38534**	**38536**
S5**H** 400 F **FC CuAl***	R 400	4000A	**38535**	**38537**
S5**H** 400 F **FC CuAl****	R 320	3200A	**38550**	**38564**
S5**H** 400 F **FC CuAl****	R 400	4000A	**38551**	**38565**
R = Threaded rear terminals				
S5**H** 400 F **R**	R 320	3200A	**38570**	**38572**
S5**H** 400 F **R**	R 400	4000A	**38571**	**38573**
RC = Rear terminals for cables				
S5**H** 400 F **RC**	R 320	3200A	**38566**	**38568**
S5**H** 400 F **RC**	R 400	4000A	**38567**	**38569**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S5**H** 400 F **F**	In 320 A	I	**17990**	**18122**	LSI	**17994**	**18126**
		LI	**17992**	**18124**	LSIG	**18000**	**18132**
S5**H** 400 F **F**	In 400 A	I	**17991**	**18123**	LSI	**17995**	**18127**
		LI	**17993**	**18125**	LSIG	**18001**	**18133**
EF = Extended front terminals							
S5**H** 400 F **EF**	In 320 A	I	**08510**	**08810**	LSI	**08514**	**08814**
		LI	**08512**	**08812**	LSIG	**08520**	**08820**
S5**H** 400 F **EF**	In 400 A	I	**08511**	**08811**	LSI	**08515**	**08815**
		LI	**08513**	**08813**	LSIG	**08521**	**08821**
FC Cu = Front terminals for copper cables							
S5**H** 400 F **FC Cu**	In 320 A	I	**08582**	**08882**	LSI	**08586**	**08886**
		LI	**08584**	**08884**	LSIG	**08592**	**08892**
S5**H** 400 F **FC Cu**	In 400 A	I	**08583**	**08883**	LSI	**08587**	**08887**
		LI	**08585**	**08885**	LSIG	**08593**	**08893**
FC CuAl = Front terminals for copper/aluminium cables							
S5**H** 400 F **FC CuAl***	In 320 A	I	**08654**	**08954**	LSI	**08658**	**08958**
		LI	**08656**	**08956**	LSIG	**08664**	**08964**
S5**H** 400 F **FC CuAl***	In 400 A	I	**08655**	**08955**	LSI	**08659**	**08959**
		LI	**08657**	**08957**	LSIG	**08665**	**08965**
S5**H** 400 F **FC CuAl****	In 320 A	I	**38538**	**38552**	LSI	**38542**	**38556**
		LI	**38540**	**38554**	LSIG	**38548**	**38563**
S5**H** 400 F **FC CuAl****	In 400 A	I	**38539**	**38553**	LSI	**38543**	**38557**
		LI	**38541**	**38555**	LSIG	**38549**	**38562**
R = Threaded rear terminals							
S5**H** 400 F **R**	In 320 A	I	**08798**	**09098**	LSI	**08802**	**09102**
		LI	**08800**	**09100**	LSIG	**08808**	**09108**
S5**H** 400 F **R**	In 400 A	I	**08799**	**09099**	LSI	**08803**	**09103**
		LI	**08801**	**09101**	LSIG	**08809**	**09109**
RC = Rear terminals for cables							
S5**H** 400 F **RC**	In 320 A	I	**08726**	**09026**	LSI	**08730**	**09030**
		LI	**08728**	**09028**	LSIG	**08736**	**09036**
S5**H** 400 F **RC**	In 400 A	I	**08727**	**09027**	LSI	**08731**	**09031**
		LI	**08729**	**09029**	LSIG	**08737**	**09037**

* Cable section = 1 x 240 mm²
** Cable section = 2 x 120 mm²

7

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED

S5L 400 Iu (40 °C) = 400 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S5**L** 400 F **F**	R 320	3200A	**38606**	**38608**
S5**L** 400 F **F**	R 400	4000A	**38607**	**38609**
EF = Extended front terminals				
S5**L** 400 F **EF**	R 320	3200A	**38610**	**38612**
S5**L** 400 F **EF**	R 400	4000A	**38611**	**38613**
FC Cu = Front terminals for copper cables				
S5**L** 400 F **FC Cu**	R 320	3200A	**38614**	**38616**
S5**L** 400 F **FC Cu**	R 400	4000A	**38615**	**38617**
FC CuAl = Front terminals for copper/aluminium cables				
S5**L** 400 F **FC CuAl***	R 320	3200A	**38618**	**38620**
S5**L** 400 F **FC CuAl***	R 400	4000A	**38619**	**38621**
S5**L** 400 F **FC CuAl****	R 320	3200A	**38634**	**38648**
S5**L** 400 F **FC CuAl****	R 400	4000A	**38635**	**38649**
R = Threaded rear terminals				
S5**L** 400 F **R**	R 320	3200A	**38654**	**38656**
S5**L** 400 F **R**	R 400	4000A	**38655**	**38657**
RC = Rear terminals for cables				
S5**L** 400 F **RC**	R 320	3200A	**38650**	**38652**
S5**L** 400 F **RC**	R 400	4000A	**38651**	**38653**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S5**L** 400 F **F**	In 320 A	I	**18254**	**18386**	LSI	**18258**	**18390**
		LI	**18256**	**18388**	LSIG	**18264**	**18396**
S5**L** 400 F **F**	In 400 A	I	**18255**	**18387**	LSI	**18259**	**18391**
		LI	**18257**	**18389**	LSIG	**18265**	**18397**
EF = Extended front terminals							
S5**L** 400 F **EF**	In 320 A	I	**09158**	**09458**	LSI	**09162**	**09462**
		LI	**09160**	**09460**	LSIG	**09168**	**09468**
S5**L** 400 F **EF**	In 400 A	I	**09159**	**09459**	LSI	**09163**	**09463**
		LI	**09161**	**09461**	LSIG	**09169**	**09469**
FC Cu = Front terminals for copper cables							
S5**L** 400 F **FC Cu**	In 320 A	I	**09230**	**09530**	LSI	**09234**	**09534**
		LI	**09232**	**09532**	LSIG	**09240**	**09540**
S5**L** 400 F **FC Cu**	In 400 A	I	**09231**	**09531**	LSI	**09235**	**09535**
		LI	**09233**	**09533**	LSIG	**09241**	**09541**
FC CuAl = Front terminals for copper/aluminium cables							
S5**L** 400 F **FC CuAl***	In 320 A	I	**09302**	**09602**	LSI	**09306**	**09606**
		LI	**09304**	**09604**	LSIG	**09312**	**09612**
S5**L** 400 F **FC CuAl***	In 400 A	I	**09303**	**09603**	LSI	**09307**	**09607**
		LI	**09305**	**09605**	LSIG	**09313**	**09613**
S5**L** 400 F **FC CuAl****	In 320 A	I	**38622**	**38636**	LSI	**38626**	**38640**
		LI	**38624**	**38638**	LSIG	**38628**	**38646**
S5**L** 400 F **FC CuAl****	In 400 A	I	**38623**	**38637**	LSI	**38627**	**38641**
		LI	**38625**	**38639**	LSIG	**38629**	**38647**
R = Threaded rear terminals							
S5**L** 400 F **R**	In 320 A	I	**09446**	**09746**	LSI	**09450**	**09750**
		LI	**09448**	**09748**	LSIG	**09456**	**09756**
S5**L** 400 F **R**	In 400 A	I	**09447**	**09747**	LSI	**09451**	**09751**
		LI	**09449**	**09749**	LSIG	**09457**	**09757**
RC = Rear terminals for cables							
S5**L** 400 F **RC**	In 320 A	I	**09374**	**09674**	LSI	**09378**	**09678**
		LI	**09376**	**09676**	LSIG	**09384**	**09684**
S5**L** 400 F **RC**	In 400 A	I	**09375**	**09675**	LSI	**09379**	**09679**
		LI	**09377**	**09677**	LSIG	**09385**	**09685**

* Cable section = 1 x 240 mm²
** Cable section = 2 x 120 mm²

Order codes

SACE Isomax S5 circuit-breaker

P = PLUG-IN

Moving part

S5N 400 Iu (40 °C) = 400 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 400 P MP	R 320	3200A	**43896**	**43902**
S5**N** 400 P MP	R 400	4000A	**43897**	**43903**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 400 P MP	In 320 A	I	**08462**	**08486**	LSI	**08466**	**08490**
		LI	**08464**	**08488**	LSIG	**08472**	**08496**
S5**N** 400 P MP	In 400 A	I	**08463**	**08487**	LSI	**08467**	**08491**
		LI	**08465**	**08489**	LSIG	**08473**	**08497**

S5H 400 Iu (40 °C) = 400 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 400 P MP	R 320	3200A	**43898**	**43904**
S5**H** 400 P MP	R 400	4000A	**43899**	**43905**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 400 P MP	In 320 A	I	**09110**	**09134**	LSI	**09114**	**09138**
		LI	**09112**	**09136**	LSIG	**09120**	**09144**
S5**H** 400 P MP	In 400 A	I	**09111**	**09135**	LSI	**09115**	**09139**
		LI	**09113**	**09137**	LSIG	**09121**	**09145**

S5L 400 Iu (40 °C) = 400 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 400 P MP	R 320	3200A	**43900**	**43906**
S5**L** 400 P MP	R 400	4000A	**43901**	**43907**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 400 P MP	In 320 A	I	**09758**	**09782**	LSI	**09762**	**09786**
		LI	**09760**	**09784**	LSIG	**09768**	**09792**
S5**L** 400 P MP	In 400 A	I	**09759**	**09783**	LSI	**09763**	**09787**
		LI	**09761**	**09785**	LSIG	**09769**	**09793**

Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE

Moving part

S5N 400 Iu (40 °C) = 400 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 400 W MP	R 320	3200A	**38414**	**38416**
S5**N** 400 W MP	R 400	4000A	**38415**	**38417**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 400 W MP	In 320 A	I	**08474**	**08498**	LSI	**08478**	**08502**
		LI	**08476**	**08500**	LSIG	**08484**	**08508**
S5**N** 400 W MP	In 400 A	I	**08475**	**08499**	LSI	**08479**	**08503**
		LI	**08477**	**08501**	LSIG	**08485**	**08509**

S5H 400 Iu (40 °C) = 400 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 400 W MP	R 320	3200A	**38490**	**38492**
S5**H** 400 W MP	R 400	4000A	**38491**	**38493**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 400 W MP	In 320 A	I	**09122**	**09146**	LSI	**09126**	**09150**
		LI	**09124**	**09148**	LSIG	**09132**	**09156**
S5**H** 400 W MP	In 400 A	I	**09123**	**09147**	LSI	**09127**	**09151**
		LI	**09125**	**09149**	LSIG	**09133**	**09157**

S5L 400 Iu (40 °C) = 400 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 400 W MP	R 320	3200A	**38574**	**38576**
S5**L** 400 W MP	R 400	4000A	**38575**	**38577**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 400 W MP	In 320 A	I	**09770**	**09794**	LSI	**09774**	**09798**
		LI	**09772**	**09796**	LSIG	**09780**	**09804**
S5**L** 400 W MP	In 400 A	I	**09771**	**09795**	LSI	**09775**	**09799**
		LI	**09773**	**09797**	LSIG	**09781**	**09805**

Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE

Moving part (1)

S5N 400 Iu (40 °C) = 400 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 400 W MP	R 320	3200A	**38426**	**38436**
S5**N** 400 W MP	R 400	4000A	**38427**	**38437**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 400 W MP	In 320 A	I	**38418**	**38428**	LSI	**38422**	**38432**
		LI	**38420**	**38430**	LSIG	**38424**	**38434**
S5**N** 400 W MP	In 400 A	I	**38419**	**51608**	LSI	**38423**	**38433**
		LI	**38421**	**38431**	LSIG	**38425**	**38435**

S5H 400 Iu (40 °C) = 400 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 400 W MP	R 320	3200A	**38506**	**38520**
S5**H** 400 W MP	R 400	4000A	**38507**	**38521**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 400 W MP	In 320 A	I	**38494**	**38508**	LSI	**38498**	**38512**
		LI	**38496**	**38510**	LSIG	**38504**	**38518**
S5**H** 400 W MP	In 400 A	I	**38495**	**38509**	LSI	**38499**	**38513**
		LI	**38497**	**38511**	LSIG	**38505**	**38519**

S5L 400 Iu (40 °C) = 400 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 400 W MP	R 320	3200A	**38590**	**38604**
S5**L** 400 W MP	R 400	4000A	**38591**	**38605**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 400 W MP	In 320 A	I	**38578**	**38592**	LSI	**38582**	**38596**
		LI	**38580**	**38594**	LSIG	**38588**	**38602**
S5**L** 400 W MP	In 400 A	I	**38579**	**38593**	LSI	**38583**	**38597**
		LI	**38581**	**38595**	LSIG	**38589**	**38603**

(1) The S5 400 mobile parts indicated on this page can be used in conjunction with S5 630 W FP fixed parts.
Two different fixed parts are available for circuit-breakers S5 400 and S5 630.
Fixed circuit-breaker S5 400:
– converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 13718 R1 (three-pole), 1SDA0 13719 R1 (four-pole) can be used in conjunction with the fixed part for S5 400 (see codes on pages 7/81).
– converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 38778 R1 (three-pole), 1SDA0 38779 R1 (four-pole) can be used in conjunction with the fixed part for S5 630. This page shows the codes for the mobile parts of withdrawable circuit-breakers which have already been converted and can be used in conjunction with the fixed parts for S5 630.
Circuit-breaker S5 630 can be converted into the mobile part of a withdrawable circuit-breaker using kit 1SDA0 38778 R1 (three-pole), 1SDA0 38779 R1 (four-pole) and used in conjunction exclusively with the fixed parts for S5 630 (see codes on page 7/81).

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED

S5N 630 Iu (40 °C) = 630 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S5**N** 630 F **F**	R 500	5000A	**38678**	**38683**
ES = Spreaded extended front terminals				
S5**N** 630 F **ES**	R 500	5000A	**38684**	**38685**
FC Cu = Front terminals for copper cables				
S5**N** 630 F **FC Cu**	R 500	5000A	**38686**	**38687**
R = Threaded rear terminals				
S5**N** 630 F **R**	R 500	5000A	**38690**	**38691**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S5**N** 630 F **F**	In 630 A	I	**38674**	**38679**	LSI	**38676**	**38681**
		LI	**38675**	**38680**	LSIG	**38677**	**38682**
ES = Spreaded extended front terminals							
S5**N** 630 F **ES**	In 630 A	I	**14575**	**14725**	LSI	**14577**	**14727**
		LI	**14576**	**14726**	LSIG	**14580**	**14730**
FC Cu = Front terminals for copper cables							
S5**N** 630 F **FC Cu**	In 630 A	I	**14611**	**14761**	LSI	**14613**	**14763**
		LI	**14612**	**14762**	LSIG	**14616**	**14766**
R = Threaded rear terminals							
S5**N** 630 F **R**	In 630 A	I	**14719**	**14869**	LSI	**14721**	**14871**
		LI	**14720**	**14870**	LSIG	**14724**	**14874**

S5H 630 Iu (40 °C) = 630 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S5**H** 630 F **F**	R 500	5000A	**38708**	**38713**
ES = Spreaded extended front terminals				
S5**H** 630 F **ES**	R 500	5000A	**38714**	**38715**
FC Cu = Front terminals for copper cables				
S5**H** 630 F **FC Cu**	R 500	5000A	**38716**	**38717**
R = Threaded rear terminals				
S5**H** 630 F **R**	R 500	5000A	**38720**	**38721**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S5**H** 630 F **F**	In 630 A	I	**38704**	**38709**	LSI	**38706**	**38711**
		LI	**38705**	**38710**	LSIG	**38707**	**38712**
ES = Spreaded extended front terminals							
S5**H** 630 F **ES**	In 630 A	I	**14899**	**15049**	LSI	**14901**	**15051**
		LI	**14900**	**15050**	LSIG	**14904**	**15054**
FC Cu = Front terminals for copper cables							
S5**H** 630 F **FC Cu**	In 630 A	I	**14935**	**15085**	LSI	**14937**	**15087**
		LI	**14936**	**15086**	LSIG	**14940**	**15090**
R = Threaded rear terminals							
S5**H** 630 F **R**	In 630 A	I	**15043**	**15193**	LSI	**15045**	**15195**
		LI	**15044**	**15194**	LSIG	**15048**	**15198**

Order codes

SACE Isomax S5 circuit-breaker

F = FIXED

S5L 630 Iu (40 °C) = 630 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S5**L** 630 F **F**	R 500	5000A	**38740**	**38745**
ES = Spreaded extended front terminals				
S5**L** 630 F **ES**	R 500	5000A	**38746**	**38747**
FC Cu = Front terminals for copper cables				
S5**L** 630 F **FC Cu**	R 500	5000A	**38748**	**38749**
R = Threaded rear terminals				
S5**L** 630 F **R**	R 500	5000A	**38752**	**38753**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S5**L** 630 F **F**	In 630 A	I	**38736**	**38741**	LSI	**38738**	**38743**
		LI	**38737**	**38742**	LSIG	**38739**	**38744**
ES = Spreaded extended front terminals							
S5**L** 630 F **ES**	In 630 A	I	**15223**	**15373**	LSI	**47991**	**43801**
		LI	**15224**	**15374**	LSIG	**15228**	**15378**
FC Cu = Front terminals for copper cables							
S5**L** 630 F **FC Cu**	In 630 A	I	**15259**	**15409**	LSI	**43748**	**43815**
		LI	**15260**	**15410**	LSIG	**15264**	**15414**
R = Threaded rear terminals							
S5**L** 630 F **R**	In 630 A	I	**15367**	**15517**	LSI	**43775**	**43843**
		LI	**15368**	**15518**	LSIG	**15372**	**15522**

Order codes

SACE Isomax S5 circuit-breaker

W = WITHDRAWABLE

Moving part

S5N 630 Iu (40 °C) = 630 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 630 W MP	R 500	5000A	**38666**	**38673**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**N** 630 W MP	In 630 A	I	**38660**	**38667**	LSI	**38662**	**38669**
		LI	**38661**	**38668**	LSIG	**38665**	**38672**

S5H 630 Iu (40 °C) = 630 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 630 W MP	R 500	5000A	**38697**	**38703**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**H** 630 W MP	In 630 A	I	**38693**	**38699**	LSI	**38695**	**38701**
		LI	**38694**	**38700**	LSIG	**38696**	**38702**

S5L 630 Iu (40 °C) = 630 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 630 W MP	R 500	5000A	**38729**	**38754**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S5**L** 630 W MP	In 630 A	I	**38723**	**38730**	LSI	**38725**	**38732**
		LI	**38724**	**38731**	LSIG	**38728**	**38734**

Order codes

SACE Isomax S6 circuit-breaker

F = FIXED

S6N 630 Iu (40 °C) = 630 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S6**N** 630 F **F**	R 630	6300A	**38787**	**38788**
EF = Extended front terminals				
S6**N** 630 F **EF**	R 630	6300A	**38789**	**38790**
FC CuAl = Front terminals for copper/aluminium cables				
S6**N** 630 F **FC CuAl***	R 630	6300A	**38791**	**38792**
R = Threaded rear terminals				
S6**N** 630 F **R**	R 630	6300A	**38795**	**38796**
RC = Rear terminals for cables				
S6**N** 630 F **RC**	R 630	6300A	**38793**	**38794**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S6**N** 630 F **F**	In 630 A	I	**18518**	**18572**	LSI	**18520**	**18574**
		LI	**18519**	**18573**	LSIG	**18523**	**18577**
EF = Extended front terminals							
S6**N** 630 F **EF**	In 630 A	I	**09806**	**09902**	LSI	**09808**	**09904**
		LI	**09807**	**09903**	LSIG	**09811**	**09907**
FC CuAl = Front terminals for copper/aluminium cables							
S6**N** 630 F **FC CuAl***	In 630 A	I	**09836**	**09932**	LSI	**09838**	**09934**
		LI	**09837**	**09933**	LSIG	**09841**	**09937**
R = Threaded rear terminals							
S6**N** 630 F **R**	In 630 A	I	**09896**	**09992**	LSI	**09898**	**09994**
		LI	**09897**	**09993**	LSIG	**09901**	**09997**
RC = Rear terminals for cables							
S6**N** 630 F **RC**	In 630 A	I	**09866**	**09962**	LSI	**09868**	**09964**
		LI	**09867**	**09963**	LSIG	**09871**	**09967**

S6S 630 Iu (40 °C) = 630 A Icu (415 V) = 50 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S6**S** 630 F **F**	R 630	6300A	**38799**	**38800**
EF = Extended front terminals				
S6**S** 630 F **EF**	R 630	6300A	**38801**	**38802**
FC CuAl = Front terminals for copper/aluminium cables				
S6**S** 630 F **FC CuAl***	R 630	6300A	**38817**	**38818**
R = Threaded rear terminals				
S6**S** 630 F **R**	R 630	6300A	**38957**	**38959**
RC = Rear terminals for cables				
S6**S** 630 F **RC**	R 630	6300A	**38819**	**38820**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S6**S** 630 F **F**	In 630 A	I	**18626**	**18680**	LSI	**18628**	**18682**
		LI	**18627**	**18681**	LSIG	**18631**	**18685**
EF = Extended front terminals							
S6**S** 630 F **EF**	In 630 A	I	**10010**	**10106**	LSI	**10012**	**10108**
		LI	**10011**	**10107**	LSIG	**10015**	**10111**
FC CuAl = Front terminals for copper/aluminium cables							
S6**S** 630 F **FC CuAl***	In 630 A	I	**10040**	**10136**	LSI	**10042**	**10138**
		LI	**10041**	**10137**	LSIG	**10045**	**10141**
R = Threaded rear terminals							
S6**S** 630 F **R**	In 630 A	I	**10100**	**10196**	LSI	**10102**	**10198**
		LI	**10101**	**10197**	LSIG	**10105**	**10201**
RC = Rear terminals for cables							
S6**S** 630 F **RC**	In 630 A	I	**10070**	**10166**	LSI	**10072**	**10168**
		LI	**10071**	**10167**	LSIG	**10075**	**10171**

* Cable section = 1 x 240 mm²

Order codes

SACE Isomax S6 circuit-breaker

F = FIXED

S6H 630 Iu (40 °C) = 630 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S6**H** 630 F **F**	R 630	6300A	**38823**	**38824**
EF = Extended front terminals				
S6**H** 630 F **EF**	R 630	6300A	**38825**	**38826**
FC CuAl = Front terminals for copper/aluminium cables				
S6**H** 630 F **FC CuAl***	R 630	6300A	**38827**	**38835**
R = Threaded rear terminals				
S6**H** 630 F **R**	R 630	6300A	**38958**	**38960**
RC = Rear terminals for cables				
S6**H** 630 F **RC**	R 630	6300A	**38843**	**38844**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S6**H** 630 F **F**	In 630 A	I	**18734**	**18788**	LSI	**18736**	**18790**
		LI	**18735**	**18789**	LSIG	**18739**	**18793**
EF = Extended front terminals							
S6**H** 630 F **EF**	In 630 A	I	**10214**	**10310**	LSI	**10216**	**10312**
		LI	**10215**	**10311**	LSIG	**10219**	**10315**
FC CuAl = Front terminals for copper/aluminium cables							
S6**H** 630 F **FC CuAl***	In 630 A	I	**10244**	**10340**	LSI	**10246**	**10342**
		LI	**10245**	**10341**	LSIG	**10249**	**10345**
R = Threaded rear terminals							
S6**H** 630 F **R**	In 630 A	I	**10304**	**10400**	LSI	**10306**	**10402**
		LI	**10305**	**10401**	LSIG	**10309**	**10405**
RC = Rear terminals for cables							
S6**H** 630 F **RC**	In 630 A	I	**10274**	**10370**	LSI	**10276**	**10372**
		LI	**10275**	**10371**	LSIG	**10279**	**10375**

S6L 630 Iu (40 °C) = 630 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S6**L** 630 F **F**	R 630	6300A	**38847**	**38848**
EF = Extended front terminals				
S6**L** 630 F **EF**	R 630	6300A	**38849**	**38850**
FC CuAl = Front terminals for copper/aluminium cables				
S6**L** 630 F **FC CuAl***	R 630	6300A	**38851**	**38859**
R = Threaded rear terminals				
S6**L** 630 F **R**	R 630	6300A	**38961**	**38962**
RC = Rear terminals for cables				
S6**L** 630 F **RC**	R 630	6300A	**38867**	**38868**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S6**L** 630 F **F**	In 630 A	I	**18842**	**18896**	LSI	**18844**	**18898**
		LI	**18843**	**18897**	LSIG	**18847**	**18901**
EF = Extended front terminals							
S6**L** 630 F **EF**	In 630 A	I	**10418**	**10514**	LSI	**10420**	**10516**
		LI	**10419**	**10515**	LSIG	**10423**	**10519**
FC CuAl = Front terminals for copper/aluminium cables							
S6**L** 630 F **FC CuAl***	In 630 A	I	**10448**	**10544**	LSI	**10450**	**10546**
		LI	**10449**	**10545**	LSIG	**10453**	**10549**
R = Threaded rear terminals							
S6**L** 630 F **R**	In 630 A	I	**10508**	**10604**	LSI	**10510**	**10606**
		LI	**10509**	**10605**	LSIG	**10513**	**10609**
RC = Rear terminals for cables							
S6**L** 630 F **RC**	In 630 A	I	**10478**	**10574**	LSI	**10480**	**10576**
		LI	**10479**	**10575**	LSIG	**10483**	**10579**

* Cable section = 2 x 240 mm²

Order codes

SACE Isomax S6 circuit-breaker

W = WITHDRAWABLE

Moving part

S6N 630 Iu (40 °C) = 630 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**N** 630 W MP	R 630	6300A	**38785**	**38786**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**N** 630 W MP	In 630 A	I	**09998**	**10004**	LSI	**10000**	**10006**
		LI	**09999**	**10005**	LSIG	**10003**	**10009**

S6S 630 Iu (40 °C) = 630 A Icu (415 V) = 50 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**S** 630 W MP	R 630	6300A	**38797**	**38798**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**S** 630 W MP	In 630 A	I	**10202**	**10208**	LSI	**10204**	**10210**
		LI	**10203**	**10209**	LSIG	**10207**	**10213**

S6H 630 Iu (40 °C) = 630 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**H** 630 W MP	R 630	6300A	**38821**	**38822**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**H** 630 W MP	In 630 A	I	**10406**	**10412**	LSI	**10408**	**10414**
		LI	**10407**	**10413**	LSIG	**10411**	**10417**

S6L 630 Iu (40 °C) = 630 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**L** 630 W MP	R 630	6300A	**38845**	**38846**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**L** 630 W MP	In 630 A	I	**10610**	**10616**	LSI	**10612**	**10618**
		LI	**10611**	**10617**	LSIG	**10615**	**10621**

Order codes

SACE Isomax S6 circuit-breaker

F = FIXED

S6N 800 Iu (40 °C) = 800 A Icu (415 V) = 35 kA

Thermomagnetic release			Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals					
S6**N** 800 F **F**	R 800	8000A		**38871**	**38872**
EF = Extended front terminals					
S6**N** 800 F **EF**	R 800	8000A		**38873**	**38874**
FC CuAl = Front terminals for copper/aluminium cables					
S6**N** 800 F **FC CuAl***	R 800	8000A		**38875**	**38876**
R = Threaded rear terminals					
S6**N** 800 F **R**	R 800	8000A		**38879**	**38880**
RC = Rear terminals for cables					
S6**N** 630 F **RC**	R 800	8000A		**38877**	**38878**

Microprocessor-based release			PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals								
S6**N** 800 F **F**	In 800 A	I		**18950**	**19004**	LSI	**18952**	**19006**
		LI		**18951**	**19005**	LSIG	**18955**	**19009**
EF = Extended front terminals								
S6**N** 800 F **EF**	In 800 A	I		**10622**	**10718**	LSI	**10624**	**10720**
		LI		**10623**	**10719**	LSIG	**10627**	**10723**
FC CuAl = Front terminals for copper/aluminium cables								
S6**N** 800 F **FC CuAl***	In 800 A	I		**10652**	**10748**	LSI	**10654**	**10750**
		LI		**10653**	**10749**	LSIG	**10657**	**10753**
R = Threaded rear terminals								
S6**N** 800 F **R**	In 800 A	I		**10712**	**10808**	LSI	**10714**	**10810**
		LI		**10713**	**10809**	LSIG	**10717**	**10813**
RC = Rear terminals for cables								
S6**N** 800 F **RC**	In 800 A	I		**10682**	**10778**	LSI	**10684**	**10780**
		LI		**10683**	**10779**	LSIG	**10687**	**10783**

S6S 800 Iu (40 °C) = 800 A Icu (415 V) = 50 kA

Thermomagnetic release			Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals					
S6**S** 800 F **F**	R 800	8000A		**38883**	**38884**
EF = Extended front terminals					
S6**S** 800 F **EF**	R 800	8000A		**38885**	**38886**
FC CuAl = Front terminals for copper/aluminium cables					
S6**S** 800 F **FC CuAl***	R 800	8000A		**38887**	**38895**
R = Threaded rear terminals					
S6**S** 800 F **R**	R 800	8000A		**38963**	**38964**
RC = Rear terminals for cables					
S6**S** 800 F **RC**	R 800	8000A		**38903**	**38904**

Microprocessor-based release			PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals								
S6**S** 800 F **F**	In 800 A	I		**19058**	**19112**	LSI	**19060**	**19114**
		LI		**19059**	**19113**	LSIG	**19063**	**19117**
EF = Extended front terminals								
S6**S** 800 F **EF**	In 800 A	I		**10826**	**10922**	LSI	**10828**	**10924**
		LI		**10827**	**10923**	LSIG	**10831**	**10927**
FC CuAl = Front terminals for copper/aluminium cables								
S6**S** 800 F **FC CuAl***	In 800 A	I		**10856**	**10952**	LSI	**10858**	**10954**
		LI		**10857**	**10953**	LSIG	**10861**	**10957**
R = Threaded rear terminals								
S6**S** 800 F **R**	In 800 A	I		**10916**	**11006**	LSI	**10918**	**11008**
		LI		**10917**	**11007**	LSIG	**10921**	**11011**
RC = Rear terminals for cables								
S6**S** 800 F **RC**	In 800 A	I		**10886**	**10976**	LSI	**10888**	**10978**
		LI		**10887**	**10977**	LSIG	**10891**	**10981**

* Cable section = 3 x 185 mm²

Order codes

SACE Isomax S6 circuit-breaker

F = FIXED

S6H 800 Iu (40 °C) = 800 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S6**H** 800 F **F**	R 800	8000A	**38907**	**38908**
EF = Extended front terminals				
S6**H** 800 F **EF**	R 800	8000A	**38909**	**38910**
FC CuAl = Front terminals for copper/aluminium cables				
S6**H** 800 F **FC CuAl***	R 800	8000A	**38911**	**38919**
R = Threaded rear terminals				
S6**H** 800 F **R**	R 800	8000A	**38965**	**38966**
RC = Rear terminals for cables				
S6**H** 800 F **RC**	R 800	8000A	**38927**	**38928**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S6**H** 800 F **F**	In 800 A	I	**19166**	**19220**	LSI	**19168**	**19222**
		LI	**19167**	**19221**	LSIG	**19171**	**19225**
EF = Extended front terminals							
S6**H** 800 F **EF**	In 800 A	I	**11024**	**11120**	LSI	**11026**	**11122**
		LI	**11025**	**11121**	LSIG	**11029**	**11125**
FC CuAl = Front terminals for copper/aluminium cables							
S6**H** 800 F **FC CuAl***	In 800 A	I	**11054**	**11150**	LSIG	**11056**	**11152**
		LI	**11055**	**11151**	LSIG	**11059**	**11155**
R = Threaded rear terminals							
S6**H** 800 F **R**	In 800 A	I	**11114**	**11210**	LSIG	**11116**	**11212**
		LI	**11115**	**11211**	LSIG	**11119**	**11215**
RC = Rear terminals for cables							
S6**H** 800 F **RC**	In 800 A	I	**11084**	**11180**	LSI	**11086**	**11182**
		LI	**11085**	**11181**	LSIG	**11089**	**11185**

S6L 800 Iu (40 °C) = 800 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S6**L** 800 F **F**	R 800	8000A	**38931**	**38932**
EF = Extended front terminals				
S6**L** 800 F **EF**	R 800	8000A	**38933**	**38934**
FC CuAl = Front terminals for copper/aluminium cables				
S6**L** 800 F **FC CuAl***	R 800	8000A	**38935**	**38943**
R = Threaded rear terminals				
S6**L** 800 F **R**	R 800	8000A	**38973**	**38974**
RC = Rear terminals for cables				
S6**L** 800 F **RC**	R 800	8000A	**38951**	**38952**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S6**L** 800 F **F**	In 800 A	I	**19274**	**19328**	LSI	**19276**	**19330**
		LI	**19275**	**19329**	LSIG	**19279**	**19333**
EF = Extended front terminals							
S6**L** 800 F **EF**	In 800 A	I	**11228**	**11324**	LSI	**11230**	**11326**
		LI	**11229**	**11325**	LSIG	**11233**	**11329**
FC CuAl = Front terminals for copper/aluminium cables							
S6**L** 800 F **FC CuAl***	In 800 A	I	**11258**	**11354**	LSI	**11260**	**11356**
		LI	**11259**	**11355**	LSIG	**11263**	**11359**
R = Threaded rear terminals							
S6**L** 800 F **R**	In 800 A	I	**11318**	**11414**	LSI	**11320**	**11416**
		LI	**11319**	**11415**	LSIG	**11323**	**11419**
RC = Rear terminals for cables							
S6**L** 800 F **RC**	In 800 A	I	**11288**	**11384**	LSI	**11290**	**11386**
		LI	**11289**	**11385**	LSIG	**11293**	**11389**

* Cable section = 3 x 185 mm²

Order codes

SACE Isomax S6 circuit-breaker

W = WITHDRAWABLE

Moving part

S6N 800 Iu (40 °C) = 800 A Icu (415 V) = 35 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**N** 800 W MP	R 800	8000A	**38869**	**38870**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**N** 800 W MP	In 800 A	I	**10814**	**10820**	LSI	**10816**	**10822**
		LI	**10815**	**10821**	LSIG	**10819**	**10825**

S6S 800 Iu (40 °C) = 800 A Icu (415 V) = 50 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**S** 800 W MP	R 800	8000A	**38881**	**38882**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**S** 800 W MP	In 800 A	I	**11012**	**11018**	LSI	**11014**	**11020**
		LI	**11013**	**11019**	LSIG	**11017**	**11023**

S6H 800 Iu (40 °C) = 800 A Icu (415 V) = 65 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**H** 800 W MP	R 800	8000A	**38905**	**38906**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**H** 800 W MP	In 800 A	I	**11216**	**11222**	LSI	**11218**	**11224**
		LI	**11217**	**11223**	LSIG	**11221**	**11227**

S6L 800 Iu (40 °C) = 800 A Icu (415 V) = 100 kA

Thermomagnetic release		Im = 5...10 Ith	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**L** 800 W MP	R 800	8000A	**38929**	**38930**

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	4 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
S6**L** 800 W MP	In 800 A	I	**11420**	**11682**	LSI	**11422**	**11684**
		LI	**11421**	**11683**	LSIG	**11425**	**11687**

Order codes

SACE Isomax S7 circuit-breaker

F = FIXED

S7S 1250 Iu (40 °C) = 1250 A Icu (415 V) = 50 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S7**S** 1250 F **F**	In 1000 A	I	**19382**	**19490**	LSI	**19386**	**19494**
		LI	**19384**	**19492**	LSIG	**19392**	**19500**
S7**S** 1250 F **F**	In 1250 A	I	**19383**	**19491**	LSI	**19387**	**19495**
		LI	**19385**	**19493**	LSIG	**19393**	**19501**
EF = Extended front terminals							
S7**S** 1250 F **EF**	In 1000 A	I	**11432**	**11624**	LSI	**11436**	**11628**
		LI	**11434**	**11626**	LSIG	**11442**	**11634**
S7**S** 1250 F **EF**	In 1250 A	I	**11433**	**11625**	LSI	**11437**	**11629**
		LI	**11435**	**11627**	LSIG	**11443**	**11635**
FC CuAl = Front terminals for copper/aluminium cables							
S7**S** 1250 F **FC CuAl**	In 1000 A	I	**11492**	**11428**	LSI	**11496**	**11688**
		LI	**11494**	**11430**	LSIG	**11502**	**11694**
S7**S** 1250 F **FC CuAl**	In 1250 A	I	**11493**	**11429**	LSI	**11497**	**11689**
		LI	**11495**	**11431**	LSIG	**11503**	**11695**
VR = Vertical flat-bar rear terminals							
S7**S** 1250 F **VR**	In 1000 A	I	**11612**	**11804**	LSI	**11616**	**11808**
		LI	**11614**	**11806**	LSIG	**11622**	**11814**
S7**S** 1250 F **VR**	In 1250 A	I	**11613**	**11805**	LSI	**11617**	**11809**
		LI	**11615**	**11807**	LSIG	**11623**	**11815**
HR = Horizontal flat-bar rear terminals							
S7**S** 1250 F **HR**	In 1000 A	I	**11552**	**11744**	LSI	**11556**	**11748**
		LI	**11554**	**11746**	LSIG	**11562**	**11754**
S7**S** 1250 F **HR**	In 1250 A	I	**11553**	**11745**	LSI	**11557**	**11749**
		LI	**11555**	**11747**	LSIG	**11563**	**11755**

S7H 1250 Iu (40 °C) = 1250 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S7**H** 1250 F **F**	In 1000 A	I	**19598**	**19706**	LSI	**19602**	**19710**
		LI	**19600**	**19708**	LSIG	**19608**	**19716**
S7**H** 1250 F **F**	In 1250 A	I	**19599**	**19707**	LSI	**19603**	**19711**
		LI	**19601**	**19709**	LSIG	**19609**	**19717**
EF = Extended front terminals							
S7**H** 1250 F **EF**	In 1000 A	I	**11840**	**12032**	LSI	**11844**	**12036**
		LI	**11842**	**12034**	LSIG	**11850**	**12042**
S7**H** 1250 F **EF**	In 1250 A	I	**11841**	**12033**	LSI	**11845**	**12037**
		LI	**11843**	**12035**	LSIG	**11851**	**12043**
FC CuAl = Front terminals for copper/aluminium cables							
S7**H** 1250 F **FC CuAl**	In 1000 A	I	**11900**	**12092**	LSI	**11904**	**12096**
		LI	**11902**	**12094**	LSIG	**11910**	**12102**
S7**H** 1250 F **FC CuAl**	In 1250 A	I	**11901**	**12093**	LSI	**11905**	**12097**
		LI	**11903**	**12095**	LSIG	**11911**	**12103**
VR = Vertical flat-bar rear terminals							
S7**H** 1250 F **VR**	In 1000 A	I	**12020**	**12212**	LSI	**12024**	**12216**
		LI	**12022**	**12214**	LSIG	**12030**	**12222**
S7**H** 1250 F **VR**	In 1250 A	I	**12021**	**12213**	LSI	**12025**	**12217**
		LI	**12023**	**12215**	LSIG	**12031**	**12223**
HR = Horizontal flat-bar rear terminals							
S7**H** 1250 F **HR**	In 1000 A	I	**11960**	**12152**	LSI	**11964**	**12156**
		LI	**11962**	**12154**	LSIG	**11970**	**12162**
S7**H** 1250 F **HR**	In 1250 A	I	**11961**	**12153**	LSI	**11965**	**12157**
		LI	**11963**	**12155**	LSIG	**11971**	**12163**

Order codes

SACE Isomax S7 circuit-breaker

F = FIXED

S7L 1250 Iu (40 °C) = 1250 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals							
S7**L** 1250 F **F**	In 1000 A	I	**19814**	**19922**	LSI	**19818**	**19926**
		LI	**19816**	**19924**	LSIG	**19824**	**19932**
S7**L** 1250 F **F**	In 1250 A	I	**19815**	**19923**	LSI	**19819**	**19927**
		LI	**19817**	**19925**	LSIG	**19825**	**19933**
EF = Extended front terminals							
S7**L** 1250 F **EF**	In 1000 A	I	**12248**	**12440**	LSI	**12252**	**12444**
		LI	**12250**	**12442**	LSIG	**12258**	**12450**
S7**L** 1250 F **EF**	In 1250 A	I	**12249**	**12441**	LSI	**12253**	**12445**
		LI	**12251**	**12443**	LSIG	**12259**	**12451**
FC CuAl = Front terminals for copper/aluminium cables							
S7**L** 1250 F **FC CuAl**	In 1000 A	I	**12308**	**12500**	LSI	**12312**	**12504**
		LI	**12310**	**12502**	LSIG	**12318**	**12510**
S7**L** 1250 F **FC CuAl**	In 1250 A	I	**12309**	**12501**	LSI	**12313**	**12505**
		LI	**12311**	**12503**	LSIG	**12319**	**12511**
VR = Vertical flat-bar rear terminals							
S7**L** 1250 F **VR**	In 1000 A	I	**12428**	**12620**	LSI	**12432**	**12624**
		LI	**12430**	**12622**	LSIG	**12438**	**12630**
S7**L** 1250 F **VR**	In 1250 A	I	**12429**	**12621**	LSI	**12433**	**12625**
		LI	**12431**	**12623**	LSIG	**12439**	**12631**
HR = Horizontal flat-bar rear terminals							
S7**L** 1250 F **HR**	In 1000 A	I	**12368**	**12560**	LSI	**12372**	**12564**
		LI	**12370**	**12562**	LSIG	**12378**	**12570**
S7**L** 1250 F **HR**	In 1250 A	I	**12369**	**12561**	LSI	**12373**	**12565**
		LI	**12371**	**12563**	LSIG	**12379**	**12571**

W = WITHDRAWABLE

Moving part

S7S 1250 Iu (40 °C) = 1250 A Icu (415 V) = 50 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
S7**S** 1250 W MP	In 1000 A	I	**11816**	**11828**	LSI	**11820**	**11832**
		LI	**11818**	**11830**	LSIG	**11826**	**11838**
S7**S** 1250 W MP	In 1250 A	I	**11817**	**11829**	LSI	**11821**	**11833**
		LI	**11819**	**11831**	LSIG	**11827**	**11839**

S7H 1250 Iu (40 °C) = 1250 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
S7**H** 1250 W MP	In 1000 A	I	**12224**	**12236**	LSI	**12228**	**12240**
		LI	**12226**	**12238**	LSIG	**12234**	**12246**
S7**H** 1250 W MP	In 1250 A	I	**12225**	**12237**	LSI	**12229**	**12241**
		LI	**12227**	**12239**	LSIG	**12235**	**12247**

S7L 1250 Iu (40 °C) = 1250 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
S7**L** 1250 W MP	In 1000 A	I	**12632**	**12644**	LSI	**12636**	**12648**
		LI	**12634**	**12646**	LSIG	**12642**	**12654**
S7**L** 1250 W MP	In 1250 A	I	**12633**	**12645**	LSI	**12637**	**12649**
		LI	**12635**	**12647**	LSIG	**12643**	**12655**

Order codes

SACE Isomax S7 circuit-breaker

F = FIXED

S7S 1600 Iu (40 °C) = 1600 A Icu (415 V) = 50 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S7**S** 1600 F **F**	In 1600 A	I	**20030**	**20072**	LSI	**20032**	**20074**
		LI	**20031**	**20073**	LSIG	**20035**	**20077**
EF = Extended front terminals							
S7**S** 1600 F **EF**	In 1600 A	I	**12656**	**12710**	LSI	**12658**	**12712**
		LI	**12657**	**12711**	LSIG	**12661**	**12715**
VR = Vertical flat-bar rear terminals							
S7**S** 1600 F **VR**	In 1600 A	I	**12704**	**12758**	LSI	**12706**	**12760**
		LI	**12705**	**12759**	LSIG	**12709**	**12763**
HR = Horizontal flat-bar rear terminals							
S7**S** 1600 F **HR**	In 1600 A	I	**12680**	**12734**	LSI	**12682**	**12736**
		LI	**12681**	**12735**	LSIG	**12685**	**12739**

S7H 1600 Iu (40 °C) = 1600 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S7**H** 1600 F **F**	In 1600 A	I	**20114**	**20156**	LSI	**20116**	**20158**
		LI	**20115**	**20157**	LSIG	**20119**	**20161**
EF = Extended front terminals							
S7**H** 1600 F **EF**	In 1600 A	I	**12776**	**12830**	LSI	**12778**	**12832**
		LI	**12777**	**12831**	LSIG	**12781**	**12835**
VR = Vertical flat-bar rear terminals							
S7**H** 1600 F **VR**	In 1600 A	I	**12824**	**12878**	LSI	**12826**	**12880**
		LI	**12825**	**12879**	LSIG	**12829**	**12883**
HR = Horizontal flat-bar rear terminals							
S7**H** 1600 F **HR**	In 1600 A	I	**12800**	**12854**	LSI	**12802**	**12856**
		LI	**12801**	**12855**	LSIG	**12805**	**12859**

S7L 1600 Iu (40 °C) = 1600 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S7**L** 1600 F **F**	In 1600 A	I	**20198**	**20240**	LSI	**20200**	**20242**
		LI	**20199**	**20241**	LSIG	**20203**	**20245**
EF = Extended front terminals							
S7**L** 1600 F **EF**	In 1600 A	I	**12896**	**12962**	LSI	**12898**	**12964**
		LI	**12897**	**12963**	LSIG	**12901**	**12967**
VR = Vertical flat-bar rear terminals							
S7**L** 1600 F **VR**	In 1600 A	I	**12956**	**13010**	LSI	**12958**	**13012**
		LI	**12957**	**13011**	LSIG	**12961**	**13015**
HR = Horizontal flat-bar rear terminals							
S7**L** 1600 F **HR**	In 1600 A	I	**12932**	**12986**	LSI	**12934**	**12988**
		LI	**12933**	**12987**	LSIG	**12937**	**12991**

Order codes

SACE Isomax S7 circuit-breaker

W = WITHDRAWABLE

Moving part

S7S 1600 Iu (40 °C) = 1600 A Icu (415 V) = 50 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
S7**S** 1600 W MP	In 1600 A	I	**12764**	**12770**	LSI	**12766**	**12772**
		LI	**12765**	**12771**	LSIG	**12769**	**12775**

S7H 1600 Iu (40 °C) = 1600 A Icu (415 V) = 65 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
S7**H** 1600 W MP	In 1600 A	I	**12884**	**12890**	LSI	**12886**	**12892**
		LI	**12885**	**12891**	LSIG	**12889**	**12895**

S7L 1600 Iu (40 °C) = 1600 A Icu (415 V) = 100 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	4 poles
S7**L** 1600 W MP	In 1600 A	I	**13016**	**13022**	LSI	**13018**	**13024**
		LI	**13017**	**13023**	LSIG	**13021**	**13027**

Order codes

SACE Isomax S8 circuit-breaker

F = FIXED

S8H 2000 Iu (40 °C) = 2000 A Icu (415 V) = 85 kA

Microprocessor-based release		PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S8**H** 2000 F **F**	In 1600 A	LSI	**44861**	**44877**
		LSIG	**44863**	**44879**
S8**H** 2000 F **F**	In 2000 A	LSI	**44862**	**44878**
		LSIG	**44864**	**44880**
VR = Vertical flat-bar rear terminals				
S8**H** 2000 F **VR**	In 1600 A	LSI	**44869**	**44885**
		LSIG	**44871**	**44887**
S8**H** 2000 F **VR**	In 2000 A	LSI	**44870**	**44886**
		LSIG	**44872**	**44888**

S8V 2000 Iu (40 °C) = 2000 A Icu (415 V) = 120 kA

Microprocessor-based release		PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S8**V** 2000 F **F**	In 1600 A	LSI	**44918**	**44934**
		LSIG	**44920**	**44936**
S8**V** 2000 F **F**	In 2000 A	LSI	**44919**	**44935**
		LSIG	**44921**	**44937**
VR = Vertical flat-bar rear terminals				
S8**V** 2000 F **VR**	In 1600 A	LSI	**44926**	**44942**
		LSIG	**44928**	**44944**
S8**V** 2000 F **VR**	In 2000 A	LSI	**44927**	**44943**
		LSIG	**44929**	**44945**

S8H 2500 Iu (40 °C) = 2500 A Icu (415 V) = 85 kA

Microprocessor-based release		PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S8**H** 2500 F **F**	In 2500 A	LSI	**44891**	**44899**
		LSIG	**44892**	**44900**
VR = Vertical flat-bar rear terminals				
S8**H** 2500 F **VR**	In 2500 A	LSI	**44895**	**44903**
		LSIG	**44896**	**44904**

S8V 2500 Iu (40 °C) = 2500 A Icu (415 V) = 120 kA

Microprocessor-based release		PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S8**V** 2500 F **F**	In 2500 A	LSI	**44948**	**44956**
		LSIG	**44949**	**44957**
VR = Vertical flat-bar rear terminals				
S8**V** 2500 F **VR**	In 2500 A	LSI	**44952**	**44960**
		LSIG	**44953**	**44961**

S8H 3200 Iu (40 °C) = 3200 A Icu (415 V) = 85 kA

Microprocessor-based release		PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
VR = Vertical flat-bar rear terminals				
S8**H** 3200 F **VR**	In 3200 A	LSI	**44908**	**44912**
		LSIG	**44909**	**44913**

S8V 3200 Iu (40 °C) = 3200 A Icu (415 V) = 120 kA

Microprocessor-based release		PR212 P	code 1SDA0 . . . . . R1 3 poles	4 poles
VR = Vertical flat-bar rear terminals				
S8**V** 3200 F **VR**	In 3200 A	LSI	**44964**	**44968**
		LSIG	**44965**	**44969**

Order codes

SACE Isomax S2X 100 current-limiting circuit-breaker

F = FIXED

S2X 100 Iu (40 °C) = 100 A Icu (415 V) = 70 kA

Thermomagnetic release		I_m	code 1SDA0 . . . . . R1 3 poles
FC Cu = Front terminals for copper cables			
S2**X** 100 F **FC Cu**	R 1	10A	**50307**
S2**X** 100 F **FC Cu**	R 1.6	16A	**50308**
S2**X** 100 F **FC Cu**	R 2.5	25A	**50309**
S2**X** 100 F **FC Cu**	R 4	40A	**50310**
S2**X** 100 F **FC Cu**	R 6.3	63A	**50311**
S2**X** 100 F **FC Cu**	R 10	100A	**50312**
S2**X** 100 F **FC Cu**	R 12.5	125A	**50313**
S2**X** 100 F **FC Cu**	R 16	160A	**50314**
S2**X** 100 F **FC Cu**	R 20	200A	**50315**
S2**X** 100 F **FC Cu**	R 25	250A	**50316**
S2**X** 100 F **FC Cu**	R 32	320A	**50317**
S2**X** 100 F **FC Cu**	R 40	400A	**50318**
S2**X** 100 F **FC Cu**	R 50	500A	**50319**
S2**X** 100 F **FC Cu**	R 63	630A	**50320**
S2**X** 100 F **FC Cu**	R 80	800A	**50321**
S2**X** 100 F **FC Cu**	R 100	1000A	**50322**
R = Threaded rear terminals			
S2**X** 100 F **R**	R 1	10A	**50339**
S2**X** 100 F **R**	R 1.6	16A	**50340**
S2**X** 100 F **R**	R 2.5	25A	**50341**
S2**X** 100 F **R**	R 4	40A	**50342**
S2**X** 100 F **R**	R 6.3	63A	**50343**
S2**X** 100 F **R**	R 10	100A	**50344**
S2**X** 100 F **R**	R 12.5	125A	**50345**
S2**X** 100 F **R**	R 16	160A	**50346**
S2**X** 100 F **R**	R 20	200A	**50347**
S2**X** 100 F **R**	R 25	250A	**50348**
S2**X** 100 F **R**	R 32	320A	**50349**
S2**X** 100 F **R**	R 40	400A	**50350**
S2**X** 100 F **R**	R 50	500A	**50351**
S2**X** 100 F **R**	R 63	630A	**50352**
S2**X** 100 F **R**	R 80	800A	**50353**
S2**X** 100 F **R**	R 100	1000A	**50354**

P = PLUG-IN

Moving part

S2X 100 Iu (40 °C) = 100 A Icu (415 V) = 70 kA

Thermomagnetic release		I_m	code 1SDA0 . . . . . R1 3 poles
S2**X** 100 P MP	R 1	10A	**50371**
S2**X** 100 P MP	R 1.6	16A	**50372**
S2**X** 100 P MP	R 2.5	25A	**50373**
S2**X** 100 P MP	R 4	40A	**50374**
S2**X** 100 P MP	R 6.3	63A	**50375**
S2**X** 100 P MP	R 10	100A	**50376**
S2**X** 100 P MP	R 12.5	125A	**50377**
S2**X** 100 P MP	R 16	160A	**50378**
S2**X** 100 P MP	R 20	200A	**50379**
S2**X** 100 P MP	R 25	250A	**50380**
S2**X** 100 P MP	R 32	320A	**50381**
S2**X** 100 P MP	R 40	400A	**50382**
S2**X** 100 P MP	R 50	500A	**50383**
S2**X** 100 P MP	R 63	630A	**50384**
S2**X** 100 P MP	R 80	800A	**50385**
S2**X** 100 P MP	R 100	1000A	**50386**

Order codes

SACE Isomax S3X current-limiting circuit-breaker

F = FIXED

S3X 125 Iu (40 °C) = 125 A Icu (415 V) = 200 kA

Thermomagnetic release		I_m	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**X** 125 F **F**	R 32	500A	**45197**	**45207**
S3**X** 125 F **F**	R 50	500A	**45199**	**45209**
S3**X** 125 F **F**	R 80	800A	**45201**	**45211**
S3**X** 125 F **F**	R 100	1000A	**45203**	**45213**
S3**X** 125 F **F**	R 125	1250A	**45205**	**45215**
EF = Extended front terminals				
S3**X** 125 F **EF**	R 32	500A	**45217**	**45267**
S3**X** 125 F **EF**	R 50	500A	**45219**	**45269**
S3**X** 125 F **EF**	R 80	800A	**45221**	**45271**
S3**X** 125 F **EF**	R 100	1000A	**45223**	**45273**
S3**X** 125 F **EF**	R 125	1250A	**45225**	**45275**
FC Cu = Front terminals for copper cables				
S3**X** 125 F **FC Cu**	R 32	500A	**45227**	**45277**
S3**X** 125 F **FC Cu**	R 50	500A	**45229**	**45279**
S3**X** 125 F **FC Cu**	R 80	800A	**45231**	**45281**
S3**X** 125 F **FC Cu**	R 100	1000A	**45233**	**45283**
S3**X** 125 F **FC Cu**	R 125	1250A	**45235**	**45285**
FC CuAl = Front terminals for copper/aluminium cables				
S3**X** 125 F **FC CuAl**	R 32	500A	**45237**	**45287**
S3**X** 125 F **FC CuAl**	R 50	500A	**45239**	**45289**
S3**X** 125 F **FC CuAl**	R 80	800A	**45241**	**45291**
S3**X** 125 F **FC CuAl**	R 100	1000A	**45243**	**45293**
S3**X** 125 F **FC CuAl**	R 125	1250A	**45245**	**45295**
R = Threaded rear terminals				
S3**X** 125 F **R**	R 32	500A	**45257**	**45307**
S3**X** 125 F **R**	R 50	500A	**45259**	**45309**
S3**X** 125 F **R**	R 80	800A	**45261**	**45311**
S3**X** 125 F **R**	R 100	1000A	**45263**	**45313**
S3**X** 125 F **R**	R 125	1250A	**45265**	**45315**
RC = Rear terminals for cables				
S3**X** 125 F **RC**	R 32	500A	**45247**	**45297**
S3**X** 125 F **RC**	R 50	500A	**45249**	**45299**
S3**X** 125 F **RC**	R 80	800A	**45251**	**45301**
S3**X** 125 F **RC**	R 100	1000A	**45253**	**45303**
S3**X** 125 F **RC**	R 125	1250A	**45255**	**45305**

Order codes

SACE Isomax S3X current-limiting circuit-breaker

F = FIXED

S3X 200 Iu (40 °C) = 200 A Icu (415 V) = 200 kA

Thermomagnetic release		Im	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals				
S3**X** 200 F **F**	R 125	1250A	**46039**	**46045**
S3**X** 200 F **F**	R 160	1600A	**46041**	**46047**
S3**X** 200 F **F**	R 200	2000A	**46043**	**46049**
EF = Extended front terminals				
S3**X** 200 F **EF**	R 125	1250A	**46051**	**46081**
S3**X** 200 F **EF**	R 160	1600A	**46053**	**46083**
S3**X** 200 F **EF**	R 200	2000A	**46055**	**46085**
FC Cu = Front terminals for copper cables				
S3**X** 200 F **FC Cu**	R 125	1250A	**46057**	**46087**
S3**X** 200 F **FC Cu**	R 160	1600A	**46059**	**46089**
S3**X** 200 F **FC Cu**	R 200	2000A	**46061**	**46091**
FC CuAl = Front terminals for copper/aluminium cables				
S3**X** 200 F **FC CuAl**	R 125	1250A	**46063**	**46093**
S3**X** 200 F **FC CuAl**	R 160	1600A	**46065**	**46095**
S3**X** 200 F **FC CuAl**	R 200	2000A	**46067**	**46097**
R = Threaded rear terminals				
S3**X** 200 F **R**	R 125	1250A	**46075**	**46105**
S3**X** 200 F **R**	R 160	1600A	**46077**	**46107**
S3**X** 200 F **R**	R 200	2000A	**46079**	**46109**
RC = Rear terminals for cables				
S3**X** 200 F **RC**	R 125	1250A	**46069**	**46099**
S3**X** 200 F **RC**	R 160	1600A	**46071**	**46101**
S3**X** 200 F **RC**	R 200	2000A	**46073**	**46103**

P = PLUG-IN

Moving part

S3X 125 Iu (40 °C) = 125 A Icu (415 V) = 200 kA

Thermomagnetic release		Im	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**X** 125 P MP	R 32	500A	**45317**	**45327**
S3**X** 125 P MP	R 50	500A	**45319**	**45329**
S3**X** 125 P MP	R 80	800A	**45321**	**45331**
S3**X** 125 P MP	R 100	1000A	**45323**	**45333**
S3**X** 125 P MP	R 125	1250A	**45325**	**45335**

S3X 200 Iu (40 °C) = 200 A Icu (415 V) = 200 kA

Thermomagnetic release		Im	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**X** 200 P MP	R 125	1250A	**46111**	**46117**
S3**X** 200 P MP	R 160	1600A	**46113**	**46119**
S3**X** 200 P MP	R 200	2000A	**46115**	**46121**

Order codes

SACE Isomax S3X current-limiting circuit-breaker

W = WITHDRAWABLE

Moving part

S3X 125 Iu (40 °C) = 125 A Icu (415 V) = 200 kA

Thermomagnetic release		I_m	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**X** 125 W MP	R 32	500A	**45337**	**45347**
S3**X** 125 W MP	R 50	500A	**45339**	**45349**
S3**X** 125 W MP	R8 0	800A	**45341**	**45351**
S3**X** 125 W MP	R 100	1000A	**45343**	**45353**
S3**X** 125 W MP	R 125	1250A	**45345**	**45355**

S3X 200 Iu (40 °C) = 200 A Icu (415 V) = 200 kA

Thermomagnetic release		I_m	code 1SDA0 . . . . . R1 3 poles	4 poles
S3**X** 200 W MP	R 125	1250A	**46123**	**46129**
S3**X** 200 W MP	R 160	1600A	**46125**	**46131**
S3**X** 200 W MP	R 200	2000A	**46127**	**46133**

Order codes

SACE Isomax S4X current-limiting circuit-breaker

F = FIXED

S4X 250 Iu (40 °C) = 250 A Icu (415 V) = 200 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S4**X** 250 F **F**	In=100	I	**46582**	**46592**	LSI	**46586**	**46596**
		LI	**46584**	**46594**	LSIG	**46588**	**46598**
S4**X** 250 F **F**	In=160	I	**46583**	**46593**	LSI	**46587**	**46597**
		LI	**46585**	**46595**	LSIG	**46589**	**46599**
S4**X** 250 F **F**	In=250	I	**46524**	**46528**	LSI	**46526**	**46530**
		LI	**46525**	**46529**	LSIG	**46527**	**46531**
EF = Extended front terminals							
S4**X** 250 F **EF**	In=100	I	**46657**	**46707**	LSI	**46663**	**46713**
		LI	**46660**	**46710**	LSIG	**46668**	**46716**
S4**X** 250 F **EF**	In=160	I	**46658**	**46708**	LSI	**46664**	**46714**
		LI	**46661**	**46711**	LSIG	**46669**	**46717**
S4**X** 250 F **EF**	In=250	I	**46659**	**46709**	LSI	**46665**	**46715**
		LI	**46662**	**46712**	LSIG	**46670**	**46718**
FC Cu = Front terminals for copper cables							
S4**X** 250 F **FC Cu**	In=100	I	**46671**	**46719**	LSI	**46677**	**46725**
		LI	**46674**	**46722**	LSIG	**46680**	**46728**
S4**X** 250 F **FC Cu**	In=160	I	**46672**	**46720**	LSI	**46678**	**46726**
		LI	**46675**	**46723**	LSIG	**46681**	**46729**
S4**X** 250 F **FC Cu**	In=250	I	**46673**	**46721**	LSI	**46679**	**46727**
		LI	**46676**	**46724**	LSIG	**46682**	**46730**
FC CuAl = Front terminals for copper/aluminium cables							
S4**X** 250 F **FC CuAl**	In=100	I	**46830**	**46842**	LSI	**46836**	**46848**
		LI	**46833**	**46845**	LSIG	**46839**	**46851**
S4**X** 250 F **FC CuAl**	In=160	I	**46831**	**46843**	LSI	**46837**	**46849**
		LI	**46834**	**46846**	LSIG	**46840**	**46852**
S4**X** 250 F **FC CuAl**	In=250	I	**46832**	**46844**	LSI	**46838**	**46850**
		LI	**46835**	**46847**	LSIG	**46841**	**46853**
R = Threaded rear terminals							
S4**X** 250 F **R**	In=100	I	**46695**	**46743**	LSI	**46701**	**46749**
		LI	**46698**	**46746**	LSIG	**46704**	**46752**
S4**X** 250 F **R**	In=160	I	**46696**	**46744**	LSI	**46702**	**46750**
		LI	**46699**	**46747**	LSIG	**46705**	**46753**
S4**X** 250 F **R**	In=250	I	**46697**	**46745**	LSI	**46703**	**46751**
		LI	**46700**	**46748**	LSIG	**46706**	**46754**
RC = Rear terminals for cables							
S4**X** 250 F **RC**	In=100	I	**46683**	**46731**	LSI	**46689**	**46737**
		LI	**46686**	**46734**	LSIG	**46692**	**46740**
S4**X** 250 F **RC**	In=160	I	**46684**	**46732**	LSI	**46690**	**46738**
		LI	**46687**	**46735**	LSIG	**46693**	**46741**
S4**X** 250 F **RC**	In=250	I	**46685**	**46733**	LSI	**46691**	**46739**
		LI	**46688**	**46736**	LSIG	**46694**	**46742**

Order codes

SACE Isomax S4X current-limiting circuit-breaker

P = PLUG-IN

Moving part

S4X 250 Iu (40 °C) = **250 A** Icu (415 V) = **200 kA**

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**X** 250 P MP	In=100	I	**46755**	**46767**	LSI	**46761**	**46773**
		LI	**46758**	**46770**	LSIG	**46764**	**46776**
S4**X** 250 P MP	In=160	I	**46756**	**46768**	LSI	**46762**	**46774**
		LI	**46759**	**46771**	LSIG	**46765**	**46777**
S4**X** 250 P MP	In=250	I	**46757**	**46769**	LSI	**46763**	**46775**
		LI	**46760**	**46772**	LSIG	**46766**	**46778**

W = WITHDRAWABLE

Moving part

S4X 250 Iu (40 °C) = **250 A** Icu (415 V) = **200 kA**

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S4**X** 250 W MP	In=100	I	**46779**	**46791**	LSI	**46785**	**46797**
		LI	**46782**	**46794**	LSIG	**46788**	**46800**
S4**X** 250 W MP	In=160	I	**46780**	**46792**	LSI	**46786**	**46798**
		LI	**46783**	**46795**	LSIG	**46789**	**46801**
S4**X** 250 W MP	In=250	I	**46781**	**46793**	LSI	**46787**	**46799**
		LI	**46784**	**46796**	LSIG	**46790**	**46802**

Order codes

SACE Isomax S6X current-limiting circuit-breaker

F = FIXED

S6X 400 Iu (40 °C) = 400 A Icu (415 V) = 200 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S6**X** 400 F **F**	In=320	I	**47595**	**47601**	LSI	**47597**	**47603**
		LI	**47596**	**47602**	LSIG	**47598**	**47604**
S6**X** 400 F **F**	In=400	I	**46534**	**46538**	LSI	**46536**	**46540**
		LI	**46535**	**46539**	LSIG	**46537**	**46541**
EF = Extended front terminals							
S6**X** 400 F **EF**	In=320	I	**47661**	**47693**	LSI	**47665**	**47697**
		LI	**47663**	**47695**	LSIG	**47667**	**47699**
S6**X** 400 F **EF**	In=400	I	**47660**	**47692**	LSI	**47664**	**47696**
		LI	**47662**	**47694**	LSIG	**47666**	**47698**
FC CuAl = Front terminals for copper/aluminium cables							
S6**X** 400 F **FC CuAl**	In=320	I	**47669**	**47701**	LSI	**47673**	**47704**
		LI	**47671**	**47703**	LSIG	**47675**	**47707**
S6**X** 400 F **FC CuAl**	In=400	I	**47668**	**47700**	LSI	**47672**	**47705**
		LI	**47670**	**47702**	LSIG	**47674**	**47706**
R = Threaded rear terminals							
S6**X** 400 F **R**	In=320	I	**47685**	**47717**	LSI	**47689**	**47721**
		LI	**47687**	**47719**	LSIG	**47691**	**47723**
S6**X** 400 F **R**	In=400	I	**47684**	**47716**	LSI	**47688**	**47720**
		LI	**47686**	**47718**	LSIG	**47690**	**47722**
RC = Rear terminals for cables							
S6**X** 400 F **RC**	In=320	I	**47677**	**47709**	LSI	**47681**	**47713**
		LI	**47679**	**47711**	LSIG	**47683**	**47715**
S6**X** 400 F **RC**	In=400	I	**47676**	**47708**	LSI	**47680**	**47712**
		LI	**47678**	**47710**	LSIG	**47682**	**47714**

S6X 630 Iu (40 °C) = 630 A Icu (415 V) = 200 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
F = Front terminals							
S6**X** 630 F **F**	In=630	I	**46560**	**46564**	LSI	**46562**	**46566**
		LI	**46561**	**46565**	LSIG	**46563**	**46567**
EF = Extended front terminals							
S6**X** 630 F **EF**	In=630	I	**47724**	**47744**	LSI	**47726**	**47746**
		LI	**47725**	**47745**	LSIG	**47727**	**47747**
FC CuAl = Front terminals for copper/aluminium cables							
S6**X** 630 F **FC CuAl**	In=630	I	**47729**	**47749**	LSI	**47731**	**47751**
		LI	**47730**	**47750**	LSIG	**47732**	**47752**
R = Threaded rear terminals							
S6**X** 630 F **R**	In=630	I	**47739**	**47759**	LSI	**47741**	**47761**
		LI	**47740**	**47760**	LSIG	**47742**	**47762**
RC = Rear terminals for cables							
S6**X** 630 F **RC**	In=630	I	**47734**	**47754**	LSI	**47736**	**47756**
		LI	**47735**	**47755**	LSIG	**47737**	**47757**

7

Order codes

SACE Isomax S6X current-limiting circuit-breaker

W = WITHDRAWABLE

Moving part

S6X 400 Iu (40 °C) = 400 A Icu (415 V) = 200 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S6**X** 400 W MP	In=320	I	**47633**	**47643**	LSI	**47637**	**47647**
		LI	**47635**	**47645**	LSIG	**47641**	**47649**
S6**X** 400 W MP	In=400	I	**47632**	**47642**	LSI	**47636**	**47646**
		LI	**47634**	**47644**	LSIG	**47640**	**47648**

S6X 630 Iu (40 °C) = 630 A Icu (415 V) = 200 kA

Microprocessor-based release			PR211 P code 1SDA0 . . . . . R1 3 poles	PR211 P code 1SDA0 . . . . . R1 4 poles		PR212 P code 1SDA0 . . . . . R1 3 poles	PR212 P code 1SDA0 . . . . . R1 4 poles
S6**X** 630 W MP	In=630	I	**47650**	**47655**	LSI	**47652**	**47657**
		LI	**47651**	**47656**	LSIG	**47653**	**47658**

Order codes

SACE Isomax S2X 80 circuit-breaker for motor protection

F = FIXED

S2X 80 Iu (40 °C) = 80 A Icu (415 V) = 70 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
FC Cu = Front terminals for copper cables			
S2**X** 80 F **FC Cu**	R 1	13A	**50231**
S2**X** 80 F **FC Cu**	R 1.6	21A	**50232**
S2**X** 80 F **FC Cu**	R 2	26A	**50233**
S2**X** 80 F **FC Cu**	R 2.5	32A	**50234**
S2**X** 80 F **FC Cu**	R 3.2	42A	**50235**
S2**X** 80 F **FC Cu**	R 4	52A	**50236**
S2**X** 80 F **FC Cu**	R 5	65A	**50237**
S2**X** 80 F **FC Cu**	R 6.5	84A	**50238**
S2**X** 80 F **FC Cu**	R 8.5	110A	**50239**
S2**X** 80 F **FC Cu**	R 11	145A	**50240**
S2**X** 80 F **FC Cu**	R 12.5	163A	**50241**
S2**X** 80 F **FC Cu**	R 16	210A	**50242**
S2**X** 80 F **FC Cu**	R 20	260A	**50243**
S2**X** 80 F **FC Cu**	R 25	325A	**50244**
S2**X** 80 F **FC Cu**	R 32	415A	**50245**
S2**X** 80 F **FC Cu**	R 42	545A	**50246**
S2**X** 80 F **FC Cu**	R 52	680A	**50247**
S2**X** 80 F **FC Cu**	R 63	820A	**50248**
S2**X** 80 F **FC Cu**	R 80	1040A	**50249**
R = Threaded rear terminals			
S2**X** 80 F **R**	R 1	13A	**50250**
S2**X** 80 F **R**	R 1.6	21A	**50251**
S2**X** 80 F **R**	R 2	26A	**50252**
S2**X** 80 F **R**	R 2.5	32A	**50253**
S2**X** 80 F **R**	R 3.2	42A	**50254**
S2**X** 80 F **R**	R 4	52A	**50255**
S2**X** 80 F **R**	R 5	65A	**50256**
S2**X** 80 F **R**	R 6.5	84A	**50257**
S2**X** 80 F **R**	R 8.5	110A	**50258**
S2**X** 80 F **R**	R 11	145A	**50259**
S2**X** 80 F **R**	R 12.5	163A	**50260**
S2**X** 80 F **R**	R 16	210A	**50261**
S2**X** 80 F **R**	R 20	260A	**50262**
S2**X** 80 F **R**	R 25	325A	**50263**
S2**X** 80 F **R**	R 32	415A	**50264**
S2**X** 80 F **R**	R 42	545A	**50265**
S2**X** 80 F **R**	R 52	680A	**50266**
S2**X** 80 F **R**	R 63	820A	**50267**
S2**X** 80 F **R**	R 80	1040A	**50268**

P = PLUG-IN

Moving part

S2X 80 Iu (40 °C) = 80 A Icu (415 V) = 70 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
S2**X** 80 P MP	R 1	13A	**50269**
S2**X** 80 P MP	R 1.6	21A	**50270**
S2**X** 80 P MP	R 2	26A	**50271**
S2**X** 80 P MP	R 2.5	32A	**50272**
S2**X** 80 P MP	R 3.2	41A	**50273**
S2**X** 80 P MP	R 4	52A	**50274**
S2**X** 80 P MP	R 5	65A	**50275**
S2**X** 80 P MP	R 6.5	84A	**50276**
S2**X** 80 P MP	R 8.5	110A	**50277**
S2**X** 80 P MP	R 11	145A	**50278**
S2**X** 80 P MP	R 12.5	163A	**50279**
S2**X** 80 P MP	R 16	210A	**50280**
S2**X** 80 P MP	R 20	260A	**50281**
S2**X** 80 P MP	R 25	325A	**50282**
S2**X** 80 P MP	R 32	415A	**50283**
S2**X** 80 P MP	R 42	545A	**50284**
S2**X** 80 P MP	R 52	680A	**50285**
S2**X** 80 P MP	R 63	820A	**50286**
S2**X** 80 P MP	R 80	1040A	**50287**

Order codes

SACE Isomax S3 circuit-breaker for motor protection

F = FIXED

S3N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**N** 160 F **F**	R 3	12 ... 36A	**47782**
S3**N** 160 F **F**	R 5	20 ... 60A	**47783**
S3**N** 160 F **F**	R 10	40 ... 120A	**47784**
S3**N** 160 F **F**	R 25	100 ... 300A	**47785**
S3**N** 160 F **F**	R 50	200 ... 600A	**47786**
S3**N** 160 F **F**	R 100	400 ... 1200A	**47787**
S3**N** 160 F **F**	R 125	500 ... 1500A	**47788**
S3**N** 160 F **F**	R 160	640 ... 1600A	**47789**

S3H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**H** 160 F **F**	R 50	200 ... 600A	**45185**
S3**H** 160 F **F**	R 100	400 ... 1200A	**45186**
S3**H** 160 F **F**	R 125	500 ... 1500A	**45187**
S3**H** 160 F **F**	R 160	640 ... 1600A	**45188**

S3L 160 Iu (40 °C) = 160 A Icu (415 V) = 85 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**L** 160 F **F**	R 50	200 ... 600A	**50544**
S3**L** 160 F **F**	R 100	400 ... 1200A	**50545**
S3**L** 160 F **F**	R 125	500 ... 1500A	**50546**
S3**L** 160 F **F**	R 160	640 ... 1600A	**50547**

S3N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**N** 250 F **F**	R 160	640 ... 1920A	**48651**
S3**N** 250 F **F**	R 200	800 ... 2400A	**48654**

S3H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**H** 250 F **F**	R 160	640 ... 1920A	**48657**
S3**H** 250 F **F**	R 200	800 ... 2400A	**48658**

S3L 250 Iu (40 °C) = 250 A Icu (415 V) = 85 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**L** 250 F **F**	R 160	640 ... 1920A	**50548**
S3**L** 250 F **F**	R 200	800 ... 2400A	**50549**

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.

Order codes

SACE Isomax S4 circuit-breaker for motor protection

F = FIXED

S4N 160 Iu (40 °C) = 160 A Icu (415 V) = 35 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**N** 160 F **F**	In = 100A	LRIU	**50139**
S4**N** 160 F **F**	In = 160A	LRIU	**50140**

S4H 160 Iu (40 °C) = 160 A Icu (415 V) = 65 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**H** 160 F **F**	In = 100A	LRIU	**45049**
S4**H** 160 F **F**	In = 160A	LRIU	**45050**

S4L 160 Iu (40 °C) = 160 A Icu (415 V) = 100 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**L** 160 F **F**	In = 100A	LRIU	**50550**
S4**L** 160 F **F**	In = 160A	LRIU	**50551**

S4N 250 Iu (40 °C) = 250 A Icu (415 V) = 35 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**N** 250 F **F**	In = 200A	LRIU	**50141**

S4H 250 Iu (40 °C) = 250 A Icu (415 V) = 65 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**H** 250 F **F**	In = 200A	LRIU	**48662**

S4L 250 Iu (40 °C) = 250 A Icu (415 V) = 100 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**L** 250 F **F**	In = 200A	LRIU	**50552**

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.

Order codes

SACE Isomax S5-S6-S7 circuit-breakers for motor protection

F = FIXED

S5N 400 Iu (40 °C) = 400 A Icu (415 V) = 35 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S5**N** 400 F **F**	In = 320A	LRIU	**50142**

S5H 400 Iu (40 °C) = 400 A Icu (415 V) = 65 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S5**H** 400 F **F**	In = 320A	LRIU	**45051**

S5L 400 Iu (40 °C) = 400 A Icu (415 V) = 100 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S5**L** 400 F **F**	In = 320A	LRIU	**50553**

S6N 800 Iu (40 °C) = 800 A Icu (415 V) = 35 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S6**N** 800 F **F**	In = 630A	LRIU	**50143**

S6H 800 Iu (40 °C) = 800 A Icu (415 V) = 65 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S6**H** 800 F **F**	In = 630A	LRIU	**45052**

S6L 800 Iu (40 °C) = 800 A Icu (415 V) = 100 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S6**L** 800 F **F**	In = 630A	LRIU	**50554**

S7S 1250 Iu (40 °C) = 1250 A Icu (415 V) = 50 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S7**S** 1250 F **F**	In = 1000A	LRIU	**50144**

S7H 1250 Iu (40 °C) = 1250 A Icu (415 V) = 65 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 **3 poles**
F = Front terminals			
S7**H** 1250 F **F**	In = 1000A	LRIU	**45053**

Note

Withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.

Order codes

SACE Isomax S3X-S4X-S6X current-limiting circuit-breakers for motor protection

F = FIXED

S3X 125 Iu (40 °C) = 125 A Icu (415 V) = 200 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**X** 125 F **F**	R 25	100 ... 300A	**45387**
S3**X** 125 F **F**	R 50	200 ... 600A	**45388**
S3**X** 125 F **F**	R 100	400 ... 1200A	**45389**
S3**X** 125 F **F**	R 125	500 ... 1500A	**45390**

S3X 200 Iu (40 °C) = 200 A Icu (415 V) = 200 kA

Magnetic only release		I_m	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S3**X** 200 F **F**	R 125	500 ... 1500A	**46135**
S3**X** 200 F **F**	R 160	640 ... 1920A	**48659**
S3**X** 200 F **F**	R 200	800 ... 2400A	**48660**

S4X 250 Iu (40 °C) = 250 A Icu (415 V) = 200 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S4**X** 250 F **F**	In = 100A	LRIU	**46590**
S4**X** 250 F **F**	In = 160A	LRIU	**46591**
S4**X** 250 F **F**	In = 200A	LRIU	**48661**

S6X 400 Iu (40 °C) = 400 A Icu (415 V) = 200 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S6**X** 400 F **F**	In = 320A	LRIU	**47780**

S6X 630 Iu (40 °C) = 630 A Icu (415 V) = 200 kA

Microprocessor-based release		PR212 MP	code 1SDA0 . . . . . R1 3 poles
F = Front terminals			
S6**X** 630 F **F**	In = 400A	LRIU	**47781**
S6**X** 630 F **F**	In = 630A	LRIU	**48663**

Note

Plug-in and withdrawable version are taken from the corresponding fixed version by means of the conversion kits indicated on page 80.

Order codes

SACE Isomax S circuit-breakers for applications up to 1000V

F = FIXED

S3L 160 Iu (40 °C) = 160 A Icu (1000 V) = 6 kA

Thermomagnetic release			AC ~	code 1SDA0 . . . . . R1 3 poles
F = Front terminals				
S3**L** 160 F **F**	R 32	Im	500A	**50436**
S3**L** 160 F **F**	R 50	Im	500A	**50437**
S3**L** 160 F **F**	R 80	Im	800A	**50438**
S3**L** 160 F **F**	R 100	Im	1000A	**50439**
S3**L** 160 F **F**	R 125	Im	1250A	**50441**
S3**L** 160 F **F**	R 160	Im	1600A	**50442**

S3L 160 Iu (40 °C) = 160 A Icu (1000 V) = 40 kA

Thermomagnetic release			DC –	code 1SDA0 . . . . . R1 4 poles
F = Front terminals				
S3**L** 160 F **F** (N100%)	R 32	Im	500A	**50443**
S3**L** 160 F **F** (N100%)	R 50	Im	500A	**50444**
S3**L** 160 F **F** (N100%)	R 80	Im	800A	**50445**
S3**L** 160 F **F** (N100%)	R 100	Im	1000A	**50446**
S3**L** 160 F **F** (N100%)	R 125	Im	1250A	**50447**
S3**L** 160 F **F** (N100%)	R 160	Im	1600A	**50448**

S3L 250 Iu (40 °C) = 250 A Icu (1000 V) = 40 kA

Thermomagnetic release			DC –	code 1SDA0 . . . . . R1 4 poles
F = Front terminals				
S3**L** 250 F **F** (N100%)	R 200	Im	2000A	**50449**
S3**L** 250 F **F** (N100%)	R 250	Im	2500A	**50450**

S3X 125 Iu (40 °C) = 125 A Icu (1000 V)= 30 kA

Thermomagnetic release			AC ~	code 1SDA0 . . . . . R1 3 poles
F = Front terminals				
S3**X** 125 F **F**	R 32	Im	500A	**50451**
S3**X** 160 F **F**	R 50	Im	500A	**50452**
S3**X** 160 F **F**	R 80	Im	800A	**50453**
S3**X** 160 F **F**	R 100	Im	1000A	**50454**
S3**X** 160 F **F**	R 125	Im	1250A	**50455**

S4L 160 Iu (40 °C) = 160 A Icu (1000 V) = 8 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
F = Front terminals					
S4**L** 160 F **F**	In 100 A	LI	**50547**	LSI	**50458**
				LSIG	**50459**

S4L 250 Iu (40 °C) = 250 A Icu (1000 V) = 8 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
F = Front terminals					
S4**L** 250 F **F**	In 250 A	LI	**50460**	LSI	**50461**
				LSIG	**50462**

S4X 250 Iu (40 °C) = 250 A Icu (1000 V) = 30 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
F = Front terminals					
S4**X** 250 F **F**	In 250 A	LI	**50463**	LSI	**50464**
				LSIG	**50465**

Order codes

SACE Isomax S circuit-breakers for applications up to 1000V

F = FIXED

S5L 400 Iu (40 °C) = 400 A Icu (1000 V) = 40 kA

Thermomagnetic release			DC –	code 1SDA0 . . . . . R1 4 poles
F = Front terminals				
S5**L** 400 F **F** (N100%)	R 400		Im 4000A	**50466**

S6L 630 Iu (40 °C) = 630 A Icu (1000 V) = 40 kA

Thermomagnetic release			DC –	code 1SDA0 . . . . . R1 4 poles
F = Front terminals				
S6**L** 630 F **F** (N100%)	R 630		Im 6300A	**50467**

S6L 800 Iu (40 °C) = 800 A Icu (1000 V) = 50 kA

Thermomagnetic release			DC –	code 1SDA0 . . . . . R1 4 poles
F = Front terminals				
S6**L** 800 F **F** (N100%)	R 800		Im 8000A	**50468**

S5L 400 Iu (40 °C) = 400 A Icu (1000 V) = 8 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
S5**L** 400 F **F**	In 400 A	LI	**50582**	LSI	**50583**
				LSIG	**50584**

S6L 630 Iu (40 °C) = 630 A Icu (1000 V) = 12 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
S6**L** 630 F **F**	In 630 A	LI	**50469**	LSI	**50470**
				LSIG	**50471**

S6L 800 Iu (40 °C) = 800 A Icu (1000 V) = 12 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
F = Front terminals					
S6**L** 800 F **F**	In 800 A	LI	**50534**	LSI	**50535**
				LSIG	**50536**

S6X 630 Iu (40 °C) = 630 A Icu (1000 V) = 30 kA

Microprocessor-based release		PR211 P	code 1SDA0 . . . . . R1 3 poles	PR212 P	code 1SDA0 . . . . . R1 3 poles
F = Front terminals					
S4**X** 630 F **F**	In 630 A	LI	**50472**	LSI	**50473**
				LSIG	**50474**

S3D/S6D/S7D Iu (40 °C) = 320/800/1600 A

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles
F = Front terminals	
S3**D** 320 F **F**	**50446**
S6**D** 800 F **F**	**50475**
S7**D** 1600 F **F**	**50479**

Order codes

SACE Isomax S2D switch-disconnectors

F = FIXED

S2D 125 Iu (40 °C) = 125 A Icw (1s) = 2.2 kA Icm (415 V) = 3.1 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	 4 poles
FC Cu = Front terminals for copper cables		
S2**D** 125 F **FC Cu**	**45057**	**45063**
FC CuAl = Front terminals for copper/aluminium cables		
S2**D** 125 F **FC CuAl***	**45058**	**45064**
S2**D** 125 F **FC CuAl****	**45059**	**45065**
EF = Extended front terminals		
S2**D** 125 F **EF**	**45056**	**45062**
R = Threaded rear terminals		
S2**D** 125 F **R**	**45060**	**45066**

S2D 160 Iu (40 °C) = 160 A Icw (1s) = 2.2 kA Icm (415 V) = 3.1 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	 4 poles
FC Cu = Front terminals for copper cables		
S2**D** 160 F **FC Cu**	**20632**	**45071**
FC CuAl = Front terminals for copper/aluminium cables		
S2**D** 160 F **FC CuAl***	**45068**	**45072**
S2**D** 160 F **FC CuAl****	**20633**	**45074**
EF = Extended front terminals		
S2**D** 160 F **EF**	**20630**	**45070**
R = Threaded rear terminals		
S2**D** 160 F **R**	**20634**	**45073**

P = PLUG-IN

Moving part

S2D 125 Iu (40 °C) = 125 A Icw (1s) = 2.2 kA Icm (415 V) = 3.1 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	 4 poles
S2**D** 125 P MP	**45061**	**45067**

S2D 160 Iu (40 °C) = 160 A Icw (1s) = 2.2 kA Icm (415 V) = 3.1 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	 4 poles
S2**D** 160 P MP	**45069**	**45075**

* Cable section = 1 x 2.5...50 mm^2

** Cable section = 1 x 35...95 mm^2

Order codes

SACE Isomax S3D switch-disconnectors

F = FIXED

S3D 100 Iu (40 °C) = 100 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S3D 100 F **F**	**20906**	**20907**
EF = Extended front terminals		
S3D 100 F **EF**	**20329**	**20354**
FC Cu = Front terminals for copper cables		
S3D 100 F **FC Cu**	**20335**	**20360**
FC CuAl = Front terminals for copper/aluminium cables		
S3D 100 F **FC** CuAl	**20341**	**20366**
R = Threaded rear terminals		
S3D 100 F **R**	**20353**	**20378**
RC = Rear terminals for cables		
S3D 100 F **RC**	**20347**	**20372**

S3D 160 Iu (40 °C) = 160 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S3D 160 F **F**	**20908**	**20909**
EF = Extended front terminals		
S3D 160 F **EF**	**20383**	**20408**
FC Cu = Front terminals for copper cables		
S3D 160 F **FC Cu**	**20389**	**20414**
FC CuAl = Front terminals for copper/aluminium cables		
S3D 160 F **FC** CuAl	**20395**	**20420**
R = Threaded rear terminals		
S3D 160 F **R**	**20407**	**20432**
RC = Rear terminals for cables		
S3D 160 F **RC**	**20401**	**20426**

P = PLUG-IN

S3D 100 Iu (40 °C) = 100 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 100 P MP	**20379**	**20381**

S3D 160 Iu (40 °C) = 160 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 160 P MP	**20433**	**20435**

W = WITHDRAWABLE

S3D 100 Iu (40 °C) = 100 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 100 W MP	**20380**	**20382**

S3D 160 Iu (40 °C) = 160 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 160 W MP	**20434**	**20436**

Order codes

SACE Isomax S3D switch-disconnectors

F = FIXED

S3D 250 Iu (40 °C) = 250 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S3D 250 F **F**	**20910**	**20911**
EF = Extended front terminals		
S3D 250 F **EF**	**20437**	**20462**
FC Cu = Front terminals for copper cables		
S3D 250 F **FC Cu**	**20443**	**20468**
FC CuAl = Front terminals for copper/aluminium cables		
S3D 250 F **FC** CuAl	**20449**	**20474**
R = Threaded rear terminals		
S3D 250 F **R**	**20461**	**20486**
RC = Rear terminals for cables		
S3D 250 F **RC**	**20455**	**20480**

S3D 320 Iu (40 °C) = 320 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S3D 320 F **F**	**20912**	**20913**
EF = Extended front terminals		
S3D 320 F **EF**	**20491**	**20516**
FC Cu = Front terminals for copper cables		
S3D 320 F **FC Cu**	**20497**	**20522**
FC CuAl = Front terminals for copper/aluminium cables		
S3D 320 F **FC** CuAl	**20503**	**20528**
R = Threaded rear terminals		
S3D 320 F **R**	**20515**	**20540**
RC = Rear terminals for cables		
S3D 320 F **RC**	**20509**	**20534**

P = PLUG-IN

S3D 250 Iu (40 °C) = 250 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 250 P MP	**20487**	**20489**

S3D 320 Iu (40 °C) = 320 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 320 P MP	**20541**	**20543**

W = WITHDRAWABLE

S3D 250 Iu (40 °C) = 250 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 250 W MP	**20488**	**20490**

S3D 320 Iu (40 °C) = 320 A Icw (1s) = 6.5 kA Icm (415 V) = 10 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S3D 320 W MP	**20542**	**20544**

Order codes

SACE Isomax S6D switch-disconnectors

F = FIXED

S6D 400 Iu (40 °C) = 400 A Icw (1s) = 15 kA Icm (415 V) = 30 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S6D 400 F **F**	**20545**	**20581**
EF = Extended front terminals		
S6D 400 F **EF**	**20552**	**20588**
FC CuAl = Front terminals for copper/aluminium cables		
S6D 400 F **FC** CuAl	**20566**	**20601**
R = Threaded rear terminals		
S6D 400 F **R**	**20573**	**20608**
RC = Rear terminals for cables		
S6D 400 F **RC**	**23326**	**23327**

S6D 630 Iu (40 °C) = 630 A Icw (1s) = 15 kA Icm (415 V) = 30 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S6D 630 F **F**	**20674**	**20699**
EF = Extended front terminals		
S6D 630 F **EF**	**20680**	**20705**
FC CuAl = Front terminals for copper/aluminium cables		
S6D 630 F **FC** CuAl	**20686**	**20711**
R = Threaded rear terminals		
S6D 630 F **R**	**20698**	**20723**
RC = Rear terminals for cables		
S6D 630 F **RC**	**20692**	**20717**

S6D 800 Iu (40 °C) = 800 A Icw (1s) = 15 kA Icm (415 V) = 30 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S6D 800 F **F**	**20724**	**20749**
EF = Extended front terminals		
S6D 800 F **EF**	**20730**	**20755**
FC CuAl = Front terminals for copper/aluminium cables		
S6D 800 F **FC** CuAl	**20736**	**20761**
R = Threaded rear terminals		
S6D 800 F **R**	**20748**	**20773**
RC = Rear terminals for cables		
S6D 800 F **RC**	**20742**	**20767**

W = WITHDRAWABLE

S6D 400 Iu (40 °C) = 400 A Icw (1s) = 15 kA Icm (415 V) = 30 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S6D 400 W MP	**20617**	**20619**

S6D 630 Iu (40 °C) = 630 A Icw (1s) = 15 kA Icm (415 V) = 30 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S6D 630 W MP	**20918**	**20919**

S6D 800 Iu (40 °C) = 800 A Icw (1s) = 15 kA Icm (415 V) = 30 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S6D 800 W MP	**20920**	**20921**

Order codes

SACE Isomax S7D switch-disconnectors

F = FIXED

S7D 1000 Iu (40 °C) = 1000 A Icw (1s) = 25 kA Icm (415 V) = 52.5 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S7D 1000 F **F**	**20774**	**20799**
EF = Extended front terminals		
S7D 1000 F **EF**	**20780**	**20805**
FC CuAl = Front terminals for copper/aluminium cables		
S7D 1000 F **FC** CuAl	**20786**	**20811**
VR = Vertical flat-bar rear terminals		
S7D 1000 F **VR**	**20798**	**20823**
HR = Horizontal flat-bar rear terminals		
S7D 1000 F **HR**	**20792**	**20817**

S7D 1250 Iu (40 °C) = 1250 A Icw (1s) = 25 kA Icm (415 V) = 52.5 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S7D 1250 F **F**	**20824**	**20849**
EF = Extended front terminals		
S7D 1250 F **EF**	**20830**	**20855**
FC CuAl = Front terminals for copper/aluminium cables		
S7D 1250 F **FC** CuAl	**20836**	**20861**
VR = Vertical flat-bar rear terminals		
S7D 1250 F **VR**	**20848**	**20873**
HR = Horizontal flat-bar rear terminals		
S7D 1250 F **HR**	**20842**	**20867**

S7D 1600 Iu (40 °C) = 1600 A Icw (1s) = 25 kA Icm (415 V) = 52.5 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S7D 1600 F **F**	**20874**	**20890**
EF = Extended front terminals		
S7D 1600 F **EF**	**20879**	**20895**
VR = Vertical flat-bar rear terminals		
S7D 1600 F **VR**	**20889**	
HR = Horizontal flat-bar rear terminals		
S7D 1600 F **HR**	**20884**	**20900**

W = WITHDRAWABLE

S7D 1000 Iu (40 °C) = 1000 A Icw (1s) = 25 kA Icm (415 V) = 52.5 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S7D 1000 W MP	**20922**	**20923**

S7D 1250 Iu (40 °C) = 1250 A Icw (1s) = 25 kA Icm (415 V) = 52.5 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S7D 630 W MP	**20924**	**20925**

S7D 1600 Iu (40 °C) = 1600 A Icw (1s) = 25 kA Icm (415 V) = 52.5 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
S7D 1600 W MP	**20926**	**20927**

Order codes

SACE Isomax S8D switch-disconnectors

F = FIXED

S8D 2000 Iu (40 °C) = 2000 A Icw (1s) = 40 kA Icm (415 V) = 85 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S8D 2000 F **F**	**45158**	**45159**
VR = Vertical flat-bar rear terminals		
S8D 2000 F **VR**	**45160**	**45161**

S8D 2500 Iu (40 °C) = 2500 A Icw (1s) = 40 kA Icm (415 V) = 85 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
F = Front terminals		
S8D 2500 F **F**	**45162**	**45163**
VR = Vertical flat-bar rear terminals		
S8D 2500 F **VR**	**45164**	**45165**

S8D 3200 Iu (40 °C) = 3200 A Icw (1s) = 40 kA Icm (415 V) = 85 kA

Switch-disconnector	code 1SDA0 . . . . . R1 3 poles	4 poles
VR = Vertical flat-bar rear terminals		
S8D 3200 F **VR**	**45167**	**45166**

Order codes

SACE Isomax S accessories

Duty releases

Shunt opening releases

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5	S6-S7	S8
24...30 V AC	**13311**			
48 V AC - 60 V DC	**13306**			
110...130 V AC	**13312**			
220...250 V AC	**13313**			
380...400 V AC	**13314**			
12 V DC	**50581**			
24 V DC	**13304**			
48 V DC	**13305**			
110 V DC	**13307**			
220 V DC	**13309**			
250 V DC	**13310**			
12 V DC		**23403**	**23404**	
24 V AC / DC		**13781**	**14136**	
48 V AC / DC		**13782**	**14137**	
60 V AC / DC			**23406**	
60 V AC / 60 ... 72 V DC		**23405**		
110...120 V AC - 110...125 V DC		**13783**	**14138**	
220...240 V AC - 220...250 V DC		**13785**	**14140**	
380...400 V AC		**13786**	**14141**	
480 V AC		**37512**	**37514**	
24 V DC				**50685**
30 V DC - 24 V AC				**46602**
48 V AC / DC				**46600**
60 V DC				**46603**
100...127 V DC / AC				**47564**
127...150 V AC				**46605**
160 V DC / 150...180 V AC				**47565**
200...250 V DC / 200...255 V AC				**46607**
380...500 V AC				**46608**

Shunt closing releases

Type	code 1SDA0 . . . . . R1	
		S8
24 V AC 50 Hz		**46636**
30 V AC 50 Hz		**46643**
48 V AC 50 Hz		**46637**
60 V AC 50 Hz		**46638**
127 ...130 V AC 50 Hz		**46646**
220 V AC 50 Hz		**46633**
500 V AC 50 Hz		**46644**
24 V AC 60 Hz		**46649**
120 V AC 60 Hz		**46647**
208 ...220 V AC 60 Hz		**46641**
240 V AC 60 Hz		**46648**
380 V AC 60 Hz		**46645**
100 V AC 50 Hz - 110 ...115 V AC 60 Hz		**46639**
110 ...115 V AC 50 Hz - 125 ...127 V AC 60 Hz		**46634**
230 ...240 V AC 50 Hz - 277 V AC 60 Hz		**46640**
380 ...400 V AC 50 Hz - 440 V AC 60 Hz		**46635**
415 ...440 V AC 50 Hz - 480 V AC 60 Hz		**46642**
24 V DC		**46650**
30 V DC		**46655**
48 V DC		**46651**
60 V DC		**46656**
110...125 V DC		**46652**
220...250 V DC		**46653**
310 V DC		**46654**

Order codes

SACE Isomax S accessories

Undervoltage releases

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5	S6-S7	S8
24 V AC 50 Hz	**23401**			**46613**
30 V AC 50 Hz				**46620**
48 V AC 50 Hz	**23402**			**46614**
60 V AC 50 Hz				**46615**
110 V AC 50 Hz	**13319**			
127 ...130 V AC 50 Hz				**46623**
220 V AC 50 Hz	**13320**			**46609**
500 V AC 50 Hz				**46621**
100 V AC 50 Hz - 110 ...115 V AC 60 Hz				**46616**
110 ...115 V AC 50 Hz - 125 ...127 V AC 60 Hz				**46611**
230 ...240 V AC 50 Hz - 277 V AC 60 Hz				**46617**
380 V AC 50 Hz - 380 ...440 V AC 60 Hz	**13321**			
380 ...400 V AC 50 Hz - 440 V AC 60 Hz				**46612**
415 ...440 V AC 50 Hz - 480 V AC 60 Hz				**46619**
24 V AC		**13842**	**14188**	
48 V AC		**13843**	**14189**	
60 V AC		**23346**	**23347**	
110 V AC 60 Hz	**45046**			
110 ...127 V AC		**13844**	**14190**	
120 V AC 60 Hz				**46624**
208 ...220 V AC 60 Hz				**46618**
220 ...250 V AC		**13846**	**14192**	
240 V AC 60 Hz				**46625**
380 V AC 60 Hz				**46622**
380 ...440 V AC		**13847**	**14193**	
480 V AC		**37513**	**37515**	
24 V DC	**13315**	**13833**	**14179**	**46626**
30 V DC				**46631**
48 V DC	**13316**	**13835**	**14181**	**46627**
60 V DC	**45045**	**13836**	**14182**	**46632**
110 V DC	**13317**			
110...125 V DC		**13838**	**14184**	**46628**
220 V DC	**13318**			
220...250 V DC		**13839**	**14185**	**46629**

Undervoltage releases + time-lag device

Type	code 1SDA0 . . . . . R1		
	S3-S4-S5	S6-S7	S8
110 - 220 V AC	**13840**	**14186**	
24 V AC/DC			**50737**
30 V AC/DC			**50738**
48 V AC/DC			**50739**
60 V AC/DC			**50740**
110/125 V AC/DC			**50741**
220/250 V AC/DC			**50742**

Connectors for duty releases

Type	code 1SDA0 . . . . . R1		
	S1-S2	S3-S4-S5-S6	S7
for fixed circuit-breakers - L=1m		**13865**	
for fixed circuit-breakers - L=2m		**37523**	
for fixed circuit-breakers - L=1m			**14209**
for fixed circuit-breakers - L=2m			**44752**
for plug-in or withdrawable circuit-breakers - L=1m		**13866**	
for withdrawable circuit-breakers - L=1m			**14210**
for withdrawable circuit-breakers - L=2m			**48949**
flying 9-pole socket-plug - L=0,6m	**13333**		
extension for testing auxiliary circuits with the circuit-breaker racked out		**25552**	**25552**

7

Electrical signalling

Auxiliary contacts

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5	S6-S7	S8
2 open/closed change-over contacts	**13328**	**13856**	**23366**	
1 open/closed change-over contacts and 1 release tripped signal	**13327**	**13575**	**23332**	
1 NO, 1 NC and 1 release not tripped signal			**25773**	
1 NO, 1 NC and 1 release tripped signal			**48956**	
3 open/closed change-over contacts				**47563**

Auxiliary contacts for digital signals

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5	S6-S7	S8
2 open/closed change-over contacts		**25544**	**25774**	
1 open/closed change-over contacts and 1 release tripped signal		**25545**	**25775**	
1 NO, 1 NC and 1 release not tripped signal			**25776**	

Early making contacts and connectors

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5-S6	S7	S8
early making contact and connector for undervoltage release		**25551**	**48106**	

Connectors for auxiliary contacts

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5-S6	S7	S8
for fixed circuit-breakers - L=1m		**13863**		
for fixed circuit-breakers - L=2m		**37522**		
for fixed circuit-breakers - L=1m			**14207**	
for fixed circuit-breakers - L=2m			**44751**	
for plug-in or withdrawable circuit-breakers - L=1m		**13864**		
for withdrawable circuit-breakers - L=1m			**14208**	
for withdrawable circuit-breakers - L=2m			**48947**	
flying 9-pole socket-plug - L=0,6m	**13329**			
extension for testing auxiliary circuits with the circuit-breaker racked out		**25553**	**25553**	

Signally contacts

Type	code 1SDA0 . . . . . R1	
		S8
contact for signalling closing springs charged		**47562**

Order codes

SACE Isomax S accessories

Motor operating mechanisms

Solenoid operator

Type	code 1SDA0 . . . . . R1 S1-S2
at the side of the circuit-breaker	
48 V DC	**48025**
60 V DC - 110 V AC	**48026**
110 V DC - 220...230 V AC	**48027**
220 V DC	**48028**
on the front of the circuit-breaker	
48 V DC	**48015**
60 V DC - 110 V AC	**48016**
110 V DC - 220...230 V AC	**48017**
220 V DC	**48018**

Direct action motor operating mechanism

Type	code 1SDA0 . . . . . R1 S3-S4-S5
24 V DC	**13873**
48...60 V DC	**13874**
100...127 V AC - 100...125 V DC	**13875**
220...240 V AC - 220...250 V DC	**13876**
380 V AC	**13877**
440 V AC	**14545**

Stored energy motor operating mechanism

Type	code 1SDA0 . . . . . R1 S6	S7
24 V DC	**14029**	**14214**
48 V DC	**14030**	**14215**
60 V DC	**23348**	**23350**
110 V AC / DC	**23349**	**23351**
120...127 V AC / DC	**14031**	**14216**
220...250 V AC / DC	**14032**	**14217**
380 V AC	**14033**	**14218**

Geared motor for automatic charging of closing springs

Type	code 1SDA0 . . . . . R1 S8
24/30 V DC	**47558**
48/60 V DC	**47559**
100...130 V DC	**47560**
220...250 V DC	**47561**

Connectors for motor operating mechanism and auxiliary contacts

Type	code 1SDA0 . . . . . R1 S1-S2	S3-S4-S5-S6	S7
for fixed circuit-breakers - L=1m		**13857**	
for fixed circuit-breakers - L=2m		**37524**	
for fixed circuit-breakers - L=1m			**14203**
for fixed circuit-breakers - L=2m			**44850**
for plug-in or withdrawable circuit-breakers - L=1m		**13858**	
for withdrawable circuit-breakers - L=1m			**14204**
for withdrawable circuit-breakers - L=2m			**48950**
flying 9-pole socket-plug - L=0,6m	**13329**		
extension for testing auxiliary circuits with the circuit-breaker racked out		**25554**	**25554**

7

Operating mechanism and locks

Direct-mounted rotary handle operating mechanism

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5	S6	S7
for fixed/plug-in circuit breakers		**13867**	**14026**	**14211**
for withdrawable circuit breakers		**13868**	**14027**	**14212**
emergency for fixed or plug-in circuit-breakers		**13870**	**46568**	**46570**

Rotary handle operating mechanism with transmission rod

Type	code 1SDA0 . . . . . R1			
	S1-S2	S3-S4-S5	S6	S7
compartment door, fixed depth for fixed or plug-in circuit-breakers (L= 119,5 mm)	**13326**			
compartment door, adjustable depth (L_{max}=300 mm) for fixed or plug-in		**13869**		
compartment door, adjustable depth (L_{max}=300 mm) for withdrawable		**50714**		
compartment door, adjustable depth (L_{max}=500 mm) for fixed			**14028**	**14213**
compartment door, adjustable depth (L_{max}=500 mm) for withdrawable			**50715**	**50716**
compartment door, emergency, fixed depth for fixed or plug-in circuit-breakers (Lmax= 119.5 mm)	**45054**			
compartment door, emergency, adjustable depth for fixed or plug-in circuit-breakers (Lmax= 300 mm)		**13871**		
compartment door, emergency, adjustable depth for fixed circuit-breakers (Lmax= 500 mm)			**46569**	**46572**
remote transmission rod with adj. depth (Lmax= 180 mm)	**25436**			
remote transmission rod with adj. depth (Lmax= 500 mm)	**45055**	**25427**		

Front flange

Type	code 1SDA0 . . . . . R1			
	S3...S5	S6	S7	S8
front flange for operating lever mechanism for fixed or plug-in	**13889**	**14035**	**14227**	
front flange for operating lever mechanism for withdrawable	**13890**	**14036**	**14228**	
flange for compartment door				**45023**

Key lock for open position

Type	code 1SDA0 . . . . . R1		
	S3...S5	S6-S7	S8
for motor operating mechanism - a different key for each cb.	**13883**	**13885**	
for motor operating mechanism - the same key for sets of cbs	**13884**	**13886**	
for motor operating mechanism against manual operation - the same key for each circuit-breaker		**36245**	
for front flange / rotary handle - a different key for each circuit-breaker	**13881**	**13881**	
for front flange / rotary handle - the same key for sets of circuit-breakers	**13882**	**13882**	
for front flange			**45024**
key lock type RONIS	**43514**	**43514**	

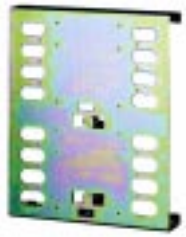
Locks

Type	Size	code 1SDA0 . . . . . R1
compartment door lock for front flange for locks /crank handle operating mechanism	S3-S4-S5-S6-S7	**13880**
padlock device for operating lever	S1-S2	**13332**
padlock device on the front of the circuit-breaker	S8	**45025**
tamper-proof lock for thermal release	S2	**36196**
tamper-proof lock for thermal release	S3	**25548**

Order codes

SACE Isomax S accessories

Mechanical interlock across two circuit-breakers



Type	code 1SDA0 . . . . . R1 horizontal	vertical
S3	**23330**	**23331**
S3X	**50524**	
S4	**13690**	**13691**
S4X	**50525**	
S5400/630	**43453**	**43454**
S6	**14024**	**14025**
S7	**14205**	**14206**
S3-S4-S5-S6-S7 (circuit-breaker/fixed part for interlocking)	**50093**	**50093**

Connection terminals

Type	code 1SDA0 . . . . . R1 3 pieces	4 pieces	6 pieces	8 pieces
EF=Extended front terminals				
S2			**25797**	**25798**
S3-S4	**23353**	**23359**	**13596**	**13597**
S5 400	**23367**	**23373**	**13706**	**13707**
S6 630	**23379**	**23389**	**13920**	**13921**
S6 800	**23383**	**23393**	**13954**	**13955**
S7	**23399**	**23396**	**14079**	**14080**
ES=Spreaded extended front terminals				
S3-S4	**46517**	**46518**	**46515**	**46516**
S5	**47551**	**47552**	**47549**	**47550**
S6 (1/2 upper kit)	**50692**	–	–	–
S6 (1/2 lower kit)	**50704**	–	–	–
S6	–	**50693**	**50688**	**50689**
S7 (1/2 upper kit)	**50694**	–	–	–
S7 (1/2 lowerkit)	**50705**	–	–	–
S7	–	**50695**	**50690**	**50691**
FC Cu=Front terminals for copper cables				
S3-S4	**23354**	**23360**	**13598**	**13599**
S5 400	**23368**	**23374**	**13708**	**13709**
S5 630	**38769**	**38770**	**38767**	**38768**
FC CuAl=Front terminals for copper/aluminium cables				
S2 (2,5-50 mm^2) (*)	**50526**	**50528**	**36194**	**36195**
S2 (35-95 mm^2) (*)	**50527**	**50530**	**25801**	**25802**
S3D 100	**23355**	**23361**	**13600**	**13601**
S3 160 - S4 160 (1x95 mm^2)	**23356**	**23362**	**13602**	**13603**
S3 250 - S4 250 (1x150 mm^2)	**23357**	**23363**	**20293**	**20294**
S5 400 (2x120 mm^2)	**25766**	**25765**	**23295**	**23296**
S5 400 (1x240 mm^2)	**23370**	**23376**	**13710**	**13711**
S6 630 (2x240 mm^2)	**23380**	**23390**	**13922**	**13923**
S6 800 (3x185 mm^2)	**23384**	**23394**	**13956**	**13957**
S7 1250 (4x240 mm^2)	**23387**	**23397**	**14081**	**14082**
R=Threaded rear terminals				
S1			**13268**	**13269**
S2			**13294**	**13295**
S3-S4	**23352**	**23365**	**13606**	**13607**
S5 400	**23372**	**23378**	**13714**	**13715**
S5 630	**38776**	**38777**	**38968**	**38775**
S6	**23382**	**23392**	**13960**	**13961**
R Res.Cur.=Threaded rear terminals for reasidual current-release mounted below				
S3		**25543**		
HR/VR=Horizontal or vertical flat-bar rear terminals				
S7	**23400**	**23398**	**14083**	**14084**
S8			**46578**	**46579**
RC = Rear terminals for copper/aluminium cables				
S3-S4 (1x120 mm^2)	**23358**	**23364**	**13604**	**13605**
S5 400 (1x240 mm^2)	**23371**	**23377**	**13712**	**13713**
S6 630 (2x150 mm^2)	**23381**	**23391**	**13924**	**13925**
S6 800 (3x240 mm^2)	**23385**	**23395**	**13958**	**13959**

(*) Order also the relevant EF extended front terminals

7

Order codes

SACE Isomax S accessories

Insulating terminal covers

Type	code 1SDA0 . . . . . R1 3 poles	4 poles
high for fixed		
S1	**13290**	**13291**
S2	**13340**	**13341**
S3-S4	**13695**	**13696**
S5	**13897**	**13898**
S6	**14040**	**14041**
low for fixed and for moving part of plug-in or withdrawable circuit-breakers		
S1	**13292**	**13293**
S2	**13342**	**13343**
S3-S4	**13693**	**13694**
S5	**13895**	**13896**
S6	**14038**	**14039**
S7	**23324**	**23325**

Screws for sealing terminal covers

Type	code 1SDA0 . . . . . R1
S1-S2	**13344**
S3-S4-S5-S6-S7	**13699**

Accessories for electronic releases

Type	Model	code 1SDA0 . . . . . R1
Signalling unit SACE PR010/K	S4-S5-S6-S7	**48965**
Signalling unit SACE PR212/K	S8	**45021**
Dialogue unit SACE PR212/D-M Modbus + actuator unit SACE PR212/T for SACE PR212/P (LSI - LSIG)	S4-S5-S6-S7	**50718**
Dialogue unit SACE PR212/D-M Modbus + actuator unit SACE PR212/T for SACE PR212/MP (LRIU)	S4-S5-S6-S7	**50719**
Dialogue unit SACE PR212/D-L Lon + actuator unit SACE PR212/T for SACE PR212/P (LSI - LSIG)	S4-S5-S6-S7	**50720**
Dialogue unit SACE PR212/D-L Lon + actuator unit SACE PR212/T for SACE PR212/MP (LRIU)	S4-S5-S6-S7	**50721**
Dialogue unit SACE PR212/D + Actuator unit SACE PR212/T	S8	**45020**
Test unit SACE TT1	S4-S5-S6-S7	**37121**
Test and configuration unit SACE PR010/T	S4-S5-S6-S7	**48964**
SACE PR212/CI contactor operating unit (with PR212/MP)	S4-S5-S6-S7	**50708**
Current transformer for neutral conductor outside circuit-breaker	S4 100	**37114**
Current transformer for neutral conductor outside circuit-breaker	S4 160	**37115**
Current transformer for neutral conductor outside circuit-breaker	S4 250	**37117**
Current transformer for neutral conductor outside circuit-breaker	S5 320	**37118**
Current transformer for neutral conductor outside circuit-breaker	S5 400	**37119**
Current transformer for neutral conductor outside circuit-breaker	S5 630	**37120**
Current transformer for neutral conductor outside circuit-breaker	S6 630	**25777**
Current transformer for neutral conductor outside circuit-breaker	S6 800	**25778**
Current transformer for neutral conductor outside circuit-breaker	S7 1000	**25779**
Current transformer for neutral conductor outside circuit-breaker	S7 1250	**25780**
Current transformer for neutral conductor outside circuit-breaker	S7 1600	**25781**
Current transformer for neutral conductor outside circuit-breaker	S8 1600	**45015**
Current transformer for neutral conductor outside circuit-breaker	S8 2000	**45016**
Current transformer for neutral conductor outside circuit-breaker	S8 2500	**45017**
Current transformer for neutral conductor outside circuit-breaker	S8 3200	**45018**
X3 connector for relay tripped signal and neutral protection for fixed circuit-breaker with PR211/P, PR212/P - LSI	S4-S5-S6-S7	**13702**
X3, X4 connectors for relay tripped signal and neutral protection for fixed circuit-breaker with PR212/P - LSIG	S4-S5-S6-S7	**13704**
X3 connector for relay tripped signal and neutral protection for plug-in or withdrawable circuit-breaker with PR211/P, PR212/P - LSI	S4-S5-S6-S7	**13703**
X3, X4 connectors for relay tripped signal and neutral protection for plug-in or withdrawable circuit-breaker with PR212/P - LSIG	S4-S5-S6-S7	**13705**
electrical/mechanical signalling and lock for PR212/P tripped	S8	**46581**

Order codes

SACE Isomax S accessories

Conversion kits

from fixed circuit-breaker to moving part of plug-in circuit-breaker

Type	code 1SDA0 . . . . . R1	
	3 poles	**4 poles**
S1	**13270**	**13271**
S2	**13296**	**13297**
S3-S4	**13608**	**13609**
S3X	**46519**	**46520**
S4X	**46511**	**46512**
S5 400	**13716**	**13717**

from fixed circuit-breaker to moving part of withdrawable circuit-breaker

Type	code 1SDA0 . . . . . R1	
	3 poles	**4 poles**
S3-S4	**13610**	**13611**
S3X	**46521**	**46522**
S4X	**46514**	**46513**
S5 400	**13718**	**13719**
S5 630	**38778**	**38779**
S6 630 / 800	**13962**	**13963**
S6X	**47619**	**47620**
S7	**23299**	**14087**

from plug-in circuit-breaker to withdrawable circuit-breaker

Type	Size	code 1SDA0 . . . . . R1
Guide for preparing the fixed part of a plug-in circuit-breaker for use as the fixed part of a withdrawable circuit-breaker	S3-S4	**13692**
Guide for preparing the fixed part of a plug-in circuit-breaker for use as the fixed part of a withdrawable circuit-breaker	S5	**13892**

Order codes

SACE Isomax S accessories

Fixed parts

Plug-in circuit-breaker

Type	code 1SDA0 . . . . . R1	
	3 poles	**4 poles**
EF = Extended front terminals		
S3 P FP **EF**	**13539**	**13548**
S4 P FP **EF**	**13612**	**13621**
S5 400 P FP **EF**	**13720**	**13729**
FC = Front terminals for copper cables		
S1 P FP **FC**	**13272**	**13274**
S2 P FP **FC**	**13298**	**13300**
S3 P FP **FC**	**13543**	**13550**
S4 P FP **FC**	**13616**	**13625**
S5 400 P FP **FC**	**13724**	**13733**
R = Threaded rear terminals		
S1 P FP **R**	**13273**	**13275**
S2 P FP **R**	**13299**	**13540**
S3 P FP **R**	**13547**	**13554**
S4 P FP **R**	**13620**	**13629**
S5 400 P FP **R**	**13728**	**13737**

Withdrawable circuit-breaker

Type	code 1SDA0 . . . . . R1	
	3 poles	**4 poles**
EF = Extended front terminals		
S3 W FP **EF**	**13555**	**13564**
S4 W FP **EF**	**13630**	**13639**
S5 400 W FP **EF**	**13738**	**13747**
S6 W FP **EF**	**13964**	**13973**
S7 W FP **EF**	**48951**	**14097**
ES = Spreaded extended front terminals		
S5 630 W FP **ES**	**38761**	**38762**
FC = Front terminals for copper cables		
S3 W FP **FC**	**13559**	**13568**
S4 W FP **FC**	**13634**	**13643**
S5 400 W FP **FC**	**13742**	**13751**
R = Threaded rear terminals		
S3 W FP **R**	**13563**	**13572**
S4 W FP **R**	**13638**	**13647**
S5 400 W FP **R**	**13746**	**13755**
S5 630 W FP **R**	**38763**	**38970**
VR = Vertical flat-bar rear terminals		
S5 630 W FP **VR**	**38971**	**38972**
S6 W FP **VR**	**13972**	**13981**
S7 W FP **VR**	**14096**	**14105**
HR = Horizontal flat-bar rear terminals		
S6 W FP **HR**	**13968**	**13977**
S7 W FP **HR**	**14092**	**14101**

Order codes

SACE Isomax S accessories

Accessories for fixed part of plug-in or withdrawable circuit-breakers

Terminals for the fixed parts of plug-in or withdrawable circuit-breakers

Type	code 1SDA0 . . . . . R1 3 poles	 4 poles
EF = Extended front terminals		
S3-S4	**13650**	**13651**
S5 400	**13759**	**13760**
S5 630	**38780**	**38781**
S6 (with terminals mounted below for S6X)	**13984**	**13985**
S7	**14108**	**14109**
FC Cu/Al = Front terminals for copper / aluminium cables		
S3-S4	**13652**	**13653**
S5 400	**13761**	**13762**
R = Threaded rear terminals		
S3-S4	**13654**	**13655**
S5 400	**13763**	**13764**
S5 630	**38969**	**38782**
HR = Horizontal flat-bar rear terminals		
S6	**13986**	**13987**
S7	**14110**	**14111**
VR = Vertical flat-bar rear terminals		
S5 630	**38763**	**38784**
S6	**13988**	**13989**
S7	**14112**	**14113**

Insulating covers for fixed parts

Type	code 1SDA0 . . . . . R1 3 poles	 4 poles
S3-S4	**13697**	**13698**
S5 400	**13899**	**13900**

Position contacts

Type	Model	code 1SDA0 . . . . . R1
contacts for signalling circuit-breaker racked out	S3-S4-S5-S6-S7	**13859**
contacts for signalling circuit-breaker racked out for digital signals	S3-S4-S5-S6-S7	**25546**
contacts for signalling circuit-breaker racked in	S3-S4-S5-S6-S7	**13860**
contacts for signalling circuit-breaker racked in for digital signals	S3-S4-S5-S6-S7	**25547**

Lock for fixed part of withdrawable circuit-breakers

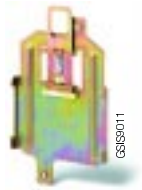
Type	Model	code 1SDA0 . . . . . R1
key lock for locking in racked in / out position - different key for each cb.	S3-S4-S5-S6-S7	**25434**
key lock for locking in racked in / out position - same key for sets of cb.	S3-S4-S5-S6-S7	**25435**
padlock device	S3-S4-S5-S6-S7	**13872**

Order codes

SACE Isomax S accessories

Installation accessories

Bracket for mounting on DIN rail



Type	Model	code 1SDA0 . . . . . R1
DIN EN 50022	S1	**23328**
DIN EN 50022	S2	**23329**
DIN EN 50022 (for solenoid operator)	S1	**48523**
DIN EN 50022 (for solenoid operator)	S2	**48524**
DIN EN 50023 (complete with DIN front flange H=45 mm)	S3 - 3 poles	**13576**
DIN EN 50023 (complete with DIN front flange H=45 mm)	S3 - 4 poles	**13577**
DIN EN 50023 (complete with DIN front flange H=45 mm)	S4 - 3 poles	**13700**
DIN EN 50023 (complete with DIN front flange H=45 mm)	S4 - 4 poles	**13701**
DIN EN 50023 (complete with DIN front flange H=45 mm)	S5 - 3 poles	**13901**
DIN EN 50023 (complete with DIN front flange H=45 mm)	S5 - 4 poles	**13902**

IP54 protection

Type	Model	code 1SDA0 . . . . . R1
for fixed-depth rotary handle operating mechanism on door	S1-S2	**13339**
for adjustable-depth rotary handle operating mechanism on door	S3-S4-S5-S6-S7	**13891**

Residual-current releases

SACE RC210, RC211, SACE RC212

Type	code 1SDA0 . . . . . R1 side by side	below
RC210/1 for S1 (In=63 A - IΔn=0,3 A)	**45076**	
RC210/1 for S1 (In=63 A - IΔn=0,5 A)	**45077**	
RC210/1 for S1 (In=63 A - IΔn=0,3 A)	**45079**	
RC210/1 for S1 (In=63 A - IΔn=0,5 A)	**45080**	
RC211/1 for S1	**13282**	**13283**
RC211/2 for S2	**13222**	**13323**
RC211/3 for S3	**20288**	**20289**
RC212/1 for S1	**13284**	**13285**
RC212/2 for S2	**13324**	**13325**
RC212/3 for S3	**20290**	**20291**

SACE RCQ

Type	code 1SDA0 . . . . . R1
release and closed toroid - diameter 60 mm	**37388**
release and closed toroid - diameter 110 mm	**37389**
release and closed toroid - diameter 185 mm	**50542**
release and opening toroid - diameter 110 mm	**37390**
release and opening toroid - diameter 180 mm	**37391**
release and opening toroid - diameter 230 mm	**37392**
release only	**37393**
closed toroid only - diameter 60 mm	**37394**
closed toroid only - diameter 110 mm	**37395**
closed toroid only - diameter 185 mm	**50543**
opening toroid only - diameter 110 mm	**37396**
opening toroid only - diameter 180 mm	**37397**
opening toroid only - diameter 230 mm	**37398**

Due to possible developments of standards as well as of materials, the characteristics and dimensions specified in the present catalogue may only be considered binding after confirmation by ABB SACE.

6O4050/012 en
Printed in Italy
Tipografia

ABB SACE S.p.A.
L.V. Breakers Division
Via Baioni, 35
24123 Bergamo - Italy
Tel.: +39 035.395.111 - Telefax: +39 035.395.306-433

http://www.abb.com