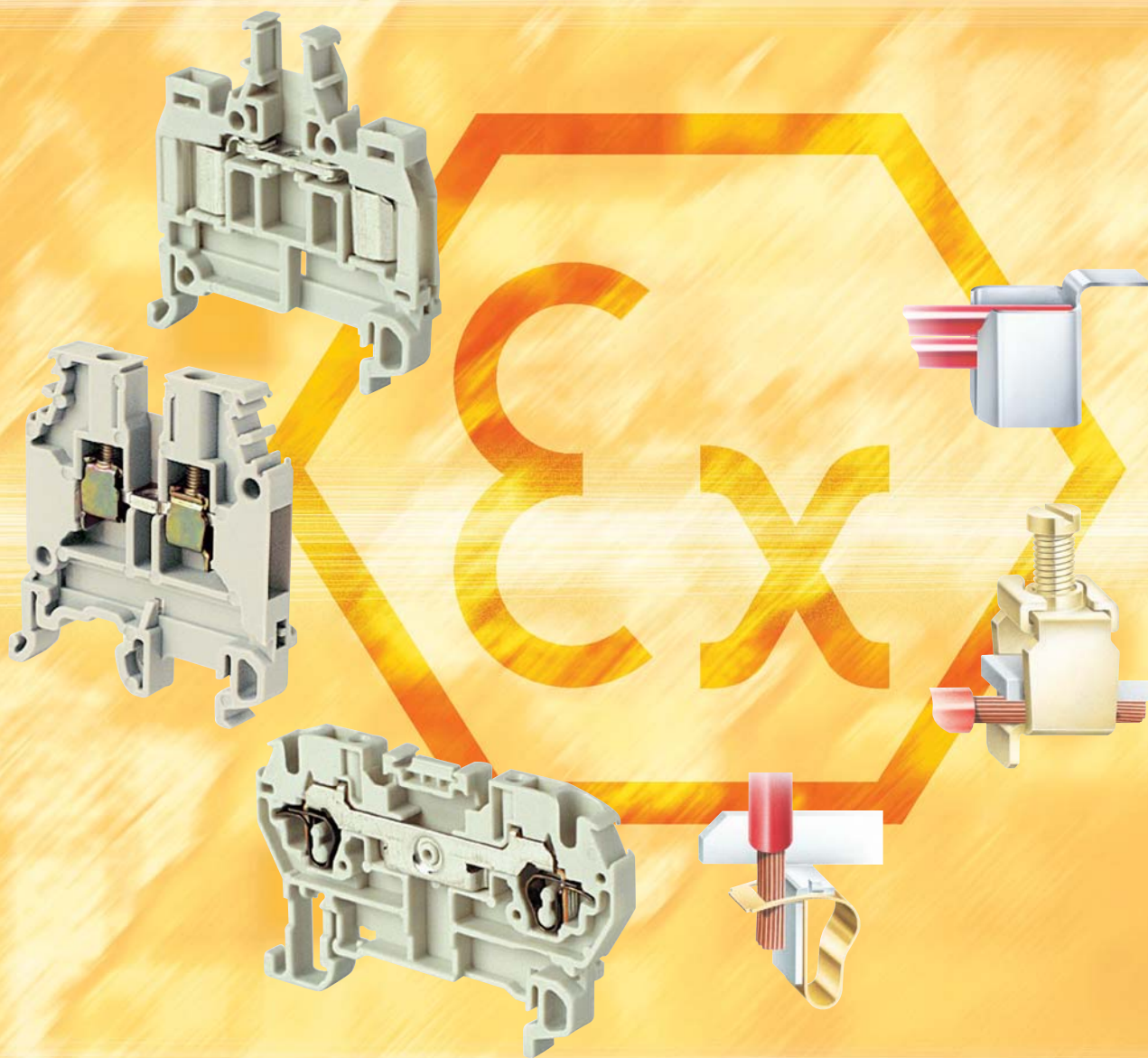


# Terminal blocks entrelec®

## Explosive atmospheres protection



# ABB Entrellec® : The best in connection

## Introducing the new ABB Entrellec® ATEX certified terminal block range



As one of the world leaders in connection technology and the world's leading supplier to the oil and gas transportation industry, ABB is pleased to introduce you to its dedicated terminal block range for safe use in explosive atmospheres.

The range is certified to the highest possible certification level of the new ATEX 94/9/EC European directive and offers maximized safety to offer you true security products.

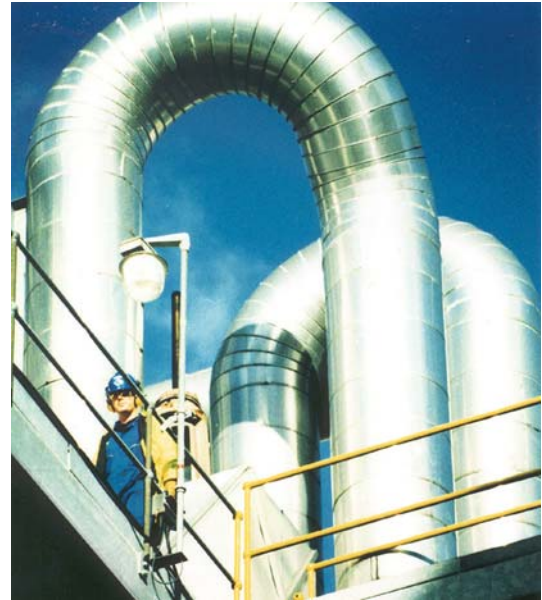
### Safe use and Applications



ABB's dedicated ATEX range is designed and certified for use in all industries with potentially explosive atmospheres caused by gas or dust inflammation such as: petrochemical industries, offshore installations, mines industries, flour mills, silos ... etc...

The following pages are meant to provide you with some basic information relative to the ATEX directive and protection methods particularly suitable for terminal blocks.

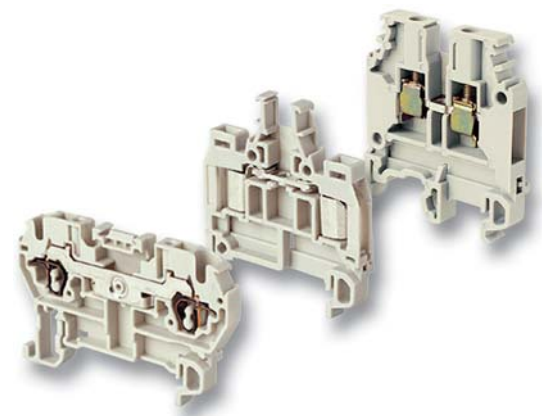
We insist on the increased demand for safety required by the ATEX directive and describe what has been the design and manufacturing choice of ABB to provide you with true security products.



### Comprehensive range

The ATEX terminal block range provides terminal blocks in the three main technologies: screw clamp, spring clamp and ADO system® in feed through (grey), neutral (blue) and ground versions. ABB ATEX terminal block range is available in V0 (per UL94) material.

As we are constantly extending our product portfolios, please do not hesitate to contact your local sales if you would like to request an ATEX certified terminal block not mentioned in these pages.



## **Atex generalities**

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## **Atex certified terminal blocks range**

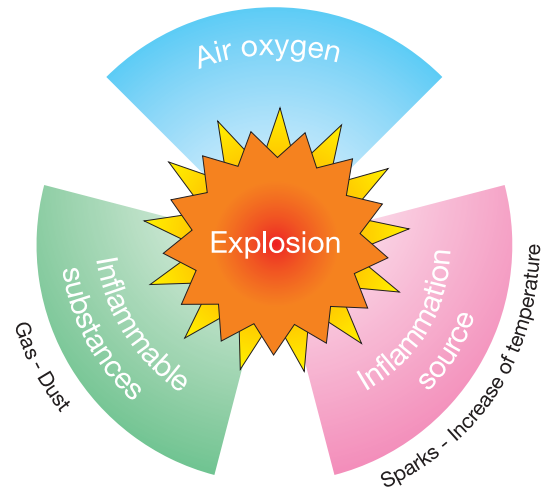
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# A. Explosive atmosphere

## Conditions

An explosion can occur if the following factors are combined:

- Presence of inflammable substances
- Presence of an ignition source or inflammation source: fire, flame, electrical or mechanical sparks, overheated surfaces, electrostatic discharges
- Oxygen



## Inflammable substances can be listed as follow :

Inflammable gas	Inflammable liquid	Inflammable dust
<ul style="list-style-type: none"> <li>- Liquid gas: butane, butene, propane, propylene</li> <li>- Smoke: carbon monoxide, methane.</li> <li>- Chemical gas substances : acetylene, acetylene oxide, vinyl chloride</li> </ul>	<ul style="list-style-type: none"> <li>- Solvents, fuel, oil, heating oil, painting, chemical substances</li> </ul>	<ul style="list-style-type: none"> <li>- Coal</li> <li>- Wood dust</li> <li>- Human and animal food products : sugar, flour, cereal</li> <li>- Plastic material</li> <li>- Metal</li> </ul>

### Ignition source:

Electrical energy may be dangerous if used close to an inflammable substance as it is considered as a potential source of ignition. Indeed, sparks, arcs or dangerous temperature levels are generated by the electrical energy.

### Protection:

Particular methods of protection have thus been investigated in order to allow the use of electrical equipment in hazardous areas.

## Concerned industries

The risk of explosion is particularly high in certain types of industries, which generate inflammable gas, inflammable liquid or inflammable dust. Indeed, the new ATEX directive now considers the explosion risk caused by dust.

We can list :

- Refineries,
- Petrochemical and chemical industries,
- Off shore installations,
- Mining industries,
- Human and food industries...





**The risk can be expressed as follow :**

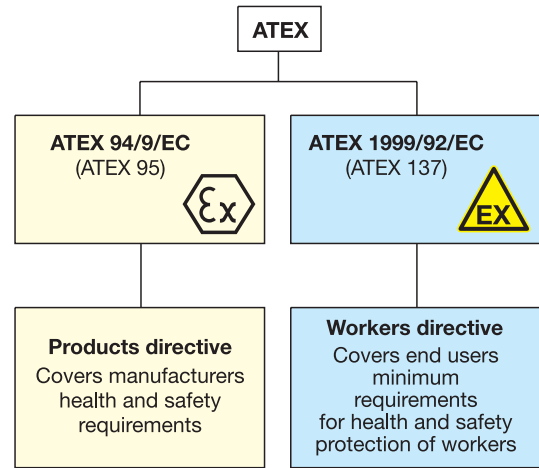
Industries	Risks
Refineries	Treatment of hydrocarbon highly inflammable
Petrochemical and chemical industries	Transformation and treatment processes which can generate explosive mixing
Pharmaceutical and cosmetic industries	Use of alcohol highly inflammable like solvents Use of active material or adjuvant which can create explosive dust
Waste and water recycling industries	Paper or plastic dust Storage of barrels or containers partially or not emptied Gas fermentation emission during water treatment
Painting facilities	Over spray formation during the lacquering of surfaces with spray gun
Gas distribution	Gas/ air mixing creation if gas leaking
Human and animal food industries	Transport and stocking of cereal, powder... which can create potentially dust explosive atmospheres in filters and aerators
Wood saw mills, metal machining	Metal dust generation during metal polishing which can create dust explosive atmospheres in collectors



## B. European explosion directives

ATEX European directive consists in two parts :

- ATEX 94/9/EC (generally called ATEX 95), which concentrates on the duties of the manufacturers.
- ATEX 1999/92/EC (generally called ATEX 137), which focuses on the end users obligations.



*Directive applicable to ABB  
Entrelec "terminal blocks"*

### The objectives of the directives

“Minimum requirements” is a key phrase of the directives - member states are free to introduce more stringent measures if they wish.

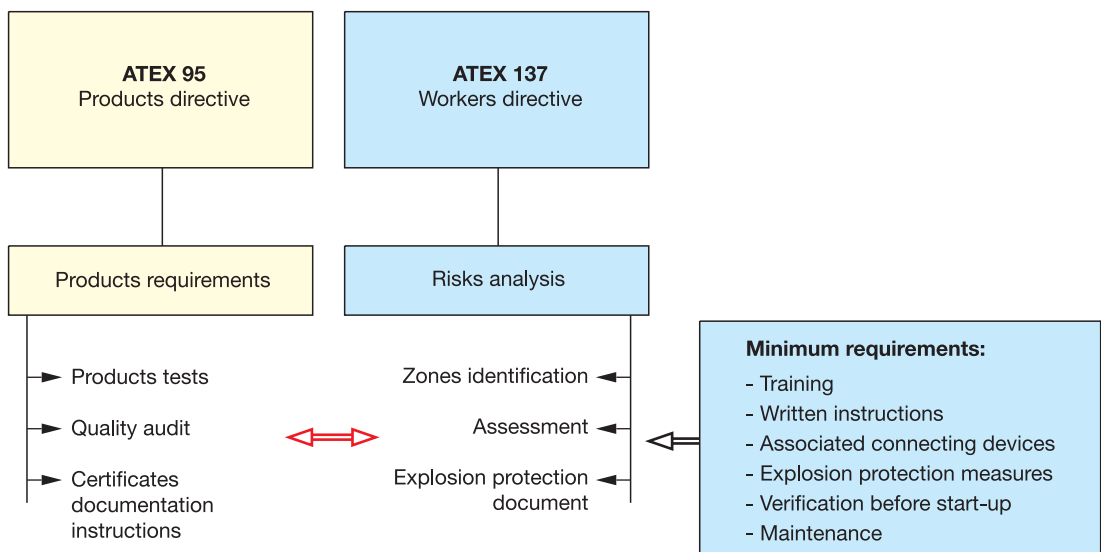
ATEX belongs to the group of the so-called “new approach” directives.

Under a new approach directive, any route towards achieving the objective is permitted.

The European commission will not interfere with how a technical solution is reached, but gives all parties involved the freedom to define the best means, methods and procedures to meet the guidelines.

This gives rise to a division of responsibilities between the equipment manufacturer and the end user.

The less responsibility the equipment manufacturer assumes for achieving the solution, the more the end user will have to take on, and vice versa.



## ATEX 95 : Equipments and components



The objective of the ATEX 95 directive is to reinforce safety aspects. It is more restricting than the former directive 76/117 EEC, as it does not only concentrate on the product but on the whole process.

The manufacturer's quality assurance is now audited through the relevant standard NF EN 13980 Potentially explosive atmospheres - Application of quality systems.

Extract of the EN 13980 §7.5.3: The manufacturer shall establish and maintain procedures for product identification during all the stages of production, testing, final inspection and placing on the market.

Traceability is required with respect to final product and its significant parts.

The "production quality assurance notification" is the highest assurance quality certification level achievable.

- ATEX products are considered as safety devices: the entire process from the design to the installation must be strictly controlled.
- Product and company quality assessment which allow design, manufacturing and sales.
- Requirements in terms of organization for designing, manufacturing and selling.

### ABB commitments versus ATEX 95

- Terminal blocks are **unitary** controlled - unitary dielectric control on finished product
- **Maximized security** is guaranteed through dedicated manufacturing processes, dedicated manufacturing sites and dedicated inventory locations .
- **Reinforced traceability** for accurate identification of the ATEX customers through dedicated part numbers for the ATEX range and batch number registration.

### Dates of enforcement

#### ATEX 95 : Equipment and components

- From July 1st 2003, equipment, protection systems and electrical components used in potentially explosive atmospheres must comply with the European directive ATEX 94/9/EC (ATEX 95).

ATEX 95 abrogates the directive 76/117/EC and becomes mandatory for all new equipment installed after 06/30/03.

Former Ex products, already in stock, can still be installed if they are to replace used parts in already active installations.

## ATEX 137 : Installations



The addition of the new "workers directive ATEX 137" reinforces the safety level even further.

- Risk analysis : requires that the employers draw up evidence of risk analysis for their site.
- Area classification : area classification into zones and site inspections must be carried out where potentially explosive atmospheres may develop.
- Explosion protection document : Information such as written instructions, training programs, and clearance for work... must be defined in the "explosion" protection document" and respected in order to guarantee the protection of the staff.
- ATEX certified products must be selected according to zone.
- Locations where explosive atmospheres may occur and identified through warning signs.

### ABB commitments versus ATEX 137

- **Reliable product information** is given to the end user : increased safety and intrinsic safety certified terminal blocks for safe installation.
- **Excellence of ADO system®** in regards to the ATEX 137 minimum requirements (training programs, written instructions, clearance for work...):
  - Simplified "clearance for work": no possibility of unauthorized modifications thanks to the ADO system® dedicated tool (OUMAD, OUPAD or OUTAD) .
  - Maximized "correct installation and operation, qualification of the personnel" : the ADO system® connection is operator independent.
  - No retightening maintenance : ADO system® is a Screwless technology.

### Dates of enforcement

#### ATEX 137 : Installations

- The ATEX 1999/92/EC (ATEX 137) directive becomes mandatory for all new installations implemented after 06/30/03, in every country member of the EEC. For existing installations, three more years are given to fulfill the minimum requirements.

If an old work place is upgraded, modified or extended, it must comply with the "minimum requirements" immediately.

## Definitions and terms

Equipment and components used in potentially explosive atmospheres are divided into groups and categories. (Atex 94/9/EC, chapter 1, art 1, § 3c)

This classification is meant to define clearly the “intended use” of equipment, protective systems and devices, which is considered of prime importance for safe operation.

### Groups

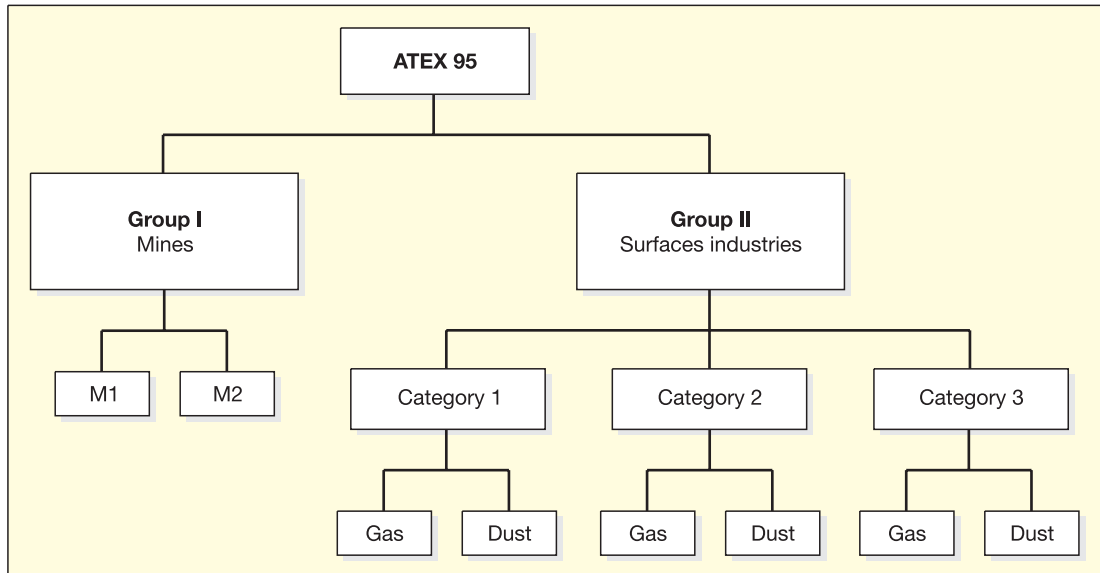
Two distinct groups according to the industry type in which the equipments or components are to be used :

- Group I stands for Mine industries :  
Underground part of mines and surface installations of such mines, liable to be endangered by firedamp and / or combustible dust.
- Group II stands for Surface industries :  
All other places liable to be endangered by explosive atmospheres.

### Categories

ATEX defines “categories of equipment”, specified by their protection characteristics:

- For Mine industries :
  - Category M 1: very high level of safety
  - Category M 2: high level of safety
- For surfaces industries :
  - Category 1: very high level of safety
  - Category 2: high level of safety
  - Category 3: normal level of safety



### Frequently asked question :

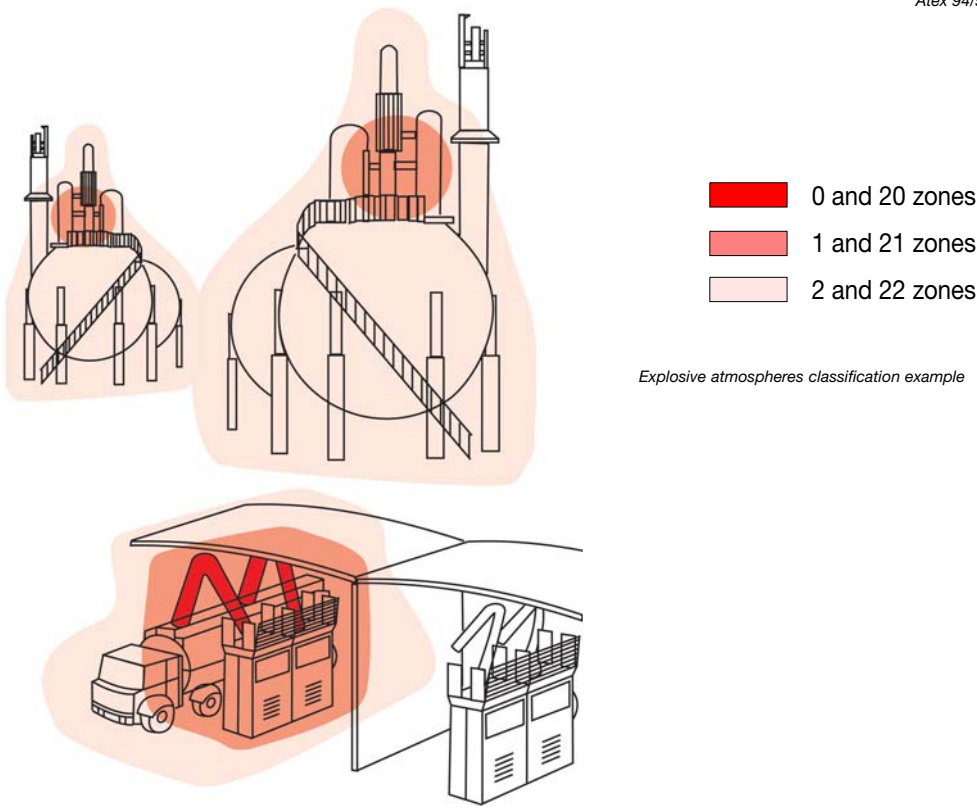
If equipment is certified in category 1, is it certified in category 2?

Equipment or components certified in category 1 are also certified in category 2 and category 3 since category 1 is the highest level of safety.



Equipment in category :	Intended use :
<p>M1 (Mine industries) Is required to remain functional, even in the event of rare incidents relating to equipment, with an explosive atmosphere present.</p>	<p>In underground parts of mines as well as those parts of surface installations of such mines endangered by firedamp and/or combustible dust.</p>
<p>M2 (Mine industries) Is intended to be de-energized in the event of an explosive atmosphere. The means of protection relating to equipment in this category assure the requisite level of protection during normal operation and also in the case of more severe operating conditions, in particular those arising from rough handling and changing environmental conditions.</p>	<p>In underground parts of mines as well as those parts of surface installations of such mines endangered by firedamp and/or combustible dust.</p>
<p>1 (Surface industries) Must ensure the requisite level of protection, even in the event of rare incidents relating to equipment and is characterized by means of protection such that :</p> <ul style="list-style-type: none"> <li>- Either, in the event of failure of on means of protection, at least an independent second means provides the requisite level of protection.</li> <li>- Or the requisite level of protection is assured in the event of two faults occurring independently of each other.</li> </ul>	<p>Zone 0 and Zone 20 : Areas in which explosive atmospheres caused by mixtures of air and gases, vapors or mists or by air/dust mixtures are present continuously, for long periods or frequently.</p>
<p>2 (Surface industries) Must ensure the requisite level of protection, even in the event of frequently occurring disturbances or equipment faults which normally have to be taken into account.</p>	<p>Zone 1 and Zone 21 : Areas in which explosive atmospheres caused by mixtures of air and gases, vapors or mists or by air/dust mixtures are likely to occur.</p>
<p>3 (Surface industries) Ensure the requisite level of protection during normal operation.</p>	<p>Zone 2 and Zone 22 : Areas in which explosive atmospheres caused by gases, vapors or mists or by air/dust mixtures are unlikely to occur or are likely to do so only infrequently and for a short period only.</p>

Atex 94/9/EC annex I



# C. ATEX 94/9/EC conformity assessment procedures

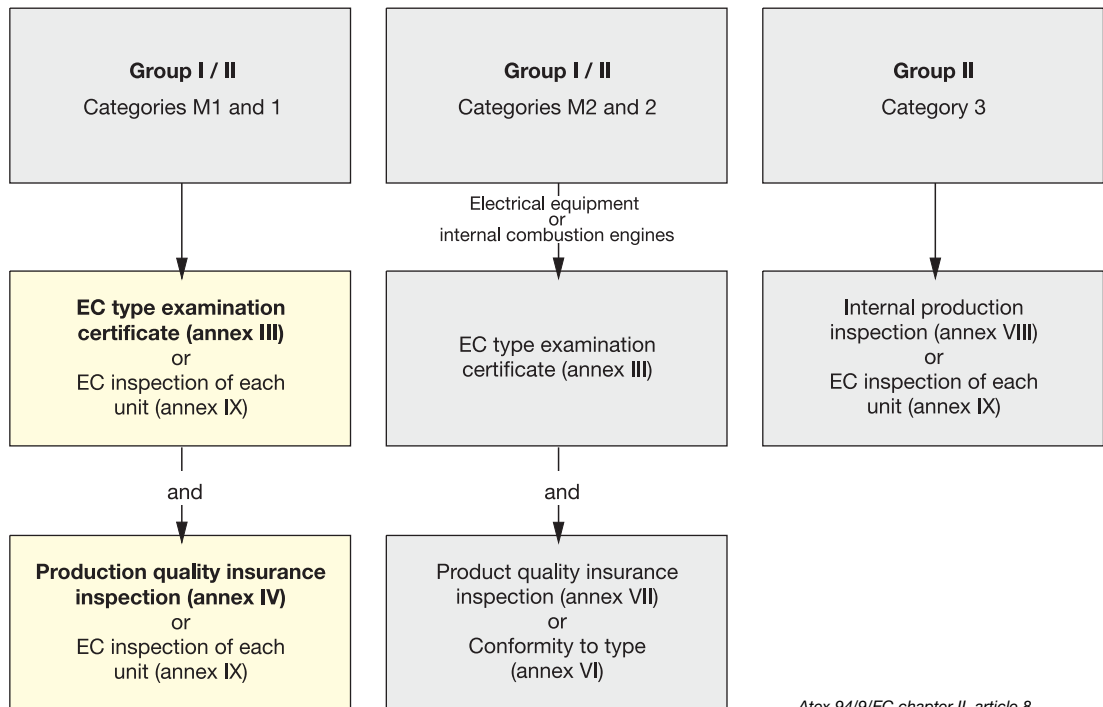
The ATEX certification process can be identified as two main parts :

- The EC type examination certificate confirms that the validity of the technical file established by ABB is in conformity with the Atex directive. Examination and test results of the product are been examined by a notified body.
- The inspection of quality assurance, conducted by a notified body : refers to the production or product quality assurance examination (depending upon the product level of certification).

The notification has three years validity with yearly audit. As said in chapter B, ATEX directives objective is to increase the safety.

Therefore, a quality assurance audit is now necessary to obtain the ATEX certification for any equipment or component.

Complete conformity assessment procedure is detailed here below :



*Atex 94/9/EC chapter II, article 8*

### ABB certification conformity

- "Production Quality Insurance" inspection
- "EC type examination certificate"

Essential Health and Safety Requirements of the Directive.

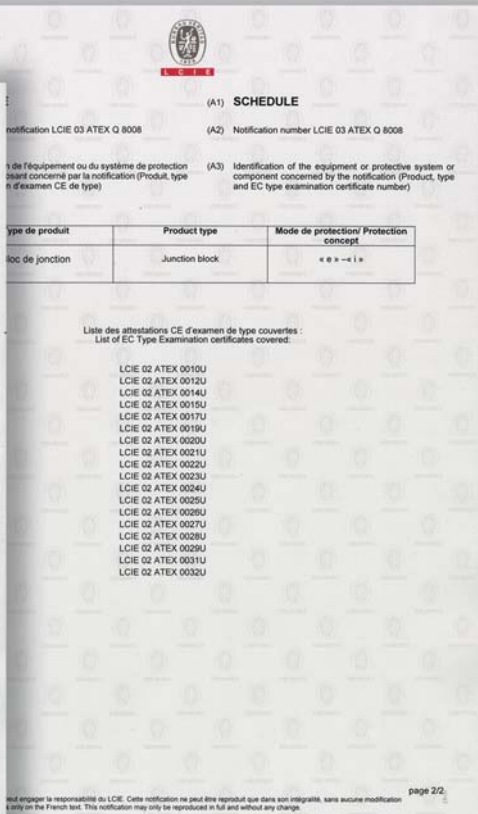
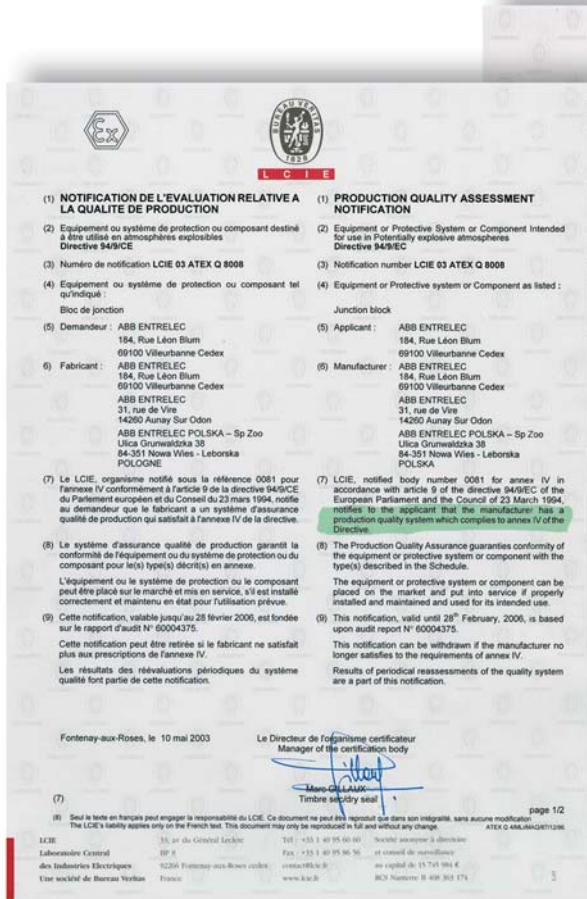
- Report of the manufacturer's Quality Assurance procedures to ensure that the "type" will continue to comply with the requirements.

### Notified bodies

"Notified Bodies", are independant bodies which are appointed by the Member States. They have the relevant expertise and facilities to undertake the required procedures such as :

- "Type Examination", which involves an assessment made of the product against the

These "Notified Bodies" are given a number and are listed in the OJEC by the European Commission prior to their operation; the activities of the Notified Bodies are a matter for Member States, as they are appointed under their authority. While the Notified Body has various responsibilities under the Directive, the manufacturer always remains responsible for the compliance of the equipment.



Production quality assessment notification

Extract list of European Notified bodies and Certified bodies :

Country	Name	Notified Bodies (ATEX 94/4/EC)	Certified Bodies (IECEX)
Denmark	DEMKO	X	X
France	INERIS	X	
	LCIE*	X	X
Germany	PTB	X	X
	TÜV	X	X
Italy	CESI	X	
Netherland	KEMA	X	
Norway	NEMKO	X	X
Sweden	SP	X	X
UK	SIRA	X	X

\*LCIE : identification code 0081  
Subsidiary of Bureau Veritas group



EC type examination certificate

## D. Protection methods in potentially explosive atmosphere

Protection methods are to be implemented so that equipment and electrical components can be used in a potentially explosive atmosphere.

### Safety methods :

Protection types	Principles
Ex d : flame-proof	Contains the explosion in an appropriate explosion proof housing.
Ex e : increased	Increases the reliability of the electrical components so that sparks or arcs cannot appear. Ex e voltage to apply is determined through severe limitations in the calculations of clearance and creepage distances.
Ex i : intrinsic	Reduces the energy to a very low energy level so that even sparks or arcs cannot ignite an explosion atmosphere.
Ex m, Ex o, Ex p or Ex q	Prevent contact between the electrical component and the explosive atmosphere

### Applications for Ex d, Ex e and Ex i protection types

#### ● Flameproof protection Ex d

Among the several protection methods, flameproof “Ex d” protection method is the most ancient and therefore represents the protection method the most implemented.

Non-ATEX certified terminal blocks could be installed in a flameproof enclosure: the protection against explosion propagation is ensured by the enclosure not by the terminal block itself.

However, as it requires a very specific design (the enclosure must be capable of withstanding a possible internal explosion), this solution appears over costly for terminal block installations.

#### ● Increased protection Ex e

Increased protection remains the best economical and technical choice for a safe use of terminal blocks in hazardous locations.

ABB ATEX terminal block range, certified in increased safety, requires a high level of construction technology and do not require an explosion proof (Ex d) enclosure to operate safely in an explosive atmosphere.

Please note that the enclosure containing the terminal blocks must offer a Dust protection (IP6X minimum) and be Ex e certified itself in order to determine the maximum surface temperature in the housing (calculations consider the number of terminal blocks in the housing and current to be applied).

#### ● Intrinsic protection Ex i

Intrinsic protection is a common method of protection for instrumentation and control; it applies to an entire circuit.

Blue is generally the colour code for the intrinsic circuit components. It is the only protection method that can be implemented in zone 0 or 20 (permanent presence of explosive atmosphere), as the allowed voltage and current are extremely low.

Voltage and current calculations are necessary to ensure that the circuit composed of its several components will operate safely.

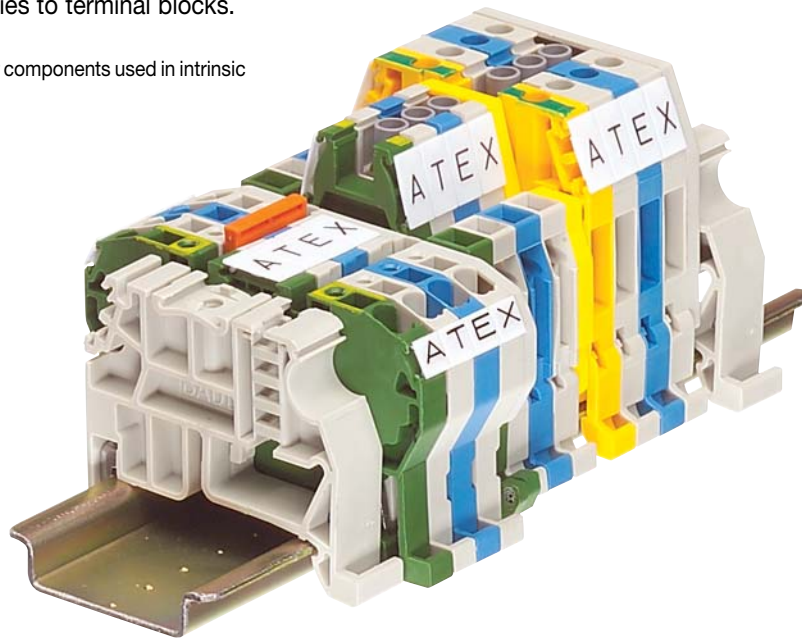
ABB supplies intrinsic and increased protection certified terminal blocks, even if the intrinsic certification is not mandatory for components.

The reasons are added benefits for our customers: it allows us to supply you with the ATEX appropriate group and category marked on the block as well as the Ex i necessary voltage calculations, which have been confirmed by a notified body.

## Terminal blocks use

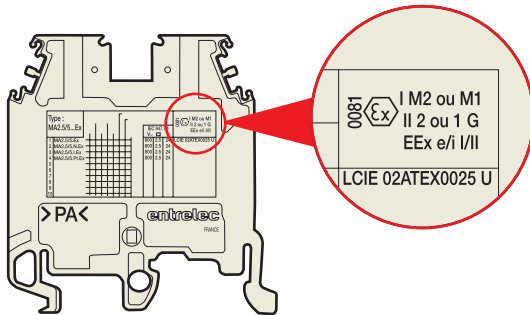
Here below are the protection methods, for which the ATEX certification applies to terminal blocks.

(\*certification is not mandatory for components used in intrinsic protection only)



CENELEC standards	IEC standards	Protection methods	Symbol	Concepts
EN 50 014	IEC 60079-0	General rules		
EN 50019	IEC 60079-7	Increased safety	e	No sparks or arcs in normal use. Control of dangerous temperature levels : because they can generate arcs or sparks in normal use, switch or fuse terminal blocks cannot be classified in increased protection.
EN 50020	IEC 60079-11	Intrinsic safety	i	Control of sparks, arcs or overheating through a very low energy level

## E. Product marking



- The directive ATEX 95 imposes a new marking for certified equipment and components. (Atex 94/9/EC, annex II).
- The terminal block marking must indicate the group and categories in which it can be used, associated with the protection method.
- The Notified body code must be indicated as well as the EC type examination certificate number for each certified block.

### Characteristics not marked on ABB terminal blocks



The CE logo does no longer appear on ABB ATEX terminal blocks. Components cannot affix the CE marking. (ATEX 94 /9/EC, chapter 2, article 8).

Components definition (Atex 94/9/EC, chapter 1, article 1) : means any item essential to the safe functioning of equipment and protective systems but with no autonomous function.

### Suffix D (for Dust explosive atmosphere) :

The D marking does not appear on the ABB terminal blocks : equipment and components used in dust explosive atmospheres have to offer an IP6X degree of protection -total protection against dust penetration-.

The “D” certification is then irrelevant to terminal blocks -the terminal blocks design can never provide IP6X protection-.

The terminal blocks dust protection is ensured by an enclosure, with a minimum IP6X dust protection, on which the D marking is indicated.

### Temperature class :

This characteristic applies to the maximum surface temperature authorised for ATEX certified equipment.

The temperature class is not indicated on components such as terminal blocks since this characteristic is specified for equipment only.

The equipment manufacturer is responsible for the validation of the maximum surface temperature of its equipment, in regards to the devices composing it and in ambient temperature of -20°C +40°C.

Please note that the temperature elevation for a terminal block will never exceed 45°K (per IEC 947-7-1) at its rated current and nominal wire size.

The operating temperature is -40°C +65°C with an acceptable -55°C in operating conditions.

### Gas class :

This characteristic defines the various types of gas surrounding the equipment.

The gas class is not indicated on terminal blocks since this characteristic is specified for equipment only and not for components.



# G. Terminal blocks UL Hazardous Locations certification

## UL Hazardous locations terminal block range certification level :

### Class I Zone 1 Ex e II T6

*(Partial range, indicated by \* in the products pages)*



## UL hazardous locations definitions and terms :

### Class I Zone 1 :

- Location in which ignitable concentrations of flammable gases or vapors are likely to exist under normal operating conditions ; or
- Location in which ignitable concentrations of flammable gases or vapors may exist frequently because of repair or maintenance operations or because of leakage ; or
- Location in which equipment is operated or processes are carried on, of such a nature that equipment breakdown or faulty operations could result in the release of ignitable concentrations of flammable gases or vapors and also cause simultaneous failure of electrical equipment in a mode to cause the electrical equipment to become a source of ignition ; or
- That is adjacent to a Class 1, Zone 0 location from which ignitable concentrations of vapors could be communicated, unless communication is prevented by adequate positive pressure ventilation from a source of clean air and effective safeguards against ventilation failure are provided.

**Ex e** : increased safety protection method

**II** : stands for gas group (IIA, IIB, and IIC)

**T6 (Temperature classification)** :  $T \leq 85^{\circ}\text{C}$  (185°F)












Please refer to the appropriate UL file for conditions of use and ratings values to apply.

## References :

- <http://europa.eu.int/comm/enterprise/atex>
- Directive 1999/92/EC
- Directive 94/9/EC
- <http://www.ul.com/hazloc>
- Guidelines on the application of directive 94/9/EC
- <http://www.offshore-technology.com>
- Corrigendum of directive 94/9/EC



# Summary

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	Safety connection terminal blocks ..... page 21
	Thermocouple terminal blocks ..... page 22
	<b>Power terminal blocks ..... page 23</b>
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# Standard and ground Terminal blocks

Screw clamp  DIN 1-3



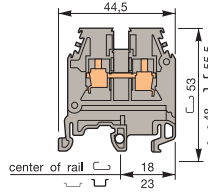
EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail. The use of ground terminal blocks do not decrease the standard terminal block's voltage ratings

\* UL - Hazardous locations Class I - Zone I - Ex e II T6  
File # E199332

End stop		th. 9 mm	BADL	V0	1SNA 399 903 F0200
End stop		th. 9,1 mm	BAM	V2	1SNA 103 002 F2600
End stop		th. 9,1 mm	BAM V0	V0	1SNA 199 306 F0300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 F2200
Rail		32 x 15 x 1,5	PR1.Z2		1SNA 163 050 F0400

## MA 2,5/5...Ex

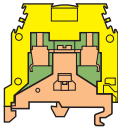
Spacing 5 mm .200"



Standard 5 mm block

## MA 2,5/5.P.Ex

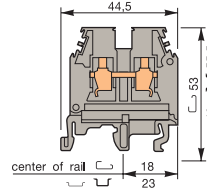
Spacing 5 mm .200"



Terminal block for ground wire.

## M 4/6...Ex

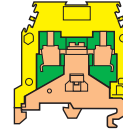
Spacing 6 mm .238"



Standard 6 mm block

## M 4/6.P.Ex

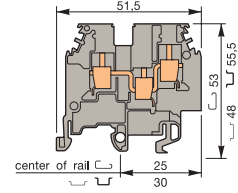
Spacing 6 mm .238"



Terminal block for ground wire.

## M 4/6.3A...Ex

Spacing 6 mm .238"

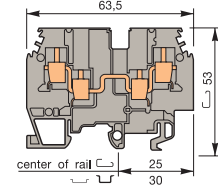


Standard 6 mm block

One circuit and three clamps

## M 4/6.4A...Ex

Spacing 6 mm .238"



Standard 6 mm block

One circuit and four clamps

	Type	P/N	Type	P/N	Type	P/N
Standard blocks UL 94 V0		Grey body	<b>MA 2,5/5.Ex*</b>	1SNA 146 014 R1300	<b>M 4/6.Ex*</b>	1SNA 146 001 R2700
		Blue body	<b>MA 2,5/5.N.Ex*</b>	1SNA 146 015 R1400	<b>M 4/6.N.Ex*</b>	1SNA 146 002 R2000
		Green body			<b>M 4/6.Ex</b>	1SNA 146 245 R0700
Terminal blocks for ground wires UL 94 V0		Green/yellow body (without rail contact)	<b>MA 2,5/5.P.Ex</b>	1SNA 146 240 R1600	<b>M 4/6.P.Ex</b>	1SNA 146 237 R2700
		Green/yellow body (with rail contact)	<b>MA 2,5/5.P.Ex*</b>	1SNA 146 016 R1500	<b>M 4/6.P.Ex</b>	1SNA 146 023 R1400

Characteristics	IEC			UL			CSA				
	NFC DIN	UL	CSA	NFC DIN	UL	CSA	NFC DIN	UL	CSA		
<b>Wire size</b>	Solid wire		0.2 - 4	22-12 AWG	22-12 AWG	0.2 - 4	22-10AWG	22-10 AWG	0.2 - 4	22-10AWG	
	Flexible wire		0.22 - 2.5			0.22 - 4			0.22 - 4		
<b>mm<sup>2</sup> / AWG</b>											
<b>Rated wire size</b>	mm <sup>2</sup> / AWG		2.5 mm <sup>2</sup>	12 AWG	12 AWG	4 mm <sup>2</sup>	10 AWG	10 AWG	4 mm <sup>2</sup>	10 AWG	
<b>Short circuit current (for ground blocks)</b>	A / s		300 A / 1 s			480 A / 1 s			4 mm <sup>2</sup>	10 AWG	
<b>Wire stripping length</b>	mm / inches		10 mm / .39"			9.5 mm / .37"			9.5 mm / .37"		
<b>Recommended torque</b>	Nm / lb.in		0.4-0.6 Nm / 3.5-5.3 lb.in			0.5-0.8 Nm / 4.4-7.1 lb.in			0.5-0.8 Nm / 4.4-7.1 lb.in		
<b>Voltage</b>	EN 50019 / EN 50020		EExe : 750 V EExi : 90 V			EExe : 750 V EExi : 375 V			EExe : 420 V EExi : 190 V		
<b>Current</b>	EN 50019 / EN 50020		EEx : 24 A			EEx : 32 A			EEx : 32 A		
<b>ATEX marking</b>			⊕ I M2 / M1 ⊕ II 2G / 1G			⊕ I M2 / M1 ⊕ II 2G / 1G			⊕ I M2 / M1 ⊕ II 2G / 1G		
<b>ATEX certificate</b>			LCIE 02 ATEX 0025U			LCIE 02 ATEX 0014U			LCIE 02 ATEX 0028U		

Accessories		Type	P/N	Type	P/N	Type	P/N
	<b>1</b> End section	grey	FEM6 V0 • th. 2,8  1SNA 146 259 R1500	FEM6 V0 • th. 2,8  1SNA 146 259 R1500	FEM6 V0 (4) th. 2,8  1SNA 146 261 F0700		
		blue	FEM6 V0 • th. 2,8  1SNA 199 302 R0700	FEM6 V0 • th. 2,8  1SNA 199 302 R0700	FEM6 V0 (4) th. 2,8  1SNA 126 576 R1700		
		yellow	FEM6 V0 • th. 2,8  1SNA 199 305 F0200	FEM6 V0 • th. 2,8  1SNA 199 305 F0200	FEM6 V0 (5) th. 2,8  1SNA 146 262 F0000		
		orange	FEM6 • th. 2,8  1SNA 103 126 R1600	FEM6 • th. 2,8  1SNA 103 126 R1600	FEM6 (5) th. 2,8  1SNA 126 629 F2400		
		green	FEM6 • th. 2,8  1SNA 103 125 R1500	FEM6 • th. 2,8  1SNA 103 125 R1500			
		beige V0	FEM6 V0 • th. 2,5  1SNA 198 368 R1700	FEM6 V0 th. 2,5  1SNA 198 368 R1700			
	<b>2</b> Circuit separator	grey	SCMA5 •  1SNA 116 728 R2500	SCM6 •  1SNA 113 003 R1000	SCM6 •  1SNA 113 003 R1000		
	<b>3</b> Separator end section (block)	grey	SCF6 th. 3  1SNA 118 707 F0300	SCF6 th. 3  1SNA 118 707 F0300			
	<b>4</b> Separator end section (rail)	grey	SCFM6 th. 3  1SNA 114 825 R0500	SCFM6 th. 3  1SNA 114 825 R0500			
	<b>5</b> Test socket	DIA. 2 mm	AL2 (1) •  1SNA 163 046 F2400	AL2 (1) •  1SNA 163 043 R2100	AL2 (1) •  1SNA 163 043 R2100		
		DIA. 3 mm		AL3 (1) •  1SNA 163 261 F0000	AL3 (1) •  1SNA 163 261 F0000		
		DIA. 4 mm					
	<b>6</b> Test device		DCB •  1SNA 105 028 F2100	DCJ •  1SNA 173 059 R0300	DCJ •  1SNA 173 059 F0300		
	<b>7</b> Test plug	DIA. 2 mm	FC2 •  1SNA 007 865 F2600	FC2 •  1SNA 007 865 F2600	FC2 •  1SNA 007 865 F2600		
<b>8</b> Preassembled jumper bar IP 20 touchproof	2 poles	BJM5 (1) •  1SNA 176 278 R1600	BJM6 (1) •  1SNA 176 663 R0000	BJM6 (1) •  1SNA 176 663 R0000			
	3 poles	BJM5 (1) •  1SNA 176 279 R1700	BJM6 (1) •  1SNA 176 664 R0100	BJM6 (1) •  1SNA 176 664 R0100			
	4 poles	BJM5 (1) •  1SNA 176 280 F0500	BJM6 (1) •  1SNA 176 665 R0200	BJM6 (1) •  1SNA 176 665 R0200			
	5 poles	BJM5 (1) •  1SNA 176 281 F2200	BJM6 (1) •  1SNA 176 666 R0300	BJM6 (1) •  1SNA 176 666 R0300			
	10 poles	BJM5 (1) •  1SNA 176 282 R2300	BJM6 (1) •  1SNA 176 667 R0400	BJM6 (1) •  1SNA 176 667 R0400			
<b>9</b> Connector plate		EL6 •  1SNA 173 627 R2100	EL6 •  1SNA 173 627 R2100	EL6 •  1SNA 173 627 R2100			
<b>10</b> Jumper bar not preassembled Post + screw + washer	20 poles	BJS5 (1) •  1SNA 177 652 R0600	BJS6 (1) •  1SNA 174 784 R2000	BJS6 (1) •  1SNA 174 784 R2000			
		EV5 •  1SNA 168 629 R1600	EV6 •  1SNA 168 604 R1600	EV6 •  1SNA 168 604 R1600			
<b>11</b> Preassembled jumper bar without screw IP20		BJE • see accessories	BJE • see accessories	BJE • see accessories			
<b>12</b> Comb-type jumper bar	10 poles	PC5 (3) •  1SNA 113 544 R1200	PC6 (3) •  1SNA 113 548 R2600	PC6 (3) •  1SNA 113 548 R2600			
<b>13</b> Isolating cover		EIP •  1SNA 113 550 R2400	EIP •  1SNA 113 550 R2400	EIP •  1SNA 113 550 R2400			
<b>13</b> Shielding connector	th. 0.5	CBM5 •  1SNA 178 745 R1400	CBM5 •  1SNA 178 745 R1400	CBM5 •  1SNA 178 745 R1400			
	th. 0.8	CBM8 •  1SNA 178 746 R1500	CBM8 •  1SNA 178 746 R1500	CBM8 •  1SNA 178 746 R1500			
<b>14</b> Protection label			EP6 •  1SNA 163 427 R1700	EP6 •  1SNA 163 427 R1700			
	4 blocks		VSP6 •  1SNA 163 433 R1500	VSP6 •  1SNA 163 433 R1500			
<b>R</b> See markers section		RC 55 - RC510	RC 65 - RC610	RC 65 - RC610			

Other accessories see section accessories

# Standard and ground Terminal blocks

Screw clamp  DIN 1-3



EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail. The use of ground terminal blocks do not decrease the standard terminal block's voltage ratings.

\* UL - Hazardous locations Class I - Zone I - Ex e II T6  
File # E199332

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 9,1 mm	BAM	V2	1SNA 103 002 R2600
End stop		th. 9,1 mm	BAM V0	V0	1SNA 199 306 R0300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		32 x 15 x 1,5	PR1.Z2		1SNA 163 050 R0400

M 6/8...Ex	M 10/10...Ex	M 16/12...Ex
Spacing 8 mm .315"	Spacing 10 mm .394"	Spacing 12 mm .473"
Standard 8 mm block	Standard 10 mm block	Standard 12 mm block with partition
M 6/8.P.Ex	M 10/10.P.Ex	M 16/12.P.Ex
Spacing 8 mm .315"	Spacing 10 mm .394"	Spacing 12mm .473"
Terminal block for ground wire.	Terminal block for ground wire. (M 10/10.P.Ex closed terminal block)	Terminal block for ground wire. (M 16/12.P.Ex closed terminal block)

	Type	P/N	Type	P/N	Type	P/N
Standard blocks UL 94 V0	Grey body	M 6/8.Ex* 1SNA 146 003 R2100	Grey body	M 10/10.Ex* 1SNA 146 005 R2300	Grey body	M 16/12.Ex* 1SNA 146 027 R1000
	Blue body	M 6/8.N.Ex* 1SNA 146 004 R2200	Blue body	M 10/10.N.Ex* 1SNA 146 006 R2400	Blue body	M 16/12.N.Ex* 1SNA 146 028 R2100
Terminal blocks for ground wires UL 94 V0	Green/yellow body (without rail contact)	M 6/8.PI.Ex 1SNA 146 238 R0000	Green/yellow body (without rail contact)	M 10/10.PI.Ex 1SNA 146 239 R0100	Green/yellow body (without rail contact)	M 16/12.PI.Ex 1SNA 146 043 R2000
	Green/yellow body (with rail contact)	M 6/8.P.Ex 1SNA 146 022 R1300	Green/yellow body (with rail contact)	M 10/10.P.Ex 1SNA 146 021 R1200	Green/yellow body (with rail contact)	M 16/12.P.Ex 1SNA 146 043 R2000

Characteristics	IEC NFC DIN	UL	CSA	IEC NFC DIN	UL	CSA	IEC NFC DIN	UL	CSA
Wire size	Solid wire 0.5 - 10 Flexible wire 0.5 - 6	22-8 AWG	24-8 AWG	0.5 - 16 0.5 - 10	20-6 AWG	18-6 AWG	0.5 - 25 0.5 - 16	18-6 AWG	8-4 AWG
mm <sup>2</sup> / AWG									
Rated wire size	mm <sup>2</sup> / AWG	6 mm <sup>2</sup> / 8 AWG	8 AWG	10 mm <sup>2</sup> / 6 AWG	6 AWG	6 AWG	16 mm <sup>2</sup> / 4 AWG	4 AWG	4 AWG
Short circuit current (for ground blocks)	A / s	720 A/1 s		1200 A/1 s			1920 A/1 s		
Wire stripping length	mm / inches	12 mm / .47"		12 mm / .47"		14 mm / .55"			
Recommended torque	Nm / lb.in	0.8-1 Nm / 7.1-8.9 lb.in		1.2-1.4 Nm / 10.6-12.3 lb.in		1.2-1.4 Nm / 10.6-12.3 lb.in			
Voltage	EN 50019 / EN 50020	EExe : 420 V	EExi : 190 V	EExe : 420 V	EExi : 190 V	EExe : 420 V	EExi : 190 V	EExe : 550 V	EExi : 375 V
Current	EN 50019 / EN 50020	EEx : 41 A		EEx : 57 A		EEx : 57 A		EEx : 76 A	
ATEX marking		Ex I M2 / M1 Ex II 2G / 1G		Ex I M2 / M1 Ex II 2G / 1G		Ex I M2 / M1 Ex II 2G / 1G		Ex I M2 / M1 Ex II 2G / 1G	
ATEX certificate		LCIE 02 ATEX 0014U		LCIE 02 ATEX 0014U		LCIE 02 ATEX 0014U		LCIE 02 ATEX 0014U	

Accessories	Type	P/N	Type	P/N	Type	P/N
	1 End section	grey  FEM6 V0 • th. 2,8 1SNA 146 259 R1500 blue  FEM6 V0 • th. 2,8 1SNA 199 302 R0700 yellow  FEM6 V0 • th. 2,8 1SNA 199 305 R0200 orange  FEM6 • th. 2,8 1SNA 103 126 R1600 green  FEM6 • th. 2,8 1SNA 103 125 R1500 beige V0  FEM6 V0 • th. 2,5 1SNA 198 368 R1700	FEM6 V0 • th. 2,8  1SNA 146 259 R1500 FEM6 V0 • th. 2,8  1SNA 199 302 R0700 FEM6 V0 • th. 2,8  1SNA 199 305 R0200 FEM6 • th. 2,8  1SNA 103 126 R1600 FEM6 • th. 2,8  1SNA 103 125 R1500 FEM6 V0 • th. 2,5  1SNA 198 368 R1700	FEM6 V0 • th. 2,8  1SNA 146 259 R1500 FEM6 V0 • th. 2,8  1SNA 199 302 R0700 FEM6 V0 • th. 2,8  1SNA 199 305 R0200 FEM6 • th. 2,8  1SNA 103 126 R1600 FEM6 • th. 2,8  1SNA 103 125 R1500 FEM6 V0 • th. 2,5  1SNA 198 368 R1700	FEM12 V0 • th. 2,8  1SNA 146 270 R1400 FEM12 • th. 2,8  1SNA 128 618 R0300 FEM12 • th. 2,8  1SNA 103 065 R2400 FEM12 V0 • th. 2,8  1SNA 198 618 R0200	
	2 Circuit separator	grey  SCM6  1SNA 113 003 R1000	SCM6  1SNA 113 003 R1000	SCM6  1SNA 113 003 R1000	SCM6  1SNA 113 003 R1000	
	3 Separator end section (block)	grey  SCF6 • th. 3 1SNA 118 707 R0300	SCF6 • th. 3  1SNA 118 707 R0300	SCF6 • th. 3  1SNA 118 707 R0300	SCF12 • th. 3  1SNA 113 102 R1000	
	4 Separator end section (rail)	grey  SCFM6 • th. 3 1SNA 114 825 R0500	SCFM6 • th. 3  1SNA 114 825 R0500	SCFM6 • th. 3  1SNA 114 825 R0500	SCFM6 • th. 3  1SNA 114 825 R0500	
	5 Test socket	DIA. 2 mm AL2 (1) 1SNA 163 043 R2100 DIA. 3 mm AL3 (1) 1SNA 163 261 R0000 DIA. 4 mm AL4 (1) 1SNA 163 262 R0100	AL2 (1) • 1SNA 163 043 R2100 AL3 (1) • 1SNA 163 261 R0000 AL4 (1) • 1SNA 163 262 R0100	AL2 (1) • 1SNA 163 043 R2100 AL3 (1) • 1SNA 163 261 R0000 AL4 (1) • 1SNA 163 262 R0100	AL2 • 1SNA 163 043 R2100 AL3 • 1SNA 163 261 R0000 AL4 • 1SNA 163 262 R0100	
	6 Test device	DCO •  1SNA 173 060 R0000	DCO •  1SNA 173 060 R0000	FC2 • 1SNA 007 865 R2600	FC2 • 1SNA 007 865 R2600	
	7 Test plug	DIA. 2 mm FC2 • 1SNA 007 865 R2600	FC2 • 1SNA 007 865 R2600	FC2 • 1SNA 007 865 R2600	FC2 • 1SNA 007 865 R2600	
	8 Preassembled jumper bar	2 poles BJM8 (1) • 1SNA 176 669 R1600 3 poles BJM8 (1) • 1SNA 176 670 R1300 4 poles BJM8 (1) • 1SNA 176 671 R0000 5 poles BJM8 (1) • 1SNA 176 672 R0100 10 poles BJM8 (1) • 1SNA 176 673 R0200	BJM8 (1) • 1SNA 176 669 R1600 BJM8 (1) • 1SNA 176 670 R1300 BJM8 (1) • 1SNA 176 671 R0000 BJM8 (1) • 1SNA 176 672 R0100 BJM8 (1) • 1SNA 176 673 R0200	BJM10 (1) • 1SNA 176 675 R0400 BJM10 (1) • 1SNA 176 676 R0500 BJM10 (1) • 1SNA 176 677 R0600 BJM10 (1) • 1SNA 176 678 R1700 BJM10 (1) • 1SNA 176 679 R1000	BJM12 (2) • 1SNA 179 626 R0600 BJM12 (2) • 1SNA 179 628 R1000 BJM12 (2) • 1SNA 179 629 R1100 BJM12 (2) • 1SNA 179 630 R1600 BJM12 (2) • 1SNA 179 631 R0300	
	9 Connector plate	EL6 • 1SNA 173 627 R2100	EL6 • 1SNA 173 627 R2100	BJS10 (1) • 1SNA 177 654 R0000 EV6 • 1SNA 168 604 R1600	BJS12 (2) • 1SNA 177 653 R0700 EV12 • 1SNA 168 664 R1100	
	10 Jumper bar not preassembled	20 poles BJS8 (1) • 1SNA 174 789 R0500	BJS8 (1) • 1SNA 174 789 R0500	BJS10 (1) • 1SNA 177 654 R0000	BJS12 (2) • 1SNA 177 653 R0700	
	Post + screw + washer	EV6 • 1SNA 168 604 R1600	EV6 • 1SNA 168 604 R1600	EV6 • 1SNA 168 604 R1600	EV12 • 1SNA 168 664 R1100	
	11 Preassembled jumper bar without screw IP20	BJE • see accessories	BJE • see accessories	BJE • see accessories	BJE • see accessories	
	12 Comb-type jumper bar	10 poles PC8 (3) • 1SNA 163 313 R2400	PC8 (3) • 1SNA 163 313 R2400	PC10 • 1SNA 163 315 R2600		
	13 Shielding connector	th. 0.5 th. 0.8				
14 Protection label	3 blocks EP6 • 1SNA 163 427 R1700 4 blocks EP8 • 1SNA 163 428 R2000 VSP6 • 1SNA 163 433 R1500	EP6 • 1SNA 163 427 R1700 EP8 • 1SNA 163 428 R2000 VSP6 • 1SNA 163 433 R1500	EP8 • 1SNA 163 428 R2000 EP10 • 1SNA 163 429 R2100 VSP6 • 1SNA 163 433 R1500	EP10 • 1SNA 163 429 R2100 EP12 • 1SNA 163 430 R2600 VSP12 • 1SNA 163 432 R1400		
R See markers section	RC 65 - RC610 - RC810	RC 65 - RC610 - RC810	RC 65 - RC610 - RC810	RC 65 - RC610 - RC810		










## Double-deck terminal blocks

Screw clamp   DIN 1-3

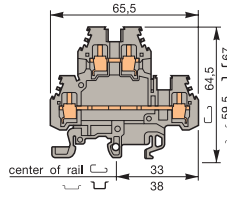


EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail.

End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 12 mm	BAEH	V2	1SNA 116 934 R0400
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		32 x 15 x 1,5	PR1.Z2		1SNA 163 050 R0400

### MA 2,5/5.D2... .Ex

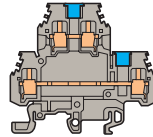
Spacing 5 mm .200"



Standard 5 mm block

### MA 2,5/5.D2.1.Ex

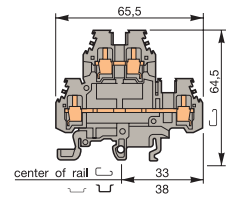
Spacing 5 mm .200"





M 2,5/5.D2.Ex with partition





### M 4/6.D2.Ex

Spacing 6 mm .238"







Standard 6 mm block

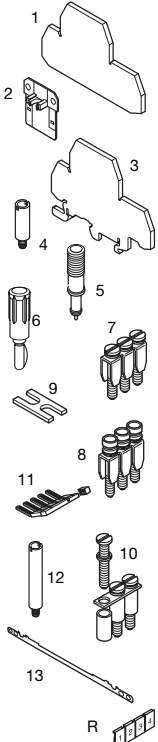


















Standard blocks UL 94 V0  Grey body  
 Blue body

Type	P/N	Type	P/N
MA 2,5/5.D2.Ex 	1SNA 146 017 R1600	M 4/6.D2.Ex 	1SNA 146 009 R0700
MA 2,5/5.D2.N.Ex 	1SNA 146 018 R2700		
MA 2,5/5.D2.1.Ex 	1SNA 146 019 R2000		

## Characteristics

	IEC NFC DIN	UL	CSA	IEC NFC DIN	UL	CSA
<b>Wire size</b>	Solid wire 0.2 - 4	22-12 AWG	20-12 AWG	0.2 - 4	22-12 AWG	24-12 AWG
	Flexible wire 0.22 - 2.5			0.22 - 4		
<b>mm<sup>2</sup> / AWG</b>						
<b>Rated wire size</b>	mm <sup>2</sup> / AWG	2.5 mm <sup>2</sup> / 12 AWG	12 AWG	4 mm <sup>2</sup> / 12 AWG	12 AWG	12 AWG
<b>Wire stripping length</b>	mm / inches	9 mm / .35"		8.5 mm / .33"		
<b>Recommended torque</b>	Nm / lb.in	0.4-0.6 Nm / 3.5-5.3 lb.in		0.5-0.8 Nm / 4.4-7.1 lb.in		
<b>Voltage</b>	EN 50019 / EN 50020	EExe : 380 V EExi : 90 V		EExe : 380 V EExi : 190 V		
<b>Current</b>	EN 50019 / EN 50020	EEx : 24 A		EEx : 32 A		
<b>ATEX marking</b>		 I M2 / M1  II 2G / 1G		 I M2 / M1  II 2G / 1G		
		EEx e/i I / II		EEx e/i I / II		
<b>ATEX certificate</b>		LCIE 02 ATEX 0026U		LCIE 02 ATEX 0019U		

## Accessories

	Type	P/N	Type	P/N	
	<b>1 End section</b>	grey  FEM6D V0 th. 1 1SNA 146 260 R1200 blue  FEM6 th. 1 1SNA 128 499 R2500 Beige V0  FEM6D V0 th. 1 1SNA 198 499 R2400	FEM6D V0 th. 1  1SNA 146 260 R1200 FEM6D th. 1  1SNA 128 499 R2500 FEM6D V0 th. 1  1SNA 198 499 R2400		
	<b>2 Circuit separator</b>	grey  SCMA5D (3) th. 1 1SNA 116 720 R2100 Beige V0 	SCMA5D (3) th. 1  1SNA 113 482 R0500 SCM6D V0 (3) th. 1  1SNA 193 482 R0600	SCM6D (3) th. 1  1SNA 113 482 R0500 SCM6D V0 (3) th. 1  1SNA 193 482 R0600	
	<b>3 Separator end section (block)</b>	grey 	SCF6D th. 1  1SNA 118 495 R1700	SCF6D th. 1  1SNA 118 495 R1700	
	<b>4 Test socket</b>	DIA. 2 mm AL2 (1) 1SNA 164 950 R0000 DIA. 3 mm	AL2 (1) 1SNA 163 070 R0000 AL3 (1) 1SNA 163 261 R0000	AL2 (1) 1SNA 163 070 R0000 AL3 (1) 1SNA 163 261 R0000	
	<b>5 Test device</b>	DCV  1SNA 173 058 R0200	DCG  1SNA 163 218 R0500	DCG  1SNA 163 218 R0500	
	<b>6 Test plug</b>	DIA. 2 mm FC2 1SNA 007 865 R2600	FC2 1SNA 007 865 R2600	FC2 1SNA 007 865 R2600	
	<b>7 Preassembled jumper bar not IP 20</b>	2 poles BJMSD (1) (2) 1SNA 176 226 R2200 3 poles BJMSD (1) (2) 1SNA 176 227 R2300 4 poles BJMSD (1) (2) 1SNA 176 228 R0400 5 poles BJMSD (1) (2) 1SNA 176 229 R0500 10 poles BJMSD (1) (2) 1SNA 176 230 R0200	BJM6D (1) (2) 1SNA 173 515 R1100 BJM6D (1) (2) 1SNA 173 516 R1200 BJM6D (1) (2) 1SNA 173 517 R1300 BJM6D (1) (2) 1SNA 173 519 R2500 BJM6D (1) (2) 1SNA 173 520 R2200	BJM6D (1) (2) 1SNA 173 515 R1100 BJM6D (1) (2) 1SNA 173 516 R1200 BJM6D (1) (2) 1SNA 173 517 R1300 BJM6D (1) (2) 1SNA 173 519 R2500 BJM6D (1) (2) 1SNA 173 520 R2200	
	<b>8 Preassembled jumper bar with IP 20 touchproof</b>	2 poles BJMSD (1) (2) 1SNA 176 736 R2100 3 poles BJMSD (1) (2) 1SNA 176 737 R2200 4 poles BJMSD (1) (2) 1SNA 176 738 R0300 5 poles BJMSD (1) (2) 1SNA 176 739 R0400 10 poles BJMSD (1) (2) 1SNA 176 740 R1100	BJM6D (1) (2) 1SNA 179 668 R2000 BJM6D (1) (2) 1SNA 179 669 R2100 BJM6D (1) (2) 1SNA 179 670 R2600 BJM6D (1) (2) 1SNA 179 671 R1300 BJM6D (1) (2) 1SNA 179 672 R1400	BJM6D (1) (2) 1SNA 179 668 R2000 BJM6D (1) (2) 1SNA 179 669 R2100 BJM6D (1) (2) 1SNA 179 670 R2600 BJM6D (1) (2) 1SNA 179 671 R1300 BJM6D (1) (2) 1SNA 179 672 R1400	
	<b>9 Connector plate</b>	EL6 1SNA 173 627 R2100	EL6 1SNA 173 627 R2100	EL6 1SNA 173 627 R2100	
	<b>10 Jumper bar not preassembled Post + screw + washer</b>	BJS5D (1) (2) 20 poles 1SNA 177 651 R0500 EV5D 1SNA 176 260 R1000	BJS61 (1) (2) 10 poles 1SNA 168 485 R2700 EV6D 1SNA 168 400 R1600	BJS61 (1) (2) 10 poles 1SNA 168 485 R2700 EV6D 1SNA 168 400 R1600	
	<b>11 Comb-type jumper bar Isolating cover</b>	PC5 1SNA 113 544 R1200 EIP 1SNA 113 550 R2400	PC61 1SNA 163 311 R2200	PC61 1SNA 163 311 R2200	
	<b>12 Vertical interconnection</b>	ITV5 1SNA 176 259 R1300	ITV6 1SNA 168 962 R0400	ITV6 1SNA 168 962 R0400	
	<b>13 Shielding connector</b>	th. 0.5 CBM5D 1SNA 173 530 R2400	CBM5D 1SNA 173 530 R2400	CBM5D 1SNA 173 530 R2400	
<b>R See markers section</b>	RC510	RC65 - RC610	RC65 - RC610		

Other accessories see section accessories

(1) A circuit separator SC is required with the use of these accessories.

(2) Use of these accessories requires the cut-out of the block body (precut). (3) Except M 2,5/5.D2.1.Ex and M 4/6.D2.1.Ex





# Thermocouple terminal blocks

Screw clamp  DIN 1-3



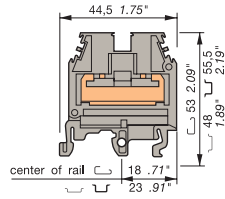
EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail.

End stop		th. 9 mm	<b>BADL</b>	V0	1SNA 399 903 F0200
End stop		th. 9,1 mm	<b>BAM</b>	V2	1SNA 103 002 F2600
End stop		th. 9,1 mm	<b>BAM V0</b>	V0	1SNA 199 306 F0300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 F1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 F1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 F2200
Rail		32 x 15 x 1,5	<b>PR1.Z2</b>		1SNA 163 050 F0400

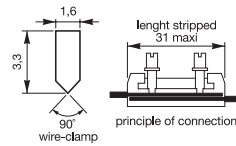
Standard blocks UL 94 V0  Grey body

## MTC 6.Ex

Spacing 6 mm .238"



6 mm block for thermocouple wires.



## Thermocouple terminal blocks

ABB Entelec's MTC 6.Ex thermocouple terminal block provides an interface for connecting thermocouple wire with virtually no loss of signal integrity. The interface design ensures positive wire continuity and allows selection and inventory of one terminal block for all thermocouple material.

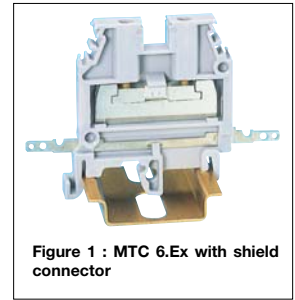


Figure 1 : MTC 6.Ex with shield connector

The thermocouple principle is based on the reaction of different metals to temperature. When thermocouple wires are terminated or connected, the "metal balance" must be maintained. The introduction of a foreign material (such as copper) results in loss of signal strength and integrity.

When running extended or intermittent lengths of thermocouple wire, to a measurement instrument, two solutions are available :

1. When signals are carried over a long distance, a thermocouple transmitter is required. The thermocouple signal, in millivolts (mV), is converted to a milliampere (mA) signal (i.e. 4-20 mA) for ease of transmission.
2. When thermocouple wire is of insufficient length, termination and interconnection, using terminal blocks, will extend its length.

### Universal terminal block

Other thermocouple terminal blocks are available with hardware (screws, clamps and connecting bar) which match the thermocouple

material being used. This requires inventory of many different terminal block types.

ABB Entelec's MTC 6.Ex terminal block adapts to all thermocouple material. This "neutral" method of connection limits the introduction of foreign materials to an insignificant level. The thermocouple wire insulation is stripped (31 mm maximum) and the bare wires are superimposed on one another. The thermocouple wires are in contact over their complete 31 mm length and tightened at two points by round tip screws (see figure 2).

## Characteristics

Wire size	Solid wire Flexible wire With isolated ferrule	2 Conductors for thermocouple (DIA. 0.9 - 1.5 mm)
mm <sup>2</sup> / AWG		
Rated wire size	mm <sup>2</sup> / AWG	
Wire stripping length	mm / inches	31 mm max. / 1.22"
Recommended torque	Nm / lb.in	0.4-0.6 Nm / 3.5-5.3 lb.in
Voltage	EN 50019 / EN 50020	EExe : 550 V EExi : 90 V
Current	EN 50019 / EN 50020	
ATEX marking		Ex I M2 / M1 Ex II 2G / 1G EEx e/i I / II
ATEX certificate		LCIE 02 ATEX 0025U

## Accessories

	Type	P/N
1 End section	grey <input type="checkbox"/>	FEM6 V0 th. 2.8 1SNA 146 259 F1500
2 Shield connector		CBM5 th. 0.5 1SNA 178 745 F1400 CBM6 th. 0.8 1SNA 178 746 F1500

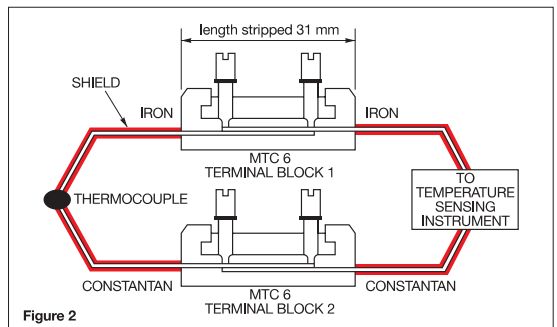
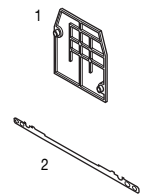


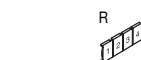
Figure 2

The screws, made of plated brass, have only a mechanical function, that of holding the wires together with a point contact. Thus, the pressure points are not relevant in the connection environment. One thermocouple lead connects through one terminal block.

The MTC 6 requires only 6 mm of space, allowing 50 terminals per foot of rail.

### Thermocouple shield wire connector bar

The MTC 6.Ex can be field of factory equipped with a shield connector bar (see figure 1). This bar, made of treated brass, mounts in the lower part of the terminal block. It ensures the continuity of the thermocouple wire shield through the terminal block or to ground with no additional spacing.



R See markers section	RC65 - RC610
Other accessories see section accessories	








## Power terminal blocks

 DIN 3 with bistable foot and base mounting

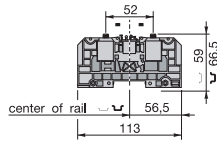


EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail.

End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

### D 35/27.FF.Ex

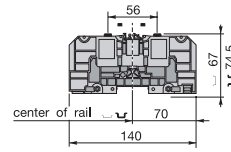
Spacing 27 mm 1.06"



2 studs M10

### D 70/32.FF.Ex

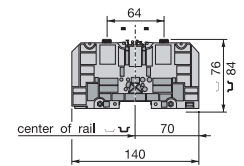
Spacing 32 mm 1.26"



2 studs M8

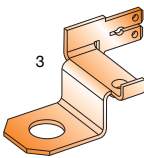
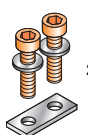
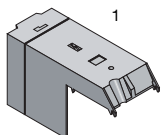
### D 120/42.FF.Ex

Spacing 42 mm 1.65"



2 studs M10

		Type	P/N	Type	P/N	Type	P/N
Standard block UL 94 V0 <input type="checkbox"/> Grey body		D 35/27.FF.Ex <input type="checkbox"/> 1SNA 146 307 R0600		D 70/32.FF.Ex <input type="checkbox"/> 1SNA 146 308 R1700		D 120/42.FF.Ex <input type="checkbox"/> 1SNA 146 309 R1000	
		Delivered with 2 covers		Delivered with 2 covers		Delivered with 2 covers	
		D 35/27.FF.Ex <input type="checkbox"/> 1SNA 146 302 R0100		D 70/32.FF.Ex <input type="checkbox"/> 1SNA 146 303 R0200		D 120/42.FF.Ex <input type="checkbox"/> 1SNA 146 304 R0300	
		Without cover		Without cover		Without cover	
<b>Characteristics</b>		IEC NFC	IEC DIN	UL/CSA	IEC NFC	IEC DIN	UL/CSA
Wire size	Lug Solid wire	(C4) 2.5 - 35	2.5 - 50	1 AWG	(C6) 6 - 95	6 - 70	000 AWG
	Flexible wire	(C4) 2.5 - 35	2.5 - 35	1 AWG	(C6) 6 - 70	6 - 70	000 AWG
mm <sup>2</sup> / AWG							
Rated wire size	mm <sup>2</sup> / AWG	35 mm <sup>2</sup>	35 mm <sup>2</sup>	1 AWG	70 mm <sup>2</sup>	70 mm <sup>2</sup>	000 AWG
Recommended wrench	Lug / Central bolt	H10 mm / 6 pans creux 6 mm		H13 mm / 6 pans creux 6 mm		H17 mm / 6 pans creux 6 mm	
Recommended torque	Nm / lb.in	3 Nm / 26.1 lb-in / 6 Nm / 52 lb-in		6 Nm / 52 lb-in / 6 Nm / 52 lb-in		10 Nm / 87 lb-in / 6 Nm / 52 lb-in	
Voltage	EN 50019	750 V		750 V		750 V	
Current	EN 50019	125 A		192 A		269 A	
ATEX marking		⊕ I M1 - II 2G		⊕ I M1 - II 2G		⊕ I M1 - II 2G	
		EEx e		EEx e		EEx e	
ATEX certificate		LCIE 03 ATEX 0034U		LCIE 03 ATEX 0034U		LCIE 03 ATEX 0034U	
<b>Accessories</b>		Type	P/N	Type	P/N	Type	P/N
1 Rotating protective cover IP20 Grey		CPUF35	1SNA 190 016 R1600	CPUF70	1SNA 190 017 R1700	CPUF120	1SNA 190 018 R2000
2 Jumper bar with CHc screws							
	2 poles	BJS27	1SNA 205 772 R1300	BJS32	1SNA 205 774 R1500	BJS42	1SNA 205 776 R1700
	3 poles	BJS27	1SNA 205 773 R1400	BJS32	1SNA 205 775 R1600	BJS42	1SNA 205 777 R1000
3 TAP for faston 6.35 x 0.8 mm and screw		DRF6	1SNA 205 767 R1600	DRF8	1SNA 205 768 R2700	DRF10	1SNA 205 769 R2000
R See marking chapter		RC810 (on cover) - RC810, RPC (on the middle)		RC810 (on cover) - RC810, RPC (on the middle)		RC810 (on cover) - RC810, RPC (on the middle)	
Other accessories see section accessories							








## Power terminal blocks

 DIN 3 with bistable foot and base mounting

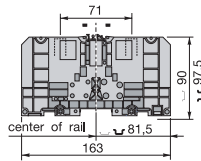


EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail.

End stop		th. 12 mm	<b>BADH</b>	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	<b>BAMH V0</b>	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200

### D 185/55.FF.Ex

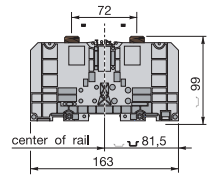
Spacing 55 mm 2.16"



2 studs M12

### D 300/55.FF.Ex

Spacing 55 mm 2.16"



2 studs M16

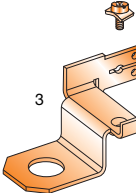
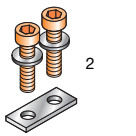
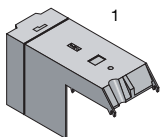
	Type	P/N	Type	P/N
Standard block UL 94 V0 <input type="checkbox"/> Grey body	<b>D 185/55.FF.Ex</b> <input type="checkbox"/> 1SNA 146 310 R0400		<b>D 300/55.FF.Ex</b> <input type="checkbox"/> 1SNA 146 311 R2100	
	Delivered with 2 covers		Delivered with 2 covers	
	<b>D 185/55.FF.Ex</b> <input type="checkbox"/> 1SNA 146 305 R0400		<b>D 300/55.FF.Ex</b> <input type="checkbox"/> 1SNA 146 306 R0500	
	Without cover		Without cover	

## Characteristics

		IEC NFC	IEC DIN	UL/CSA	IEC NFC	IEC DIN	UL/CSA
Wire size	Lug	(C11) 25 - 240	6 - 185	500 MCM	25 - 300	6 - 300	1000 MCM
		(C11) 6 - 185		500 MCM	6 - 300		1000 MCM
mm <sup>2</sup> / AWG							
Rated wire size	mm <sup>2</sup> / AWG/MCM	185 mm <sup>2</sup>	185 mm <sup>2</sup>	500 MCM	300 mm <sup>2</sup>	300 mm <sup>2</sup>	1000 MCM
Recommended wrench	lug / central bolt	H19 mm / 6 pans creux 6 mm		H24 mm / 6 pans creux 6 mm			
Recommended torque	Nm / lb.in	14 Nm / 121 lb-in / 6 Nm / 52 lb-in		25 Nm / 217 lb-in / 6 Nm / 52 lb-in			
Voltage	EN 50019	750 V		750 V			
Current	EN 50019	353 A		520 A			
ATEX marking		Ⓔ I M1 - II 2G		Ⓔ I M1 - II 2G			
ATEX certificate		LCIE 03 ATEX 0034U		LCIE 03 ATEX 0034U			

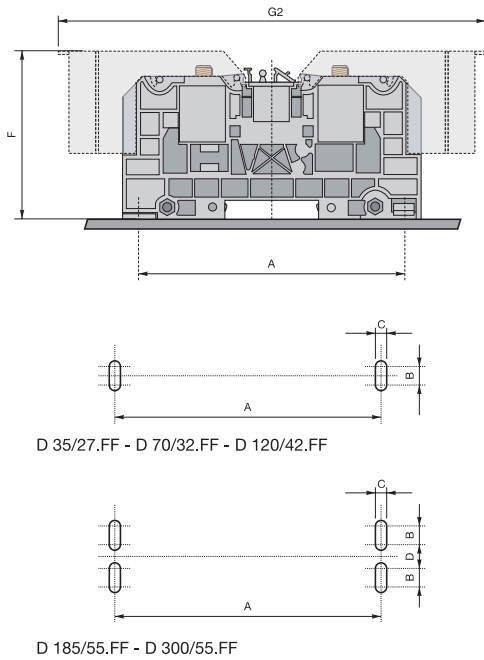
## Accessories

	Type	P/N	Type	P/N
<b>1</b> Rotating protective cover IP20 Grey	CPUF185	1SNA 190 019 R2100	CPUF185	1SNA 190 019 R2100
<b>2</b> Jumper bar with CHc screws				
	2 poles	BJS51	1SNA 205 778 R2100	BJS51
3 poles	BJS51	1SNA 205 779 R2200	BJS51	1SNA 205 779 R2200
<b>3</b> TAP for faston 6.35 x 0.8 mm and screw	DRF12	1SNA 205 770 R2500	DRF16	1SNA 205 771 R1200
<b>R</b> See marking chapter	RC810 (on cover) - RC810, RPC (on the middle)		RC810 (on cover) - RC810, RPC (on the middle)	
Other accessories see section accessories				

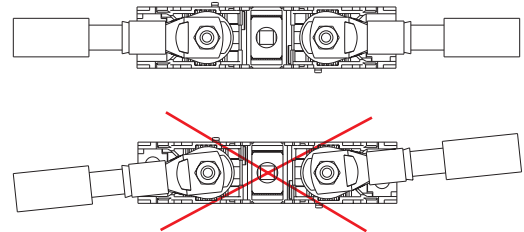


# Power terminal blocks

## Drilling position for base mounting and dimensions with covers



### Particular conditions for mounting



Type	Mounting with	A	B	C	D	F	G1	G2	H
D 35/27...	2 Screws	100,5	7,5	6,5	/	63,5	136,5	160	82,5
D 70/32...	2 Screws	120	7,5	6,5	/	72,5	165	190,5	105,7
D 120/42...	2 Screws	120	7,5	6,5	/	83,5	197	255,5	129,7
D 185/55...	4 Screws	135	13,5	6,5	8,5	103,5	228,5	295	151,5
D 300/55...	4 Screws	135	13,5	6,5	8,5	105	/	295	/

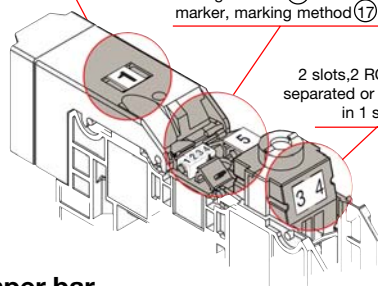
Dimensions in mm.

### Marking

2 RC 810 or 1 RC 1010, marking method (17)(28)

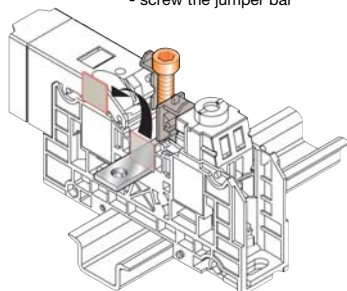
RPC type setting marker, marking method (20) or RC 810 marker, marking method (17)

2 slots, 2 RC810 not separated or 1 RC 1010 in 1 slot



### Jumper bar

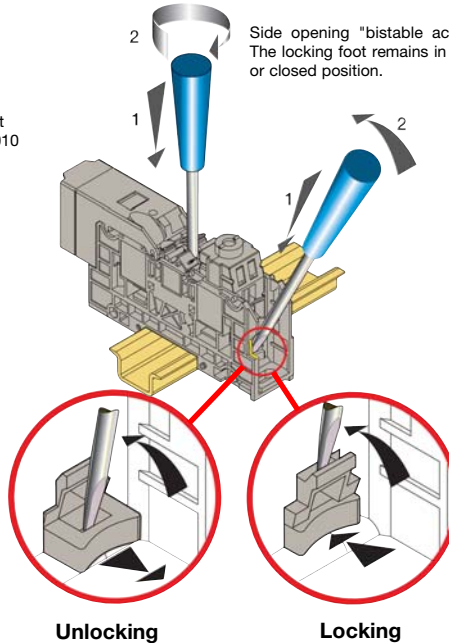
- move the marker holders up
- cut out the partition
- screw the jumper bar



### Locking foot operating with screwdriver DIA. 4

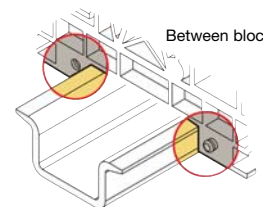
Center opening (to be made after jumper bar has been removed) "monostable action". As soon as the screwdriver is removed, the locking foot comes back to closed position

Side opening "bistable action". The locking foot remains in open or closed position.

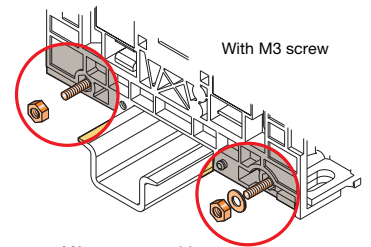


### Locking

Between blocks with stul

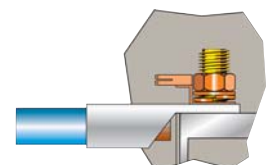


With M3 screw



M3 nut on one side  
M3 nut + washer on the other side

### Mounting of the derivative system



# Standard and ground Terminal blocks

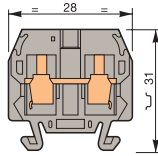
Screw clamp  DIN 2



EExe and EExi voltage ratings apply to terminal blocks only without any accessory.  
The use of ground terminal blocks do not decrease the standard terminal block's voltage ratings.

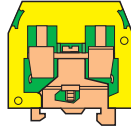
## DR 4/6... .Ex

Spacing 6 mm .238"



DR 4/6.Ex : Standard block 6 mm  
DR 4/6.1.Ex : Standard block 6 mm with partition.

## DR 4/6.P.Ex

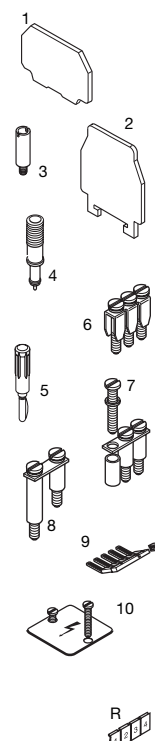


Terminal block for ground wire.

End stop		th. 6.5 mm	BADRL	V0	1SNA 199 420 F2100
Rail		15 x 5 x 1	PR2		1SNA 164 600 F1200

		Type	P/N
Standard blocks UL 94 V0	<input type="checkbox"/> Grey body	DR 4/6.Ex	<input type="checkbox"/> 1SNA 146 199 F2200
	<input type="checkbox"/> Grey body	DR 4/6.1.Ex	<input type="checkbox"/> 1SNA 146 200 F1700
	<input type="checkbox"/> Blue body	DR 4/6.N.Ex	<input type="checkbox"/> 1SNA 146 276 F0600
	<input type="checkbox"/> Blue body	DR 4/6.1.N.Ex	<input type="checkbox"/> 1SNA 146 277 F0700
Terminal blocks for ground wires UL 94 V0	<input checked="" type="checkbox"/> Green/yellow body (with rail contact)	DR 4/6.P.Ex	<input checked="" type="checkbox"/> 1SNA 146 201 F0400

Characteristics		IEC NFC DIN	UL	CSA
Wire size	Solid wire	0.2 - 4	18-12 AWG	18-12 AWG
	Flexible wire	0.22 - 4		
mm <sup>2</sup> / AWG	With isolated ferrule			
Rated wire size	mm <sup>2</sup> / AWG	4 mm <sup>2</sup>	12 AWG	12 AWG
Wire stripping length	mm / inches	9.5 mm max. / .37"		
Recommended torque	Nm / lb.in	0.5-0.8 Nm / 4.4-7.1 lb.in		
Voltage	EN 50019 / EN 50020	EExe : 275 V	EExi : 90 V	
Current	EN 50019 / EN 50020	30 A		
ATEX marking		Ⓔ I M2 / M1 Ⓔ II 2G / 1G		
		EEx e/i I / II		
ATEX certificate		LCIE 02 ATEX 0017U / 0024U		

Accessories		Type	P/N	
	1 End section	grey <input type="checkbox"/> FEDR61 V0	th. 1 1SNA 146 293 F2000	
		blue <input type="checkbox"/> FEDR61	th. 1 1SNA 127 600 F0500	
		yellow <input type="checkbox"/> FEDR63	th. 1 1SNA 103 975 F2100	
	2 Circuit separator	white <input type="checkbox"/> SCDR61	th. 0,3 1SNA 173 016 F1000	
	3 Test socket	DIA. 2 mm	AL2	1SNA 167 319 F0600
	4 Test device			
	5 Test plug	DIA. 2 mm	FC2	1SNA 007 865 F2600
	6 Assembled jumper bar not IP20	2 poles	BJM62 (1)	32 A 1SNA 173 217 F2600
		3 poles	BJM62 (1)	32 A 1SNA 173 218 F0700
		4 poles	BJM62 (1)	32 A 1SNA 173 219 F0000
5 poles		BJM62 (1)	32 A 1SNA 173 221 F2200	
6 poles		BJM62 (1)	32 A 1SNA 174 112 F1600	
7 poles		BJM62 (1)	32 A 1SNA 174 113 F1700	
8 poles		BJM62 (1)	32 A 1SNA 174 114 F1000	
9 poles	BJM62 (1)	32 A 1SNA 174 115 F1100		
10 poles	BJM62 (1)	32 A 1SNA 173 226 F2700		
7 Jumper bar not assembled	Post + screw + washer			
8 Pivoting jumper bar		BJPD6	1SNA 173 223 F2400	
9 Comb-type jumper bar	10 poles	PC61	1SNA 163 311 F2200	
10 Protection label	3 blocks	EPD61	1SNA 173 206 F0400	
		VSPD61	1SNA 173 207 F0500	
R See markers section		RC65		

Other accessories see section accessories

(1) Use of these accessories requires the cut-out of the block body (precut).



# Standard and ground Terminal blocks

Spring clamp  DIN 3

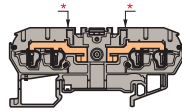


EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.  
1 wire per spring.

End stop		th. 9 mm	BADL	V0	1SNA 399 903 F0200
End stop		th. 9,1 mm	BAM	V2	1SNA 103 002 F2600
End stop		th. 9,1 mm	BAM V0	V0	1SNA 199 306 F0300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 F1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 F1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 F2200

## D 2,5/5... ..2L.2L.Ex

Spacing 5 mm .200"

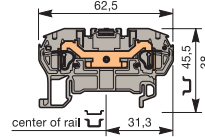


**Double circuit**  
Terminal block with 4 springs with 2 electrically separated circuits. Each circuit has its own test socket and can be jumpered independently.

\* Marking to make a difference between the D 2,5/5... ..4L.Ex and the D 2,5/5.2L.2L.Ex terminal blocks. Same dimensions as D 2,5/5... ..4L.Ex

## D 4/6... ..2L.Ex

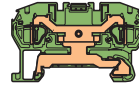
Spacing 6 mm .236"



Terminal block with 2 springs

## D 4/6.P.2L.Ex

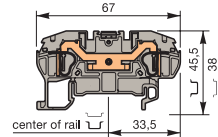
Spacing 6 mm .236"



Terminal block with 2 springs for ground wire.

## D 6/8... ..2L.Ex

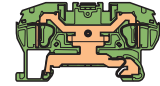
Spacing 8 mm .315"



Terminal block with 2 springs

## D 6/8.P.2L.Ex

Spacing 8 mm .315"



Terminal block with 2 springs for ground wire.

	Type	P/N	Type	P/N	Type	P/N
Standard blocks UL 94 V0  Grey body	D 2,5/5.2L.2L.Ex	1SNA 146 047 F2400	D 4/6.2L.Ex	1SNA 146 251 F0500	D 6/8.2L.Ex	1SNA 146 059 F0000
Blue body	D 2,5/5.N.2L.2L.Ex	1SNA 146 048 F0500	D 4/6.N.2L.Ex	1SNA 146 058 F0700	D 6/8.N.2L.Ex	1SNA 146 060 F0500
Terminal blocks for ground wires UL 94 V0  Green/yellow body (with rail contact)			D 4/6.P.2L.Ex	1SNA 146 253 F0700	D 6/8.P.2L.Ex	1SNA 146 061 F2200

## Characteristics

	IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA
<b>Wire size</b>	Solid wire Flexible wire	0.12 - 4 26-12 AWG	0.2 - 6 24-10 AWG	0.5 - 10 22-8 AWG	0.5 - 10 22-8 AWG	0.5 - 6 22-8 AWG
<b>mm<sup>2</sup> / AWG</b>	With isolated ferrule	0.5 - 2.5 26-12 AWG	0.2 - 4 24-10 AWG	0.5 - 6 22-8 AWG	0.5 - 6 22-8 AWG	0.5 - 6 22-8 AWG
<b>Rated wire size</b>	mm <sup>2</sup> / AWG	2.5 mm <sup>2</sup> 12 AWG	4 mm <sup>2</sup> 10 AWG	6 mm <sup>2</sup> 8 AWG	6 mm <sup>2</sup> 8 AWG	8 AWG
<b>Short circuit current (for ground blocks)</b>	A / s		480 A / 1 s		720 A / 1 s	
<b>Wire stripping length</b>	mm / inches	9.5 mm / .37"	11 mm / .43"	12.5 mm / .49"		
<b>Recommended screwdriver</b>	mm / inches	3.5 mm / .14"	4 mm / .16"	5.5 mm / .22"		
<b>Voltage</b>	EN 50019 / EN 50020	EExe : 110 V EExi : 60 V	EExe : 660 V EExi : 90 V	EExe : 550 V EExi : 90 V		
<b>Current</b>	EN 50019 / EN 50020	EEx : 24 A	EEx : 32 A	EEx : 41 A		
<b>ATEX marking</b>		Ⓔ I M2 / M1 Ⓔ II 2G / 1G	Ⓔ I M2 / M1 Ⓔ II 2G / 1G	Ⓔ I M2 / M1 Ⓔ II 2G / 1G		
<b>ATEX certificate</b>		LCIE 02 ATEX 0010U	LCIE 02 ATEX 0015U	LCIE 02 ATEX 0015U		

## Accessories

	Type	P/N	Type	P/N	Type	P/N
<b>1 End section</b>	grey orange	FED5.4L th. 2,5 1SNA 291 041 F2000 FED5.4L th. 2,5 1SNA 291 042 F2100	FED5.2L th. 2,5 1SNA 291 061 F2400 FED5.2L th. 2,5 1SNA 291 062 F2500	FED8.2L th. 2,5 1SNA 291 161 F2500 FED8.2L th. 2,5 1SNA 291 162 F2600		
<b>2 Circuit separator</b>	orange	SCD5.4L th. 2,5 1SNA 291 372 F0000	SCD5.2L th. 2,5 1SNA 291 352 F0400			
<b>3 Test plug</b>	black	FC2 Ø 2 1SNA 007 865 F2600	FC2 Ø 2 1SNA 007 865 F2600	FC2 Ø 2 1SNA 007 865 F2600		
<b>4 Jumper bar</b>	orange	BJDL5.2 2 poles 1SNA 291 102 F2300 BJDL5.3 3 poles 1SNA 291 103 F2400 BJDL5.4 4 poles 1SNA 291 104 F2500 BJDL5.5 5 poles 1SNA 291 105 F2600 BJDL5.6 6 poles 1SNA 291 106 F2700 BJDL5.7 7 poles 1SNA 291 107 F2800 BJDL5.8 8 poles 1SNA 291 108 F0100 BJDL5.9 9 poles 1SNA 291 109 F0200 BJDL5.10 10 poles 1SNA 291 110 F2600	BJDL6.2 2 poles 1SNA 291 128 F2400 BJDL6.3 3 poles 1SNA 291 129 F2500 BJDL6.4 4 poles 1SNA 291 194 F1700 BJDL6.5 5 poles 1SNA 291 195 F1000	BJDL8.2 2 poles 1SNA 291 122 F1600 BJDL8.3 3 poles 1SNA 291 123 F1700 BJDL8.4 4 poles 1SNA 291 144 F2400 BJDL8.5 5 poles 1SNA 291 145 F2500		
<b>5 Jumper bar</b>	orange	between 2 blocks, different spacing - spacing 5 and 6 mm IP 20 - 24 A - spacing 5 and 8 mm IP 20 - 24 A - spacing 6 and 8 mm IP 20 - 32 A	BJDPL56 (1) 1SNA 291 150 F0600 BJDPL58 (1) 1SNA 291 160 F0000	BJDPL56 (1) 1SNA 291 150 F0600 BJDPL68 (1) 1SNA 291 170 F0200	BJDPL58 (1) 1SNA 291 160 F0000 BJDPL68 (1) 1SNA 291 170 F0200	
<b>R</b>	See markers section	RC510, RPC (on top) - RC55 (on side)	RC610, RPC (on top) - RC65 (on side)	RC610, RC810, RPC (on top) - RC65, RCAL (on side)		

Other accessories see section accessories

(1) Insert an end section between the 2 connected blocks

## Standard and ground miniblocks

- Spring clamp DIN 2
- Base mount with flanges

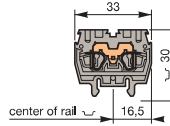


EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.  
1 wire per spring.

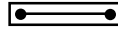
End stop		th. 6.5 mm	BADRL	V0	1SNA 199 420 P2100
Rail		15 x 5 x 1	PR2		1SNA 164 600 P1200

### DR 2,5/5.2L.Ex

Spacing 5 mm .200"

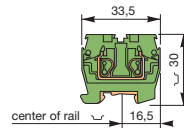


Miniblock with 2 springs

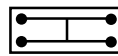


### DR 2,5/10.P.4L.Ex

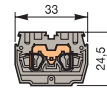
Spacing 10 mm .396"



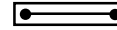
Ground miniblock with 4 springs



### DB 2,5/5.2L.Ex



Miniblock with 2 springs



		Type	P/N		
Standard blocks UL 94 V0	<input type="checkbox"/> Grey body	DR 2,5/5.2L.Ex	<input type="checkbox"/> 1SNA 146 207 P0200	DB 2,5/5.2L.Ex	<input type="checkbox"/> 1SNA 146 246 P0000
	<input type="checkbox"/> Blue body			DB 2,5/5.N.2L.Ex	<input type="checkbox"/> 1SNA 146 247 P0100
Terminal blocks for ground wires UL 94 V0	<input type="checkbox"/> Green/yellow body (with rail contact)	DR 2,5/10.P.4L.Ex	<input type="checkbox"/> 1SNA 146 263 P0100		
Characteristics		IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA
Wire size	Solid wire	0.12 - 4	26-12 AWG	0.12 - 4	26-12 AWG
	Flexible wire	0.12 - 2.5	26-12 AWG	0.12 - 2.5	26-12 AWG
mm <sup>2</sup> / AWG	With isolated ferrule	0.5 - 2.5		0.5 - 2.5	
Rated wire size	mm <sup>2</sup> / AWG	2.5 mm <sup>2</sup>	12 AWG		
Short-circuit current (for ground blocks)	A / s	300 A / 1 s		2.5 mm <sup>2</sup>	12 AWG
Wire stripping length	mm / inches	9.5 mm / .37"		9.5 mm / .37"	
Recommended screwdriver	mm / inches	3.5 mm / .14"		3.5 mm / .14"	
Voltage	EN 50019 / EN 50020	EExe : 275 V	EExi : 60 V	EExe : 275 V	EExi : 60 V
Current	EN 50019 / EN 50020	24 A		24 A	
ATEX marking		I M2 / M1	II 2G / 1G	I M2 / M1	II 2G / 1G
ATEX certificate		LCIE 02 ATEX 0031U		LCIE 02 ATEX 0031U	
Accessories		Type	P/N	Type	P/N
1	End section	grey <input type="checkbox"/>	FED1.L th. 1.5 <input type="checkbox"/> 1SNA 291 301 P0200		
		orange <input type="checkbox"/>	FED1.L th. 1.5 <input type="checkbox"/> 1SNA 291 302 P0300		
2	Kit end section (right + left)	grey <input type="checkbox"/>		FEDB.L <input type="checkbox"/> 1SNA 290 281 P0100	
		orange <input type="checkbox"/>		FEDB.L <input type="checkbox"/> 1SNA 290 282 P0200	
3	Separator section	grey <input type="checkbox"/>	FED2.L th. 4 <input type="checkbox"/> 1SNA 291 311 P2300	FED2.L th. 4 <input type="checkbox"/> 1SNA 291 311 P2300	
		orange <input type="checkbox"/>	FED2.L th. 4 <input type="checkbox"/> 1SNA 291 312 P2400	FED2.L th. 4 <input type="checkbox"/> 1SNA 291 312 P2400	
4	Jumper bar IP 20 - 24 A	orange <input type="checkbox"/>	BJDL5.2 (1) 2 poles <input type="checkbox"/> 1SNA 291 102 P2300	BJDL5.2 (1) 2 poles <input type="checkbox"/> 1SNA 291 102 P2300	
			BJDL5.3 (1) 3 poles <input type="checkbox"/> 1SNA 291 103 P2400	BJDL5.3 (1) 3 poles <input type="checkbox"/> 1SNA 291 103 P2400	
			BJDL5.4 (1) 4 poles <input type="checkbox"/> 1SNA 291 104 P2500	BJDL5.4 (1) 4 poles <input type="checkbox"/> 1SNA 291 104 P2500	
			BJDL5.5 (1) 5 poles <input type="checkbox"/> 1SNA 291 105 P2600	BJDL5.5 (1) 5 poles <input type="checkbox"/> 1SNA 291 105 P2600	
			BJDL5.6 (1) 6 poles <input type="checkbox"/> 1SNA 291 106 P2700	BJDL5.6 (1) 6 poles <input type="checkbox"/> 1SNA 291 106 P2700	
			BJDL5.7 (1) 7 poles <input type="checkbox"/> 1SNA 291 107 P2000	BJDL5.7 (1) 7 poles <input type="checkbox"/> 1SNA 291 107 P2000	
			BJDL5.8 (1) 8 poles <input type="checkbox"/> 1SNA 291 108 P0100	BJDL5.8 (1) 8 poles <input type="checkbox"/> 1SNA 291 108 P0100	
			BJDL5.9 (1) 9 poles <input type="checkbox"/> 1SNA 291 109 P0200	BJDL5.9 (1) 9 poles <input type="checkbox"/> 1SNA 291 109 P0200	
			BJDL5.10 (1) 10 poles <input type="checkbox"/> 1SNA 291 110 P2600	BJDL5.10 (1) 10 poles <input type="checkbox"/> 1SNA 291 110 P2600	
		5	Jumper bar IP 20 - 24 A	orange <input type="checkbox"/>	BJDL10.2 (2) 2 poles <input type="checkbox"/> 1SNA 291 322 P2600
	BJDL10.3 (2) 3 poles <input type="checkbox"/> 1SNA 291 323 P2700				
	BJDL10.4 (2) 4 poles <input type="checkbox"/> 1SNA 291 324 P2000				
	BJDL10.5 (2) 5 poles <input type="checkbox"/> 1SNA 291 325 P2100				
R	See markers section	RC55		RC55	
Other accessories see section accessories		(1) For D.....2,5/5.2L.Ex only. (2) For DR 2,5/10.P.4L.Ex only.			





# Terminal blocks Insulation displacement

Screw clamp - ADO  DIN 3

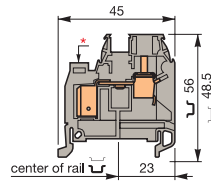


EEx and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.  
Only 1 wire per ADO connection.

End stop		th. 9 mm	BADL	V0	1 SNA 399 903 R0200
End stop		th. 9,1 mm	BAM	V2	1 SNA 103 002 R2600
End stop		th. 9,1 mm	BAM V0	V0	1 SNA 199 306 R0300
Rail		35 x 7,5 x 1	PR3.Z2		1 SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1 SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1 SNA 168 700 R2200

## D 6/8.ADO3.Ex

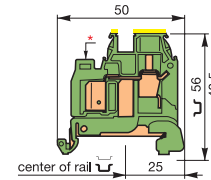
Spacing 8 mm .315"



Standard 8 mm block - \* White marking

## D 6/8.P.ADO3.Ex

Spacing 8 mm .315"



Terminal block for ground wire with rail contact - \* White marking

		Type	P/N
Standard blocks UL 94 V0	Grey body	D 6/8.ADO3.Ex	1 SNA 146 078 R0300
	Blue body	D 6/8.N.ADO3.Ex	1 SNA 146 079 R0400
Terminal blocks for ground wires UL 94 V0	Green/yellow body (with rail contact)	D 6/8.P.ADO3.Ex	1 SNA 146 081 R1700

### Characteristics

		IEC NFC DIN	UL/CSA
Wire size	Screw	Solid wire Flexible wire	0.2 - 10 0.22 - 6
	mm <sup>2</sup> / AWG	ADO	Solid wire Flexible wire
Rated wire size		mm <sup>2</sup> / AWG	4 mm <sup>2</sup> 12 AWG
Short-circuit current (for ground blocks)	A / s	480 A / 1 s	12 AWG
Wire stripping length	mm / inches	12 mm / .47"	
Recommended torque	Nm / lb.in	0.8-1 Nm / 7.1-8.9 lb.in	
Voltage	EN 50019 / EN 50020	EExe : 750 V	EExi : 375 V
Current	EN 50019 / EN 50020	EEx : 32 A	
ATEX marking		I M2 / M1	II 2G / 1G
ATEX certificate		EEx e/i I / II LCIE 02 ATEX 0029U	

### Accessories

		Type	P/N	
	1 End section	grey  FEDAD1 yellow  FEDAD1	th. 3  1 SNA 199 336 R2000 th. 3  1 SNA 199 339 R0300	
	2 Circuit separator	grey	SCAD •  1 SNA 196 896 R0000	
	3 Test socket	DIA. 2 mm DIA. 3 mm DIA. 4 mm	AL2 (1) • AL3 (1) • AL4 (1) •	1 SNA 163 043 R2100 1 SNA 163 261 R0000 1 SNA 163 240 R1700
	4 Test device		DCO	1 SNA 173 060 R0000
	5 Test plug		FC2 FC4	1 SNA 007 865 R2600 1 SNA 167 860 R0100
	6 Assembled jumper bar (without IP20 protection)		BJM8 (1) •	see accessories
	7 Assembled jumper bar (with IP20 protection)		BJM8 (1) •	see accessories
	8 Jumper bar not assembled		BJS (1) •	see accessories
	9 Screwless jumper bar IP20		BJE8 •	see accessories
	10 Jumper bar		BJB •	see accessories
	11 Screwless jumper bar to be inserted into ADO jaw	orange IP20	BJADO	see accessories
	12 Pivoting jumper bar		BJP8 •	1 SNA 174 448 R0700
	13 Connector plate		EL6 •	1 SNA 173 627 R2100
	14 Comb-type jumper bar		PC8 10 poles	1 SNA 163 313 R2400
	15 Protection label		EP6 • 3 blocks EP8 • 4 blocks VSP6 •	1 SNA 163 427 R1700 1 SNA 163 428 R2000 1 SNA 163 433 R1500
	Screw for protection label		AD2.5	1 SNA 114 205 R2000
	16 IDC jumper		OUMAD	1 SNA 179 466 R0600
	17 Manual tool		OUPAD	1 SNA 178 944 R0400
	18 Semi-automatic tool		OUTA	1 SNA 205 284 R0300
19 Interchangeable head kit				
R See markers section		RCAL85 - RC810 - RTM7		

• These accessories cannot be mounted on D 6/8.P.ADO3.Ex block

(1) A circuit separator SC... is required with these accessories.






# Double deck terminal blocks Insulation displacement

Screw clamp - ADO  DIN 3



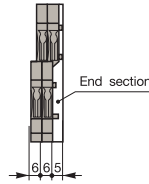
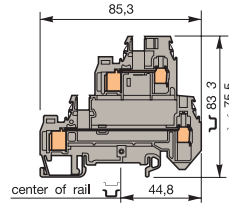
EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.

2 wires max. same gage and nature per ADO connection.

End stop		th. 12 mm	<b>BADH</b>	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	<b>BAMH V0</b>	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200



## D 4/6.D2.ADO.Ex






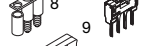


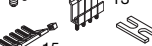

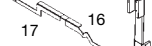

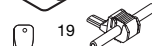
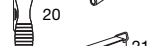





Spacing 6 mm .238"



Terminal block 6 mm, double deck opened.

	Type	P/N
Standard blocks UL 94 V0 <input type="checkbox"/> Grey body	<b>D4/6.D2.ADO.Ex</b> <input type="checkbox"/>	1SNA 146 045 R2200
<input type="checkbox"/> Blue body	<b>D4/6.D2.NADO.Ex</b> <input type="checkbox"/>	1SNA 146 046 R2300

Characteristics		IEC NFC DIN	UL/CSA	
Wire size	Screw	Solid wire	0.2 - 4	22-10 AWG
		Flexible wire	0.22 - 4	22-10 AWG
mm <sup>2</sup> / AWG	ADO	Solid wire	0.28 - 1.5	22-16 AWG
		Flexible wire	0.34 - 1.5	22-16 AWG
Rated wire size		mm <sup>2</sup> / AWG	1.5 mm <sup>2</sup>	10/16 AWG
Wire stripping length		mm / inches	9.5 mm / .37"	
Recommended torque		Nm / lb.in	0.5-0.8 Nm / 4.4-7.1 lb.in	
Voltage		EN 50019 / EN 50020	EExe : 550 V	EExi : 375 V
Current		EN 50019 / EN 50020	EEx : 17.5 A	
ATEX marking			 I M2 / M1	 II 2G / 1G
			EEx e/i I / II	
ATEX certificate			LCIE 02 ATEX 0021U	

Accessories		Type	P/N
	<b>1</b> End stop	FED2AD1	th. 5 <input type="checkbox"/> 1SNA 199 417 R1200
	<b>2</b> End section	SCAD	<input type="checkbox"/> 1SNA 196 896 R0000
	<b>3</b> Circuit separator	AL2 (1)	DIA 2 1SNA 163 043 R2100
	<b>4</b> Test socket	AL3 (1)	DIA 3 1SNA 163 261 R0000
	<b>5</b> Test device	DCJ	<input type="checkbox"/> 1SNA 173 059 R0300
	<b>6</b> Test plug	FC2	DIA 2 1SNA 007 865 R2600
	<b>7</b> Screwless jumper bar IP20	BJM6...	see accessories
	<b>8</b> Pivoting jumper bar	BJM6...	see accessories
	<b>9</b> Jumper bar for alternated jumping	BJJ6	20 poles 1SNA 174 784 R2000
	<b>10</b> Connector plate	EV6	1SNA 168 604 R1600
	<b>11</b> Comb type jumper bar	BJE6...	see accessories
	<b>12</b> Vertical jumper bar	BJB	1SNA 199 466 R2300
	<b>13</b> Shielding connector	BJADO6...	see accessories
	<b>14</b> Protection label	BJP6 (1)	1SNA 174 413 R1400
	<b>15</b> IDC jumper	BJA6 (1)	10 poles 1SNA 116 541 R1200
	<b>16</b> Manual tool	EL6	1SNA 173 627 R2100
	<b>17</b> Semi-automatic tool	PC6	10 poles 1SNA 113 548 R2600
	<b>18</b> Interchangeable head kit	EIP	1SNA 113 550 R2400
		ITVE	1SNA 179 694 R0300
		CBD2S	1SNA 178 408 R1400
		EP6	4 blocks 1SNA 163 427 R1700
		VSP6	1SNA 163 433 R1500
		AD2.5	1SNA 114 205 R2000
		OUMAD	1SNA 179 466 R0600
		OUPAD	1SNA 178 944 R0400
		OUTA	1SNA 205 284 R0300
	<b>R</b> See markers section	RC65 - RC610 - RTM7	

(1) A circuit separator SC.... is required with these accessories.

# Terminal blocks Insulation displacement

ADO - ADO  DIN 3



EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.

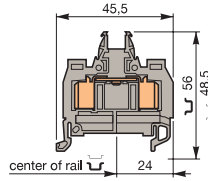
2 wires max. same gage and nature per ADO connection.

\* UL - Hazardous locations Class I - Zone I - Ex e II T6  
File # E199332

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 9,1 mm	BAM	V2	1SNA 103 002 R2600
End stop		th. 9,1 mm	BAM V0	V0	1SNA 199 306 R0300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

## D 1/5.ADO.Ex

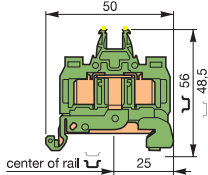
Spacing 5 mm .200"



Standard 5 mm block

## D 1/5.P.ADO.Ex

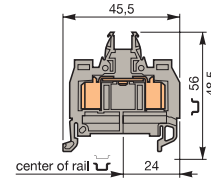
Spacing 5 mm .200"



Terminal block for ground wire with rail contact

## D 1,5/6.ADO.Ex

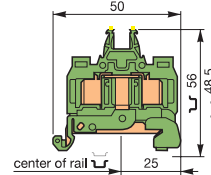
Spacing 6 mm .238"









Standard 6 mm block



## D 1,5/6.P.ADO.Ex

Spacing 6 mm .238"



Terminal block for ground wire with rail contact



























	Type	P/N	Type	P/N
Standard blocks UL 94 V0  Grey body  Blue body	D 1/5.ADO.Ex 	1SNA 146 069 R0200	D 1,5/6.ADO.Ex* 	1SNA 146 036 R1100
	D 1/5.N.ADO.Ex 	1SNA 146 070 R0700	D 1,5/6.N.ADO.Ex 	1SNA 146 037 R1200

Terminal blocks for ground wires UL 94 V0  Green/yellow body (with rail contact)	D 1/5.P.ADO.Ex 	1SNA 146 075 R2000	D 1,5/6.P.ADO.Ex* 	1SNA 146 040 R0100
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### Characteristics

	IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA
<b>Wire size</b>				
<b>mm<sup>2</sup> / AWG</b>	Screw	Solid wire Flexible wire		
	ADO	Solid wire Flexible wire	0.2 - 1 0.22 - 1	24-18 AWG 24-18 AWG
<b>Rated wire size</b>				
<b>Short-circuit current (for ground blocks)</b>	A / s	120 A / 1 s	180 A / 1 s	
<b>Wire stripping length</b>	mm / inches			
<b>Recommended torque</b>	Nm / lb.in			
<b>Voltage</b>	EN 50019 / EN 50020	EExe : 750 V EExi : 60 V	EExe : 550 V EExi : 90 V	
<b>Current</b>	EN 50019 / EN 50020	EEx : 13,5 A	EEx : 17,5 A	
<b>ATEX marking</b>		I M2 / M1  II 2G / 1G	I M2 / M1  II 2G / 1G	
<b>ATEX certificate</b>		LCIE 02 ATEX 0029U	LCIE 02 ATEX 0021U	

### Accessories

	Type	P/N	Type	P/N
<b>1</b> End section 	grey  yellow 	FEMAD3 th. 3  1SNA 199 341 R0500 FEMAD3 th. 3  1SNA 199 343 R0700	FEMAD3 th. 3  1SNA 199 341 R0500 FEMAD3 th. 3  1SNA 199 343 R0700	
<b>2</b> Circuit separator 	grey 	SCAD5  1SNA 199 551 R2000	SCAD5  1SNA 199 551 R2000	
<b>3</b> Test socket 	DIA. 2 mm DIA. 3 mm	AL2 (1) 1SNA 163 046 R2400	AL2 (1) 1SNA 163 046 R2400 AL3 (1) 1SNA 163 261 R0000	
<b>4</b> Test plug 		FC2 1SNA 007 865 R2600	FC2 1SNA 007 865 R2600 FC4 1SNA 167 860 R0100	
<b>5</b> Assembled jumper bar (without IP20 protection) 		BJM5 (1) see accessories	BJM6 (1) see accessories	
<b>6</b> Assembled jumper bar (with IP20 protection) 		BJM5 (1) see accessories	BJM6 (1) see accessories	
<b>7</b> Jumper bar not assembled 	Post + screw + washer	BJS5 (1) see accessories	BJS6 (1) see accessories	
<b>8</b> Screwless jumper bar IP20 		BJE... see accessories	BJE... see accessories	
<b>9</b> Jumper bar 		BJB see accessories	BJB see accessories	
<b>10</b> Screwless jumper bar to be inserted into ADO jaw 	orange IP20	BJADO5... see accessories	BJADO6... see accessories	
<b>11</b> Pivoting jumper bar 			BJP6 1SNA 174 413 R1400	
<b>12</b> Connector plate 			EL6 1SNA 173 627 R2100	
<b>13</b> Shielding connector 	th. 0,5 th. 0,8	CBM5 1SNA 178 745 R1400 CBM8 1SNA 178 746 R1500	CBM5 1SNA 178 745 R1400 CBM8 1SNA 178 746 R1500 EP6 1SNA 163 427 R1700	
<b>14</b> Protection label 	Screw for protection label		VSP6 1SNA 163 433 R1500	
<b>15</b> Manual tool 		OUMAD 1SNA 179 466 R0600	OUMAD 1SNA 179 466 R0600	
<b>16</b> Semi-automatic tool 		OUPAD 1SNA 178 944 R0400	OUPAD 1SNA 178 944 R0400	
<b>17</b> Interchangeable head kit 		OUTA 1SNA 205 284 R0300	OUTA 1SNA 205 284 R0300	
<b>R</b> See markers section		RC55 - RC510 - RTM 7	RC65 - RC610 - RTM7	

(1) A circuit separator SC... is required with these accessories.

# Terminal blocks Insulation displacement

ADO - ADO  DIN 3



EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.

2 wires max. same gage and nature per ADO connection.

\*\* UL - Hazardous locations Class I - Zone I - Ex e II T6  
File # E199332

End stop		th. 9 mm	BADL	V0	1SNA 399 903 F0200
End stop		th. 9,1 mm	BAM	V2	1SNA 103 002 F2600
End stop		th. 9,1 mm	BAM V0	V0	1SNA 199 306 F0300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 F1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 F1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 F2200

Standard blocks UL 94 V0		Grey body			
		Blue body			
Terminal blocks for ground wires UL 94 V0		Green/yellow body (with rail contact)			

## Characteristics

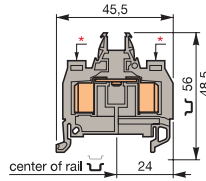
Wire size	Screw	Solid wire Flexible wire				
mm <sup>2</sup> / AWG	ADO	Solid wire Flexible wire	1 - 2.5 1 - 2.5	16-14 AWG 16-14 AWG	2.5 - 4 14-12 AWG	
Rated wire size		mm <sup>2</sup> / AWG	2.5 mm <sup>2</sup>	16 AWG	4 mm <sup>2</sup> 12 AWG	
Short-circuit current (for ground blocks)	A / s		300 A / 1 s		480 A / 1 s	
Wire stripping length	mm / inches					
Recommended torque	Nm / lb.in					
Voltage	EN 50019 / EN 50020		EExe : 420 V EExi : 24 A	EExe : 90 V	EExe : 420 V EExi : 190 V	
Current	EN 50019 / EN 50020				EEx : 32 A	
ATEX marking						
ATEX certificate			LCIE 02 ATEX 0021U		LCIE 02 ATEX 0029U	

## Accessories

	1 End section	grey	FEMAD3	th. 3	1SNA 199 341 F0500
	2 Circuit separator	grey	SCAD		1SNA 196 896 F0000
	3 Test socket	DIA. 2 mm DIA. 3 mm DIA. 4 mm	AL2 (1) AL3 (1) AL4 (1)		1SNA 163 043 F2100 1SNA 163 262 F0100 1SNA 163 240 F1700
	4 Test plug		FC2 FC4		1SNA 007 865 F2600 1SNA 167 860 F0100
	5 Assembled jumper bar (without IP20 protection)		BJM8 (1)		see accessories
	6 Assembled jumper bar (with IP20 protection)		BJM8 (1)		see accessories
	7 Jumper bar not assembled Post + screw + washer		BJJ8 (1) EV6		see accessories see accessories
	8 Screwless jumper bar	IP20	BJE8...		see accessories
	9 Jumper bar		BJB	1SNA 199 466 F2300	1SNA 199 466 F2300
	10 Pivoting jumper bar		BJP8	1SNA 174 448 F0700	1SNA 174 448 F0700
	11 Connector plate		EL6	1SNA 173 627 F2100	1SNA 173 627 F2100
	12 Protection label		EP6 EP8 VSP6	1SNA 163 427 F1700 1SNA 163 428 F2000 1SNA 163 433 F1500	1SNA 163 427 F1700 1SNA 163 428 F2000 1SNA 163 433 F1500
	13 Manual tool	Screw for protection label	OUMAD	1SNA 179 466 F0600	1SNA 179 466 F0600
	14 Semi-automatic tool		OUPAD	1SNA 178 944 F0400	1SNA 178 944 F0400
	15 Interchangeable head kit		OUTA	1SNA 205 284 F0300	1SNA 205 284 F0300
	R See markers section		RCAL85 - RC610 - RTM7		RCAL85 - RC610 - RTM7

### D 2,5/8.ADO.Ex

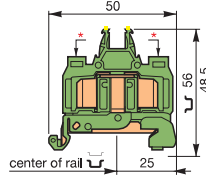
Spacing 8 mm .315"



Standard 8 mm block - \* Black marking

### D 2,5/8.P.ADO.Ex

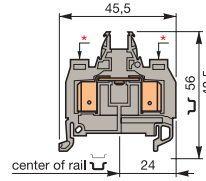
Spacing 8 mm .315"



Terminal block for ground wire with rail contact - \* Black marking

### D 4/8.ADO.Ex

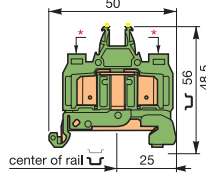
Spacing 8 mm .315"



Standard 8 mm block - \* White marking

### D 4/8.P.ADO.Ex

Spacing 8 mm .315"



Terminal block for ground wire with rail contact - \* White marking



# Standard and ground miniblocks

- Screw clamp - ADO  $\checkmark$  DIN 2 /  $\checkmark$  DIN 3 / Base mount



EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.

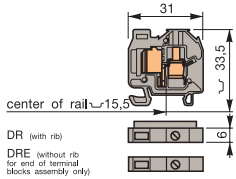
2 wires max. same gage and nature per ADO connection.

\* UL - Hazardous locations Class I - Zone I - Ex e II T6  
File # E199332

End stop	$\checkmark$	th. 6.5 mm	BADRL	V0	1SNA 199 420 F2100
End stop	$\checkmark$	th. 12 mm	BADH	V2	1SNA 116 900 F2700
End stop	$\checkmark$	th. 9,1 mm	BAMH V0	V0	1SNA 194 836 F0100
Rail	$\checkmark$	15 x 5 x 1	PR2		1SNA 164 600 F1200
Rail	$\checkmark$	35 x 7,5 x 1	PR3.22		1SNA 174 300 F1700
Rail	$\checkmark$	35 x 15 x 2,3	PR4		1SNA 168 500 F1200
Rail	$\checkmark$	35 x 15 x 1,5	PR5		1SNA 168 700 F2200

## DR... 4/6.ADO.Ex

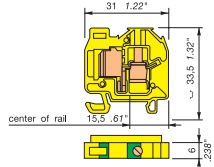
Spacing 6 mm .238"  
Mounting rail DIN 2



DR (with rib)  
DRE (without rib for end of terminal blocks assembly only)

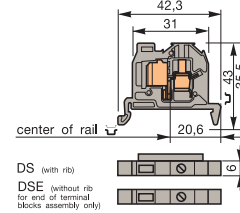
## DR 4/6.PI.ADO.Ex

Spacing 6 mm .238"  
Mounting rail DIN 2



## DS 4/6... ADO.Ex

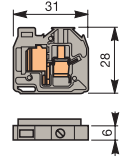
Spacing 6 mm .238"  
Mounting rail DIN 3



DS (with rib)  
DSE (without rib for end of terminal blocks assembly only)

## DB 4/6.ADO.Ex

Spacing 6 mm .238"  
Base mount with flanges



	Type	P/N	Type	P/N	Type	P/N
--	------	-----	------	-----	------	-----

Standard blocks UL 94 V0	DR 4/6.ADO.Ex	1SNA 146 202 F0500	DS 4/6.ADO.Ex*	1SNA 146 064 F2500	DB 4/6.ADO.Ex	1SNA 146 210 F0000
	DR 4/6.ADO.Ex	1SNA 146 208 F1300				
	DRE 4/6.ADO.Ex	1SNA 146 209 F1400				
Terminal blocks for ground wires UL 94 V0	DR 4/6.PI.ADO.Ex	1SNA 146 203 F0600	DS 4/6.N.ADO.Ex*	1SNA 146 065 F2600		

### Characteristics

		IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA
Wire size	Screw	Solid wire	0.2 - 4	22-10 AWG	0.2 - 4	22-10 AWG	0.2 - 4
		Flexible wire	0.22 - 4	22-10 AWG	0.22 - 4	22-10 AWG	0.22 - 4
mm <sup>2</sup> / AWG	ADO	Solid wire	0.28 - 1.5	22-16 AWG	0.28 - 1.5	22-16 AWG	0.28 - 1.5
		Flexible wire	0.34 - 1.5	22-16 AWG	0.34 - 1.5	22-16 AWG	0.34 - 1.5
Rated wire size		mm <sup>2</sup> / AWG	1.5 mm <sup>2</sup>	16-10 AWG	1.5 mm <sup>2</sup>	16-10 AWG	1.5 mm <sup>2</sup>
Short-circuit current (for ground blocks)	A / s		180 A / 1 s				
Wire stripping length	mm / inches		9.5 mm / .37"		9.5 mm / .37"		9.5 mm / .37"
Recommended torque	Nm / lb.in		0,5-0,8 Nm / 4,4-7,1 lb.in		0,5-0,8 Nm / 4,4-7,1 lb.in		0,5-0,8 Nm / 4,4-7,1 lb.in
Voltage	EN 50019 / EN 50020	EExe : 420 V	EExi : 190 V	EExe : 420 V	EExi : 190 V	EExe : 420 V	EExi : 190 V
Current	EN 50019 / EN 50020	EEx : 17,5 A		EEx : 17,5 A		EEx : 17,5 A	
ATEX marking		EEx I M2 / M1 EEx II 2G / 1G		EEx I M2 / M1 EEx II 2G / 1G		EEx I M2 / M1 EEx II 2G / 1G	
ATEX certificate		LCIE 02 ATEX 0032U		LCIE 02 ATEX 0032U		LCIE 02 ATEX 0032U	

### Accessories

	Type	P/N	Type	P/N	Type	P/N
1 End stop (DIN 2)	grey	BADRL V0 th. 6.5 1SNA 199 420 F2100				
2 End stop (DIN 3)	grey		BADL V0 th. 9.0 1SNA 399 903 F0200			
3 End section	grey	FEAD1 V0 th. 2.5 1SNA 199 421 F1600	FEAD1 V0 th. 2.5 1SNA 199 421 F1600			
	orange	FEAD1 V0 th. 2.5 1SNA 199 422 F1700	FEAD1 V0 th. 2.5 1SNA 199 422 F1700			
4 End section kit with screw locks (right + left)	grey			FEAD3 V0 1SNA 199 437 F1600		
	orange			FEAD3 V0 1SNA 199 438 F2700		
5 Separator	grey	FEAD5 V0 th. 5.0 1SNA 199 433 F1200	FEAD5 V0 th. 5.0 1SNA 199 433 F1200	FEAD5 V0 th. 5.0 1SNA 199 433 F1200		
	orange	FEAD5 V0 th. 5.0 1SNA 199 434 F1300	FEAD5 V0 th. 5.0 1SNA 199 434 F1300	FEAD5 V0 th. 5.0 1SNA 199 434 F1300		
6 Test device		DCJ 1SNA 173 059 F0300	DCJ 1SNA 173 059 F0300	DCJ V2 1SNA 173 059 F0300		
7 Test plug		FC2 DIA. 2 1SNA 007 865 F2600	FC2 DIA. 2 1SNA 007 865 F2600	FC2 DIA. 2 1SNA 007 865 F2600		
8 Screwless jumper bar to be inserted into ADO jaw orange IP20		BJADO6... see accessories	BJADO6... see accessories	BJADO6... see accessories		
9 Comb-type jumper bar InsulatinG		PC6 see accessories	PC6 see accessories	PC6 see accessories		
		EIP 1SNA 113 550 F2400	EIP 1SNA 113 550 F2400	EIP 1SNA 113 550 F2400		
10 IDC jumper			AD2,5 V2 1SNA 114 205 F2000	AD2,5 V2 1SNA 114 205 F2000		
11 Manual tool		OUMAD 1SNA 179 466 F0600	OUMAD 1SNA 179 466 F0600	OUMAD 1SNA 179 466 F0600		
12 Semi-automatic tool		OUPAD 1SNA 178 944 F0400	OUPAD 1SNA 178 944 F0400	OUPAD 1SNA 178 944 F0400		
13 Interchangeable head kit		OUTA 1SNA 205 284 F0300	OUTA 1SNA 205 284 F0300	OUTA 1SNA 205 284 F0300		
14 Pneumatic tool kit		OUTAD 1SNA 205 710 F1100	OUTAD 1SNA 205 710 F1100	OUTAD 1SNA 205 710 F1100		
15 Extraction tool kit		EXAD2 1SNA 205 721 F0000	EXAD2 1SNA 205 721 F0000	EXAD2 1SNA 205 721 F0000		
R See markers section		Top of block RC65 - RCAL85	Top of block RC65 - RCAL85	Top of block RC65 - RCAL85		

## Standard and ground miniblocks

- Screw clamp - ADO ✓ DIN 2



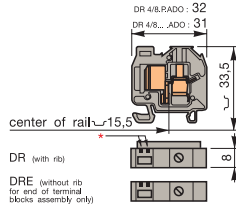
EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.

2 wires max. same gage and nature per ADO connection.

End stop	✓	th. 6.5 mm	BADRL	V0	1SNA 199 420 R2100
Rail	✓	15 x 5 x 1	PR2		1SNA 164 600 R1200

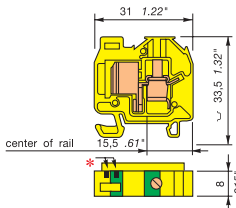
### DR 4/8.ADO.Ex

Spacing 8 mm .315"  
Mounting rail DIN 2



### DR 4/8.PI.ADO.Ex

Spacing 8 mm .315"  
Mounting rail DIN 2



Standard blocks UL 94 V0	□ Grey body	<b>Type</b>	<b>P/N</b>
		DR 4/8.ADO.Ex	□ 1SNA 146 255 R0100

Terminal blocks for ground wires UL 94 V0	■ Yellow body/green (without rail contact)	<b>Type</b>	<b>P/N</b>
		DR 4/8.PI.ADO.Ex	■ 1SNA 146 204 R0700

### Characteristics

		IEC NFC DIN	UL/CSA
Wire size	Screw	Solid wire Flexible wire	0.2 - 4 0.22 - 4
	mm <sup>2</sup> / AWG	ADO	Solid wire Flexible wire
Rated wire size		mm <sup>2</sup> / AWG	2.5 mm <sup>2</sup> 14 AWG
Short-circuit current (for ground blocks)	A / s	300 A / 1 s	
Wire stripping length	mm / inches	9.5 mm / .37"	
Recommended torque	Nm / lb.in	0.5-0.8 Nm / 4.4-7.1 lb-in	
Voltage	EN 50019 / EN 50020	EExe : 550 V	EExi : 375 V
Current	EN 50019 / EN 50020	EEx : 24 A	
ATEX marking		Ex I M2 / M1	Ex II 2G / 1G
ATEX certificate		EEx e/I I / II LCIE 02 ATEX 0032U	

### Accessories

		Type	P/N
	1 End stop (DIN 2)	grey □	BADRL V0 th. 6.5 □ 1SNA 199 420 R2100
	2 End section	grey □	FEAD1 V0 th. 2.5 □ 1SNA 199 421 R1600
	3 Separator	orange ■	FEAD1 V0 th. 2.5 ■ 1SNA 199 422 R1700
	4 Test device	grey □	FEAD5 V0 th. 5.0 □ 1SNA 199 433 R1200
	5 Test plug	orange ■	FEAD5 V0 th. 5.0 ■ 1SNA 199 434 R1300
	6 Comb-type jumper bar		DCJ ■ 1SNA 173 059 R0300
	7 IDC jumper		FC2 DIA. 2 1SNA 007 865 R2600
	8 Manual tool		PC8 see accessories
	9 Semi-automatic tool		AD2.5 V2 1SNA 114 205 R2000
	10 Interchangeable head kit		OUMAD 1SNA 179 466 R0600
	11 Pneumatic tool kit		OUPAD 1SNA 178 944 R0400
	12 Extraction tool kit		OUTA 1SNA 205 284 R0300
			OUTAD 1SNA 205 710 R1100
			EXAD2 1SNA 205 721 R0000
R	See markers section	Top of block RCAL85	

# Standard and ground miniblocks

- ADO - ADO DIN 2 / DIN 3



EExe and EExi voltage ratings apply to terminal blocks only without any accessory. The use of ground terminal blocks do not decrease the standard terminal blocks' voltage ratings.

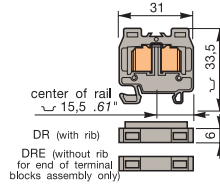
2 wires max. same gage and nature per ADO connection.

\* UL - Hazardous locations Class I - Zone I - Ex e II T6  
File # E199332

End stop		th. 6.5 mm	BADRL	V0	1SNA 199 420 F2100
End stop		th. 12 mm	BADH	V2	1SNA 116 900 F2700
End stop		th. 9.1 mm	BAMH V0	V0	1SNA 194 836 F0100
Rail		15 x 5 x 1	PR2		1SNA 164 600 F1200
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 F1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 F1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 F2200

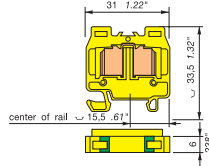
## DR 1,5/6.ADO.Ex

Spacing 6 mm .238"  
Mounting rail DIN 2



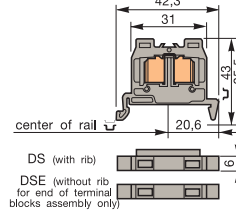
## DR 1,5/6.PI.ADO.Ex

Spacing 6 mm .238"  
Mounting rail DIN 2



## DS 1,5/6... ADO.Ex

Spacing 6 mm .238"  
Mounting rail DIN 3



	Type	P/N	Type	P/N
Standard blocks UL 94 V0	Grey body		Blue body	
Terminal blocks for ground wires UL 94 V0	Yellow body/green (without rail contact)			
	DR 1,5/6.ADO.Ex	1SNA 146 205 F0000	DS 1,5/6.ADO.Ex*	1SNA 146 066 F2700
			DS 1,5/6.N.ADO.Ex*	1SNA 146 067 F2000
	DR 1,5/6.PI.ADO.Ex	1SNA 146 206 F0100		

Characteristics		IEC NFC DIN	UL/CSA	IEC NFC DIN	UL/CSA
Wire size	Screw	Solid wire			
		Flexible wire			
mm <sup>2</sup> / AWG	ADO	Solid wire	0.28 - 1.5	22-16 AWG	0.28 - 1.5
		Flexible wire	0.34 - 1.5	22-16 AWG	0.34 - 1.5
Rated wire size		mm <sup>2</sup> / AWG	1.5 mm <sup>2</sup>	16 AWG	1.5 mm <sup>2</sup>
Short-circuit current (for ground blocks)	A / s		180 A / 1 s		
Wire stripping length	mm / inches				
Recommended torque	Nm / lb.in				
Voltage	EN 50019 / EN 50020	EExe : 550 V	EExi : 375 V	EExe : 550 V	EExi : 375 V
Current	EN 50019 / EN 50020	EEx : 17,5 A		EEx : 17,5 A	
ATEX marking					
		EEx e/i I / II		EEx e/i I / II	
ATEX certificate		LCIE 02 ATEX 0032U		LCIE 02 ATEX 0032U	

Accessories		Type	P/N	Type	P/N
	1 End stop (DIN 2)	grey	BADRL V0 th. 6.5  1SNA 199 420 F2100	BADL V0 th. 9.0  1SNA 399 903 F0200	
	2 End stop (DIN 3)	grey		FEAD2 V0 th. 2.5  1SNA 199 423 R1000	
	3 End section	orange	FEAD2 V0 th. 2.5  1SNA 199 424 R1100	FEAD2 V0 th. 2.5  1SNA 199 424 R1100	
	4 Separator	orange	FEAD6 V0 th. 5.0  1SNA 199 435 R1400	FEAD6 V0 th. 5.0  1SNA 199 435 R1400	
	5 Screwless jumper bar to be inserted into ADO jaw orange IP20	orange	FEAD6 V0 th. 5.0  1SNA 199 436 R1500	FEAD6 V0 th. 5.0  1SNA 199 436 R1500	
	6 Manual tool		BJADO6... see accessories	BJADO6... see accessories	
	7 Semi-automatic tool	OUMAD	1SNA 179 466 F0600	OUMAD	1SNA 179 466 F0600
	8 Interchangeable head kit	OUPAD	1SNA 178 944 F0400	OUPAD	1SNA 178 944 F0400
	9 Pneumatic tool kit	OUTA	1SNA 205 284 F0300	OUTA	1SNA 205 284 F0300
	10 Extraction tool kit	OUTAD	1SNA 205 710 R1100	OUTAD	1SNA 205 710 R1100
		EXAD2	1SNA 205 721 F0000	EXAD2	1SNA 205 721 F0000
	R See markers section		Top of block RC65 - RCAL85		Top of block RC65 - RCAL85



# Numerical and alphabetical index

1SNA 007 865 R2600	16	1SNA 146 063 R2400	35	1SNA 164 586 R1000	21	1SNA 176 678 R1700	17	1SNA 205 777 R1000	23	D 6/8.P2L.Ex	28
1SNA 103 002 R2600	16	1SNA 146 064 R2500	36	1SNA 164 587 R1100	21	1SNA 176 679 R1000	17	1SNA 205 778 R2100	24	D 6/8.PADO.Ex	30
1SNA 103 061 R2000	18	1SNA 146 065 R2600	36	1SNA 164 588 R2200	21	1SNA 176 736 R2100	19	1SNA 205 779 R2200	24	D 6/8.PADO3.Ex	31
1SNA 103 065 R2400	17	1SNA 146 066 R2700	38	1SNA 164 600 R1200	26	1SNA 176 737 R2200	19	1SNA 290 281 R0100	29	DB 2,5/5.2L.Ex	29
1SNA 103 125 R1500	16	1SNA 146 067 R2000	38	1SNA 164 736 R2500	21	1SNA 176 738 R0300	19	1SNA 290 282 R0200	29	DB 2,5/5.N.2L.Ex	29
1SNA 103 126 R1600	16	1SNA 146 068 R0100	18	1SNA 164 737 R2600	21	1SNA 176 739 R0400	19	1SNA 291 041 R2000	27	DB 4/6.ADO.Ex	36
1SNA 103 775 R0000	20	1SNA 146 069 R0200	33	1SNA 164 950 R0000	33	1SNA 176 740 R1100	19	1SNA 291 042 R2100	27	DR 1,5/6.ADO.Ex	38
1SNA 103 776 R0100	20	1SNA 146 070 R0700	33	1SNA 167 319 R0600	26	1SNA 177 508 R0700	18	1SNA 291 051 R2200	27	DR 1,5/6.PI.ADO.Ex	38
1SNA 103 975 R2100	26	1SNA 146 071 R2400	30	1SNA 167 860 R0100	18	1SNA 177 509 R0000	18	1SNA 291 052 R2300	27	DR 2,5/10.P.4L.Ex	29
1SNA 105 028 R2100	16	1SNA 146 072 R2500	30	1SNA 168 237 R0500	18	1SNA 177 510 R2400	18	1SNA 291 061 R2400	27	DR 2,5/5.2L.Ex	29
1SNA 113 003 R1000	16	1SNA 146 073 R2600	18	1SNA 168 238 R1600	18	1SNA 177 511 R1100	18	1SNA 291 062 R2500	27	DR 4/6.1.Ex	26
1SNA 113 065 R1500	18	1SNA 146 074 R2700	30	1SNA 168 273 R1100	21	1SNA 177 651 R0500	19	1SNA 291 077 R2400	27	DR 4/6.1.N.Ex	26
1SNA 113 102 R1000	17	1SNA 146 075 R2000	33	1SNA 168 400 R1600	19	1SNA 177 652 R0600	16	1SNA 291 102 R2300	27	DR 4/6.ADO.Ex	36
1SNA 113 482 R0500	19	1SNA 146 076 R2100	34	1SNA 168 485 R2700	34	1SNA 177 653 R0700	17	1SNA 291 103 R2400	27	DR 4/6.Ex	26
1SNA 113 544 R1200	16	1SNA 146 077 R2200	34	1SNA 168 500 R1200	16	1SNA 177 654 R0000	17	1SNA 291 104 R2500	27	DR 4/6.N.Ex	26
1SNA 113 548 R2600	16	1SNA 146 078 R0300	31	1SNA 168 516 R2500	21	1SNA 177 812 R1700	20	1SNA 291 105 R2600	27	DR 4/6.P.Ex	26
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1SNA 116 541 R1200	32	1SNA 146 104 R2300	20	1SNA 168 521 R2200	21	1SNA 178 032 R2500	20	1SNA 291 110 R2600	27	DS 1,5/6.ADO.Ex	38
1SNA 116 720 R2100	19	1SNA 146 199 R2200	26	1SNA 168 522 R2300	21	1SNA 178 033 R2600	20	1SNA 291 122 R1600	28	DS 1,5/6.N.ADO.Ex	38
1SNA 116 728 R2500	16	1SNA 146 200 R1700	26	1SNA 168 523 R2400	21	1SNA 178 408 R1400	32	1SNA 291 123 R1700	28	DS 4/6.ADO.Ex	36
1SNA 116 771 R2000	20	1SNA 146 201 R0400	26	1SNA 168 604 R1600	16	1SNA 178 745 R1400	16	1SNA 291 128 R2400	28	DS 4/6.N.ADO.Ex	36
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1SNA 116 934 R0400	18	1SNA 146 203 R0600	36	1SNA 168 664 R1100	17	1SNA 178 944 R0400	30	1SNA 291 144 R2400	28		
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1SNA 118 495 R1700	19	1SNA 146 205 R0000	38	1SNA 168 962 R0400	19	1SNA 179 613 R0100	18	1SNA 291 150 R0600	27		
1SNA 118 618 R0100	17	1SNA 146 206 R0100	38	1SNA 168 973 R0700	21	1SNA 179 614 R0200	18	1SNA 291 160 R0000	27	M 10/10.Ex	17
1SNA 118 707 R0300	16	1SNA 146 207 R0200	29	1SNA 168 974 R0000	21	1SNA 179 615 R0300	18	1SNA 291 161 R2500	28	M 10/10.N.Ex	17
1SNA 126 576 R1700	16	1SNA 146 208 R1300	36	1SNA 173 016 R1000	26	1SNA 179 616 R0400	18	1SNA 291 162 R2600	28	M 10/10.PI.Ex	17
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1SNA 127 600 R0500	26	1SNA 146 210 R0000	36	1SNA 173 059 R0300	16	1SNA 179 626 R0600	17	1SNA 291 194 R1700	28	M 10/10.RS.Ex	21
1SNA 128 499 R2500	19	1SNA 146 211 R2500	21	1SNA 173 060 R0000	17	1SNA 179 627 R0700	18	1SNA 291 195 R1000	28	M 16/12.Ex	17
1SNA 128 618 R0300	17	1SNA 146 212 R2600	21	1SNA 173 147 R2000	18	1SNA 179 628 R1000	17	1SNA 291 301 R0200	29	M 16/12.N.Ex	17
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1SNA 146 002 R2000	16	1SNA 146 237 R2700	16	1SNA 173 207 R0500	26	1SNA 179 630 R1600	17	1SNA 291 311 R2300	29	M 35/16.Ex	18
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1SNA 146 011 R1000	16	1SNA 146 251 R0500	28	1SNA 173 316 R2100	18	1SNA 179 694 R0300	32	1SNA 291 362 R0600	27	M 4/6.D2.Ex	19
1SNA 146 012 R1100	16	1SNA 146 253 R0700	28	1SNA 173 317 R2200	18	1SNA 179 762 R1600	21	1SNA 291 372 R0000	27	M 4/6.Ex	16
1SNA 146 013 R1200	16	1SNA 146 255 R0100	37	1SNA 173 318 R0300	18	1SNA 190 016 R1600	23	1SNA 399 903 R0200	16	M 4/6.P.Ex	16
1SNA 146 014 R1300	16	1SNA 146 259 R1500	16	1SNA 173 319 R0400	18	1SNA 190 017 R1700	23			M 4/6.PI.Ex	16
1SNA 146 015 R1400	16	1SNA 146 261 R1200	19	1SNA 173 320 R0100	18	1SNA 190 018 R2000	23			M 4/6.RS.Ex	21
1SNA 146 016 R1500	16	1SNA 146 261 R0700	16	1SNA 173 323 R2000	18	1SNA 190 019 R2100	24			M 6/8.Ex	17
1SNA 146 017 R1600	19	1SNA 146 262 R0000	16	1SNA 173 327 R2400	18	1SNA 193 065 R1600	18			M 6/8.N.Ex	17
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1SNA 146 019 R2000	19	1SNA 146 272 R0200	21	1SNA 173 331 R2000	18	1SNA 194 434 R0600	21			M 6/8.PI.Ex	17
1SNA 146 020 R2500	18	1SNA 146 273 R0300	21	1SNA 173 515 R1100	19	1SNA 194 836 R0100	18			M 6/8.RS.Ex	21
1SNA 146 021 R1200	17	1SNA 146 276 R0600	26	1SNA 173 516 R1200	19	1SNA 196 896 R0000	30			M 70/22.Ex	18
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1SNA 146 023 R1400	16	1SNA 146 293 R2000	26	1SNA 173 519 R2500	19	1SNA 198 233 R2000	18			M 70/22.P.Ex	18
1SNA 146 024 R1500	18	1SNA 146 302 R0100	23	1SNA 173 520 R2200	19	1SNA 198 368 R1700	16			M 95/26.Ex	18
1SNA 146 025 R1600	18	1SNA 146 303 R0200	23	1SNA 173 530 R2400	19	1SNA 198 499 R2400	19			M 95/26.N.Ex	18
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1SNA 146 029 R2200	18	1SNA 146 307 R0600	23	1SNA 174 113 R1700	26	1SNA 199 305 R0200	16			MA 2,5/5.Ex	16
1SNA 146 030 R2700	18	1SNA 146 308 R1700	23	1SNA 174 114 R1000	26	1SNA 199 306 R0300	16			MA 2,5/5.N.2L.Ex	16
1SNA 146 031 R1400	30	1SNA 146 309 R1000	23	1SNA 174 115 R1100	26	1SNA 199 336 R2000	30			MA 2,5/5.N.3L.Ex	16
1SNA 146 032 R1500	30	1SNA 146 310 R0400	24	1SNA 174 300 R1700	26	1SNA 199 339 R0300	30			MA 2,5/5.PI.Ex	16
1SNA 146 033 R1600	30	1SNA 146 311 R2100	24	1SNA 174 413 R1400	30	1SNA 199 341 R0500	33			MA 2,5/5.PI.Ex	16
1SNA 146 034 R1700	30	1SNA 163 043 R2100	16	1SNA 174 448 R0700	16	1SNA 199 343 R0700	33			MTC 6.Ex	22
1SNA 146 035 R1000	30	1SNA 163 046 R2400	16	1SNA 174 784 R2000	30	1SNA 199 417 R1200	32				
1SNA 146 036 R1100	33	1SNA 163 050 R0400	16	1SNA 174 788 R0400	21	1SNA 199 420 R2100	26				
1SNA 146 037 R1200	33	1SNA 163 070 R0000	19	1SNA 174 789 R0500	19	1SNA 199 421 R1600	36				
1SNA 146 038 R2300	34	1SNA 163 181 R1100	21	1SNA 176 226 R2200	17	1SNA 199 422 R1700	36				
1SNA 146 039 R2400	34	1SNA 163 218 R0500	19	1SNA 176 227 R2300	19	1SNA 199 423 R1000	38				
1SNA 146 040 R0100	33	1SNA 163 240 R1700	31	1SNA 176 228 R0400	19	1SNA 199 424 R1100	38				
1SNA 146 041 R2600	34	1SNA 163 261 R0000	16	1SNA 176 229 R0500	19	1SNA 199 433 R1200	36				
1SNA 146 042 R2700	30	1SNA 163 262 R0100	17	1SNA 176 230 R0200	19	1SNA 199 434 R1300	36				
1SNA 146 043 R2000	17	1SNA 163 311 R2200	19	1SNA 176 259 R1300	19	1SNA 199 435 R1400	38				
1SNA 146 044 R2100	18	1SNA 163 313 R2400	17	1SNA 176 260 R1000	19	1SNA 199 436 R1500	38				
1SNA 146 045 R2200	32	1SNA 163 315 R2600	17	1SNA 176 278 R1600	16	1SNA 199 437 R1600	36				
1SNA 146 046 R2300	32	1SNA 163 394 R2600	21	1SNA 176 279 R1700	16	1SNA 199 438 R					



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