CARLO GAVAZZI
Automation Components

CARLO GAVAZZI

Our Products

CARLO GAVAZZI
Automation Components

Sense

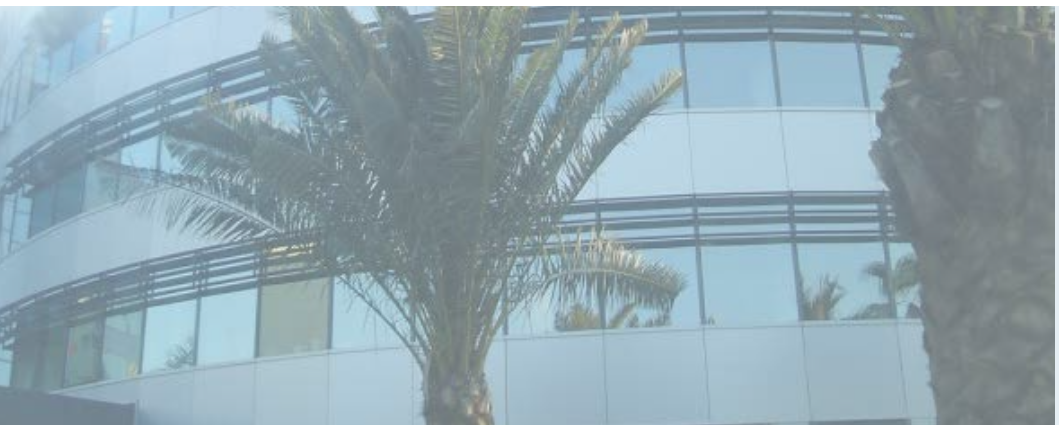
Switch

Control

Fieldbus

CARLO GAVAZZI
Automation Components






A complete product range

ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is a multinational electronics group active in the design, manufacture and marketing of electronic equipment targeted at the global markets of industrial and building automation.

Our history is full of firsts and our products are installed in a huge number of applications all over the world. With more than 80 years of successful operation, our experience is unparalleled.

We have our headquarters in Europe and numerous offices around the world.
Our R&D competence centres and production sites are located in Denmark, Italy, Lithuania, Malta and the People's Republic of China.

We operate worldwide through 22 of our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

Our core competence in automation spans four product lines: Sense, Switch, Control and Fieldbus.

Our wide array of products includes sensors, monitoring relays, timers, energy management systems, solid state relays, safety devices, fieldbus systems.

We focus our expertise on offering state-of-the-art product solutions in selected market segments.

Our customers include original equipment manufacturers of packaging machines, plastic-injection moulding machines, food and beverage production machines, conveying and materials handling equipment, door and entrance control systems, lifts and escalators, as well as heating, ventilation and air-conditioning devices.

A guarantee of reliability

Carlo Gavazzi products earned the independent approval of the relevant bodies which govern our industry and the many markets we serve.
They are developed and manufactured in full compliance with the most important international standard regulations.

Carlo Gavazzi manufacturing facilities operates in line with the requirements of ISO9001:2008 Quality Management Systems and ISO14001:2004 Environmental Management System standard.

CARLO GAVAZZI
Automation Components

Sense

Inductive proximity sensors, NAMUR, DC

Types	M12		M18	
Housing	**Steel**	**Plastic**	**Steel**	**Plastic**
Flush mountable				
Dimensions short body (mm)	M12 x 1 x 30	M12 x 1 x 30	M18 x 1 x 30	M18 x 1 x 30
Dimensions long body (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 50	M18 x 1 x 50
Thread (mm)	M12 x 1	M12 x 1	M18 x 1	M18 x 1
Operating frequency	1.4 kHz	1.4 kHz	500 Hz	500 Hz
Sensing distance (Sn)	2 mm	2 mm	5 mm	5 mm
References				
Short body cable	**IA12ESF02UC**	**IA12CSF02UC**	**IA18ESF05UC**	**IA18CSF05UC**
Long body cable	**IA12ELF02UC**	**IA12CLF02UC**	**IA18ELF05UC**	**IA18CLF05UC**
Short body plug	**IA12ESF02UCM1**	**IA12CSF02UCM1**	**IA18ESF05UCM1**	**IA18CSF05UCM1**
Long body plug	**IA12ELF02UCM1**	**IA12CLF02UCM1**	**IA18ELF05UCM1**	**IA18CLF05UCM1**
Non-flush mountable				
Dimensions short body (mm)	M12 x 1 x 30	M12 x 1 x 30	M18 x 1 x 30	M18 x 1 x 30
Dimensions long body (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 50	M18 x 1 x 50
Thread (mm)	M12 x 1	M12 x 1	M18 x 1	M18 x 1
Operating frequency	1.2 kHz	1.2 kHz	200 Hz	200 Hz
Sensing distance (Sn)	4 mm	4 mm	8 mm	8 mm
References				
Short body cable	**IA12ESN04UC**	**IA12CSN04UC**	**IA18ESN08UC**	**IA18CSN08UC**
Long body cable	**IA12ELN04UC**	**IA12CLN04UC**	**IA18ELN08UC**	**IA18CLN08UC**
Short body plug	**IA12ESN04UCM1**	**IA12CSN04UCM1**	**IA18ESN08UCM1**	**IA18CSN08UCM1**
Long body plug	**IA12ELN04UCM1**	**IA12CLN04UCM1**	**IA18ELN08UCM1**	**IA18CLN08UCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	7 - 9 VDC	7 - 9 VDC	7 - 9 VDC	7 - 9 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Housing material	Stainless steel	Thermoplastic polyester	Stainless steel	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, NAMUR, DC

Types	M30	
Connections	**Steel**	**Plastic**
Flush mountable		
Dimensions short body (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30
Dimensions long body (m)	M30 x 1.5 x 50	M30 x 1.5 x 50
Thread (mm)	M30 x 1	M30 x 1
Operating frequency	300 Hz	300 Hz
Sensing distance (Sn)	10 mm	10 mm
References		
Short body cable	**IA30ESF10UC**	**IA30CSF10UC**
Long body cable	**IA30ELF10UC**	**IA30CLF10UC**
Short body plug	**IA30ESF10UCM1**	**IA30CSF10UCM1**
Long body plug	**IA30ELF10UCM1**	**IA30CLF10UCM1**
Non-flush mountable		
Dimensions short body (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30
Dimensions long body (m)	M30 x 1.5 x 50	M30 x 1.5 x 50
Thread (mm)	M30 x 1.5	M30 x 1.5
Operating frequency	100 Hz	100 Hz
Sensing distance (Sn)	15 mm	15 mm
References		
Short body cable	**IA30ESN15UC**	**IA30CSN15UC**
Long body cable	**IA30ELN15UC**	**IA30CLN15UC**
Short body plug	**IA30ESN15UCM1**	**IA30CSN15UCM1**
Long body plug	**IA30ELN15UCM1**	**IA30CLN15UCM1**
Characteristics flush and non-flush mountable		
Rated operating voltage	7 - 9 VDC	7 - 9 VDC
Degree of protection	IP 67	IP 67
Housing material	Stainless steel	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI

Inductive proximity sensors, 2-wire, DC, extended range

Types	M8 Extended Short body	M12 Extended - Short body	
Connections	**2 m cable**	**2 m cable**	**M12 connector**
Flush mountable			
Dimensions (mm)	M8 x 30	M12 x 49	M12 x 63
Thread (mm)	M8 x 1 x 30	M12 x 1 x 38	M12 x 1 x 38
Operating frequency	2 kHz	1 kHz	1 kHz
Sensing distance (Sn)	2 mm	4 mm	4 mm
References			
NO	**IA08BSF02DO**	**IA12DSF04DO**	**IA12ASF04DOM1**
NC	**IA08BSF02DC**	**IA12DSF04DC**	**IA12ASF04DCM1**
Non-flush mountable			
Dimensions (mm)	M8 x 30	M12 x 53	M12 x 67
Thread (mm)	M8 x 1 x 26	M12 x 1 x 38	M12 x 1 x 38
Operating frequency	2 kHz	800 Hz	800 Hz
Sensing distance (Sn)	4 mm	8 mm	8 mm
References			
NO	**IA08BSN04DO**	**IA12DSN08DO**	**IA12ASN08DOM1**
NC	**IA08BSN04DC**	**IA12DSN08DC**	**IA12ASN08DCM1**
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 30 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 8 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	3 - 100 mA	5 - 100 mA	5 - 100 mA
Housing material	Stainless steel	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals / Marks	CE - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, DC, extended range

Types	M18 Extended - Short body		M30 Extended - Short body	
Connections	**2 m cable**	**M18 connector**	**2 m cable**	**M18 connector**
Flush mountable				
Dimensions (mm)	M18 x 42	M18 x 55	M30 x 44	M30 x 55
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	500 Hz	500 Hz	400 Hz	400 Hz
Sensing distance (Sn)	8 mm	8 mm	15 mm	15 mm
References				
NO	**IA18DSF08DO**	**IA18ASF08DOM1**	**IA30DSF15DO**	**IA30ASF15DOM1**
NC	**IA18DSF08DC**	**IA18ASF08DCM1**	**IA30DSF15DC**	**IA30ASF15DCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 50	M18 x 63	M30 x 56	M30 x 67
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	400 Hz	400 Hz	200 Hz	200 Hz
Sensing distance (Sn)	14 mm	14 mm	22 mm	22 mm
References				
NO	**IA18DSN14DO**	**IA18ASN14DOM1**	**IA30DSN22DO**	**IA30ASN22DOM1**
NC	**IA18DSN14DC**	**IA18ASN14DCM1**	**IA30DSN22DC**	**IA30ASN22DCM1**

Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	5 - 100 mA	5 - 100 mA	5 - 100 mA	5 - 100 mA
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M12 Standard - Short body		M12 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 50	M12 x 51	M12 x 65	M12 x 66
Thread (mm)	M12 x 1 x 32	M12 x 1 x 30	M12 x 1 x 47	M12 x 1 x 45
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO	**ICB12SF02NO**	**ICB12SF02NOM1**	**ICB12LF02NO**	**ICB12LF02NOM1**
PNP-NO	**ICB12SF02PO**	**ICB12SF02POM1**	**ICB12LF02PO**	**ICB12LF02POM1**
NPN-NC	**ICB12SF02NC**	**ICB12SF02NCM1**	**ICB12LF02NC**	**ICB12LF02NCM1**
PNP-NC	**ICB12SF02PC**	**ICB12SF02PCM1**	**ICB12LF02PC**	**ICB12LF02PCM1**
Non-flush mountable				
Dimensions (mm)	M12 x 50	M12 x 51	M12 x 65	M12 x 66
Thread (mm)	M12 x 1 x 25	M12 x 1 x 23	M12 x 1 x 40	M12 x 1 x 38
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO	**ICB12SN04NO**	**ICB12SN04NOM1**	**ICB12LN04NO**	**ICB12LN04NOM1**
PNP-NO	**ICB12SN04PO**	**ICB12SN04POM1**	**ICB12LN04PO**	**ICB12LN04POM1**
NPN-NC	**ICB12SN04NC**	**ICB12SN04NCM1**	**ICB12LN04NC**	**ICB12LN04NCM1**
PNP-NC	**ICB12SN04PC**	**ICB12SN04PCM1**	**ICB12LN04PC**	**ICB12LN04PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC, extended range

Types	M12 Extended - Short body		M12 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 50	M12 x 51	M12 x 65	M12 x 66
Thread (mm)	M12 x 1 x 32	M12 x 1 x 30	M12 x 1 x 47	M12 x 1 x 45
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO	**ICB12SF04NO**	**ICB12SF04NOM1**	**ICB12LF04NO**	**ICB12LF04NOM1**
PNP-NO	**ICB12SF04PO**	**ICB12SF04POM1**	**ICB12LF04PO**	**ICB12LF04POM1**
NPN-NC	**ICB12SF04NC**	**ICB12SF04NCM1**	**ICB12LF04NC**	**ICB12LF04NCM1**
PNP-NC	**ICB12SF04PC**	**ICB12SF04PCM1**	**ICB12LF04PC**	**ICB12LF04PCM1**
Non-flush mountable				
Dimensions (mm)	M12 x 50	M12 x 51	M12 x 65	M12 x 66
Thread (mm)	M12 x 1 x 25	M12 x 1 x 23	M12 x 1 x 40	M12 x 1 x 38
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**ICB12SN08NO**	**ICB12SN08NOM1**	**ICB12LN08NO**	**ICB12LN08NOM1**
PNP-NO	**ICB12SN08PO**	**ICB12SN08POM1**	**ICB12LN08PO**	**ICB12LN08POM1**
NPN-NC	**ICB12SN08NC**	**ICB12SN08NCM1**	**ICB12LN08NC**	**ICB12LN08NCM1**
PNP-NC	**ICB12SN08PC**	**ICB12SN08PCM1**	**ICB12LN08PC**	**ICB12LN08PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 54	M18 x 53	M18 x 74	M18 x 73
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
NPN-NO	**ICB18SF05NO**	**ICB18SF05NOM1**	**ICB18LF05NO**	**ICB18LF05NOM1**
PNP-NO	**ICB18SF05PO**	**ICB18SF05POM1**	**ICB18LF05PO**	**ICB18LF05POM1**
NPN-NC	**ICB18SF05NC**	**ICB18SF05NCM1**	**ICB18LF05NC**	**ICB18LF05NCM1**
PNP-NC	**ICB18SF05PC**	**ICB18SF05PCM1**	**ICB18LF05PC**	**ICB18LF05PCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 54	M18 x 53	M18 x 74	M18 x 73
Thread (mm)	M18 x 1 x 17	M18 x 1 x 17	M18 x 1 x 37	M18 x 1 x 37
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**ICB18SN08NO**	**ICB18SN08NOM1**	**ICB18LN08NO**	**ICB18LN08NOM1**
PNP-NO	**ICB18SN08PO**	**ICB18SN08POM1**	**ICB18LN08PO**	**ICB18LN08POM1**
NPN-NC	**ICB18SN08NC**	**ICB18SN08NCM1**	**ICB18LN08NC**	**ICB18LN08NCM1**
PNP-NC	**ICB18SN08PC**	**ICB18SN08PCM1**	**ICB18LN08PC**	**ICB18LN08PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC, extended range

Types	M18 Extended - Short body		M18 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 54	M18 x 53	M18 x 74	M18 x 73
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**ICB18SF08NO**	**ICB18SF08NOM1**	**ICB18LF08NO**	**ICB18LF08NOM1**
PNP-NO	**ICB18SF08PO**	**ICB18SF08POM1**	**ICB18LF08PO**	**ICB18LF08POM1**
NPN-NC	**ICB18SF08NC**	**ICB18SF08NCM1**	**ICB18LF08NC**	**ICB18LF08NCM1**
PNP-NC	**ICB18SF08PC**	**ICB18SF08PCM1**	**ICB18LF08PC**	**ICB18LF08PCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 54	M18 x 53	M18 x 74	M18 x 73
Thread (mm)	M18 x 1 x 17	M18 x 1 x 17	M18 x 1 x 37	M18 x 1 x 37
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	14 mm	14 mm	14 mm	14 mm
References				
NPN-NO	**ICB18SN14NO**	**ICB18SN14NOM1**	**ICB18LN14NO**	**ICB18LN14NOM1**
PNP-NO	**ICB18SN14PO**	**ICB18SN14POM1**	**ICB18LN14PO**	**ICB18LN14POM1**
NPN-NC	**ICB18SN14NC**	**ICB18SN14NCM1**	**ICB18LN14NC**	**ICB18LN14NCM1**
PNP-NC	**ICB18SN14PC**	**ICB18SN14PCM1**	**ICB18LN14PC**	**ICB18LN14PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	10 mm	10 mm	10 mm	10 mm
References				
NPN-NO	**ICB30SF10NO**	**ICB30SF10NOM1**	**ICB30LF10NO**	**ICB30LF10NOM1**
PNP-NO	**ICB30SF10PO**	**ICB30SF10POM1**	**ICB30LF10PO**	**ICB30LF10POM1**
NPN-NC	**ICB30SF10NC**	**ICB30SF10NCM1**	**ICB30LF10NC**	**ICB30LF10NCM1**
PNP-NC	**ICB30SF10PC**	**ICB30SF10PCM1**	**ICB30LF10PC**	**ICB30LF10PCM1**
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO	**ICB30SN15NO**	**ICB30SN15NOM1**	**ICB30LN15NO**	**ICB30LN15NOM1**
PNP-NO	**ICB30SN15PO**	**ICB30SN15POM1**	**ICB30LN15PO**	**ICB30LN15POM1**
NPN-NC	**ICB30SN15NC**	**ICB30SN15NCM1**	**ICB30LN15NC**	**ICB30LN15NCM1**
PNP-NC	**ICB30SN15PC**	**ICB30SN15PCM1**	**ICB30LN15PC**	**ICB30LN15PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC, extended range

Types	M30 Extended - Short body		M30 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO	**ICB30SF15NO**	**ICB30SF15NOM1**	**ICB30LF15NO**	**ICB30LF15NOM1**
PNP-NO	**ICB30SF15PO**	**ICB30SF15POM1**	**ICB30LF15PO**	**ICB30LF15POM1**
NPN-NC	**ICB30SF15NC**	**ICB30SF15NCM1**	**ICB30LF15NC**	**ICB30LF15NCM1**
PNP-NC	**ICB30SF15PC**	**ICB30SF15PCM1**	**ICB30LF15PC**	**ICB30LF15PCM1**
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	22 mm	22 mm	22 mm	22 mm
References				
NPN-NO	**ICB30SN22NO**	**ICB30SN22NOM1**	**ICB30LN22NO**	**ICB30LN22NOM1**
PNP-NO	**ICB30SN22PO**	**ICB30SN22POM1**	**ICB30LN22PO**	**ICB30LN22POM1**
NPN-NC	**ICB30SN22NC**	**ICB30SN22NCM1**	**ICB30LN22NC**	**ICB30LN22NCM1**
PNP-NC	**ICB30SN22PC**	**ICB30SN22PCM1**	**ICB30LN22PC**	**ICB30LN22PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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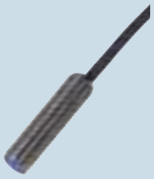
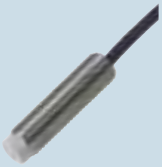
Inductive proximity sensors, 3-wire, DC

Types	M5 Standard - Short body		M8 Standard - Short body	
Connections	**2 m cable**	**M5 connector**	**2 m cable**	**M8 connector**
Flush mountable				
Dimensions (mm)	M5 x 26.5	M5 x 40	M8 x 30	M8 x 45
Thread (mm)	M5 x 1 x 20.5	M5 x 1 x 21	M8 x 1 x 30	M8 x 1 x 25
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	1 mm (0.8 mm for IA05BSF10NCP)	1 mm	1.5 mm	1.5 mm
References				
NPN-NO	**IA05BSF10NOP**	**IA05BSF10NOM5P**	**IA08BSF15NO**	**IA08BSF15NOM5**
PNP-NO	**IA05BSF10POP**	**IA05BSF10POM5P**	**IA08BSF15PO**	**IA08BSF15POM5**
NPN-NC	**IA05BSF10NCP**	**IA05BSF10NCM5P**	**IA08BSF15NC**	**IA08BSF15NCM5**
PNP-NC	**IA05BSF10PCP**	**IA05BSF10PCM5P**	**IA08BSF15PC**	**IA08BSF15PCM5**
Non-flush mountable				
Dimensions (mm)			M8 x 30	M8 x 45
Thread (mm)			M8 x 1 x 27	M8 x 1 x 22
Operating frequency			2 kHz	2 kHz
Sensing distance (Sn)			2.5 mm	2.5 mm
References				
NPN-NO			**IA08BSN25NO**	**IA08BSN25NOM5**
PNP-NO			**IA08BSN25PO**	**IA08BSN25POM5**
NPN-NC			**IA08BSN25NC**	**IA08BSN25NCM5**
PNP-NC			**IA08BSN25PC**	**IA08BSN25PCM5**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	< 1.0 VDC (@ Imax)	< 1.0 VDC (@ Imax)	≤ 2.5 VDC (@ Imax)	≤ 2.5 VDC (@ Imax)
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SP	SP	SP	SP
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA @ 25°C	≤ 200 mA @ 25°C
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE	CE	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M8 Standard - Long body		
Connections	**2 m cable**	**M8 connector**	**M12 connector**
Flush mountable			
Dimensions (mm)	M8 x 45	M8 x 60	M12 x 70
Thread (mm)	M8 x 1 x 45	M8 x 1 x 40	M12 x 1 x 43
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	1.5 mm	1.5 mm	1.5 mm
References			
NPN-NO	**IA08BLF15NO**	**IA08BLF15NOM5**	**IA08BLF15NOM1**
PNP-NO	**IA08BLF15PO**	**IA08BLF15POM5**	**IA08BLF15POM1**
NPN-NC	**IA08BLF15NC**	**IA08BLF15NCM5**	**IA08BLF15NCM1**
PNP-NC	**IA08BLF15PC**	**IA08BLF15PCM5**	**IA08BLF15PCM1**
Non-flush mountable			
Dimensions (mm)	M8 x 45	M8 x 60	M12 x 70
Thread (mm)	M8 x 1 x 42	M12 x 1 x 37	M8 x 1 x 40
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2.5 mm	2.5 mm	2.5 mm
References			
NPN-NO	**IA08BLN25NO**	**IA08BLN25NOM5**	**IA08BLN25NOM1**
PNP-NO	**IA08BLN25PO**	**IA08BLN25POM5**	**IA08BLN25POM1**
NPN-NC	**IA08BLN25NC**	**IA08BLN25NCM5**	**IA08BLN25NCM1**
PNP-NC	**IA08BLN25PC**	**IA08BLN25PCM5**	**IA08BLN25PCM1**
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.5 VDC (@ Imax)	≤ 2.5 VDC (@ Imax)	≤ 2.5 VDC (@ Imax)
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	S	S	S
Output current	< 200 mA @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°C
Housing material	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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Inductive proximity sensors, 3-wire, DC, extended range

Types	M8 Extended - Short body	
Connections	**2 m cable**	**M8 connector**
Flush mountable		
Dimensions (mm)	M8 x 35	M8 x 50
Thread (mm)	M8 x 1 x 35	M8 x 1 x 30
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm
References		
NPN-NO	**IA08BSF20NO**	**IA08BSF20NOM5**
PNP-NO	**IA08BSF20PO**	**IA08BSF20POM5**
NPN-NC	**IA08BSF20NC**	**IA08BSF20NCM5**
PNP-NC	**IA08BSF20PC**	**IA08BSF20PCM5**
Non-flush mountable		
Dimensions (mm)	M8 x 35	M8 x 50
Thread (mm)	M8 x 1 x 32	M8 x 1 x 27
Operating frequency	1 kHz	1 kHz
Sensing distance (Sn)	4 mm	4 mm
References		
NPN-NO	**IA08BSN40NO**	**IA08BSN40NOM5**
PNP-NO	**IA08BSN40PO**	**IA08BSN40POM5**
NPN-NC	**IA08BSN40NC**	**IA08BSN40NCM5**
PNP-NC	**IA08BSN40PC**	**IA08BSN40PCM5**
Characteristics flush and non-flush mountable		
Rated operating voltage	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	< 200 mA @ 25°C	< 200 mA @ 25°C
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 41.6	M18 x 55	M18 x 61.6	M18 x 75
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
NPN-NO	**IA18DSF05NO**	**IA18ASF05NOM1**		
PNP-NO	**IA18DSF05PO**	**IA18ASF05POM1**	**IA18DLF05PO**	**IA18ALF05POM1**
NPN-NC	**IA18DSF05NC**	**IA18ASF05NCM1**		
PNP-NC	**IA18DSF05PC**	**IA18ASF05PCM1**	**IA18DLF05PC**	**IA18ALF05PCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 49.6	M18 x 63		
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30		
Operating frequency	1.5 kHz	1.5 kHz		
Sensing distance (Sn)	8 mm	8 mm		
References				
NPN-NO	**IA18DSN08NO**	**IA18ASN08NOM1**		
PNP-NO	**IA18DSN08PO**	**IA18ASN08POM1**		
NPN-NC	**IA18DSN08NC**	**IA18ASN08NCM1**		
PNP-NC	**IA18DSN08PC**	**IA18ASN08PCM1**		
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA @ 50°C	< 200 mA @ 50°C	< 200 mA @ 50°C	< 200 mA @ 50°C
Housing material	Nickel-plated brass + plastic	Nickel-plated brass	Nickel-plated brass + plastic	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

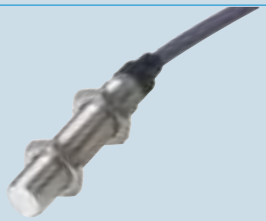
Inductive proximity sensors, 3-wire, DC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	700 Hz	700 Hz	700 Hz	700 Hz
Sensing distance (Sn)	10 mm	10 mm	10 mm	10 mm
References				
NPN-NO	**IA30DSF10NO**	**IA30ASF10NOM1**		
PNP-NO	**IA30DSF10PO**	**IA30ASF10POM1**	**IA30DLF10PO**	**IA30ALF10POM1**
NPN-NC				
PNP-NC			**IA30DLF10PC**	
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67		
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30		
Operating frequency	700 Hz	700 Hz		
Sensing distance (Sn)	15 mm	15 mm		
References				
NPN-NO	**IA30DSN15NO**	**IA30ASN15NOM1**		
PNP-NO	**IA30DSN15PO**	**IA30ASN15POM1**		
NPN-NC				
PNP-NC				
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA @ 50°C	< 200 mA @ 50°C	< 200 mA @ 50°C	< 200 mA @ 50°C
Housing material	Nickel-plated brass + plastic	Nickel-plated brass	Nickel-plated brass + plastic	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC, extended range

Types	M18 Extended - Short body		M30 Extended - Short body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 41.6	M18 x 55	M30 x 43.6	M30 x 55
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
Operating frequency	1400 Hz	1400 Hz	700 Hz	700 Hz
Sensing distance (Sn)	8 mm	8 mm	15 mm	15 mm
References				
NPN-NO	**IA18DSF08NO**	**IA18ASF08NOM1**	**IA30DSF15NO**	**IA30ASF15NOM1**
PNP-NO	**IA18DSF08PO**	**IA18ASF08POM1**	**IA30DSF15PO**	**IA30ASF15POM1**
NPN-NC				
PNP-NC			**IA30DSF15PC**	
Non-flush mountable				
Dimensions (mm)	M18 x 49.6	M18 x 63	M30 x 55.6	M30 x 67
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	700 Hz	700 Hz	500 Hz	500 Hz
Sensing distance (Sn)	14 mm	14 mm	22 mm	22 mm
References				
NPN-NO	**IA18DSN14NO**	**IA18ASN14NOM1**	**IA30DSN22NO**	**IA30ASN22NOM1**
PNP-NO	**IA18DSN14PO**	**IA18ASN14POM1**	**IA30DSN22PO**	**IA30ASN22POM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA @ 50°C	< 200 mA @ 50°C	< 200 mA @ 50°C	< 200 mA @ 50°C
Housing material	Stainless steel	Stainless steel	Nickel-plated brass + plastic	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, AC

Types	M12 Standard - Long body	
Connections	**2 m cable**	**M12 connector**
Flush mountable		
Dimensions (mm)	M12 x 66	M12 x 74.5
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	25 Hz	25 Hz
Sensing distance (Sn)	2 mm	2 mm
References		
SCR-NO	**EI1202TBOSL**	**EI1202TBOSL-6**
SCR-NC	**EI1202TBCSL**	
Non-flush mountable		
Dimensions (mm)	M12 x 70	M12 x 78.5
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	25 Hz	25 Hz
Sensing distance (Sn)	4 mm	4 mm
References		
SCR-NO	**EI1204TBOSL**	**EI1204TBOSL-6**
SCR-NC	**EI1204TBCSL**	
Characteristics flush and non-flush mountable		
Rated operating voltage	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T
Output current	< 500 mA	< 500 mA
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, AC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 57	M18 x 55	M18 x 77	M18 x 75
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	25 kHz	25 kHz	25 kHz	25 kHz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
SCR-NO	**EI1805TBOSS**	**EI1805TBOSS-6**	**EI1805TBOSL**	**EI1805TBOSL-6**
SCR-NC	**EI1805TBCSS**		**EI1805TBCSL**	
Non-flush mountable				
Dimensions (mm)	M18 x 65	M18 x 63	M18 x 85	M18 x 83
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	25 kHz	25 kHz	25 kHz	25 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
SCR-NO	**EI1808TBOSS**	**EI1808TBOSS-6**	**EI1808TBOSL**	**EI1808TBOSL-6**
SCR-NC	**EI1808TBCSS**		**EI1808TBCSL**	**EI1808TBCSL-6**
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, AC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 59		M30 x 79	M30 x 75.5
Thread (mm)	M30 x 1.5 x 30		M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	25 kHz		25 kHz	25 kHz
Sensing distance (Sn)	10 mm		10 mm	10 mm
References				
SCR-NO	**EI3010TBOSS**		**EI3010TBOSL**	**EI3010TBOSL-6**
SCR-NC	**EI3010TBCSS**		**EI3010TBCSL**	
Non-flush mountable				
Dimensions (mm)	M30 x 87.5	M30 x 67.5	M30 x 91	M30 x 71
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	25 kHz	25 kHz	25 kHz	25 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
SCR-NO	**EI3015TBOSS**	**EI3015TBOSS-6**	**EI3015TBOSL**	**EI3015TBOSL-6**
SCR-NC	**EI3015TBCSS**		**EI3015TBCSL**	
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive Proximity Sensors, 2-Wire, AC

Types	M18 Standard Short body	M18 Standard - Long body		M30 Standard Long body
Connections	**2 m cable**	**2 m cable**	**M12 connector**	**2 m cable**
Flush mountable				
Dimensions (mm)	M18 x 57	M18 x 77		M30 x 79
Thread (mm)	M18 x 1 x 30	M18 x 1 x 50		M30 x 1.5 x 50
Operating frequency	25 Hz	25 Hz		25 Hz
Sensing distance (Sn)	5 mm	5 mm		10 mm
References				
SCR-NO	**EI1805TBOPS**	**EI1805TBOPL**		**EI3010TBOPL**
Non-flush mountable				
Dimensions (mm)		M18 x 85	M18 x 83	M30 x 91
Thread (mm)		M18 x 1 x 50	M18 x 1 x 50	M30 x 1.5 x 50
Operating frequency		25 Hz	25 Hz	25 Hz
Sensing distance (Sn)		8 mm	8 mm	15 mm
References				
SCR-NO		**EI1808TBOPL**		**EI3015TBOPL**
SCR-NC		**EI1808TBCPL**	**EI1808TBCPL-6**	
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, high temperature

Types	M5	M8	M12	
Connections	**2 m cable**	**2 m cable**	**2 m cable or M12 connector**	
Flush or non-flush mountable				
Dimensions (mm)	M5 x 30	M8 x 45	M12 x 40	M12 x 40
Thread (mm)	M5 x 0.5 x 25	M8 x 1 x 40	M12 x 1 x 40	M12 x 1 x 34
Sensing distance (Sn)	0.8 mm	1 mm	2 mm	4 mm
Output	≤ 5 mA	≤ 5 mA	≤ 20 mA	≤ 20 mA
References				
NPN-NO Cable	**IA05BSF08NOHT-K**	**IA08BSF10NOHT-K**		**IA12ASN04NOHT-K**
PNP-NO Cable	**IA05BSF08POHT-K**	**IA08BSF10POHT-K**	**IA12ASF02POHT-K**	**IA12ASN04POHT-K**
PNP-NO Plug			**IA12ASF02POM1HT-K**	**IA12ASN04POM1HT-K**
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection	Short-circuit, reverse polarity	Short-circuit, reverse polarity	Short-circuit	Short-circuit
Housing material	Stainless steel	Stainless steel	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +120°C	-25°C to +120°C	-40°C to +100°C	-40°C to +100°C
Approvals / Marks	CE	CE	CE	CE

Types	M18		M30	
Connections	**2 m cable or M12 connector**		**2 m cable or M12 connector**	
Flush or non-flush mountable				
Dimensions (mm)	M18 x 40	M18 x 40	M30 x 40	M30 x 40
Thread (mm)	M18 x 1 x 40	M18 x 1 x 32	M30 x 1.5 x 40	M30 x 1.5 x 28
Sensing distance (Sn)	5 mm	8 mm	10 mm	15 mm
Output	≤ 25 mA	≤ 25 mA	≤ 25 mA	≤ 25 mA
References				
PNP-NO Cable	**IA18ASF05POHT-K**	**IA18ASN08POHT-K**	**IA30ASF10POHT-K**	**IA30ASN15POHT-K**
PNP-NO Plug	**IA18ASF05POM1HT-K**	**IA18ASN08POM1HT-K**	**IA30ASF10POM1HT-K**	**IA30ASN15POM1HT-K**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection	Short-circuit	Short-circuit	Short-circuit	Short-circuit
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-40°C to +100°C	-40°C to +100°C	-40°C to +100°C	-40°C to +100°C
Approvals / Marks	CE	CE	CE	CE

Inductive proximity sensors, micro switch 2-wire AC

Types	Micro switch
Connections	**2 m cable**
	
Dimensions body (mm)	30 x 19 x 15
Thread (mm)	Ø 12 x 16
Sensing distance (Sn)	1 kHz
Output	4 mm
References	
NO	**IG12FSF04DO**
NC	**IG12FSF04DC**
Specifications	
Rated operating voltage	10 to 40 VDC
Voltage drop	≤ 3 VDC at max. load
Degree of protection	IP67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT
Output current	≤ 5 - 100 mA
Housing material	Anodized Aluminium
Operating temperature	-25°C to +70°C
Approvals / Marks	CE

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Inductive proximity sensors, switch, polyester housing

Types	Transistor NPN/PNP	Power MOSFET output AC types	
Connections	**Terminals**	**Terminals**	**Terminals**
Non-flush mountable			
Dimensions (mm)	40 x 40 x 118	40 x 40 x 118	40 x 40 x 118
Operating frequency	≤ 100 Hz	≤ 25 Hz AC; 40 Hz DC	≤ 25 Hz
Sensing distance (Sn)	30 mm	30 mm	30 mm
References			
NPN - NO / NC	**IC40CNN30NAT1**		
PNP - NO / NC	**IC40CNN30PAT1**		
AC / DC - NO		**IC40CNN30COT1**	
AC / DC - NC		**IC40CNN30CCT1**	
AC - NO / NC			**IC40CNN30TAT1**
Specifications			
Rated operating voltage	10 - 30 VDC	20 - 250 VAC / DC	20 - 250 VAC
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SP	S	
Output current	≤ 200 mA	5 - 200 mA @ 25°C	5 - 200 mA @ 25°C
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Red, green	Red, green	Red, green
Approvals / Marks	CE	CE	CE

Inductive proximity sensors, loop detector

Types	Single loop	Dual loop
Connections	**Plug 11 pin circular**	**Plug 11 pin circular**
		
Adjustment	Auto	Auto
Manual fine-tune	Yes	Yes
Loop inductance	15-1500 µH	15-1500 µH
Input	1 Loop	2 Loop
Output	2 x SPDT, 1A / 250 VAC	2 x SPST, 1A / 250 VAC
References		
24 VAC / DC	**LDP1SA1BM24**	**LDP2TA2BM24**
115 VAC	**LDP1SA1B115**	**LDP2TA2B115**
230 VAC	**LDP1SA1B230**	**LDP2TA2B230**
Specifications		
Operating temperature	-40°C to +70°C	-40°C to +70°C
Mounting	11 pin circular plug	11 pin circular plug
Approvals / Marks	CE - UL	CE - UL

Capacitive proximity sensors, TRIPLESHIELD™

Types	M18-DC TRIPLESHIELD™		M18-AC TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 71.5	M18 x 83.5	M18 x 71.5	M18 x 83.5
Thread (mm)	z	M18 x 1 x 46.5	M18 x 1 x 46.5	M18 x 1 x 46.5
Operating frequency	30 Hz	30 Hz	10 Hz	10 Hz
Sensing distance (Sn)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)
References				
NPN - NO and NC	**CA18CLF08NA**	**CA18CLF08NAM1**		
PNP - NO and NC	**CA18CLF08PA**	**CA18CLF08PAM1**		
Thyristor (SCR) NO			**CA18CLF08TO**	**CA18CLF08TOM6**
Thyristor (SCR) NC			**CA18CLF08TC**	**CA18CLF08TCM6**
Non-flush mountable				
Dimensions (mm)	M18 x 79.5	M18 x 91.5	M18 x 79.5	M18 x 91.5
Thread (mm)	M18 x 1 x 46.5	M18 x 1 x 46.5	M18 x 1 x 46.5	M18 x 1 x 46.5
Operating frequency	30 Hz	30 Hz	10 Hz	10 Hz
Sensing distance (Sn)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)
References				
NPN - NO and NC	**CA18CLN12NA**	**CA18CLN12NAM1**		
PNP - NO and NC	**CA18CLN12PA**	**CA18CLN12PAM1**		
Thyristor (SCR) NO			**CA18CLN12TO**	**CA18CLN12TOM6**
Thyristor (SCR) NC			**CA18CLN12TC**	**CA18CLN12TCM6**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	20 - 250 VAC	20 - 250 VAC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 10 VAC	≤ 10 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	T	T
Output current	< 200 mA	< 200 mA	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Also available in Teflon, polypropylene and PVC housing.
Please see page 33

Capacitive proximity sensors, TRIPLESHIELD™

Types	M30-DC TRIPLESHIELD™			
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 63.6	M30 x 63.6	M30 x 63.6	M30 x 63.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)
References				
NPN - NO and NC	**EC3016NPASL**	**EC3016NPASL-1**	**EC3016NPAPL**	**EC3016NPAPL-1**
PNP - NO and NC	**EC3016PPASL**	**EC3016PPASL-1**	**EC3016PPAPL**	**EC3016PPAPL-1**
Non-flush mountable				
Dimensions (mm)	M30 x 75.6	M30 x 75.6	M30 x 75.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)
References				
NPN - NO and NC	**EC3025NPASL**	**EC3025NPASL-1**	**EC3025NPAPL**	**EC3025NPAPL-1**
PNP - NO and NC	**EC3025PPASL**	**EC3025PPASL-1**	**EC3025PPAPL**	**EC3025PPAPL-1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	Stainless steel	Stainless steel	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESHIELD™

Types	M30-AC TRIPLESHIELD™			
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 63.6	M30 x 63.6	M30 x 63.6	M30 x 63.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)
References				
Thyristor (SCR) NO or NC	**EC3016TBAPL**	**EC3016TBAPL-6**	**EC3016TBASL**	**EC3016TBASL-6**
Non-flush mountable				
Dimensions (mm)	M30 x 75.6	M30 x 75.6	M30 x 75.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)
References				
Thyristor (SCR) NO or NC	**EC3025TBAPL**	**EC3025TBAPL-6**	**EC3025TBASL**	**EC3025TBASL-6**
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC
Voltage drop	< 10 VAC	< 10 VAC	< 10 VAC	< 10 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESHIELD™

Types	M12 teach-in TRIPLESHIELD™		M18 teach-in TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 82.4	M12 x 84.7	M18 x 89.55	M18 x 89.2
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	15 Hz	15 Hz	15 Hz	15 Hz
Sensing distance (Sn)	0.5 - 8 mm (Teach-in)	0.5 - 8 mm (Teach-in)	0.2 - 12 mm (Teach-in)	0.2 - 12 mm (Teach-in)
References				
NPN/PNP, NO/NC	**CA12CLC08BP**	**CA12CLC08BPM1**	**CA18CLC12BP**	**CA18CLC12BPM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	< 2.5 VDC	< 2.5 VDC	< 2.5 VDC	< 2.5 VDC
Degree of protection	IP 68	IP 68	IP 68	IP 68
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 250 mA	< 250 mA	< 250 mA	< 250 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Special features	Teach-in , Humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Teach-in , Humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Teach-in , Humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Teach-in , Humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESHIELD™

Types	M30 teach in TRIPLESHIELD™		M30 AC/DC TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 99.2	M30 x 90.45	M30 x 63.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	15 Hz	15 Hz	10 Hz	10 Hz
Sensing distance (Sn)	0.5 - 30 mm (adjustable)	0.5 - 30 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)
References				
NPN/PNP, NO/NC	**CA30CLC30BP**	**CA30CLC30BPM1**		
Power MOFSET			**CA30CLF16CP**	**CA30CLF16CPM6**
Non-flush mountable				
Dimensions (mm)			M30 x 71.6	M30 x 83.6
Thread (mm)			M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency			10 Hz	10 Hz
Sensing distance (Sn)			2 - 25 mm (adjustable)	2 - 25 mm (adjustable)
References				
Power MOFSET			**CA30CLN25CP**	**CA30CLN25CPM6**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	20 - 250 VAC/DC	20 - 250 VAC/DC
Voltage drop	< 2.5 VDC	< 2.5 VDC	< 5.5 VAC/DC	< 5.5 VAC/DC
Degree of protection	IP 68	IP 68	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	PT	PT
Output current	< 250 mA	< 250 mA	< 250 mA DC < 350 mA AC	< 250 mA DC < 350 mA AC
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-20°C to +85°C	-20°C to +85°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Special features	Teach-in , Humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Teach-in , Humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation		
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESHIELD™

Types	M18 TRIPLESHIELD™, chemical resistant		
Connections	**2 m cable**	**2 m cable**	**2 m cable**
Flush mountable			
Dimensions (mm)	M18 x 71.5	M18 x 71.5	M18 x 71.5
Thread (mm)	M18 x 1 x 46.5	M18 x 1 x 46.5	M18 x 1 x 46.5
Operating frequency	30 Hz	30 Hz	30 Hz
Sensing distance (Sn)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)
References			
NPN-NO/NC	**CA18HLF08NA**	**CA18GLF08NA**	**CA18FLF08NA**
PNP-NO/NC	**CA18HLF08PA**	**CA18GLF08PA**	**CA18FLF08PA**
Non-flush mountable			
Dimensions (mm)	M18 x 71.5		
Thread (mm)	M18 x 1 x 46.5		
Operating frequency	30 Hz		
Sensing distance (Sn)	3 - 12 mm (adjustable)		
References			
NPN-NO/NC	**CA18HLN12NA**		
PNP-NO/NC	**CA18HLN12PA**		
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA
Housing material	Plypropylene	PVC	Teflon
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE

Capacitive proximity sensors, TRIPLESHIELD™

Types	VC5510	VC5510 Time delay	CD50	
Connections	**1.5 m cable**	**1.5 m cable**	**2 m cable**	**2 m cable**
Flush mountable				
Dimensions (mm)	55 x 35 x 15	55 x 35 x 15	50 x 30 x 7	50 x 30 x 7
Operating frequency	> 15 Hz	> 0.1 Hz	10 Hz	10 Hz
Sensing distance (Sn)	10 mm	10 mm	6 mm	5 mm
References				
NPN - NO	**VC5510NNOP**	**VC5510NNOPT**	**CD50CNF06NO**	**CD50CNF05NO**
NPN - NC	**VC5510NNCP**	**VC5510NNCPT**		
PNP - NO	**VC5510PNOP**	**VC5510PNOPT**		
PNP - NC	**VC5510PNCP**	**VC5510PNCPT**		
Sensing distance (Sn)			7 mm	
PNP - NO			**CD50CNF07PO**	
NPN - NC			**CD50CNF07NC**	
Sensing distance (Sn)			10 mm	
PNP - NO			**CD50CNF10PO**	
NPN - NC			**CD50CNF10NC**	
Characteristics flush and non-flush mountable				
Rated operating voltage	5 - 30 VDC	5 - 30 VDC	10 - 30 VDC	5 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 V	≤ 1.5 V
Degree of protection	IP 65	IP 65	IP 67	IP 67
Output current	≤ 100 mA	≤ 100 mA	≤ 50 mA	≤ 50 mA
Housing material	PC/ABS	PC/ABS	Noryl, grey	Noryl, grey
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +60°C	0°C to +60°C
LED colour	Red	Red		
Approvals/Marks	CE - UL	CE - UL	CE	CE

Capacitive proximity sensors, TRIPLESHIELD™

Types	CD46 teach-in TRIPLESHIELD™	EC 5525 TRIPLESHIELD™	
Connections	**2 m cable**	**2 m cable**	**M12 connector**
Flush or non-Flush mountable			
Dimensions short body (mm)	46 x 28 x 5.5	55 x 35 x 15	55 x 35 x 15
Operating frequency	10 Hz	50 Hz	50 Hz
Sensing distance (Sn)	1.0 - 10 mm (Teach-in)	4 - 25 mm	4 - 25 mm
References			
NPN-NO/NC	**CD46CNC10NP**	**EC5525NPAP**	**EC5525NPAP-1**
PNP-NO/NC	**CD46CNC10PP**	**EC5525PPAP**	**EC5525PPAP-1**
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 30 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 68	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	PBT	Polycarbonate	Polycarbonate
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow, Green	Yellow	Yellow
Special features	Teach-in, remote setup, alarm output		
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESHIELD™

Types	M18 teach-in TRIPLESHIELD™		M30 teach-in TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush or non-flush mountable				
Dimensions (mm)	M18 x 89.55	M18 x 89.2	M30 x 99.2	M30 x 99.45
Thread (mm)	M18 x 1 x 50	M18 x 1 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	5 Hz	5 Hz	5 Hz	5 Hz
Sensing distance (Sn)	0.5 - 12 mm (Teach-in)	0.5 - 12 mm (Teach-in)	0.5 - 30 mm (Teach-in)	0.5 - 30 mm (Teach-in)
References				
NPN/PNP, NO/NC	**CA18CLL12BP**	**CA18CLL12BPM1**	**CA30CLL30BP**	**CA30CLL30BPM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 68	IP 68	IP 68	IP 68
Output current	≤ 250 mA	≤ 250 mA	≤ 250 mA	≤ 250 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C
Max. temperature on sensing face	120°C (248°F)	120°C (248°F)	120°C (248°F)	120°C (248°F)
LED colour	Yellow	Yellow	Yellow	Yellow
Special features	Single-step Teach-in, Humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Single-step Teach-in, Humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Single-step Teach-in, Humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation	Single-step Teach-in, Humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: Dirt and moisture compensation
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive level sensors

Types	Capacitive level sensors for solid, fluid and granulated substances			
Connections	**2 m cable**	**2 m cable**	**2 m cable**	**2 m cable**
				
Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101	M30 x 101
Thread	Smooth	Smooth	Smooth	M30 (with 2 nuts)
Operating frequency	1 Hz	1 Hz	1 Hz	1 Hz
Sensing distance (Sn)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)
References with ON delay				
Time delay	1 s - 10 m			1 s - 10 m
120 VAC	**VC11RT12010M**			
230 VAC	**VC11RT23010M**			
24 VAC/DC	**VC11RT92410M**			
24-230 VAC/DC	**VC11RTM2410M**			**CA30CLN12MU10M**
References with OFF delay				
Time delay		1 s - 10 m		1 s - 10 m
120 VAC		**VC12RT12010M**		
230 VAC		**VC12RT23010M**		
24 VAC/DC		**VC12RT92410M**		
24-230 VAC/DC		**VC12RTM2410M**		**CA30CLN12MV10M**
References without delay				
120 VAC			**VC12RN120**	
230 VAC			**VC12RN230**	
24 VAC/DC			**VC12RN924**	
24-230 VAC/DC			**VC12RNM24**	**CA30CLN12MT**
Specifications				
Consumption	≤ 1.5 W	≤ 1.5 W	≤ 1.5 W	≤ 2.5 W
Consumption M24 versions	≤ 2.5 W	≤ 2.5 W	≤ 2.5 W	
Hysteresis	1.5 mm at 7 mm sensing distance	1.5 mm at 7 mm sensing distance	1.5 mm at 7 mm sensing distance	3 - 20%
Output	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	PBTP, grey
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
LED colour	Red	Red	Red	Yellow
Approvals/Marks UL508 NEMA	CE cULus (M24 versions)	CE - CSA cULus (M24 versions)	CE cULus (M24 versions)	CE, CSA cULus 1, 2, 4, 4X, 5, 6, 6P, 12

Capacitive level sensors

	Ø18 sensors for solid, fluid and granulated substances		Ø32 sensors
Types	**2-wire, AC**	**3-wire, DC**	**2-wire, AC**
Connections	**2 m cable**	**2 m cable**	**2 m cable**
			
Dimensions (mm)	Ø18 x 86	Ø18 x 86	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	10 Hz	30 Hz	10 Hz
Sensing distance (Sn)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)	2 - 20 mm (adjustable)
References			
Thyristor (SCR) NO	**CB18CLN12TOFT**		
Thyristor (SCR) NO ATEX	**CB18CLN12TOFTAX**		
Thyristor (SCR) NC	**CB18CLN12TCFT**		
Thyristor (SCR) NC ATEX	**CB18CLN12TCFTAX**		
NPN - NO/NC		**CB18CLN12NA**	
NPN - NO/NC ATEX		**CB18CLN12NAAX**	
PNP - NO/NC		**CB18CLN12PA**	
PNP - NO/NC ATEX		**CB18CLN12PAAX**	
ON-delay			No
Thyristor (SCR) NO			**CB32CLN20TO**
Thyristor (SCR) NO ATEX			**CB32CLN20TOAX**
Thyristor (SCR) NC			**CB32CLN20TC**
Thyristor (SCR) NC ATEX			**CB32CLN20TCAX**
ON-delay			Yes
Thyristor (SCR) NO			**CB32CLN20TOFT**
Thyristor (SCR) NO ATEX			**CB32CLN20TOFTAX**
Thyristor (SCR) NC			**CB32CLN20TCFT**
Thyristor (SCR) NC ATEX			**CB32CLN20TCFTAX**
Specifications			
Rated operating voltage	20 - 250 VAC	10 - 40 VDC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC
Time delay	30 s ON-delay		30 s ON-delay
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	SPT	T
Output current	≤ 500 mA	≤ 200 mA	≤ 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +80°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX

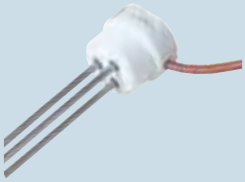
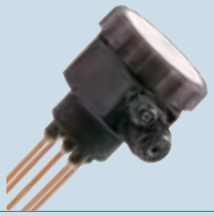
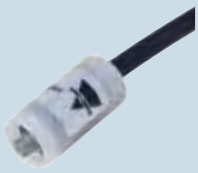
Capacitive level sensors

Types	Ø32 level sensors TRIPLESHIELD™ - ATEX		
Connections	**With ON delay**	**With OFF delay**	**Without time delay**
			
Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	5 Hz	5 Hz	5 Hz
Sensing distance (Sn)	4 - 20 mm (adjustable)	4 - 20 mm (adjustable)	4 - 20 mm (adjustable)
References			
Cable length	2 m	2 m	2 m
120 VAC	**CB32CLN20SUAX**	**CB32CLN20SVAX**	**CB32CLN20STAX**
230 VAC	**CB32CLN20RUAX**	**CB32CLN20RVAX**	**CB32CLN20RTAX**
24 VAC/DC	**CB32CLN20QUAX**	**CB32CLN20QVAX**	**CB32CLN20QTAX**
Cable length	5 m	5 m	5 m
120 VAC	**CB32CLN20SUAX5M**	**CB32CLN20SVAX5M**	**CB32CLN20STAX5M**
230 VAC	**CB32CLN20RUAX5M**	**CB32CLN20RVAX5M**	**CB32CLN20RTAX5M**
24 VAC/DC	**CB32CLN20QUAX5M**	**CB32CLN20QVAX5M**	**CB32CLN20QTAX5M**
Cable length	10 m	10 m	10 m
120 VAC	**CB32CLN20SUAX10M**	**CB32CLN20SVAX10M**	**CB32CLN20STAX10M**
230 VAC	**CB32CLN20RUAX10M**	**CB32CLN20RVAX10M**	**CB32CLN20RTAX10M**
24 VAC/DC	**CB32CLN20QUAX10M**	**CB32CLN20QVAX10M**	**CB32CLN20QTAX10M**
Specifications			
Consumption	< 1.5 W	< 1.5 W	< 1.5 W
Hysteresis	3 to 20% of sensing distance	3 to 20% of sensing distance	3 to 20% of sensing distance
Output	Relay SPDT, 2 A / 240 VAC	Relay SPDT, 2 A / 240 VAC	Relay SPDT, 2 A / 240 VAC
Time delay	1 s - 10 m	1 s - 10 m	
Degree of protection	IP 67	IP 67	IP 67
Housing material	PBT	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - ATEX	CE - ATEX	CE - ATEX

Conductive level sensors

Types	VN / VNI	VNY / VNYI	VPC	VPP
Connections	Cable (PVC) 2 m	Screw connection	Screw connection	Screw connection
				
Electrodes				
Number of electrodes	1, 2, 3 or 4	1, 2, 3 or 4	1, 2 or 3	1, 2 or 3
Diameter/length (mm)	D5/1000	D5/1000	D4/500	D4/500
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Isolation of electrodes	Yes (VNI)	Yes (VNI)	Yes	Yes
Isolation	Polyethylene	Polyethylene	Polyethylene	Polyethylene
Housing				
Pibe thread	1½"	1½"	1½" (VPC x05) or 1" (VPC x10)	1½" (VPC x05) or 1" (VPC x10)
Material	Nylon 6	Nylon 6	PVC	Kynar (PVDF)
References				
1 electrodes	**VN1** **VNI1**	**VNY1** **VNYI1**	**VPC105** **VPC110**	**VPP105** **VPP110**
2 electrodes	**VN2** **VNI2**	**VNY2** **VNYI2**	**VPC205** **VPC210**	**VPP205** **VPP210**
3 electrodes	**VN3** **VNI3**	**VNY3** **VNYI3**	**VPC310**	**VPP310**
4 electrodes	**VN4** **VNI4**	**VNY4** **VNYI4**		
Specifications				
Degree of protection	IP 67	IP 67	IP 67	IP 67
Operating temperature	0°C to +90°C	0°C to +90°C	0°C to +60°C	0°C to +100°C
Approvals/Marks	CE	CE	CE	CE

Conductive level sensors

Types	VT / VTI	CLH	VH1 / VH2	A 94-10
Connections	**Cable** (Silicone)	**Screw connection**	**Cable** (Neoprene)	**Cable** (Neoprene)
				
Electrodes				
Number of electrodes	1, 2, 3 or 4	2 or 4 + reference	1 (hanging)	2 (hanging)
Diameter/length (mm)	D5/1000	D5	D18/365 or D32/755	D22/750
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Isolation of electrodes	Yes (VNI)	Yes	No (VH1) - Yes (VH2)	No
Isolation	Teflon	Kynar, Polyolefine	Nylon 6	
Housing				
Pibe thread	1½"	1½"		
Material	Teflon	Polypropylene	Nylon 6	Polyester
References				
1 electrodes	**VT1** **VTI1**		**VH1 or VH2**	
2 electrodes	**VT2** **VTI2**			**A 94-10**
3 electrodes	**VT3** **VTI3**	**CLH3***		
4 electrodes	**VT4** **VTI4**			
5 electrodes		**CLH5***		
Specifications				
Degree of protection	IP 67	IP 65	IP 67	IP 67
Operating temperature	0°C to +145°C	-20°C to +90°C	0°C to +90°C	0°C to +60°C
Approvals/Marks	CE	CE	CE	CE
Electrodes (Stainless steel ANSI316)				
No Insulation				
1 m		**CLE1**		
2 m		**CLE2**		
Extension 1 m		**CLE1X**		
Kynar (DVDP) Insulation				
1 m		**CLE1K**		
2 m		**CLE2K**		
Extension 1 m		**CLE1XK**		
Polyolefine Insulation				
1 m		**CLE1P**		
2 m		**CLE2P**		
Extension 1 m		**CLE1XP**		

* Electrodes shall be ordered separately

Conductive level sensors

	Level controller		
Types	**CLD1**	**CLP2 basic**	**CLD2**
Connections	**DIN rail**	**Plug 11 pin circular**	**DIN rail**
			
Function	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids
Adjustable	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer
Sensitivity	5 KΩ to 150 KΩ	250 Ω to 500 KΩ	250 Ω to 500 KΩ
Functions switch	- Timer 1 to 30 sec. delay on filling or/and emptying	- Filling / Emptying - 3-levels: Low, Standard and High	- Filling / Emptying - 3-levels: Low, Standard and High
Input	1 + reference	2 + reference	2 + reference
Output	8A / 250 VAC SPDT	8A / 250 VAC SPDT	5A / 250 VAC DPDT
Power Supply	24 V AC/DC	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC
References			
24 VAC/DC	**CLD1EA1CM24**	**CLP2EA1CM24**	**CLD2EA1CM24**
115 VAC/DC		**CLP2EA1C115**	**CLD2EA1C115**
230 VAC/DC		**CLP2EA1C230**	**CLD2EA1C230**
Specifications			
Time delay	< 300 mS	< 300 mS	< 300 mS
Housing material	NORYL SE1	NORYL SE1	NORYL SE1
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Output LED colour	Yellow	Yellow	Yellow
Power LED colour	Green	Green	Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Conductive level sensors

	Level controller		
Types	**CLP2**	**CLD4**	**CLP4**
Connections	**Plug 11 pin circular**	**DIN rail**	**Plug 11 pin circular**
			
Function	Filling or emptying. Selectable by rotary switches. Conductive liquids Master - Slave system	Filling, emptying or combinations. Selectable by rotary switches. Conductive liquids	Filling, emptying or combinations. Selectable by rotary switches. Conductive liquids
Adjustable	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer
Sensitivity	250 Ω to 500 KΩ	250 Ω to 500 KΩ	250 Ω to 500 KΩ
Functions switch	- Filling / Emptying - 3-levels: Low, Standard and High	- Tank - well - Direct in to out 2 probe - Low and High alarm - 2 system in one, filling and/or emptying - 3-levels: Low, Standard and High - NO or NC	- Tank - well - Direct in to out 2 probe - Low and High alarm - 2 system in one, filling and/or emptying - 3-levels: Low, Standard and High - NO or NC
Input	2 + reference	2 + reference	2 + reference
Output	5A / 250 VAC DPDT	8A / 250 VAC SPDT, SPST	8A / 250 VAC DPDT, SPST
Power Supply	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC
References			
24 VAC/DC	**CLP2FA1CM24**	**CLD4MA2DM24**	**CLP4MA2AM24**
115 VAC/DC	**CLP2FA1C115**	**CLD4MA2D115**	**CLP4MA2A115**
230 VAC/DC	**CLP2FA1C230**	**CLD4MA2D230**	**CLP4MA2A230**
Specifications			
Time delay	< 300 mS	< 300 mS	< 300 mS
Housing material	NORYL SE1	NORYL SE1	NORYL SE1
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Output LED colour	Yellow	Yellow	Yellow
Power LED colour	Green	Green	Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI

Ultrasonic sensors, 2 x digital outputs

Types	UA18CAD...TI	UA18CAD...M1TI	UA30CAD...TI	UA30CAD...M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	250 - 3500 mm	250 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 250 mm	≤ 250 mm
2 x NPN	**UA18CAD04NPTI**	**UA18CAD04NPM1TI**	**UA30CAD35NPTI**	**UA30CAD35NPM1TI**
2 x PNP	**UA18CAD04PPTI**	**UA18CAD04PPM1TI**	**UA30CAD35PPTI**	**UA30CAD35PPM1TI**
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
2 x NPN	**UA18CAD09NPTI**	**UA18CAD09NPM1TI**		
2 x PNP	**UA18CAD09PPTI**	**UA18CAD09PPM1TI**		
Sensing distance (Sn)	200 - 2200 mm	200 - 2200 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
2 x NPN	**UA18CAD22NPTI**	**UA18CAD22NPM1TI**		
2 x PNP	**UA18CAD22PPTI**	**UA18CAD22PPM1TI**		
Specifications				
Rated operating voltage	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 500 mA	< 500 mA	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, analog and digital output

Types	UA18CAD...TI	UA18CAD...M1TI	UA30CAD...TI	UA30CAD...M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	250 - 3500 mm	250 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 250 mm	≤ 250 mm
NPN, 4-20 mA	**UA18CAD04NGTI**	**UA18CAD04NGM1TI**	**UA30CAD35NGTI**	**UA30CAD35NGM1TI**
PNP, 4-20 mA	**UA18CAD04PGTI**	**UA18CAD04PGM1TI**	**UA30CAD35PGTI**	**UA30CAD35PGM1TI**
NPN, 0-10 V	**UA18CAD04NKTI**	**UA18CAD04NKM1TI**	**UA30CAD35NKTI**	**UA30CAD35NKM1TI**
PNP, 0-10 V	**UA18CAD04PKTI**	**UA18CAD04PKM1TI**	**UA30CAD35PKTI**	**UA30CAD35PKM1TI**
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
NPN, 4-20 mA	**UA18CAD09NGTI**	**UA18CAD09NGM1TI**		
PNP, 4-20 mA	**UA18CAD09PGTI**	**UA18CAD09PGM1TI**		
NPN, 0-10 V	**UA18CAD09NKTI**	**UA18CAD09NKM1TI**		
PNP, 0-10 V	**UA18CAD09PKTI**	**UA18CAD09PKM1TI**		
Sensing distance (Sn)	200 - 2200 mm	200 - 2200 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
NPN, 4-20 mA	**UA18CAD22NGTI**	**UA18CAD22NGM1TI**		
PNP, 4-20 mA	**UA18CAD22PGTI**	**UA18CAD22PGM1TI**		
NPN, 0-10 V	**UA18CAD22NKTI**	**UA18CAD22NKM1TI**		
PNP, 0-10 V	**UA18CAD22PKTI**	**UA18CAD22PKM1TI**		
Specifications				
Rated operating voltage NG or PG NK or PK	 15 - 30 VDC 15 - 30 VDC	 15 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P
Load current	< 500 mA	< 500 mA	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, DC, analogue, remote teach

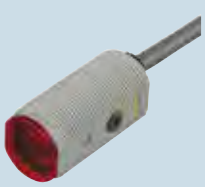
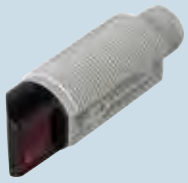
	Programmable RS232	Integrated amplifier	Integrated Amplifier, switching output	Remote teach analogue, 0-10VDC or 4-20 mA
Types	**UA30CLD..M7**	**UA12CLD..M1TR**	**UC80CND**	**UC80CND60A.M1TR**
Connections	**M16 connector**	**M12 connector**	**M12 connector**	**M12 connector**
				
Dimensions (mm)	M30 x 136	M12 x 79	80 x 80 x 50	80 x 80 x 50
References diffuse reflective				
Operating frequency	5 - 30 Hz Programmable	20 Hz	1 Hz	-
Sensing distance (Sn)	150 - 1500 mm adj.	25 - 200 mm adj.	600 - 6000 mm adj.	600 - 6000 mm
Output slope				Adjustable
0-10 VDC	**UA30CLD15FKM7**			**UC80CND60AKM1TR**
4-20 mA	**UA30CLD15FGM7**			**UC80CND60AGM1TR**
NPN-NO/NC		**UA12CLB02NPM1TR**	**UC80CND60NPM1TR**	
PNP-NO/NC		**UA12CLB02PPM1TR**	**UC80CND60PPM1TR**	
Sensing distance (Sn)	250 - 2000 mm adj.			
0-10 VDC	**UA30CLD20FKM7**			
4-20 mA	**UA30CLD20FGM7**			
Sensing distance (Sn)	350 - 3500 mm adj.			
0-10 VDC	**UA30CLD35FKM7**			
4-20 mA	**UA30CLD35FGM7**			
Specifications				
Rated operating voltage	19 - 30 VDC	10 - 30 VDC	15 - 30 VDC	28 - 30 VDC
Voltage drop	≤ 2.5 VDC	≤ 4.5 V	≤ 4.5 V	
Degree of protection	IP 67	IP 65	IP 65	IP 65
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 100 mA Analogue see type	< 100 mA	< 500 mA	See sensor type
Housing material	PBTB	Stainless Steel	ABS	ABS
Operating temperature	-15°C to +70°C	-20°C to +70°C	-15°C to +70°C	-15°C to +70°C
LED colour	Yellow + Green			
Remarks	Hold/sync. input RS232			
Approvals/Marks	CE - UL - cUL	CE	CE	CE

Accessories Ultrasonic

	Adapters		
Types	**AUA - RT**	**UCC**	**UCP1 and UCP2**
Connections	**M12 connector**	**Terminal block**	**Terminal block**
			
Dimensions (mm)	17 x 56	38.5 x 80.5	38.5 x 80.5
Specifications			
	Programming adapter for remote teach sensors ending with "RT"	RS232 to RS485 adapter	Programming adapter RS232

CARLO GAVAZZI

Photoelectric sensors

	M18, DC, axial type		M18, DC, radial type	
Types	**PA18CA.**	**PA18CA.**	**PA18CR.**	**PA18CR.**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 40	M18 x 44	M18 x 50	M18 x 54
Diffuse reflective				
Sensing distance (Sn)	50 - 1000 mm	50 - 1000 mm	50 - 800 mm	50 - 800 mm
NPN NO+NC	**PA18CAD10NASA**	**PA18CAD10NAM1SA**	**PA18CRD08NASA**	**PA18CRD08NAM1SA**
PNP NO+NC	**PA18CAD10PASA**	**PA18CAD10PAM1SA**	**PA18CRD08PASA**	**PA18CRD08PAM1SA**
Diffuse reflective WS				
Sensing distance (Sn)	0 - 400 mm	0 - 400 mm		
NPN NO+NC	**PA18CAD04NAWS**	**PA18CAD04NAM1WS**		
PNP NO+NC	**PA18CAD04PAWS**	**PA18CAD04PAM1WS**		
Retro reflective polariz.				
Sensing distance (Sn)	50 - 500 mm	50 - 500 mm	50 - 400 mm	50 - 400 mm
NPN NO+NC	**PA18CAP50NASA**	**PA18CAP50NAM1SA**	**PA18CRP40NASA**	**PA18CRP40NAM1SA**
PNP NO+NC	**PA18CAP50PASA**	**PA18CAP50PAM1SA**	**PA18CRP40PASA**	**PA18CRP40PAM1SA**
Retro reflective				
Sensing distance (Sn)	50 - 650 mm	50 - 650 mm	50 - 500 mm	50 - 500 mm
NPN NO+NC	**PA18CAR65NASA**	**PA18CAR65NAM1SA**	**PA18CRR50NASA**	**PA18CRR50NAM1SA**
PNP NO+NC	**PA18CAR65PASA**	**PA18CAR65PAM1SA**	**PA18CRR50PASA**	**PA18CRR50PAM1SA**
Through-beam emitter (E)				
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 16 m	1 - 16 m
	PA18CAT20	**PA18CAT20M1**	**PA18CRT16**	**PA18CRT16M1**
Through-beam receiver (R)				
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 16 m	1 - 16 m
NPN NO+NC	**PA18CAT20NASA**	**PA18CAT20NAM1SA**	**PA18CRT16NASA**	**PA18CRT16NAM1SA**
PNP NO+NC	**PA18CAT20PASA**	**PA18CAT20PAM1SA**	**PA18CRT16PASA**	**PA18CRT16PAM1SA**
Background suppression (BGS)				
Sensing distance (Sn)	10 - 200 mm	10 - 200 mm		
NPN NO+NC	**PA18CAB20NASA**	**PA18CAB20NAM1SA**		
PNP NO+NC	**PA18CAB20PASA**	**PA18CAB20PAM1SA**		
Specifications				
Operating frequency	500 Hz	500 Hz	500 Hz	500 Hz
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP 67 + IP 69K	IP 67 + IP 69K	IP 67 + IP 69K	IP 67 + IP 69K
Protection Short-circuit(S) Rev. polarity(P), Transients(T)	SPT	SPT	SPT	SPT
Supply current BGS, E + R	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC
Housing material	ABS, PMMA, PBTB	ABS, PMMA, PBTB	ABS, PMMA, PBTB	ABS, PMMA, PBTB
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Photoelectric sensors

	M18, DC, square type		
Types	**PH18.**	**PH18.**	**PH18.**
Connections	**2 m cable**	**M12 connector**	**Pigtail M12**
			
Dimensions (mm)	15 x 21 (31.5) x 35	15 x 21 (31.5) x 35	15 x 21 (31.5) x 35
Diffuse reflective			
Sensing distance (Sn)	50 - 1000 mm	50 - 1000 mm	50 - 1000 mm
NPN NO+NC	**PH18CND10NASA**	**PH18CND10NAM1SA**	**PH18CND10NAT1SA**
PNP NC+NC	**PH18CND10PASA**	**PH18CND10PAM1SA**	**PH18CND10PAT1SA**
Retro reflective polariz.			
Sensing distance (Sn)	50 - 500 mm	50 - 500 mm	50 - 500 mm
NPN NO+NC	**PH18CNP50NASA**	**PH18CNP50NAM1SA**	**PH18CNP50NAT1SA**
PNP NO+NC	**PH18CNP50PASA**	**PH18CNP50PAM1SA**	**PH18CNP50PAT1SA**
Retro reflective			
Sensing distance (Sn)	50 - 650 mm	50 - 650 mm	50 - 650 mm
NPN NO+NC	**PH18CNR65NASA**	**PH18CNR65NAM1SA**	**PH18CNR65NAT1SA**
PNP NO+NC	**PH18CNR65PASA**	**PH18CNR65PAM1SA**	**PH18CNR65PAT1SA**
Through-beam emitter (E)			
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 20 m
	PH18CNT20	**PH18CNT20M1**	**PH18CNT20T1**
Through-beam receiver (R)			
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 20 m
NPN NO+NC	**PH18CNT20NASA**	**PH18CNT20NAM1SA**	**PH18CNT20NAT1SA**
PNP NO+NC	**PH18CNT20PASA**	**PH18CNT20PAM1SA**	**PH18CNT20PAT1SA**
Background suppression (BGS)			
Sensing distance (Sn)	8 - 200 mm	8 - 200 mm	8 - 200 mm
NPN NO+NC	**PH18CNB20NASA**	**PH18CNB20NAM1SA**	**PH18CNB20NAT1SA**
PNP NO+NC	**PH18CNB20PASA**	**PH18CNB20PAM1SA**	**PH18CNB20PAT1SA**
Specifications			
Operating frequency	500 Hz	500 Hz	500 Hz
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP 67 + IP 69K	IP 67 + IP 69K	IP 67 + IP 69K
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Supply current BGS, E + R	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC
Housing material	ABS, PMMA	ABS, PMMA	ABS, PMMA
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

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Photoelectric sensors

	M18 metal, DC, integrated amplifier	
Types	**E.18..**	**E.18..-1**
Connections	**2 m cable**	**M12 connector**
		
Dimensions (mm)	M18 x 55	M18 x 67
Diffuse reflective		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable
NPN NO+NC	**EO1804NPAS**	**EO1804NPAS-1**
PNP NC+NC	**EO1804PPAS**	**EO1804PPAS-1**
Retro reflective polariz.		
Operating frequency	100 Hz	100 Hz
Sensing distance (Sn)	2 m, adjustable	2 m, adjustable
NPN NO+NC	**EP1820NPAS**	**EP1820NPAS-1**
PNP NO+NC	**EP1820PPAS**	**EP1820PPAS-1**
Retro reflective		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	3 m, adjustable	3 m, adjustable
NPN NO+NC	**ER1830NPAS**	**ER1830NPAS-1**
PNP NO+NC	**ER1830PPAS**	**ER1830PPAS-1**
Through-beam emitter		
Sensing distance (Sn)	20 m	20 m
	ET1820	**ET1820-1**
Through-beam receiver		
Operating frequency	170 Hz	170 Hz
Sensing distance (Sn)	20 m, adjustable	20 m, adjustable
NPN NO+NC	**ET1820NPAS**	**ET1820NPAS-1**
PNP NO+NC	**ET1820PPAS**	**ET1820PPAS-1**
Fiber optic		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	Fibre dependent	Fibre dependent
NPN NO+NC	**EF1801NPAS**	**EF1801NPAS-1**
PNP NO+NC	**EF1801PPAS**	**EF1801PPAS-1**
Specifications		
Rated operating voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Rev. polarity (P) Transients (T)	SPT	SPT
Load current	< 200 mA	< 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass
LED colour	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow	Yellow
Approvals/Marks	CE	CE

Photoelectric sensors

	M18 plastic, AC, integrated amplifier		M18 metal, AC, integrated amplifier	
Types	**PA18CL**	**PA18CL.M6**	**PA18AL**	**PA18AL..M6**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 71.5	M18 x 83.5	M18 x 71.5	M18 x 83.5
Diffuse reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	100 mm, fixed	100 mm, fixed		
Thyristor (SCR) NC	**PA18CLD01TC**	**PA18CLD01TCM6**		
Thyristor (SCR) NO	**PA18CLD01TO**	**PA18CLD01TOM6**		
Sensing distance (Sn)	200 mm, fixed	200 mm, fixed		
Thyristor (SCR) NC	**PA18CLD02TC**	**PA18CLD02TCM6**		
Thyristor (SCR) NO	**PA18CLD02TO**	**PA18CLD02TOM6**		
Sensing distance (Sn)	400 mm, fixed	400 mm, fixed		
Thyristor (SCR) NC	**PA18CLD04TC**	**PA18CLD04TCM6**		
Thyristor (SCR) NO	**PA18CLD04TO**	**PA18CLD04TOM6**		
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable
Thyristor (SCR) NC	**PA18CLD04TCSA**	**PA18CLD04TCM6SA**	**PA18ALD04TCSA**	**PA18ALD04TCM6SA**
Thyristor (SCR) NO	**PA18CLD04TOSA**	**PA18CLD04TOM6SA**	**PA18ALD04TOSA**	**PA18ALD04TOM6SA**
Retro reflective polariz.				
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)	2 m, fixed	2 m, fixed	2 m, adjustable	2 m, adjustable
Thyristor (SCR) NC	**PA18CLP20TC**	**PA18CLP20TCM6**	**PA18ALP20TCSA**	**PA18ALP20TCM6SA**
Thyristor (SCR) NO	**PA18CLP20TO**	**PA18CLP20TOM6**	**PA18ALP20TOSA**	**PA18ALP20TOM6SA**
Retro reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	3 m, fixed	3 m, fixed	3 m, adjustable	3 m, adjustable
Thyristor (SCR) NC	**PA18CLR30TC**	**PA18CLR30TCM6**	**PA18ALR30TCSA**	**PA18ALR30TCM6SA**
Thyristor (SCR) NO	**PA18CLR30TO**	**PA18CLR30TOM6**	**PA18ALR30TOSA**	**PA18ALR30TOM6SA**
Specifications				
Rated operating voltage	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC
Off state current	≤ 5 mA AC	≤ 5 mA AC	≤ 5 mA AC	≤ 5 mA AC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT	PT
Load current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Polyester (PBTP)	Polyester (PBTP)	Nickel-plated brass	Nickel-plated brass
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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Photoelectric sensors

	Integrated amplifier		Integrated amplifier, transparent	
Types	**PD30 - Advanced with teach**			
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
				
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20
Retro reflective				
Operating frequency	1000 Hz	1000 Hz	1000 Hz	1000 Hz
Sensing distance (Sn)	6 m, Teach-in	6 m, Teach-in	2 m, Teach-in	2 m, Teach-in
Mute NPN NO/NC	**PD30CNR06NPMU**	**PD30CNR06NPM5MU**	**PD30CNG02NPMU**	**PD30CNG02NPM5MU**
Mute PNP NO/NC	**PD30CNR06PPMU**	**PD30CNR06PPM5MU**	**PD30CNG02PPMU**	**PD30CNG02PPM5MU**
Dust NPN NO/NC	**PD30CNR06NPDU**	**PD30CNR06NPM5DU**		
Dust PNP NO/NC	**PD30CNR06PPDU**	**PD30CNR06PPM5DU**		
Remote NPN NO/NC	**PD30CNR06NPRT**	**PD30CNR06NPM5RT**	**PD30CNG02NPRT**	**PD30CNG02NPM5RT**
Remote PNP NO/NC	**PD30CNR06PPRT**	**PD30CNR06PPM5RT**	**PD30CNG02PPRT**	**PD30CNG02PPM5RT**
Retro reflective polarized				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	6 m, Teach-in	6 m, Teach-in		
Mute NPN NO/NC	**PD30CNP06NPMU**	**PD30CNP06NPM5MU**		
Mute PNP NO/NC	**PD30CNP06PPMU**	**PD30CNP06PPM5MU**		
Dust NPN NO/NC	**PD30CNP06NPDU**	**PD30CNP06NPM5DU**		
Dust PNP NO/NC	**PD30CNP06PPDU**	**PD30CNP06PPM5DU**		
Remote NPN NO/NC	**PD30CNP06NPRT**	**PD30CNP06NPM5RT**		
Remote PNP NO/NC	**PD30CNP06PPRT**	**PD30CNP06PPM5RT**		
Through-beam emitter				
Sensing distance (Sn)	15 m, Teach-in	15 m, Teach-in		
NPN	**PD30CNT15NMU**	**PD30CNT15NM5MU**		
PNP	**PD30CNT15PMU**	**PD30CNT15PM5MU**		
Through-beam receiver mute function				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	15 m, Teach-in	15 m, Teach-in		
Remote NPN NO/NC	**PD30CNT15NPRT**	**PD30CNT15NPM5RT**		
Remote PNP NO/NC	**PD30CNT15PPRT**	**PD30CNT15PPM5RT**		
Dust NPN NO/NC	**PD30CNT15NPDU**	**PD30CNT15NPM5DU**		
Dust PNP NO/NC	**PD30CNT15PPDU**	**PD30CNT15PPM5DU**		
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS	ABS	ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE cULus	CE cULus	CE cULus	CE cULus

Photoelectric sensors

	Integrated amplifier, diffuse reflective		Laser miniature, DC, integrated amplifier	
Types	**PD30 - Advanced with teach**		**LD32**	**LD32**
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
				
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20	12 x 20 x 32	12 x 20 x 32
Diffuse reflective				
Operating frequency	1000 Hz	1000 Hz	4000 Hz	4000 Hz
Sensing distance (Sn)	1 m, Teach-in	1 m, Teach-in	150 mm, Teach-in	150 mm, Teach-in
NPN NO+NC			**LD32CND15NPT**	**LD32CND15NPM5T**
PNP NO+NC			**LD32CND15PPT**	**LD32CND15PPM5T**
Dust output				
NPN NO/NC	**PD30CND10NPDU**	**PD30CND10NPM5DU**		
PNP NO/NC	**PD30CND10PPDU**	**PD30CND10PPM5DU**		
Remote teach				
NPN NO/NC	**PD30CND10NPRT**	**PD30CND10NPM5RT**		
PNP NO/NC	**PD30CND10PPRT**	**PD30CND10PPM5RT**		
Diffuse reflective background suppress.				
Operating frequency	1000 Hz	1000 Hz	4000 Hz	4000 Hz
Sensing distance (Sn)	150 mm, Teach-in	150 mm, Teach-in	60 mm, Teach-in	60 mm, Teach-in
NPN NO+NC	**PD30CNB15NPRT**	**PD30CNB15NPM5RT**	**LD32CNB06NPT**	**LD32CNB06NPM5T**
PNP NO+NC	**PD30CNB15PPRT**	**PD30CNB15PPM5RT**	**LD32CNB06PPT**	**LD32CNB06PPM5T**
Retro reflective polarized				
Operating frequency			4000 Hz	4000 Hz
Sensing distance (Sn)			1 m, Teach-in	1 m, Teach-in
NPN NO+NC			**LD32CNP10NPT**	**LD32CNP10NPM5T**
PNP NO+NC			**LD32CNP10PPT**	**LD32CNP10PPM5T**
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA	≤ 2.4 VDC	≤ 2.4 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS	ABS	ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE cULus	CE cULus	CE	CE
Light Source			Laser Class 2	Laser Class 2

CARLO GAVAZZI

Photoelectric sensors

	Integrated amplifier	
Types	**PD30 - Basic with potentiometer**	
Connections	**2 m cable**	**M8 connector**
		
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20
Retro reflective		
Operating frequency	1000 Hz	1000 Hz
Sensing distance (Sn)	6 m	6 m
NPN NO/NC	**PD30CNR60NASA**	**PD30CNR60NAM5SA**
PNP NO/NC	**PD30CNR60PASA**	**PD30CNR60PAM5SA**
Retro reflective polarized		
Operating frequency	1000 Hz	1000 Hz
Sensing distance (Sn)	6 m	6 m
NPN NO/NC	**PD30CNP60NASA**	**PD30CNP60NAM5SA**
PNP NO/NC	**PD30CNP60PASA**	**PD30CNP60PAM5SA**
Through-beam emitter		
Sensing distance (Sn)	15 m	15 m
	PD30CNT15	**PD30CNT15M5**
Through-beam receiver		
Operating frequency	500 Hz	500 Hz
Sensing distance (Sn)	15 m	15 m
NPN NO/NC	**PD30CNT15NASA**	**PD30CNT15NAM5SA**
PNP NO/NC	**PD30CNT15PASA**	**PD30CNT15PAM5SA**
Specifications		
Rated operating voltage	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS
Operating temperature	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE cULus	CE cULus

Photoelectric sensors

	Integrated amplifier	
Types	**PD30 - Basic with potentiometer**	
Connections	**2 m cable**	**M8 connector**
		
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20
Diffuse reflective		
Operating frequency	1000 Hz	1000 Hz
Sensing distance (Sn)	1 m	1 m
NPN NO+NC	**PD30CND10NASA**	**PD30CND10NAM5SA**
PNP NO+NC	**PD30CND10PASA**	**PD30CND10PAM5SA**
Diffuse reflective background suppression, red light		
Operating frequency	500 Hz	500 Hz
Sensing distance (Sn)	200 mm	200 mm
NPN NO+NC	**PD30CNB20NASA**	**PD30CNB20NAM5SA**
PNP NO+NC	**PD30CNB20PASA**	**PD30CNB20PAM5SA**
Diffuse reflective background suppression, infrared light		
Operating frequency	500 Hz	500 Hz
Sensing distance (Sn)	200 mm	200 mm
NPN NO+NC	**PD30CNB20NAIS**	**PD30CNB20NAM5IS**
PNP NO+NC	**PD30CNB20PAIS**	**PD30CNB20PAM5IS**
Specifications		
Rated operating voltage	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS
Operating temperature	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE cULus	CE cULus

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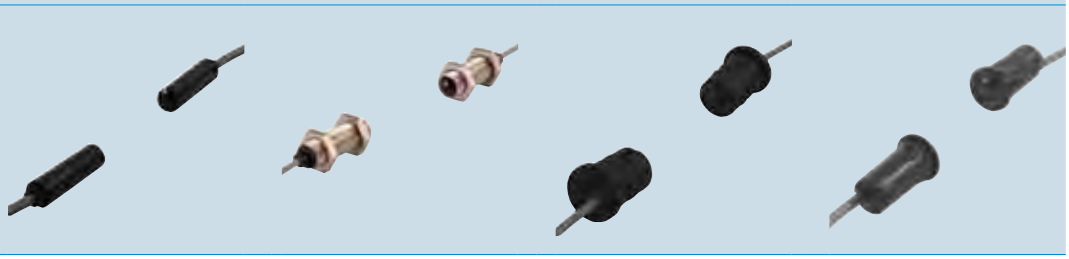
Photoelectric sensors

Through-beam, transistor output

Types	PB10..	PA12	PB18..	PE12..
Connections	5 m cable	M12 connector	5 m cable	5 m cable
				
Dimensions (mm)	Ø10	M12	Ø18	Ø12
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m	15 m	15 m
Single channel	**PB10CNT20**	**PA12BNT20**	**PB18CNT15**	**PE12CNT15**
Channel 1	**PB10C1T20**	**PA12B1T20**		**PE12C1T15**
Channel 2	**PB10C2T20**	**PA12B2T20**		**PE12C2T15**
Channel 3	**PB10C3T20**	**PA12B3T20**		**PE12C3T15**
Through-beam receiver				
Operating frequency	100 Hz (for 3 ch 30 Hz)	100 Hz (for 3 ch 30 Hz)	100 Hz	100 Hz
Sensing distance (Sn)	25 m	25 m	15 m	15 m
NPN NO Single channel	**PB10CNT20NO**	**PA12BNT20NO**	**PB18CNT15NO**	**PE12CNT15NO**
NPN NC Single channel	**PB10CNT20NC**	**PA12BNT20NC**	**PB18CNT15NC**	**PE12CNT15NC**
PNP NO Single channel	**PB10CNT20PO**	**PA12BNT20PO**	**PB18CNT15PO**	**PE12CNT15PO**
PNP NC Single channel	**PB10CNT20PC**	**PA12BNT20PC**	**PB18CNT15PC**	**PE12CNT15PC**
NPN NO Channel 1	**PB10C1T20NO**	**PA12B1T20NO**		**PE12C1T15NO**
NPN NC Channel 1	**PB10C1T20NC**	**PA12B1T20NC**		**PE12C1T15NC**
PNP NO Channel 1	**PB10C1T20PO**	**PA12B1T20PO**		**PE12C1T15PO**
PNP NC Channel 1	**PB10C1T20PC**	**PA12B1T20PC**		**PE12C1T15PC**
NPN NO Channel 2	**PB10C2T20NO**	**PA12B2T20NO**		**PE12C2T15NO**
NPN NC Channel 2	**PB10C2T20NC**	**PA12B2T20NC**		**PE12C2T15NC**
PNP NO Channel 2	**PB10C2T20PO**	**PA12B2T20PO**		**PE12C2T15PO**
PNP NC Channel 2	**PB10C2T20PC**	**PA12B2T20PC**		**PE12C2T15PC**
NPN NO Channel 3	**PB10C3T20NO**	**PA12B3T20NO**		**PE12C3T15NO**
NPN NC Channel 3	**PB10C3T20NC**	**PA12B3T20NC**		**PE12C3T15NC**
PNP NO Channel 3	**PB10C3T20PO**	**PA12B3T20PO**		**PE12C3T15PO**
PNP NC Channel 3	**PB10C3T20PC**	**PA12B3T20PC**		**PE12C3T15PC**
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	PC	PC	PTE	PC
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
LED colour	Green (E), Yellow (R)	Green (E), Yellow (R)		Green (E), Yellow (R)
Approvals/Marks UL 508 UL 325	CE cULus cURus	CE UL - cUL UR - cURus	CE cULus cURus	CE cULus cURus

NB! For pig-tail connector versions add C2 after the part number

Photoelectric sensors

	DC, integrated amplifier			
Types	**PD70**	**PD112**	**PA.**	**PB.**
Connections	**2 m cable or connector**		**2 m cable or connector**	
				
Dimensions (mm)	11.6 x 11.6 x 70	112 x 45 x 25	36 x 18 x 63	18 x 75 x 36
Diffuse reflective background suppress.				
Operating frequency		Door Mode 16.7 Hz Industri mode 250 Hz	1000 Hz	1000 Hz
Sensing distance (Sn)		2.5 m, adjustable	150 mm, adjustable	150 mm, adjustable
Cable		2 m	2 m	2 m
NPN/PNP, NO+NC		-	**PA15INPA/PA15IPPA**	**PB15INPA/PB15IPPA**
NPN+PNP, NO/NC		**PD112CNB25BP**	-	-
Connector		M12	M12	M12
NPN/PNP, NO+NC		-	**PB15INPA/PB15IPPA**	**PB15INPA-1/PB15IPPA-1**
NPN+PNP, NO/NC		**PD112CNB25BPM1**		
Retro reflective polariz.				
Operating frequency			1000 Hz	1000 Hz
Sensing distance (Sn)			3 m, adjustable	3 m, adjustable
Cable			2 m	2 m
NPN/PNP, NO+NC			**PA3PNPA/PA3PPPA**	**PB3PNPA/PB3PPPA**
Connector			M12	M12
NPN/PNP, NO+NC			**PB3PNPA/PB3PPPA**	**PB3PNPA-1/PB3PPPA-1**
Through-beam				
Operating frequency	100 Hz			
Sensing distance (Sn)	12 m, adjustable			
Cable	2 m			
NPN NO (Receiver)	**PD70CNT12NO**			
NPN NC (Receiver)	**PD70CNT12NC**			
PNP NO (Receiver)	**PD70CNT12PO**			
PNP NC (Receiver)	**PD70CNT12PC**			
Mute High (Em itter)	**PD70CNT12MH**			
Mute Low (Emitter)	**PD70CNT12ML**			
Connector	M8			
NPN NO (Receiver)	**PD70CNT12NOM5**			
NPN NC (Receiver)	**PD70CNT12NCM5**			
PNP NO (Receiver)	**PD70CNT12POM5**			
PNP NC (Receiver)	**PD70CNT12PCM5**			
Mute High (Emitter)	**PD70CNT12M5MH**			
Mute Low (Emitter)	**PD70CNT12M5ML**			
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.8 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PC Black	PC Black	Aluminium	Reinforced ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Receiver output Green, Emitter power ON	Yellow, Output Green, Power ON	Yellow	Yellow
Approvals/Marks	CE - cURus	CE - cULus	CE	CE

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Photoelectric sensors

		Integrated amplifier	
Types	**PC50**	**PC50..M1**	**PC50**
Connections	**2 m cable**	**M12 connector**	**2 m cable**
			
Dimensions (mm)	17 x 50 x 50	17 x 50 x 50	17 x 50 x 50
Diffuse reflective			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	1 m, adjustable	1 m, adjustable	
NPN/PNP NO+NC	**PC50CND10BA**	**PC50CND10BAM1**	
Sensing distance (Sn)	2 m, adjustable	2 m, adjustable	
NPN/PNP NO+NC	**PC50CND20BA**	**PC50CND20BAM1**	
Sensing distance (Sn)			1 m, adjustable
Relay SPDT Multivoltage			**PC50CND10RP**
Sensing distance (Sn)			2 m, adjustable
Relay SPDT Multivoltage			**PC50CND20RP**
Diffuse reflective background suppress.			
Operating frequency	250 Hz	250 Hz	
Sensing distance (Sn)	500 mm, adjustable	500 mm, adjustable	
NPN/PNP NO+NC	**PC50CNB50BA**	**PC50CNB50BAM1**	
Retro reflective polarized			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	6 m, adjustable	6 m, adjustable	6 m, adjustable
NPN/PNP NO+NC	**PC50CNP06BA**	**PC50CNP06BAM1**	
Mute High	**PC50CNP06BAMH**	**PC50CNP06BAM1MH**	
Mute Low	**PC50CNP06BAML**	**PC50CNP06BAM1ML**	
Relay SPDT Multivoltage			**PC50CNP06RP**
Retro reflective			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	10 m, adjustable	10 m, adjustable	10 m, adjustable
NPN/PNP NO+NC	**PC50CNR10BA**	**PC50CNR10BAM1**	
Relay SPDT Multivoltage			**PC50CNP10RP**
Through-beam emitter			
Sensing distance (Sn)	20 m	20 m	20 m
	PC50CNT20B	**PC50CNT20BM1**	**PC50CNT20R**
Through-beam receiver			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	20 m, adjustable	20 m, adjustable	20 m, adjustable
NPN/PNP NO+NC	**PC50CNT20BA**	**PC50CNT20BAM1**	-
Relay SPDT Multivoltage			**PC50CNT20RP**
Specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	12-240 VDC/24-240 VAC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	Relay SPDT
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	PT
Load current	≤ 200 mA	≤ 200 mA	≤ 3 mA
Housing material	Reinforced ABS/PC	Reinforced ABS/PC	Reinforced ABS/PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric sensors

	DC, integrated amplifier		Integrated amplifier colour sensors
Types	**E.55...**	**E.55...-1**	**PD12..**
Connections	**2 m cable**	**M12 connector**	**M12 connector**
			
Dimensions (mm)	35 x 55 x 15	35 x 55 x 15	61 x 26 x 125
Diffuse reflective			
Operating frequency	500 Hz (*100 Hz)	500 Hz (*100 Hz)	500 Hz
Sensing distance (Sn)	200 mm, adjustable	200 mm, adjustable	4-50 mm (fiber depend.)
NPN NO+NC	**ED5502NPAP**	**ED5502NPAP-1**	
PNP NO+NC	**ED5502PPAP**	**ED5502PPAP-1**	
Sensing distance (Sn)	600 mm, adjustable*	600 mm, adjustable*	
NPN NO+NC	**ED5506NPAP**	**ED5506NPAP-1**	
PNP NO+NC	**ED5506PPAP**	**ED5506PPAP-1**	
NPN/PNP NO+PC			**PD12CNC01BPT** 1 Output
NPN/PNP NO+PC			**PD12CNC04BPT** 4 Output
Through-beam emitter			
Sensing distance (Sn)	5 m	5 m	
	ET5505	**ET5505-1**	
Through-beam receiver			
Operating frequency	100 Hz	100 Hz	
Sensing distance (Sn)	5 m, adjustable	5 m, adjustable	
NPN NO+NC	**ET5505NPAP**	**ET5505PPAP**	
PNP NO+NC	**ET5505NPAP-1**	**ET5505PPAP-1**	
Accessories: fibres			
Dist. 18 mm			**FPDC 01 SCC 100**
Dist. 40-60 mm			**FPDC 02 SCC 100**
Dist. 4-6 mm			**FPDC 03 SCC 100**
Dist. 2-6 mm			**FPDC 04 SCC 100**
Dist. 4 mm			**FPDC 05 SCC 100**
General specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	24 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 65
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Load current	≤ 200 mA	≤ 200 mA	< 100 mA
Housing material	PC / ABS	PC / ABS	PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	0°C to +40°C
LED colour	Yellow	Yellow	Yellow + Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - cUL

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Photoelectric sensors

	Integrated amplifier		Fork sensor	
Types	**PD60..**	**PD60..M5**	**PF80..**	**PF74..**
Connections	**2 m cable**	**M8 connector**	**M8 connector**	**5 m cable**
				
Dimensions (mm)	13 x 30 x 60	13 x 30 x 60	12 x 37.5 x 80	15 x 60 x 74
Transparent detection				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	0.8 m, Teach-in	0.8 m, Teach-in		
NPN/PNP NO+NC	**PD60CNG08BPT**	**PD60CNG08BPM5T**		
Sensing distance (Sn)	1.4 m, Teach-in	1.4 m, Teach-in		
NPN/PNP NO+NC	**PD60CNG14BPT**	**PD60CNG14BPM5T**		
Fibre optical sensor plastic fibres				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	200 mm	200 mm		
NPN/PNP NO+NC	**PD60CNX20BP**	**PD60CNX20BPM5**		
Sensing distance (Sn)	200 mm, Teach-in	200 mm, Teach-in		
NPN/PNP NO+NC	**PD60CNX20BPT**	**PD60CNX20BPM5T**		
Fibre optical sensor glass fibres				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	200 mm	200 mm		
NPN/PNP NO+NC	**PD60CNV20BP**	**PD60CNV20BPM5**		
Sensing distance (Sn)	200 mm, Teach-in	200 mm, Teach-in		
NPN/PNP NO+NC	**PD60CNV20BPT**	**PD60CNV20BPM5T**		
Contrast sensor				
Operating frequency	20 kHz	20 kHz		
Sensing distance (Sn)	18 mm (fibre depend.)	18 mm (fibre depend.)		
NPN/PNP NO+NC	**PD60CNK18BPT**	**PD60CNK18BPM5T**		
Fork sensor				
Operating frequency			10 kHz	≤ 1100Hz
Sensing distance (Sn)			3 mm, Slot width	30 mm, Slot width
NPN/PNP NO+NC			**PF80FNT03BPM5T**	
PNP N.O., NPN N.C.				**PF74CNT30BC**
PNP N.C., NPN N.O.				**PF74CNT30BO**
General specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	19.2 - 28.8 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC @ 100 mA ≤ 1.0 VDC @ 10 mA	≤ 1.5 VDC @ 100 mA
Degree of protection	IP 65 (IP 67 CNG type)	IP 65 (IP 67 CNG type)	IP65	IP65
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	ST	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 40 mA	≤ 30 mA
Housing material	PC	PC	Aluminium, black	PC, black
Operating temperature	0°C to +60°C	0°C to +60°C	-20°C to +60°C	-25°C to +60°C
LED colour	Red	Red	Yellow + Red	Yellow + Green
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE	CE

Photoelectric sensors

	Integrated amplifier relay output			Through-beam relay output
Types	**PM..**	**PM..**	**PD86**	**PD98**
Connections	**Terminals single relay**	**Terminal block mute input**	**Terminal block mute input**	**Terminal block mute input**
				
Dimensions (mm)	25 x 65 x 81	25 x 65 x 81	86 x 44 x 39	98 x 56 x 37
Diffuse reflective				
Oper. freq. / Sens. dist. (Sn)	20 Hz			
Sensing distance (Sn)	0.8 m, adjustable			
Relay SPDT Multivoltage	**PMD8RG / RGT** **PMD8RI / RIT**			
Retro reflective polariz.				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed	
Relay SPDT Multivoltage	**PMP12RG / PMP12RI**			
Relay SPST (PC)		**PMP12RGM / PMP12RIM**	**PD86CNP12QPMU**	
Relay SPST (ZAMAK)			**PD86HNP12QPMU-01C**	
Retro reflective				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 10 m, fixed			
Relay SPDT Multivoltage	**PMR10RG / RGT**			
Relay SPST	**PMR10RI / RIT**			
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m		30 m (15 m default)
	PMT20G / PMT20I	**PMT20GM / PMT20IM**		**PD98CNT30QMU***
Through-beam receiver				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 20 m, fixed	20 Hz / 20 m, fixed		25 Hz / 30 m (15 m default)
Relay SPDT Multivoltage	**PMT20RG / RGT** **PMT20RI / RIT**			
Relay SPST				
General specifications				
Rated operating voltage	12 - 240 VDC / 24 - 240 VAC	24 VAC/DC ±20%	24 VAC/DC ±20%	12 V to 24 VAC/DC
Voltage drop	Relay SPDT	Relay SPST	Relay SPST	Relay DPDT
Degree of protection	IP 67	IP 67	IP 66	IP 54
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT	PT
Load current	≤ 3 A	≤ 3 A	1 A (AC), 0.5 A (DC)	1 A (AC), 0.5 A (DC)
Housing material	PC/ABS	PC/ABS	PD86C.. : PC + PMMA PD86H.. : ZAMAK + PMMA	PC/ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow	Yellow	Yellow + Green	Yellow (receiver)
Approvals/Marks	CE - UL - CSA	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325
Remarks	G = PG 13.5 Outlet I = ½"NPT Outlet T = Timer	G = PG 13.5 Outlet I = ½"NPT Outlet Mute input	Mute input	Mute input

* Item number set, emitter + receiver.

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Photoelectric sensors

	Edge infrared photoelectric safety switch	Heavy duty infrared barrier	Through-beam relay output
Types	**IREPSS1**	**IRPHS20 / IRPHS60**	**PD180**
Connections	**Terminal block**	**Terminal block**	**Terminal block**
			
Dimensions (mm)	34 x 190 x 32	60 x 130 x 52	180 x 51 x 49
Through-beam range			
Indoor sensing distance (max) m	10	20 / 60	15 / 30
General specifications			
Technology	Infrared	Infrared	Infrared
Supply voltage Receiver or Emitter	12/24 VAC/VDC (depending on jumper insertion)	12/24 VAC/VDC (depending on jumper insertion)	12 + 24 VAC/DC
Battery Supply Emitter			2 x 3,6 VDC, 2100 mAH Lithium Batteries size AA
Consumption	60 mA to 24 VAC (tx + rx)	110 mA to 24 VAC (tx + rx)	35 mA DC (55 mA DC with low battery alarm)
Output	changeover relay SPDT	NO and NC with double relay in series	2 x SPST
Contact rating	1A@24VAC (resistive load)	1A@24VAC (resistive load)	1A@30VDC (resistive load)
Approvals	CE	CE	CE - UL325
Conformity	EN 12453, EN 954-1, RoHS	EN 12453, EN 954-1, RoHS	EN 12445, EN12453, EN12978, RoHS
Test input			Emitter test input
Environmental specifications			
Wavelength	950 nm	950 nm	850 nm
Operating temperature	-20°C to +60°C	-20°C to +60°C	-25°C to +55°C
Degree of protection	IP 54	IP 66	IP 55
Mechanical specifications			
LED transmitter	Power signal	Power signal	None (energy saving)
LED receiver	Signal for alignment with transmitter	Signal for alignment with transmitter	Power ON - Green LED Output - Yellow LED
Optical adjustment		Horizontal 180°	Horizontal 200° Vertical ±30°
Mounting	Wall or ceiling mounted type	Wall mounted type	Wall mounted type
Weight	310g (couple)	940g (couple)	Emitter 270g Receiver 230g
Comments			Emitter is supplied with 2 x 3.6 VDC 2100 mAH Lithium Batteries

Photoelectric sensors

	Sensors	Amplifier 1-channel	Amplifier 2-channel	Amplifier 3-channel
Types	**MPF..**	**MPF1..**	**MPF2..**	**MPF3..**
Connections	**10 m cable**	**Terminals**	**Terminals**	**Terminals**
				
Dimensions (mm)	See sensor type	70 x 57 x 86	70 x 57 x 86	70 x 57 x 86
Amplifier				
		1-Channel	2-Channel	3-Channel
12-24 VAC/DC ±15% Low current		**MPF1-912RSL**	**MPF2-912RSL**	**MPF3-912RSL**
12-24 VAC/DC ±15%		**MPF1-912RS**	**MPF2-912RS**	**MPF3-912RS**
115 VAC ±15%		**MPF1-115RS**	**MPF2-115RS**	**MPF3-115RS**
230 VAC ±15%		**MPF1-230RS**	**MPF2-230RS**	**MPF3-230RS**
Through-beam emitter		**Output and function selection**		
Sensing distance (Sn)	15 m	No Dist Adjust		Dist Adjust	
Ø12 x 20	**MPFT15-4 (C)**	Normal Mute	Inverted Mute	Normal Mute	Inverted Mute
D11 x 24.5	**MPFT11-D11-4 (C)**				
D18 x 25	**MPFT15-D18-4 (C)**	RS	RSI	RSA	RSAI
M14 x 23	**MPFT15-M14-4 (C)**	RSL	RSLI	RSLA	RSLAI
Through-beam receiver					
Sensing distance (Sn)	15 m				
Ø12 x 20	**MPFR-4 (C)**				
D11 x 24.5	**MPFR-D11-4 (C)**				
D18 x 25	**MPFR-D18-4 (C)**				
M14 x 23	**MPFR-M14-4 (C)**				
General specifications					
Rated operating voltage	Powered by amplifier	See amplifier reference	See amplifier reference	See amplifier reference
Output		1 x 2 SPST in series	2 x 2 SPST in series	3 x 2 SPST in series
Low current resistive load		RS type: 2 A@240 VAC/30 VDC RSL type: 0.5 A@50 VAC/30 VAC	RS type: 2 A@240 VAC/30 VDC RSL type: 0.5 A@50 VAC/30 VAC	RS type: 2 A@240 VAC/30 VDC RSL type: 0.5 A@50 VAC/30 VAC
Operating frequency	Amplifier dependent	10 Hz	10 Hz	10 Hz
Degree of protection	IP 67	IP 40	IP 40	IP 40
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	PT	PT	PT
Housing material -Amplifier -Sensor Ø12+D11+D18 -Sensor	 PC + ABS PC + Stainless steel	PC	PC	PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour		Yellow	Yellow	Yellow
Approvals/Marks	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325 - UL508
Remarks	C = Pigtail connector version			
Optical angle (degrees)	±5			

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Photoelectric sensors

Sensors for amplifiers

Types	MOF..	MOF.. ATEX	MNF..	MDF..
Connections	10 m cable	Terminals	Terminals	Terminals
				
Dimensions (mm)	Ø 10 x 42	Ø 10 x 42	Ø 20 x 80	Ø 13.5 x 55
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m		
Max. ±2° optical angle	**MOFT20**	**MOFT20AX**		
	MOFT20-M12-2	**MOFT20-M12-2AX**		
Sensing distance (Sn)	50 m			
Max. ±2° optical angle	**MOFT50**			
	MOFT50-M12-2			
Sensing distance (Sn)	20 m	20 m		
Max. ±5° optical angle	**MOFT20-5**	**MOFT20-5AX**		
	MOFT20-M12-5	**MOFT20-M12-5AX**		
Sensing distance (Sn)	20 m	20 m	15 m	30 m
Max. ±8° optical angle	**MOFT20-8**	**MOFT20-8AX**	**MNFT15**	**MDFT30**
	MOFT20-M12-8	**MOFT20-M12-8AX**		
	MOFT20-M14-8	**MOFT20-M14-8AX**		
Through-beam receiver				
Operating frequency	Amplifier dependent	Amplifier dependent	Amplifier dependent	Amplifier dependent
Sensing distance (Sn)	See emitter	See emitter	See emitter	See emitter
Max. ±2° optical angle	**MOFR**	**MOFRAX**		
	MOFR-M12-2	**MOFR-M12-2AX**		
Max. ±5° optical angle	**MOFR-5**	**MOFR-5AX**		
	MOFR-M12-5	**MOFR-M12-5AX**		
Max. ±8° optical angle	**MOFR-8**	**MOFR-8AX**	**MNFR15**	**MDFR30**
	MOFR-M12-8	**MOFR-M12-8AX**		
	MOFR-M14-8	**MOFR-M14-8AX**		
General specifications				
Rated operating voltage	Powered by Amplifier	Powered by Amplifier	Powered by Amplifier	Powered by Amplifier
Output	On Amplifier	On Amplifier	On Amplifier	On Amplifier
Operating frequency	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..
Degree of protection	IP66 - IP67	IP66 - IP67	IP67	IP67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Housing material sensor	Ø10: PC M14 + M14: PC + SS	Ø10: PC M14 + M14: PC + SS	PC M14 + M14: PC + SS	Acetal, glass reinforced
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	None	None	None	None
Approvals/Marks	CE	CE - ATEX	CE	CE

Photoelectric sensors

Types	Amplifiers for sensors		
Connections	**11-pole plug**	**11-pole plug**	**11-pole plug**
			
Dimensions (mm)	35 x 80 x 81.5	35 x 80 x 81.5	35 x 80 x 81.5
Description	Standard amplifier with Sensor diagnostics and adjustable sensing distance	As S142A but with adjustable time delay	As S142A but with Master / Slave function for high neighbour immunity
References amplifier			
1 x SPDT relay	**S142ARNN924**	**S142BRNN924**	
1 x NPN Output	**S142ARNN024**	**S142BRNN024**	
1 x NPN Alarm Output	**S142ARNN115** **S142ARNN230**	**S142BRNN115** **S142BRNN230**	
1 x SPDT relay	**S142ARNT924**	**S142BRNT924**	
1 x NPN Output or alarm	**S142ARNT024**		
1 x Emitter mute input	**S142ARNT115** **S142ARNT230**	**S142BRNT115** **S142BRNT230**	
1 x PNP Output	**S142APPT924**	**S142BPPT924**	
1 x PNP Alarm Output	**S142APPT115**	**S142BPPT115**	
1 x Emitter mute input	**S142APPT230**	**S142BPPT230**	
1 x SPDT relay			**S142CRXA924**
A - Auto distance adjustment			**S142CRXA115** **S142CRXA230**
M - Manual distance adjustment			**S142CRXM924** **S142CRXM115** **S142CRXM230**
General specifications			
Rated operating voltage 924 115 230	 24 VAC/DC 115 VAC 230 VAC	 24 VAC/DC 115 VAC 230 VAC	 24 VAC/DC 115 VAC 230 VAC
Relay load current resistive load	10 A @ 250 VAC / 25 VDC SPD	10 A @ 250 VAC / 25 VDC SPD	10 A @ 250 VAC / 25 VDC SPD
Transistor Load current	100 mA 40 VDC	100 mA 40 VDC	
Operation frequency	20 Hz	20 Hz, no timer	15 Hz @ 2 systems 4 Hz @ 6 systems
Degree of protection	IP 20	IP 20	IP 20
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	S
Housing material	Noryl SE1, Light grey	Noryl SE1, Light grey	Noryl SE1, Light grey
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI

Photoelectric sensors

Types	S1430 UAP..	S1430 RAL..	S1430 ROS..	PAM...
Connections	**11-pole plug**	**11-pole plug**	**11-pole plug**	**Terminals**
				
Dimensions (mm)	35 x 80 x 81.5	35 x 80 x 81.5	35 x 80 x 81.5	2, 3, 4, 5, 6 DIN housing
Description	3 input 3 transistors outputs	3 input 3 transistors outputs	3 input 3 double relay outputs	2-4-6-8 or 10 channel modular system
References amplifier				
12-30 VAC/DC ±15%	**S1430UAP912**			
15-30 VAC/DC ±10%		**S1430RAL915**	**S1430ROS915**	
No. of channels				2 channels
- NPN output, NO				**PAM02AN3ANO/NC**
- PNP output, NO				**PAM02AN3APO/PC**
No. of channels				4 channels
- NPN output, NO				**PAM04AN3ANO/NC**
- PNP output, NO				**PAM04AN3APO/PC**
No. of channels				6 channels
- NPN output, NO				**PAM06AN3ANO/NC**
- PNP output, NO				**PAM06AN3APO/PC**
References extension modules				
No. of channels				2 channels
- NPN output, NO				**PAM02CN3ANO**
- NPN output, NC				**PAM02CN3ANC**
- PNP output, NO				**PAM02CN3APO**
- PNP output, NC				**PAM02CN3APC**
No. of channels				4 channels
- NPN output, NO				**PAM04CN3ANO**
- NPN output, NC				**PAM04CN3ANC**
- PNP output, NO				**PAM04CN3APO**
- PNP output, NC				**PAM04CN3APC**
General specifications				
Rated operating voltage	See Amplifier type	See Amplifier type	See Amplifier type	18 - 33 VDC
Output	3 x Transistor NPN/PNP/NO/NC	3 x SPST	3 x SPST	One output per channel
Load current resistive load	100 mA, 40 VDC, NPN	1.5 A @ 100 VAC / 30 VDC	1.5 A @ 100 VAC / 30 VDC	20 mA, 33 VDC, NPN / PNP 8 A @ 250VAC /24 VDC SPDT resistive load
Operation frequency	16 Hz	12.5 Hz	12.5 Hz	30 Hz @ 6 channels
Degree of protection	IP 20	IP 20	IP 20	IP 20
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	PT	PT	SPT
Housing material	Noryl SE1, Light grey	Noryl SE1, Light grey	Noryl SE1, Light grey	
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
LED colour	Yellow + Green + Red	Yellow + Green + Red	Yellow + Green + Red	Yellow + Green + Red
Approvals/Marks	Multiplexed system	Multiplexed system	Multiplexed system	Multiplexed system, Test functions, bargraph, mute input etc.

Photoelectric sensors

Types	Wireless entrapment protection device for industrial doors ESPE		
Connections	**Main controller**	**Subcontroller**	**PB11**
			
Dimensions (mm)	35 x 35 x 125	26 x 242 x 45	Ø11 x 24.5
Description	The Carlo Gavazzi main controller can control up to 4 subcontrollers	This flexible Carlo Gavazzi subcontroller can handle 2 safety edges and 1 door-in-door limit switch	
References			
Main controller	**WSM 2 B A 2 D24**		
Subcontroller		**WSS 2 B A 2 BAT**	
Photoelectric sensor Emitter			**PB 11 CNT 15 WE**
Photoelectric sensor Receiver			**PB 11 CNT 15 WR**
General specifications			
Rated operating voltage	12 - 24 VAC/DC	1 - 4 Litthium 3.6 VDC size AA batteries	From sub controller
Supply current	< 50 mA		
Relay load current resistive load	1A / 30 VDC 0.5 A / 30 VAC		
Communication frequency	2.4 GHz Duplex	2.4 GHz Duplex	
Response time	120 mS	120 mS	
Number or channels	16	16	
Communication distance	10 m wireless	10 m wireless	
Sensing distance			15 m
Subcontroller up-time		10 - 80 sec	
Test input	On main module		
Degree of protection	IP 66	IP 66	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	P	
Housing material	ABS, Light grey	PC, Light grey	PA6 Glass reinforced
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Green, Yellow, Red	Yellow	-
Approvals/Marks	CE - UL - FCC	CE - UL - FCC	CE - UL

Photoelectric level sensors

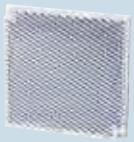
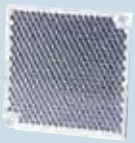
	Integrated amplifier		
Types	**VP0.E.**	**VP ATEX**	**VP E.M**
Connections	**2 m cable**	**2 m cable**	**2 m cable**
			
Dimensions (mm)	3/8" x 74	3/8" x 74	3/8" x 74
Light type	Unmodulated	Unmodulated	Unmodulated
References optical level sensor			
Operating frequency	30 Hz	30 Hz	30 Hz
Sensing dist. (Sn), Hor.	± 5 mm, fixed	± 5 mm, fixed	± 5 mm, fixed
Sensing dist. (Sn), Ver.	± 2.5 mm, fixed	± 2.5 mm, fixed	± 2.5 mm, fixed
Housing material	Polysulphone	Polysulphone	Polysulphone
NPN NO	**VP02E**		**VP02EM**
NPN NC	**VP01E**		**VP01EM**
PNP NO	**VP02EP**	**VP02EPAX**	**VP02EPM**
PNP NC	**VP01EP**	**VP01EPAX**	**VP01EPM**
Housing material	Polyamide 12	Polyamide 12	Polyamide 12
NPN NO	**VP04E**		**VP04EM**
NPN NC	**VP03E**		**VP03EM**
PNP NO	**VP04EP**	**VP04EPAX**	**VP04EPM**
PNP NC	**VP03EP**	**VP03EPAX**	**VP03EPM**
Housing material	Polysulphone		
SCR NO	**VP02-110TB**		
SCR NC	**VP01-110TB**		
SCR NO	**VP02-230TB**		
SCR NC	**VP01-230TB**		
DC-types			
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
Off-state current	≤ 12 mA	≤ 12 mA	≤ 12 mA
Load current	< 200 mA	< 200 mA	< 200 mA
AC-types (SCR)			
Rated operating voltage	110 or 230 VAC	110 or 230 VAC	110 or 230 VAC
Voltage drop	≤ 9 VAC	≤ 9 VAC	≤ 9 VAC
Off-state current	≤ 7 mA	≤ 7 mA	≤ 7 mA
Load current	< 10 - 100 mA	< 10 - 100 mA	< 10 - 100 mA
AC-types (SCR)			
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT
Operating temperature	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
LED colour	Yellow	Yellow	Yellow
Pressure	10 bar @ +60°C	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric level sensors

	Integrated amplifier	
Types	**VPA..../VPB....**	**VPA....-1/VPB....-1**
Connections	**2 m cable**	**M12 connector**
		
Dimensions (mm)	3/8" x 70.5	3/8" x 90.5
Light type	Modulated	Modulated
References optical level sensor		
Operating frequency	30 Hz	30 Hz
Sensing dist. (Sn), Hor.	± 5 mm, fixed	± 5 mm, fixed
Sensing dist. (Sn), Ver.	± 2.5 mm, fixed	± 2.5 mm, fixed
Housing material	Stainless steel/polysulphone	Stainless steel/polysulphone
NPN NO+NC	**VPA1MNA**	**VPA1MNA-1**
PNP NO+NC	**VPA1MPA**	**VPA1MPA-1**
Housing material	Stainless steel and glass	Stainless steel and glass
NPN NO+NC	**VPA2MNA**	**VPA2MNA-1**
PNP NO+NC	**VPA2MPA**	**VPA2MPA-1**
Housing material	Nickel-pl. brass/polysulphone	Nickel-pl. brass/polysulphone
NPN NO+NC	**VPB1MNA**	**VPB1MNA-1**
PNP NO+NC	**VPB1MPA**	**VPB1MPA-1**
Housing material	Nickel-plated brass and glass	Nickel-plated brass and glass
NPN NO+NC	**VPB2MNA**	**VPB2MNA-1**
PNP NO+NC	**VPB2MPA**	**VPB2MPA-1**
DC-types		
Rated operational voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC
Off-state current	≤ 7 mA	≤ 7 mA
Load current	< 200 mA	< 200 mA
General specifications		
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Operating temperature	-20°C to +80°C	-20°C to +80°C
LED colour	Yellow	No LED
Pressure	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

Photoelectric sensors accessories

Reflectors, rectangular

Item Number	ER100	ER840	ER681	ER686
Dimensions (mm)	100 x 100 x 9.2	84.5 x 84.5 x 9	52 x 119 x 27	55.3 x 126 x 9
Mounting (screws not incl.)	2 x M3 screws	2 x M3.5 screws	4 x M4 screws	2 x M6 screws
Reduction factor	1.2	0.96	0.92	0.92

Reflectors, rectangular




Item Number	ER4060	ER5060	ER42182	ER5080
Dimensions (mm)	60 x 41 x 8	55.5 x 61 x 8	186 x 46.5 x 8	80 x 54 x 8
Mounting (screws not incl.)	2 x M3.5 screws	2 x M4 screws	2 x M6 screws	Adhesive
Reduction factor	0.81	0.80	0.65	0.60

Reflectors, rectangular




Item Number	ER483	ER8	ER665	ER530
Dimensions (mm)	32.5 x 65 x 8	82 x 37 x 5.5	18.5 x 120 x 65	19 x 72.5 x 8.4
Mounting (screws not incl.)	2 x M3.5 screws	Adhesive	2 x M4 screws	2 x M3.5 screws
Reduction factor	0.55	0.51	0.45	0.45

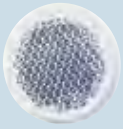
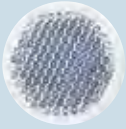
Reflectors, rectangular



Reflectors, cylindrical

Item Number	ER390	ER1	ER640	ER692
Dimensions (mm)	23.5 x 47.5 x 8	51 x 17.5 x 5	13 x 17 x 5	Ø 35 x 5.5
Mounting (screws not incl.)	2 x M3.5 screws	Adhesive	Adhesive	Adhesive
Reduction factor	1.39	0.20	0.16	0.53

Reflectors, cylindrical

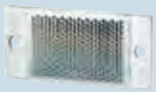





Item Number	ER4	ER460	ER420	ER423
Dimensions (mm)	Ø 84 x 7.4	Ø 46 x 6.5	Ø 42 x 6.3	Ø 41.5 x 6
Mounting (screws not incl.)	1 x M4 screw	Adhesive	Adhesive	2 x M3 screws
Reduction factor	1	0.55	0.54	0.54

Photoelectric sensors accessories

Reflectors, cylindrical

Micro cube reflectors for LD32

Item Number	**ER689**	**EM 130-20**	**EM 120-20**	**EM 123-70**
Dimensions (mm)	Ø 25 x 5.5	20 x 43	20 x 32	13.7 x 23
Mounting (screws not incl.)	Adhesive	2 x M3 screws	2 x M3.5 screws	2 x M2 screws
Reduction factor	0.39	1 (Micro Cube)	1 (Micro Cube)	1 (Micro Cube)

Reflectors, tape

Micro cube reflectors for LD32




Item Number	**ERT25**	**EM 111-40**	**EM 121-41**	**EM 110-40**
Dimensions (mm)	25 mm x 45.7 m	10.5 x 10.5	Ø20	Ø10
Mounting (screws not incl.)	Adhesive			
Reduction factor	0.23 (25 x 25 mm)	1 (Micro Cube)	1 (Micro Cube)	1 (Micro Cube)

Reflectors, tape

Accessories, photoelectric sensors



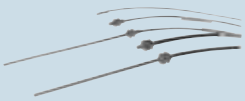

Item Number	**ERT50**	**AMPF-MB1**	**AMPF-MB2**	**AMPF-MB3**
Dimensions (mm)/Used for	50 mm x 45.7 m	MPFT15-4 & MPFR-4	MPFT15-4 & MPFR-4	MPFT15-4 & MPFR-4
Mounting (screws not incl.)	Adhesive			
Reduction factor/ Description	0.34 (50 x 50 mm)	Plastic mounting bracket for wall mounting	Adaptor for fitting to an Ø18 mm rubber profile	Metal mounting bracket for harsh environment

Accessories, photoelectric sensors




Item Number	**APA18-AK**	**APA18-RAR**	**6IODC**	**APA3**
Used for	M18 photoelectrics	M18 photoelectrics	S1430...	PA.. sensors
Description	Ø2, Ø4, and Ø8 mm aperture	90° mirror for angle detection	Plug conversion	Mounting bracket in anodized aluminium

Accessories, photoelectric sensors

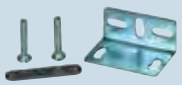



Item Number	**FPD..S.. / FPT..S..**	**FPD..S.. / FPT..S..**	**FGD..S.. / FGT..S..**	**MB-M01**
Dimensions (mm)	1 mm fiber	0.25 to 1 mm fiber	1 mm fiber	
Used for	PD60CNX.. EF1810..	PD60CNX.. EF1810..	PD60CNV..	MOF.. sensors
Description	Plastic fibre optics. Separate fibre heads see datasheet	Plastic fibre optics. Various fibre heads see datasheet	Glass fibre optics. Various fibre heads see datasheet	Ball mounting bracket for flexible mounting

Photoelectric sensors accessories

Brackets

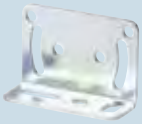


Item Number	**APA-2**	**APB-1**	**MB02**	**APD32-MB3**
Used for	PA.. sensors	PB	PM	PD32 - LD32
Description	Mounting bracket in steel, black	Mounting bracket in steel, black	Long mounting bracket for wall mounting in steel, cromated	Mounting bracket in steel, cromated

Brackets





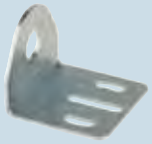
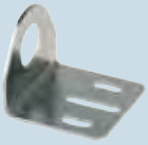

Item Number	**APD30 MB1**	**APD30 MB2**	**ACP50-1**	**MB18A**
Used for	PD.. sensors	PD.. sensors	PC50.. sensors	M18 sensors
Description	Mounting bracket in steel, chromated	Mounting bracket in steel, chromated	Mounting bracket in steel, chromated	Mounting bracket in plast

Brackets



Item Number	**AMB4-30**	**APA18-MB1**	**APH18-MB1**
Used for	Ø4 to M30 sensors	PA18 sensors	PH18 sensors
Description	Mounting bracket in plast and steel	Mounting bracket in plast	Mounting bracket in plast

Brackets angled

Steel, galvanized	**AMB8-A**	**AMB12-A**	**AMB18-A**	**AMB30-A**
Stainless steel AISI316L	-	**AMB12-A316L**	**AMB18-A316L**	-
Used for	M8 sensors	M12 sensors	M18 sensors	M30 sensors
Description	Mounting bracket	Mounting bracketd	Mounting bracket	Mounting bracket

Brackets straight




Steel, galvanized	**AMB8-S**	**AMB12-S**	**AMB18-S**	**AMB30-S**
Stainless steel AISI316L		**AMB12-S316L**	**AMB18-S316L**	-
Used for	M8 sensors	M12 sensors	M18 sensors	M30 sensors
Description	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket

Motion sensors

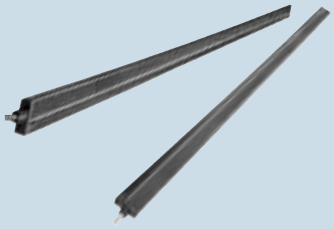
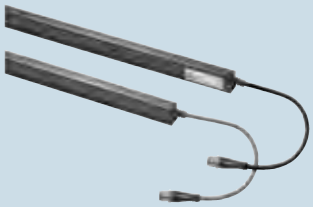
	Standard range RAD series		Long range IRS series
Types	**RAD 01**	**RAD 02**	**IRS 01**
Connections	**cable**	**cable**	**cable**
			
Dimensions (mm)	118 x 80 x 53	118 x 80 x 53	137 x 188 x 91.5
Features	K-Band radar sensor compatible with all swinging and sliding automatic doors. 3-D adjustable position of the sensor offers precise orientation of the activation pattern. Microprocessor technology filters out possible weather condition interferences. IR remote controller can be added for easy adjustment.	K-Band radar sensor compatible with all swinging and sliding automatic doors. 3-D adjustable position of the sensor offers precise orientation of the activation pattern. Microprocessor technology filters out possible weather condition interferences. IR remote controller can be added for easy adjustment.	K-Band unidirectional long range motion sensor for trouble-free opening of all types of industrial automatic doors. To detect either people or vehicles, whether they are moving towards or away from the sensor. Microprocessor technology filters out possible weather condition interferences. IR remote controller can be added for easy adjustment.
Input specifications			
Detection Angle	V: 0 to 90° in 15° increments L: ±30° in 7.5° increments	V: 0 to 90° in 15° increments L: ±30° in 7.5° increments	V: ±45° in 15° increments L: ±45° in 15° increments
Detecting Area Wide sensing field Narrow sensing field	mounting height 2.2 m 4 m (W) x 2 m (D) 2 m (W) x 2.5 m (D)	mounting height 2.2 m 4 m (W) x 2 m (D) 2 m (W) x 2.5 m (D)	mounting height 2.5 m~7 m 2.5 m (W) x 8 m (D) 2.5 m (W) x 10 m (D)
Detection Mode	Bidirectional	Uni & Bidirectional	Uni & Bidirectional
Motion Detecting Speed	0.05~1 m/s	0.05~1 m/s	0.05~3.0 m/s along sensor axis
Adjustments			
Sensitivity	10 levels (1 to 10)	10 levels (1 to 10)	5 levels (1 to 5)
Hold Time	From 0.5 to 9 s in 10 steps	From 0.5 to 9 s in 10 steps	From 0.5 to 9 s in 10 steps
Immunity Detection	"Quasi-presence", normal, increased immunity	"Quasi-presence", normal, increased immunity	"Quasi-presence", normal, increased immunity, LTS
Direction Recognition	· Bidirectional detection	· Unidirectional approaching · Unidirectional departig · Uni & Bidirectional detection	· Unidirectional approaching · Unidirectional departig · Uni & Bidirectional detection
Operating Modes (or relays assignment)			· Differentiation between people and vehicles · People suppression · Vehicles suppression · People or vehicles with direction segregation
LTS			Lateral traffics suppression "toggle" type function
Output specifications			
Output Relay SPDT Max. contact voltage Max. contact current Max. switching power	24 VDC / 120 VAC 1 A (resistive) 30 W (DC) / 120 VA (AC)	24 VDC / 120 VAC 1 A (resistive) 30 W (DC) / 120 VA (AC)	24 VDC / 120 VAC 1 A (resistive) 30 W (DC) / 120 VA (AC)
Hold time	0.5~9 s (adjustable)	0.5~9 s (adjustable)	0.5~6 s (adjustable)
Electrical specifications			
Frequency emitted	24.125 GHz	24.125 GHz	24.125 GHz
Rated supply voltage	12~24 VAC ±10% 12~24 VDC +30% / -10%	12~24 VAC ±10% 12~24 VDC +30% / -10%	12~24 VAC ±10% 12~24 VDC +30% / -10%
Mains frequency	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz
Power consumption	< 0.5 W	< 0.5 W	< 1.2 W
Approvals	CE - FCC - cURus	CE - FCC - cURus	CE - FCC - cURus
References			
Sensor	**RAD 01**	**RAD 02**	**IRS 01**
Remote controller	**RAD 00 RC**	**RAD 00 RC**	**IRS 00 RC**

Motion and presence sensor

Combined motion and presence detector for pedestrian doors

Types	GUARDIAN 1	GUARDIAN 2
Connections	Terminal block	Terminal block
		
Dimensions (mm)	210 x 77 x 58	210 x 77 x 58
Technology	Digital video camera technology 640 x 480	Digital video camera technology 640 x 480
Door types	Streight sliding doors	Curved and Streight sliding doors
Features	The Guardian sensor is a unique motion and presence detector that provides maximum safety and protection in pedestrian sliding door installations. Equipped with the latest digital video camera technology, Guardian watches over the entrance and exit area safeguarding people within, while at the same time controlling the doors. Guardian is able to ignore cross traffic, and it has a brilliant capability of self-adjusting to changes in the environment and weather conditions	
Input specifications		
Mounting height	180 cm to 300 cm	180 cm to 300 cm
Motion zone sensing area	Hight 180 cm = 246 x 204 cm Hight 220 cm = 300 x 249 cm Hight 300 cm = 410 x 340 cm	Hight 180 cm = 246 x 204 cm Hight 220 cm = 300 x 249 cm Hight 300 cm = 410 x 340 cm
Presence zone sensing area	Hight 180 cm = 42 cm x door width Hight 220 cm = 51 cm x door width Hight 300 cm = 70 cm x door width	Hight 180 cm = 42 cm x door width Hight 220 cm = 51 cm x door width Hight 300 cm = 70 cm x door width
Maximum door radius vs. Mounting height		Hight 180 cm = Radius 130 cm Hight 220 cm = Radius 170 cm Hight 300 cm = Radius 200 cm
Sensitivity	Adjusting in 7 steps	Adjusting in 7 steps
Presence time	7 step rotary switch: (10, 30 sec.) 1min, 5 min (Not accordance to DIN18650)	7 step rotary switch: (10, 30 sec.) 1min, 5 min (Not accordance to DIN18650)
Ambient Light	10 lux - 50.000 lux	10 lux - 50.000 lux
Output specifications		
Output function	Safety and Motion Zone: Relay - SPST Common relay data: 1A DC 30VDC 600.000 cycles @ 0.5A, 50 VAC/30 VDC	Safety and Motion Zone: Relay - SPST Common relay data: 1A DC 30VDC 600.000 cycles @ 0.5A, 50 VAC/30 VDC
General specifications		
Rated operating voltage	12 - 24 VAC	12 - 24 VAC
No load supply current	Max. 230 mA	Max. 230 mA
Test input. Active high	ON > 9 VAC/VDC OFF < 6 VAC/VDC	ON > 9 VAC/VDC OFF < 6 VAC/VDC
Test input. Active low	ON < 6 VAC/VDC OFF > 9 VAC/VDC	ON < 6 VAC/VDC OFF > 9 VAC/VDC
Type of ESPE	Type 2	Type 2
Environment protection	IP 64	IP 64
TÜV	In acc. with machinery directive 2006/42/EC, annex I DIN 18650-1 § 5.7.4, edition 2005 (prEN16005), EN13241-1, EN 12978	In acc. with machinery directive 2006/42/EC, annex I DIN 18650-1 § 5.7.4, edition 2005 (prEN16005), EN13241-1, EN 12978
UL-approved	cURus: UL325, CSA-C22.2 No. 247	cURus: UL325, CSA-C22.2 No. 247
Marking	CE	CE
References		
Marking	**GUARDIAN 1**	**GUARDIAN 2**

Light curtains for lift and doors

	Light curtains for lift	Light curtains for doors	
Types	**BFL104 - BFL194**	**BFD40E**	**BFD40S**
			
Specifications			
Diodes number	22 [BFL104] - 40 [BFL194]	40	40
Beams number	104 max [BFL104] - 194 max [BFL194]	40	40
Operating range	0 ÷ 4 m	0 ÷ 12 m	0 ÷ 12 m
Distance between bottom beam and bottom of housing	13.7 mm	13.7 mm	13.7 mm
Protected height	20.5 ÷ 1846 mm	20.5 ÷ 1846 mm [200x] 20.5 ÷ 2528 mm [250x]	20.5 ÷ 1846 mm [200x] 20.5 ÷ 2528 mm [250x]
Light immunity	> 100 Klux	> 100 Klux	> 100 Klux
RX-TX synchronization	By wire	By wire	By wire
Test function		Selectable by connecting a cable	Selectable by connecting a cable
General specifications			
Power supply	10-30 VDC, 18-27 VAC rectified	10-30 VDC	10-30 VDC
Output	NPN, PNP, voltage free NO/NC	NPN, PNP, voltage free NO/NC	NPN, PNP, voltage free NO/NC
Housing material	Plastic (PC-ABS)	Plastic (PC-ABS)	Plastic (PC-ABS)
Degree of protection	IP 54, IP 65	IP 54, IP 67	IP 54, IP 67
Operating temperature	-10° to +55°C, R.H. < 95%	-10° to +55°C, R.H. < 95%	-10° to +55°C, R.H. < 95%
Connecting cable	PVC, 5 x 24 AWG	PVC, 5 x 24 AWG	PVC, 5 x 24 AWG
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
General specifications			
	BFL104E200	**BFD40E200**	**BFD40S200**
	BFL104E200I	**BFD40E200I**	**BFD40S200I**
	BFL194E200	**BFD40E250XX**	**BFD40S250XX**
	BFL194E200I	**BFD40E250IXX**	**BFD40S250XXI**

Light curtain accessories

Light curtain accessories for lift

Types	BFLDIN	BFLBOX
		
Dimensions (mm) DIN RAIL housing On surface by screws	81 x 35.5 x 62.7	Internal: 150 x 105 x 80 External: 165 x 120 x 85 (excluded cable glands)
Function	Power supply unit for lift light curtain	Plastic case including BFLDIN
Output specifications		
11-14	SPST relay (NE or ND)	SPST relay (NE or ND)
Max. load AC1	5A / 250 VAC	5A / 250 VAC
Max. load DC12	5A / 24 VDC	5A / 24 VDC
Electrical life	> 1 x 10^5 operations	> 1 x 10^5 operations
Signalling	Buzzer	Buzzer
General specifications		
Power supply	24-48 VAC/DC ±25% [D48] 100-240 VAC/DC ±10% [D23]	24-48 VAC/DC ±25% [D48] 100-240 VAC/DC ±10% [D23]
Degree of protection	IP 20	IP 55
Cable Glands		n. 2 x ø 3.5÷7 mm (for BFL cables Tx & Rx) n.2 x ø 5÷8 mm (for BFLDIN supply and relay output cables)
Approvals/Marks	CE - UL	CE
References		
	BFL DIN D48N	**BFL BOX D48N**
	BFL DIN D23N	**BFL BOX D23N**

Sensors general accessories

General Accessories, sensors

				
Dimensions (mm)	M8 connector	M8 connector	M8 connector	M8 connector
Used for	3-wire DC Sensors	3-wire DC Sensors	3-wire DC Sensors	3-wire DC Sensors
2 m cable	**CONM53NF-S2**	**CONM53NF-A2**	**CONM54NF-S2**	**CONM54NF-A2**
5 m cable	**CONM53NF-S5**	**CONM53NF-A5**	**CONM54NF-S5**	**CONM54NF-A5**
10 m cable			**CONM54NF-S10**	**CONM54NF-A10**
Description	High-end connector	High-end connector	High-end connector	High-end connector
				
Dimensions (mm)	M12 connector	M12 connector	M12 connector	M12 connector
Used for	2-, 3- or 4-wire DC	2-, 3- or 4-wire DC	2-, 3- or 4-wire DC	2-, 3- or 4-wire DC
2 m cable, 3-pin	**CONG10-S2**	**CONG10-A2**	**CONM13NF-S2**	**CONM13NF-A2**
5 m cable, 3-pin	**CONG10-S5**	**CONG10-A5**	**CONM13NF-S5**	**CONM13NF-A5**
10 m cable, 3-pin			**CONM13NF-S10**	**CONM13NF-A10**
2 m cable, 4-pin	**CONG1A-S2**	**CONG1A-A2**	**CONM14NF-S2**	**CONM14NF-A2**
5 m cable, 4-pin	**CONG1A-S5**	**CONG1A-A5**	**CONM14NF-S5**	**CONM14NF-A5**
10 m cable, 4-pin			**CONM14NF-S10**	**CONM14NF-A10**
2 m cable, 5-pin			**CONM15NF-S2**	**CONM15NF-A2**
5 m cable, 5-pin			**CONM15NF-S5**	**CONM15NF-A5**
10 m cable, 5-pin			-	**CONM15NF-A10**
Description	High-end connector	High-end connector	High-end connector	High-end connector
				
Dimensions (mm)	M12 connector	M12 connector	M8 connector	M8 connector
Used for	2-wire AC	2-wire AC	4-wire DC Sensors	4-wire DC Sensors
2 m cable, 3-pin	**CONH6A-S2**	**CONH6A-A2**		
5 m cable, 3-pin	**CONH6A-S5**	**CONH6A-A5**		
2 m cable			**CONG5A-S2**	**CONG5A-A2**
5 m cable			**CONG5A-S5**	**CONG5A-A5**
Description	High-end connector	High-end connector	Low-cost connector	Low-cost connector
				
Dimensions (mm)	-	65 x 27 x 130	M12 connector	M12 connector
Used for	Cylindrical 4 - 30 mm	Stand-alone sensors	2-, 3- or 4-wire DC	2-, 3- or 4-wire DC
Item number	**AMB4-30**	**ST-03**		
No cable 4-pin			**CONM14NF-S**	**CONM14NF-A**
Description	Universal sensor mounting bracket	Sensor tester for: NAMUR and 2-, 3- or 4-wire DC	Terminal connection	Terminal connection

CARLO GAVAZZI

Proximity magnetic sensors, rectangular

	Rectangular		
Types	**S series**	**SPB2 series**	**SPA1 series**
			
Dimensions (mm)	11.5 x 79 x 21.2	25.5 x 85 x 24	16 x 90 x 20
Electrical specifications			
Max. switch. voltage contact	250 VAC [SA / SC 2, SB2 / -S5] 1500 VAC [SA / SC 8] 230 VAC [SS2, SBS2]	250 VAC	24 VDC [output 1 and 2]
Max. switch. current contact	1 A [SS2, SBS2] 3 A [SA2, SC2, SB2, SB2S5, SA8, SC8]	3 A	0.5 A [output 1] 4 A [output 2]
Max. switch. power contact	100 VA [SA / SC 2, SB2 / -S5] 120 VA [SA / SC 8] 60 VA [SS2, SBS2]	100 VA	5 VA [output 1] 100VA [output 2]
Power supply			24 VDC
General specifications			
Operating distance	8 - 32 mm	5 - 30 mm	12 mm
Output connection	PVC cable, 0.5 m (0.24 m Type S5)	Faston [SPB2] 2 m PVC Cable [SPB22MT]	PVC cable, 19 cm pig - Tail
Degree of protection	IP 67	IP 67 [SPB22MT] IP 65 [SPB2]	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +80°C
Housing material	Plastic	Plastic	ABS class V0
References			
Normally open	**SA2** **SA8**		
Normally closed	**SC2** **SC8**		
Change - Over	**SS2**		
Bistable	**SB2** **SB2S5**	**SPB2** **SPB22MT**	
Bistable CO	**SBS2**		
Normally closed, 2 outputs			**SPA1S2** **SPA1S3**

Proximity magnetic sensors, rectangular

	Rectangular	
Types	**M and MS series**	**MM series**
		
Dimensions (mm)	8.3 x 37 x 16	6.1 x 23.5 x 14 [A6] 7 x 27 x 11 [A3, S1]
Electrical specifications		
Max. switch. voltage contact	100 VAC [MS1] 230 VAC [MSA1] 500 VAC [MA3, MC3]	100 VAC [S1, A6] 500 VAC [A3]
Max. switch. current contact	0.25 A [MS1] 0.5 A [MA3, MC3] 0.75 A [MSA1]	0.25 A [S1] 0.5 A [A3, A6]
Max. switch. power contact	5 VA [MS1] 10VA [MSA1, MA3, MC3]	5 VA [S1] 10 VA [A3, A6]
General specifications		
Operating distance	7 - 35 mm	10 - 40 mm
Output connection	PVC cable, 0.5 m (2 m, Type MSA1)	PVC cable [A3, S1] Twin lead cable [A6]
Degree of protection	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing material	Plastic	Plastic
References		
Normally open	**MSA1** **MA3**	**MMA3** **MMA6**
Normally closed	**MC3**	
Change - Over	**MS1**	**MMS1**

CARLO GAVAZZI

Proximity magnetic sensors, cylindrical

	Cylindrical		
Types	**FM... series**	**FMM... series**	**FMMP... series**
			
Dimensions (mm)	Ø 9.3 [A3, C3, S1] M10 x 0.75 [A3S5, A6] M12 x 1 [C3S1, A9S1]	M8 x 1	Ø 6 x 25 [L25] Ø 6 x 33 [L33] Ø 6 x 38 [L38]
Electrical specifications			
Max. switch. voltage contact	100 VAC [S1, A6] 230 VAC [A9S1] 500 VAC [A3, C3, A3S5, C3S1]	100 VAC [A6, S1] 500 VAC [A3]	140 VAC
Max. switch. current contact	0.25 A [S1] 0.5 A [A3, C3, A6, A3S5, C3S1] 3 A [A9S1]	0.25 A [S1] 0.5 A [A3, A6]	1 A
Max. switch. power contact	5 VA [A3, C3, A3S5, C3S1] 60 VA [A9S1] 100 VA [S1, A6]	5 VA [S1] 10 VA [A3, A6]	10 VA
Max carry current			1.2 A
General specifications			
Operating distance	5 - 36 mm	8 - 27 mm	> 8 mm
Output connection	PVC cable 0.5 m for Ø 9.3 2 m for M10 and M12	PVC cable, 2 m	Twin lead cable, 0.5 m
Degree of protection	IP 67	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +70°C	-20°C to +75°C
Housing material	Plastic [A3, C3, S1] Nickel plated brass [A6] Brass [A3S5, C3S1, A9S1]	Stainless steel [A3, S1] Nickel plated brass [A6]	Plastic
References			
Normally open	**FMA3** **FMA3S5** **FMA6** **FMA9S1**	**FMMA3** **FMMA6**	**FMMPA7L25** **FMMPA7L33** **FMMPA7L38**
Normally closed	**FMC3** **FMC3S1**		
Change - Over	**FMS1**	**FMMS1**	

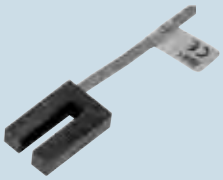
Proximity magnetic sensors, cylindrical

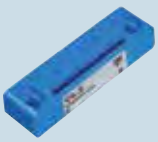
	Cylindrical	
Types	**FMP... series**	**FS... series**
		
Dimensions (mm)	M12 x 1 x 100	Ø 13.5 [A2, A8, C2, C8, S2] M10 x 1.25 [A2S3, S2S1] M12 x 1 [A2S4, S2S4] M16 x 1.5 [B2]
Electrical specifications		
Max. switch. voltage contact	120 VAC / DC [C7] 175 VDC, 120 VAC [S1] 200 VDC, 140 VAC [A7] 230 VAC / DC [A9, C9, A9S1] 250 VAC / DC [B2]	230 VAC [S2, S2S1, S2S4] 250 VAC [A2, B2, C2, A2S3, A2S4] 1500 VAC [A8, C8]
Max. switch. current contact	0.25 A [S1] 0.5 A [C7] 1 A [A7] 3 A [B2, A9, C9, A9S1]	1 A [S2, S2S4, S2S1] 3 A [A2, B2, C2, A8, C8, A2S3, A2S4]
Max. switch. power contact	5 VA [S1] 10 VA [A7, C7] 60 VA [A9, C9, A9S1] 120 VA [B2]	60 VA [S2S1, S2S4, S2] 100 VA [A2, B2, C2, A2S3, A2S4] 120 VA [A8, C8]
General specifications		
Operating distance	7 - 26 mm	3 - 32 mm
Output connection	PVC cable, 2 m	PVC cable, 2 m 0.5 m for Ø 13.5
Degree of protection	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing material	Plastic	Plastic [A2, A8, C2, C8, S2, B2] Brass [A2S3 / S4, S2S1 / S4]
References		
Normally open	**FMPA7** [black] **FMPA9** [black] **FMPA9S1** [black]	**FSA2** **FSA8** **FSA2S32MT** **FSA2S42MT**
Normally closed	**FMPC7** [red] **FMPC9** [red]	**FSC2** **FSC8**
Change - Over	**FMPS1** [blue]	**FSS2** **FSS2S12MT** **FSS2S42MT**
Bistable	**FMPB2** [grey]	**FSB22MT**

Proximity magnetic sensors, cylindrical

	Cylindrical	
Types	**FSLP... series**	**FSM... series**
		
Dimensions (mm)	Ø 16	M12 x 1 [A2, A7, S2] M16 x 1 [S2S2AT]
Electrical specifications		
Max. switch. voltage contact	100 VAC [A7] 250 VAC [B2]	24 VDC [A7] 230 VAC [S2, S2S2AT] 250 VAC [A2]
Max. switch. current contact	0.4 A [A7] 3 A [B2]	0.5 A [S2S2AT] 1 A [S2] 3 A [A2] 50 mA [A7]
Max. switch. power contact	10 VA [A7] 120 VA [B2]	30 VA [S2S2AT] 60 VA [S2] 100 VA [A2] (A7 negligible)
General specifications		
Operating distance	18 - 25 mm (front); >10 - >15 mm (side)	2 - 19 mm
Output connection	PVC cable, 2 m	Silicone cable, 2 m [A7] Silicone cable, 0.5 m [S2S2AT] PVC cable, 2 m [A2, S2]
Degree of protection	IP 67	IP 67
Operating temperature	-30° to +80°C	-25°C to +75°C [A2, A7, S2] -20°C to +150°C [S2S2AT]
Housing material	Plastic	Brass [S2S2, S2S2AT] Nickel plated brass [A2, A7, S2]
References		
Normally open	**FSLPA7**	**FSMA2** **FSMA7**
Normally closed		
Change - Over		**FSMS2** **FSMS2S2AT**
Bistable	**FSLPB2**	

Proximity magnetic sensors, slot

Types	Slot	
	ISY series	IM series
		
Dimensions (mm)	10 x 45 x 37	7 x 28 x 18.5
Electrical specifications		
Max. switch. voltage contact	100 VAC [S1] 500 VAC [C3]	100 VAC [S1] 500 VAC [C3]
Max. switch. current contact	0.25 A [S1] 0.5 A [C3]	0.25 A [S1] 0.5 A [C3]
Max. switch. power contact	5 VA [S1] 10 VA [C3]	5 VA [S1] 10 VA [C3]
General specifications		
Output connection	PVC cable, 0.5 m	PVC cable, 0.5 m
Degree of protection	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing materials	Plastic	Plastic
References		
Normally closed	**ISYC3**	**IMC3**
Change - Over	**ISYS1**	**IMS1**

Types	Magnetic units CL series			
Shapes	**Rectangular**	**Trapezoidal**		**Cylindrical**
				
General specifications				
Minimum separation:	Dimensions (mm)	**References**		
10	25 x 14 x 8	**CL1**		
20	44.5 x 12 x 9	**CL2**		
30	59 x 18 x 9	**CL3**		
50	76 x 25 x 18	**CL4**		
Not mandatory		Dimensions (mm)	**References**	Dimensions (mm)	**References**
		90 x 31 x 22.5	**CL90**	Ø 9.3 x 32	**CL10**
				Ø 13.5 x 65	**CL11**
				Ø 18 x 6	**CL18**
				Ø 23 x 9	**CL23**
				Ø 31 x 10	**CL31**
				Ø 20 x 10	**CL20S1**
				Ø 22.1 x 11.3	**CL20S3**

Level magnetic sensors

	Cylindrical		
Types	**ILM series**	**ILMM series**	**ILMP series**
			
Float Diameter (mm)	Ø 53	Ø 28	Ø 25
Output functions			
	Normally open, Normally closed [2, 8] Change-over [S2]	Normally open and normally closed [5, 590, 5ATS1] Normally open [5S1] Normally closed [5S2, 5S2AT]	Normally open, normally closed
Electrical specifications			
Max. switch. voltage contact	230 VAC [S2] - 250 VAC [2] 1500 VAC [8]	240 VAC, 220 VDC	240 VAC, 200 VDC
Max. switch. current contact	1 A [S2] 3 A [2, 8]	0.5 A	0.5 A
Max. switch. power contact	60 VA [S2] - 100 VA [2] 120 VA [8]	50 VA	50 VA
General specifications			
Output connection	Silicone cable, 0.5 m	XLPE cable, 0.3 m 1,1 m [ATS1]	PVC cable, 0.3 m
Min. liquid specific gravity	0.75 kg / dm^3	0.75 kg / dm^3	
Max. pressure	20 kg / cm^2	10 kg / cm^2	2 kg / cm^2
Degree of protection	IP 67	IP 67	IP 67
Operating temperature	-25 to +120 °C [2, 8, S2]	-10 to +120°C [5, 590] -10 to +200°C [5ATS1, 5S2AT] -20 to +120°C [5S1, 5S2]	-20°C to +80°C
Housing materials	AISI 316 Stainless steel	AISI 304 stainless steel [5, 590 5ATS1] AISI316 stainless steel [5S2AT, 5S1, 5S2]	Plastic
References			
Normally open / Normally closed	**ILM2** **ILM8**	**ILMM5** **ILMM590** **ILMM5ATS1**	**ILMP5** **ILMP5P**
Change - Over	**ILMS2**		
Normally closed		**ILMM5S2AT** **ILMM5S2**	
Normally open		**ILMM5S1**	

Level magnetic sensors

	Cylindrical		
Types	**ILMPU - ILU - ILMU series**	**ILSP series**	**FLM series - Flux Sensors**
			
Float Diameter (mm)	Ø 17.5 [ILMPU] Ø 31 [ILMU] Ø 45 [ILU]	Ø 44	Ø 20
Electrical specifications			
Max. switch. voltage contact	230 VAC [ILUS2] 240 VAC, 200 VDC [ILMPU5, ILMU5] 250 VAC [ILU2] 1000 VAC [ILU8]	230 VAC [S2] 250 VAC [2] 1500 VAC [8]	100 VAC
Max. switch. current contact	0.5 A [ILMP, ILM] 1 A [ILUS2] 3 A [ILU2, ILU8]	1 A [S2] 3 A [2, 8]	0.4 A
Max. switch. power contact	50 VA [ILMP, ILM] 60 VA [ILUS2] 100 VA [ILU2] 120 VA [ILU8]	60 VA [S2] 100 VA [2] 120 VA [8]	10 VA
General specifications			
Output connection	Silicone cable, 0.3 m [ILMPU5, ILMU5] Silicone cable, 0.5 m [ILU2, ILU8, ILUS2]	Silicone cable, 0.5 m	HT105 PVC cable ended with 6.35 mm female faston
Operating distance Don			+5 mm
Release distance Doff			D_{on} - 2 mm
Min. liquid specific gravity	0.70 kg / dm^3 [ILMPU, ILMU] 0.75 kg / dm^3 [ILU]	0.75 kg / dm^3	
Max. pressure	2 kg / cm^2 [ILMPU, ILMU] 100 kg / cm^2 [ILU]	0.6 kg / cm^2	
Degree of protection	IP 68	IP 67	IP 67
Operating temperature	-20 to +80°C [ILMPU, ILMU] -25 to +100°C [ILU]	-25 to +100 °C	-30 to +105°C
Housing materials	Non toxic polypropylene or plastic	Plastic	Stainless steel
References			
Normally open / Normally closed	**ILMPU5** **ILMU5**	**ILSP2** **ILSP8**	
Normally open	**ILU2** **ILU8**		**FLMA1S1**
Change - Over	**ILUS2**	**ILSPS2**	

Intrinsic safety

Explosion proof sensors

Types	Cylindrical series FSQ	Rectangular series MQ	Level series ILM
			
Exter. Dimensions (mm) Float Dimensions (mm)	Ø16 x 110	37 x 16 x 8.3	 Sperichal Ø 53 [S], Cylindrical Ø 45x55 [C]
Category	2G, 2D	2G, 2D [MQx1EX] 1G, 1D [MQA0EX]	2G, 2D [ILMx2] 1G, 1D [ILMx0]
EX Identification	II2GExmbIICT5Gb II2DExmbIIICT100°CDbIP67	II2GExmbIICT5Gb [MQx1EX] II2DExmbIIICT100°CDbIP67 [MQx1EX] II1GExiaIICT6Ga [MQA0EX] II1DExiaIIICT100°CDaIP67 [MQA0EX]	II2GExmbIICT5 [ILMx2] II2DExmbIIICT100°CDbIP67 [ILMx2] II1GExiaIICT6Ga [ILMx0] II1DExiaIIICT100°CDaIP67 [ILMx0]
General specifications			
Max. switch. voltage contact	250 VAC	230 VAC/DC [MQA1EX, MQC1EX] 30 VAC/DC [MQA0EX] 150 VAC/DC [MQS1EX]	250 VAC/DC [ILMA2] 230 VAC/DC [ILMS2] 30 VAC/DC [ILMx0]
Max. switch. current contact	3A	0.25 to 0.75 A [MQx1EX] 120 mA [MQA0EX]	3 A [ILMA2]; 1A [ILMS2] 120 mA [ILMx0]
Max. switch. power contact	100 VA	5 to 10 VA [MQx1EX] - [MQA0EX]	100 VA [ILMA2] 60 VA [ILMS2]
Operating distance	8 - 30 mm	10 - 35 mm	-
Degree of protection	IP67	IP67	IP67
Temperature Class	T5	T5 [MQx1EX] T6 [MQA0EX]	T5 [ILMx2] T6 [ILMx0]
Body material	Stainless steel AISI 303	Self-exting. PP + 30% glass fiber	Stainless steel AISI 316
Approvals / mark	CE - TÜV Sud	CE - TÜV Sud	CE - TÜV Sud
References			
Normally open	**FSQA2B01SLEX** **FSQA2HFEX**	**MQA1EX** **MQA0EX**	**ILMA2SSLEX** **ILMA2CSLEX** **ILMA0SSLEX** **ILMA0CSLEX**
Normally closed		**MQC1EX**	
Change - Over		**MQS1EX**	**ILMS2SEX** **ILMS2CEX** **ILMS0SEX** **ILMS0CEX**

Safety magnetic sensors

Safety magnetic sensors

Types — SMS...

Electrical specifications

Max. switch. voltage	100 VAC
Max. switch. power	5 VA
Max. switch. current	0.25 A

General specifications

External dimensions (mm)	88 x 25 x 13; M18x1 SMSA2*; M30x1.5 SMSA3P*
Suitable magnetic unit	CLS; CLSA2 (SMSA2P*); CLSA2M (SMSA2M*); CLSA3 (SMSA3P*)
Output connection	Cable (PVC, AWG 22 to 26, L=2 m.); pig tail with M12 connector, L=0.3 m
Degree of protection	IP 67
Operating temperature	-25° to +70°C
Housing material	Plastic; PBT + 30 % glass (SMSA2P and SMSA3P); Stainless Steel (SMSA2M)
Approvals / Marks	CE - (UL version is available for some items with different codification)

References

	Housing type / Material	Safety Aux. Outputs	Aux. Outputs	REFERENCES
	Rectangular / Plastic	1NO		**SMS10**
	Rectangular / Plastic	1NO	1NC	**SMS10NC**
0.3 m cable with M12 conn.	Rectangular / Plastic	1NO	1NC	**SMS10NCCM1**
	Rectangular / Plastic	1NO+1NC		**SMS01**
	Rectangular / Plastic	1NO+1NC		**SMS02**
LED on NC contact	Rectangular / Plastic	1NO+1NC		**SMS02LD**
Resistor on NO contact	Rectangular / Plastic	1NO+1NC		**SMS02S1**
	Rectangular / Plastic	2NO		**SMS03**
0.3 m cable with M12 conn.	Rectangular / Plastic	2NO		**SMS03+CM1A4/03MT**
	Rectangular / Plastic	2NO	1NC	**SMS03NC**
0.3 m cable with M12 conn.	Rectangular / Plastic	2NO	1NC	**SMS03NCS1**
	Cylindrical / Plastic	1NO+1NC		**SMSA2P02**
LED on NC contact	Cylindrical / Plastic	1NO+1NC		**SMSA2P02LD**
	Cylindrical / Plastic	2NO		**SMSA2P03**
	Cylindrical / Plastic	1NO		**SMSA2P10**
	Cylindrical / Plastic	2NO		**SMSA2P30**
	Cylindrical / Plastic	1NO+1NC		**SMSA3P02**
	Cylindrical / Plastic	2NO		**SMSA3P03**
	Cylindrical / Plastic	2NO		**SMSA3P30**
	Cylindrical / Stainless steel	1NO+1NC		**SMSA2M02**
	Cylindrical / Stainless steel	1NO		**SMSA2M10**

Types — CLS...

General specifications

Degree of protection	IP 67
Operating temperature	-25° to +70°C
Housing material	Plastic; Stainless Steel (CLSA2M)
Approvals / Marks	CE - (UL version is available for some items with different codification)

References

External dimensions (mm)	Shape	REFERENCES
88 x 25 x 13	Rectangular	**CLS**
Ø25.1 x 9.3	Cylindrical	**CLSA2; CLSA2M**
Ø30 x 16	Cylindrical	**CLSA3**

Safety light curtains

Types	Safety light curtains, safety category 2 hand resolution SC2...	Safety light curtains, safety category 2 presence resolution SC2...
		

General specifications

Power supply	24 VDC ±20%	24 VDC ±20%
Output functions	2 PNP Output	2 PNP Output
Output connections	M12 4-pole connector for TX M12 5-pole connector for RX	M12 4-pole connector for TX M12 5-pole connector for RX
Safety category	2	2
Auxiliary functions	Reset / Test ; Automatic Restart	Reset / Test ; Automatic Restart
Housing material	Painted aluminium (yellow RAL 1003)	Painted aluminium (yellow RAL 1003)
Environment light rejection	IEC-61496-2	IEC-61496-2
Degree of protection	IP 65 (EN 60529)	IP 65 (EN 60529)
Operating temperature	0° to +55°C	0° to +55°C
Approvals/Marks	CE - TÜV Nord - cULus listed	CE - TÜV Nord - cULus listed

References

Resolution	Range	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES
Hand 30 mm	0.2-19 m	150	8	8	**SC2AR30150D19**				
		300	16	9	**SC2AR30300D19**				
		450	24	11	**SC2AR30450D19**				
		600	32	12	**SC2AR30600D19**				
		750	40	14	**SC2AR30750D19**				
		900	48	15	**SC2AR30900D19**				
		1050	56	17	**SC2AR301050D19**				
		1200	64	18	**SC2AR301200D19**				
		1350	72	20	**SC2AR301350D19**				
		1500	80	21	**SC2AR301500D19**				
Presence 90 mm	0.2-19 m					300	5	9	**SC2AR90300D19**
						450	7	10	**SC2AR90450D19**
						600	9	11	**SC2AR90600D19**
						750	11	12	**SC2AR90750D19**
						900	13	13	**SC2AR90900D19**
						1050	15	14	**SC2AR901050D19**
						1200	17	15	**SC2AR901200D19**
						1350	19	16	**SC2AR901350D19**
						1500	21	17	**SC2AR901500D19**

Safety light curtains

Types	Safety light curtains, safety category 4 finger resolution SC4...	Safety light curtains, safety category 4 hand resolution SC4...
		

General specifications

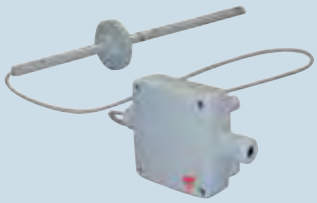
Power supply	24 VDC ±20%	24 VDC ±20%
Output functions	2 PNP Output	2 PNP Output
Output connections	M12 4-pole connector for TX M12 8-pole connector for RX	M12 4-pole connector for TX M12 8-pole connector for RX
Safety category	4	4
Auxiliary functions	Reset / Test ; Selectable Manual/Auto. Restart ; Selectable EDM	Reset / Test ; Selectable Manual/Auto. Restart ; Selectable EDM
Housing material	Painted aluminium (yellow RAL 1003)	Painted aluminium (yellow RAL 1003)
Environment light rejection	IEC-61496-2	IEC-61496-2
Degree of protection	IP 65 (EN 60529)	IP 65 (EN 60529)
Operating temperature	0° to +55°C	0° to +55°C
Approvals/Marks	CE - TÜV Nord - cULus listed	CE - TÜV Nord - cULus listed

References

Resolution	Range	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES
Finger 14 mm	0.2 - 6 m	150	16	11	**SC4ED14150D6**				
		300	32	15	**SC4ED14300D6**				
		450	48	18	**SC4ED14450D6**				
		600	64	22	**SC4ED14600D6**				
		750	80	25	**SC4ED14750D6**				
		900	96	29	**SC4ED14900D6**				
		1050	112	33	**SC4ED141050D6**				
		1200	128	36	**SC4ED141200D6**				
Hand 30 mm	0.2 - 19 m					150	8	9	**SC4ED30150D19**
						300	16	11	**SC4ED30300D19**
						450	24	13	**SC4ED30450D19**
						600	32	14	**SC4ED30600D19**
						750	40	16	**SC4ED30750D19**
						900	48	18	**SC4ED30900D19**
						1050	56	19	**SC4ED301050D19**
						1200	64	21	**SC4ED301200D19**
						1350	72	23	**SC4ED301350D19**
						1500	80	25	**SC4ED301500D19**
						1650	88	26	**SC4ED301650D19**

Environmental sensors

Environmental sensors - CGES series

Types	CGESHTD - CGESHTPD	CGESHTW - CGESHTPW	CGESAIRVEL
			
Dimensions (mm)	80 x 80 x 37.2 (probe 200 mm)	85 x 100 x 26	80 x 80 x 37.2 (cable lenght 1m)
Function	Humidity and Temperature	Humidity and Temperature	Air Velocity measurement
Mounting	Duct mounting	Wall mounting	Wall or Duct mounting
Input specifications			
Relative humidity Working range Accuracy @ 20°C	 10 to 95% ±3% RH	 0 to 95% ±2% (40 to 60%RH) ±3% (10 to 90%RH)	
Temperature Sensor Accuracy @ 20°C	 Pt1000 DIN A ±0.3%°C	 Pt1000 DIN A / Pt100 DIN A Vout: ±0.25%°C / Aout: ±0.4°C	
Air Velocity Working range Accuracy @ 20°C			 0 to 10 m/s (0 to 2000 ft/min) 0 to15 m/s (0 to 3000 ft/min) 0 to 20 m/s (0 to 4000 ft/min) ±0.2 m/s +3% of m.v.
Electrical specifications			
Output	0-10 V or 4-20 mA (2 wires)	0-10 V or 4-20 mA (2 wires)	0-10 V or 4-20 mA
Supply Voltage	24 VAC ±20% / 15-35 VDC	24 VAC ±20% / 15-35 VDC	24 VAC/DC ±20%
Consumption DC supply AC supply	 typical 8 mA typical 20 mAeff	 typical 4 mA typical 15 mAeff	 max. 150 mA max. 90 mA
General specifications			
Cable gland	M16 x 1.5 cable Ø4.5 - 10 mm		M16 x 1.5 cable Ø4.5 - 10 mm
Electrical connnections	Screw terminals max. 1.5 mm² (AWG 16)	Screw terminals max. 1.5 mm² (AWG 16)	Screw terminals max. 1.5 mm² (AWG 16)
Working temperature range	-5 to 50°C	-5 to 55°C	-10 to 50°C
Storage temperature range	-25 to 60°C	-25 to 60°C	-30 to 60°C
Degree of protection	IP 65; Nema 4	IP 20	IP 65; Nema 4
Conformity	EN 61000-6-1, EN 61000-6-3, EN 61326-1+A1+A2	EN 50081-1 FCC Part15 ClassB EN 50082-1 ICES-003 ClassB	EN 50081-1, EN 50082-1, EN 50082-2
Approvals	CE - RoHS	CE - RoHS	CE - RoHS
References			
	For ordering key details, please refer to www.productselection.net		

Environmental sensors

	Environmental sensors - CGES series	
Types	**CGESCO2VA - CGESCO2TVA - CGESCO2THVA**	**CGESCO2D**
		
Dimensions (mm)	85 x 100 x 26	80 x 80 x 37.2 (probe 200 mm)
Function	CO_2, Relative Humidity and Temperature	CO_2
Mounting	Wall mounting	Duct mounting
Input specifications		
Relative humidity Working range Accuracy @ 20°C	 10 to 90% ±3% (30 to 70% RH) ±5% (10 to 90% RH)	
Temperature Sensor Accuracy @ 20°C	 Pt1000 DIN A Vout: ±0.3%°C / Aout: ±0.7°C	
CO2 Working range Accuracy @ 20°C 2000 ppm 5000 ppm	 0 to 2000 ppm / 0 to 5000 ppm < ± 50 ppm +2% of m.v. < ± 50 ppm +3% of m.v.	 0 to 2000 ppm / 0 to 5000 ppm < ± 50 ppm +2% of m.v. < ± 50 ppm +3% of m.v.
Electrical specifications		
Output	0-10 V or 4-20 mA or switching	0-10 V or 4-20 mA or switching
Supply Voltage	24 VAC ±20% / 15-35 VDC	24 VAC ±20% / 15-35 VDC
Consumption DC supply AC supply	 <3 W <3 W	 <3 W <3 W
General specifications		
Cable gland		M16 x 1.5 cable Ø4.5 - 10 mm
Electrical connections	Screw terminals max. 1.5 mm^2 (AWG 16)	Screw terminals max. 1.5 mm^2 (AWG 16)
Working temperature range	-5 to 55°C	-5 to 55°C
Storage temperature range	-20 to 60°C	-25 to 60°C
Degree of protection	IP 20	IP 65; Nema 4
Conformity	EN 61000-6-3, EN61326-1+A1+A2:05.2002 EN 61000-6-1	EN 61000-6-3 ÖVE EN61326-1+A1+A2:05.2002 EN 61000-6-1, FCC Part 15 ICES-003 ClassB
Approvals/Marks	CE - RoHS	CE - RoHS
References		
	For ordering key details, please refer to www.productselection.net	

Wind sensors

	Wind vane	Cup anemometer
Types	**DWS-D-D...**	**DWS-V-D...**
Connections	**2 m cable**	**2 m cable**
		
Dimensions (mm)	207 x 162	137 x 145
Use	Wind direction	Wind speed
References wind vane		
Wind indication	0° and 90° intervals	
	DWS-D-DAC13	
Wind indication	±7° and left/right	
	DWS-D-DDC13	
References cup anemometer		
Operating temperature		-20° to 60°C
Heating		Yes
		DWS-V-DAC13
Operating temperature		0° to 60°C
Heating		No
		DWS-V-DBC05
General specifications		
Rated operating voltage	12 - 24 VDC	12 - 24 VDC
Voltage drop	Typ. 4.9 VDC	Typ. 4.9 VDC
Degree of protection	IP 54	IP 54
Output frequence	10 Hz pr. m/s	10 Hz pr. m/s
Housing material	Body: Black PVC Rotor: Stainless steel	Body: Black PVC Rotor: Stainless steel
Approvals/Marks	CE	CE

Environmental sensors

	Solar irradiance sensor		Pyranometer
Types	**PVS-1**	**PVS-1A**	**PVS-2A**
Connections			
			
Dimensions (mm)	57 x 48 x 15 (not including clamp)	62 x 48 x 15 (not including clamp)	162 x 215 x 40
Description	Solar irradiance sensor based on photovoltaic technology built with a solid aluminium case and anti-UV encapsulating resin	Solar irradiance sensor based on photovoltaic technology built with a solid aluminium case and anti-UV encapsulating resin	Global solar radiation sensor based on a thermopile transducer compliant with WMO (World Meteorological Organization) standards for environmental monitoring, provided with worldwide valid calibration certificate
Environmental specification			
Operating temperature	-10°C to 80°C	-10°C to 80°C	-40°C to 80°C
Degree of protection	IP67	IP67	IP67
General specification			
Technology	Crystalline calibrated cell	Crystalline calibrated cell	2nd Class Thermopile Pyranometer according to ISO9060
Output	80 mV @ 1000 W/m² STC	4-20 mA	4-20 mA
Calibration	According to IEC 60904-2 and 60904-4 (calibration certificate as option)	According to IEC 60904-2 and 60904-4 (calibration certificate as option)	According to ISO9847 (calibration certtificate included)
Solar irradiance range	0-1250 W/m 20-1250 W/m²	0-1250 W/m 20-1250W/m²	0-2000 W/m 20-2000 W/m²
Connector	3 PIN Phoenix M8 IP67 connector (male and female included)	3 PIN Phoenix M8 IP67 connector (male and female included)	7 pin IP68 connector (male, female and 10 meters cable included)
Housing material	Aluminium	Aluminium	Aluminium
Power Supply	Self-powered	Powered by VMU-P module through the 4-20 mA current loop	10-28 VDC, power consumption < 0.1W
Approvals/Marks	CE	CE	CE
References			
	For ordering key details, please refer to www.productselection.net		

Switch

CARLO GAVAZZI

Solid state relays PCB type, 1-phase

	AC zero switching			DC switching
Types	**RP1A - RP1B** 3/5/5.5 A (AC)	**RP..10A** 10 A (AC)	**RAP** 3/5 A (AC)	**RP1D** 1 A, 4 A, 8 A (DC)
PCB mounting SSRs, AC and DC operating. Rated isolation voltage ≥4000 Vrms				
Dimensions H xWx D (mm)	25.4 x 43 x 10.5	37 x 43 x 22	25.4 x 43 x 10.5	25.4 x 43 x 10.5
Features	Standard AC switching SSR	With integral heatsink	LED indication High blocking voltage	DC switching SSR
Input specifications				
Control input range	3-32 VDC [RP1A23..] 3-32 VDC [RP1A40..] 4-32 VDC [RP1A48..] 15-32 VAC [RP1A23A6]	3-32 VDC [RP1A23..] 4-32 VDC [RP1A40..] 4-32 VDC [RP1A48..]	3.5-40 VDC [RAP40..] 4.5-40 VDC [RAP48..]	4.5 - 32 VDC
Max. input current	10 mA	10 mA	12 mA	15 mA
Output specifications				
Rated operational current				DC1: 1/4/8 ADC
AC 51 @ Ta=25°C	3 A [RP1...3] 5 A [RP1...5] 5.5 A [RP1...6]	10 A	3 A [RAP...A3] 5 A [RAP...A5]	
AC 53a @ Ta=25°C	2 A [RP1...3] 3 A [RP1...5] 5 A [RP1...6]	7 A	2.5 A [RAP...A3] 3 A [RAP...A5]	
Min. operational current	20 mA	10 mA	20 mA	1 mADC
Non rep. surge current (t=20 ms)	65 A_P [RP1...3] 80 A_P [RP1...5] 250 A_P [RP1...6]	250 A_P	60 A_P [RAP...A3] 90 A_P [RAP...A5]	
Off-state leakage current	≤ 1 mA	≤ 3 mA	≤ 1 mA	0.01 mADC
I^2t for fusing (t=10 ms)	20 A^2s [RP1...3] 50 A^2s [RP1...5] 340 A^2s [RP1...6]	340 A^2s	18 A^2s [RAP...A3] 40 A^2s [RAP...A5]	
Critical dV/dt off-state	250 V/µs [RP1...3] 500 V/µs [RP1...5] 500 V/µs [RP1...6]	1000 V/µs	100 V/µs	
General specifications				
Operational voltage range	12-265 Vrms [RP1A23..] 20-440 Vrms [RP1A40..] 20-530 Vrms [RP1A48..]	12-265 Vrms [RP1A23..] 20-440 Vrms [RP1A40..] 20-530 Vrms [RP1A48..]	10-440 Vrms[RAP40..] 20-530 Vrms[RAP48..]	1- 60 VDC [RP1D060...] 1 - 350 VDC [RP1D350...]
Blocking voltage	650 V_P [RP1A23..] 850 V_P [RP1A40..] 1000 V_P [RP1A48..]	650 V_P [RP1A23..] 850 V_P [RP1A40..] 1000 V_P [RP1A48..]	1000 V_P [RAP40..] 1200 V_P [RAP48..]	
Power factor	0.5	0.5	0.2	0.5
Operating temperature	-20°C to +70°C	-30°C to +80°C	-20°C to +70°C	-20°C to +80°C
Terminals	4 pins x Ø 0.1 mm	4 pins x Ø 0.1 mm	4 pins x Ø 0.1 mm	4 pins x Ø 0.1 mm
Approvals/Marks	CE - UR - cUR - VDE	CE - UR - cUR	CE - UR - CSA - VDE	CE - UR - cUR
References				
	3 A	10 A	3 A	1 A
	RP1A23D3	**RP1A23D10**	**RAP40A3**	**RP1D350D1**
	RP1A40D3	**RP1A40D10**	**RAP48A3**	
	RP1A48D3	**RP1A48D10**		4 A
	5 A		5 A	**RP1D060D4**
	RP1A23D5		**RAP40A5**	
	RP1A40D5		**RAP48A5**	8 A
	RP1A48D5			**RP1D060D8**
	5.5 A			
	RP1A23D6			
	RP1A23A6			
	RP1A40D6			
	RP1A48D6			

* Other options available on request: Instant-on switching (RP1B..), see Accessories for DIN-rail adaptor.

Solid state relays, 1-phase

Types	RGS1A..KKE	RGS1A..KGE	RGS1A..MKE
Single phase, chassis mounting with LED for control status indication, IP20 protection, 45-65 Hz operating frequency, ≥ 4000 VACrms isolation voltage, 100 kArms short circuit current rating, certified motor ratings			
Dimensions (mm)	90 x 17.8 x 50.6	90 x 17.8 x 50.6	90 x 17.8 x 63.6
Features	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, screw terminals with captivated clamp for power and control connections, E-type layout	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, box clamp for power connections (up to 25 mm²/AWG3), screw for control connections, E-type layout	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, screw terminals with captivated clamp for power connections and pluggable spring for control, E-type layout
Input specifications			
Control input range	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..], 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	25 AAC [RG..25] / 50 AAC [RG..50/51] 75 AAC [RG..75] / 90 AAC [RG..90/91/92]	50 AAC [RG..50] 90 AAC [RG..92]	25 AAC [RG..25] / 50 AAC [RG..50] 90 AAC [RG..90/92]
AC-53a @ Ta=40°C	5 AAC [RG..25] / 10 AAC [RG..50/51] 14.8 AAC [RG..75] / 18 AAC [RG..90/91/92]	10 AAC [RG..50] 18 AAC [RG..92]	5 AAC [RG..25] / 10 AAC [RG..50] 18 AAC [RG..90/92]
Min. operational current	150 mAAC [RG..25] / 250 mAAC [RG..50/51] 400 mAAC [RG..75] / 500 mAAC [RG..90/91/92]	250 mAAC [RG..50] 500 mAAC [RG..92]	150 mAAC [RG..25] / 250 mAAC [RG..50] 500 mAAC [RG..90/92]
Non rep. surge current (t=10 ms)	325 Ap [RG..25] / 600 Ap [RG..50/51] 800 Ap [RG..75] / 1150 Ap [RG..90/91] 1900 Ap [RGS..92]	600 Ap [RG..50] 1900 Ap [RG..92]	325 Ap [RG..25] / 600 Ap [RG..50] 1150 Ap [RG..90] / 1900 Ap [RG..92]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RG..25] / 1800 A^2s [RG..50/51] 3200 A^2s [RG..75] / 6600 A^2s [RG..90/91] 18000 A^2s [RGS..92]	1800 A^2s [RG..50] 18000 A^2s [RG..92]	525 A^2s [RG..25] / 1800 A^2s [RG..50] 6600 A^2s [RG..90] / 18000 A^2s [RG..92]
Critical dV/dt (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60...]	42-600 VAC +10%	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]
Blocking voltage	800 Vp [RG..23..] 1200 Vp [RG..60..] 1600 Vp [RG..60..51/91]	1200 Vp	800 Vp [RG..23..] 1200 Vp [RG..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to 80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE
References			
230 VAC, 800 Vp	25 AAC: **RGS1A23X25KKE**		25 AAC: **RGS1A23X25MKE**
	50 AAC: **RGS1A23X50KKE**		50 AAC: **RGS1A23X50MKE**
	75 AAC: **RGS1A23X75KKE**		
600 VAC, 1200 Vp	25 AAC: **RGS1A60X25KKE**		25 AAC: **RGS1A60X25MKE**
	50 AAC: **RGS1A60X50KKE**	50 AAC: **RGS1A60X50KGE**	50 AAC: **RGS1A60X50MKE**
	75 AAC: **RGS1A60X75KKE**		
	90 AAC: **RGS1A60X90KKE**		90 AAC: **RGS1A60X90MKE**
	90 AAC: **RGS1A60X92KKE**	90 AAC: **RGS1A60X92KGE**	90 AAC: **RGS1A60X92MKE**
600 VAC, 1600 Vp	50 AAC: **RGS1A60X51KKE**		
	90 AAC: **RGS1A60X91KKE**		

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGS1B.. models for Instant On (Random) switching are avaialable on request

CARLO GAVAZZI

Solid state relays, 1-phase

Types	RGS1A..MGE	RGS1A..KGU	RGS1A...DIN
Single phase, chassis mounting with LED for control status indication, IP20 protection, 45-65 Hz operating frequency, ≥ 4000 VACrms isolation voltage, 100 kArms short circuit current rating, certified motor ratings			
Dimensions (mm)	90 x 17.8 x 63.6	90 x 17.8 x 50.6	106 x 17.8 x 65
Features	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, box clamps for power connections (25mm²/ AWG3) and pluggable spring for control, E-type layout	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, box clamps for power and control connections, U-type layout	17.8 mm wide solid state relay mounted on DIN mountable module
Input specifications			
Control input range	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	50 AAC [RG..50] 90 AAC [RG..92]	20 AAC [RG..20] 30 AAC [RG..30]	10 AAC [RG..20/25..DIN] 12 AAC [RG..50/90..DIN]
AC-53a @ Ta=40°C	10 AAC [RG..50] 18 AAC [RG..92]	5 AAC [RG..20] 8 AAC [RG..30]	5 AAC [RG..20/25..DIN] 5 AAC [RG..50/90..DIN]
Min. operational current	250 mAAC [RG..50] 500 mAAC [RG..92]	150 mAAC [RG..20] 250 mAAC [RG..30]	150 mAAC [RG..20/25..DIN] 250 mAAC [RG..50..DIN] 400 mAAC [RG..90..DIN]
Non rep. surge current (t=10 ms)	600 Ap [RG..50] 1900 Ap [RG..92]	325 Ap [RG..20] 600 Ap [RG..30]	325 Ap [RG..20/25..DIN] 600 Ap [RG..50..DIN] 1150 Ap [RG..90..DIN]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	1800 A^2s [RG..50] 18000 A^2s [RG..92]	525 A^2s [RG..20] 1800 A^2s [RG..30]	525 A^2s [RG..20/25..DIN] 1800 A^2s [RG..50..DIN] 6600 A^2s [RG..90..DIN]
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-600 VAC +10%	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60...]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]
Blocking voltage	1200 Vp	800 Vp [RGS.23..] 1200 Vp [RGS.60..]	800 Vp [RG..23..] 1200 Vp [RG..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE
References			
230 VAC, 800 Vp, E-type			10 AAC: **RGS1A23X25KKEDIN**
			12 AAC: **RGS1A23X50KKEDIN**
600 VAC, 1200 Vp, E-type	50 AAC: **RGS1A60X50MGE**		10 AAC: **RGS1A60X25KKEDIN**
	90 AAC: **RGS1A60X92MGE**		12 AAC: **RGS1A60X50KKEDIN**
			12 AAC: **RGS1A60D90KKEDIN**
230 VAC, 800 Vp, U-type		20 AAC: **RGS1A23X20KGU**	10 AAC: **RGS1A23D20KGUDIN**
		30 AAC: **RGS1A23X30KGU**	
		20 AAC: **RGS1A60X20KGU**	
600 VAC, 1200 Vp, U-type		30 AAC: **RGS1A60X30KGU**	

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGS1B.. models for Instant On (Random) switching are available on request

Solid state relays, 1-phase

	Industrial Housing DC Output Switching	Industrial Housing - AC Output Switching Integrated Current Measurement	
Types	**RGS1D...KKE**	**RGS1S..GKEP**	**RGS1S..GG.P**
Single phase, chassis mounting industrial relays with LED for control status indication and IP20 protection, Rated isolation voltage ≥4000 Vrms, 100 kArms Short Circuit Current Rating for AC switching versions			
Dimensions HxWxD (mm)	90 x 17.8 x 50.6	90 x 22.5 x 78	90 x 35.6 x 78
Features	17.8 mm wide solid state relay with IGBT output, integrated free wheeling diode, DC control voltage, screw terminals with captivated clamp, E-type layout	22.5 mm wide solid-state relay with thyristor output, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, screw terminals with captivated clamp, Etype layout	35 mm wide solid-state relay with thyristor output, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, box clamp terminals, E-type or U-type layout
Input specifications			
Control input range	4.5-32 VDC	4-32 VDC	4-32 VDC
Max. input current	13.7 mADC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply voltage		24 VDC -15%, +20%	24 VDC -15%, +20%
Max. supply current		50 mADC	50 mADC
Alarm specifications			
Output type		NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA
Alarm Indication		Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current AC-51 @ Ta=40°C		20 AAC [RGS1S..20] 30 AAC [RGS1S..30 / 31]	60 AAC
DC Rated operational current	15 ADC [RGS1D..15.] 25 ADC [RGS1D..25.]		
Minimum TEACH / operational current	20 mA	1.2 AAC	5 AAC
Minimum partial load current		0.2 AAC	0.83 AAC
Detectable partial load failure		>16.67% from current setpoint	>16.67% from current setpoint
Non rep. surge current (Itsm) (t=10 ms)	200 ADC [10µs]	325 Ap [RGS1S..20] 600 Ap [RGS1S..30] 1150 Ap [RGS1S..31]	1150 Ap
Max. Off-state leak current	1.5 mADC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)		525 A^2s [RGS1S..20] 1800 A^2s [RGS1S..30] 6600 A^2s [RGS1S..31]	6600 A^2s
Critical dV/dt (@ Tj init = 40°C)		1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-1000 VDC [CE] 24-600 VDC [UL508]	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 VDC	1200 Vp	1200 Vp
Power factor		≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-40°C to +80°C	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA
References			
1000 VDC	15 ADC: **RGS1D1000D15KKE**		
	25 ADC: **RGS1D1000D25KKE**		
600 VAC, 525 A^2s, E-type		20 AAC: **RGS1S60D20GKEP**	
600 VAC, 1800 A^2s, E-type		30 AAC: **RGS1S60D30GKEP**	
600 VAC, 6600 A^2s, E-type		30 AAC: **RGS1S60D31GKEP**	
600 VAC, 6600 A^2s, E-type			60 AAC: **RGS1S60D61GGEP**
600 VAC, 6600 A^2s, U-type			60 AAC: **RGS1S60D61GGUP**

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Solid state relays, 1-phase

	Industrial Housing Zero switching		Industrial Housing Zero / Instant-on switching	
Types	**RS1A** 10/25/40 A	**RS1A..A** 25/40 A	**RAM1A** 25/50/75/100/125 A	**RM1A** 25/50/75/100 A
Single phase, chassis mounting, industrial relays with LED status indication and IP 20 protection. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms				
Dimensions (mm) HxWxD	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	Ideal for Ohmic loads	AC control Ohmic loads	Built-in snubber, VDE	Built-in Varistor
Input specifications				
Control input range	3-32 VDC [RS1A23D...] 4-32 VDC [RS.....D] 18-36 VAC/DC [RS...LA]	80-130 VAC [RS1A..A1] 200-260 VAC [RS1A..A2] 360-400 VAC [RS1A..A4]	3-32 VDC [RAM1A23D..] 4-32 VDC [RAM1A60D..] 20-280 VAC / 22-48 VDC [RAM..A.]	3-32 VDC [RAM1A23D..] 4-32 VDC [RM1A..D.] 20-280 VAC / 22-48 VDC [RM..A.]
Max. input current	12 mA [RS..D.] 15 mA [RS..LA.]	13 mA	12 mA [RAM1A..D.] 20 mA [RAM1A..A.]	12 mA [RM1A..D.] 20 mA [RM1A..A.]
Output specifications				
Rated operational current				
AC 51 @ Ta=25°C	10/25/40 A	25/40 A	25/50/75/100/125 A	25/50/75/100 A
AC 53a @ Ta=25°C			5/15/17/20/30 A	5/15/20/30 A
Min. operational current	150 mA	150 mA	150 mA	150 mA
Non rep. surge current (t=10 ms)	100 A_P [RS1A...10] 325 A_P [RS1A...23] 600 A_P [RS1A...40]	325 A_P [RS1A...25] 600 A_P [RS1A...40]	325 A_P [RAM1A..25] 600 A_P [RAM1A..50] 800 A_P [RAM1A..75] 1150 A_P [RAM1A..100] 1900 A_P [RAM1A..125]	325 A_P [RM1A..25] 600 A_P [RM1A..50] 1150 A_P [RM1A..75] 1900 A_P [RM1A..100]
Off-state leakage current	< 3 mA	< 3 mA	< 3 mA	< 3 mA
I^2t for fusing (t=10 ms)	≤ 50 A^2s [RS1A..10] ≤ 525 A^2s [RS1A..25] ≤ 1800 A^2s [RS1A..40]	≤ 525 A^2s [RS1A..25] ≤ 1800 A^2s [RS1A..40]	<525 A^2s [RAM1A..25] <1800 A^2s [RAM1A..50] <3200 A^2s [RAM1A..75] <6600 A^2s [RAM1A..100] <18000 A^2s [RAM1A..125]	<525 A^2s [RM1A..25] <1800A^2s [RM1A..50] <6600 A^2s [RM1A..75] <18000 A^2s [RM1A..100]
Critical dV/dt	500 V/µs	500 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	42-265 Vrms [RS1A23..] 42-440 Vrms [RS1A40..] 42-530 Vrms [RS1A48..]	42-265 Vrms [RS1A23..] 42-440 Vrms [RS1A40..]	24-265 Vrms [RAM1A23..] 42-660 Vrms [RAM1A60..]	24-265 Vrms[RM1A23..] 42-440 Vrms[RM1A40..] 42-530 Vrms[RM1A48..] 42-660 Vrms[RM1A60..]
Blocking voltage	≥650 V_P [RS1A23..] ≥850 V_P [RS1A40..] ≥1200 V_P [RS1A48..]	≥650 V_P [RS1A23..] ≥850 V_P [RS1A40..]	<650 V_P [RAM1A23..] <1200 V_P [RAM1A60..]	<650 V_P [RM1A23..] <850 V_P [RM1A40..] <1200 V_P [RM1A48..] <1400 V_P [RM1A60..]
Power factor	≥ 0.95	≥ 0.95	≥ 0.5	≥ 0.5
Operating temperature	-20°C to +70°C	-30°C to +70°C	-40°C to +80°C	-20°C to +70°C
Terminals	Screw type with clamp	Screw type with clamp	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA	CE - UR - CSA	CE - UR - CSA - VDE	CE - UR - CSA
References				
	10 / 25 / 40 A	25 / 40 A	25 / 50 / 75 / 100 / 125 A	25 / 50 / 75 / 100 A
230 Vrms	**RS1A23D..**	**RS1A23A1..**	**RAM1A23D..**	**RM1A23D..**
	RS1A23LA..	**RS1A23A2..**	**RAM1A23A..**	**RM1A23A..**
		RS1A23A4..		
400 Vrms	**RS1A40D..**	**RS1A40A2..**		**RM1A40D..**
	RS1A40LA..	**RS1A40A4..**		**RM1A40A..**
480 Vrms	**RS1A48D..**			**RM1A48D..**
	RS1A48LA..			**RM1A48A..**
600 Vrms			**RAM1A60D..**	**RM1A60D..**
			RAM1A60A..	**RM1A60A..**

* Other options available on request: Instant-on switching (RAM1B.. RM1B..), see Accessories for Heatsinks.

Solid state relays, 1-phase

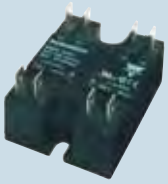
	Industrial Housing Zero switching	Industrial Housing Peak switching	Industrial Housing Phase angle
Types	**RM1A..M** 25/50/75/100 A	**RM1C** 25/50/75/100 A	**RM1E** 25/50/100 A
Single phase, chassis mounting, industrial relays with LED status indication and IP20 protection AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms			
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	Low voltage AC/DC control	Ideal for transformers	Analog Phase-angle control
Input specifications			
Control input range	4.25-36 VDC / 4.25-27 VAC	4.25-32 VDC	4-20 mA [RM1E..AA..] 0-10 VDC [RM1E..V..]
Max. input current	18 mA @ 24 VAC/DC	18 mA	0.15 mA [RM1E..V..]
Supply voltage range			24 VDC [RM1E..V..]
Max. supply input current			20 mA [RM1E..V..]
Output specifications			
Rated operational current			
AC 51 @ Ta=25°C	25 / 50 / 75 / 100 A	25 / 50 / 100 A	25 / 50 / 100 A
AC 53a @ Ta=25°C	5 / 15 / 20 / 30 A		5 / 15 / 20 A
AC 56a @ Ta=25°C		10/20/30 A	
Min. operational current	150 mA	150 mA	150 mA
Non rep. surge current (t=10 ms)	325 A_P [RM1A..M25] 600 A_P [RM1A..M50] 1150 A_P [RM1A..M75] 1900 A_P [RM1A..M100]	325 A_P [RM1C..25] 600 A_P [RM1C..50] 1150 A_P [RM1C..75] 1900 A_P [RM1C..100]	325 A_P [RM1E..25] 600 A_P [RM1E..50] 1150 A_P [RM1E..100]
Off-state leakage current	< 3 mA	< 3 mA	< 3 mA
I^2t for fusing (t=10 ms)	≤525 A^2s [RM1A..M25] ≤1800 A^2s [RM1A..M50] ≤6600 A^2s [RM1A..M75] ≤18000 A^2s [RM1A..M100]	≤525 A^2s [RM1C..25] ≤1800 A^2s [RM1C..50] ≤6600 A^2s [RM1C..75] ≤18000 A^2s [RM1C..100]	≤525 A^2s [RM1E..25] ≤1800 A^2s [RM1E..50] ≤6600 A^2s [RM1E..100]
General specifications			
Operational voltage range	24-265 Vrms [RM1A23M.] 42-440 Vrms [RM1A40M.] 42-530 Vrms [RM1A48M.] 42-660 Vrms [RM1A60M.]	100-440 Vrms [RM1C40D.] 340-660 Vrms [RM1C60D.]	90-280/ 90-265 Vrms [RM1E23AA/V..] 340-460 Vrms [RM1E40AA..] 90-550/ 200-550 Vrms [RM1E48AA/V..] 410-660 Vrms [RM1E60AA/V..]
Blocking voltage	≥650 V_P [RM1A23M.] ≥850 V_P [RM1A40M.] ≥1200 V_P [RM1A48M.] ≥1400 V_P [RM1A60M.]	850 V_P [RM1C40D..] 1400 V_P [RM1C60D..]	<650 V_P [RM1E23..] <850 V_P [RM1E40..] <1200 V_P [RM1E48..] <1400 V_P [RM1E60..]
Power factor	≥ 0.5	≥ 0.95	≥ 0.75
Operating temperature	-20°C to +70°C	-30°C to +80°C	-20°C to +70°C
Terminals	Screw type with clamp	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA	CE - UR - CSA	CE - UR - CSA
References 1-phase:			
	25 / 50 / 75 / 100 A	25 / 50 / 75 / 100 A	25 / 50 / 100 A
230 Vrms	**RM1A23M..**		**RM1E23AA25****
			RM1E23AA50**
			RM1E23AA100**
400 Vrms	**RM1A40M..**	**RM1C40D25**	**RM1E40AA25**
		RM1C40D50	**RM1E40AA50**
		RM1C40D75	**RM1E40AA100**
480 Vrms	**RM1A48M..**		**RM1E48AA25****
			RM1E48AA50**
			RM1E48AA100**
600 Vrms	**RM1A60M..**	**RM1C60D25**	**RM1E60AA25****
		RM1C60D50	**RM1E60AA50****
		RM1C60D100	**RM1E60AA100****

** Replace "AA" by "V" for voltage controlled versions

CARLO GAVAZZI

Solid state relays, 1 / 2-phase

Industrial Housing - AC Output Switching

Types	RA Sense 25/50/90/110 A	RA Low Noise 10/25 A	RA2A* 25/40 A	RA2A..C 25/40 A
Single Phase relays with special functions. 2 Phase industrial relays				
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	57.8 x 44.5 x 31.7	57.8 x 44.5 x 34.8
Features	Detects supply and load failure	Complies with EN55022	Two independent poles	Two independent poles, faston terminals for power, pin connectors for control
Input Specifications				
Control input range	7-32 VDC	3-32 VDC	4.5-32 VDC	4.5-32 VDC
Max. input current	4 mA	32 mA	2 x 10 mA	2x 10 mA
Control supply	20-32 VDC (40 mA)			
Alarm output PNP NPN	VCC - 2 VDC (100 mA) 2 VDC (100 mA)			
Output Specifications				
Rated operational current AC 51 @ Ta=40°C	25 A / 50 A / 90 A / 110 A	10 A / 25 A	25 A / 40 A per pole	25 A / 40 A per pole
AC 53a @ Ta=40°C			5 A / 15 A per pole	
Min. operational current	200 mArms	2 Arms	150 mArms [RA2A…25] 250 mArms [RA2A…40]	150 mArms [RA2A…25C] 250 mArms [RA2A…40C]
Non rep. surge current (t=10 ms)	325 Ap [RA..25..S] 600 Ap [RA..50..S] 1150 Ap [RA..90..S] 1900 Ap [RA..110..S]	90 Ap, t=20 ms [RA..10..L] 200 Ap, t=20 ms [RA..25..L]	325 Ap [RA2A..25] 600 Ap [RA2A..40] 325 Ap [RA2A..25M] 600 Ap [RA2A..40M]	325 Ap [RA2A…25C] 600 Ap [RA2A…40C]
Off-state leakage current	< 6 mArms	< 1 mArms	< 3 mArms	<3 mArms
I^2t for fusing (t=10 ms)	525 A^2s [RA..25..S] 1800 A^2s [RA..50..S] 6600 A^2s [RA..90..S] 18000 A^2s [RA..110..S]	120 A^2s [RA..10..L] 200 A^2s [RA..25..L]	525 A^2s [RA2A..25] 1800 A^2s [RA2A..40] 525 A^2s [RA2A..25M] 1800 A^2s [RA2A..40M]	525 A^2s [RA2A..25C] 1800 A^2s [RA2A..40C]
General specifications				
Operational voltage range	60-140 Vrms [RA12..S] 170-250 Vrms [RA23..S] 150-440 Vrms [RA40..S] 180-530 Vrms [RA48..S]	180-265 Vrms [RA24..L] 340-530 Vrms [RA40..L]	24-265 Vrms [RA2A23..] 42-440 Vrms [RA2A40..] 42-530 Vrms [RA2A48..] 42-660 Vrms [RA2A60..]	24-265 Vrms [RA2A23..] 42-660 Vrms [RA2A60..]
Blocking voltage	650 Vp [RA12..S] 650 Vp [RA23..S] 1000 Vp [RA40..S] 1200 Vp [RA48..S]	650 Vp [RA24..L] 850 Vp [RA40..L]	650 Vp [RA2A23..] 850 Vp [RA2A40..] 1200 Vp [RA2A48..] 1200 Vp [RA2A60..]	650 Vp [RA2A23..] 1200 Vp [RA2A60..]
Power factor	≥ 0.5	1	≥0.95 [RA2A...] ≥0.50 [RA2A...M]	≥ 0.95 at rated voltage
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Terminals	Screw / 5 way plug	Screw type with clamp	FASTONS 6.35 mm	FASTONS 6.35mm / 4 way plug
Approvals/Marks	CE - UR - CSA	CE - UR - CSA - VDE	CE - UR - CSA	CE - cURus
References				
	25 / 50 / 90 / 110 A	10 / 25 A	25 / 40 A per pole	25 / 40 A per pole
120 Vrms	**RA12..06..S**			
230 Vrms	**RA23..06..S**	**RA2410-D06L**	**RA2A23..**	**RA2A23D..C**
		RA2425-D06L	**RA2A23..M**	
400 Vrms	**RA40..10..S**	**RA4010-D08L**	**RA2A40..**	
		RA4025-D08L	**RA2A40..M**	
480 Vrms	**RA48..12..S**		**RA2A48..**	
			RA2A48..M	
600 Vrms			**RA2A60..**	**RA2A60D..C**
			RA2A60..M	

* RA 2-pole: for inductive loads use types with suffix "M".

Solid state relays, 1 / 3-phase

	Industrial Housing Zero switching	Industrial Housing DC switching	Industrial Housing 3-Phase switching
Types	**RA** 25/50/90/110 A	**RD** 1/5 A DC	**RZ3A** 25/55/75 A
Single phase and 3 phase industrial relays			
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	74 x 103 x 41
Features	General purpose	Ideal for DC valve coils	3-phase switching
Input specifications			
Control input range	3-32 VDC [RA..D..] 10-90 VAC / DC [RA..LA..] 90-280 VAC / DC [RA..HA..]	3-32 VDC	4-32 VDC [RZ3A..D.] 24-275 Vrms [RZ3A..A.]
Max. input current	22 mA [RA..D..] 17 mA [RA..LA..] 6.5 mA [RA..HA..]	32 mA	23 / 15 mA
Output specifications			
Rated operational current			
AC 51 @ Ta=25°C	25 A, 50 A, 90 A, 110 A	DC1: 1A / 5A	25 / 55 / 75 Arms
AC 53a @ Ta=25°C	5 A, 15 A, 20 A, 30 A		5 / 15 / 20 Arms
Min. operational current	20 mA	1 mA	
Non rep. surge current (t=10 ms)	325 Ap [RA..25.] 600 Ap [RA.50.] 1150 Ap [RA..90.] 1900 Ap [RA.110.]		325 Ap [RZ3A..25..] 600 Ap [RZ3A..55..] 1150 Ap [RZ3A..75..]
Off-state leakage current	< 3 mA	< 1 mA	< 3 mA
I^2t for fusing (t=10 ms)	<525 A^2s [RA..25.] <1800 A^2s [RA..50.] <6600 A^2s [RA..90.] <18000 A^2s [RA..110.]		525 A^2s [RZ3A..25..] 1800 A^2s [RZ3A..55..] 6600 A^2s [RZ3A..75..]
General specifications			
Operational voltage range	24-280 Vrms [RA24.06..] 42-480 Vrms [RA44.08..] 42-530 Vrms [RA48.12..] 24-690 Vrms [RA60.16..]	3-60 VDC [RD0605..D] 3-200 VDC [RD2001..D] 3-350 VDC [RD3501..D]	24-440 Vrms [RZ3A40.] 42-530 Vrms [RZ3A48.] 42-660 Vrms [RZ3A60.]
Blocking voltage	<650 VP [RA24.06..] <850 VP [RA44.08..] <1200 VP [RA48.12..] <1600 VP [RA60.16..]		<850 VP [RZ3A40..] <1200 VP [RZ3A48..] <1600 VP [RZ3A60..]
Power factor	≥ 0.5		
Operating temperature	-20°C to +70°C	-20°C to +70°C	-30°C to +80°C
Terminals	Screw / 5 way plug	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA	CE - CSA	CE - UR - CSA
References			
230 Vrms	**RA24..-D..**	200 VDC: **RD2001-D**	
	RA24..LA..	350 VDC: **RD3501-D**	
	RA24..HA..		
400 Vrms	**RA44..-D..**	60 VDC: **RD0605-D**	
	RA44..LA..		**RZ3A40D..***
	RA44..HA..		**RZ3A40A..***
480 Vrms	**RA48..-D..**		
	RA48..LA..		**RZ3A48D..***
	RA48..HA..		**RZ3A48A..***
600 Vrms	**RA60..-D..**		**RZ3A60D..***
			RZ3A60A..*

* Add suffix 'P' for additional integrated Over Temperature Protection

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Solid state relays, 1, 2 and 3-phase

Ready for use design - DIN rail mounting

Types	RMD1H	RMD2H	RMD3H
Hybrid relays. AC operating frequency range 45-65 Hz.			
Dimensions HxWxD (mm)	81 x 17.5 x 67.2	97 x 140.7 x 50.7	97 x 140.7 x 50.7
Features	Hybrid relay	2 pole switching hybrid relay	3 pole switching hybrid relay
Input specifications			
Control input range	4-32 VDC [RMD....D20] 24-275 VAC [RMD....A20]	24 VAC/DC +10/-15% [RMD2..LA..] 120 VAC/DC +10/-15% [RMD2..MA..] 240 VAC/DC +10/-15% [RMD2..HA..]	24 VAC/DC +10/-15% [RMD3..LA..] 120 VAC/DC +10/-15% [RMD3..MA..] 240 VAC/DC +10/-15% [RMD3..HA..]
Max. input current	5 mA [RMD..D20] 3 mA [RMD..A20]	400 mA	400 mA
Output specifications			
Rated operational current			
AC 51 @ Ta=25°C	20 A ACrms	30 AAC [RMD2..30] 40 AAC [RMD2..40]	30 AAC [RMD3..30] 40 AAC [RMD3..40]
Min. operational current	100 mA	150 mA	150 mA
General specifications			
Operational voltage range	195-253 Vrms	240 VAC -15% /+10% [RMD..24..] 277 VAC -15% /+10% [RMD..48..]	240 VAC -15% /+10% [RMD..24..] 277 VAC -15% /+10% [RMD..48..] 480 VAC + N [RMD..48..]
Power factor	≥ 0.9	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-5°C to +55°C	0°C to 70°C	0°C to 70°C
Terminals	Box clamp	Input 6.35 mm FASTON, Output screw	Input 6.35 mm FASTON, Output screw
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus
References			
	RMD1H23D20	30 AAC	30 AAC
	RMD1H23A20	**RMD2H24LA30**	**RMD3H24LA30**
		RMD2H24MA30	**RMD3H24MA30**
		RMD2H24HA30	**RMD3H24HA30**
		40 AAC	**RMD3H48LA30**
		RMD2H24LA40	**RMD3H48MA30**
		RMD2H24MA40	**RMD3H48HA30**
		RMD2H24HA40	40 AAC
			RMD3H24LA40
			RMD3H24MA40
			RMD3H24HA40
			RMD3H48LA40
			RMD3H48MA40
			RMD3H48HA40

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC Output Switching

Types	RGC1A...15KKE	RGC1A...25KKE	RGC1A...30KKE
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥4000 Vrms, 100 kArms Short Circuit Current Rating, Motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 22.5 x 141
Features	17.8 mm wide solid state contactor, integrated output varistor, DC or AC control voltage, screw terminals for power and control, E-type layout	17.8 mm wide solid state contactor, integrated output varistor, DC or AC control voltage, screw terminals for power and control, E-type layout	22.5 mm wide solid state contactor, integrated output varistor, DC or AC control voltage, screw terminals for power and control, E-type layout
Input Specifications			
Input Specifications	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output Specifications			
Rated operational current AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC [RGC..30.] 10 AAC [RGH..31.]
Min. operational current	150 mA [RGC..15.] 400 mA [RGH..15.]	250 mA	250 mA [RGC..30.] 400 mA [RGH..31.]
Non rep. surge current (t=10 ms)	325 Ap [RGC..15.] 1150 Ap [RGH..15.]	600 Ap	600 Ap [RGC..30.] 1150 Ap [RGH..31.]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RGC..15.] 6600 A^2s [RGH..15.]	1800 A^2s	1800 A^2s [RGC..30.] 6600 A^2s [RGH..31.]
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE - GL [RGC..15.]	CE - cULus - VDE - GL	CE - cULus - VDE - GL [RGC..30.]
References			
DC control voltage			
230 VAC, 800 Vp	**RGC1A23D15KKE**	**RGC1A23D25KKE**	**RGC1A23D30KKE**
600 VAC, 1200 Vp	**RGC1A60D15KKE**	**RGC1A60D25KKE**	**RGC1A60D30KKE**
600 VAC, 1600 Vp, 6600 A^2s	**RGH1A60D15KKE**		**RGH1A60D31KKE**
AC/DC control voltage			
230 VAC, 800 Vp	**RGC1A23A15KKE**	**RGC1A23A25KKE**	**RGC1A23A30KKE**
600 VAC, 1200 Vp	**RGC1A60A15KKE**	**RGC1A60A25KKE**	**RGC1A60A30KKE**
600 VAC, 1600 Vp, 6600 A^2s	**RGH1A60A15KKE**		**RGH1A60A31KKE**

Instant On (Random) Switching available on request (RGC1B60D...)

CARLO GAVAZZI

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC Output Switching

Types	RGC1A...15MKE	RGC1A...25MKE	RGC1A...30MKE
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥ 4000 Vrms, 100kArms Short Circuit Current Rating, Motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 17.8 x 114.5	110 x 17.8 x 114.5	110 x 22.5 x 152
Features	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout
Input specifications			
Control input range	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC [RGC..30.] 10 AAC [RGH..31.]
Min. operational current	150 mA [RGC..15.] 400 mA [RGH..15.]	250 mA	250 mA [RGC..30.] 400 mA [RGH..31.]
Non rep. surge current (t=10 ms)	325 Ap [RGC...15..] 1150 Ap [RGH...15..]	600 Ap	800 Ap [RGC..60.] 1150 Ap [RGH..60.]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RGC..15.] 6600 A^2s [RGH..15.]	1800 A^2s	1800 A^2s [RGC..30.] 6600 A^2s [RGH..31.]
Critical dV/dt (@Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE - GL [RGC..15.]	CE - cULus - VDE - GL	CE - cULus - VDE - GL [RGC..30.]
References			
DC control voltage			
230 VAC, 800 Vp	**RGC1A23D15MKE**	**RGC1A23D25MKE**	**RGC1A23D30MKE**
600 VAC, 1200 Vp	**RGC1A60D15MKE**	**RGC1A60D25MKE**	**RGC1A60D30MKE**
600 VAC, 1600 Vp,6600 A^2s	**RGH1A60D15MKE**		**RGH1A60D31MKE**
AC/DC control voltage			
230 VAC, 800 Vp	**RGC1A23A15MKE**	**RGC1A23A25MKE**	**RGC1A23A30MKE**
600 VAC, 1200 Vp	**RGC1A60A15MKE**	**RGC1A60A25MKE**	**RGC1A60A30MKE**
600 VAC, 1600 Vp,6600 A^2s	**RGH1A60A15MKE**		**RGH1A60A31MKE**

Instant On (Random) Switching available on request (RGC1B60D...)

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC Output Switching

Types	RGC1A...15KGU	RGC1A...25KGU	RGC1A...30KGU
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥ 4000 Vrms, 100 kArms Short Circuit Current Rating, Motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 22.5 x 141
Features	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for connection of control terminals and box clamps for power terminals, U-type layout	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for connection of control terminals and box clamps for power terminals, U-type layout	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for connection of control terminals and box clamps for power terminals, U-type layout
Input Specifications			
Control input range	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output Specifications			
Rated operational current			
AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC
Min. operational current	150 mA	250 mA	250 mA
Non rep. surge current (t=10 ms)	325 Ap	600 Ap	600 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s	1800 A^2s	1800 A^2s
Critical dV/dt (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE - GL	CE - cULus - VDE - GL	CE - cULus - VDE - GL
References			
DC control voltage			
230 VAC, 800 Vp	**RGC1A23D15KGU**	**RGC1A23D25KGU**	**RGC1A23D30KGU**
600 VAC, 1200 Vp	**RGC1A60D15KGU**	**RGC1A60D25KGU**	**RGC1A60D30KGU**
AC/DC control voltage			
230 VAC, 800 Vp	**RGC1A23A15KGU**	**RGC1A23A25KGU**	**RGC1A23A30KGU**
600 VAC, 1200 Vp	**RGC1A60A15KGU**	**RGC1A60A20KGU**	**RGC1A60A30KGU**

Instant On (Random) Switching available on request (RGC1B60D...)

CARLO GAVAZZI

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting AC Output Switching

Types	RGC1A..40KGE RGC1A..42KGE	RGC1A..40MGE RGC1A..42MGE	RGC1A..60KGE RGC1A..62KGE	RGC1A..62MGE
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥ 4000 Vrms, 100 kArms Short Circuit Current Rating, Motor ratings according to UL508				
Dimensions HxWxD (mm)	110 x 35.6 x 141	110 x 35.6 x 152	110 x 69.1 x 141	110 x 69.1 x 152
Features	35 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, E-type layout	35 mm wide solid state contactor, integrated varistor, DC or AC control voltage, spring plug for control, box clamp for power terminals, E-type layout	70 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, E-type layout	70 mm wide solid state contactor, integrated varistor, DC or AC control voltage, spring plug for control, box clamp for power terminals, E-type layout
Input Specifications				
Control input range	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output Specifications				
Rated operational current AC 51 @ Ta=40°C	40 AAC [RGC..40, RGH..40/41] 43 AAC [RGC..42]	40 AAC [RGC..40, RGH..41] 43 AAC [RGC..42]	60 AAC [RGC..60] 65 AAC [RGC..62, RGH..60]	65 AAC [RGC..62]
AC 53a @ Ta=40°C	13 AAC [RGC..40, RGH..41] 16 AAC [RGC..42] 10 AAC [RGH..40]	13 AAC [RGC..40, RGH..41] 16 AAC [RGC..42]	14.8 AAC [RGC..60] 20 AAC [RGC..62] 18 AAC [RGH..60]	20 AAC [RGC..62]
Min. operational current	400 mAAC [RGC..40, RGH..41] 500 mAAC [RGC..42] 250 mAAC [RGH..40]	400 mAAC [RGC..40, RGH..41] 500 mAAC [RGC..42]	400 mAAC [RGC..60, RGH..60] 500 mAAC [RGC..62]	500 mAAC [RGC..62]
Non rep. surge current (t=10 ms)	800 Ap [RGC..40] 1900 Ap [RGC..42] 600 Ap [RGH..40] 1150 Ap [RGH..41]	800 Ap [RGC..40] 1900 Ap [RGC..42] 1150 Ap [RGH..41]	800 Ap [RGC..60] 1900 Ap [RGC..62] 1150 Ap [RGH..60]	1900 Ap [RGC..62]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	3200A^2s [RGC..40] 18000 A^2s [RGC..42] 1800 A^2s [RGH..40] 6600 A^2s [RGH..41]	3200A^2s [RGC..40] 18000 A^2s [RGC..42] 6600 A^2s [RGH..41]	3200A^2s [RGC..60] 18000 A^2s [RGC..62] 6600 A^2s [RGH..60]	18000 A^2s [RGC..62]
General specifications				
Operational voltage range	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]
Blocking voltage	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus - VDE	CE - cULus - VDE
References				
230 VAC, 800 Vp, 3200 A^2s	**RGC1A23X40KGE**	**RGC1A23X40MGE**	**RGC1A23X60KGE**	
230 VAC, 800 Vp, 18000 A^2s	**RGC1A23X42KGE**	**RGC1A23X42MGE**	**RGC1A23X62KGE**	**RGC1A23X62MGE**
600 VAC, 1200 Vp, 3200 A^2s	**RGC1A60X40KGE**	**RGC1A60X40MGE**	**RGC1A60X60KGE**	
600 VAC, 1200 Vp, 18000 A^2s	**RGC1A60X42KGE**	**RGC1A60X42MGE**	**RGC1A60X62KGE**	**RGC1A60X62MGE**
600 VAC, 1600 Vp, 1800 A^2s	**RGH1A60X40KGE**			
600 VAC, 1600 Vp, 6600 A^2s	**RGH1A60X41KGE**	**RGH1A60X41MGE**	**RGH1A60X60KGE**	

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGC1B.. models for Instant On (Random) switching are avaialable on request

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting

	AC Output Switching		DC Output Switching
Types	**RGC1A..40KGU RGC1A..42KGU**	**RGC1A..60KGU RGC1A..62KGU**	**RGC1D1000D15KKE**
Single phase, semiconductor contactirs with integrated heatsink, LED indication and IP20 protection, Rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating and Motor ratings according to UL508 for AC Output Switching			
Dimensions HxWxD (mm)	110 x 35.6 x 141	110 x 69.1 x 141	110 x 17.8 x 141
Features	35 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, U-type layout	70 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, U-type layout	17.8 mm wide solid state contactor for DC switching with integrated free wheeling diode, DC control, screw terminals for power and control, E-type layout
Input Specifications			
Control input range	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	4.5-32 VDC
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	13.7 mADC
Output Specifications			
Rated operational current			
AC-51 @ Ta = 40°C	40 AAC [RGC..40, RGH..41] 43 AAC [RGC..42]	60 AAC [RGC..60] 65 AAC [RGC..62, RGH..60]	
AC-53a @ Ta = 40°C	13 AAC [RGC..40, RGH..41] 16 AAC [RGC..42]	14.8 AAC [RGC..60] 20 AAC [RGC..62] 18 AAC [RGH..60]	
DC 1 @ 60°C			8 ADC
Min. operational current	400 mAAC [RGC..40, RGH..41] 500 mAAC [RGC..42]	400 mAAC [RGC..60, RGH..60] 500 mAAC [RGC..62]	20 mADC
Non rep. surge current (t=10 ms)	800 Ap [RGC..40] 1900 Ap [RGC..42] 1150 Ap [RGH..41]	800 Ap [RGC..60] 1900 Ap [RGC..62] 1150 Ap [RGH..60]	200 ADC (10us)
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	3200A^2s [RGC..40] 18000 A^2s [RGC..42] 6600 A^2s [RGH..41]	3200A^2s [RGC..60] 18000 A^2s [RGC..62] 6600 A^2s [RGH..60]	1.5 mADC
Critical dV/dt (@ Tj init= 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-1000 VDC [CE] 24-600 VDC [UL508]
Blocking voltage	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60..]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus
References			
230 VAC, 800 Vp, 3200 A^2s	**RGC1A23X40KGU**	**RGC1A23X60KGU**	
230 VAC, 800 Vp, 18000 A^2s	**RGC1A23X42KGU**	**RGC1A23X62KGU**	
600 VAC, 1200 Vp, 3200 A^2s	**RGC1A60X40KGU**	**RGC1A60X60KGU**	
600 VAC, 1200 Vp, 18000 A^2s	**RGC1A60X42KGU**	**RGC1A60X62KGU**	
600 VAC, 1600 Vp, 6600 A^2s	**RGH1A60X41KGU**	**RGH1A60X60KGU**	
1000 VDC			**RGC1D1000D15KKE**

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions). X must be replaced with A for AC control 20-275 VAC, 24-190 VDC

RGC1B.. models for Instant On (Random) switching are avaialable on request

CARLO GAVAZZI

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting
AC Output Switching with Integrated Over Temperature Protection

Types	RGC1A...25GKEP	RGC1A...30GKEP	RGC1A...40GG.P RGC1A...42GG.P
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥4000 Vrms, 100 kArms Short Circuit Current Rating, Motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 22.5 x 130	110 x 22.5 x 168	110x 35.6 x 168
Features	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, screw terminals with captivated clamp for connection of power terminals and box clamps for control terminals	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, screw terminals with captivated clamp for connection of power terminals and box clamps for control terminals	35 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, box clamps for connection of power and control terminals
Input specifications			
Control input range	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	24 mADC [RG..D.] 35 mAAC [RG..A.]	24 mADC [RG..D.] 35 mAAC [RG..A.]	24 mADC [RG..D.] 35 mAAC [RG..A.]
Supply Voltage			
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC
Over Temperature Alarm			
Alarm output	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]
	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	25 AAC	30 AAC	40 AAC [RGC..40], 43 AAC [RGC..42]
AC 53a @ Ta=40°C	5 AAC	8 AAC	13 AAC [RGC..40], 16 AAC [RGC..42]
Min. operational current	250 mA	250 mA	400 mAAC [RGC..40], 500 mAAC [RGC..42]
Non rep. surge current (t=10 ms)	600 Ap	600 Ap	800 Ap [RGC..40] 1900 Ap [RGC..42]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	3200 A^2s [RGC..40], 18000 A^2s [RGC..42]
Critical dV/dt off-state (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus - VDE
References			
DC control voltage			
230 VAC, 800 Vp		**RGC1A23D30GKEP**	
600 VAC, 1200 Vp	**RGC1A60D25GKEP**	**RGC1A60D30GKEP**	3200 A^2s: **RGC1A60D40GGXP** 18000 A^2s: **RGC1A60D42GGXP**
AC/DC control voltage			
600 VAC, 1200 Vp	**RGC1A60A25GKEP**	**RGC1A60A30GKEP**	3200 A^2s: **RGC1A60A40GGXP** 18000 A^2s: **RGC1A60A42GGXP**

X must be replaced with the following depending on the connection configuration required
Configuration X: E = E-type U = U-type

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC Output Switching

	Integrated Over Temperature Protection		Integrated Fuse
Types	**RGC1A...60GG.P RGC1A...62GG.P**	**RGC1A...90GG.P RGC1A...92GG.P**	**RGC1F...D..GGE**
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65Hz, Rated isolation voltage ≥4000Vrms, 100kArms Short Circuit Current Rating, Motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 69.1 x 168	126 x 69.1 x 168 (with fan)	110 x 35.6 x 168
Features	70 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, box clamps for connection of power & control terminals	70 mm wide solid state contactor with attached fan, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, box clamps for connection of power & control terminals	35 mm wide solid state contactor with integrated fuse, additional monitoring features available with RGC1FS.. for SSR, load & fuse failure detection, integrated varistor for overvoltage protection, DC control voltage range, box clamps for connection of power & control terminals
Input specifications			
Control input range	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RGC1F..23.] 4.5-32 VDC [RGC1F..60.]
Max. input current	23 mADC [RG..D.]/35 mAAC [RG..A.]	23 mADC [RG..D.] / 35 mAAC [RG..A.]	12 mAC
Supply Voltage			
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC (fan rating 24 VDC / 50 mA)	80 mADC
Over Temperature Alarm			
Alarm output	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC1FS..]
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	60 AAC [RGC..60] 65 AAC [RGC..62]	85 AAC	20 AAC [RGC1F..20.]/30 AAC [RGC1F..30.]/40 AAC [RGC1F..40.]
AC 53a @ Ta=40°C	14,8 AAC [RGC..60] 20 AAC [RGC..62]	14,8 AAC [RGC..90] 20 AAC [RGC..92]	4.7 AAC [RGC1F..20.]/6 AAC [RGC1F..30.] / 8 AAC [RGC1F..40.]
Min. operational current	400 mA [RGC..60] 500 mA [RGC..62]	400 mA [RGC..90] 500 mA [RGC..92]	200 mA
Non rep. surge current (Itsm) (t=10 ms)	800 Ap [RGC..60] 1900 Ap [RGC..62]	800 Ap [RGC..90] 1900 Ap [RGC..92]	Integrated fuse
Off-state leakage current	3 mAAC	3 mAAC	
I^2t for fusing (t=10 ms)	3200 A^2s [RGC..60] 18000 A^2s [RGC..62]	6600 A^2s [RGC..90] 18000 A^2s [RGC..92]	Fuse - 740A^2s [RGC1F..20..] Fuse - 1400A^2s [RGC1F..30..] Fuse - 3100A^2s [RGC1F..40..]
Critical dV/dt off-state (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	
General specifications			
Operational voltage range	42-600 VAC +10% [RG.60...]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	1200 Vp	800 Vp [RGC.23.]/1200 Vp [RGC.60.]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus (to 30AAC)
References			
DC control voltage			
230 VAC, 800 Vp		**RGC1A23D90GGXP**	**20 AAC RGC1FY23D20GGE** **30 AAC RGC1FY23D20GGE** **40 AAC RGC1FY23D20GGE**
600 VAC, 1200 Vp	**RGC1A60D60GGXP** **RGC1A60D62GGXP**	**RGC1A60D90GGXP** **RGC1A60D92GGXP**	**20 AAC RGC1FY60D20GGE** **30 AAC RGC1FY60D20GGE** **40 AAC RGC1FY60D20GGE**
AC/DC control voltage			
600 VAC, 1200 Vp	**RGC1A60A60GGXP** **RGC1A60A62GGXP**	**RGC1A60A90GGXP** **RGC1A60A92GGXP**	

X and Y must be replaced with the following depending on the version required
Configuration X: E = E-type U = U-type
Version Y: A = fuse only S = fuse + monitoring

CARLO GAVAZZI

Solid state contactors, 1-phase

Ready for use design - AC Output Switching, Integrated Current Measurement

Types	RGC1S..GKEP	RGC1S..41GGEP	RGC1S..61GGEP
Single phase, semiconductor contactors with integrated current measurement, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥ 4000 Vrms, 100 kArms Short Circuit Current Rating			
Dimensions HxWxD (mm)	110 x 22.5 x 130/163	110 x 35.6x 163	110 x 69.1 x 163
Features	22.5 mm wide solid state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, screw terminals with captivated clamp for power terminals, E-type layout	35 mm wide solid state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, box clamps for power terminals, E-type layout	70 mm wide solid state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, box clamps for power terminals, E-type layout
Input Specifications			
Control input range	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	10 mADC at 24 VDC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply Voltage			
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC
Alarm specifications			
Output type	NC PNP open collector max. 35 VDC/50 mA	NC PNP open collector max. 35 VDC/50 mA	NC PNP open collector max. 35 VDC/50 mA
Alarm Indication	Red LED (flash rate)	Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	20 AAC [RGC1S..20] 23.8 AAC [RGC1S..25] 30 AAC [RGC1S..30 / 31]	40 AAC	60 AAC
Minimum TEACH / operational current	1.2 AAC	1.2 AAC	5 AAC
Minimum partial load current	0.2 AAC	0.2 AAC	0.83 AAC
Detectable partial load failure	>16.67% from current setpoint	>16.67% from current setpoint	>16.67% from current setpoint
Non. rep. surge current Itsm (t=10ms)	325 Ap [RGC1S..20] 600 Ap [RGC1S..25/30] 1150 Ap [RGC1S..31]	1150 Ap	1150 Ap
Max. off state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10ms)	525 A^2s [RGC1S..20] 1800 A^2s [RGC1S..25/30] 6600 A^2s [RGC1S..31]	6600 A^2s	6600 A^2s
Critical dV/dt (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-600 VAC +10%	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
600 VAC, 1200 Vp	20 AAC: **RGC1S60D20GKEP**		
	23.8 AAC: **RGC1S60D25GKEP**		
	30 AAC: **RGC1S60D30GKEP**		
	30 AAC: **RGC1S60D31GKEP**	40 AAC: **RGC1S60D41GGEP**	60 AAC: **RGC1S60D61GGEP**

Solid state contactors, 1-phase

Ready for use design - AC Output Switching, Integrated Current Measurement

Types	RGC1S..90GGEP	RGC1S..41GGUP	RGC1S..61GGUP
Single phase, semiconductor contactors with integrated current measurement, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥ 4000 Vrms, 100 kArms Short Circuit Current Rating			
Dimensions HxWxD (mm)	126 x 69.1 x 163 (with fan)	110 x 35.6x 163	110 x 69.1 x 163
Features	70mm wide solid-state contactor with, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, box clamps for power terminals, E-type layout	35.6mm wide solid-state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, box clamps for power terminals, U-type layout	70mm wide solid-state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection, box clamps for power terminals, U-type layout
Input specifications			
Control input range	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	10 mADC at 24 VDC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply Voltage			
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC
Alarm specifications			
Output type	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA
Alarm Indication	Red LED (flash rate)	Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	85 AAC	40 AAC	60 AAC
Minimum TEACH / operational current	1.2 AAC	1.2 AAC	5 AAC
Minimum partial load current	0.83 AAC	0.2 AAC	0.83 AAC
Detectable partial load failure	>16.67% from current setpoint	>16.67% from current setpoint	>16.67% from current setpoint
Non. rep. surge current Itsm (t=10ms)	1150 A_P	1150 A_P	1150 A_P
Max. off state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	6600 A^2s	6600 A^2s	6600 A^2s
Critical dV/dt (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-600 VAC +10%	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
600 VAC, E-type	85 AAC: **RGC1S60D90GGEP**		
600 VAC, U-type		40 AAC: **RGC1S60D41GGUP**	60 AAC: **RGC1S60D61GGUP**

CARLO GAVAZZI

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting

Types	RJ1P MB	RJ1P
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥4000 Vrms		
Dimensions HxWxD (mm)	103 x 45 x 122	103 x 45 x 103
Features	SSR with fieldbus communication interface	Multifunction Phase-angle, Distributed full cycle and Burst control (1s, 3s and 10s)
Control specifications		
Control input range	2-wire Modbus RTU	4-20 mA [RJ1P...I...] 0-10 VDC [RJ1P...V...]
Max. input current		50 mA [RJ1P...I...] 0-1 mA [RJ1P...V...]
Control supply		24 VAC/DC [RJ1P...V...]
Max. input current		23 mA [RJ1P...V...]
Output specifications		
Rated operational current		
AC 51 @ Ta=25°C	50 AACrms	50 AACrms
AC 53a @ Ta=25°C		
Min. TEACH / operational current	500 mAACrms	150 mArms/ 500 mArms
Non-repet. surge current (t=10 ms	1900 A_P	325/1900 A_P
Off-state leakage current	< 3 mArms	< 3 mArms
I^2t for fusing (t=10 ms)	18000 A^2s	525 A^2s / 18000 A^2s
On state voltage drop	1.6 Vrms	1.6 Vrms
Critical dV/dt off-state	1000 V/µs	1000 V/µs
General specifications		
Operational voltage range	90-265 Vrms	90-265 Vrms [RJ1P23..] 200-550 Vrms [RJ1P48..] 410-660 Vrms[RJ1P60..]
Blocking voltage		650 V_P [RJP23..] 1200 V_P [RJ1P48..] 1200 V_P [RJ1P60..]
Power factor	≥ 0.9	≥ 0.9
Operating temperature	-30° to +70°C	-20° to +60°C
Terminals	Box clamp	Box clamp
Approvals/Marks	CE - UR - cUR	CE - UR - cUR
References		
1-phase, zero switching	50 A	30 / 50 A
230 V	**RJ1P23MBT50EBC**	**RJ1P23V30E**
	RJ1P23MBT50ECS	**RJ1P23I30E**
	RJ1P23MBT50ECV	**RJ1P23V50E**
		RJ1P23I50E
480 V	**RJ1P48MBT50EBC**	**RJ1P48V30E**
	RJ1P48MBT50ECS	**RJ1P48I30E**
	RJ1P48MBT50ECV	**RJ1P48V50E**
		RJ1P48I50E
600 V	**RJ1P60MBT50EBC**	**RJ1P60V30E**
	RJ1P60MBT50ECS	**RJ1P60I30E**
	RJ1P60MBT50ECV	**RJ1P60V50E**
		RJ1P60I50E

Solid state contactors, 1-phase, 2-phase

Ready to use design - DIN rail mounting

Types	Solitron RN Full Cycle 1 pole 30/50 A	Solitron RN Sense* 1 pole 30/50 A
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥4000 Vrms		
Dimensions (mm)	120 x 45 x 110 (30A) 120 x 90 x 110 (50/63 A)	120 x 45 x 110 (30A) 120 x 90 x 110 (50A)
Features	High precision temperature control	High precision economy switching
Control specifications		
Control input range	4-20 mA [RN.F.I.], 0-10 VDC [RN.F.V.]	7-32 VDC
Max. input current	50 mA [RN.F.I.], 0.1 mA [RN.F.V.]	4 mA
Control supply	12-32 VDC / 24 VAC [RN.V.]	20-32 VDC (≤ 40 mA)
Alarm output		PNP : VCC - 2 VDC (≤ 100 mA) / NPN: 2 VDC @ (≤ 100 mA)
Output specifications		
Rated operational current		
AC 51 @ Ta=30°C	30 Arms [RN.F..30] 50 Arms [RN.F..50]	30 Arms [RN1S...30..] 50 Arms [RN1S...50..]
AC 53a @ Ta=40°C		6 Arms [RN1S...30..] 12 Arms [RN1S...50..]
Min. operational current	500 mArms	200 mArms
Non rep. surge current (Itsm) (t=10 ms)	325 AP [RN..30] 600 AP [RN..50]	325 AP [RN.F..30..] 600 AP [RN.F..50..]
Off-state leakage current	< 6 mAAC	< 6 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RN.F..30] 1800 A^2s [RN.F..50]	525 A^2s [RN.F..30..] 1800 A^2s [RN.F..50..]
General specifications		
Operational voltage range	85-140 Arms [RN..F12..], 85-265 Arms [RN..F23..] 190-530 Arms [RN..F48..]	120-265 Arms [RN1S23..], 150-440 Arms [RN1S40..] 180-530 Arms [RN1S48..]
Blocking voltage	800 V_P [RN..F12..], 800 V_P [RN..F23..] 1000 V_P [RN..F48..]	800 VP [RN1S23..], 1000 VP [RN1S40..] 1200 VP [RN1S48..]
Power factor	≥ 0.9	≥ 0.5
Operating temperature	-20°C to +70°C	-20°C to +70°C
Terminals	Screw captive wire clamp	Screw captive wire clamp
Approvals/Marks	CE - UR - CSA	CE - UR - CSA
General specifications		
30 A	**RN1F12I30**	**RN1S23H30NO**
	RN1F12V30	**RN1S23H30PO**
	RN1F23I30	**RN1S40H30NO**
	RN1F23V30	**RN1S40H30PO**
	RN1F48I30	**RN1S48H30NO**
	RN1F48V30	**RN1S48H30PO**
50 A	**RN1F12I50**	**RN1S23H50NO**
	RN1F12V50	**RN1S23H50PO**
	RN1F23I50	**RN1S40H50NO**
	RN1F23V50	**RN1S40H50PO**
	RN1F48I50	**RN1S48H50NO**
	RN1F48V50	**RN1S48H50PO**

* Other options available on request: Active low control input and normally closed alarm output.

CARLO GAVAZZI

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting AC Output Switching

Types	RGCM2A..20.. 2 + 1 poles	RGC2A..25.. 2 + 1 poles	RGC2A..40.. 2 + 1 poles	RGC2A..75..F 2 + 1 poles
Semiconductor contactors with integrated heatsink, AC operating frequency range 45-65 Hz. Rated isolation voltage 4000 Vrms				
Dimensions HxWxD (mm)	105 x 45 x 105	110 x 54 x 103	110 x 72 x 126	141 x 72 x 141 (with fan)
Features	45 mm solid state contactor, enclosed heatsink, integrated varistors for over-voltage protection, 5 kArms SCCR, screw with clamp for power connection	54 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, box clamp for power connection	72 mm solid state contactor, integrated overheat protection with EMR alarm output, 100 kArms SCCR, box clamp for power connection
Input Specifications				
Control input range	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RG..D..DF] 5-32 VDC [RG..D..AF] 20-275 VAC [RG..A..AF]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	12.5 mADC [RG..D..DF] 5.5 mADC [RG..D..AF] 4.3 mAAC [RG..A..AF]
External supply voltage				24 VDC [RG..D..DF] 90-250 VAC [RG..D..AF] 90-250 VAC [RG..A..AF]
Max. supply current				150 mADC [RG..D..DF] 80 mADC [RG..D..AF] 80 mAAC [RG..A..AF]
Alarm Specifications				
Alarm output				EMR: 2A 230VAC/30VDC
Alarm condition				Over Temperature
Output Specifications				
Rated operational current AC-51 @ Ta = 40°C	20 AAC	27 AAC	40 AAC	75 AAC
AC-53a @ Ta = 40°C	7.6 AAC	11.5 AAC	16.5 AAC	28 AAC
Motor rating	3 kW @ 400 VAC 5 HP @ 600 VAC	5.5 kW @ 400 VAC 10 HP @ 600 VAC	7.5 kW @ 400 VAC 15 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC
Minimum operational current	250 mAAC	250 mAAC	400 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10ms)	1800 A^2s	1800 A^2s	6600 A^2s	15000 A^2s
General specifications				
Operational voltage range	42-600 VAC +10%	42-220 VAC +10% [RG..22.] 42-600 VAC +10% [RG..60.]	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 Vp	800 Vp [RG..22.] 1200 Vp [RG..60.]	1200 Vp	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +80°C	-40°C to +80°C	-40°C to +70°C [RG...DF] -40°C to +60°C [RG…AF]
Approvals / Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
DC control voltage				
220 VAC, 800 Vp		**RGC2A22D25KKE**		
600 VAC, 1200 Vp	**RGCM2A60D20GKE**	**RGC2A60D25KKE**	**RGC2A60D40KGE**	
AC/DC control voltage				
220 VAC, 800 Vp		**RGC2A22A25KKE**		
600 VAC, 1200 Vp	**RGCM2A60A20GKE**	**RGC2A60A25KKE**	**RGC2A60A40KGE**	
DC control voltage, DC external supply				**RGC2A60D75GGEDF**
DC control voltage, AC external supply				**RGC2A60D75GGEAF**
AC control voltage, AC external supply				**RGC2A60A75GGEAF**

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting - AC Output Switching with System Monitoring

Types	RGC2A..25..M 2 + 1 poles	RGC2A..40..M 2 + 1 poles	RGC2A..75..FM 2 + 1 poles
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms Short Circuit Current Rating			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DFM] 5-32 VDC [RG..D..AFM] 20-275 VAC [RG..A..AFM]
Control current @ max. control voltage	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DFM] 5.5 mADC [RG..D..AFM] 4.3 mAAC [RG..A..AFM]
External supply voltage	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DFM] 90-250 VAC [RG..D..AFM] 90-250 VAC [RG..A..AFM]
Max. supply current	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	150 mADC [RG..D..DFM] 80 mAAC [RG..D..AFM] 80 mAAC [RG..A..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Output specifications			
Rated operational current AC-51 @ Ta = 40oC	27 AAC	40 AAC	75 AAC
AC-53a @ Ta = 40oC	11.5 AAC	16.5 AAC	28 AAC
Motor rating	Suitable only for resistive loads	Suitable only for resistive loads	Suitable only for resistive loads
Minimum operational current	250 mAAC	400 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10ms)	1800 A^2s	6600 A^2s	15000 A^2s
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
General specifications			
Operational voltage range	90-600 VAC +10%	90-600 VAC +10%	90-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Operating temperature	-40°C to +80°C [RG...DM] -40°C to +60°C [RG…AM]	-40°C to +80°C [RG...DM] -40°C to +60°C [RG…AM]	-40°C to +70°C [RG...DFM] -40°C to +60°C [RG…AFM]
Approvals / Marks	CE - cULus	CE - cULus	CE - cULus
References			
600 VAC, 1200 Vp			
DC control voltage, DC external supply	**RGC2A60D25GKEDM**	**RGC2A60D40GGEDM**	**RGC2A60D75GGEDFM**
DC control voltage, AC external supply	**RGC2A60D25GKEAM**	**RGC2A60D40GGEAM**	**RGC2A60D75GGEAFM**
AC control voltage, AC external supply	**RGC2A60A25GKEAM**	**RGC2A60A40GGEAM**	**RGC2A60A75GGEAFM**

CARLO GAVAZZI

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting, AC Output Switching

Types	RGCM3A..15 3 poles	RGC3A..20.. 3 poles	RGC3A..25.. / 30.. 3 poles
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms			
Dimensions HxWxD (mm)	105 x 45 x 105	110 x 54 x 103	110 x 72 x 126
Features	45 mm solid state contactor, enclosed heatsink, integrated varistors for over-voltage protection, 5 kArms SCCR, screw with clamp for power connection	54 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp or box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RGC..D.] 20-275VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275VAC, 24-190 VDC [RGC..A.]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	15.5 AAC	20 AAC	28 AAC [RGC3..25] 30 AAC [RGC3..30]
AC-53a @ Ta = 40°C	5.8 AAC	10 AAC	11 AAC [RGC3..25] 14 AAC [RGC3..30]
Motor rating	2.2 kW @ 400 VAC 3 HP @ 600 VAC	4 kW @ 400 VAC 10 HP @ 600 VAC	4 kW @ 400 VAC [RGC3..25] 5.5 kW @ 400 VAC [RGC3..30] 10 HP @ 600 VAC [RGC3..25] 15 HP @ 600 VAC [RGC3..30]
Minimum operational current	250 mAAC	250 mAAC	250 mAAC [RGC3..25] 400 mAAC [RGC3..30]
Non. rep. surge current Itsm (t=10ms)	600 Ap	600 Ap	600 Ap [RGC3..25] 1150 Ap [RGC3..30]
I^2t for fusing (t=10ms)	1800 A^2s	1800 A^2s	1800 A^2s [RGC3..25] 6600 A^2s [RGC3..30]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/us	1000 V/us	1000 V/us
General specifications			
Operational voltage range	42-220 VAC + 10% [RG..22.] 42-600 VAC +10% [RG..60.]	42-220 VAC + 10% [RG..22.] 42-600 VAC +10% [RG..60.]	42-600 VAC +10%
Blocking voltage	800 Vp [RG..22.] 1200 Vp [RG..60.]	800 Vp [RG..22.] 1200 Vp [RG..60.]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
DC control voltage			
220 VAC, 800 Vp	**RGCM3A22D15GKE**	**RGC3A22D20KKE**	
600 VAC, 1200 Vp	**RGCM3A60D15GKE**	**RGC3A60D20KKE**	28 AAC: **RGC3A60D25KKE**
			30 AAC: **RGC3A60D30KGE**
AC/DC control voltage			
220 VAC, 800 Vp	**RGCM3A22A15GKE**	**RGC3A22A20KKE**	
600 VAC, 1200 Vp	**RGCM3A60A15GKE**	**RGC3A60A20KKE**	28 AAC: **RGC3A60A25KKE**
			30 AAC: **RGC3A60A30KGE**

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting, AC Output Switching

Types	RGC3A..40..F 3 poles	RGC3A..65..F 3 poles
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms Short Circuit Current Rating		
Dimensions HxWxD (mm)	135 x 54 x 118 (with fan)	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor + fan, integrated overheat protection with EMR alarm output, box clamp for power connection	72 mm solid state contactor + fan, integrated overheat protection with EMR alarm output, box clamp for power connection
Input specifications		
Control input range	5-32 VDC [RG..D..DF] 20-275 VAC [RG..A..AF]	5-32 VDC [RG..D..DF] 5-32 VDC [RG..D..AF] 20-275 VAC [RG..A..AF]
Input current @ max. control voltage	12.5 mADC [RG..D..DF] 4.3 mAAC [RG..A..AF]	12.5 mADC [RG..D..DF] 5.5 mADC [RG..D..AF] 4.3 mAAC [RG..A..AF]
External supply voltage	24 VDC [RG..D..DF] 90-250 VAC [RG..A..AF]	24 VDC [RG..D..DF] 90-250 VAC [RG..D..AF] 90-250 VAC [RG..A..AF]
Max. supply current	150 mADC [RG..D..DF] 80 mAAC [RG..A..AF]	150 mADC [RG..D..DF] 80 mAAC [RG..D..AF] 80 mAAC [RG..A..AF]
Alarm specifications		
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Over Temperature	Over Temperature
Output specifications		
Rated operational current AC-51 @ Ta = 40°C	42 AAC	66 AAC
AC-53a @ Ta = 40°C	17 AAC	25 AAC
Motor rating	7.5 kW @ 400 VAC 15 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC
Minimum operational current	400 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	1150 Ap	1750 Ap
I^2t for fusing (t=10ms)	6600 A^2s	15000 A^2s
Off-state leakage current	3 mAAC	3 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/us	1000 V/us
General specifications		
Operational voltage range	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C [RGC..D..DF] -40°C to +60°C [RGC..A..AF]	-40°C to +70°C [RGC..DF] -40°C to +60°C [RGC..AF]
Approvals / Marks	CE - cULus	CE - cULus
References		
600 VAC, 1200 Vp		
DC control voltage, DC external supply	**RGC3A60D40GGEDF**	**RGC3A60D65GGEDF**
DC control voltage, AC external supply		**RGC3A60D65GGEAF**
AC control voltage, AC external supply	**RGC3A60A40GGEAF**	**RGC3A60A65GGEAF**

CARLO GAVAZZI

Solid state contactors, 2/3-phase

Ready for use design - DIN rail mounting - AC Output Switching with System Monitoring

Types	RGC3A..20..M 3 poles	RGC3A..25..M RGC3A..30..M 3 poles	RGC3A..65..FM 3 poles
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms SCCR			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp or box clamp for power connection	72 mm solid state contactor + fan, EMR alarm output and electronic auxiliary output, box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DFM] 5-32 VDC [RG..D..AFM] 20-275 VAC [RG..A..AFM]
Control current @ max. control voltage	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DFM] 5.5 mADC [RG..D..AFM] 4.3 mAAC [RG..A..AFM]
External supply voltage	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DFM] 90-250 VAC [RG..D..AFM] 90-250 VAC [RG..A..AFM]
Max. supply current	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	150 mADC [RG..D..DFM] 80 mAAC [RG..D..AFM] 80 mAAC [RG..A..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	20 AAC	28 AAC [RGC3..25] 30 AAC [RGC3..30]	66 AAC
AC-53a @ Ta = 40°C	10 AAC	11 AAC [RGC3..25] 14 AAC [RGC3..30]	25 AAC
Motor rating	Suitable only for resistive loads	Suitable only for resistive loads	Suitable only for resistive loads
Minimum operational current	250 mAAC	250 mAAC [RGC3..25] 400 mAAC [RGC3..30]	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	600 Ap [RGC3..25] 1150 Ap [RGC3..30]	1750 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10ms)	1800 A^2s	1800 A^2s [RGC3..25] 6600A^2s [RGC3..30]	15000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/us	1000 V/us	1000 V/us
General specifications			
Operational voltage range	90-600 VAC +10%	90-600 VAC +10%	90-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Operating temperature	-40°C to +80°C [RG...DM] -40°C to +60°C [RG…AM]	-40°C to +80°C [RG...DM] -40°C to +60°C [RG…AM]	-40°C to +70°C [RG...DFM] -40°C to +60°C [RG…AFM]
Approvals / Marks	CE - cULus	CE - cULus	CE - cULus
References			
DC control voltage, DC external supply	**RGC3A60D20GKEDM**	28AAC: **RGC3A60D25GKEDM** 30AAC: **RGC3A60D30GGEDM**	**RGC3A60D65GGEDFM**
DC control voltage, AC external supply	**RGC3A60D20GKEAM**	28AAC: **RGC3A60D25GKEAM** 30AAC: **RGC3A60D30GGEAM**	**RGC3A60D65GGEAFM**
AC control voltage, AC external supply	**RGC3A60A20GKEAM**	28AAC: **RGC3A60A25GKEAM** 30AAC: **RGC3A60A30GGEAM**	**RGC3A60A65GGEAFM**

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting, Proportional Controllers

Types	RGC2P60AA15C1 2 + 1 poles	RGC2P60AA25C1 2 + 1 poles	RGC2P60AA40C1 2 + 1 poles
3-phase semiconductor proportional controllers with integrated heatsink, AC operating frequency range 45-65 Hz. Rated isolation voltage 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 54 x 103	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, screw with clamp for power connection	54 mm solid state contactor with integrated varistors for over-voltage protection, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications			
Control input	4-20 mADC	4-20 mADC	4-20 mADC
Voltage drop	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC
Types			
Switching mode	1 Full Cycle [RGC..C1..]	1 Full Cycle [RGC..C1..]	1 Full Cycle [RGC..C1..]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	15 AAC	25 AAC	40 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	600 Ap	1150 Ap
I^2t for fusing (t=10ms)	1800 A^2s	1800 A^2s	6600 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/us	1000 V/us	1000 V/us
General specifications			
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals / Marks	CE - cULus	CE - cULus	CE - cULus
References			
Control Input:	**4-20 mADC**	**4-20 mADC**	**4-20 mADC**
1 Full Cycle	**RGC2P60AA15C1**	**RGC2P60AA25C1**	**RGC2P60AA40C1**

CARLO GAVAZZI

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting - Proportional Controllers with System Monitoring

Types	RGC2P60.25.M 2 + 1 poles	RGC2P60.40..M 2 + 1 poles	RGC2P60.75..FM 2 + 1 poles
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, screw with clamp for power connection	72 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, box clamp for power connection	72 mm solid state contactor with fan and system monitoring, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications			
Control input	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]
Input impedance	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]
External supply voltage	24 VDC/AC	24 VDC/AC	24 VDC/AC [RGC..DFM] 90-250 VAC [RGC..AFM]
Max. supply current	90 mADC/AC	90 mADC/AC	175 mADC/AC [RGC..DFM] 60 mAAC [RGC..AFM]
Alarm specifications			
Alarm output	EMR; 2A 250VAC/30VDC	EMR; 2A 250VAC/30VDC	EMR; 2A 250VAC/30VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Types			
Switching mode	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	27 AAC	40 AAC	75 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10ms)	1800 A^2s	6600 A^2s	15000 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/us	1000 V/us	1000 V/us
General specifications			
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply
Approvals / Marks	CE - cULus	CE - cULus	CE - cULus
References			
Control Input:	**0-20, 4-20, 12-20 mADC**	**0-20, 4-20, 12-20 mADC**	**0-20, 4-20, 12-20 mADC**
1 Full Cycle, DC external supply	**RGC2P60I25C1DM**	**RGC2P60I40C1DM**	**RGC2P60I75C1DFM**
1 Full Cycle, AC external supply			**RGC2P60I75C1AFM**
4 Full Cycles, DC external supply	**RGC2P60I25C4DM**	**RGC2P60I40C4DM**	**RGC2P60I75C4DFM**
4 Full Cycles, AC external supply			**RGC2P60I75C4AFM**
Control Input:	**0-10, 0-5, 1-5 VDC, Pot**	**0-10, 0-5, 1-5 VDC, Pot**	**0-10, 0-5, 1-5 VDC, Pot**
1 Full Cycle, DC external supply	**RGC2P60V25C1DM**	**RGC2P60V40C1DM**	**RGC2P60V75C1DFM**
1 Full Cycle, AC external supply			**RGC2P60V75C1AFM**

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting, Proportional Controllers

Types	RGC3P60AA20.. 3 poles	RGC3P60AA30.. 3 poles
3-phase semiconductor proportional controllers with integrated heatsink, AC operating frequency range 45-65 Hz. Rated isolation voltage 4000 Vrms, 100 kArms short circuit current rating		
Dimensions HxWxD (mm)	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications		
Control input	4-20 mADC	4-20 mADC
Voltage drop	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC
Types		
Switching mode	Phase Angle [RGC..E] 1 Full Cycle [RGC..C1]	Phase Angle [RGC..E] 1 Full Cycle [RGC..C1]
Output specifications		
Rated operational current AC-51 @ Ta = 40°C	20 AAC	30 AAC
Minimum operational current	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	1150 Ap
I^2t for fusing (t=10ms)	1800 A^2s	6600 A^2s
Off-state leakage current	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/us	1000 V/us
General specifications		
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C
Approvals / Marks	CE - cULus	CE - cULus
References		
Control Input:	**4-20 mADC**	**4-20 mADC**
Phase Angle	**RGC3P60AA20E**	**RGC3P60AA30E**
1 Full Cycle	**RGC3P60AA20C1**	**RGC3P60AA30C1**

CARLO GAVAZZI

Solid state contactors, 3-phase

Ready for use design - DIN rail mounting, Proportional Controllers with System Monitoring

Types	RGC3P60.20..P/M 3 poles	RGC3P60.30..P/M 3 poles	RGC3P60.65..FP/FM 3 poles
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, screw with clamp for power connection	72 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, box clamp for power connection	72 mm solid state contactor with fan and system monitoring, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications			
Control input	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]
Input impedance	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]
External supply voltage	24 VDC/AC [RGC..DM] 90-250 VAC [RGC..AM]	24 VDC/AC [RGC..DM] 90-250 VAC [RGC..AM]	24 VDC/AC [RGC..DFM] 90-250 VAC [RGC..AFM]
Max. supply current	90 mADC/AC [RGC..DM] 30 mAAC [RGC..AM]	90 mADC/AC [RGC..DM] 30 mAAC [RGC..AM]	175 mADC/AC [RGC..DFM] 60 mAAC [RGC..AFM]
Alarm specifications			
Alarm output	EMR; 2A 250 VAC / 30 VDC	EMR; 2A 250 VAC / 30 VDC	EMR; 2A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Types			
Switching mode	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	20 AAC	30 AAC	66 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10ms)	1800 A^2s	6600 A^2s	15000 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init = 40°C)	1000 V/us	1000 V/us	1000 V/us
General specifications			
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply
Approvals / Marks	CE - cULus	CE - cULus	CE - cULus
References			
Phase Angle, DC external supply	**RGC3P60Y20EDP**	**RGC3P60Y30EDP**	**RGC3P60Y65EDFP**
Phase Angle, AC external supply		**RGC3P60Y30EAP**	**RGC3P60Y65EAFP**
X Full Cycle, DC external supply	**RGC3P60Y20CXDM**	**RGC3P60Y30CXDM**	**RGC3P60Y65CXDFM**
X Full Cycle, AC external supply		**RGC3P60Y30CXAM**	**RGC3P60Y65CXAFM**
Softstart + 16 Full Cycles, DC external supply	**RGC3P60V20S16DM**	**RGC3P60V30S16DM**	**RGC3P60V65S16DFM**
Digitial Control Input:	**5-10VDC**	**5-10VDC**	**5-10VDC**
Softstart + ON/OFF, DC external supply	**RGC3P60V20SDM**	**RGC3P60V30SDM**	**RGC3P60V65SDFM**

X = '1', '4' or '16' full cycles
Y = 'I' for 0-20mA, 4-20mA or 12-20mA or 'V' for 0-10V, 0-5V, 1-5V or pot

Solid state contactors for motor switching, 3-phase

Ready for use design - DIN rail mounting

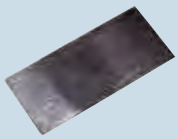
Types	REC2B	REC3B	REC2R
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms			
Dimensions HxWxD (mm)	105 x 45 x 99.4	105 x 45 x 99.4	105 x 45 x 99.4
Features	2ph switching Electronic motor contactor	3ph switching Electronic motor contactor	2ph switching Electronic motor contactor for reversing
Control specifications			
Control input range	15-32 VDC [REC..D] 90-253 VAC [REC..A]	15-32 VDC [REC..D] 90-253 VAC [REC..A]	15-32 VDC [REC..D] 90-253 VAC [REC..A]
Max. input current	10 mADC [REC..D] 15 mAAC [REC..A]	10 mADC [REC..D] 15 mAAC [REC..A]	10 mADC [REC..D] 15 mAAC [REC..A]
Output specifications			
Rated operational current AC53a @ Ta= 40°C, 400 VAC	6.2 AAC [REC2B..20] 7.6 AAC [REC2B..30] 9.2 AAC [REC2B..40]	5.8 AAC [REC3B.20] 5.8 AAC [REC3B.21] 7.6 AAC [REC3B.30]	6.2 AAC [REC2R..20] 7.6 AAC [REC2R..30]
Motor Rating @ 400 VAC UL508/IEC60947-4-2 @40°C	3HP / 2.2 kW [REC2B.20] 3HP / 3.0 kW [REC2B.30] 3HP / 4.0 kW [REC2B.40]	2HP / 2.2 kW [REC3B.20] 2HP / 2.2 kW [REC3B.21] 3HP / 3.0 kW [REC3B.30]	3HP / 2.2 kW [REC2R.20] 3HP / 3.0 kW [REC2R.30]
Min. operational current	150 mA [RECB.20]	150 mA [REC3B..20]	150 mA [REC2R..20]
Non repet. surge current (Itsm) (t=10 ms)	325 Ap [REC2B.20] 600 Ap [REC2B.30] 800 Ap [REC2B.40]	325 Ap [REC3B48..20] 600 Ap [REC3B60..20] 600 Ap [REC3..21] 800 Ap [REC3..30]	600 Ap
Max. Off-state leak current	< 3 mAAC	< 3 mAAC	< 3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [REC2.20] 525 A^2s [REC2.48..30] 1800 A^2s [REC2.60..30] 3200 A^2s [REC2.40]	525A^2s [REC3B48..20] 1800 A^2s [REC3B60..20] 1800 A^2s [REC3..21] 3200 A^2s [REC3.40]	1800 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	48 - 530 VAC [REC..48..] 48 - 600 VAC [REC..60..]	48 - 530 VAC [REC..48..] 48 - 600 VAC [REC..60..]	48 - 530 VAC [REC..48..] 48 - 600 VAC [REC..60..]
Blocking voltage	1200 Vp [REC..48..] 1600 Vp [REC..60..]	1200 Vp [REC..48..] 1600 Vp [REC..60..]	1200 Vp [REC..48..] 1600 Vp [REC..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
Terminals	input screw/spring, output screw	input screw/spring, output screw	input screw/spring, output screw
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
	2.2 kW	2.2 kW	2.2 kW
	REC2B48D20GKE	**REC3B48D20GKE**	**REC2R48D20GKE**
	REC2B48A20GKE	**REC3B48A20GKE**	**REC2R48A20GKE**
	3.0 kW	**REC3B60D20GKE**	3.0 kW
	REC2B48D30GKE	**REC3B60A20GKE**	**REC2R48D30GKE**
	REC2B48A30GKE	2.2 kW (high Itsm)	**REC2R48A30GKE**
	REC2B60D30GKE	**REC3B48D21GKE**	**REC2R60D30GKE**
	REC2B60A30GKE	3.0 kW	**REC2R60A30GKE**
	4.0 kW	**REC3B48D30GKE**	
	REC2B48D40GKE	**REC3B48A30GKE**	
	REC2B48A40GKE		

Solid state relays accessories

General accessories

Types	RPM1	RPM1P	RPM2	DIN-rail adaptor
				
Dimensions (mm) HxWxD	84 x 12.5 x 42	84 x 12.5 x 42	82 x 25 x 39	81 x 44 x 13.5
Description	Din-rail adaptor for PCB relays. (Relay excluded)	Din-rail adaptor with sockets for plug-in PCB relays. (Relay excluded)	Din-rail adaptor for PCB relays with an operational voltage ≥ 230 V. (Relay excluded)	DIN-rail adaptor for heatsinks. Integrated in kits. RHS100, RHS300, RHS301
References				
	RPM1	**RPM1P (no LED)**	**RP....M2**	**RHS00**
		RPM1PD (with LED)		
Selection guide for SSR assembly				
	RP....M1	**RP....M1P (no LED)**	**RS1A23LA**	**R....H8**
		RP....M1PD (with LED)		

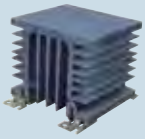
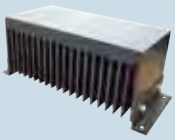
Types	RMIP20	BBR	RM terminal	RM terminal IP 20
				
Dimensions HxWxD (mm)	58 x 45 x 9	59 x 45 x 25.5	35 x 16.5 x 25	35 x 16.5 x 29
Description	Clip-on IP20 protection Cover for RAM, RM, RS	Protection cover for RA and RD serie	RM terminal adaptor for 16 mm² and 35 mm² cable	RM terminal adaptor for 35 mm² cable, IP 20
Pack Quantity	20	25	10	10
References				
	RMIP20	**BBR**	**RM625FK** (16 mm²)	**RM635FKP**
			RM635FK (35 mm²)	

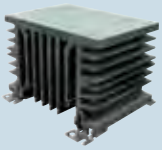
Types	Thermal paste	Thermal pad RG	Thermal Pad RM, RA	Varistors
				
Dimensions HxWxD(mm)		34.6 x 14	35 x 42	
Description	Paste for relay mounting on heatsink	Thermal pad for RG. Thermal resistance: 0.8 K/W	RM, RS, RA thermal pad. Thermal resistance: 0.4 K/W	Solid State Relay protection against voltage transient (voltage surge)
Pack Quantity		10	50	10
References				
	HTS02S	**RGHT**	**KK071CUT**	275 V: **RV02** 420 V: **RV04**
				510 V: **RV05** 625 V: **RV06**
				680 V: **RV07**

Solid state relays accessories

Heatsink assemblies for solid state relays

Types	RHS100	RHS45C	RHS45B
			
Dimensions HxWxD (mm)	82 x 45 x 49 (SSR not included)	103 x 45 x 55 (SSR not included)	103 x 45 x 81 (SSR not included)
Description	Heatsink for 1-phase RA, RD, RM, RAM, RS series. Heatsink assembly with DIN - rail adaptor*	Heatsink for 1-phase RA, RD, RM, RAM, RS series Heatsink assembly* with DIN-rail adapter. A fan 24VDC (RHSF40-24) may be mounted	Heatsink for 1-phase RA, RD, RM, RAM, RS series Heatsink assembly* with DIN-rail adapter. A fan 24VDC (RHSF40-24) may be mounted
Thermal resistance			
Without fan	3.0 K/W	2.7 K/W	2.0 K/W
With fan	Not available	1.25 K/W	1.2 K/W
Selection guide for heatsink assemblies			
Without fan	R.....H0	R.....H15	R.....H5
With fan		upon request	upon request

Types	RHS90A	RHS37A	RHS320
			
Dimensions HxWxD(mm)	103 x 90 x 80 (SSR not included)	106 x 17.8 x 52.5 (SSR not included)	100 x 240 x 93 (SSR not included)
Description	Heatsink for 1-phase RA, RD, RM, RAM, RS series Heatsink assembly* with DIN-rail adapter. A fan 24 VDC (RHSF40-24) may be mounted	Heatsink for 1-phase RG series Heatsink assembly* with DIN-rail adapter	Heatsink for 1-phase and 3-phase SSRs Heatsink assembly* for panel mounting
Thermal resistance			
Without fan	1.35 K/W	3.9 K/W	0.4 K/W
With fan	0.45 K/W	Not Available	Not Available
Selection guide for heatsink assemblies			
Without fan	R.....H16	R.....H51	R.....H13
With fan	R.....H19		

Types	RHS300	RHS112A	RHS301
			
Dimensions HxWxD(mm)	82 x 105 x 60 (SSR not included)	103 x 112 x 80 (SSR not included)	83 x 118 x 96 (SSR not included)
Description	Heatsink suited for 3 phase SSRs. Heatsink assembly*with DIN-rail adapter	Heatsink for 1-phase and 3-phase SSRs. Heatsink assembly* with DIN-rail adapter. A fan 24VDC (RHSF60-24) may be mounted	Heatsink for 1-phase and 3-phase SSRs. Heatsink assembly* with DIN-rail adapter. A fan (RHS301F115, RHS301F230) may be mounted
Thermal resistance			
Without fan	5.0 K/W	1.1 K/W	0.8 K/W
With fan	Not available	0.4 K/W	0.25 K/W
Selection guide for heatsink assemblies			
Without fan	R.....H1	R.....H17	R.....H2
With fan		R.....H18	R.....H10 [115 VAC fan]
			R.....H12 [230 VAC fan]

* Heatsink assembly includes mounting screws and thermal paste for semiconductor device.

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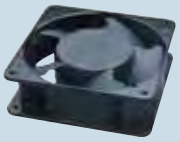
Solid state relays accessories

General accessories

Types	Fastons	Fan 24VDC
		
Dimensions (mm)	4.8 / 6.3	40 x 40 x 20 (RHSF40) / 60 x 60 x 20 (RHSF60)
Description	Screw Faston terminals for RAM, RM, RS series	RHSF40-24 to be mounted with RHS45C, RHS45B RHSF60-24 to be mounted with RHS90A, RHS112A
Pack Quantity	20	
References		
	4.8 mm / **6.3 mm**	**RHSF40-24**
	RM48F0 (flat) / **RM63F0** (flat)	
	RM48F4 (45° angle) / **RM63F4** (45° angle)	**RHSF60-24**

Types	Plug Terminals	Cables
		
Dimensions HxWxD(mm)		
Description	Spring pluggable terminals for RG 2.5 mm² cables	Cable for RM1E...V and RA...S models with one-end terminated with a female plug for mounting on the SSR
Pack Quantity	10	1
References		
	RGM25	**RCS3-100-1 [RM1E...V]**
		RCSS5-200-1 [RA...S]
		RCS5-300-1 [RA...S]

Soft starters

HVAC Compressor soft starters

Types	RSBS	RSBD & RSBT (45mm)	RSBD & RSBT (120mm)
Soft starting of 1-Phase (RSBS) and 3-phase (RSBT) scroll compressors			
Dimensions (mm)	60.4* x 137 x 81.4	81 x 45 x 125 [RSBT..V11../V51..] 97.5 x 45 x 125 [RSBT..V21../V61..] 106 x 45 x 125 [RSBD..V51../V61..]	150 x 120 x 170
Features	Internally bypassed, Current Limit start Optional auxiliary relay output (Option V22), HP algorithm for high pressure starts	Compact 2- (RSBD) and 3- (RSBT) phase controlled soft starter for scroll compressors. Patented auto-adapt function for reduction of insruch current. Current balancing strategy on RSBD models. No user settings required HP algorithm optimised for multi-compressor systems	Patented Auto-adaptive algorithm Two - (RSBD) and Three phase (RSBT) Controlled versions Internally bypassed 2 Output relays for alarms and top of ramp indication
Control specifications			
Control input range	230 VAC	Option E: 110 - 400 VAC [RSBD40../RSBT] Option F: 24 VAC / DC [RSBD40..]	24 VAC/DC & 110-400 VAC
Controlled phases	1	2 [RSBD40..] 3 [RSBT….]	2 [RSBD48..CV..] 3 [RSBT48..CV..]
Output specifications			
Rated operational current (Ie)	25 A [RSBS2325..] 32 A [RSBS2332..]	12/16/25/32/37/45 A [RSBD40..] 16/25/32 A [RSBT..]	55A [RSB.4855CV..] 70A [RSB.4870CV..] 95A [RSB.4895CV..]
Operational voltage	230 VAC (-15%, + 10%)	RSBD40: 220 - 400 VAC (-15%, +10%) RSBT22: 220 VAC (-15%, +10%) RSBT40: 400 VAC (-15%, +10%)	220 - 480 VAC (-15%, +10%)
Overload current profile @ 40°C	25 A: AC-53b: 1.6 - 1:60 [RSBS2325..] 32 A: AC-53b: 1.4 - 1:60 [RSBS2332..]	RSBD40: AC-53b: 3.5-1:299 RSBT..16: AC-53b: 2.5-1:60 RSBT..25: AC-53b: 3.6 -1:60 RSBT..32: AC-53b: 3.4 -1:60	55 A: AC-53b: 3.5 - 1 : 299 70 A: AC-53b: 3.5 - 1 : 299 95 A: AC-53b: 3.5 - 1 : 299
Number of starts per hour	12 (evenly distributed)	12 (evenly distributed)	12 (evenly distributed)
Assigned compressor rating @400V	**RSBS2325… / RSBS2332…****** 3.7 kW (5 HP) / 4 kW (5 HP)	**RSBD4016/RSBD4025/RSBD4032/ RSBD4037/RSBD4050** 5.5kW(5HP)/7.5kW(7.5HP)/11kW(10HP)/15kW (15HP)/18.5kW(20HP)/22kW(25HP) **RSBT..16/RSBT..25/RSBT..32** 7.5kW (7.5HP)/11.0kW(10HP)/15.0kW(15HP)	**RSB.4855CV../ RSB.4870CV../ RSB.4895CV..** 22 kW (30 HP)/ 30 kW (40 HP)/ 45 kW (50 HP)
General specifications			
Internally bypassed	Yes	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz +/- 10 Hz	50/60 Hz +/- 10 Hz
Ramp up/Ramp down	< 600ms/ 0s	<1s/0s	<1s/ 0s
Default Current limit	40 Arms [RSBS2325..V.2..] 45 Arms [RSBS2332..V.2..]	3.5xIe [RSBD40..] 40Arms [RSBT..16]/90A [RSBT..25]/ 110Arms [RSBT..32]	192.5 Arms [RSB.4855CV..] 245.0 Arms [RSB.4870CV..] 332.5 Arms [RSB.4895CV..]
Operating temperature	-20° to +65°C (-4° to +149°F)	RSBD/RSBT..16: -20°C to 60°C (-4°F to +140°F) RSBT..25: -20°C to 55°C (-4°F to +131°F) RSBT..32: -20°C to 50°C (-4°F to +122°F)	-20° to +60°C (-4° to +140°F)
Storage temperature	-30° to +70°C (-22° to +158°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +85°C (-40°F to +185°F)
Wrong Phase sequence indication	N/A	Yes	Yes
Degree of Protection	IP20	IP20	IP20 (Housing) / IP10 (Terminals)
Approvals	CE - UL - cUL	RSBD: CE - cULus - CCC (pending) RSBT: CE - cULus** - VDE***	CE - UL - cUL

* For RSBS23...V22.., auxiliary terminal is 10.5mm protruding
** For options V50/ V51/ V61
*** Up to 15 AAC
**** Assigned compressor rating @ 230V

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Soft starters

Motor control - Soft start and stop

Types	RSHR 3-Phase	RSGD
Soft starting and stopping of 3-phase motors. Starting / stopping time and initial torque can be independently adjusted		
Dimensions (mm)	158.5 x 90 x 90	106 x 45 x 125 [RSGD..12.. - RSGD..32..] 150 x 45 x 132 [RSGD..37.. - RSGD..45..]
Features	Three phase controlled. In Line or In Delta (6-wire) connection. Wrong Phase sequence detection. Motor PTC protection. Phase Loss Detection	Compact two phase controlled general purpose soft starter. Self-learning algorithm for better current balancing. Improved current reduction capability. Optional alarm and top of ramp relay output
Control specifications		
Control input range	24-550 VAC/DC (Option "C") 24-600 VAC/DC (Option "D")	Option E: 110 - 400 VAC [RSGD40..] Option F: 24 VAC/DC [RSGD40..] Option G: 100 - 240 VAC [RSGD60..]
Controlled phases	3	2
Output specifications		
Rated operational current		
AC 53b	25 A [RSHR..25…] 32 A [RSHR..32...]	12/16/25/32/37/45 A
Operational voltage	127/220 VAC [RSHR22..] 230/400 VAC [RSHR40..] 277/480 VAC [RSHR48..] 346/600 VAC [RSHR60..] 220-480 VAC [RSHRM] 400-480 VAC [RSHRM]	RSGD40: 220 - 400 VAC (-15%, +10%) RSGD60: 220 - 600 VAC (-15%, +10%)
Overload current profile @ 40°C	25 A: AC-53a: 4-4:50-7 [RSHR2225.../RSHR4025...] 25 A: AC-53a: 4-4:50-3 [RSHR4825.../RSHR6025…/RSHRM] 32 A: AC-53a: 4-4:50-50 [RSHR..32...]	12/16/25 A: AC-53b: 3 - 5 : 175 32/37 A: AC-53b: 4 - 6: 354 45 A: AC-53b: 3.5 - 5 : 355
Number of starts per hour @40°C	7 [RSHR2225.../RSHR4025...] 3 [RSHR4825.../RSHR6025…/RSHRM] 50 [RSHR..32...]	20: [RSGD..12/RSGD..16/RSGD..25] 10: [RSGD..32/RSGD..37/RSGD..45]
Assigned motor rating @ 400 V	In Line Connection/In Delta Connection **RSHR4025CV..** 11 kW [10 HP] / 20 kW [20 HP] **RSHR4032CV..** 15 kW [20 HP] / 22kW [30 HP]	**RSGDxx12/RSGDxx16/RSGDxx25** 3 kW (3 HP) / 4 kW (5 HP) / 5.5 kW (7.5 HP) 5.5 kW (5.0 HP) / 7.5 kW (7.5 HP) / 11 kW (10 HP) **RSGDxx32/RSGDxx37/RSGDxx45** 9 kW (10 HP) / 9k W (10 HP) / 11 kW (15 HP) 15 kW (15 HP) / 18.5 kW (20 HP) / 22 kW (25 HP)
General specifications		
Internally bypassed	No	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz +/- 10 Hz
Ramp up/Ramp down	1-10s / 0-30s; 0-1s / 0-1s [RSHR...V38]	1 - 20s/0 - 20s
Initial torque	0-70%	0 - 85%
Operating temperature	-20°C to +60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)
Storage temperature	-50°C to +85°C (-58°F to +185°F)	-40°C to +80°C (-40°F to +176°F)
Wrong Phase sequence indication	Yes	Yes
Degree of Protection	IP 20	IP20
Approvals	CE - UL - cUL - CCC	CE - cULus - CCC (pending)

xx = 40 or 60

Soft starters

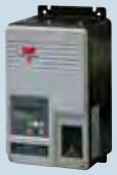
Motor control - Soft start and stop

Types	RSE-B	RSHR Midi	RSHR
Soft starting and stopping of 3-phase motors. Starting / stopping time and initial torque can be independently adjusted			
Dimensions (mm)	103 x 45 x 80	126 x 45 x 114	108.5 x 90 x 90
Features	Compact Design. Rotary knobs to adjust start/stop and initial torque parameters	Rotary knobs to adjust start/ stop/ torque parameters. Internally bypassed. Optional auxiliary relay for end of ramp (V21 option)	Wrong phase sequence detection Motor PTC protection. Device overtemperature protection
Control specifications			
Control input range	24 - 110 VAC/DC 110 - 480 VAC	24-110 VAC/DC & 110-480 VAC	24-550 VAC/DC (Option "C") 24-600 VAC/DC (Option "D")
Controlled phases	2	2	2
Output specifications			
Rated operational current			
AC 53b	3 A [RSE..03-B] 12 A [RSE..12-B]	6A [RSHR..06...] 12A [RSHR..12...] 18A [RSHR..18...]	25A [RSHR..25…] 38A [RSHR..38...] 45A [RSHR..45...]
Operational voltage	127/220 VAC [RSE22..-B] 230/400 VAC [RSE40..-B] 277/480 VAC [RSE48..-B] 346/600 VAC [RSE60..-B]	127/220VAC [RSHR22..] 230/400VAC [RSHR40..] 277/480VAC [RSHR48..] 346/600VAC [RSHR60..] 190-530VAC [RSHRM..]	127/220VAC [RSHR22..] 230/400VAC [RSHR40..] 277/480VAC [RSHR48..] 346/600VAC [RSHR60..]
Overload current profile @ 40°C	3 A: AC-53b : 3-5 : 30 12 A: AC-53b : 3-5 : 180	6A:AC-53b:4-5:4 [RSHR..06…] 12A:AC-53b:4-5:50 [RSHR..12...] 18A: AC-53b:4-5:50 [RSHR..18…] 6A:AC-53b:4-5:3 [RSHRM06BV...] 12A: AC-53b:4-5:14 [RSHRM12BV..] 18A: AC-53b:4-5:62 [RSHRM18BV...]	25A: AC-53b:4-5:65 [RSHR..25...] 38A: AC-53b:4-5:85 [RSHR..38...] 45A: AC-53b:4-5:115 [RSHR..45...]
Number of starts per hour @40°C	70 [RSE..03-B] 11 [RSE..12-B]	250 [RSHR..06…] 60 [RSHR..12…] 60 [RSHR..18…] 275 [RSHRM..06…] 150 [RSHRM..12…] 60 [RSHRM..18…]	50 [RSHR..25…] 40 [RSHR..38…] 30 [RSHR..45…]
Assigned motor rating @ 60°C. (In Line connection) 220 V 400 V 480 V 600 V	RSE..03-B/ RSE..12-B 0.55kW/3.0kW 1.1kW/5.5kW 1.5kW/5.75kW 2.2kW/5.5kW	RSHR..06... / RSHR..12... / RSHR..18... 1.1kW(1.5HP)/3kW(3HP)/4kW(5HP) 2.2kW(3HP)/5.5kW(7.5HP)/7.5kW(10HP) 2.2kW(5HP)/5.5kW(7.5HP)/7.5kW(10HP) 3kW(5HP)/7.5kW(10HP)/11kW(15HP)	RSHR..25... / RSHR..38... / RSHR..45... 5.5kW(10HP)/11kW(10HP)/11kW(15HP) 11kW(15HP)/18.5kW(20HP)/22kW(25HP) 15kW(20HP)/22kW(25HP)/30kW(30HP) 18.5kW(25HP)/22kW(30HP)/30kW(40HP
General specifications			
Internally bypassed	Yes	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60Hz ±10%	50/60Hz ±10%
Ramp up/Ramp down	0.5-7.5 s / 0.5 s -10 s	0.5-10s / 0.5-20s	1-10s / 1-20s
Initial torque	5-70%	0-85%	0-70%
Operating temperature	-20°C to +50°C (-4°F to +122°F)	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)
Storage temperature	-50°C to +85°C (-58°F to +185°F)	-50°C to +85°C (-58°F to +185°F)	-50°C to +85°C (-58°F to +185°F)
Wrong Phase sequence indication	No	No	Yes
Degree of Protection	IP 20	IP 20	IP 20
Approvals	CE - UL - CSA	CE - UL - cUL	CE - UL - CSA

CARLO GAVAZZI

Soft starters

Motor control - Soft start and stop (High Power)

Types	RSDR	RSQK	RSXK
Soft starting and soft stopping of 3-phase induction motors. High Inertia loads (Trip Class 30) starting			
Features	Rotary knobs to adjust start/stop/initial torque parameters. Internally bypassed. Ramp-up/Ramp-down time up to 30s	Energy optimising soft starter. Keypad control with LCD monitoring menu. In delta compatibility. Automatic application setup. Optional Modbus and Remote Keypad operation. Adjustable Overload protection. Static load control	Energy optimising soft starter. Keypad control with LCD monitoring menu. In delta compatibility. Automatic application setup. Optional Modbus and Remote Keypad operation. Adjustable Overload protection
Control specifications			
Control input range	24 VDC / 110 VAC (externally supplied)	115 VAC or 230 VAC	115 VAC or 230 VAC
Controlled phases	2	3	3
Output specifications			
Rated operational current	55/ 66/ 80/ 97/ 132/ 160/ 195/ 230/ 280/ 350/ 430/ 500	23/ 30/ 44/ 59/ 72/ 85/ 105/ 146/ 174/ 202/ 242/ 300/ 370/ 500/ 600/ 750/ 900/ 1100/ 1200/ 1400/ 1600/ 1800	22/ 29/ 35/ 41/ 55/ 66/ 80/ 97/ 132/ 160/ 195/ 230/ 280/ 382/ 430/ 540/ 610/ 690/ 850/ 950/ 1060/ 1150/ 1190/ 1346/ 1518/ 1673
Overload current profile @ 40°C	AC53b: 3-5:355	AC53a: 3-35:99-10 (RSQK...0023 to ...0202) AC53a: 3-35:60-3 (RSQK...0242 to ...0900) AC53a: 3-35:60-6 (RSQK...0400 to ...1200) AC53a: 3-30:60-3 (RSQK...1400 to ...1800)	AC53a: 3.5-12:75-5 (RSXK...0022 to ...0160) AC53a: 3.5-12:60-3 (RSXK...0195 to ...1673)
Number of starts per hour @40°C	10 for (light loads) 5 for (Heavy loads)	10 (RSQK..0023 to RSQK..0202) 3 (RSQK..0242 to RSQK..0900) 6 (RSQK..0400 to RSQK..1200) 3 (RSQK..1400 to RSQK..1800)	5 (RSXK..0022 to RSXK..0160) 3 (RSXK..0195 to RSXK..1673)
Assigned motor rating @ 40°C	**RSDR40055B** (30 kW/42 HP)	**RSQK..023 - RSQK..072** (11 kW/15 HP - 37 kW/54 HP)	**RSXK..022 - RSXK..066** (11 kW/15 HP - 37 kW/54 HP)
	RSDR40066B (37 kW/54 HP)		
	RSDR40080B (45 kW/60 HP)	**RSQK..085 - RSQK..0202** (45 kW/60 HP - 110 kW/175 HP)	**RSXK..085 - RSXK..0195** (45 kW/60 HP - 110 kW/175 HP)
	RSDR40097B (55 kW/75 HP)		
	RSDR40132B (75 kW/110 HP)	**RSQK..0242 - RSQK..0500** (132 kW/200 HP - 250 kW/300 HP)	**RSXK..0230 - RSXK..0430** (132 kW/200 HP - 250 kW/300 HP)
	RSDR40160B (90 kW/130 HP)		
	RSDR40195B (110 kW/160 HP)	**RSQK..0600 - RSQK..1100** (320 kW/375 HP - 630 kW/750 HP)	**RSXK..0540- RSXK..1150** (315 kW/375 HP - 630 kW/820 HP)
	RSDR40230B (132 kW/190 HP)		
	RSDR40280B (160 kW/230 HP)	**RSQK..1200 - RSQK..1800** (710 kW/900 HP - 1050 kW/1400 HP)	**RSXK..1190 - RSXK...1673** (710 kW/900 HP - 1050 kW/1400 HP)
	RSDR40350B (200 kW/290 HP)		
	RSDR40430B (250 kW/350HP)		
	RSDR40500B (280 kW/400 HP)	*For more details see datasheet	*For more details see datasheet
General specifications			
Operational voltage	230 - 460 VAC (-15%, +10%)	230 - 460 VAC (-15%, +10%) [RSQK40....] 400 - 575 VAC (-15%, +10%) [RSQK50....] 500 - 690 VAC (-15%, +10%) [RSQK60....]	230 - 460 VAC (-15%, +10%) [RSXK40....] 400 - 575 VAC (-15%, +10%) [RSXK50....] 500 - 690 VAC (-15%, +10%) [RSXK60....]
Internally bypassed	Yes	No	No
Operational frequency	50/60 Hz ±2 Hz	50/60 Hz ±2 Hz	50/60 Hz ±2 Hz
Ramp up/Ramp down	0.5 - 30s / 0-30s	1 - 255s / 0 - 255s	1 - 255s / 0 - 255s
Initial torque	30-100%	Automatic setup/ Current limit start	Automatic setup/ Current limit start
Operating temperature	0°C to +40°C (32°F to +104°F)	0°C to +40°C (32°F to +104°F)	0°C to +40°C (32°F to +104°F)
Storage temperature	-25°C to +60°C (-13°F to +140°F)	-25°C to +60°C (-13°F to +140°F)	-25°C to +60°C (-13°F to +140°F)
Wrong Ph. sequ. indication	No	Yes	Yes
Degree of Protection	IP20 (up to 55 kW)	IP20 (up to 500 kW)	IP20 (up to 220 kW)
Approvals	CE - cULus*	CE - UL - cUL**	CE

* RSDR40055B to RSDR40280B

* Applicable to RSQK40... and RSQK50... up to 500kW

Soft starters

	Motor control - Soft start and stop	Reversing
Types	**RSC..AA..+RSO...**	**RR2A**
Soft starting and stopping of 3-phase motors (RSC... + RSO..). Phase angle control of 3-phase heaters (RSC. AA..+RSO). Reversing (RR..)		
Dimensions (mm)	65 x 103 x 74	41 x 103 x 74
Features	User controlled analogue input	Reversing with interlock, optoisolation
Control specifications		
Control input range	0-20 mA (A-input) 4-20 mA (B-input)	10-40 VDC
Controlled phases	20 mA	20 mA
Control supply	10 - 32 VDC	
Max. supply current	180 mA	
Output specifications		
Rated operational current		
AC 51a	16Arms [RSO..10] 25Arms [RSO..25] 50Arms [RSO..50] 90Arms [RSO..90] 110Arms [RSO..110]	
AC 53a	5 Arms [RSO..25] 15 Arms [RSO..50] 30 Arms [RSO..90] 40 Arms [RSO..110]	5 Arms [RR2A40D150/RR2A48D220] 11 Arms [RR2A40D400/RR2A48D550]
Overload current profile		5A: AC-53a : 6-6 : 100-60 11A: AC-53a : 8-3 : 100-40 **
Operational voltage	150-250 Vrms [RSO22..] 220-420 Vrms [RSO40..] 400-510 Vrms [RSO48..] 400-625 Vrms [RSO60..]	400 Vrms [RR2A40D...] 480 Vrms [RR2A48D...]
General specifications		
Ramp up / Ramp down	User controlled	2-pole change-over, built-in transient overvolt. protect, interlocking reversing, LED status indication
Initial torque	User controlled	
Bypass contactor supply		
Connections	Screw type with clamp	Screw type with clamp
Operating temperature	-20°C to +70°C	-20°C to +80°C
Storage temperature	-40°C to +100°C	-40°C to +100°C
Approvals/Marks	CE - UL - CSA	CE - UL - cUL
Reference		
	Control module	5 A
	RSC-AAM60	**RR2A40D150** (1.5 kW)
	Output module: 400 VAC	**RR2A40D400** (4.0 kW)
	25 A: **RSO4025** (4 kW*)	11 A
	50 A: **RSO4050** (11 kW*)	**RR2A48D220** (2.2 kW)
	90 A: **RSO4090** (15 kW*)	**RR2A48D550** (5.5 kW)
	110 A: **RSO40110** (22 kW*)	

* Output module can be 200, 400, 480, 600 VAC
* Correct heatsink assembly required. For further details please consult datasheet.
** Applicable when device is mounted to heatsink type RHS301

CARLO GAVAZZI

Motor protection relays

	DMPU series			
Types	**Main module**	**Measurement module (5A)**	**Measurement module (65A)**	**I/O module**
				
Dimensions HxWxD (mm)	35.5 x 90 x 63.2	53.5 x 90 x 63.2	53.5 x 90 x 92 mm	17.5 x 90 x 63.2
Features	Motor start/stop, reverse, start/delta, ANSI motor protection functions, remote control and management, warning, dataloggers	3-phase voltage and split-core current measurement	3-phase voltage and pass through current measurement	Connected to DMPUC-PRB or DMPUC-MTB adds 2 inputs and 2 outputs to the system. Up to 10 modules can be used
Power supply	24 VDC ±20%	24 VDC from the main module	24 VDC from the main module	24 VDC from the main module
Inputs	3, configurable as contact or temperature	3-phase voltage: 100 to 690 V 3-phase current: 5A (for higher current use CTD currents transformers series)	3-phase voltage: 100 to 690 V 3-phase current: up to 65 A	2, configurable as contact or temperature
Outputs		2 x SPST relay	2 x SPST relay	2 x SPST relay
Communication	Profibus DPV1 (DMPUC-PRB), Modbus TCP/IP (DMPUC-MTB), Modbus RTU (all)	Via cable to the main module	Via cable to the main Module	Plugged in to the main module
General specifications				
Operating temperature	-25° to +55°C (-13°F to 131°F)	-25° to +55°C (-13°F to 131°F)	-25° to +55°C (-13°F to 131°F)	-25° to +55°C (-13°F to 131°F)
Degree of Protection	IP 20	IP 20	IP 20	IP 20
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Approvals	CE, cULus listed, C-TIC	CE, cULus listed, C-TIC	CE, cULus listed, C-TIC	CE, cULus listed, C-TIC
References				
	DMPUC-PRB DMPUC-MTB	**DMPUC-05**	**DMPUC-65**	**DMPUC-R2**

Motor protection relays

	DMPU series			
Types	**Operator interface**	**Earth leakage module**	**Core balance transformers**	**Programming software**
				
Dimensions HxWxD (mm)	96 x 48 x 88.5	17.5 x 90 x 63.2	Hole Ø 35, 70, 120 or 210	
Features	Provides 2x8 characters lines display and 4 fully programmable keys	Connected to DMPUC-PRB or DMPUC-MTB adds direct earth leakage measurement and protection according to EN 60947-2. Ranges: 30 mA to 30A	Core balance transformers for DMPUC-EL	Set parameters, program the control and monitoring functions of the system, monitor data, download dataloggers. Program operator interface pages and key functions
Technical specifications				
Power supply	24 VDC ±20%	24 VDC from the main module	None	
Inputs		Earth leakage, for transformers 250/1 to 1000/1 3, contact		Motor data, desired functions
Outputs		1 x SPST relay dedicated to earth leakage alarm		Configuration file, dataloggers in Excel format files
Communication	RS485 Modbus RTU ports	Plugged in to the main module		Using Modbus RTU or TCP/IP port of the main module
General specifications				
Operating temperature	-25° to +60°C (-13°F to 140°F)	-25° to +55°C (-13°F to 131°F)		
Degree of Protection	Front: IP65 Connections: IP20	IP 20		
Mounting	Front panel	DIN-rail	Back panel	Windows XP, Windows Vista, Windows 7
Approvals	cULus listed	CE, cULus, C-TIC (with CTG)	CE, cULus, C-TIC (with DMPUC-EL)	
References				
	DMPUC-HMI	**DMPUC-EL**	**CTG035 CTG070 CTG120 CTG210**	**DMPU-PS DMPU-PSHMI**

CARLO GAVAZZI

Variable speed drives

VariFlex² variable speed drives - RVEF series

Accessories

Types	Size A	Size B	Braking unit
Drives, Inverters			
Dimensions (mm)	132 x 77 x 130.5	132 x 118 x 148	132 x 77 x 130.5
Features	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional RS485 serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional remote keypad, built-in PID control	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional RS485 serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional remote keypad, built-in PID control	External braking unit for RVEF frequency drives, with 240 VAC and 480 VAC inverter voltage. Applicable motor rated capacity up to 2.2 kW

Technical specifications

AC supply voltage	1-ph, 100-120 VAC; 1-ph, 200-240 VAC; 3-ph, 200-240 VAC;	1-ph, 200-240 VAC; 3-ph, 200-240 VAC; 3-ph, 380-480 VAC;	
AC supply frequency	50/60 Hz	50/60 Hz	
Output voltage	3-ph, 0-240 V	3-ph, 0-240 V 3-ph, 0-480 V	
Output frequency	0-200 Hz	0-200 Hz	
100% RMS output current	1.7 A [RVEFA...020] 3.1 A [RVEFA...040] 4.2 A [RVEFA...075]	7.5 A [RVEFB120150 - RVEFB320150] 10.5 A [RVEFB120220 - RVEFB320220] 2.3 A [RVEFB340075] 3.8 A [RVEFB340150] 5.2 A [RVEFB340220]	
Input displacement factor (cos ϕ)	> 0.97	> 0.97	

General specifications

Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C
Degree of Protection	IP 20	IP 20	IP 20
Power connections	Screw terminals	Screw terminals	
Control connections	Screw terminals	Screw terminals	
Drive connections			Screw terminals
Mounting	DIN-rail or panel mounting	DIN-rail or panel mounting	DIN-rail or panel mounting
Integrated cooling fan	yes	yes	
Switching frequency	4 to 16 kHz	4 to 16 kHz	
Approvals	CE - cULus	CE - cULus	CE - cULus

Braking unit

Rate discharge current	240 V : 7.5 A	480 V : 3 A
Max. discharge current	240 V : 15 A	480 V : 7.5 A

References

100 - 120 VAC, 1-phase	**RVEFA110020** (0.20 kW-0.25 HP) **RVEFA110040** (0.40 kW-0.50 HP) **RVEFA110075** (0.75 kW-1.00 HP)		
200 - 240 VAC, 1-phase	**RVEFA120020(F)** (0.20 kW-0.25 HP) **RVEFA120040(F)** (0.40 kW-0.50 HP) **RVEFA120075(F)** (0.75 kW-1.00 HP)	**RVEFB120150(F)** (1.50 kW-2.00 HP) **RVEFB120220(F)** (2.20 kW-3.00 HP)	**RVFTBU230**
200 - 240 VAC, 3-phase	**RVEFA320020** (0.20 kW-0.25 HP) **RVEFA320040** (0.40 kW-0.50 HP) **RVEFA320075** (0.75 kW-1.00 HP)	**RVEFB320150** (1.50 kW-2.00 HP) **RVEFB320220** (2.20 kW-3.00 HP)	
380 - 480 VAC, 3-phase		**RVEFB340075(F)** (0.75 kW-1.00 HP) **RVEFB340150(F)** (1.50 kW-2.00 HP) **RVEFB340220(F)** (2.20 kW-3.00 HP)	**RVFTBU480**

(F): equipped with built-in filter

Variable speed drives

VariFlex² variable speed drives - RVDF series

Types	Size A IP20	Size B IP20	Size A IP65	Size B IP65
Drives, Inverters				
Dimensions (mm)	132 x 72 x 118	140 x 118 x 171	205 x 134 x 174	295 x 232 x 181
Features	Maximum overload of 150% for 60 s, conforms to EN61800-3 for the 2nd environment. Parameters settings by keypad	Maximum overload of 150% for 60 s, conforms to EN61800-3 for the 2nd environment. Parameters settings by keypad	Maximum overload of 150% for 60 s, conforms to EN61800-3 for the 2nd environment. Parameters settings by keypad. IP65 models with power switch, reverse / forward switch and potentiometer	Maximum overload of 150% for 60 s, conforms to EN61800-3 for the 2nd environment. Parameters settings by keypad. IP65 models with power switch, reverse / forward switch and potentiometer
Technical specifications				
AC supply voltage	1-ph, 100-120 VAC 1-ph, 200-240 VAC	1-ph, 200-240 VAC 3-ph, 380-480 VAC	1-ph, 200-240 VAC	1-ph, 200-240 VAC 3-ph, 380-480 VAC
AC supply frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Output voltage	3-ph, 0-240 VAC	3-ph, 0-240 VAC 3-ph, 0-480 VAC	3-ph, 0-240 VAC	3-ph, 0-240 VAC 3-ph, 0-480 VAC
Output frequency	0-200 Hz	0-200 Hz	0-200 Hz	0-200 Hz
100% RMS output current	1.4 A [RVDFA…020] 2.3 A [RVDFA…040] 4.2 A [RVDFA…075]	7.5 A [RVDFB1…150] 10.5 A [RVDFB1…220] 2.3 A [RVDFB3…075] 3.8 A [RVDFB3…150] 5.2 A [RVDFB3…220]	1.4 A [RVDFA…020] 2.3 A [RVDFA…040] 4.2 A [RVDFA…075]	7.5 A [RVDFB1…150] 10.5 A [RVDFB1…220] 2.3 A [RVDFB3…075] 3.8 A [RVDFB3…150] 5.2 A [RVDFB3…220]
Input displacement factor (cos ϕ)	> 0.97	> 0.97	> 0.97	> 0.97
General specifications				
Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Degree of Protection	IP 20	IP 20	IP 65	IP 65
Power connections	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Control connections	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Mounting	DIN-rail or panel mounting	DIN-rail or panel mounting	Panel mounting	Panel mounting
Integrated cooling fan	yes	yes	yes	yes
Switching frequency	4 to 16 kHz	4 to 16 kHz	4 to 16 kHz	4 to 16 kHz
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
100-120 VAC, 1-phase	**RVDFA110020** **RVDFA110040** **RVDFA110075**			
200-240 VAC, 1-phase	**RVDFA120020F** **RVDFA120040F** **RVDFA120075F**	**RVDFB120150F** **RVDFB120220F**	**RVDFA120020FES** **RVDFA120040FES** **RVDFA120075FES**	**RVDFB120150FES** **RVDFB120220FES**
380-480 VAC, 3-phase		**RVDFB340075F** **RVDFB340150F** **RVDFB340220F**		**RVDFB340075FES** **RVDFB340150FES** **RVDFB340220FES**

CARLO GAVAZZI

Variable speed drives

VariFlex² variable speed drives - RVCF series

Types	Size A	Size B	Size C
Drives, Inverters			
Dimensions (mm)	163 x 90 x 147	187.1 x 128 x 148	260 x 186 x 195
Features	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional keypad extension cable. Built-in PLC function and PID control	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional keypad extension cable. Built-in PLC function and PID control	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional keypad extension cable. Built-in PLC function and PID control

Technical specifications

AC supply voltage	1-ph, 200-240 VAC 3-ph, 200-240 VAC 3-ph, 380-480 VAC	1-ph, 200-240 VAC 3-ph, 200-240 VAC 3-ph, 380-480 VAC	3-ph, 200-240 VAC 3-ph, 380-480 VAC
AC supply frequency	50/60 Hz	50/60 Hz	50/60 Hz
Output voltage	3-ph, 0-240 V 3-ph, 0-480 V	3-ph, 0-240 V 3-ph, 0-480 V	3-ph, 0-240 V 3-ph, 0-480 V
Output frequency	0-650 Hz	0-650 Hz	0-650 Hz
100% RMS output current	3.1A [RVCFA1200040-RVCFA3200040] 4.5A [RVCFA1200075-RVCFA3200075] 7.5A [RVCFA3200150] 2.3A [RVCFA3400075] 3.8A [RVCFA3400150]	7.5A [RVCFB1200150] 10.5A [RVCFB1200220-RVCFB3200220] 17.5A [RVCFB3200370] 5.2A [RVCFB3400220] 8.8A [RVCFB3400370]	26A [RVCFC3200550] 35A [RVCFC3200750] 13A [RVCFC3400550] 17.5A [RVCFC3400750] 25A [RVCFC3401100]
Input displacement factor (cos ϕ)	> 0.97	> 0.97	> 0.97

General specifications

Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
Degree of Protection	IP 20	IP 20	IP 20
Power connections	Screw terminals	Screw terminals	Screw terminals
Control connections	Screw terminals	Screw terminals	Screw terminals
Mounting	DIN-rail or panel mounting	DIN-rail or panel mounting	Panel mounting
Integrated cooling fan	yes	yes	yes
Switching frequency	2 to 16 kHz	2 to 16 kHz	2 to 16 kHz
Approvals	CE - cULus	CE - cULus	CE - cULus

References

220-240 VAC, 1-phase	**RVCFA1200040(F)** (0.40 kW - 0.50 HP) **RVCFA1200075(F)** (0.75 kW - 1.00 HP)	**RVCFB1200150(F)** (1.50 kW - 2.00 HP) **RVCFB1200220(F)** (2.20 kW - 3.00 HP)	
220-240 VAC, 3-phase	**RVCFA3200040** (0.40 kW - 0.50 HP) **RVCFA3200075** (0.75 kW - 1.00 HP) **RVCFA3200150** (1.50 kW - 2.00 HP)	**RVCFB3200220** (2.20 kW - 3.00 HP) **RVCFB3200370** (3.70 kW - 5.00 HP)	**RVCFC3200550** (5.50 kW - 7.50 HP) **RVCFC3200750** (7.50 kW - 10.0 HP)
380-480 VAC, 3-phase	**RVCFA3400075(F)** (0.75 kW - 1.00 HP) **RVCFA3400150(F)** (1.50 kW - 2.00 HP)	**RVCFB3400220(F)** (2.20 kW - 3.00 HP) **RVCFB3400370(F)** (3.70 kW - 5.00 HP)	**RVCFC3400550(F)** (5.50 kW - 7.50 HP) **RVCFC3400750(F)** (7.50 kW - 10.0 HP) **RVCFC3401100(F)** (11.0 kW - 15.0 HP)

(F): equipped with built-in filter

Variable speed drives

VariFlex² variable speed drives - RVCF series

Types	Size D	Size E	Size F
Drives, Inverters			
Dimensions (mm)	360 x 265 x 247.5	553 x 269 x 303.6	653 x 308 x 308.6
Features	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional keypad extension cable. Built-in PLC function and PID control	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional keypad extension cable. Built-in PLC function and PID control	Maximum overload of 150% of rated current for 60s, conforms to EN 61800-3 for the 2nd environment, parameters accessible via keypad, knob and PC, optional serial communications, optional copy card for drive-to-drive parameter transfer and storage and optional keypad extension cable. Built-in PLC function and PID control

Technical specifications

AC supply voltage	3-ph, 200-240 VAC 3-ph, 380-480 VAC	3-ph, 200-240 VAC 3-ph, 380-480 VAC	3-ph, 380-480 VAC
AC supply frequency	50/60 Hz	50/60 Hz	50/60 Hz
Output voltage	3-ph, 0-240 V 3-ph, 0-480 V	3-ph, 0-240 V 3-ph, 0-480 V	3-ph, 0-480 V
Output frequency	0-650 Hz	0-650 Hz	0-650 Hz
100% RMS output current	48 A [RVCFD3201100] 64 A [RVCFD3201500] 80 A [RVCFD3201850] 32 A [RVCFD3401500] 40 A [RVCFD3401850] 48 A [RVCFD3402200]	96 A [RVCFE3202200] 130 A [RVCFE3203000] 64 A [RVCFE3403000] 80 A [RVCFE3403700]	96 A [RVCFF3404500] 128 A [RVCFF3405500]
Input displacement factor (cos ϕ)	> 0.97	> 0.97	> 0.97

General specifications

Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
Degree of Protection	IP 20	IP 00	IP 00
Power connections	Screw terminals	Screw terminals	Screw terminals
Control connections	Screw terminals	Screw terminals	Screw terminals
Mounting	Panel mounting	Panel mounting	Panel mounting
Integrated cooling fan	yes	yes	yes
Switching frequency	2 to 16 kHz	2 to 16 kHz	2 to 16 kHz
Approvals	CE - cULus	CE - cULus	CE - cULus

References

220-240 VAC, 3-phase	**RVCFD3201100** (11.0 kW - 15.0 HP) **RVCFD3201500** (15.0 kW - 20.0 HP) **RVCFD3201850** (18.5 kW - 25.0 HP)	**RVCFE3202200** (15.0 kW - 20.0 HP) **RVCFE3203000** (30.0 kW - 40.0 HP)	
380-480 VAC, 3-phase	**RVCFD3401500** (15.0 kW - 20.0 HP) **RVCFD3401850** (18.5 kW - 25.0 HP) **RVCFD3402200** (22.0 kW - 30.0 HP)	**RVCFE3403000** (30.0 kW - 40.0 HP) **RVCFE3403700** (37.0 kW - 50.0 HP)	**RVCFF3404500** (45.0 kW - 60.0 HP) **RVCFF3405500** (55.0 kW - 75.0 HP)

CARLO GAVAZZI

Limit switches - Miniature type

Head Types	**PO** Plain plunger	**PY** Nylon roller plunger	**P8** Cross nylon roller plunger	**RT** Ø14 Nylon roller lever
				
Dimensions HxWxD (mm)	35 x 60 x 16 1m PVC cable	35 x 70 x 16 1m PVC cable	35 x 70 x 16 1m PVC cable	35 x 92 x 29.5 1m PVC cable
PS31M (metal*) References contact block				
Snap 1NO+1NC	**PS31M-CS11P0-M00**	**PS31M-CS11PY-M00**	**PS31M-CS11P8-M00**	**PS31M-CS11RT-M00**
Slow 1NO+1NC	**PS31M-CT11P0-M00**	**PS31M-CT11PY-M00**	**PS31M-CT11P8-M00**	**PS31M-CT11RT-M00**
				
Dimensions WxHxD (mm)	31.5 x 60 x 16 1m PVC cable	31.5 x 70 x 16 1m PVC cable	31.5 x 70 x 16 1m PVC cable	31.5 x 92 x 29.5 1m PVC cable
PS21M (metal*) References contact block				
Snap 1NO+1NC	**PS21M-CS11P0-M00**	**PS21M-CS11PY-M00**	**PS21M-CS11P8-M00**	**PS21M-CS11RT-M00**
Slow 1NO+1NC	**PS21M-CT11P0-M00**	**PS21M-CT11PY-M00**	**PS21M-CT11P8-M00**	**PS21M-CT11RT-M00**

Head Types	Plain plunger with fixing nuts	Roller plunger with fixing nuts	Cross roller plunger with fixing nuts	**R1** Adjustable lever with Ø18 nylon roller
				
Dimensions (mm) WxHxD	35 x 74 x 16 1m PVC cable	35 x 84.8 x 16 1m PVC cable	35 x 84.8 x 16 1m PVC cable	35 x 86...158 x 38.9 1m PVC cable
PS31M (metal*) References contact block				
Snap 1NO+1NC	**PS31M-CS11P0-M0L**	**PS31M-CS11PY-M0L**	**PS31M-CS11P8-M0L**	**PS31M-CS11RT-M0L**
Slow 1NO+1NC	**PS31M-CT11P0-M0L**	**PS31M-CT11PY-M0L**	**PS31M-CT11P8-M0L**	**PS31M-CT11RT-M0L**
				
Dimensions WxHxD (mm)	31.5 x 74 x 16 1m PVC cable	31.5 x 84.8 x 16 1m PVC cable	31.5 x 84.8 x 16 1m PVC cable	31.5 x 86...158 x 38.9 1m PVC cable
PS21M (metal*) References contact block				
Snap 1NO+1NC	**PS21M-CS11P0-M0L**	**PS21M-CS11PY-M0L**	**PS21M-CS11P8-M0L**	**PS21M-CS11RT-M0L**
Slow 1NO+1NC	**PS21M-CT11P0-M0L**	**PS21M-CT11PY-M0L**	**PS21M-CT11P8-M0L**	**PS21M-CT11RT-M0L**

General specifications (for all types)

Mechanical life	>10 000 000 cycles	Rated thermal current (Ith)	10 A (IEC947-5-1)
Operating frequency	3600 cycles/h	Rated insulation voltage (Ui)	400 VAC (IEC947-5-1)
Operating Speed	1...1500 mm/s	Insulation resistance (500 VDC)	2 MΩ
Rated operating current (Ie)	1.5 A/230 V (Cat. AC15)	Degree of protection	IP 67
	1.1 A/24 V (Cat. DC13)	Approvals	CE - UL (upon request)

* Also available in thermoplastic (T type)

Limit switches - Limit type

Types	PO Plain plunger	PR Roller plunger	RH Plastic roller plunger	RT Nylon roller lever
				
Family: L				
	PS21 Thermoplastic*	**PS21** Thermoplastic*	**PS21** Thermoplastic*	**PS21** Thermoplastic*
Dimensions WxHxD (mm)	30.3 x 73 x 30	30.3 x 84 x 30	30.3 x 92 x 30	30.3 x 106 x 45
References contact block				
Snap 1NO+1NC	**PS21L-PS11P0-T00**	**PS21L-PS11PR-T00**	**PS21L-PS11RH-T00**	**PS21L-PS11RT-T00**
Slow 1NO+1NC	**PS21L-PT11P0-T00**	**PS21L-PT11PR-T00**	**PS21L-PT11RH-T00**	**PS21L-PT11RT-T00**
Slow Ov.**1NO+1NC	**PS21L-PO11P0-T00**	**PS21L-PO11PR-T00**	**PS21L-PO11RH-T00**	**PS21L-PO11RT-T00**
Slow 2NO	**PS21L-PT20P0-T00**	**PS21L-PT20PR-T00**	**PS21L-PT20RH-T00**	**PS21L-PT20RT-T00**
Slow 2NC	**PS21L-PT02P0-T00**	**PS21L-PT02PR-T00**	**PS21L-PT02RH-T00**	**PS21L-PT02RT-T00**
Snap 2NC	**PS21L-PS02P0-T00**	**PS21L-PS02PR-T00**	**PS21L-PS02RH-T00**	**PS21L-PS02RT-T00**

				
Family: L				
	PS42 Thermoplastic*	**PS42** Thermoplastic*	**PS42** Thermoplastic*	**PS42** Thermoplastic*
Dimensions HxWxD (mm)	57 x 66 x 33	57 x 77 x 33	57 x 85 x 33	57 x 99 x 45
References contact block				
Snap 1NO+1NC	**PS42L-PS11P0-T00**	**PS42L-PS11PR-T00**	**PS42L-PS11RH-T00**	**PS42L-PS11RT-T00**
Slow 1NO+1NC	**PS42L-PT11P0-T00**	**PS42L-PT11PR-T00**	**PS42L-PT11RH-T00**	**PS42L-PT11RT-T00**
Slow Ov.**1NO+1NC	**PS42L-PO11P0-T00**	**PS42L-PO11PR-T00**	**PS42L-PO11RH-T00**	**PS42L-PO11RT-T00**
Slow 2NO	**PS42L-PT20P0-T00**	**PS42L-PT20PR-T00**	**PS42L-PT20RH-T00**	**PS42L-PT20RT-T00**
Slow 2NC	**PS42L-PT02P0-T00**	**PS42L-PT02PR-T00**	**PS42L-PT02RH-T00**	**PS42L-PT02RT-T00**
Snap 2NC	**PS42L-PS02P0-T00**	**PS42L-PS02PR-T00**	**PS42L-PS02RH-T00**	**PS42L-PS02RT-T00**

* also available in metal (M type)

** Ov. : overlapping travel paths

CARLO GAVAZZI

Limit switches - Limit type

Head types	**W1** Adjustable lever with Ø50 rubber roller	**R1** Adjustable lever with Ø18 nylon roller	**BE** Ø18 nylon roller lever	**LW** Stainless steel spring cat whisker
				
Family: L				
	PS21	**PS21**	**PS21**	**PS21**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)	30.3 x (126.5-186.5) x 52	30.3 x (98.5-170.5) x 45.5	30.3 x 114 x 33	30.3 x 188 x 30
References contact block				
Snap 1NO+1NC ⊕	**PS21L-PS11W1-T00**	**PS21L-PS11R1-T00**	**PS21L-PS11BE-T00**	**PS21L-PS11LW-T00**
Slow 1NO+1NC ⊕	**PS21L-PT11W1-T00**	**PS21L-PT11R1-T00**	**PS21L-PT11BE-T00**	**PS21L-PT11LW-T00**
Slow Ov.**1NO+1NC ⊕	**PS21L-PO11W1-T00**	**PS21L-PO11R1-T00**	**PS21L-PO11BE-T00**	**PS21L-PO11LW-T00**
Slow 2NO	**PS21L-PT20W1-T00**	**PS21L-PT20R1-T00**	**PS21L-PT20BE-T00**	**PS21L-PT20LW-T00**
Slow 2NC ⊕	**PS21L-PT02W1-T00**	**PS21L-PT02R1-T00**	**PS21L-PT02BE-T00**	**PS21L-PT02LW-T00**
Snap 2NC ⊕	**PS21L-PS02W1-T00**	**PS21L-PS02R1-T00**	**PS21L-PS02BE-T00**	**PS21L-PS02LW-T00**

				
Family: L				
	PS42	**PS42**	**PS42**	**PS42**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)	57 x (118.5-177) x 33	57 x (91.5-163.5) x 33	57 x 107 x 33	57 x 181 x 45
References contact block				
Snap 1NO+1NC ⊕	**PS42L-PS11W1-T00**	**PS42L-PS11R1-T00**	**PS42L-PS11BE-T00**	**PS42L-PS11LW-T00**
Slow 1NO+1NC ⊕	**PS42L-PT11W1-T00**	**PS42L-PT11R1-T00**	**PS42L-PT11BE-T00**	**PS42L-PT11LW-T00**
Slow Ov.**1NO+1NC ⊕	**PS42L-PO11W1-T00**	**PS42L-PO11R1-T00**	**PS42L-PO11BE-T00**	**PS42L-PO11LW-T00**
Slow 2NO	**PS42L-PT20W1-T00**	**PS42L-PT20R1-T00**	**PS42L-PT20BE-T00**	**PS42L-PT20LW-T00**
Slow 2NC ⊕	**PS42L-PT02W1-T00**	**PS42L-PT02R1-T00**	**PS42L-PT02BE-T00**	**PS42L-PT02LW-T00**
Snap 2NC ⊕	**PS42L-PS02W1-T00**	**PS42L-PS02R1-T00**	**PS42L-PS02BE-T00**	**PS42L-PS02LW-T00**

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(U_i)	Ie/AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	Ie/AC-13 24 VDC	2.8 V
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U_i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (plastic body)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Conventional enclosed thermal voltage (U_{imp})	6 kV	Approvals	CE - UL - CSA

* also available in metal (M type) ** Ov. : overlapping travel paths

Limit switches - Limit type

Head types	P0 Plain plunger	PR Roller plunger	RH Plastic roller lever	RT Nylon roller lever
				
Family: L				
	PS43	**PS43**	**PS43**	**PS43**
	Metal	Metal	Metal	Metal
Dimensions HxWxD (mm)	66 x 102.5 x 43	66 x 115.5 x 43	67 x 129.5 x 43	66 x 128.5 x 61.5
References contact block				
Snap 1NO+1NC	**PS43L-PS11P0-M00**	**PS43L-PS11PR-M00**	**PS43L-PS11RH-M00**	**PS43L-PS11RT-M00**
Slow 1NO+1NC	**PS43L-PT11P0-M00**	**PS43L-PT11PR-M00**	**PS43L-PT11RH-M00**	**PS43L-PT11RT-M00**
Slow Ov.**1NO+1NC	**PS43L-PO11P0-M00**	**PS43L-PO11PR-M00**	**PS43L-PO11RH-M00**	**PS43L-PO11RT-M00**
Slow 2NO	**PS43L-PT20P0-M00**	**PS43L-PT20PR-M00**	**PS43L-PT20RH-M00**	**PS43L-PT20RT-M00**
Slow 2NC	**PS43L-PT02P0-M00**	**PS43L-PT02PR-M00**	**PS43L-PT02RH-M00**	**PS43L-PT02RT-M00**
Snap 2NC	**PS43L-PS02P0-M00**	**PS43L-PS02PR-M00**	**PS43L-PS02RH-M00**	**PS43L-PS02RT-M00**
Slow 1NO+2NC	**PS43L-PT12P0-M00**	**PS43L-PT12PR-M00**	**PS43L-PT12RH-M00**	**PS43L-PT12RT-M00**
Slow 2NO+1NC	**PS43L-PT21P0-M00**	**PS43L-PT21PR-M00**	**PS43L-PT21RH-M00**	**PS43L-PT21RT-M00**
Slow 3NC	**PS43L-PT03P0-M00**	**PS43L-PT03PR-M00**	**PS43L-PT03RH-M00**	**PS43L-PT03RT-M00**
Slow 3NO	**PS43L-PT30P0-M00**	**PS43L-PT30PR-M00**	**PS43L-PT30RH-M00**	**PS43L-PT30RT-M00**
				
Family: L				
	PS31	**PS31**	**PS31**	**PS31**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)	41 x 104 x 40.5	41 x 117 x 40.5	41 x 121 x 40.5	41 x 130 x 59
References contact block				
Snap 1NO+1NC	**PS31L-PS11P0-T00**	**PS31L-PS11PR-T00**	**PS31L-PS11RH-T00**	**PS31L-PS11RT-T00**
Slow 1NO+1NC	**PS31L-PT11P0-T00**	**PS31L-PT11PR-T00**	**PS31L-PT11RH-T00**	**PS31L-PT11RT-T00**
Slow Ov.**1NO+1NC	**PS31L-PO11P0-T00**	**PS31L-PO11PR-T00**	**PS31L-PO11RH-T00**	**PS31L-PO11RT-T00**
Slow 2NO	**PS31L-PT20P0-T00**	**PS31L-PT20PR-T00**	**PS31L-PT20RH-T00**	**PS31L-PT20RT-T00**
Slow 2NC	**PS31L-PT02P0-T00**	**PS31L-PT02PR-T00**	**PS31L-PT02RH-T00**	**PS31L-PT02RT-T00**
Snap 2NC	**PS31L-PS02P0-T00**	**PS31L-PS02PR-T00**	**PS31L-PS02RH-T00**	**PS31L-PS02RT-T00**
Slow 1NO+2NC	**PS31L-PT12P0-T00**	**PS31L-PT12PR-T00**	**PS31L-PT12RH-T00**	**PS31L-PT12RT-T00**
Slow 2NO+1NC	**PS31L-PT21P0-T00**	**PS31L-PT21PR-T00**	**PS31L-PT21RH-T00**	**PS31L-PT21RT-T00**
Slow 3NC	**PS31L-PT03P0-T00**	**PS31L-PT03PR-T00**	**PS31L-PT03RH-T00**	**PS31L-PT03RT-T00**
Slow 3NO	**PS31L-PT30P0-T00**	**PS31L-PT30PR-T00**	**PS31L-PT30RH-T00**	**PS31L-PT30RT-T00**

* also available in metal (M type)

** Ov. : overlapping travel paths

CARLO GAVAZZI

Limit switches - Limit type

Head types	**W1** Adjustable lever with Ø50 rubber roller	**R1** Adjustable lever with Ø18 nylon roller	**BE** Ø18 nylon roller lever	**LW** Stainless steel spring cat whisker
				
Family: L				
	PS43 Metal	**PS43** Metal	**PS43** Metal	**PS43** Metal
Dimensions HxWxD (mm)	62 x (147.5-203.5) x 62.5	62 x (133.5-189.5) x 60	62 x 142.5 x 66	62 x 195,5 x 43
References contact block				
Snap 1NO+1NC	**PS43L-PS11W1-M00**	**PS43L-PS11R1-M00**	**PS43L-PS11W0-M00**	**PS43L-PS11LW-M00**
Slow 1NO+1NC	**PS43L-PT11W1-M00**	**PS43L-PT11R1-M00**	**PS43L-PT11W0-M00**	**PS43L-PT11LW-M00**
Slow Ov.**1NO+1NC	**PS43L-PO11W1-M00**	**PS43L-PO11R1-M00**	**PS43L-PO11W0-M00**	**PS43L-PO11LW-M00**
Slow 2NO	**PS43L-PT20W1-M00**	**PS43L-PT20R1-M00**	**PS43L-PT20W0-M00**	**PS43L-PT20LW-M00**
Slow 2NC	**PS43L-PT02W1-M00**	**PS43L-PT02R1-M00**	**PS43L-PT02W0-M00**	**PS43L-PT02LW-M00**
Snap 2NC	**PS43L-PS02W1-M00**	**PS43L-PS02R1-M00**	**PS43L-PS02W0-M00**	**PS43L-PS02LW-M00**
Slow 1NO+2NC	**PS43L-PT12W1-M00**	**PS43L-PT12R1-M00**	**PS43L-PT12W0-M00**	**PS43L-PT12LW-M00**
Slow 2NO+1NC	**PS43L-PT21W1-M00**	**PS43L-PT21R1-M00**	**PS43L-PT21W0-M00**	**PS43L-PT21LW-M00**
Slow 3NC	**PS43L-PT03W1-M00**	**PS43L-PT03R1-M00**	**PS43L-PT03W0-M00**	**PS43L-PT03LW-M00**
Slow 3NO	**PS43L-PT30W1-M00**	**PS43L-PT30R1-M00**	**PS43L-PT30W0-M00**	**PS43L-PT30LW-M00**

				
Family: L				
	PS31 Thermoplastic*	**PS31** Thermoplastic*	**PS31** Thermoplastic*	**PS31** Thermoplastic*
Dimensions HxWxD (mm)	50 x (149-205) x 65	41 x (135-191) x 60	50 x 144 x 64.5	41 x 195 x 40.5
References contact block				
Snap 1NO+1NC	**PS31L-PS11W1-T00**	**PS31L-PS11R1-T00**	**PS31L-PS11W0-T00**	**PS42L-PS11LW-T00**
Slow 1NO+1NC	**PS31L-PT11W1-T00**	**PS31L-PT11R1-T00**	**PS31L-PT11W0-T00**	**PS42L-PT11LW-T00**
Slow Ov.**1NO+1NC	**PS31L-PO11W1-T00**	**PS31L-PO11R1-T00**	**PS31L-PO11W0-T00**	**PS31L-PO11LW-T00**
Slow 2NO	**PS31L-PT20W1-T00**	**PS31L-PT20R1-T00**	**PS31L-PT20W0-T00**	**PS31L-PT20LW-T00**
Slow 2NC	**PS31L-PT02W1-T00**	**PS31L-PT02R1-T00**	**PS31L-PT02W0-T00**	**PS31L-PT02LW-T00**
Snap 2NC	**PS31L-PS02W1-T00**	**PS31L-PS02R1-T00**	**PS31L-PS02W0-T00**	**PS31L-PS02LW-T00**
Slow 1NO+2NC	**PS31L-PT12W1-T00**	**PS31L-PT12R1-T00**	**PS31L-PT12W0-T00**	**PS31L-PT12LW-T00**
Slow 2NO+1NC	**PS31L-PT21W1-T00**	**PS31L-PT21R1-T00**	**PS31L-PT21W0-T00**	**PS31L-PT21LW-T00**
Slow 3NC	**PS31L-PT03W1-T00**	**PS31L-PT03R1-T00**	**PS31L-PT03W0-T00**	**PS31L-PT03LW-T00**
Slow 3NO	**PS31L-PT30W1-T00**	**PS31L-PT30R1-T00**	**PS31L-PT30W0-T00**	**PS31L-PT30LW-T00**

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(U_i)	Ie/AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	Ie/AC-13 24 VDC	2.8 V
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U_i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Conventional enclosed thermal voltage (U_{imp})	6 kV	Approvals	CE - UL - CSA

* also available in metal (M type) ** Ov. : overlapping travel paths

Limit switches - Safety type

Head types — Key Actuator 90° adj. head (key must be ordered separately)




Family: S

		PS21	PS42	PS31	PS43
		Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)		30.3 x 90 x 30	57 x 83 x 33	41.3 x 109.5 x 41	43 x 104.5 x 66
References contact block					
Snap 1NO+1NC	⇒	PS21S-PS1105-T00	PS42S-PS1105-T00	PS31S-PS1105-T00	PS43S-PS1105-Y00
Snap 2NC	⇒	PS21S-PS0205-T00	PS42S-PS0205-T00	PS31S-PS0205-T00	PS43S-PS0205-Y00
Slow 1NO+1NC	⇒	PS21S-PT1105-T00	PS42S-PT1105-T00	PS31S-PT1105-T00	PS43S-PT1105-Y00
Slow Ov.**1NO+1NC	⇒	PS21S-PO1105-T00	PS42S-PO1105-T00	PS31S-PO1105-T00	PS43S-PO1105-Y00
Slow 2NC	⇒	PS21S-PT0205-T00	PS42S-PT0205-T00	PS31S-PT0205-T00	PS43S-PT0205-Y00
Slow 2NO+1NC	⇒			PS31S-PT2105-T00	PS43S-PT2105-Y00
Slow 1NO+2NC	⇒			PS31S-PT1205-T00	PS43S-PT1205-Y00
Slow 3NC	⇒			PS31S-PT0305-T00	PS43S-PT0305-Y00

Head types — Key actuator fully turnable head (key must be ordered separately) / Hinge Switch Operated lever*




Family: S / H

		PS21	PS42	PS21	PS42
		Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)		30.3 x 98.6 x 30	57 x 91.5 x 33	30.3 x 157 x 42	57 x 150 x 42
References contact block					
Snap 1NO+1NC	⇒	PS21S-PS1109-T00	PS42S-PS1109-T00	PS21H-PS11HC-T00	PS42H-PS11HC-T00
Snap 2NC	⇒	PS21S-PS0209-T00	PS42S-PS0209-T00	PS21H-PS02HC-T00	PS42H-PS02HC-T00
Slow 1NO+1NC	⇒	PS21S-PT1109-T00	PS42S-PT1109-T00	PS21H-PT11HC-T00	PS42H-PT11HC-T00
Slow Ov.**1NO+1NC	⇒	PS21S-PO1109-T00	PS42S-PO1109-T00	PS21H-PO11HC-T00	PS42H-PO11HC-T00
Slow 2NC	⇒	PS21S-PT0209-T00	PS42S-PT0209-T00	PS21H-PT02HC-T00	PS42H-PT02HC-T00

Head types — Hinge shaft Zinc plated steel / Hinge Shaft Stainless steel




Family: H

		PS21	PS42	PS21	PS42
		Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)		30.3 x 79.5 x 51.2	57 x 72.5 x 52.5	30.3 x 79.5 x 51.2	30.3 x 72.5 x 52.5
References Contact Block					
Snap 1NO+1NC	⇒	PS21H-PS11HZ-T00	PS42H-PS11HZ-T00	PS21H-PS11HS-T00	PS42H-PS11HS-T00
Snap 2NC	⇒	PS21H-PS02HZ-T00	PS42H-PS02HZ-T00	PS21H-PS02HS-T00	PS42H-PS02HS-T00
Slow 1NO+1NC	⇒	PS21H-PT11HZ-T00	PS42H-PT11HZ-T00	PS21H-PT11HS-T00	PS42H-PT11HS-T00
Slow Ov.**1NO+1NC	⇒	PS21H-PO11HZ-T00	PS42H-PO11HZ-T00	PS21H-PO11HS-T00	PS42H-PO11HS-T00
Slow 2NC	⇒	PS21H-PT02HZ-T00	PS42H-PT02HZ-T00	PS21H-PT02HS-T00	PS42H-PT02HS-T00

* also available in metal (M type) ** Ov. : overlapping travel paths

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Limit switches - Safety type

Head types

Pull wire activated head
16m cable max

Family: R

	PS31	PS43
	Metal	Metal
Dimensions HxWxD (mm)	40 x 162.75 x 43	63 x 158.25 x 43.3

References contact block

Snap 1NO+1NC	**PS31R-PS11N7-Y00**	**PS43R-PS11N7-Y00**
Snap 2NC	**PS31R-PS02N7-Y00**	**PS43R-PS02N7-Y00**
Slow 1NO+1NC	**PS31R-PT11N7-Y00**	**PS43R-PT11N7-Y00**
Slow Ov.**1NO+1NC	**PS31R-PO11N7-Y00**	**PS43R-PO11N7-Y00**
Slow 2NC	**PS31R-PT02N7-Y00**	**PS43R-PT02N7-Y00**
Slow 2NO+1NC	**PS31R-PT21N7-Y00**	**PS43R-PT21N7-Y00**
Slow 1NO+2NC	**PS31R-PT12N7-Y00**	**PS43R-PT12N7-Y00**
Slow 3NC	**PS31R-PT03N7-Y00**	**PS43R-PT03N7-Y00**

Head types

Pull wire activated head
with pull button reset - 16m cable max

Family: H

	PS31	PS43
	Metal	Metal
Dimensions HxWxD (mm)	40 x 162.75 x 43	63 x 158.25 x 44

References contact block

Snap 1NO+1NC	**PS31R-PS11N7-YK0**	**PS43R-PS11N7-YK0**
Snap 2NC	**PS31R-PS02N7-YK0**	**PS43R-PS02N7-YK0**
Slow 1NO+1NC	**PS31R-PT11N7-YK0**	**PS43R-PT11N7-YK0**
Slow Ov.**1NO+1NC	**PS31R-PO11N7-YK0**	**PS43R-PO11N7-YK0**
Slow 2NC	**PS31R-PT02N7-YK0**	**PS43R-PT02N7-YK0**
Slow 2NO+1NC	**PS31R-PT21N7-YK0**	**PS43R-PT21N7-YK0**
Slow 1NO+2NC	**PS31R-PT12N7-YK0**	**PS43R-PT12N7-YK0**
Slow 3NC	**PS31R-PT03N7-YK0**	**PS43R-PT03N7-YK0**

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(U_i)	Ie/AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	Ie/AC-13 24 VDC	2.8 V
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U_i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Conventional enclosed thermal voltage (U_{imp})	6 kV	Approvals	CE - UL - CSA

* also available in metal (Y type) ** Ov. : overlapping travel paths

Limit switches - Safety type with pull button reset

Head Types	**PO** Steel plunger	**PR** Steel plunger with nylon roller	**R3** Plastic roller lever on metal plunger	**RT** Lever with nylon roller
				
Family: K				
	PS21	**PS21**	**PS21**	**PS21**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)	30.3 x 88 x 36.5	30.3 x 99 x 36.5	30.3 x 107 x 36.5	39 x 106 x 45
References contact block				
Snap 1NO+1NC	**PS21K-PS11P0-T00**	**PS21K-PS11PR-T00**	**PS21K-PS11R3-T00**	**PS43S-PS1105-Y00**
Snap 2NC	**PS21K-PS02P0-T00**	**PS21K-PS02PR-T00**	**PS21K-PS02R3-T00**	**PS43S-PS0205-Y00**
Slow 1NO+1NC	**PS21K-PT11P0-T00**	**PS21K-PT11PR-T00**	**PS21K-PT11R3-T00**	**PS43S-PT1105-Y00**
Slow 2NC	**PS21K-PT02P0-T00**	**PS21K-PT02PR-T00**	**PS21K-PT02R3-T00**	**PS21K-PT02RT-T00**
				
Family: K				
	PS42	**PS42**	**PS42**	**PS42**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)	57 x 81 x 36.5	57 x 92 x 36.5	57 x 100 x 36.5	57 x 99 x 45
References contact block				
Snap 1NO+1NC	**PS42K-PS11P0-T00**	**PS42K-PS11PR-T00**	**PS42K-PS11R3-T00**	**PS42K-PS11RT-T00**
Snap 2NC	**PS42K-PS02P0-T00**	**PS42K-PS02PR-T00**	**PS42K-PS02R3-T00**	**PS42K-PS02RT-T00**
Slow 1NO+1NC	**PS42K-PT11P0-T00**	**PS42K-PT11PR-T00**	**PS42K-PT11R3-T00**	**PS42K-PT11RT-T00**
Slow 2NC	**PS42K-PT02P0-T00**	**PS42K-PT02PR-T00**	**PS42K-PT02R3-T00**	**PS42K-PT02RT-T00**

Head Types	**R4** Roller Lever, external side actuation	**LR** Roller Lever Ø22, side actuation
		
Family: K		
	PS21	**PS42**
	Thermoplastic*	Thermoplastic*
Dimensions HxWxD (mm)	44 x 107 x 36.5	57 x 112 x 36.5
References contact block		
Snap 1NO+1NC	**PS21K-PS11R4-T00**	**PS42K-PS11LR-T00**
Snap 2NC	**PS21K-PS02R4-T00**	**PS42K-PS02LR-T00**
Slow 1NO+1NC	**PS21K-PT11R4-T00**	**PS42K-PT11LR-T00**
Slow 2NC	**PS21K-PT02R4-T00**	**PS42K-PT02LR-T00**

General specifications (for all types)

Degree of protection	IP 65	Rated operational current	
Rated insulation voltage plastic body	(U_i)	Ie/AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	Ie/AC-13 24 VDC	2.8 V
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U_i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V	load factor	0.5
	500 V	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Conventional enclosed thermal voltage (U_{imp})	6 kV	Approvals	CE - UL - CSA

* Also available in metal (Y type) other types available

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Industrial and Midi industrial relays

	Industrial relays		Midi industrial relays	
Types	**RCP 8** (2 Poles)	**RCP 11** (3 Poles)	**RMI 2-10** (2 Poles)	**RMI 4-5** (4 Poles)
				
Dimensions HxWxD (mm)	56 x 35.5 x 35.5	56 x 35.5 x 35.5	36 x 21.5 x 28	36 x 21.5 x 28
No. of Contacts	2 Change-over (octal)	3 change-over (undecal)	2 Change-over	4 Change-over
Contact rating	10 A	10 A	10 A	5 A
Features standard with	Test button / Flag / LED	Test button / Flag / LED	Test button / Flag / LED	Test button / Flag / LED
Output specifications				
Max. load AC1	12 A / 250 VAC	12 A / 250 VAC	12 A / 250 VAC	6 A / 250 VAC
Min. load	100 mA / 12 VDC	100 mA / 125 VDC	100 mA / 5 VDC	100 mA / 5 VDC
Electrical life	> 100.000 cycles	> 100.000 cycles	> 100.000 cycles	> 100.000 cycles
Switching power	2500 VA (resistive)	2500 VA (resistive)	2500 VA (resistive)	1250 VA (resistive)
General specifications				
Voltage ranges VDC	6 - 12 - 24 - 48 - 60 - 100 - 110	6 - 12 - 24 - 48 - 60 - 100 - 110	5 - 6 - 9 - 12 - 24 - 36 - 48 - 60 - 100 - 110 - 220 - 240	5 - 6 - 9 - 12 - 24 - 36 - 48 - 60 - 100 - 110 - 220 - 240
Voltage ranges VAC	6 - 12 - 24 - 48 - 115/120 - 230	6 - 12 - 24 - 48 - 115/120 - 230	6 - 12 - 24 - 36 - 48 115/120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 115/120 - 220 - 240 - 380
Insulation according to	EN 61810-5	EN 61810-5	EN 61810-5	EN 61810-5
Consumption	1.5 W DC-2.5 VA AC	1.5 W DC-2.5 VA AC	1 W DC-1.5 VA AC	1 W DC-1.5 VA AC
Approvals / Conformity	UL - CSA - TÜV - IMQ	UL - CSA - TÜV - IMQ	UL - CSA - TÜV - IMQ	UL - CSA - TÜV - IMQ
References				
5 VDC			**RMIA/B2-105 DC**	**RMIA/B4-55 DC**
6 VAC	**RCP80026 VDC**	**RCP110036 VDC**	**RMIA/B2-106 AC**	**RMIA/B4-56 AC**
6 VDC	**RCP80026 VAC**	**RCP110036 VAC**	**RMIA/B2-106 DC**	**RMIA/B4-56 DC**
12 VAC	**RCP800212 VAC**	**RCP1100312 VAC**	**RMIA/B2-1012 AC**	**RMIA/B4-512 AC**
12 VDC	**RCP800212 VDC**	**RCP1100312 VDC**	**RMIA/B2-1012 DC**	**RMIA/B4-512 DC**
24 VAC	**RCP800224 VAC**	**RCP1100324 VAC**	**RMIA/B2-1024 AC**	**RMIA/B4-524 AC**
24 VDC	**RCP800224 VDC**	**RCP1100324 VDC**	**RMIA/B2-1024 DC**	**RMIA/B4-524 DC**
48 VAC	**RCP800248 VAC**	**RCP1100348 VAC**	**RMIA/B2-1048 AC**	**RMIA/B4-548 AC**
48 VDC	**RCP800248 VDC**	**RCP1100348 VDC**	**RMIA/B2-1048 DC**	**RMIA/B4-548 DC**
60 VDC	**RCP800260 VDC**	**RCP1100360 VDC**	**RMIA/B2-1060 DC**	**RMIA/B4-560 DC**
100 VDC	**RCP8002100 VDC**	**RCP11003100 VDC**	**RMIA/B2-10100 DC**	**RMIA/B4-5100 DC**
110 VDC	**RCP8002110 VDC**	**RCP11003110 VDC**	**RMIA/B2-10110 DC**	**RMIA/B4-5110 DC**
115/120 VAC	**RCP8002115/120 VAC**	**RCP11003115/120 VAC**	**RMIA/B2-10115 AC**	**RMIA/B4-5115 AC**
230 VAC	**RCP8002230 VDC**	**RCP11003230 VDC**	**RMIA/B2-10230 AC**	**RMIA/B4-5230 AC**

	Industrial relays sockets		Midi industrial relays sockets	
Types	**ZPD 8XA ZPD 11XA**	**ZPD 8A ZPD 11A**	**ZMI 2NA ZMI 4NA**	**ZMI 2 / 3 / 4SA**
				
General specifications				
Dimensions HxWxD (mm)	65 X 27 X 38	65 X 27 X 38	42.5 x 75 x 27	42.5 x 75 x 27
Rated volt. / Rated curr.	10 A @ 400 VAC	10 A @ 400 VAC	10 A @ 300 VAC	10/12 A @ 300 VAC
Insulation voltage	> 3 kV	> 3 kV	> 4 kV	> 4 kV
Socket material	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V2)	Self-ext. PA6 + GF (V2)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP 20	IP 20	IP 20	IP 20
Approvals	CE - UL - CSA (10 A 300 VCA)	CE - UL	CE - UL - IMQ - RINA	CE - UL - CSA
References				
For RCP 8 / RCP 11	**ZPD 8XA / ZPD 11XA**	**ZPD 8A / ZPD 11A**		
For RMI2-10 / RMI4-5			**ZPD 8A / ZPD 11A**	**ZMI 2 / 3 / 4SA**

Midi industrial relays

Midi industrial relays

Types	RPY 1	RPY 2	RPY 3	RPY 4
				
Dimensions HxWxD (mm)	36 x 21.5 x 28	36 x 21.5 x 28	36 x 31.5 x 28	36 x 41.5 x 28
No. of Contacts	Faston or PCB	Faston or PCB	Faston or PCB	Faston or PCB
Contact rating	1 Change-over	2 Change-over	3 Change-over	4 Change-over
Terminal types	16 A	10 A	10 A	10 A
Output specifications				
Max. load AC1	16 A	10 A	10 A	10 A
Electrical life	1 x 10^5	1 x 10^5	1 x 10^5	1 x 10^5
Switching power	1 HP at 240 VAC 1/2 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC
General specifications				
Voltage ranges VDC	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220 - 240	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220	6 - 9 - 12 - 24 - 36 - 48 100 - 110 - 220
Voltage ranges VAC	6 - 12 - 24 - 36 - 48 - 110 120 - 120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 - 110 120 - 120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 - 110 120 - 120 - 220 - 240 - 380	6 - 12 - 24 - 36 - 48 - 110 120 - 120 - 220 - 240 - 380
Insulation Coil / Contact	2000/1200 VAC	2000/1200 VAC	2000/1200 VAC	2000/1200 VAC
Consumption	DC=0.9 W - AC=1.2 VA	DC=0.9 W - AC=1.2 VA	DC=1.4 W - AC=2 VA	DC=1.5 W - AC=2.5 VA
Approvals / Conformity	UL - CSA - TÜV	UL - CSA - TÜV	UL - CSA - TÜV	UL - CSA - TÜV
References				
Consult your Carlo Gavazzi Partner or Distributor	Several options available: Led, diode, etc...	Several options available: Led, diode, etc...	Several options available: Led, diode, etc...	Several options available: Led, diode, etc...

Midi industrial relays sockets

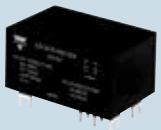
Types	ZPY08A	ZPY11A	ZPY14A
			
General specifications			
Dimensions HxWxD (mm)	27.8 x 30 x 69.8	27.8 x 40 x 69.8	27.8 x 50.5 x 69.8
Rated volt. / Rated curr.	10 A @ 300 VAC	10 A @ 300 VAC	10 A @ 300 VAC
Insulation voltage	> 4 kW	> 4 kW	> 4 kW
Socket material	PA6 - V2	PA6 - V2	PA6 - V2
Mounting	DIN Rail	DIN Rail	DIN Rail
Degree of protection	IP 00	IP 00	IP 00
Approvals	UL - cUL - CSA	UL - cUL - CSA	UL - cUL - CSA
References			
Consult your Carlo Gavazzi Partner or Distributor	For Relays: RPYA 001 and RPYA 002	For Relays: RPYA 003	For Relays: RPYA 004

CARLO GAVAZZI

Power relays

Power relays

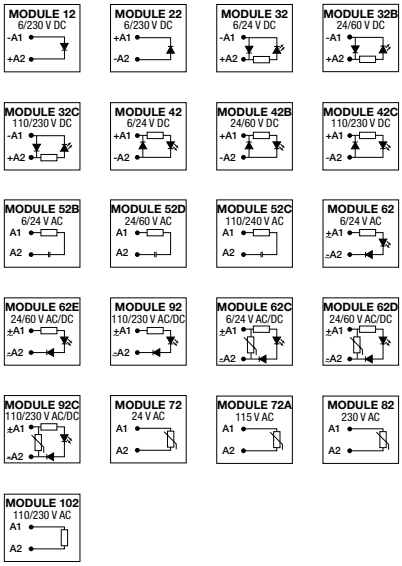
Types	NA (1/2 Poles)	NB (1/2 Poles)	NF (1/2 Poles)	NP (1/2 Poles)
				
Dimensions HxWxD (mm)	36 x 50.5 x 33.5	55 x 50.5 54.5	36 x 50.5 x 54.5	36 x 50.5 x 33.5
No. of Contacts	1 Normally open 2 Normally open	1 Normally open 2 Normally open	1 Normally open 2 Normally open	1 Normally open 2 Normally open
Contact rating	30 A	30 A	30 A	30 A
Terminal types	Faston	Bolt	Faston	PCB
Output specifications				
Max. load AC1	30 A (1NO) - 25 A (2NO)	30 A (1NO) - 25 A (2NO)	30 A (1NO) - 25 A (2NO)	30 A (1NO) - 25 A (2NO)
Electrical life	1 x 10^5	1 x 10^5	1 x 10^5	1 x 10^5
Switching power	7500 VA / 840 W	7500 VA / 840 W	7500 VA / 840 W	7500 VA / 840 W
General specifications				
Voltage ranges VDC	3 - 6 - 12 - 24 - 48 100 - 110 - 200	3 - 6 - 12 - 24 - 48 100 - 110 - 200	3 - 6 - 12 - 24 - 48 100 - 110 - 200	3 - 6 - 12 - 24 - 48 100 - 110 - 200
Voltage ranges VAC	6 - 12 - 24 - 48 - 120 - 220	6 - 12 - 24 - 48 - 120 - 220	6 - 12 - 24 - 48 - 120 - 220	6 - 12 - 24 - 48 - 120 - 220
Insulation according to	4000 VAC	4000 VAC	4000 VAC	4000 VAC
Consumption	DC=1.9 W - AC=2.7 VA	DC=1.9 W - AC=2.7 VA	DC=1.9 W - AC=2.7 VA	DC=1.9 W - AC=2.7 VA
Approvals / Conformity	UL - cUL	UL - cUL	UL - cUL	UL - cUL

	CF (2 Poles)	CS (2 Poles)
		
Dimensions (mm) WxHxD	26.42 x 68.58 x 34.54	26.42 x 52.32 x 34.54
No. of Contacts	2 Normally open 2 Change-over	2 Normally open 2 Change-over
Contact rating	30 A	30 A
Terminal types	Faston	PCB
Output specifications		
Max. load AC1	30 A (2NO) - 20 A (2CO)	30 A (2NO) - 20 A (2CO)
Electrical life	1 x 10^5	1 x 10^5
Switching power	8310 VA / 840 W	8310 VA / 840 W
General specifications		
Voltage ranges VDC	6 - 12 - 24 - 48	6 - 12 - 24 - 48
Voltage ranges VAC	24 - 120 - 208 - 240 - 277	24 - 120 - 208 - 240 - 277
Insulation according to	4000 VAC	4000 VAC
Consumption	DC=1.7 W - AC=4 VA	DC=1.7 W - AC=4 VA
Approvals / Conformity	UL - cUL	UL - cUL

Sockets and Modules

Types	ZD 35/2A	ZD 50/2A	ZD 35/3A	ZD 50/3A
				
General specifications				
Rated volt. / Rated curr.	12 A @ 300 VAC	12 A @ 300 VAC	12 A @ 300 VAC	12 A @ 300 VAC
Insulation voltage	> 5 kV	> 5 kV	> 5 kV	> 5 kV
Socket material	Self-ext. PA 6 + GF (V1)	Self-ext. PA 6 + GF (V1)	Self-ext. PA 6 + GF (V1)	Self-ext. PA 6 + GF (V1)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP 20	IP 20	IP 20	IP 20
Approvals	UL - CSA (12 A, 300 VCA)	UL - CSA (12 A, 300 VCA)	UL - CSA (12 A, 300 VCA)	UL - CSA (12 A, 300 VCA)
References				
For relay:	MZ 1P 5/10 A M15 M 8A M25 1P 12 A LC 10 A	MZ B 1P 5/10 A MZ 2P 5/10 A MZ 1P 16 A M15 M 8 A M25 1P 16 A M25 2P 8 A LC 5/16 A	MZ 1P 5/10 A M15 M 8 A M25 1P 12 A LC 10 A	MZ B 1P 5/10 A MZ 2P 5/10 A MZ 1P 16 A M15 M 8 A M25 1P 16 A M25 2P 8 A LC 5/16 A
For detailed informations consult your Carlo Gavazzi Partner or Distributor	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays

Types — Additional modules for ZMI and ZD sockets



General specifications

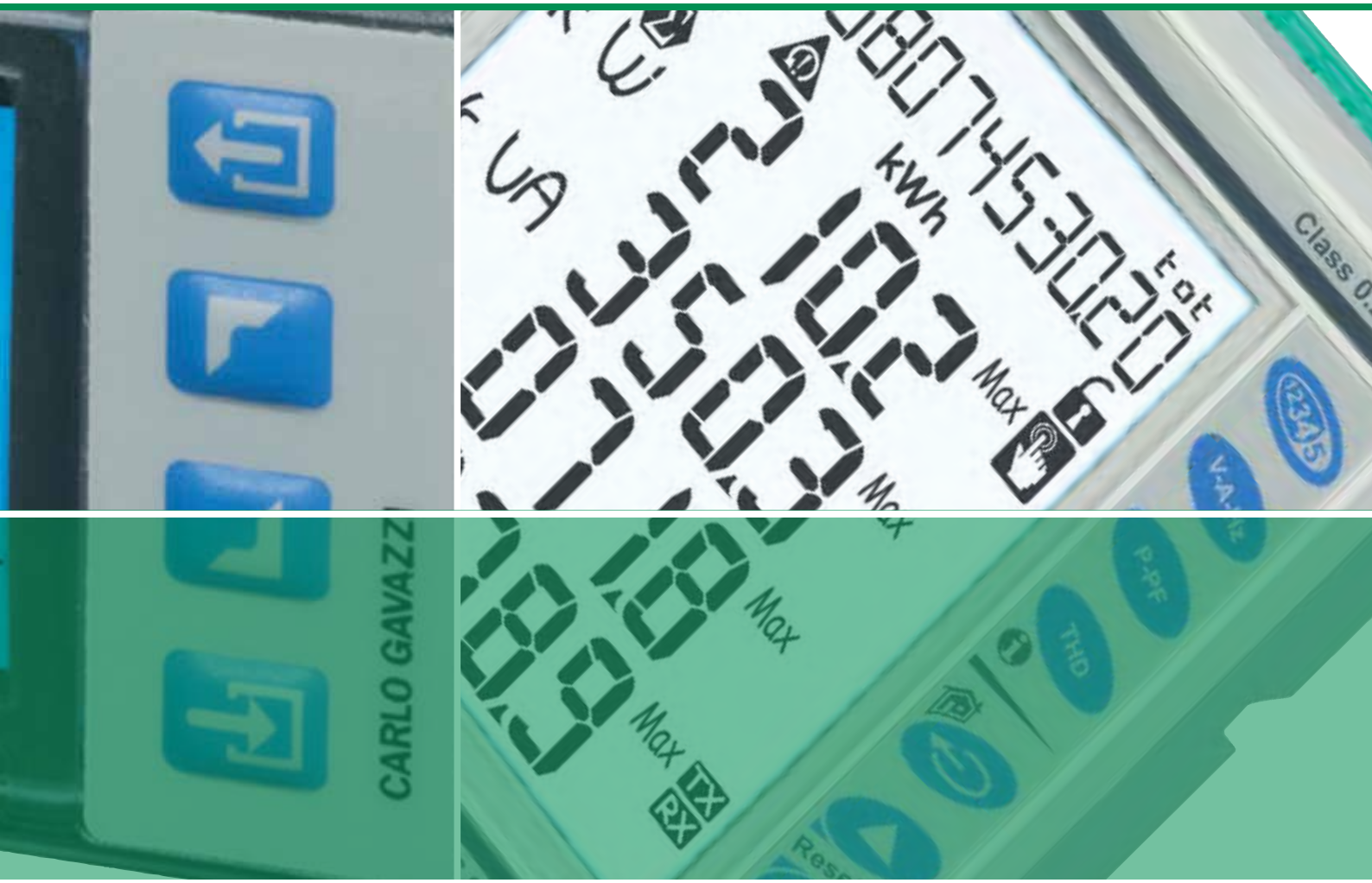
Dimensions (mm) WxHxD	23 x 12.5 x 8.5
Terminal material	CuSn
Degree of protection	IP 40
Operating temperature	-40°C to + 70°C
Ambient humidity	85RH non condensing
Approvals / Conformity	No approvals

References

Consult your Carlo Gavazzi Partner or Distributor

CARLO GAVAZZI
Automation Components

Control



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Monitoring relays

Current relays

Types	DIA 01 PIA 01	DIA 53	DIB 01 PIB 01
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over current monitoring relay. 1-phase AC / DC. Direct input or on CT 5A. Setpoint adjustable. Hysteresis adjustable	Over current monitoring relay. 1-phase AC. Setpoint adjustable. 2-wire connection. Reaction time < 50 ms for F versions. 12 mm hole for insulated current carrying wire	Over or under current monitoring relay. 1-phase AC / DC TRMS. Direct input or on CT 10A. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable. 12 mm hole for insulated current carrying wire [100 A]
Input specifications			
Measuring range	0.5-5 A AC/DC	2-20 AAC [20A] 5-50 AAC [50A] 10-100 AAC [100A]	0.1-5 mA AC / DC [5MA] 1-50 mA AC / DC [50MA] 10-500 mA AC / DC [500MA] 0.1-5 A AC / DC [5A] 1-10 A AC / DC [10A] 2-100 A AC [100A]
Output specifications			
	1 x SPDT relay	Static output	1 x SPDT relay
Max. load AC1	8 A / 250 VAC		8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	100 mA	5 A / 24 VDC
Electrical life	>1 x 10^5 operations		>1 x 10^5 operations
General specifications			
Power supply	24-48 V AC / DC [D48] 115 / 230 VAC [B23]	40 VDC max. Powered by the measured current	24-48 V AC / DC [D48] 115 / 230 VAC [B23] 24 VDC / 24-240 VAC [M24]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DIA01C D48 5A	**DIA53S 724 20A**	**DIB01C . . . 5MA**
	PIA01C D48 5A	**DIA53S 724 50A**	**DIB01C . . . 50MA**
	DIA01C B23 5A	**DIA53S 724 100A**	**DIB01C . . . 500MA**
	PIA01C B23 5A	**DIA53S 724 20A F**	**DIB01C . . . 5A**
		DIA53S 724 50A F	**DIB01C . . . 10A**
		DIA53S 724 100A F	**DIB01C M24 100A**
			PIB01C . . . 5MA
			PIB01C . . . 50MA
			PIB01C . . . 500MA
			PIB01C . . . 5A
			PIB01C . . . 10A
			. . . = insert code for Power Supply

Monitoring relays

	Current relays		
Types	**DIB 71**	**DIB 02 PIB 02**	**DIC 01 PIC 01**
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over or under current monitoring relay. 1-phase AC / DC TRMS. Direct input or on CT 5A. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable	Over or under current monitoring relay. 1-phase AC / DC TRMS. Input on shunt or CT MI / MP. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable	Process signal monitoring relay. 1-phase AC / DC TRMS. Direct input, CT A82 or CT MI / MP. 2 setpoints separately adjustable. Hysteresis adjustable. 2 delay functions separately adjustable
Input specifications			
Measuring range	0.1-5 mA AC / DC [5MA] 1-50 mA AC / DC [50MA] 10-500 mA AC / DC [500 MA] 0.1-5 A AC / DC [5A]	6-150 mV AC / DC 0.4 - 4Vp	0.5-20 mA AC / DC 0.1-10 V AC / DC 0.4 - 4Vp
Output specifications			
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay [P] 2 x SPDT relays [D]
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24 / 48 VAC [B48] 115 / 230 VAC [B23]	24-48 V AC / DC [D48] 115 / 230 VAC [B23]	24-48 V AC / DC [D48] 115 / 230 VAC [B23]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DIB71C B48 5MA	**DIB02C D48 150MV**	**DIC01D D48 AV0**
	DIB71C B48 50MA	**PIB02C D48 150MV**	**PIC01C D48 AV0**
	DIB71C B48 500MA	**DIB02C B23 150MV**	**DIC01D B23 AV0**
	DIB71C B48 5A	**PIB02C B23 150MV**	**PIC01C B23 AV0**
	DIB71C B23 5MA		
	DIB71C B23 50MA		
	DIB71C B23 500MA		
	DIB71C B23 5A		

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Monitoring relays

Voltage relays

Types	DUA 01 PUA 01	DUA 52	DUA 55	DUB 01 PUB 01
				
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over current and voltage monitoring relay. 1-phase AC / DC. Setpoint adjustable. Hysteresis adjustable	Under voltage monitoring relay for DC battery. Setpoint adjustable. Hysteresis adjustable. Measures its own power supply	Over and under voltage monitoring relay. 1-phase (measures its own power supply) AC TRMS	Over or under voltage monitoring relay. 1-phase AC / DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.
Input specifications				
Measuring range	2-500 V AC / DC 0.4 -4 Vp	8-28 VDC [724] 38-58 VDC [748]	208 / 220 / 230 / 240 VAC	0.1-10 V AC / DC [10V] 2-500 V AC / DC [500V]
Output specifications				
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24-48 V AC / DC [D48] 115 / 230 VAC [B23]	8-28 VDC [724] 38-58 VDC [748]	208-480 VAC	24-48 V AC / DC [D48] 115 / 230 VAC [B23]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DUA01C D48 500V	**DUA52 C724**	**DUA55 CM44**	**DUB01C D48 10V**
	PUA01C D48 500V	**DUA52 C748**		**DUB01C D48 500V**
	DUA01C B23 500V			**PUB01C D48 10V**
	PUA01C B23 500V			**PUB01C D48 500V**
				DUB01C B23 10V
				DUB01C B23 500V
				PUB01C B23 10V
				PUB01C B23 500V

Monitoring relays

	Voltage relays			
Types	**DUB 71**	**DUB 02 PUB 02**	**DUB 03 PUB 03**	**DUC 01 PUC 01**
				
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over or under voltage monitoring relay. 1-phase AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable	Over and under voltage monitoring relay. 1-phase (measures its own power supply) AC TRMS. Over and under voltage setpoints separately adjustable. Hysteresis adjustable. Delay time adjustable (ON/OFF)	Over or under voltage monitoring relay. 1-phase (measures its own power supply) AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable	Over and under voltage monitoring relay. 1-phase AC/DC TRMS. 2 setpoints separately adjustable. Hysteresis adjustable. 2 delay functions separately adjustable
Input specifications				
Measuring range	0.1-10 V AC/DC [10V] 2-500 V AC/DC [500V]	24/115/230 VAC	24/48/115/240 V AC/DC	2-500 V AC/DC [500V]
Output specifications				
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay [P]	1 x SPDT relay [C] 2 x DPDT relay [D]
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24/48 VAC [B48] 115 / 230 VAC [B23]	24/115/230 VAC	12-240 V AC/DC	24-48 V AC/DC [D48] 115 / 230 VAC [B23]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DUB71C B48 10V	**DUB02C T23**	**DUB03C W24**	**DUC01D D48 500V**
	DUB71C B48 500V	**PUB02C T23**	**PUB03C W24**	**PUC01C D48 500V**
	DUB71C B23 10V			**DUC01D B23 500V**
	DUB71C B23 500V			**PUC01C B23 500V**

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Monitoring relays

3-phase voltage relays

Types	DPA 01 PPA 01	DPA 51 DPA 71	DPA 03 PPA 03	DPA 53
				
Dimensions HxWxD (mm) DIN RAIL housing	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]
Plug-in housing	80 x 36 x 94 [P]		80 x 36 x 94 [P]	
Function	Phase sequence, total and partial phase loss monitoring relay. 3-phase AC (measures its own power supply). Regenerated voltage	Phase sequence, total and partial phase loss monitoring relay. 3-phase AC (measures its own power supply). Regenerated voltage	Under voltage, phase sequence, total and partial phase loss monitoring relay. 3-phase (measures its own power supply) AC TRMS	Under voltage, phase sequence, total and partial phase loss monitoring relay. 3-phase (measures its own power supply) AC TRMS
Input specifications				
Measuring range	208-240 VAC [M23] 208-415 VAC [P] [M44] 208-480 VAC [D] [M44] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 380-600 VAC [M60] 380-690 VAC [M69]	208-240 VAC [M23] 208-480 VAC [M44] 380-480 VAC [M48]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 600-690 VAC [M69]	208-240 VAC [M23] 380-480 VAC [M48]
Output specifications				
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	208-240 VAC [M23] 208-415 VAC [P] [M44] 208-480 VAC [D] [M44] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 380-600 VAC [M60] 380-690 VAC [M69]	208-240 VAC [M23] 208-480 VAC [M44] 380-480 VAC [M48]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 600-690 VAC [M69]	208-240 VAC [M23] 380-480 VAC [M48]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DPA01D M23	**DPA51C M44**	**DPA03C M23**	**DPA53C M23**
	PPA01D M23	**DPA71D M23**	**PPA03C M23**	**DPA53C M48**
	DPA01C M44	**DPA71D M48**	**DPA03C M48**	
	PPA01C M44		**PPA03C M48**	
	DPA01D M48		**DPA03C M69**	
	PPA01D M48			
	DPA01C M60			
	DPA01C M69			

Monitoring relays

	3-phase voltage relays		
Types	**DPA 55**	**DPB 01 PPB 01**	**DPB 51**
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	90 x 17.5 x 67.2 [Mini-D]
Function	Over and under voltage, phase sequence, total and partial phase loss monitoring relay. 3-phase (measures its own power supply) AC TRMS. Two tolerance voltage windows	Over and under voltage monitoring relay with phase loss and phase sequence. 3-phase +N (measures its own power supply) AC TRMS. N versions without phase sequence detection. W4 versions supplied between L and N. 2 setpoints separately adjustable. Delay time adjustable.	Over and under voltage monitoring relay with phase loss and phase sequence. 3-phase +N (measures its own power supply) AC TRMS. 2 setpoints separately adjustable. Delay time adjustable.
Input specifications			
Measuring range	208-480 VAC	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48]	208-480 VAC
Output specifications			
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	208-480 VAC	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] [W]	208-480 VAC
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DPA55C M44	**DPB01C M23**	**DPB51C M44**
		PPB01C M23	
		DPB01C M23 N	
		PPB01C M23 N	
		DPB01C M48	
		PPB01C M48	
		DPB01C M48 W4	
		PPB01C M48 W4	
		DPB01C M48 N	
		PPB01C M48 N	
		DPB01C M48 N W4	
		PPB01C M48 N W4	

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Monitoring relays

3-phase voltage relays

Types	DPB 71	DPB 02 PPB 02	DPC 01 PPC 01
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over and under voltage monitoring relay with phase loss and phase sequence. 3-phase +N (measures its own power supply) AC TRMS. 2 setpoints separately adjustable. Delay time adjustable.	Asymmetry monitoring relay with phase sequence / phase loss. 3-phase +N (measures its own power supply) AC TRMS. Adjustable asymmetry. Delay time adjustable.	Over and under voltage monitoring relay with phase loss / phase sequence, asymmetry and tolerance. 3-phase +N (measures its own power supply) AC TRMS. Setpoint separately adjustable by function
Input specifications			
Measuring range	208-240 VAC [M23] 380-480 VAC [M48]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 600-690 VAC [M69] Frequency 50-60 Hz 100-115 VAC [M11 400Hz] 208-240 VAC [M23 400Hz] 380-415 VAC [M48 400Hz] 440-480 VAC [M49 400Hz] 600-690 VAC [M69 400Hz] Frequency 50-400 Hz
Output specifications			
	1 x SPDT relay	1 x SPDT relay	2 x SPDT relay
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	208-240 VAC [M23] 380-480 VAC [M48]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48]	100-115 VAC [M11] 208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 440-480 VAC [M49] 600-690 VAC [M69]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DPB71C M23	**DPB02C M23**	**DPC01D M23**
	DPB71C M48	**PPB02C M23**	**PPC01D M23**
		DPB02C M48	**DPC01D M48**
		PPB02C M48	**PPC01D M48**
			DPC01D M69
			DPC01D M11 400HZ
			DPC01D M23 400HZ
			DPC01D M48 400HZ
			DPC01D M49 400HZ
			DPC01D M69 400HZ

Monitoring relays

	3-phase multifunction voltage relays		Interface protection relays
Types	**DPC 71 PPC 71**	**DPC 02**	**DPC 72**
			
Dimensions (mm) HxWxD DIN RAIL housing Plug-in housing	81 x 35.5 x 67.2 [D] 81.2 x 35.5 x 75 [P]	80 x 45 x 99.5 [D]	90 x 71.6 x 66.3 [D]
Function	Over and under voltage monitoring relay with phase loss / phase sequence, asymmetry and tolerance. 3-phase +N (measures its own power supply) AC TRMS. Setpoints separately adjustable by function	Over and under voltage / over and under frequency with phase loss and phase sequence monitoring relay. 3-phase+N (measures its own power supply) AC TRMS. Setpoints separately adjustable. Separately adjustable delay times. Adjustable frequency range	Digital interface protection relay with over and under voltage / over and under frequency, phase loss and phase sequence controls. Frequency derivative monitoring [B001, B003], voltage quality [B002], RS485 port, event counter, datastamping and auto-test function. 3-phase (measures its own power supply) AC TRMS. Setpoints separately adjustable. Separately adjustable delay times. Programmable via PC (DpcSoft free configuration software)
Input specifications			
Measuring range	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48]	Voltage: 208-240 VAC [M23] 380-415 VAC [M48] 440-480 VAC [M49] 600-690 VAC [M69] Frequency: 50/60 Hz	Voltage: 380-415 VAC [M48] Frequency: 45-65 Hz
Output specifications			
	2 x SPDT relays	2 x SPDT relays	1 x DPDT relays
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48]	208-240 VAC [M23] 308-415 VAC [M48] 440-480 VAC [M49] 600-690 VAC [M69]	308-415 VAC [M48]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA - ENEL DK 5950 [B003]	CE - VDE 0126-1-1 [B002]
References			
	DPC71D M23	**DPC02D M23**	**DPC72D M48 B001**
	PPC71D M23	**DPC02D M48**	**DPC72D M48 B002**
	DPC71D M48	**DPC02D M49**	
	PPC71D M48	**DPC02D M69**	
		DPC02D M23 B003	
		DPC02D M48 B003	

Monitoring relays

Interface protection relays

Types	PI96	PI-DIN
		
Dimensions HxWxD (mm)	96 x 96 x 85.9	90 x 71.6 x 66.3
Description	Single or three-phases systems monitoring relay interface protection with energy metering and logging of max-min and avg values for: V_{LL}, V_{LN}, VA, VAr, PF, kWh, THD	Single or three-phases systems monitoring relay interface protection
Measuring input		
Voltage range	230 V_{LN}, 400 V_{LL}	230 V_{LN}, 400 V_{LL}
Frequency range	47.5 to 51.5 Hz	47.5 to 51.5 Hz
Current range	I_n 5A, I_{max} 6A (bigger currents CT)	None
Display	LCD, 4 lines 4 DGT, 1 line 10 DGT	LCD, 2 lines 4 DGT, 1 line 8 DGT
Input specifications		
VDE-AR-N-4105	-	2 digitals
CEI 0-21	6 digitals	4 digitals
Output specifications		
Type	4 x SPST relays (N.O.)	2 x SPDT relays
Max. load AC1	5 A @ 250 Vac	8 A @ 250 Vac
Serial communication protocol	RS485-RS232	RS485
Protocol	Modbus RTU	Modbus RTU
General specifications		
Power supply	115..230 VCA -20% +15% (48..62Hz) Option 24 VCC -20% +10%	115..230 VCA -20% +15% (48..62Hz) Option 24 VCC -20% +10%
Approvals / Marks	CE - CEI 0 - 21	CE - VDE - AR - N - 4105 - CEI 0 - 21
References		
CEI 0-21 (AC aux power)	**PI960021HI6R4S1XX**	**PIDIN0021HI4R2S1XX**
CEI 0-21 (DC aux power)	**PI960021LI6R4S1XX**	**PIDIN0021LI4R2S1XX**
VDE-AR-N-4105 (AC aux power)		**PIDIN4105HI2R2S1XX**
VDE-AR-N-4105 (DC aux power)		**PIDIN4105LI2R2S1XX**

Monitoring relays

	Frequency relays		Cosϕ relays
Types	**DFB 01 PFB 01**	**DFC 01**	**DWA 01 PWA 01**
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	 80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D]	 80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Frequency monitoring relay. 1-phase AC (measures its own power supply). 2 setpoints separately adjustable. Delay time adjustable	Frequency monitoring relay. 1-phase AC (measures its own power supply). 2 setpoints separately adjustable. 2 separately adjustable delay times. 2 separate relay outputs	Cosϕ monitoring relay. 1- or 3-phase AC (measures its own power supply). Direct input or through external CT. Power ON delay adjustable
Input specifications			
Measuring range	50 / 60 Hz	50 / 60 Hz	cosϕ : 0.1-0.99
Output specifications			
	1 x SPDT relay	2 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24-240 VAC	24-48 VAC [B48] 115-230 VAC [B23]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DFB01C M24	**DFC01D B48**	**DWA01C M23 5A**
	PFB01C M24	**DFC01D B23**	**PWA01C M23 5A**
			DWA01C M48 5A
			PWA01C M48 5A

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Monitoring relays

Power and power factor relays

Types	DWB 01 PWB 01	DWB 02 PWB 02	DWB 03 PWB 03
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Power factor monitoring relay. 1- or 3-phase (measures its own power supply) AC TRMS. Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable	Active power monitoring relay. 1- or 3-phase (measures its own power supply) AC TRMS. Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable	Active power monitoring relay. 1- or 3-phase AC TRMS power direction (measures its own power supply). Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable
Input specifications			
Measuring range	cosϕ : 0.1-0.99	208-690 VAC 0.5-5 AAC 1-10 AAC 0.4 - 4 Vp	208-690 VAC 0.5-5 AAC 1-10 AAC 0.4 - 4 Vp
Output specifications			
	1 x SPDT relays	1 x SPDT relays	1 x SPDT relays
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 600-690 VAC [M69]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 600-690 VAC [M69]	208-240 VAC [M23] 380-415 VAC [P] [M48] 380-480 VAC [D] [M48] 600-690 VAC [M69]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DWB01C M23 10A	**DWB02C M23 10A**	**DWB03C M23 10A**
	PWB01C M23 10A	**PWB02C M23 10A**	**PWB03C M23 10A**
	DWB01C M48 10A	**DWB02C M48 10A**	**DWB03C M48 10A**
	PWB01C M48 10A	**PWB02C M48 10A**	**PWB03C M48 10A**
	DWB01C M69 10A	**DWB02C M69 10A**	**DWB03C M69 10A**

Monitoring relays, timers

	Temperature relays	Pump alternating relays	Timers, Delay on operate
Types	**DTA 01 PTA 01 DTA 02 PTA 02**	**DLA 71 DLA 73**	**DAA 01 PAA 01**
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Motor temperature monitoring relays. PTC insulated input. Automatic set-point. Short circuit detection. Latch, test and reset function (DTA02, PTA02)	Pump alternating relay. For 2 or 3 pumps. Differential or sequential mode. Automatic rotation of the pumps. Output relay managed by one independent input contact (DLA73)	Delay on operate (manual start)
Input specifications			
Time range			0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h
Output specifications			
	1 x SPDT relay 1 x SPST relay [DTA01]	2 x SPST relay [DLA71] [2P] 3 x SPST relay [DLA71] [3P] 3 x SPST relay [DLA73]	1 x SPDT relay [C] 2 x SPDT relays [D]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24-48 VAC / DC [D48] 115 VAC [115] 230 VAC [230]	24 / 48 VAC [B48] 115 / 230 VAC [B23]	24 VDC / 24-240 VAC [C] 24-240 VAC / DC [D]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DTA01C D48	**DLA71D B48 2P**	**DAA01C M24**
	PTA01C D48	**DLA71T B48 3P**	**PAA01C M24**
	DTA01C 115	**DLA71D B23 2P**	**DAA01D M24**
	PTA01C 115	**DLA71T B23 3P**	**PAA01D M24**
	DTA01C 230	**DLA73T B23 2P**	
	PTA01C 230	**DLA73T B48 2P**	
	DTA02C D48		
	PTA02C D48		
	DTA02C 115		
	PTA02C 115		
	DTA02C 230		
	PTA02C 230		

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Timers

Delay on operate

Types	DAA 51 DAA 71	FAA 01 FAA 08	HAA 08 HAA 14
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]	48 x 48 x 83.4	28 x 21.5 x 64
Function	Delay on operate (automatic start)	Delay on operate. Symmetrical recycler. Interval. One shot	Delay on operate. Symmetrical recycler with ON or OFF first. Interval
Input specifications			
Time range	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	Full scale 12 0.02 - 1.2 s 0.2 - 12 s 2 - 120 s 0.2 - 12 m 2 - 120 m 0.2 - 12 h 2 - 120 h Full scale 30 0.05 - 3 s 0.5 - 30 s 5 - 300 s 0.5 - 30 m 5 - 300 m 0.5 - 30 h 5 - 300 h	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h
Output specifications			
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x DPDT relay 11-pin [01] 8-pin [08]	1 x 4PDT relay [Q] 1 x DPDT relay [D] 14-pin [14] 8-pin [08]
Max. load AC1	5 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24 VDC / 24-240 VAC [CM24] 24-240 VAC / DC [DM24] 12-240 VAC / DC [DW24]	12-240 VAC / DC	24-240 VAC / DC
Approvals / Marks	CE - UL - CSA - RINA	CE - UL - CSA	CE - UL - CSA
References			
	DAA51C M24	**FAA01D W24**	**HAA14Q M24**
	DAA71D M24	**FAA08D W24**	**HAA08D M24**
	DAA71D W24		

Timers

	Delay on release		True delay on release
Types	**DBA 02 PBA 02**	**DBA 52**	**D/PBB 01 D/PBB 02**
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	 80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	 81 x 17.5 x 67.2 [Mini-D]	 80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Delay on release	Delay on release	True delay on release
Input specifications			
Time range	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	D/PBB01: 0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s D/PBB02: 60 s - 600 s / 0.1 h - 1 h 1 h - 10 h
Output specifications			
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay [C] 1 x DPDT relay [D]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24 VDC / 24-240 VAC	24 VDC / 24-240 VAC	24-240 VAC / DC [M24] 12-24 VDC [724]
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DBA02C M24	**DBA52C M24**	**DBB01C M24**
	PBA02C M24		**PBB01C M24**
			DBB01D M24
			PBB01D M24
			DBB01C 724
			PBB01C 724
			DBB01D 724
			PBB01D 724
			DBB02C M24
			PBB02C M24
			DBB02D M24
			PBB02D M24

Timers

	True delay on release	Recycler	
Types	**DBB 51**	**DCB 01 PCB 01**	**DCB 51**
			
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]
Function	True delay on release	Asymmetrical recycler with ON and OFF time first. One shot. Two state delay on operate	Asymmetrical recycler with ON or OFF first
Input specifications			
Time range	1 s - 10 s [10S] 6 s - 60 s [1M] 60 s - 600 s [10M]	0.1 - 1 s / 1 - 10 s 6 - 60 s / 60 s - 600 s 0.1 h 1 h / 1 h - 10 h 10 h - 100 h	0.1 - 1 s / 1 - 10 s 6 - 60 s / 60 s - 600 s 0.1 h 1 h / 1 h - 10 h 10 h - 100 h
Output specifications			
	1 x SPDT relay	1 x SPDT relay [C] 2 x SPDT relays [D]	1 x SPDT relay
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24 VDC / 24-240 VAC	24 VDC / 24-240 VAC [C] 24-240 VAC / DC [D]	24 VDC / 24-240 VAC
Approvals / Marks	CE - UL - CSA - RINA	CE - UL - CSA	CE - UL - CSA
References			
	DBB51C M24 10S	**DCB01C M24**	**DCB51C M24**
	DBB51C M24 1M	**PCB01C M24**	
	DBB51C M24 10M	**DCB01D M24**	
		PCB01D M24	

Timers

Multifunction

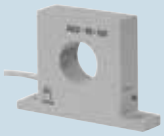
Types	DMB 01 PMB 01	DMB 51 PMB 71	FMB 01	DMC 01 PMC 01
				
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]	48 x 48 x 83.4	80 x 22.5 x 99.5 [D] 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Multifunction: • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	Multifunction: • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	Multifunction: (Trigger, Gate and Reset inputs) • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	Multifunction: • Delay on operate - manual start • Delay on operate - automatic and manual start • Delay on release • Interval - manual start • Interval - automatic and manual start • Interval - manual start with no time reset • Interval - automatic and manual start with no time reset
Input specifications				
Time range	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	Full scale: 12 0.02 - 1.2 s / 0.2 - 12 s 2 - 120 s / 0.2 - 12 m 2 - 120 m / 0.2 - 12 h 2 - 120 h Full scale: 30 0.05 - 3 s / 0.5 - 30 s 5 - 300 s / 0.5 - 30 m 5 - 300 m / 0.5 - 30 h 5 - 300 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h
Output specifications				
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x DPDT relay	1 x SPDT relay [C] 2 x SPDT relay [D]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24 VDC & 24-240 VAC [C] 24-240 VAC/DC [D]	24 VDC & 24-240 VAC [M24] 12-240 VAC/DC [W24]	12-240 VAC/DC	24 VDC [724] 24 / 48 VAC [B48] 115 / 230 VAC [B23] 24 VAC [024] 115 VAC [115] 230 VAC [230]
Approvals / Marks	CE - UL - CSA - RINA	CE - UL - CSA - RINA	CE - UL - CSA	CE - UL - CSA
References				
	DMB01C M24	**DMB51C M24**	**FMB01D W24**	**DMC01C xxx**
	PMB01C M24	**DMB51C W24**		**PMC01C yyy**
	DMB01D M24	**DMB71D M24**		**DMC01D xxx**
	PMB01D M24	**DMB71D W24**		**PMC01D yyy**
				xxx= 724, B23, B48 yyy= 724, 024, 115, 230

Timers

	Mini-E timers	Star delta	
Types	**EAS EBS ECS**	**DAC 01 PAC 01**	**DAC 51**
			
Dimensions HxWxD (mm) DIN RAIL housing	56 x 22.5 x 49 [Mini-E] 56 x 22.5 x 44 [Mini-E] [F]	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]
Plug-in housing		80 x 36 x 94 [P]	
Function	EAS - Delay on operate (automatic start). EBS - Interval (automatic start). ECS - Symmetrical recycler (ON/OFF automatic start) thyristor output. Screw or fast-ON connection. DIN-rail or chassis mounting	Star delta	Star delta
Input specifications			
Time range	[10S] : 0.5 s - 10 s [1M] : 0.1 m - 1 m [10M] : 1 m - 10 m	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s
Star to delta relay (neutral centre position)		50 - 130 ms between star to delta position	50 - 130 ms between star to delta position
Output specifications			
	Static output 500 mA, 700 mA [F]	1 x SPDT relay (with neutral centre position)	1 x SPDT relay (with neutral centre position)
Max. load AC1		8 A / 250 VAC	5 A / 250 VAC
Max. load DC12		5 A / 24 VDC	5 A / 24 VDC
Electrical life		>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24-230 VAC / DC [EAS] 24-230 VAC [EBS], [ECS]	24-240 VAC / DC [M24] 380-415 VAC [M40]	24-240 VAC / DC
Approvals / Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	EAS S M23 . . .	**DAC01C M24**	**DAC51C M24**
	EAS S M23 . . . F	**PAC01C M24**	
	EBS S M23 . . .	**DAC01C M40**	
	EBS S M23 . . . F	**PAC01C M40**	
	ECS S M23 A . . .		
	ECS S M23 B . . .		
	ECS S M23 A . . . F		
	ECS S M23 B . . . F		
	. . . = insert code for Time Range		

Current transformers

Current transformers for monitoring relays

Types	MI	MP	A 82	E 83
				
Dimensions HxWxD (mm)	45 x 52 x 16 [5 / 20] 67.5 x 95 x 20 [100 / 500]	45 x 120 x 16 [5 / 20] 114 x 150 x 23 [100 / 500]	67.5 x 95 x 20	56 x 22.5 x 49
Function	1-phase AC. Output voltage. Cable hole	3-phase AC. Output voltage. Cable hole	1-phase AC. Output 0 / 4-20 mA DC, 0-10 VDC (A82-30). Cable hole. Led indication	1-phase AC. Output 4-20 mA DC. Cable hole. DIN-rail mounting
Input specifications				
Input current	0.5 - 5 AAC[5] 2 - 20 AAC [20] 10 - 100 AAC [100] 50 - 500 AAC [500]	0.5 - 5 AAC[5] 2 - 20 AAC [20] 10 - 100 AAC [100] 50 - 500 AAC [500]	0 - 25 AAC [25] 0 - 50 AAC [50] 0 - 100 AAC [100] 0 - 250 AAC [250] 0 - 500 AAC [500]	0 - 5 AAC 0 - 10 AAC 0 - 15 AAC 0 - 20 AAC 0 - 25 AAC 0 - 30 AAC 0 - 50 AAC
Max. current continuously	20 AAC [5] 50 AAC [20] 250 AAC [100] 750 AAC [500]	20 AAC [5] 50 AAC [20] 250 AAC [100] 750 AAC [500]	600 AAC	100 AAC
Dielectric voltage	6 kV ACrms	6 kV ACrms	6 kV ACrms	
Output specifications				
Output value	0.4 - 4 Vp The output voltage is proportional to the input current	0.4 - 4 Vp The output voltage is proportional to the highest current value in the 3 conductors wich are drawn through the holes of the current metering transformer	A82 - 10: 0-20 mA DC A82 - 20: 4-20 mA DC A82 - 30: 0-10 VDC The output current (A82-10, A82-20) and voltage (A82-30) are proportional to the input current	4 - 20 mA DC The output current is proportional to the input current
Output tolerance	± 5% @ In	± 5% @ In	± 2% @ 50 Hz	± 2% @ 50 Hz
Rated insulation voltage (cable)	250 VACrms	250 VACrms	250 VACrms	
General specifications				
Cable hole diameter	10.5 mm [5 / 20] 27 mm [100 / 500]	3 x 12 mm [5 / 20] 3 x 27 mm [100 / 500]	27 mm	12 mm
Connection cable	2 m PVC 2 x 0.5 mm^2	2 m PVC 2 x 0.5 mm^2	A82-10, A82-30: 2m, 3x0.25 m^2 A82-20: 2m, 2x0.25 m^2	Screw terminal 2 x 1.5 mm^2
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
References				
	MI 5	**MP 3005**	**A 82-XX 25**	**E 83-20 50**
	MI 20	**MP 3020**	**A 82-XX 50**	
	MI 100	**MP 3100**	**A 82-XX 100**	
	MI 500	**MP 3500**	**A 82-XX 250**	
			A 82-XX 500	
			XX = 10: 0-20 mA DC = 20: 4-20 mA DC = 30: 0-10 VDC	

Current transformers

Current Transformers

Types	TADK	TADK2	CTD 1
			
Dimensions HxWxD (mm)	115.5 x 75 x 44	115.5 x 75 x 44	86 x 56 x 42
Input specifications			
	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5
Output specifications			
Secondary current	5 A standard (1 A on request)	5 A standard (1 A on request)	5 A 1 A
General specifications			
Class	0.5	0.5	0.5 / 1 / 3
Bus-bar size (mm)	no (wounded primary)	25 x 5 (fixed bar)	20 x 5
Standards	IEC 60185	IEC 60185	EN 60044-1
Primary current			

Accuracy class depending on the burden output I2 nominal 1 A / 5 A	Burden (VA)				Burden (VA)				Burden (VA			
	Class	0.5	1	3	Class	0.5	1	3	Class	0.5	1	3
	1 A	10			1 A	10			50 A		1	1.25
	5 A	10			5 A	10			60 A		1	1.25
	10 A	10			10 A	10			70 A		1.5	1.75
	15 A	10			15 A	10			75 A	1	1.25	1.75
	25 A	10			25 A	10			80 A	1.25	1.5	2
	40 A	10			40 A	10			100 A	1.5	1.75	2.25
					50 A	10			120 A	1.75	2	2.5
					60 A	10			125 A	2	2.25	2.75
					80 A	10			150 A	2.25	2.5	3
					100 A	10			160 A	2.5	2.75	3.25
					150 A	10			200 A	3	3.25	3.75
					200 A	10			250 A	4.5	4.75	5.25
					250 A	10			300 A	5	5.5	6

General specifications

For ordering key details, please refer to www.productselection.net

Current transformers

Current transformers

Types	CTD 2	CTD 3	CTD 4
			
Dimensions HxWxD (mm)	86 x 56 x 42	109 x 77 x 42	113 x 90 x 42

Input specifications

	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A 1 A	5 A 1 A	5 A 1 A

General specifications

Class	0.5 / 1 / 3	0.5 / 1 / 3	0.5 / 1 / 3 / 5P5
Bus-bar size (mm)	32 x 5 x 30 x 10	51 x 15	64 x 20
Standards	EN 60044-1	EN 60044-1	EN 60044-1

Primary current

Accuracy class depending on the burden output I2 nominal 1 A / 5 A

	Burden (VA)				Burden (VA)				Burden (VA)			
Class	0.5	1	3	Class	0.5	1	3	Class	0.50	1	3
40 A			1.25	50 A			1.75	150 A		2.5	5
50 A			1.5	60 A			2	200 A		3.25	6
60 A			2	70 A			2.25	250 A	2.5	4.5	2
70 A			2.5	75 A			3	300 A	3	4	3
75 A		1.75	2.5	80 A			3	400 A	6	9	3
80 A		2	2.75	100 A		2	3.5	500 A	10	12.5	4
100 A		2.5	3	120 A		2.25	4	600 A	11	13.5	4
120 A		2.75	3.75	125 A		2.5	4.5	700 A	12.5	15	5
125 A	2	2.75	3.75	150 A	2.25	3	6	750 A	13	15.5	5
150 A	3	4	5	160 A	2.5	3.5	6.5	800 A	14	16.5	5
160 A	3	4	5	200 A	3	4.5	8.5	1000 A	17.5	20	6
200 A	4	5	6.5	250 A	3.5	6.5	10.5	1200 A	20	22.5	6
250 A	5.5	7	8	300 A	7	10	13	1250 A	20	22.5	6
300 A	7	8.5	9.5	400 A	9	14	17	1500 A	27.5	30	8
400 A	12	13.5	14.5	500 A	14	18	21	1600 A	27.5	30	8
500 A	14	15.5	16.5	600 A	17	21	24				
600 A	17.5	19	20	700 A	22	26	29				
				750 A	24	28	31				
				800 A	25	29	32				

References

For ordering key details, please refer to www.productselection.net

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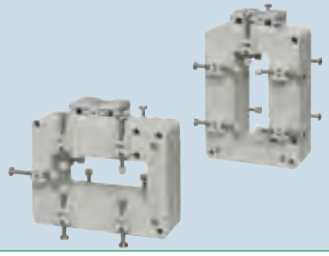
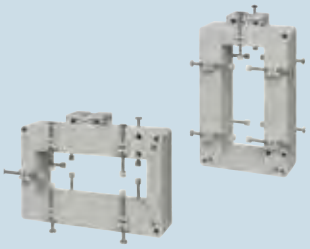
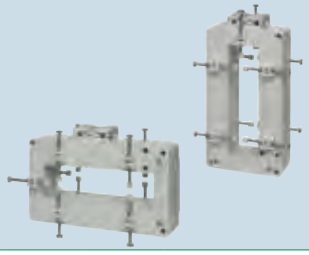
Current transformers

Current transformers

Types	CTD 8V CTD 8H	CTD 9V CTD 9H	CTD 10V CTD 10H
			
Dimensions HxWxD (mm)	132.9 x 87 x 60	177.9 x 91.7 x 60	177.9 x 106.7 x 60

Input specifications

	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A 1 A	5 A 1 A	5 A 1 A

General specifications

Class	0.5 / 1 / 3	0.5 / 1 / 3	0.5 / 1 / 3
Bus-bar size (mm)	81 x 31	125 x 36	126 x 51
Standards	EN 60044-1	EN 60044-1	EN 60044-1

Primary current

Accuracy class depending on the burden output I2 nominal 1 A / 5 A

	Burden (VA)				Burden (VA)				Burden (VA)			
	Class	0.5	1	3	Class	0.5	1	3	Class	0.50	1	3
	150 A			2	400 A		3	6	400 A	1	7	10
	200 A			4	500 A	2	4	8	500 A	3	10	14
	250 A			5	600 A	4	6	10	600 A	5	12	17
	300 A		2	6	700 A	4	8	10	700 A	8	15	20
	400 A	3	5	8	750 A	4	8	10	750 A	10	15	20
	500 A	5	7	10	800 A	4	8	10	800 A	10	15	20
	600 A	6	10	12	1000 A	6	10	13	1000 A	12	20	25
	700 A	6	10	12	1200 A	8	12	15	1200 A	15	25	30
	750 A	8	12	15	1250 A	8	12	15	1250 A	15	25	30
	800 A	8	12	15	1500 A	10	15	18	1500 A	20	30	40
	1000 A	10	15	20	1600 A	10	15	18	1600 A	20	30	40
	1200 A	12	15	20	2000 A	15	20	24	2000 A	25	40	50
	1250 A	12	15	20	2500 A	20	25	30	2500 A	30	50	60
	1500 A	15	20	25	3000 A	25	30	35	3000 A	30	50	60
	1600 A	15	20	25	3200 A	25	30	35	3200 A	30	50	60
	2000 A	20	25	30								
	2500 A	25	30	40								

References

For ordering key details, please refer to www.productselection.net

Current transformers

Split core current transformers

Types	CTD 5S	CTD 6S	CTD 8S
			
Dimensions HxWxD (mm)	93.9 x 83 x 60	113.9 x 107 x 60	132.9 x 87 x 60

Input specifications

	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC
Operating frequency	58 to 62 Hz	58 to 62 Hz	58 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV_{RMS}, 50 Hz, 1min	3 kV_{RMS}, 50 Hz, 1min	3 kV_{RMS}, 50 Hz, 1min
Security factor	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A 1 A	5 A 1 A	5 A 1 A

General specifications

Class	1	1	1
Bus-bar size (mm)	27 x 32	52 x 51	81 x 31
Standards	EN 60044-1	EN 60044-1	EN 60044-1

Primary current

	Burden (VA)			Burden (VA)			Burden (VA)		
	Class	1	3	Class	1	3	Class	1	3
	100 A		1.5	150 A		1.5	150 A		1.5
	125 A	1.5	1.5	200 A	1.5	2	200 A		1.5
	150 A	1.5	2.5	250 A	1.5	3.75	250 A		2
	200 A	1.5	5	300 A	1.5	5	300 A		2
	250 A	1.5	5	400 A	2.5	5	400 A	3	5
	300 A	2.5	7.5	500 A	5	10	500 A	5	7
	400 A	5	10	600 A	7.5	15	600 A	6	10
				700 A	7.5	15	700 A	6	10
				750 A	7.5	15	750 A	8	12
				800 A	10	15	800 A	8	12
				1000 A	10	15	1000 A	10	15
							1200 A	12	15
							1250 A	12	15
							1500 A	15	20
							1600 A	15	20
							2000 A	20	25
							2500 A	25	30

References

For ordering key details, please refer to www.productselection.net

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Current transformers

Current transformers

Types	CTD 8Q	CTD 9S	CTD 10S
			
Dimensions HxWxD (mm)	144 x 129 x 55	177.9 x 91.7 x 60	177.9 x 106.7 x 60
Input specifications			
	Current transformer 1-phase AC	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC
Operating frequency	48 to 62 Hz	58 to 62 Hz	58 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV_{RMS}, 50 Hz, 1min	3 kV_{RMS}, 50 Hz, 1min	4 kV_{RMS}, 50 Hz, 1min
Security factor	≤ 5	≤ 5	≤ 5
Output specifications			
Secondary current	5 A 1 A	5 A 1 A	5 A 1 A
General specifications			
Class	0.5	1	1
Bus-bar size (mm)	55 x 100	126 x 36	126 x 51
Standards	EN 60044-1	EN 60044-1	EN 60044-1

Primary current

Accuracy class depending on the burden output I2 nominal 1 A / 5 A

Burden (VA)		Burden (VA)			Burden (VA)		
Class	0.5	Class	1	3	Class	1	3
1000 A	15	400 A		3	400 A	1	7
1500 A	15	500 A	2	4	500 A	3	10
2000 A	15	600 A	4	6	600 A	5	12
2500 A	15	700 A	4	8	700 A	8	15
3000 A	15	750 A	4	8	750 A	10	15
4000 A	15	800 A	4	8	800 A	10	15
		1000 A	6	10	1000 A	12	20
		1200 A	8	12	1200 A	15	25
		1250 A	8	12	1250 A	15	25
		1500 A	10	15	1500 A	20	30
		1600 A	10	15	1600 A	20	30
		2000 A	15	20	2000 A	25	40
		2500 A	20	25	2500 A	30	50
		3000 A	25	30	3000 A	30	50
		3200 A	25	30	3200 A	30	50

References

For ordering key details, please refer to www.productselection.net

Current transformers

	Current transformers		Active current sensor
Types	**CTD 11V CTD 11H**	**CTD 12V CTD 12H**	**ROG 400**
			
Dimensions HxWxD (mm)	178 x 98 x 55	178 x 125 x 55	54 x 29 x 17
Input specifications			
	Current transformer 1-phase AC	Current transformer 1-phase AC	Split core AC current sensor 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	45 to 65 Hz
Max. system voltage	0.72 kV	0.72 kV	
Rated insulation level	3 kV_{RMS}, 50 Hz	3 kV_{RMS}, 50 Hz	3 kV_{RMS}, 50 Hz
Security factor	≤ 5	≤ 5	
Output specifications			
Secondary current	5 A 1 A	5 A 1 A	4 to 20 mA DC
General specifications			
Class	0.5	0.5	
Bus-bar size (mm)	125 x 53	125 x 53	40
Standards	EN 60044-1	EN 60044-1	
Primary current			
	Burden (VA)	Burden (VA)	
	Class 0.5	Class 0.5	
	1000 A 15	1000 A 15	
	1500 A 15	1500 A 15	
	2000 A 15	2000 A 15	
	2500 A 15	2500 A 15	
	3000 A 15	3000 A 15	
	4000 A 15	4000 A 15	
Accuracy class depending on the burden output I2 nominal 1 A / 5 A			400 AAC
References			
	For ordering key details, please refer to www.productselection.net		

Current transformers

Split core current sensors for EM21 72V

Types	CTV-1X	CTV-2X	CTV-3X
			
Input / output specifications			
Primary current 50/60 Hz	60 A (1-70 A)	100 A (1-120 A)	200 A
Secondary output	333 mV	333 mV	333 mV
General specifications			
Accuracy	1%	1%	1%
Linearity	0.5%	0.5%	0.5%
Phase error at nominal current	≤4°	≤2°	≤2°
Max. system voltage	660 V	660 V	660 V
Opening angle	180°	180°	180°
Certifications	CE - cURus	CE - cURus	CE - cURus
References			
	CTV1X60A333MV	**CTV2x100A333MV**	**CTV3X200A333MX**

Types	CTV-4X	CTV-8X
		
Input / output specifications		
Primary current 50/60 Hz	400 A (20-480 A max)	800 A (1-1000 A max)
Secondary output	333 mV	333 mV
General specifications		
Accuracy	1%	1%
Linearity	0.5%	
Phase error at nominal current	≤2°	≤2°
Max. system voltage	660 V	660 V
Opening angle	180°	
Certifications	CE - cURus	CE - cURus
References		
	CTV4X400A333MV	**CTV8X800A333MV**

Converters and gateway

	Serial converter		Ethernet gateway	M-bus converter
Types	**SIU-PC2**	**SIU-PC3**	**SIU-TCP2**	**VMU-B**
				
Dimensions HxWxD (mm)	Front: 100 x 67	Front: 60 x 37.5	Front: 78 x 65	Front: 90 x 17.5
Function	RS422 / RS485 to RS232 converter	RS422 / RS485 to USB converter	Ethernet to RS232 / 485 Gateway	Modbus to M-bus converter
Port 1				
Port Connections	RS232 9-pole, female	USB type A	Ethernet, 10 / 100 Mbps RJ45	RS485
Baud rate	Max 230400 Baud	Max 961.6 kBaud	Max 230400 Baud	
Port 2				
Port Connections	RS422, RS485 2-wire and 4-wire communication	RS232, RS485 2-wire communication	RS232, RS485 2-wire and 4-wire communication	M-bus
General specifications				
Power supply	12 to 30 VDC Suggested adapter: SPD12-101 (120 to 240 VAC/DC)	Self supplyed by USB port	9 to 30 VDC AD5V1A: AC / DC power supply adapter (on request)	18 to 260 VAC/DC
Approvals / Marks	CE - FCC	CE - FCC	CE	CE
References				
	SIU PC2	**SIU PC3**	**SIU TCP2**	**VMUBM1US1B1X01**
	SIU PC2I (2kV insulated)			

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Digital panel meters

Ammeters, voltmeters and frequency meters

Types	DI3 DIN	DI3 72	LDI 3
			
Dimensions HxWxD (mm)	89 x 52.5 x 58.5	72 x 72 x 75.5	48 x 96 x 83
Function	3-digit meter. 1-phase AC, DC. Voltmeter, ammeter frequency meter	Microprocessor based indicator. AC / DC Ammeter, Voltmeter. Freq. meter 3-digit display red LED. Height: 14.2 mm	Microprocessor based indicator. AC / DC Ammeter, Voltmeter. Freq. meter 3-digit display
Input specifications			
Range code	1 A / 100 VAC [AV1] 5 A / 500 VAC [AV5] 1 A / 60 mV / 100 V / 500 VDC [AV6] 1 Hz to 1000 Hz [F1K]	[AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC	[AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC [F1K]: 1 to 1000Hz
Accuracy	0.5% FS (0.1% FS frequency meter)	±0.5% FS	±0.5% FS (±0.3% FS frequency meter)
Indication – Max.	999 [AV1 / AV5], 000 [AV1 / AV5]	999 [AV1 / AV5], 000 [AV1 / AV5]	999
Indication – Min.	-99 [AV6]	-99 [AV6]	[AV1 / AV5]: 000, [AV6]: -99
Range selection / decimal point pos.	Selectable by DIP-switch	Selectable by DIP-switch	Selectable by DIP-switch
Display refresh time	1 time/s	1 time/s	1 time/s
General specifications			
Power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]	230 VAC [D], 24 [A], 48 [B], 115 [C] VAC
Option			IP65[IX], tropicalization [XT]
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals / Marks	CE	CE - c CSA us	CE - c CSA us
References			
	For ordering key details, please refer to www.productselection.net		

Digital panel meters

	Ammeters and voltmeters		Thermometer and ohmmeter
Types	**LDI 35 AV0**	**LDI 35 AV2**	**LDI 35 CF**
			
Dimensions HxWxD (mm)	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	Microprocessor based indicator/controller, AC / DC ammeter, voltmeter, 3½-digit or 3-digit + dummy zero display	Microprocessor based indicator/controller, AC / DC ammeter, voltmeter, 3½-digit or 3-digit + dummy zero display	Microprocessor based indicator/controller, Temperature resistance Measurem. in C° or F° 3½-digit or 3-digit + dummy zero display
Input specifications			
Range code	Current: 2 mA DC, 20 mA DC Voltage: 200 mV DC, 20 VDC, 200 VDC [AV0]	Current:2 A AC / DC 5 A AC / DC, Voltage: 200 V AC / DC, 500 V AC / DC [AV2]	Pt100, Ni100 [CFX]; Pt1000[CFP]; TC-J-LK-S-T [CFX/CFP]; 200.0Ω [CFX]; 2000Ω [CFP]
Accuracy	±0.3% FS	DC: ±0.3% FS, AC: ±0.5% FS	TC, PT100/1000, resistence ±0.3% FS Ni 100 ±0.5% FS
Indication – Max.	3½-dgt: 1999, 3+0-dgt: 9990	3½- dgt: 1999, 3+0-dgt: 9990	Depending on range and type of the temperature probe
Indication – Min.	3½-dgt: -1999, 3+0-dgt: -1990	3½-dgt: -1999 (DC), 0 (AC), 3+0-dgt:-1990 (DC), 0 (AC)	
Resistance			0 to 200 Ω (2000 Ω)
Range election / decimal point pos.	Programmable	Programmable	Programmable
Display refresh time	4 times/s	4 times/s	4 times/s
Functions			
	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.
Output specifications			
Setpoints	1 optional alarm [1] 5 A / 250 VAC / DC. Excit. output 40 mA / 15 VDC [AX]	1 optional alarm [1] 5 A / 250 VAC / DC. Excit. output 40 mA / 15 VDC [AX]	1 optional alarm [1] 5 A / 250 VAC / DC. Excit. output 40 mA / 15 VDC [AX]
General specifications			
Power supply	120 [E], 230 [D], 240[F], 24 [A], 48 [B], 115 [C] VAC, 9-32 [3] VDC, 40-150 [6] VDC	120 [E], 230 [D], 240[F], 24 [A], 48 [B], 115 [C] VAC, 9-32 [3] VDC, 40-150 [6] VDC	120 [E], 230 [D], 240[F], 24 [A], 48 [B], 115 [C] VAC, 9-32 [3] VDC, 40-150 [6] VDC
Option	IP65[IX], excit. out [AX], tropicalization [XT]	IP65[IX], excit. out [AX], tropicalization [XT]	IP65[IX], excit. out [AX], tropicalization [XT]
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals / Marks	CE - c CSA us	CE - c CSA us	CE - c CSA us
References			
	For ordering key details, please refer to www.productselection.net		

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Digital panel meters

Ammeters and voltmeters

Types	LDM 30	LDM 35 H	LDM 40
			
Dimensions HxWxD (mm)	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	3-digit + dummy 0 µP-based indicator, red LED display	3 ½-digit µP-based indicator and controller, 3 ½-DGT or 3-DGT + dummy 0 red LED display	4-digit µP-based indicator and controller
Input specifications			
Range code	1A/100VAC [AV1]; 5A/500VAC [AV5]	(0.2-2-20 mA, 0.2-2-20 V) [LSE]; (0.2- 2-5 A, 20-200-500 V) [HSX]; DC and AC TRMS	(0.2-2-20 mA, 0.2-2-20 V) [LSE]; (0.2- 2-5 A, 20-200-500 V) [HSX]; DC and AC TRMS
Accuracy	±0.5%FS, ±1DGT	DC: ±(0.3%RDG + 3DGT) AC: ±(0.5%RDG + 3DGT)	DC: ±(0.1%RDG + 2DGT) AC: ±(0.3%RDG + 2DGT)
Indication – Max.	9990		9999
Indication – Min.	000		0 (AC) -9999 (DC) 4-digit LED red
Range selection / decimal point pos.	Selectable by dipswitch	Programmable	Programmable
Display refresh time	2 times/s	5 times/s	5 times/s
Functions			
		Signal / display scaling. Digital filter. Peak and valley	Signal / display scaling. Digital filter. Peak and valley
Output specifications			
		Up to 2 Alarm relay, [1-2]	Up to 2 Alarm relay, [1-2], Analogue 0 to 20mA, 0 to 10V [AV], RS485
General specifications			
Power supply	24 / 48V AC [B], 115 / 230V AC [D]	90 to 260V AC / DC [H], 18 to 60V AC / DC [L]	90 to 260V AC / DC [H], 18 to 60V AC / DC [L]
Option	Tropicalization [XT], IP65 [IX]	Tropicalization [TX]	Tropicalization [TX]
Safety Standards	EN61010-1 IEC61010-1		EN61010-1 IEC61010-1
Approvals / Marks	CE - c UR us - c CSA us	CE - c UR us - c CSA us	CE - c UR us - c CSA us pending
References			
	For ordering key details, p lease refer to www.productselection.net		

Digital panel meters

Modular meter and conditioner

Types		UDM 35	UDM40/USC	UDM 60
				
Dimensions HxWxD (mm)		48 x 96 x 105	44 x 113 x 107 (USC) 48 x 96 x 105 (UDM40)	48 x 96 x 105
Function		MODULAR Microprocessor-based indicator / controller AC/DC Ammeter / Voltmeter / resistance / temperature measurement	MODULAR Microprocessor-based indicator / controller AC/DC Ammeter / Voltmeter / resistance / temperature measurement	MODULAR 6-DGT µP-based controller
Input specifications				
Range code		0.2-2-20 mA DC / AC 0.2-2-20V DC / AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC / AC; 20-200-500 V DC / AC [HSX]; TC: J-K-S-T-E, Pt100-250-500-1000 [TRX]; 0.02-0.2-2-20 kΩ [TRX]	0.2-2-20 mA DC / AC 0.2-2-20 V DC / AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC / AC; 20-200-500 V DC / AC [HSX]; TC: J-K- S-T-E, Pt100-250-500-1000 [TRX]; 0.02-0.2-2-2 0kΩ [TRX]	Speed, frequency, rate, period, totalizer 0.001Hz to 50Hz for DC signal [TF1] 0.001Hz to 50Hz for AC signal [TF2]
Accuracy		0.1% RDG	0.1% RDG	±(0.001%RDG + 3DGT)
Indication	Max.	1999	9999	9 999 999
	Min.	0 (AC) -1999 (DC), 3 1/2-digit LED red	0 (AC) -9999 (DC), 4-digit LED. Colours: red, green, orange	0 6-DGT, LCD backlighted display
Range election / decimal		Programmable	Programmable	Programmable
Display refresh time		5 times/s	5 times/s	
Functions				
		Password protection. Scaling factor. Min Max data storage. Programmable digital filter. Range selection. Programmable via PC	Password protection. Scaling factor. Min Max data storage. 16 linearization points. Programm.digital filter. Range selection. Programmable via PC	Signal/display scaling. Analogue output scaling. Digital filter. Peak and valley. Linearization. Combination of the inputs according to predefined functions. Pulse metering and totalizing
Output specifications				
Setpoints		Analogue 0 to 20mA, 0 to 10V [AV], Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [RS]	Analogue 0 to 20mA, 0 to 10V [AV], Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [RS]	Analogue 0 to 20 mA, 0 to 10V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [RS]
General specifications				
Power supply		90 to 260 VAC / DC [H], 18 to 60 VAC / DC [L]	90 to 260 VAC / DC [H], 18 to 60 VAC / DC [L]	90 to 260 AC / DC [H], 18 to 60 VAC / DC [L]
Option		Tropicalization [TX]	Tropicalization [TX]	Tropicalization [TX]
Safety Standards		EN 61010-1, IEC 61010-1	EN 61010-1, IEC 61010-1	EN 61010-1, IEC 61010-1
Approvals / Marks		CE - c UR us - c CSA us	CE - c UR us - c CSA us	CE - c UR us - c CSA us pending
References				
			For ordering key details, please refer to www.productselection.net	

Energy management

	Energy meter / Energy analyzer	Energy meter	
Types	**EM10 DIN / EM11 DIN**	**EM21 72D / 72V**	**EM21 72R**
			
Dimensions HxWxD (mm)	90 x 18 x 67	72 x 72 x 65	72 x 72 x 65
Description	1-DIN module		
Function	1-phase energy meter kWh (EM10) 1-phase energy analyzer (EM11) V_{LN}, A, Hz, W, W_{dmd}, var, PF, kWh, kvarh. TRMS method	3-phase energy analyzer with double mounting capability, panel and DIN rail, W, var, PF, Phase-sequence, VLL, VLN, A TRMS method	3-phase energy analyzer with double mounting capability, panel and DIN rail, W, var, PF, Phase-sequence, VLL, VLN, A TRMS method
Input specifications			
Range code	120 VAC [AV7] 230 VAC [AV8] Ib: 5 A, Imax: 32 AAC; 1-phase	120 / 230 VAC, 400 VAC In: 5 A; Imax: 6 A (72 D) 3-phase by CTV current sensor (72V)	120 / 230 VAC, 400 VAC In: 5 A; Imax: 6 A 3-phase by included current sensor
Accuracy	±0.5% RDG (V, A) (EM11)	±0.5% RDG (V, A)	±0.5% RDG (V) ±1% RDG (A)
Active energy	Class 1 (EN62053-21) +	Class 1 (EN62053-21) Class B (EN50470-3)	Class 2 (EN62053-21) Class A (EN50470-3)
Reactive energy	Class B (EN50470-3) (EM10 / EM11) Class 2 (EN62053-23) (EM11)	Class 2 (EN62053-23)	
Display	4 DGT (inst. variables) (EM11) 5+1 DGT (energies), LCD	3 DGT (inst. variables) 6+1 DGT (energies), LCD	3 DGT (inst. variables) 6+1 DGT (energies), LCD
Output specifications			
Out 1 (Pulse)	1-open collector	1 static opto-mosfet	1 static opto-mosfet
Out 1 (Alarm)	1-relay (EM11)	None	None
Out 2 (Serial communication)		RS485 (2-wire, Modbus) M-BUS by means of VMU-B	RS485 (2-wire, Modbus) M-BUS by means of VMU-B
Inputs		None	None
General specifications			
Power supply	Self power supply [X]	Self power supply	Self power supply
Approvals / Marks	CE - MID certification	CE	CE
References			
	For ordering key details, please refer to www.productselection.net		

Energy management

	Multifunction meter	Energy meter	Energy analyzer
Types	**WM10 DIN**	**EM23 DIN**	**EM24 DIN**
			
Dimensions HxWxD (mm)	90 x 71 x 64.5	90 x 71 x 64.5	90 x 71 x 65
Description			4 DIN modules
Function	3-phase multifunction meter W, var, PF, Hz, A, VLN, VLL TRMS method	3-phase energy analyzer W, var, A, kWh, kvarh TRMS method	3-phase energy analyzer Sys: VLL, VLN, , var, VA, Wdmd, W, VAdmd, Hz, kWh, kvarh, hour counter, gas and water Max: Admd, Wdmd, VAdmd. Single-phase: VLL, VLN, A, W, var, VA, PF, Admd, kWh, kvarh. TRMS method
Input specifications			
Range code	400 VLLAC Ib: 10 A; Imax 65 A 3-phase	400 VLLAC Ib: 10 A; Imax 65 A 3-phase	120 / 208 VL-L [AV6]; 400 VL-L [AV5] In: 1 / 5 A, Imax: 10 AAC; 120 / 208 VL-L [AV0]; 230 VL-L [AV2] 400 VL-L [AV9] Ib: 10 A, Imax: 64 AAC; 3-phase
Accuracy			±0.5% RDG (V, A)
Active energy	Class 1 (EN62053-21) +	Class 1 (EN62053-21) +	Class 1 (EN62053-21) +
Reactive energy	Class B (EN50470-3) Class 2 (EN62053-23)	Class B (EN50470-3) Class 2 (EN62053-23)	Class B (EN50470-3) Class 2 (EN62053-23)
Display	3 x 3 DGT (inst. variables)	3 x 3 DGT (inst. variables) 6+1 DGT (energies) LCD	3x4 DGT (inst. variables) 8 DGT (energies), LCD
Output specifications			
Out 1 (Pulse)	None	1-open collector	2-open collector / relay
Out 1 (Alarm)	None	None	2-relay / open collector
Out 2 (Serial communication)	None	None	RS485 (2-wire) / M-BUS
Inputs	None	None	3 digital input
General specifications			
Power supply	Self power supply	Self power supply	Self power supply [X]. Auxiliary power supply: 18 to 60 VAC / DC [L], 115 / 230 VAC [D], according to the model
Approvals / Marks	CE	CE - MID certification	CE - MID certification
References			
	For ordering key details, please refer to www.productselection.net		

CARLO GAVAZZI

Energy management

	Energy meter		Power analyzer
Types	**EM3-DIN**	**EM4-DIN**	**WM22 DIN**
			
Dimensions HxWxD (mm)	90 x 162.5 x 63	90 x 162.5 x 63	90 x 162.5 x 63
Description	MODULAR	MODULAR	MODULAR
Function	2-phase, 3-phase unbalanced 3 or 4 wires energy meter. Direct connection up to 100 A. 6+1 digits electromechanical display	3-phase energy meter. Direct connection up to 100 A. Back-lighted LCD display. 31 / 2 digits istantaneous variables read out, 8+ 7½ dgt energy read out. Measurement of system and phase variables, energy by timeperiods, m3 H20 and m3 GAS	3-phase power analyzer. Direct connection up to 100 A. Back-lighted LCD display. 4 x 31 / 2 digits istantaneous variables read out, 7½ digits energy read out. Measurement of system and phase variables. Measurement of THD
Input specifications			
Range code	208 V_{L-L} [AV8], 220 V_{L-L} [AV2], 400 V_{L-L} [AV9], 660 V_{L-L} [AV3] / 20(00) AAC. 3-phase unbalanced load [3]	100 V_{L-L} [AV6], 208 V_{L-L} [AV4], 400 V_{L-L} [AV5], 660 V_{L-L} [AV7] 5(10) AAC; 208 V_{L-L} [AV0] [AV8 self p.s.], 220 V_{L-L} [AV2], 400 V_{L-L} [AV1] [AV9 self p.s.], 660 V_{L-L} [AV3] 20(100) AAC	100 V_{L-L} [AV6], 208 V_{L-L} [AV4], 400 V_{L-L} [AV5],660 V_{L-L} [AV7] 5(10) AAC; 208 V_{L-L} [AV0], 400 V_{L-L} [AV1], 220 V_{L-L} [AV2] 660 V_{L-L} [AV3] 20(100) AAC
Accuracy			±0.5% RDG (A,V)
Active energy	Class 2: (EN61036)	Class 1: (EN61036)	Class 1: (EN61036)
Reactive energy	Class 3: (EN61268)	Class 2: (EN61268)	Class 2: (EN61268)
Display	6+1 digits (electromechanical)	3½-digit backlighted LCD (8-digit for energy)	1000 samples /s @ 50Hz
Output specifications			
Out 1 (Pulse)	Dual pulse outputs (NPN transistor) [O]	Dual pulse output module (NPN trans.) [O]	Dual pulse output module (NPN trans.)[O]
Out 1 (Alarm)		1 alarm output module [O] (NPN trans.) 30 VDC/100 mA Max	1 alarm + 1 pulse output module [O] (NPN tr) 30 VDC/100 mA Max
Out 2 (Serial communication)	None	RS422/485 serial port [SO]	1 analogue output : 0 to 20 mADC [A1], or 0 to 10 VDC [V1]
Inputs		2 digital inputs module [D]	RS422/485 serial port [SO]
General specifications			
Power supply	Self power supply [X]: 400 VAC, 208 VAC V_{L-L}, Auxiliary power supply: 230 VAC [D], 115 VAC [C]	Self power supply: [X] 400 VAC, 208 VAC, 220 VAC V_{L-L}, Auxiliary power supply: 230[D], 115[C], 48[B], 24 [A]VAC, 18 to 60 VDC [4], 77 to 143 VDC [5]	Self power supply: [X] 400 VAC 208 VAC V_{L-L}, Auxiliary power supply: 230[D], 115[C], 48[B], 24 [A]VAC, 18 to 60 [4], 77 to 143 VDC [5]
Approvals / Marks	CE	CE	CE
References			
	For ordering key details, please refer to www.productselection.net		

Energy management

	Multifunction meter		Power analyzers
Types	**WM12-DIN**	**WM14 DIN**	**WM14 Advanced**
			
Dimensions HxWxD (mm)	90 x 107.8 x 64.5	90 x 107.8 x 64.5	90 x 107.8 x 64.5
Function	3-phase multifunction power indicator. System: V_{LL}, V_{LN}, An, VA, VA_{dmd}, W_{dmd}, W, var, PF, Hz. Max: A, W_{dmd}. Single phase: V_{LL}, V_{LN}, A, VA, W, var, PF	3-phase power analyzer. System: V_{LL}, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, kWh, kvarh, hour meter; Max: A, A_{dmd}, W_{dmd}; Single phase: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA	3-phase power analyzer. System: V_{LL}, VLN, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, kWh, kvarh, hour meter; Max: W_{dmd}, VA_{dmd}. Single phase: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA, THD (A,V); Max: V_{LN}, A, A_{dmd}, W. Min: V_{LN}, A, PF
Input specifications			
Range code	400 / 660 V_{L-L} / 5(6) AAC [AV5] 100 / 208 V_{L-L} / 5(6) AAC [AV6]	400 / 660 V_{L-L} / 5(6) AAC [AV5] 100 / 208 V_{L-L} / 5(6) AAC [AV6]	400 / 660 V_{L-L} / 5(6) AAC [AV5], 100 / 208 V_{L-L} / 5(6) AAC [AV6]
Accuracy	±0.5% FS (V, A)	0.5 FS (V, A), 1 (kWh), 2 (kvarh)	0.5 FS (V, A), 1 (kWh), 2 (kvarh)
Display	3x3-digit LED	3x3-digit, LED 8+1-digit (energies)	3x3-digit, LED 8+-digit (energies)
Display refresh time	1.5 times/s	1.5 times/s	5 times/s (2 times/s FFT on)
Output specifications			
Serial communication output	RS485 port (on request) [S]	RS485 port (on request) [S]	RS485 port (on request) [S]
Alarm output			2 (relays) with PLC-type control function on 16 variables (AND / OR) [R]
Pulse output			2 (open collector) [O]
General specifications			
Power supply	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D], 18 to 60 VDC [3]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VDC [3]	18 to 60 VAC / DC [L], 90 to 260 VAC / DC [H]
Approvals / Marks	CE - cURus	CE - cURus - cCSAus	CE - cURus
Note			Advanced version [AX]
References			
	For ordering key details, please refer to www.productselection.net		

CARLO GAVAZZI

Energy management

	Multifunction meter	Power analyzers	
Types	**WM12 96**	**WM14 96 Basic/Profibus**	**WM14 96 Advanced**
			
Dimensions HxWxD (mm)	96 x 96 x 46	96 x 96 x 46	96 x 96 x 46
Function	3-phase multifunction indicator. System: V_{LL}, V_{LN}, A, An, VA, VA_{dmd}, W, W_{dmd}, var, PF, Hz. Max: A, W_{dmd} Single phase: V_{LL}, V_{LN}, A, VA, W, var, PF	3-phase power analyzer. System: V_{LL}, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, kWh, kvarh, hour meter; Max: A, A_{dmd}, W_{dmd}; Single phase: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA	3-phase power analyzer. System: V_{LL}, V_{LN}, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, kWh, kvarh, hour meter; Max: W_{dmd}, VA_{dmd}. Single phase: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA, THD (A,V); Max: V_{LN}, A, A_{dmd}, W. Min: V_{LN}, A, PF
Input specifications			
Range code	400 / 660 V_{L-L} / 5(6) AAC [AV5], 100 / 208 V_{L-L} / 5(6) AAC [AV6]	400 /660 V_{L-L} / 5(6) AAC [AV5], 100 /208 V_{L-L} / 5(6) AAC [AV6]	400 /660 V_{L-L} / 5(6) AAC [AV5], 100 /208 V_{L-L} / 5(6) AAC [AV6]
Accuracy	0.5 FS (V, A)	0.5 FS (V, A) 1 (kWh) 2 (kvarh)	0.5 FS (V, A), 1 (kWh), 2 (kvarh)
Display	3x3-digit, LED	3x3-digit, LED 8+1-digit (energies)	3x3-digit, LED 8+1-digit (energies)
Display refresh time	1.5 times/s	1.5 times/s	5 times/s (2 times/ FFT on)
Output specifications			
Serial communication output	RS 485 port (on request) [S]	RS 485 port (on request) [S] Profibus DP port [DG] (on request)	RS422/485 (on request) [S1]
Alarm output			2 (relays) with PLC-type control function on 16 variables (AND / OR) [R]
Pulse output			2 (open collector) [O]
General specifications			
Power supply	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D], 18 to 60 VDC [3]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D], 18 to 60 VDC [3], 90 to 260 AC / DC [H] DG version only	18 to 60 VAC / DC [L], 90 to 260 VAC / DC [H]
Approvals/Marks	CE - cURus - cCSAus	CE - cURus (no DG version)	CE - cURus
			Advanced version [AX]
References			
		For ordering key details, please refer to www.productselection.net	

Energy management

	Energy analyzer	Modular power quality analyzers	
Types	**EM26 96**	**WM30 96**	**WM40 96**
			
Dimensions HxWxD (mm)	96 x 96 x 61	96 x 96 x 50	96 x 96 x 50
Description		MODULAR	MODULAR
Function	3-phase energy analyzer Sys: V_{LL}, V_{LN}, An, var, VA, W, W_{dmd}, VA_{dmd}, VA, Hz, %THD-V, %THD-A, kWh, kvarh, hour counter, gas and water Max: A_{dmd}, W_{dmd}, VA_{dmd}. Single-phase: V_{LL}, V_{LN}, A, W, var, VA, PF, A_{dmd}. kWh, kvarh; TRMS method	3-phase power quality analyzer System: V_{LN}, V_L , VA, W, var, PF, Hz, THD total/partial kWh and kvarh Single phase: V_{LN}, V_{LL}, VA, AL, An, W, var, PF, THD; Phase-sequence-asymmetry loss	3-phase power quality analyzer System: V_{LN}, V_{LL}, VA, W, var, PF, Hz, THD. Total/partial kWh and kvarh (multi-tariff), K-factor Single phase: V_{LN}, V_{LL}, VA, AL An (calculated or measured),W, var, PF, THD, TDD; Phasesequence-asymmetry-loss Load profile, event stamping, data logger, utility and hour counters
Input specifications			
Range code	120 / 208 V_{L-L} [AV6], 400 / 660 V_{L-L} [AV5] In: 1 / 5A, Imax: 10AAC 3-phase unbal. load	400 / 690 V_{LL} AC1(2)A [AV4] 400 / 690 V_{LL} AC5(6)A [AV5] 100 / 208 V_{LL} AC5(6)A [AV6] 100 / 208 V_{LL} AC1(2)A [AV7]	400 / 690 V_{LL} AC1(2)A [AV4] 400 / 690 V_{LL} AC5(6)A [AV5] 100 / 208 V_{LL} AC5(6)A [AV6] 100 / 208 V_{LL} AC1(2)A [AV7]
Accuracy	±0.5% RDG (V, A) 1 (kWh), 2 (kvarh)	±0.2% RDG (V, A) C (kWh), 2 (kvarh)	±0.2% RDG (V, A) Class C (kWh), EN50470-3 Class 2 (kvarh), EN62053-23
Display	3x4-digit (inst. variables) 8-digit (energies) LCD	4x4-digit backligh. LCD 9+1-digit (energies)	4x4-digit backligh. LCD 9+1-digit (energies)
Display refresh time	1.5 times/s	≤ 100 ms	≤ 100 ms
Output specifications			
Serial communication output	RS485 (2-wire) [S1]	Modbus RS485/232 port + RTC [S1] , BACnet SMTP [B3]	Modbus RS485/232 port + RTC [S1], BACnet SMTP [B3] Optical port (ANSI type 2)
Internet/Ethernet port		Modbus TCP Ethernet port [E2], BACNet-IP [B1] , Ethernet/IP [E6]	Modbus TCP Ethernet port [E2], BACNet-IP [B1] , Ethernet/IP [E6]
Alarm output	2-relay [R2] / open collector [O3]	Up to 4 freely configuration virtual alarms	Up to 16 freely configuration virtual alarms
Pulse output	3-open collector [O3] / relay [B2]	Up to 2 digital output modules	Up to 8 digital outputs
Digital input	3 digital inputs [I3]		Up to 6 digital inputs
Analogue output		Up to 2 analogue output modules	Up to 4 analogue outputs
General specifications			
Power supply	18 to 60 VAC / DC [L] 90 to 260 VAC / DC [H]	18 to 60 VAC / DC [L] 90 to 260 VAC / DC [H]	18 to 60 VAC / DC [L] 90 to 260 VAC / DC [H]
Approvals / Marks	CE - cULus (only H)	CE - cULus "Listed"	CE - cULus "Listed"
References			
	For ordering key details, please refer to www.productselection.net		

CARLO GAVAZZI

Energy management

	Modular power quality analyzer	Modular power quality analyzer/transducers	
Types	**WM3 96**	**WM5 96**	**PQT H**
			
Dimensions HxWxD (mm)	96 x 96 x 124	96 x 96 x 124	90 x 90 x 140
Description	MODULAR	MODULAR	MODULAR
Function	3-phase power quality analyzer System: V_{LN}, V_{LL}, An, VA, VA_{dmd}, W, W_{dmd}, var, PF, Hz, THD, total/partial kWh, kvarh (4 tariff) Single phase: V_{LN}, V_{LL}, A, W, var, PF, THD	Smart power quality analyzer. Sys:V_{LN}, V_{LL}, An, W, var, VA, PF, Hz, kWh, kvarh, Single-phase: V_{LN}, V_{LL}, A, W, var, VA, PF, THD-V, THD-A. THD and single H up to the 63rd H (V, A)	Smart power quality transducer. Sys:V_{LN}, V_{LL}, An, W, var, VA, PF, Hz, kWh, kvarh, Single-phase: V_{LN}, V_{LL}, A, W, var, VA, PF, THD-V, THD-A. THD and single H up to the 63rd H (V, A)
Input specifications			
Range code	433 VAC-1/5 AAC [AV5] 690 VAC-1/5 AAC [AV7]	120/208VL-L [AV6], 400/690VL-L [AV5] In: 1/5A, Imax: 10AAC	120/208VL-L [AV6], 400/690VL-L [AV5] In: 1/5A, Imax: 10AAC
Accuracy	±0.5% RDG (V, A)	±0.2% RDG (V, A)	±0.2% RDG (V, A)
Active energy	1 (kWh)	Class 0.5 (EN62053-22)	Class 0.5 (EN62053-22)
Reactive energy	2 (kvarh)	Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	4x4-digit backligh. LCD 4x9-digit (energies)	WM5: 4x4-digit backlighted LCD WM5: 4x9-digit (energy)	
Sampling Rate	10 times /s	10 times /s	10 times /s
Output specifications			
Serial communication output	RS 422 / 485 port RS232 port + RTC	RS422 / 485, RS232+RTC modules. Optical port (ANSI C12.18/Modbus)	RS422 / 485, RS232+RTC modules. Optical port (ANSI C12.18/Modbus)
Internet / Ethernet port		Internet / Ethernet comm. with WEB server capability [E2]	Internet / Ethernet comm. with WEB server capability [E2]
Alarm output	Up to 2 single / dual open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules
Pulse output	Up to 2 single / dual open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules
Digital input	Up to 3 digital inputs	Up to 12 (W_{dmd}, VA_{dmd} sync.; tariff, contact ststus reading)	Up to 12 (W_{dmd}, VA_{dmd} sync.; tariff, contact ststus reading)
Analogue output	Up to 2 single / dual analog output modules	Up to 8, by single / dual (mA/V) output modules	Up to 8, by single / dual (mA/V) output modules
General specifications			
Power supply	18 to 60 VAC / DC [L] 90 to 260 VAC / DC [H]	18 to 60 VAC / DC [L], 90 to 260 VAC / DC [H]	18 to 60 VAC / DC [L], 90 to 260 VAC / DC [H]
Approvals / Marks	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA
References			
	For ordering key details, please refer to www.productselection.net		

Energy management

	Compact power transducers		Transducer
Types	**CPT DIN**	**CPT DIN Advanced**	**CVT DIN**
			
Dimensions HxWxD (mm)	45 x 83.5 x 98.5	45 x 83.5 x 98.5	89 x 71.5 x 58.5
Description	3-phase compact power transducer	3-phase compact power transducer	Single phase transducer
Function	4-digit data format instantaneous variable, 8+1-digit format energy variables, 5+2-digit data format hours. TRMS method. Sys: V_{LL}, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, kWh, kvarh, hour meter; Max: W_{dmd}; Single-ph: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA	4-digit data format instantaneous variable, 8+1-digit format energies, 5+2-digit format hours. TRMS method. Sys: V_{LL}, V_{LN}, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, kWh, kvarh, hour; Max: W_{dmd}, VA_{dmd}. Sing. ph: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA, THD, (A,V); Max: V_{LN}, A, A_{dmd}, W. Min: V_{LN},A, PF	1-phase AC, DC. Measurements V, A, Hz
Input specifications			
Range code	120 / 208VAC [AV6], 400 / 690VAC [AV5], 1AAC and 5AAC	120 / 208VAC [AV6], 400 / 690VAC [AV5], 1AAC and 5AAC	1 A / 100 VAC [AV1], 60 mVDC / 10 VDC [AV2], 5 A / 100 VAC [AV4], 5 A / 500 VAC [AV5], 200VDC / 1ADC [AV6], 45 to 55Hz [F1], 55 to 65Hz [F2], 350 to 450Hz [F3]
Accuracy	±0.5% RDG (A,V)	±0.5% RDG (A,V)	0.5% FS
Active energy	kWh: class 1	kWh: class 1 (EN62053-21)	
Reactive energy	kvarh: class 2	kvarh: class 2 (EN62053-23)	
Sampling Rate	1.5 times/s	1.5 times/s	
Output specifications			
Serial communication	RS422/485 [S1], RS232 [S2]	RS422/485 [S1], RS232 [S2]	
Alarm output		2 (relays) with PLC-type control function on 16 variables (AND / OR) [R2]	
Pulse output		2 (open collector) [O2]	
Analogue output		Up to 3: 20 mA [A1-3], 10 VDC [V1-3]	0 to 20 mA [1], 4 to 20 mA [2], 0 to 10 V [3], 0 to ±1 V [4]
General specifications			
Power supply	18 to 60 VAC / DC [L], 90 to 260 VAC / DC [H]	18 to 60 VAC / DC [L], 90 to 260 VAC / DC [H]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]
Approvals / Marks	CE - cURus - CSA	CE - cURus - CSA	CE
Note	Basic version [BX]	Advanced version [AX]	
References			
		For ordering key details, please refer to www.productselection.net	

Energy management

DC energy analyzers

Types	VMU-E	VMU-X
		
Dimensions	1-DIN module	1-DIN module
Description	DC energy analyzer: V, A, W, kWh	Power supply module for VMU-E unit
Input specifications		
Range code	400 VDC 20 A [AV00] (up 1000 A with external shunt) 400 VDC 1000A [AV10] (by 10V Hall effect sensors)	
Accuracy	±0.5% RDG (V, A)	
Energy	Class 1	
Display	6 DGT, LCD, h 7mm	
Output specifications		
Out 1 (Pulse)		1 opto-mosfet
Out 1 (Alarm)		1 opto-mosfet
Serial communication		RS485
General specifications		
Power supply	Self power supply through VMU-X unit [X]	38 to 265 VAC/DC [X]
Approvals / Marks	CE	CE
References		
	For ordering key details, please refer to www.productselection.net	

Energy monitoring solution

	Web-server	Modem
Types	**VMU-C EM**	**VMU-W**
		
Dimensions	2-DIN module	2-DIN module
Description	Web-server which controls and supervises any electrical installation acquiring information from energy meters, power analyzers and VMU I/O modules. It provides information via Internet, so data are available anywhere.	Modem based on "UMM" (Universal Mobile Modem) communication technology for data communication when wired Internet is not available. Suitable to be used in combination with VMU-C only.
Type	Micro PC	Universal Mobile Modem
Storage memory	4 GB	
Back-up memory	Micro-SD / Micro-SDHC / USB	
Mobile communication specifications		
SIM card		SIM (25 x 15mm) for data communication (M2M)
Compatibility		Modem compatible with quad-band GSM-GPRS-EDGE standards; dual-band UMTS-HSPA
Supported services		Internet communication; SMS
Communication port and Output specifications		
RS485	1 port for VMU I/O modules, 1 port for power analyzers and energy meters	
Ethernet	1 port for Internet / LAN connection	
USB	1 USB "A" (for USB stick) and 1 USB "mini-A" (service port)	
LED		
Status and colour	One LED with different colours for internal BUS communication, communication ports, alarms and power supply	Single colour green for ON/OFF. Single colour blue for communication link status.
Antenna		
Connector		RP-SMA female
Type		Stilo antenna included (available cable connected adhesive mount antenna as option)
Connections		
RS485	3 screw terminals per port	
Ethernet	RJ-45 connector (10 / 100 Base-T)	
USB	High Speed USB 2.0	
Power supply		
Voltage Supply	From 12 to 28 VDC	From 12 to 28 VDC
Power Consumption	5 W	≤ 5W
Approvals/Marks		
	CE, cULus listed	CE, cULus listed, R&TTE 99 / 5 / CE, FCC / IC / PTCRB
References		
	For ordering key details, please refer to www.productselection.net	

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Energy monitoring solution

VMU I/O optional modules

Types	VMU-M EM	VMU-P EM	VMU-O EM
			
Dimensions	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-DGT readout	Environment variable measurement unit	Inputs / outputs unit
Function	VMU-M performs the local bus management of VMU-P both measuring units and VMU-O I/O unit	2 temperatures, 1 analogue and 1 pulse rate output.	VMU-O allows to add, for every single unit, available in the local bus two digital inputs and two relay outputs
Input specifications			
Range code	2 Pt100 or Pt1000, 3-wires (-50.0 to +200.0°C) or one digital input and one pulse input, for local management.	2 Pt100 or Pt1000, 3-wires 1 analogue input (20mA or 120 mV). 1 pulse rate input (0 to 1000 Hz max.) [2TIW]	2 digital inputs for "Protection trip detection or others"
Accuracy	±(0.5%RDG + 5DGT)	±(0.2%RDG + 1DGT)	
Output specifications			
Alarm	Real and virtual alarm management of all variables coming from VMU-M and VMU-P with local event logging.		2 digital outputs for alarm notification of local alarms or as a digital input status changing. SPST relay type.
Serial communication	Local bus: up tu 1 VMU-P and 3 VMU-O units RS485 communication port (Modbus).	Local bus: one VMU-P unit per bus	Local bus: up to 3 VMU-O units
Others		Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit
General specifications			
Power supply	12 to 28 VDC power supply	Self-power supply from VMU-M unit	Self-power supply from VMU-M unit
Approvals / Marks	cULus approved	cULus approved	cULus approved
References			
	For ordering key details, please refer to www.productselection.net		

PV monitoring solution

	Web-server		Modem
Types	**Eos-Box**	**VMU-C**	**VMU-W**
			
Dimensions HxWxD (mm)	225 x 225 x 45	17.5 x 90 x 67	2-DIN module
Description	Eos-Box is a web server that controls and supervises the whole installation, acquiring information from: Eos-Array groups; inverters; energy meters; interface protection. The Eos-Box provides information via the internet, so the data is available wherever you are	VMU-C is a Web-server which controls and supervises a photovoltaic installation acquiring information from Eos-Array groups, inverters and energy meters. The VMU-C provides information via Internet, so data are available wherever you are	Modem based on "UMM" (Universal Mobile Modem) communication technology for data communication when wired Internet is not available. This unit is suitable to be used in combination with VMU-C only.
Type	Embedded PC	Micro PC	Universal Mobile Modem
Storage memory	8 GB DOM	4 GB	
Back-up memory	Industrial CompactFlash™ (on request)	Micro-SD / Micro-SDHC / USB	
Mobile communication specifications			
SIM card			SIM (25 x 15mm) for data communication (M2M)
Compatibility			Modem compatible with quad-band SM-GPRS-EDGE standards; dual-band UMTS-HSPA
Supported services			Internet communication; SMS
Communication port and Output specifications			
RS485	3 ports for Eos Array bus management 1 port for inverter and meters	1 port for Eos-Arrays, 1 port for inverters and energy meters	
Ethernet	1 for internet / LAN connection; 1 for local access	1 port for Internet / LAN connection	
USB	3, for local access and external modem connection	1 USB "A" (for USB stick) and 1 USB "mini-A" (service port)	
LED			
Status and colour	Green for power-on. Orange for DOM memory access	One led with different colors for internal BUS communication, communication ports, alarms and power supply	Single colour green for ON/OFF. Single colour blue for communication link status.
Antenna			
Connector			RP-SMA female
Type			Stilo antenna included (available cable connected adhesive mount antenna as option)
Connections			
RS485	3 pole detachable screw terminal block per port	3 screw terminals per port	
Ethernet	RJ-45 connector (10 / 100 Base-T)	RJ-45 connector (10 / 100 Base-T)	
USB	High speed USB 2.0	High Speed USB 2.0	
General specifications			
Voltage Supply	100 to 240 VAC	From 12 to 28 VDC	From 12 to 28 VDC
Power Consumption	70 W	5 W	≤ 5W
Approvals / Marks	CE	CE - UL listed	CE, cULus listed, R&TTE 99 / 5 / CE, FCC / IC / PTCRB
References			
	EOSBOXDXXX	For ordering key details, please refer to www.productselection.net	

PV monitoring solution

EOS-Array solar control solution

Types	VMU-M	VMU-S	VMU-P	VMU-O...AT
				
Dimensions HxWxD (mm)	1-DIN module	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-DGT readout	String unit, with built-in protection fuseholder	Environment variable measurement unit	Inputs/outputs unit
Function	VMU-M performs the local bus management of VMU-S, VMU-P both measuring units and VMU-O I/O unit	Variables measuring unit, DC current, voltage, power and energy metering. String control and efficiency mesurement	PV module temperature, air temperature, sun irradiation and wind speed metering	VMU-O allows to add, for every single unit, available in the local bus two digital inputs and two relay outputs
Input specifications				
Range code	2 Pt100 or Pt1000, 3-wire (-50.0 to +200.0°C) or one digital input and one pulse input. [T2]	Direct connections 16 A / 1000 VDC [AV10]. Measurements: V, A,W, Wh	2 Pt100 or Pt1000, 3-wire (PV and air temperature). 1 irradiation input (up to 120 mV). 1 wind speed input (0 to 1000 Hz max.) [2TIW]	2 digital inputs for "Protection trip detection or others" [I2]
Accuracy	±(0.5% RDG + 5DGT)	±(0.5% RDG + 2DGT)	±(0.2% RDG + 1DGT)	
Output specifications				
Alarm	Real and virtual alarm management of all variables coming from VMU-M, VMU-S, and VMU-P with event logging			2 digital outputs for alarm notification as string alarm or as a digital input status changing. SPST relay type. [R2]
Serial communication	Local bus: up tu 15 mixed VMU-S, VMU-P and VMU-O units RS485 communication port (Modbus) [S1]	Local bus: up tu 15 VMU-S units in the same bus [S]	Local bus: one VMU-P unit per bus [S]	Local bus: up to 7 VMU-O units
Others	Data logger (V, A, W, PV cell and air temperature, irradiation, wind speed) DC/AC efficiency	Diagnostics functions: antitheft control, fuse blow detection, wrong PV panel connection. Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit
General specifications				
Power supply	12 to 28 VDC power supply [A]	Self-power supply from VMU-M unit [X]	Self-power supply from VMU-M unit [X]	Self-power supply from VMU-M unit [X]
Approvals / Marks	cULus approved	cULus approved	cULus approved	cULus approved
References				
		For ordering key details, please refer to www.productselection.net		

PV monitoring solution

EOS-Array Lite solar control solution

Types	VMU-ML	VMU-S0	VMU-P	VMU-O
				
Dimensions HxWxD (mm)	1-DIN module	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-DGT readout	String unit, with built-in protection fuseholder	Environment variable measurement unit	Outputs unit
Function	VMU-ML performs the local bus management of VMU-S0, VMU-P both measuring units and VMU-O output unit	Variables measuring unit, DC current and voltage	PV module temperature, air temperature, sun irradiation	VMU-O allows to add, for every single unit, available in the local bus, one relay outputs
Input specifications				
Range code		Direct connections 16 A / 1000 VDC [AV10]. Measurements: V, A	1 Pt100 or Pt1000, 3-wire (PV and air temperature). 1 irradiation input (up to 120mV). [1TI]	
Accuracy		±(0.5%RDG + 2DGT)	±(0.2%RDG + 1DGT)	
Output specifications				
Alarm	Single real or virtual alarm management of all variables coming from VMU-ML, VMU-S0, and VMU-P with event logging			1 digital output for alarm notification as string alarm. SPST relay type. [R1]
Serial communication	Local bus: up tu 15 mixed VMU-S0, VMU-P and VMU-O units RS485 communication port (Modbus) [S1]	Local bus: up tu 15 VMU-S0 units in the same bus [S]	Local bus: one VMU-P unit per bus [S]	Local bus: up to 7 VMU-O units
Others	Front dual colour LED to show the status of the unit	Diagnostics functions: wrong PV panel connection	Front multicolor LED to show the status of the unit	Front multicolor LED to show the status of the unit
General specifications				
Power supply	12 to 28 VDC power supply [A]	Self-power supply from VMU-ML unit [X]	Self-power supply fromVMU-ML unit [X]	Self-power supply from VMU-ML unit [X]
Approvals / Marks	cULus approved	cULus approved	cULus approved	cULus approved
References				
		For ordering key details, please refer to www.productselection.net		

PV monitoring solution

	EOS-Array solar control solution	Surge arresters for PV systems	Surge arresters for single-3phase lines
Types	**VMUAT**	**DSF**	**DSF A/P**
			
Dimensions HxWxD (mm)	v1-DIN module	90 x 36 x 72 [52] 90 x 54 x 72 [53]	90 x 18 x 72 [51] 90 x 36 x 72 [52] 90 x 54 x 72 [53] 90 x 72 x 72 [54]
Description	Optical fiber anti-theft sensor	2-pole [52] or 3-pole [53] surge arresters for P.V. installations. Removable cartridges. Exhausted cartridge indication contact [C]	Surge arresters for AC lines single or 3phase network types TN-S; TT; IT; TN-C. Removable cartridges.
Input specifications			
Range code	Optical fiber plastic type PF0221000		
Output specifications			
Out 1 (Alarm)		1 x SPDT relay	1 x SPDT relay
Out 1 (Pulse)	NPN or PNP	N.A.	N.A.
General specifications			
SPD class		Class II	Class II
Max. continuous voltage Uc		600 VDC [600, 1200] 1000 VDC [1000] 1200 VDC [1200]	150 VDC 300 VDC 385 VDC 460 VDC 550 VDC 750 VDC
I_n (8 / 20)		20 kA [600, 1200] 12.5 kA [1000]	20 kA 10 kA [DSF5xCA750]
I_{max} (8 / 20)		40 kA [600, 1200] 25 kA [1000]	50 kA 25 kA [DSF5xCA750]
Response time		< 25 ns	< 25 ns
Back-up fuse		Not required up to 200 kArms	Not required up to 200 kArms
Power supply	Self power supply through VMU-X unit [X]	N.A.	N.A.
Approvals / Marks	CE	CE, UR (UL 1449 3rd ED.), UTE C 61-740-51, CSA	CE, UR (UL 1449 3rd ED.), CSA
References			
	For ordering key details, please refer to www.productselection.net	**DSF52CD600PV** **DSF52XD1000PV** **DSF52CD1000PV** **DSF53XD1200PV** **DSF53CD1200PV**	For ordering key details, please refer to www.productselection.net

PV monitoring solution

Surge arresters for PV systems

Types	DSB A 52	DSB P 53	DSB P 54
			
Dimensions HxWxD (mm)	90 x 36 x 72	90 x 54 x 72	90 x 72 x 72
Description	Surge arresters for AC lines single phase. Removable cartridges.	Surge arresters for AC lines three phase. Removable cartridges.	Surge arresters for AC lines three phase. Removable cartridges.
Output specifications			
Out (Alarm)		1 x SPDT relay (option)	
General specifications			
SPD class	Class II	Class II	Class II
Max. continuous voltage Uc	275 VAC / 350 VDC 385 VAC / 500 VDC	275 VAC / 350 VDC 385 VAC / 500 VDC 440 VAC / 580 VDC	275 VAC / 350 VDC 385 VAC / 500 VDC 440 VAC / 580 VDC
I_n (8/20)	20 kA / pole	20 kA / pole	20 kA / pole
I_{max} (8/20)	40 kA / pole	40 kA / pole	40 kA / pole
Response time	< 25 ms with GDT 25 ms (L-N), 100 ms (N-PE) without GDT	< 25 ms	< 25 ms
Back-up fuse	125 A gL	125 A gL	125 A gL
Mounting		DIN rail	
Temperature range		-40°C to +80°C -40°F to +176°F	
Approvals / Marks	CE: IEC616431	CE: IEC616431	CE: IEC616431
References			
For ordering key details, please refer to www.productselection.net			

PV monitoring solution

	Surge arresters for PV systems	Surge arresters for communication lines	
Types	**DSC**	**DSB S**	**DSB DP**
			
Dimensions HxWxD (mm)	90 x 72 x 70	90 x 12 x 71.5	90 x 12 x 71.5
Description	Surge arresters for DC systems.	Surge arresters for RS485 communication lines. Removable cartridges.	Surge arresters for Dupline® and Smarthouse® communication lines. Removable cartridges.
Output specifications			
Out (Alarm)	1 x SPDT relay	None	None
General specifications			
SPD class	Class I, II	Class C1/C2/C3 (IEC 60643-21)	Class C1/C2/C3 (IEC 60643-21)
Max. continuous voltage Uc	1000 V	6 Vdc	18 Vdc
I_n (8/20)	20 kA / pole	10 kA / pole	10 kA / pole
I_{max} (8/20)	40 kA / pole	20 kA / pole	20 kA / pole
I_{imp} (10/350)	12.5 kA / pole	N.A.	N.A.
Response time	<25 ns	<1 ns	<1 ns
Back-up fuse	N.A.	N.A.	N.A.
Mounitng		DIN rail	
Temperature range		-40°C to +80°C -40°F to +176°F	
Approvals / Marks	CE: IEC616431; UTE C61-740-51	CE: IEC 60643-21	CE: IEC 60643-21
References			
	DSC54CD1000PV	**DSB51XXP**	**DSB51XXDP**

Counters

Electromechanical counters

Types	EMCT46/EMCT47	E2CT4	E1CT4	ECH4
				
Version	Micro	Mini	Standard	Combination time and energy meter
Dimensions HxWxD (mm)	13.8x25x35.2 20x30x36.2	24x48x53.8	24x48x49	48x48x38
Technical data				
Number of digit	6/7	5	6	7/8
Reset	no	yes	no	no
Digit height, visible (mm)	4 x 1.7 / 4 x 1.2	4 x 1.7	4 x 1.7	4 x 1.7
Panel cut-out (mm)	e.g. 27x 14	45 x 22 / 31 x 20	45 x 22 / 31 x 20	46 x 46 X Ø50.5
Mounting type	Panel / PCB	Panel / base mount / PCB	Panel / base mount / PCB	Panel / DIN-rail
Max. protection	up to IP 65	IP 41	IP 41	IP 52 front side
Pulse voltage min. / max.	1.5 to 24 VDC	24 to 230 VAC 12 to 24 VDC	24 to 230 VAC 12 to 24 VDC	0 to 260 VAC 0 to 260 VDC
Max. count frequency	10 Hz	10 Hz	10 Hz	10 Hz
Min. power consumption	70 mW	130 mW	50 mW	1 W / 3 V
References				
	EMCT46xxxxxx **EMCT47xxxxxx**	**E2CT4xxxxxx**	**E1CT4xxxxxx**	**ECH4**

Electronic counters

Types	FKA	DCT86	DMF861	DMF862
				
Version	LCD-Panel mount	LCD-Panel mount	LCD-Panel mount	LCD-Panel mount
Dimensions HxWxD (mm)	DIN 48 X 24	DIN 48 X 24	DIN 48 X 24	DIN 48 X 24
Function				
Totaliser	yes			
Pulse counter		yes	yes	2 pulse counters, Pulse counter and timer, Pulse and frequency meter or 2 timers
Position display for encoders			yes	
Frequency meter/Tachometer			yes	
Timer			yes	
Technical data				
Number of digit	8	6	6	6
Time range	manual / electric	manual / electric	manual / electric	manual / electric
Digit height, visible (mm)	8	8	8	8
Panel cut-out(mm)	45 x 22	45 x 22	45 x 22	45 x 22
Max. protection	IP 65 front side	IP 65 front side	IP 65 front side	IP 65 front side
Min. power consumption (W/VA)	12000	60000	60000	60000
Power supply	Lithium battery	10 to 30 VDC	10 to 30 VDC	10 to 30 VDC
Count inputs	NPN/PNP 10 to 260 VAC/DC	NPN/PNP	NPN/PNP	NPN/PNP
References				
	FKAxxxxxx	**NI-DCT86xxxxxx**	**NI-DMF861xxxxxx**	**NI-DMF862xxxxxx**

Counters

Digital multifunction

Types	DMF1461	DMF1462
		
Version	LED - Panel mount	LED - Panel mount
Dimensions HxWxD (mm)	DIN 96 x 48	DIN 96 x 48
Function		
Pulse counter	Yes	2 pulse counters, Pulse counter and timer, Pulse and frequency meter or 2 timers
Position display for encoders	Yes	
Frequency meter / Tachometer	Yes	
Timer	Yes	
Technical data		
Number of digit	6	6
Reset	manual / electric	manual / electric
Preset	-	-
Digit height, visible (mm)	14	14
Panel cut-out (mm)	92 x 45	92 x 45
Max. protection	IP65 front side	IP65 front side
Max. count frequency (Hz)	60000	60000
Supply voltage	90...260 VAC / 10..30 VDC	90...260 VAC / 10..30 VDC
Count inputs	Schmitt-Trigger	Schmitt-Trigger
References		
	DMF1461xxx0	**DMF1462xx0**

Hour meter electromechanical

Types	E1HM4	E2HM4	E2HM35	E1HM35
				
Version	Panel mount	Panel mount	Panel mount	DIN rail
Dimensions HxWxD (mm)	DIN 48x24 - DIN 25x53	DIN 48x48	Ø71.1x37.3	90x36x66
Technical data				
Number of digit	7/8	7/8	6	7
Time range	0.01~99999.99h	0.01~99999.99h	0.01~99999.99h	0.01~99999.99h
Digit height, visible (mm)	4	4	3.5	3.5
Panel cut-out(mm)	45x22 / 50x25	46x46	Ø56.7	-
Max. protection	IP65 front side	IP65 front side	IP65 front side	IP65 front side
Min. power consumption (W/VA)	0.5 / 1.2	0.5 / 1.2	0.8 / 0.4	1 / 2.5
Voltage range	20...264 VAC 10...130 VDC / 24 VDC	20...264 VAC - 100...130 VAC 10...30 VDC	115...230 VAC 10...80 VDC	230 VAC 10...27 VDC
References				
	E1HM4xxxxxx	**E2HM4xxxxxx**	**E2HM35xxxxxx**	**E1HM35xxxxxx**

Counters

	Hour meter electronic LCD		Electronic time preset counters
Types	**FSA01**	**FSA02**	**DMF61 / DMF62**
			
Version	LCD panel mount	LCD panel mount	LCD panel mount
Dimensions HxWxD (mm)	DIN 24 x 48	DIN 24 x 48	DIN 48 x 48
Technical data			
Number of digit	7	8	2 x 6
Time range	0.01 h; h.min	0.01 h; h.min	
Max. Count frequency (Hz)			s. min. h or hh.mm.ss
Preset			61 : 1 / 62 : 2
Reset	manual	manual	electronic
Digit height, visible (mm)	8	8	
Panel cut-out (mm)	45 x 22	45 x 22	45 x 45
Mounting type	Panel mount	Panel mount	Panel mount
Max. protection	IP 65 front side	IP 65 front side	IP 65 front side
Power supply	Lithium battery (>8years)	Lithium battery (>8years)	90 to 260 VAC 11 to 30 VDC
Output			Relay or Optocoupler
Input			2 count inputs, gate, reset, lock, MPI, 4 optional inputs
References			
	FSA01xxxxxx	**FSA02xxxxxx**	**DMF6101xxxx0**
			DMF6201xxxx0

PID controllers

PID controller – PDI series

Types	PDI 380	PDI 390	PDI 408	PDI 409
				
Dimensions HxWxD (mm)	75 x 33 x 64	75 x 33 x 64	48 x 48 x 98	48 x 48 x 98
Function	Single display digital controller. Up to 4 configurable set points. Configurable multi input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 2 configurable outputs (relay, SSR). Soft Start and LbA functions. Led shift index. Multi-level parameters programming, password protected. Programming KEY	Dual display digital controller. Up to 4 configurable set points. Configurable multi input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 2 configurable outputs (relay, SSR). Soft Start and LbA functions. Multi-level parameters programming, password protected. Programming KEY	Single display digital controller. Up to 4 configurable set points. Configurable multi input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 3 configurable outputs (relay, SSR). Soft Start and LbA functions. Led shift index. Multilevel parameters programming, password protected. Programming KEY	Dual display digital controller. Up to 4 configurable set points. Configurable multi input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 3 configurable outputs (relay, SSR). Soft Start and LbA functions. Multi-level parameters programming, password protected. Programming KEY
Input specifications				
Overall accuracy	±0.5% f.s., ±1% TC-S	±0.5% f.s., ±1% TC-S	±0.5% f.s, ±1% TC-S	±0.5% f.s, ±1% TC-S
Input signal	TC (J, K, S, I R), Pt100, mV [C] TC (J, K, S, I R), PTC, NTC, mV [E] 0 / 4-20 mA [I] 0 / 1-5 0 / 2-10 VDC [V]	TC (J, K, S, I R), Pt100, mV [C] TC (J, K, S, I R), PTC, NTC, mV [E] 0 / 4-20 mA [I] 0 / 1-5 0 / 2-10 VDC [V]	TC (J, K, S, IR), PTC, NTC, mV [E] TC (J, K, S, IR), PT100, mV [C] 0 / 4-20 mA [I] 0-1 V, 0 / 1-5 V, 0 / 2-10 V [V]	TC (J, K, S, I R), PTC, NTC, mV [E] TC (J, K, S, I R), PT100, mV [C] 0 / 4-20 mA [I] 0 - 1 V, 0 / 1 - 5 V, 0 / 2-10 V [V]
Sampling rate	8 per second	8 per second	8 per second	8 per second
Display	4 digit 7-segment LED, h 12 mm	4+4 digit 7-segment LED, h 7 mm	4 digit 7-segment LED, h 12 mm	4+4 digit 7-segment LED, h 7 mm
Output specifications				
Output 1	Relay [R], 8 mA / 8 VDC for SSR [O]	Relay [R], 8 mA / 8 VDC for SSR [O]	Relay [R], 8 mA / 8 VDC for SSR [O]	Relay [R], 8 mA / 8 VDC for SSR [O]
Output 2	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]
Output 3			No [X] Relay [R], 8 mA / 8 VDC for SSR [O]	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]
Others				
Power supply	12 VAC / DC [F] 24 VAC / DC [L] 100-240 VAC [H]	12 VAC / DC [F] 24 VAC / DC [L] 100-240 VAC [H]	24 VAC / DC [L] 100-240 VAC [H]	24 VAC / DC [L] 100-240 VAC [H]
Approvals	CE - cURus	CE - cURus	CE - cURus	CE - cURus
References				
		For ordering key details, please refer to www.productselection.net		

PID controllers

PID controller – PDI series

Types	PDI 420	PDI 430	PDI 720
			
Dimensions HxWxD (mm)	48 x 48 x 98	48 x 48 x 98	72 x 72 x 97
Function	Dual display digital controller. Up to 4 configurable set points. Universal input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 4 configurable outputs (relay, SSR). Soft Start and LbA functions. RS485 communication. CT input for HB alarm. Multi-level parameters programming, password protected. Programming KEY	Dual display digital controller. Up to 4 configurable set points. Universal input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 4 configurable outputs (relay, SSR or 2 normalized analogue signal outputs). Input signal retransmission. Motorized actuators control. Soft Start and LbA functions. RS485 communication. CT input for HB alarm. Additional dig. in. Multi-level parameters programming, password protected. Programming KEY	Single display digital controller. Up to 4 configurable set points. Configurable multi input. ON/OFF, single/double action PID or Neutral Zone control. Fast Autotuning and Selftuning. Up to 3 configurable outputs (relay, SSR). Soft Start and LbA functions. Led shift index. RS485 communication. Additional digital input. Multi-level parameters programming, password protected. Programming KEY
Input specifications			
Overall accuracy	±0.15% f.s.	±0.15% f.s.	±0.5% f.s., ±1% TC-S
Input signal	Pt100, TC (J, K, S, IR), PTC, NTC, mv, V, mA	Pt100, TC (J, K, S, B, C, E, L, N, R, T, IR), PTC, NTC, mv, V, mA (1 Programmable digital input)	Pt100, TC (J, K, S, IR), mV [C] PTC, NTC, mV, TC (J, K, S, IR) [E] 0/4-20 mA [I], 0/1-5V, 0/2-10V [V]
Sampling rate	8 x per secwond	8 x per second	8 x per second
Display	4+4 digit 7-segment LED, h 7 mm	4+4 digit 7-segment LED, h 7 mm	4 digit 7-segment LED, h 14 mm
Output specifications			
Output 1	Relay [R], 7 mA / 14 VDC for SSR [O]	Relay [R], 7 mA / 14 VDC for SSR [O] 0/4-20 mA [C], 0/2-10 V [V]	Relay [R], 8 mA / 8 VDC for SSR [O]
Output 2	No [X] Relay [R], 7 mA / 14VDC for SSR [O]	No [X] Relay [R], 7 mA / 14 VDC for SSR [O] 0/4-20 mA [C], 0/2-10 V [V]	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]
Output 3	No [X] Relay [R], 7 mA / 14VDC for SSR [O]	No [X] Relay [R], 7 mA / 14 VDC for SSR [O]	No [X] Relay [R], 8 mA / 8 VDC for SSR [O]
Output 4	No [X] Relay [R], 7 mA / 14VDC for SSR [O]	No [X] Relay [R], 7 mA / 14 VDC for SSR [O]	
Options			
Serial Communication	No [X] RS485 [S]		No [X] RS485 [S]
Serial Communication and/or digital input		No [X] RS485 [S] RS485 + DI [I]	No [X] DI [I]
Heater Break Alarm	No [X] CT input [H]	No [X] CT input [H]	
Others			
Power supply	24 VAC / DC [L] 100-240 VAC [H]	24 VAC / DC [L] 100-240 VAC [H]	24 VAC / DC [L] 100-240 VAC [H]
Approvals	CE - cURus	CE - cURus	CE - cURus
References			
	For ordering key details, please refer to www.productselection.net		

CARLO GAVAZZI

Switching power supplies

Single phase switching power supplies

Types	5 / 10 / 18W				30 / 60W			90 / 100W		
										
Dimensions HxWxD (mm)	90 x 22.5 x 115				90 x 40.5 x 115			90 x 54 x 114		
Output specifications										
Voltage	5 VDC	15 VDC	12 VDC	24 VDC	12 VDC	24 VDC	48 VDC	12 VDC	24 VDC	48 VDC
Current SPD 5 W	1 A	340 mA	420 mA	210 mA						
Current SPD 10 W	2 A	670 mA	840 mA	420 mA						
Current SPD 18 W	3 A	1.2 A	1.5 A	750 mA						
Current SPD 30 W					2.5 A	1.25 A	625 mA			
Current SPD 60 W					5 A	2.5 A	1.25 A			
Current SPD 90 W									3.8 A	
Current SPD 100 W								8.4 A	4.2 A	2.1 A
Line regulation		±1%				±2%			±0.5%	
Load regulation		±2%				±2%			±1%	
Efficiency	75%	77%	77%	77%	86%	89%	89%		85%	
Input specifications										
Voltage range	Multi voltage: 90 to 265 VAC or 120 to 370 VDC				Multi voltage: 90 to 265 VAC or 120 to 370 VDC			Multi voltage: 90 to 264 VAC or 120 to 375 VDC		
Frequency range	47 to 63 Hz				47 to 63 Hz			47 to 63 Hz		
PFC								0.7		
General specifications										
Ambient temperature	-25°C to +71°C				-25°C to +71°C			-25°C to +71°C		
Storage	-25°C to +85°C				-25°C to +85°C			-25°C to +85°C		
Derating (>60°C)	3 % /°C				2.5 % /°C			2.5 % /°C		
Approvals / Marks	UL - cUL - TÜV - CE - Class I DIV2				UL - cUL - TÜV - CE - Class I DIV2			UL - cUL - TÜV - CE - Class I DIV2		
Installation	DIN Rail				DIN Rail			DIN Rail		
Connection	Screw terminals / Spring terminals (B)				Screw terminals / Spring terminals (B)			Screw terminals / Spring terminals (B)		
Main features										
	Adjustable output voltage Internal noise filter Short circuit protection Overload protection (110-135%)				Adjustable output voltage Internal noise filter Short circuit protection Overload protection (110-135 %) Output "Power ready" signal VDC (only model 24 VDC)			Adjustable output voltage Internal noise filter Short circuit protection Overload protection (102-108%), PFC. Overvoltage protection (102-106%). Output "Power ready" signal VDC		
LED indicator for "power on"	Yes				Yes			Yes		
LED indicator for DC "too low"	Yes				No - SPD24 with transistor output			Yes with relay output		
References										
5 VDC										
Screw terminals	**SPD05051 / SPD05101 SPD05181**									
Spring terminals	**SPD05051B / SPD05101B SPD05181B**									
12 VDC										
Screw terminals	**SPD12051 / SPD12101 SPD12181**				**SPD12301 / SPD12601**			**SPD121001**		
Spring terminals	**SPD12051B / SPD12101B SPD12181B**				**SPD12301B / SPD12601B**					
24 VDC										
Screw terminals	**SPD24051 / SPD24101 SPD24181**				**SPD24301 / SPD12401**			**SPD24901L / SPD241001L**		
Spring terminals	**SPD24051B / SPD24101B SPD24181B**				**SPD24301B / SPD24601B**					
48 VDC										
Screw terminals					**SPD48301 / SPD48601**			**SPD481001**		
Spring terminals					**SPD48301B / SPD48601B**					

Switching power supplies

Single phase switching power supplies

Types	120W / 120W(N)	240W	300W	480W
				
Dimensions HxWxD (mm)	125 x 63.5 x 126	125 x 83 x 126	125 x 83 x 126	125 x 175 x 123
Output specifications				
Voltage	12 VDC / 24 VDC / 48 VDC	24 VDC / 48 VDC	24 VDC / 48 VDC	24 VDC / 48 VDC
Current	10 A / 5 A / 2.5 A	10 A / 5 A	12.5 A / 6.25 A	20 A / 10 A
Line regulation	±1%	±1%	±0.5%	±0.5%
Load regulation	±1%	±1%	±1%	±0.5%
Efficiency	84% / 86% / 87%	89% / 90%	89% / 90%	89% / 90%
Input specifications				
Voltage range	By switch: 93 to 132 VAC (autoselect on "N" model), 186 to 264 VAC 210 to 370 VDC	Autoselect: 93 to 132 VAC, 186 to 264 VAC, 210 to 370 VDC	Autoselect: 90 to 264 VAC, 210 to 375 VDC	Autoselect: 93 to 132 VAC, 186 to 264 VAC, 210 to 370 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
PFC	0.7	0.7	0.75	0.99
General specifications				
Ambient temperature	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C
Storage	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Derating (>60°C)	2.5 % /°C	2.5 % /°C	2.5 % /°C	2.5 % /°C > 56°C
Approvals / Marks	UL - cUL - TÜV - CE - ClassI DIV2	UL - cUL - TÜV - CE - ClassI DIV2	UL - cUL - TÜV - CE - ClassI DIV2	UL - cUL - TÜV - CE - ClassI DIV2
Installation	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Connection	Screw terminals / Spring terminals (B)	Screw terminals / Spring terminals (B)	Screw terminals / Spring terminals (B)	Screw terminals / Spring terminals (B)
Main features				
	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-145%). Parallel connection up to 3 supplies and PFC function on (N) model only	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-145%) Parallel connection up to 3 supplies standard. PFC function integrated	Parallel function, PFC and Output ready	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (120-140%) Parallel connection up to 3 supplies standard. PFC function integrated
LED indicator for "power on"	Yes	Yes	Yes, 24 V with output ready	Yes
LED indicator for DC "too low"	Yes - with relay output (SPD24 only)	Yes - with relay output (SPD24 only)	Yes	Yes - with relay output (SPD24 only)
References				
12 VDC				
Screw terminals	**SPD121201 SPD121201N**			
Detatch. screw terminals	**SPD121201B SPD121201BN**			
24 VDC				
Screw terminals	**SPD241201 SPD241201N**	**SPD242401**	**SPD243001**	**SPD244801**
Detatch. screw terminals	**SPD241201B SPD241201BN**	**SPD242401B**	**SPD243001B**	**SPD244801B**
48 VDC				
Screw terminals	**SPD481201 SPD481201N**	**SPD482401**	**SPD483001**	**SPD484801**
Detatch. screw terminals	**SPD481201B SPD481201BN**	**SPD482401B**	**SPD483001B**	**SPD484801B**

CARLO GAVAZZI

Switching power supplies

Three phase switching power supplies

Types	SPD 120W 3-ph	SPD 240W 3-ph	SPD 480W 3-ph	SPD 960W 3-ph
				
Dimensions HxWxD (mm)	123.6 x 74.3 x 112	123.6 x 89.0 x 110.7	125 x 175 x 125	125.9 x 275.8 x 118.2
Output specifications				
Voltage	12 VDC 24 VDC	24 VDC 48 VDC	24 VDC 48 VDC	24 VDC 48 VDC
Current	10 A 5 A	10 A 5 A	20 A 10 A	40 A 20 A
Line regulation	±1%	±1%	±0.5%	±1%
Load regulation	±1%	±1%	±0.5%	±1%
Efficiency	88% 89%	90% 91%	90% 91%	92% 93%
Input specifications				
Voltage range	340 to 575 VAC 480 to 820 VDC	340 to 575 VAC 480 to 820 VDC	340 to 575 VAC 480 to 820 VDC	340 to 575 VAC 480 to 820 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
PFC	0.6	0.6	0.7	0.7
General specifications				
Ambient temperature	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C
Storage	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Derating (>60°C)	2.5 % /°C	2.5 % /°C	2.5 % /°C > 56°C	2.5 % /°C > 56°C
Approvals / Marks	UL - cUL - TÜV - CE	UL - cUL - TÜV - CE	UL - cUL - TÜV - CE	UL - cUL - TÜV - CE
Installation	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Connection	Screw terminals	Screw terminals	Screw terminals / Detach conn.	Screw terminals
Main features				
	Can be used as Bi or Three phase, Parallel function and PFC	Can be used as Bi or Three phase, Parallel function and PFC	Can be used as Bi or Three phase, Parallel function and PFC	Can be used as Bi or Three phase. Active parallel function and PFC
LED indicator for "power on"	Yes, 24 V with output ready	Yes, 24 V with output ready	Yes, 24 V with output ready	Yes, 24 V with output ready
LED indicator for DC "too low"	Yes	Yes	Yes	Yes
References				
12 VDC				
Screw terminals	**SPD121203**			
24 VDC				
Screw terminals	**SPD241203**	**SPD242403**	**SPD244803** **SPD244803B**	**SPD249603** **SPD249603L** **(without parallel function and output ready)**
48 VDC				
Screw terminals		**SPD482403**	**SPD484803** **SPD484803B**	**SPD489603**

Switching power supplies, redundant modules

	Bi-phase switching power supplies			Redundant modules	
Types	**100W**			**SPD Redundant Module**	**SPM Redundant Module**
					
Dimensions HxWxD (mm)	90 x 54 x 114			90 x 54 x 114	91 x 35 x 56
Output specifications					
Voltage	12 VDC	24 VDC	48 VDC	24 VDC	Input Voltage
Current	8.4 A	4.2 A	2.1 A	20 A	10 A
Line regulation		±1%			
Load regulation		±1%			
Efficiency	86%	87%	89%		
Input specifications					
Voltage range	340 to 575 VAC, 480 to 820 VAC			21 to 28VDC	5 to 48 VDC
Frequency range	47 to 63Hz				
PFC	0.55				
General specifications					
Ambient temperature	-25°C to +71°C			-25°C to +71°C	-25°C to +71°C
Storage	-25°C to +85°C			-25°C to +85°C	-25°C to +85°C
Derating (>60°C)	2.5% /°C				
Approvals / Marks	UL - cUL - TÜV - CE - Class I DIV2			UL - cUL - TÜV - CE	
Installation	DIN Rail			DIN Rail	DIN Rail
Connection	Screw terminals			Screw terminals	Screw terminals
Main features					
	Parallel function, PFC and Output ready			2 Relay outputs for remote monitoring	
LED indicator for "power on"	Yes - with relay output (SPD24 only)			Yes - with relay output (SPD24 only)	
LED indicator for DC "too low"	Yes				
References					
12 VDC					
Screw terminals	**SPD121002**				
24 VDC					
Screw terminals	**SPD241002**			**SPD24RM20**	**SPM2RM2410**
48 VDC					
Screw terminals	**SPD481002**				

Switching power supplies

Low profile DIN rail mounting

Types	SPM 1	SPM 3	SPM 4	SPM 5
				
Dimensions HxWxD (mm)	91 x 18 x 55.5	91 x 52 x 55.5	91 x 71 x 55.5	91 x 90 x 55.5
Output specifications				
Voltage	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC, 24 VDC (S ver.)
Current	1.5 A - 0.83 A 0.67 A - 0.42 A	3.0 A - 2.1 A 2.0 A - 1.3 A	7.0 A - 4.5 A 4.0 A - 2.5 A	12 A - 6 A - 5 A 4.2 A - 3.8 A
Line regulation	±1%	±1%	±1%	±1%
Load regulation	±1%	±1%	±1%	±1%
Input specifications				
Voltage range	Autoselec.: 90 to 264 VAC, 120 to 370 VDC	Autoselec.: 10 to 264 VAC, 120 to 370 VDC	Autoselec.: 90 to 264 VAC, 120 to 370 VDC	Autoselec.: 90 to 264 VAC, 120 to 370 VDC
Frequency range	47 to 63Hz	47 to 63Hz	47 to 63Hz	47 to 63Hz
General specifications				
Ambient temperature	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C
Storage	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Derating (>60°C)	2.5 % /°C	2.5 % /°C	2.5 % /°C	2.5 % /°C
Approvals / Marks	UL - cUL - TÜV - CE - ClassI DIV2	UL - cUL - TÜV - CE - ClassI DIV2	UL - cUL - TÜV - CE - ClassI DIV2	UL - cUL - TÜV - CE - ClassI DIV2
Installation	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Connection	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Main features				
		Adjustable output voltage	Adjustable output voltage	Adjustable output voltage
LED indicator for "power on"	Yes	Yes	Yes	Yes
LED indicator for DC "too low"	Yes	Yes	Yes	Yes
References				
5 VDC	**SPM1-051**	**SPM3-051**	**SPM4-051**	**SPM5-051**
12 VDC	**SPM1-121**	**SPM3-121**	**SPM4-121**	**SPM5-121**
15 VDC	**SPM1-151**	**SPM3-151**	**SPM4-151**	**SPM5-151**
24 VDC	**SPM1-241**	**SPM3-241**	**SPM4-241**	**SPM5-241**
24 VDC (class 2 UL)				**SPM5-241S**

Switching power supplies

Enclosed switching power supplies

Types	20 W	35 W	60 W
			
Dimensions HxWxD (mm)	92 x 54 x 30	78 x 51 x 28	98 x 82 x 35
Output specifications			
Voltage	5 VDC / 12 VDC / 15 VDC / 24 VDC	5 VDC / 12 VDC / 15 VDC / 24 VDC	5 VDC / 12 VDC / 15 VDC / 24 VDC
Current	4 A / 1.7 A / 1.4 A / 0.9 A	6 A / 3 A / 2.4 A / 1.5 A	9 A / 5 A / 4 A / 2.5 A
Line regulation	± 0.5%	± 0.5%	± 0.5%
Load regulation	±1%	±1%	±1%
Efficiency (typ)	up to 87%	up to 87%	up to 89%
Input specifications			
Voltage range	88 - 264 VAC 120 - 375 VDC	88 - 264 VAC 120 - 375 VDC	88 - 264 VAC 120 - 375 VDC
Frequency range	47- 63 Hz	47- 63 Hz	47- 63 Hz
General specifications			
Ambient temperature	-40°C to +71°C	-40°C to +71°C	-40°C to +71°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Derating (>60°C)	2.5% / °C	2.5% / °C	2.5% / °C
Approvals / Marks	CE - TÜV - cURus	CE - TÜV - cURus	CE - TÜV - cURus
Installation	Screw terminal	Screw terminal	Screw terminal
Main features			
LED indicator for “power on”	Yes	Yes	Yes
Mounting	Horizontal and Vertical	Horizontal and Vertical	Horizontal and Vertical
References			
5 VDC	**SPP1-05201**	**SPP1-05351**	**SPP1-05601**
12 VDC	**SPP1-12201**	**SPP1-12351**	**SPP1-12601**
15 VDC	**SPP1-15201**	**SPP1-15351**	**SPP1-15601**
24 VDC	**SPP1-24201**	**SPP1-24351**	**SPP1-24601**

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Safety modules

Emergency stop and safety gates

Types	NES02D	NES13D	NDS12B	NA13CT
				
Dimensions HxWxD (mm)	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114
Safety category	Up to category 4 (EN ISO 13849-1:2008)	Up to category 4 (EN ISO 13849-1:2008)	Up to category 2 (EN 13849-1: 2007)	3 (EN 954-1)
Performance level	e	e		
Function	Category 0 emergency stop module safety gates (mech. switches)	Category 0 emergency stop module safety gates (mech. switches)	Category 1 emergency stop module	Category 1 emergency stop module
Output specifications				
	2 x NO safety relay	3 x NO safety relay + 1 NC relay	1 x NO safety relay instant 1 x NO safety relay delayed 1 x NO auxiliary relay instant	3 x NO safety relay + 1 NC relay
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	5 A @ 230 VAC	6 A @ 230 VAC
Max. load DC12	6 A @ 24 VDC	6 A @ 24 VDC	5 A @ 24 VDC	
Electrical life	> 10^5 operations	> 10^5 operations	> 10^5 operations	> 10^5 operations
Input specifications				
Type	2 x NO, voltage free	2 x NO, voltage free	2 x NO, voltage free	
General specifications				
Power supply	24 VAC / DC -15% +10%	24 VAC / DC -15% +10%	24 VAC / DC ±10%	18 VAC ±10% 24 VDC ±10%
Screw Terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA] Detachable [DA]	Fixed
Start	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual	Automatic / Manual
Approvals / Marks	CE - UL - TÜV	CE - UL - TÜV	CE	CE - UL
References				
	NES02DB24SA	**NES13DB24SA**	**NDS12BB24SA**	**NA13CT**
	NES02DB24SC	**NES13DB24SC**	**NDS12BB24DA**	
	NES02DB24DA	**NES13DB24DA**		
	NES02DB24DC	**NES13DB24DC**		

Safety modules

	Two hand device	Safety mat & edge	
Types	**ND12D**	**NSE02C**	**NST02C**
			
Dimensions HxWxD (mm)	99 x 22.5 x 114	80 x 22.5 x 99.5	80 x 22.5 x 99.5
Safety category	4 (EN 954-1)	3 (EN 13849-1: 2007)	3 (EN 13849-1: 2007)
Performance level		b (EN ISO 13849-1:2008)	b (EN ISO 13849-1:2008)
Function	Two hand device	Safety mat & edge module	Safety mat module
Output specifications			
	2 x NO safety relay	2 x NO safety relay	2 x NO safety relay
Max. load AC1	8 A @ 230 VAC	5 A @ 230 VAC	5 A @ 230 VAC
Max. load DC12		5 A @ 24 VDC	5 A @ 24 VDC
Electrical life	> 10^5 operations	> 10^5 operations	> 10^5 operations
Input specifications			
Type	2 x NO, 2 x NC, voltage free	2-wire mats or safety edges	4-wire mats (SM...)
General specifications			
Power supply	24 VAC/DC -15% +10% 110 VAC -15% +10% [110CG] 230 VAC -15% +10% [230CG]	24 VAC/DC ±15%	24 VAC/DC ±15%
Screw Terminals	Fixed	Fixed	Fixed
Start	Automatic	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]
Approvals / Marks	CE - UL - TÜV	CE - TÜV	CE - TÜV
References			
	ND12D	**NSE02CB24SA**	**NST02CB24SA**
	ND12D110CG	**NSE02CB24SC**	**NST02CB24SC**
	ND12D230CG		

Safety modules

	Safety gates (magnetic sensors)			
Types	**NSO02**	**NSO13**	**NSC02**	**NSC13**
				
Dimensions HxWxD (mm)	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114
Safety category	Up to category 4 (EN ISO 13849-1:2008)	Up to category 4 (EN ISO 13849-1:2008)	Up to category 4 (EN ISO 13849-1:2008)	Up to category 4 (EN ISO 13849-1:2008)
Performance level				
Function	Safety gates module	Safety gates module	Safety gates module	Safety gates module
Output specifications				
	2 x NO safety relay	3 x NO safety relay + 1 NC relay	2 x NO safety relay	3 x NO safety relay + 1 NC relay
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	5 A @ 230 VAC	6 A @ 230 VAC
Max. load DC12	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC
Electrical life	> 10^5 operations	> 10^5 operations	> 10^5 operations	> 10^5 operations
Input specifications				
Type	2 x NO, SMS or mechanical	2 x NO, SMS or mechanical	1 x NO, 1 x NC, SMS or mechanical	1 x NO, 1 x NC, SMS or mechanical
General specifications				
Power supply	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%
Screw Terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]
Start	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]
Approvals / Marks	CE - UL - TÜV	CE - UL - TÜV	CE - UL - TÜV	CE - UL - TÜV
References				
	NSO02DB24SA	**NSO13DB24SA**	**NSC02DB24SA**	**NSC13DB24SA**
	NSO02DB24SC	**NSO13DB24SC**	**NSC02DB24SC**	**NSC13DB24SC**
	NSO02DB24DA	**NSO13DB24DA**	**NSC02DB24DA**	**NSC13DB24DA**
	NSO02DB24DC	**NSO13DB24DC**	**NSC02DB24DC**	**NSC13DB24DC**

Safety modules

	Safety light curtains	Lift levelling	Standstill monitor	Exstensions
Types	**NLG02D NLG13D**	**NA12DLIFT**	**MF1C**	**NE14D**
				
Dimensions HxWxD (mm)	99 x 22.5 x 114	99 x 22.5 x 114	80 x 45 x 99.5	99 x 22.5 x 114
Safety category	Up to category 4 (EN 954-1)		3 (EN 954-1)	Up to category 4
Performance level	e (EN ISO 13849-1:2008)			e (EN ISO 13849-1:2008)
Function	Light curtains safety modules	Lift levelling module (EN 81-1, 81-2, EN 12015, EN 12016)	Standstill monitor safety module 1-phase or 3-phase	Exstension safety module
Output specifications				
	2 x NO safety relay [NLG02] 3 x NO safety relay + 1 NC relay [NLG13]	2 x NO safety relay	2 x NO safety relay	4 x NO safety relay + 1NC (feedback)
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	8 A @ 230 VAC	8 A @ 230 VAC
Max. load DC12	6 A @ 24 VDC			
Electrical life	> 10^5 operations	> 10^5 operations	> 10^5 operations	> 10^5 operations
Input specifications				
Type	2 x NO min 10 mA / 17 V max 60 mA / 38 V [NLG02] max 30 mA / 38 V	2 x NO	Up to 500 VAC	2 x NO, voltage free
General specifications				
Power supply	24 VDC - 15% +10%	24 VAC/DC ±15%	24 VAC/DC ±15%	24 VAC/DC -15% +10% 110 VAC -15% +10% [110CG] 230 VAC -15% +10% [230CG]
Screw Terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed	Fixed	Fixed
Start	Automatic / Manual [SA, DA] Monitored manual [SC, DC]			
Approvals / Marks	CE - UL - TÜV	CE - TÜV	CE - UL - TÜV	CE - UL - TÜV
References				
	NLG02D724SA	**NA2DLIFT**	**MF1C**	**NE14D**
	NLG02D724SC			**NE14D110CG**
	NLG02D724DA			**NE14D230CG**
	NLG02D724DC			
	NLG13D724SA			
	NLG13D724SC			
	NLG13D724DA			
	NLG13D724DC			

Configurable Safety Module

Types	CERTUS Master Module
	CMM
	
Dimensions HxWxD (mm)	99 x 22.5 x 114
Safety category	4
Safety level	SIL 3, according to IEC 61508 SIL CL 3, according to IEC 62061 PLe and Cat. 4, according to ISO/EN 13489-1
Performance level	e
Function	Can stand-alone managing and monitoring different safety sensors and commands at the same time. Manages up to 14 expansion units
Safety inputs and outputs specifications	
CMM as a stand alone unit	- 8 digital inputs, PNP active high according to EN 61131-2 - 2 pairs of solid state programmable safety outputs (OSSD), PNP active high 400mA at 24VDC max
Max. digital inputs with expansion modules	128
Max. digital outputs with expansion modules	16 pairs (OSD)
Max. n° of expansion modules	14
Non-Safety inputs and outputs specifications	
Test outputs	4
Programmable digital signal outputs	2
Input for Start/Restart interlock and EDM	2
General specifications	
Rated voltage	24VDC±20% / supply from class II
Digital inputs	PNP active high , according to EN 61131-2
OSSD	PNP active high - 400mA@24VDC
Enclosur eprotection class	IP 20
Terminal blocks protection class	IP 2x

Types	I/O Expansion Modules		
	C 8I 2O	C 8I / C 16I	C 12I 8TO
			
Dimensions HxWxD (mm)	99 x 22.5 x 114		
Safety category	4		
Performance level	e		
Function	expansion modules		
General specifications			
PFHd (IEC 61508:1998)	5.72E-9	5.75E-9 (C 8I); 7.09E-9 (C 16I)	3.24E-9
Rated voltage	24VDC ± 20%		
Dissipated power	3W max		
Digital inputs	8 / PNP active high according to EN 61131-2	8 (C 8I) / 16 (C 16I)	12 / PNP active high according to EN 61131-2
Test output	4 for sensor monitoring and checking short-circuits and overloads	4 for sensor monitoring and checking short-circuits and overloads	8 for sensor monitoring and checking short-circuits and overloads

Configurable Safety Module

OSSD + standard Relay Expansion Modules

Types	C 2OSSD / C 4OSSD	C 2R / C4R
	 	 
Dimensions HxWxD (mm)	99 x 22.5 x 114	
Safety category	4	
Performance level	e	
Function	expansion modules	

General specifications

PHFd (IEC 61508:1998)	3.16E-9 (C 2OSSD) / 3.44E-9 (C 4OSSD)	
Rated volatge	24VDC ± 20%	
Dissipated power	3W max	
Digital output	2 (C 2OSSD); 4 (C 4OSSD)	
Switching voltage		240VAC
Switching current		6A max
Contacts		2 NO + 1 NC (C 2R) connectable to 1 OSSD pair 4 NO + 2 NC (C4R) connectable to 2 OSSD pairs

Data and Diagnostics Communication + Bus Transfer Expansion Modules

Types	C DDC	C BT
		
Dimensions HxWxD (mm)	99 x 22.5 x 114	
Safety category	4	
Performance level	e	
Function	Communication with most common industrial fieldbus system	Interface expansion module allowing the connection of remote expansions. Ideal solution for the interconnection of the safety functions of several machines in a production line

General specifications

Connection		Shielded cable compatible with RS485
Max connection distance		100m
Max number of CBT modules per system		5
References	C PFBUS - Profibus C DNET - DeviceNET C CAN - CANopen C EIP - Ethernet IP C ECAT - EtherCAT C PFNET - PROFINET C OMMS - Universal Serial Bus	C BT1 – 1 connection (1 input or 1 output) To be placed at the beginning or at the end of the network connected with a single cable. C BT2 – 2 connections (1 input and 1 output)


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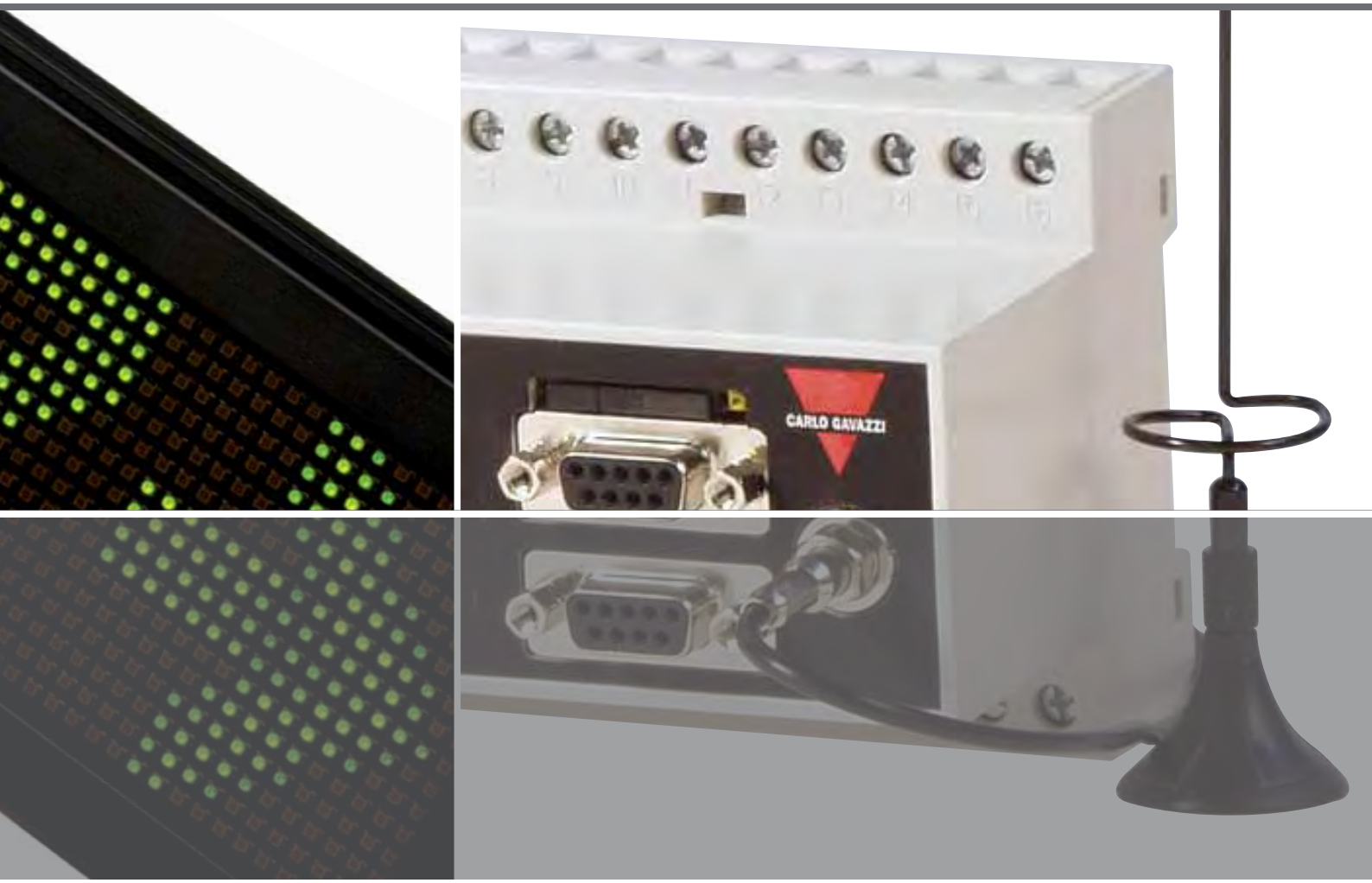
DuplineSafe
Safety Transmitter
GS75102101
PK:
GN:
IN S
Rx
Tx

Fieldbus



Dupline® Fieldbus: general purpose

	Channel generators/interfaces		
Types	**G3490**	**G3496**	**G3800**
			
Dimensions (mm)	77 x 72 x 70	77 x 72 x 70	77 x 144 x 70
Functions	Standard channel generator	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus	Controller and Modbus Interface with built-in GSM Modem (option) or external Radio Modem Logger (option)
Housing type	DIN-Rail, H4	DIN-Rail, H4	DIN-Rail, H8
Electrical specifications			
Number of channels	Selectable	Selectable	Selectable
Features/Signal types		Possibility for 3-wire operation with DC-power on the 3'rd wire	4 x Contact/PNP input +4 x PNP 10-30 VDC output 2 x RS232+1 x RS485. Possibility for alarms, monitoring and control via SMS messages
Power Supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 824 = 15-30 VDC	700 = 20-30 VDC	800 = 10-30 VDC 230 = 115-230 VAC
General specifications			
Degree of protection	IP 20	IP 20	IP 20
Operating temperature	-20°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks		Built-in protocol for specific PLC brands for easy interfacing	Up to 32 controllers can be networked together via RS485 or Ethernet via converter module
References			
Channel Generator	**G3490 0000**		
Optolink		**G3496 0000**	
LG		**G3496 0001**	
GE-Fanuc		**G3496 0002**	
Mitsubishi		**G3496 0003**	
Omron		**G3496 0004**	
Modbus		**G3496 0005**	
Allen-Bradley		**G3496 0006**	
Schneider		**G3496 0007**	
Koyo		**G3496 0008**	
Matsushita		**G3496 0009**	
Siemens		**G3496 0010**	
Toshiba		**G3496 0011**	
IDEC		**G3496 0012**	
-GSM Modem, -RS485			**G3800 0015**
+GSM Modem, -RS485			**G3800 1015**
-GSM Modem, +RS485			**G3800 0016**
+GSM Modem, +RS485			**G3800 1016**
-GSM Modem, +RS485,+Logging			**G3800 0036**
+GSM Modem, +RS485,+Logging			**G3800 1036**

Dupline® Fieldbus: general purpose

	Channel generators/interfaces		Digital input modules	
Types	**G3891**	**GTI50**	**G3410 5501**	**G3420**
				
Dimensions (mm)	77 x 144 x 70	55 x 70 x 15 mm	77 x 72 x 70	77 x 72 x 70
Functions	Gateways to Fieldbus systems (Profibus-DP, DeviceNet etc.)	Dupline® Modbus RTU Interface module for Text Displays and Touch screens	Dupline® powered transmitter with 8 monostable volt-free contacts	Input module for external supply with optoisolated inputs
Housing type	DIN-Rail, H8	Closed plastic housing with 25p male sub-D	DIN-Rail, H4	DIN-Rail, H4
Electrical specifications				
Number of channels	Selectable		8	8
Features/Signal types		Supports Modbus RTU function code 3 and code 16	Volt-free input contacts	Contact/NPN Voltage (6-265 VAC/DC)
Power Supply	230 = 115/230 VAC	Powered by RS485 port	Powered by Dupline®	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks			Low power consumption	
References				
		GTI50		
Profibus-DP with C. G.	**G3891 0020**			
Profibus-DP analogue output multiplex	**G3891 0021**			
DeviceNet	**G3891 0050**			
Lonworks	**G3891 0051**			
Modbus / TCP	**G3891 0052**			
Profibus-DP passive	**G3891 0120**			
8 channel			**G3410 5501**	
Contact/NPN				**G3420 5501**
Voltage				**G3420 5502**

Dupline® Fieldbus: general purpose

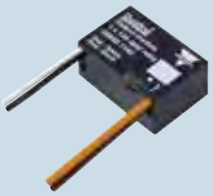
Digital input modules

Types	G4420 7401	G5010	G6391 0240	G8810 2201
				
Dimensions (mm)	36 x 85 x 58	49 x 22.5 x 56	34.2 x 37.5 x 36.8	28 x 14 x 10
Functions	Input module for counting of pulses from energy meters, item detectors etc	Dupline powered single input Module	Plug-in module to EM4 or WM22 with 2 S0 input contacts for measuring water, gas etc	Small-sized 2-channel monostable transmitter
Housing type	DIN-Rail, H2	DIN-Rail, Mini-E	Plug-in	Plug-in
Electrical specifications				
Number of channels	4	1	2	2
Features/Signal types	Contact input (DIN 43 864). Max. count frequency: 14 Hz	Contact input	Reads actual internal value of total energy and/or reactive energy from EM4/WM22 and transmits to Dupline®. 2 x S0 contact input	2 contact inputs for push buttons
Power Supply	230 = 230 VAC 724 = 15-30 VDC	Powered through the Dupline® network	Powered through the Dupline® network and EM4/WM22	Supplied by Dupline®
General specifications				
Degree of protection	IP 40	IP 20	IP 20	IP 65
Operating temperature	-20°C to +60°C	-20°C to +50°C	0°C to +50°C	-40°C to +70°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-20°C to +85°C	-40°C to +70°C
Remarks	Decentral counting. Counter values stored in non-volatile memory			Address coding by GAP 1605
References				
4 channel Counter	**G4420 7401**			
1 channel		**G5010 1106**		
2 channels		**G5010 2206**		**G8810 2201**
2 channel plug-in module			**G6391 0240**	

Dupline® Fieldbus: general purpose

	Digital I/O modules		Digital output modules	
Types	**G3440 4443**	**G3440 5543**	**G3430 / G3830**	**G34305545**
				
Dimensions (mm)	77 x 72 x 70	77 x 72 x 70	77 x 72 x 70 77 x 144 x 70 (H8)	77 x 72 x 70
Functions	Combined I/O module for external supply with optoisolated inputs and relay outputs	I/O module for digital signals	Output modules for external supply with isolated outputs	Central relay module with 8 x SPST relays for resistive loads
Housing type	DIN-Rail, H4	DIN-Rail, H4	DIN-Rail, H4 DIN-Rail, H8 (G3830 5543)	DIN-Rail, H4
Electrical specifications				
Number of channels	4	6	1, 2, 4, 8	8
Features/Signal types	2 x 6-265 VAC/DC inputs +2 x SPST relay outputs	4 opto isolated inputs and 2 SPST relay outputs	10 A SPDT relay 5 A SPST relay 0.7 A NPN transistor 0.7 A PNP transistor	8 x 16 A/250 VAC relays Inrush current: <130 A
Power Supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 824 = 15-30 VDC	230 = 230 VAC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC 824 = 15-30 VDC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-5°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks				Total module load max. 32 A
References				
2 input + 2 output SPST	**G3440 4443**			
4 input + 2 output SPST		**G3440 5543**		
1 x 10 A SPDT			**G3430 1149**	
2 x 10 A SPDT			**G3430 2249**	
4 x 5 A SPST			**G3430 4443**	
4 x 16 A SPST			**G3430 4445**	
8 x 5 A SPST			**G3830 5543**	
8 x 0.7 A NPN			**G3430 5511**	
8 x 0.7 A PNP			**G3430 5521**	
8 x 16 A SPST (Max. 32 A)				**G3430 5545**

Dupline® Fieldbus: general purpose

	Digital output modules	Analogue input modules		
Types	**G8830 1143**	**G3429 6470**	**G3210 1161**	**G3210 1111**
				
Dimensions (mm)	26 x 39 x 17	77 x 72 x 70	77 x 36 x 70	77 x 36 x 70
Functions	Decentral relay module with 1 x SPST relay for control of lights	Universal analogue input module for external supply	Analogue input module powered from Dupline® and input signal	Dupline®- powered Analogue input module for Pt100 temperature sensor
Housing type	Compact regular, with solid cables. For decentral installation	DIN-Rail, H4	DIN-Rail, H2	DIN-Rail, H2
Electrical specifications				
Number of channels	1	Selectable	1	1
Features/Signal types	1 x 13 A/250 VAC relay Inrush current: <130 A	4 x isolated analogue input. Input type individually configurable (0-20 mA, 4-20 mA, 0-10 VDC)	1 x 4-20 mA input	1 x Pt100 3-wire input Ranges: (-50°C to +40°C) (+30°C to +120°C) (-10°C to +100°C)
Power Supply	Powered through the Dupline® network	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered through the Dupline® network and 4-20 mA input signal	Powered through the Dupline® network
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-20°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks	Recommended minimum load 100 mA / 12 V	Protocol freely selectable (Analink, Multiplexed BCD or 8-bit)	Uses Analink 8-bit protocol	Uses Analink 8-bit protocol. Built-in cable compensation
References				
Universal analogue output		**G3429 6470**		
Dupline powered analogue input			**G3210 1161**	
-50°C to +40°C				**G3210 1111**
+30°C to +120°C				**G3210 1112**
-10°C to +100°C				**G3210 1113**
1 x 13 A SPST	**G8830 1143**			

Dupline® Fieldbus: general purpose

	Analogue output modules	Decentral analogue input modules		
Types	**G3439 6470**	**G8810 6265**	**G8810 6311**	**G8810 6312**
				
Dimensions (mm)	77 x 72 x 70	50 X 30 X 18	50 X 30 X 18	50 X 30 X 18
Functions	Universal analogue output module for external supply	Decentral analogue module with 3 x 0-10 VDC inputs designed for HVAC systems	Decentral analogue module with 2 x 0-10 VDC, 1 x thermistor and 1 x variable resistor inputs designed for HVAC systems	Decentral analogue module with 1 x thermistor and 1 x variable resistor inputs designed for HVAC systems
Housing type	DIN-Rail, H4	Compact housing for de-central installation	Compact housing for de-central installation	Compact housing for de-central installation
Electrical specifications				
Number of channels	Selectable	3	4	2
Features/Signal types	4 x analogue outputs. Output type configurable for 0-20 mA, 4-20 mA or 0-10 VDC	3 x 0-10 VDC input	2 x 0-10 VDC input 1 x thermistor 10k3 input 1 x variable resistor 1 - 11 KΩ input	1 x thermistor 10k3 input 1 x variable resistor 1 - 11 KΩ input
Power Supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered from external 15 - 30 VDC	Powered from external 15 - 30 VDC	Dupline® powered
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C
Remarks	Protocol freely selectable (Analink, Multiplexed BCD or 8-bit)	Analink protocol 8 bit resolution	Analink protocol 8 bit resolution	Analink protocol 8 bit resolution
References				
Universal analogue output	**G3439 6470**			
Decentral 3 x input		**G8810 6265**		
Decentral 4 x input			**G8810 6311**	
Decentral 2 x input Bus powered				**G8810 6312**

Dupline® Fieldbus: general purpose

	Digital sensors		Temp. Sensor
Types	**G6110 1145**	**G8910 1101**	**G8911 1010**
			
Dimensions (mm)	M18 x 55	Ø11 x 68	67 x 35 x 15
Functions	Dupline® powered inductive proximity switch	Dupline® powered magnet proximity switch	Temperature sensor for outdoor use. With built-in PT1000 transducer
Housing type	M18	Cylindrical	Flat pack sensor housing
Electrical specifications			
Number of channels	1	1	1
Features/Signal types	Detects proximity of metal objects	Detects proximity of magnet	1 x Analink Range: -30°C to +60°C
Power Supply	Powered through the Dupline® network	Powered through the Dupline® network	Powered through the Dupline® network
General specifications			
Degree of protection	IP 67	IP 67	IP 67
Operating temperature	-25°C to +70°C	-20°C to +50°C	-25°C to +70°C
Storage temperature	-30°C to +80°C	-20°C to +70°C	-55°C to +85°C
Remarks	Available with cable or M12 connector. Flush mounting	Available in Ø 11 plastic housing or with M14 metal thread	8-bit resolution
References			
Cable	**G6110 1145**		
M12 plug	**G6110 1145-1**		**G8911 1010**
Ø11		**G8910 1101**	
M14		**G8910 1101-G**	

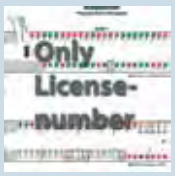
Dupline® Fieldbus: general purpose

Types	Repeater	Optolink interface	
Housing	**D3892 0000**	**G3491 0000**	**G3491 0090**
			
Dimensions (mm)	77 x 144 x 70	77 x 72 x 70	77 x 72 x 70
Functions	Dupline® signal Repeater for extension of transmission distance	RS232 to fibre optic interface	RS232 to fibre opto-link interface
Housing type	DIN-Rail, H8	DIN-Rail, H4	DIN-Rail, H4
Electrical specifications			
Number of channels	Adjusts automatically	Adjusts automatically	Adjusts automatically
Features/Signal types	All Dupline® signal types. Regenerates the Dupline® signal carrier through channel-generator output	Reads/controls up to 63 Dupline® systems which are networked through optolinks (G3491 0000)	Used as interface between computer or PLC with RS232 and a fibre optic Lan-ring
Power Supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC
General specifications			
Degree of protection	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks		Operates with G3491 0090	Operates with G3491 0000
References			
Repeater (Booster)	**D3892 0000**		
Dupline® fibre interface		**G3491 0000**	
RS232 to optolink interface			**G3491 0090**

Dupline® Fieldbus: general purpose

	Converters		Display modules	Power supply
Types	**G3491 0040**	**G3492 / G3493**	**G5460 6606**	**G3485 0000**
				
Dimensions (mm)	77 x 72 x 70	77 x 72 x 70	96 x 96 x 78	77 x 72 x 70
Functions	Private line Modem for long distance transmission of Dupline® signals	Optical repeater for converting Dupline® from electrical to optical transmission media	LED status indicator for 16 Dupline® channels	3-wire power supply, used when multiple Dupline® modules are supplied through a DCbus
Housing type	DIN-Rail, H4	DIN-Rail, H4	Panel mounting	DIN-Rail, H4
Electrical specifications				
Number of channels	Adjusts automatically	Adjusts automatically	16	Selectable
Features/Signal types	Digital, 8-bit analogue, non-multiplexed 3 1/2 digit BCD analogue	All Dupline® signal types	Each of the 16 LED's indicates the status of the digital channels assigned to it	Supply current ≤ 4 A (up to 25°C) or ≥ 3 A (up to 50°C)
Power Supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	230 = 115/230 VAC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	15-30 VDC
General specifications				
Degree of protection	IP 20	IP 20	IP 40	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	-5°C to +50°C
Storage temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +60°C	-20°C to +85°C
Remarks	Operates pair-wise	Operates pair-wise. Runs on 0/125, 62.5/125 or 100/140 micro m with STN connectors		Multiple units can be connected in parallel to increase length and size of a Dupline® system
References				
Long distance modem	**G3491 0040**			
Optical/electrical converter		**G3492 0000**		
Electrical/optical converter		**G3493 0000**		
LED indicator for Dupline			**G5460 6606**	
3-wire power supply				**G3485 0000 700**

Dupline® Fieldbus: general purpose

	Software			
Types	**DUPDATACC**	**DUP-SERV-ADD**	**DUP-SERV-SW**	**DUP-PGS-SWxx**
				
Functions	Software package with DDE-driver and ActiveXdriver for G3800. Controller and interface unit	A data logging, visualization and alarm handling software package to be installed in a windows based PC	A data logging, visualization and alarm handling software package to be installed in a windows based PC	A data logging, visualization and alarm handling software package to be installed in a windows based PC
Electrical specifications				
Features/Signal types	All Dupline® signal types. Copy and paste of dynamic Dupline links into EXCEL spreadsheets	Works only with G3800 xx36. Log and control energy consumption, analogue values and digital events and alarms	Works only with G3800 xx36. Log and control energy consumption, analogue values and digital events and alarms	Client/server program that is developed to the GP34960005 Carpark Master Module together with Moxa RS485/ethernet connectors

References				
DDE-Server	**DUPDATACC**			
Dupline-Online One License			**DUP-SERV-SW**	
ADD-License to Dupline-Online		**DUP-SERV-ADD**		
Dupline-Online two license			**DUP-SERV-SW2**	
Dupline Carpark 250 parking spaces				**DUP-PGS-SW250**
Dupline Carpark 500 parking spaces				**DUP-PGS-SW500**
Dupline Carpark 1000 paing spaces				**DUP-PGS-SW1000**
Dupline Carpark 2000 parking spaces				**DUP-PGS-SW2000**
Dupline Carpark 3000 parking spaces				**DUP-PGS-SW3000**
Dupline Carpark 4000 parking spaces				**DUP-PGS-SW4000**
Dupline Carpark 5000 parking spaces				**DUP-PGS-SW5000**
Dupline Carpark 6000 parking spaces				**DUP-PGS-SW6000**
Dupline Carpark 7000 parking spaces				**DUP-PGS-SW7000**
Dupline Carpark 8000 parking spaces				**DUP-PGS-SW8000**
Dupline Carpark 9000 parking spaces				**DUP-PGS-SW9000**
Dupline Carpark 10000 parking spaces				**DUP-PGS-SW10000**

Dupline® Fieldbus: general purpose

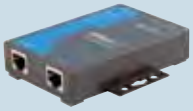
	Accessories		
Types	**GAP1605**	**GTU8**	**G3282 2002 230**
			
Dimensions (mm)	120 x 65 x 22	145 x 90 x 28	77 x 36 x 70
Functions	Dupline® coding device for assigning addresses to Dupline® I/O modules and sensors	Dupline® test unit for monitoring and control of Dupline® channels	Dupline® bus separator
Housing type	Handheld	Handheld	H2 Housing
Electrical specifications			
Number of channels	NA	Adjusts automatically	2
Features/Signal types		Digital, multiplexed BCD, 8-bit analogue signalsand split I/O. Also prepared to calibrate sensors in Carpark system	Disconnect the secondary side of the Dupline® bus when a short-circuit is detected
Power Supply	9 V battery	Powered through the Dupline® network	230 V
General specifications			
Degree of protection	IP 40	IP 40	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +85°C	-20°C to +85°C
Remarks		Options for latching digital signals and for reading multiplexed BCD values	
References			
Programmer	**GAP1605**		
Display			
Monitoring and control unit		**GTU8**	
Bus separator			**G3282 2002 230**

Dupline® Fieldbus: general purpose

Accessories

Types	ADAPT 1605	ANT1	ANT2	D3212 4000
				
Dimensions (mm)	25 x 50 x 100		15 x 35 x 120	36 x 70 x 77
Functions	Codings adaptor between GAP1605 and Dupline® modules without standard connection plug	GSM antenna 900 MHz	Active antenna used for radio controlled clock	Synchronizer module for analogue modules
Housing type	Handheld box		Glued plastic casing	H2 housing
Electrical specifications				
Features/Signal types	4 clip-on terminals for Dupline® modules. Includes a M12 plug for modules like G8911 1010		Input signal is 77.5 kHz	Max. 112 analogue signals with up to 12 bit resolution
Power Supply		Powered by G3800 XXXX	Powered by G3800 XXXX	Powered by Dupline®
General specifications				
Degree of protection	IP 20	IP 67	IP 40	IP 40
Operating temperature	0°C to +50°C	-25°C to +60°C	0°C to +50°C	-20°C to +50°
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-50°C to +85°C
Remarks				Transmits always on A1-A4
References				
Adaptor	**ADAPT 1605**			
Antenna		**ANT1**	**ANT2**	
Synchronizer				**D3212 4000**

Dupline® Fieldbus: general purpose

	Accessories			
Types	**DT01/DT02**	**ETHCONV 2**	**ETHCONV 3**	**ETHCONV 4**
				
Dimensions (mm)	17.5 x 70 x 77	22 x 75.2 x 80	22 x 90 x 100.4	29 x 89.2 x 118.5
Functions	Cable termination unit	Ethernet to RS232 converter	Ethernet to RS232 converter	Ethernet to RS485 converter
Housing type	H1 housing	Metal housing	Metal housing	Plast housing
Electrical specifications				
Number of channels		1	2	2
Features/Signal types	Removes distortion caused by reflection	1 port RJ45 10/100 Mbit TCP/IP based ethernet	2 port RJ45 10/100 Mbit TCP/IP based ethernet	2 port RJ45 10/100 Mbit TCP/IP based ethernet
Power Supply	No power needed	12-48 VDC/130 mA	12-30 VDC/305 mA	12-30 VDC/305 mA
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 30
Operating temperature	-20°C to +50°C	0°C to +55°C	0°C to +55°C	0°C to +55°C
Storage temperature	-50°C to +85°C	-40°C to +75°C	-40°C to +75°C	-40°C to +75°C
Remarks		Automatic dedicated installation tool available	Automatic dedicated installation tool available	Automatic dedicated installation tool available
References				
Standard Dupline®	**DT01**			
Hi-line Dupline®	**DT02**			
1 Channel		**ETHCONV2**		
2 Channels			**ETHCONV3**	**ETHCONV4**

Dupline® Fieldbus: DuplineSafe

	Optical fibre Converter	Output module	Gateway / interface	
Types	**GS3492/GS3493**	**GS3830 0143**	**GS3891 0125**	**GSTI 50**
				
Dimensions (mm)	77 x 72 x 70	144 x 77 x 70	144 x 77 x 70	55 x 70 x 15
Functions	Optical repeater for converting DuplineSafe from electrical to optical transmission media	DuplineSafe relay output module. Monitors up to 63 DuplineSafe inputs	Profibus-DP Gateway passive with Safety mapping	Dupline® Modbus interface module with Safety mapping
Housing type	DIN-Rail, H4	DIN-rail mounting H8	DIN-rail mounting H8	Compact plastic housing
Electrical specifications				
Number of channels	Adjusts automatically	2		
Features/Signal types	All Dupline® signal types	2 x NO Relays Force Guided contact	Reads/controls up to 128 inputs/outputs through Profibus-DP, Communication speed up to 12 MBaud	
Power Supply	230 = 115/230 VAC	230 VAC ± 15%	115 = 115 VAC 230 = 230 VAC	Powered by the RS485 com port
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Pollution degree	0°C to +50°C	3 (IEC 60664)		
Operating temperature	-20°C to +85°C	-25°C to +50°C	0°C to +50°C	-20°C to +60°C
Storage temperature		-30°C to +70°C	-20°C to +85°C	-30°C to +85°C
Humidity (non condensing)		20 to 80%	20 to 80%	
Remarks	Operates pair-wise. Runs on 50/125, 62.5/125 or 100/140 micro m with STN connectors	Approved according to IEC/EN 61508, EN 62061 and ISO/EN 13849-1 PL e	Certified by PNO	Supports Modbus RTU function code 3 and code 16
References				
Optical/electrical converter	**GS3492 0000**			
Electrical/optical converter	**GS3493 0000**			
Output relay		**GS3830 0143**		
Gateway / interface			**GS3891 0125**	**GSTI 50**

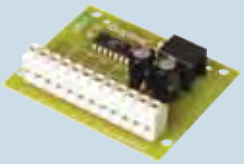
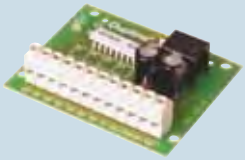
Dupline® Fieldbus: DuplineSafe

	Input module	Repeater	Configuration tool	
Types	**GS7510 2101**	**GS3892 0000**	**GS7380 0080**	**GS7380 0081**
				
Dimensions (mm)	57.5 x 36.0 x 16.4	77 x 144 x 70	28 x 90 x 145	25 x 50 x 100
Functions	Bus-powered safety input module	DuplineSafe signal repeater for extension of transmission distance	Configuration and test unit for DuplineSafe	USB Configuration unit for DuplineSafe
Housing type		DIN-Rail H8	Handheld	Handheld
Electrical specifications				
Number of channels	2	Adjusts automatically		
Features/Signal types	1 x NC contact	Regenerates the Dupline® signal carrier through channel generator output		Windows based programming tool for safety output relay module and safety input modules
Power Supply	Powered through the Dupline® network	024 = 024 VAC 115 = 115 VAC 230 = 230 VAC	9 V battery 6LR61	Supplied by the USB port
General specifications				
Degree of protection	IP 67	IP 40	IP 40	IP 40
Pollution degree	3 (IEC 60664)			3 (IEC 60664)
Operating temperature	-40°C to +50°C	0°C to +50°C	-10°C to +45°C	0°C to +50°C
Storage temperature	-40°C to +70°C	-50°C to +85°C	-20°C to +70°C	-20°C to +60°C
Humidity (non condensing)	20 to 80%			
Remarks	Approved according to IEC/EN 61508, EN 62061 and ISO/EN 13849-1 PL e		Adapt 7380 is included	
References				
		GS3892 0000	**GS7380 0080**	**GS7380 0081**
Cable connection	**GS7510 2101**			
Cable connection cULus approved	**GS7510 2192**			
Plug connector	**GS7510 2101-1**			
Plug connector cULus approved	**GS7510 2192-1**			

Dupline® Fieldbus: irrigation

	Digital I/O modules		Converter	Tools
Types	**GH3440 4412**	**GH6440 4412**	**GH3485 0000**	**GHTU8**
				
Dimensions (mm)	77 x 72 x 70	80 x 77 x 50	77 x 72 x 70	145 x 90 x 28
Functions	I/O module for irrigation valve control	I/O module for irrigation valve control	Dupline® to Hi-Line converter	Dupline test unit for monitoring and control of Dupline® channels. Used for Hi-line modules
Housing type	DIN-Rail, H4	Fully molded housing for under ground installation	DIN-Rail, H4	Handheld
Electrical specifications				
Number of channels	4	4	Adjusts automatically	Adjusts automatically
Features/Signal types	2 outputs for control of 3-wire 12 VDC latching valve, and 2 contact inputs	2 outputs for control of 3-wire 12 VDC latching valve, and 2 contact inputs	Converts the Dupline® signal to Hi-Line 28 VDC level for control of irrigation valves (see GH3440 4412 and GH6440 4412)	Digital, multiplexed BCD and 8-bit analogue signals
Power Supply	Powered through Hi-Line signal (see GH34850000)	Powered through Hi-Line signal (see GH34850000)	724 = 20-30 VDC	Powered through the Dupline® network
General specifications				
Degree of protection	IP 20	IP 67	IP 20	IP 40
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks				Options for latching digital signals and for reading multiplexed BCD values
References				
2 outputs and 2 inputs	**GH3440 4412**	**GH6440 4412**		
Converter			**GH3485 0000**	
Monitoring and control unit				**GHTU8**

Dupline® Fieldbus: elevator

	Input module	Output module	Input/output module
Types	**G2120**	**G2130**	**G2140 4421**
			
Dimensions (mm)	Open PCB 72.3 x 59	Open PCB 74 x 59	Open PCB 54 x 40
Functions	8 contact inputs for push buttons or transistors. LED indications for supply and carrier	8 outputs for control of floor indicators and lamps. LED indications for supply and carrier	2 push button inputs. 2 PNP-transistor outputs. LED indications for supply and carrier
Housing type	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)
Electrical specifications			
Number of channels	8	8	4
Features/Signal types	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3
Power Supply	700 = 10 - 30 VDC	700 = 10 - 30 VDC	700 = 10 - 30 VDC
General specifications			
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
References			
NPN	**G2120 5501 700**	**G2130 5511 700**	
PNP	**G2120 5502 700**	**G2130 5521 700**	**G2140 4421 700**

Dupline® Fieldbus: elevator

	Input/output module	Master modules	
Types	**G2140 55.0**	**G2196**	**G3496**
			
Dimensions (mm)	Open PCB 74 x 59	Open PCB 86 x 54	77 x 72 x 70
Functions	4 push-button inputs 4 transistor outputs LED indications for supply and carrier	128 signals RS 485/RS 232 interface to control system LED indications for supply, carrier and RS485Tx	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus
Housing type	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)	DIN-Rail, H4
Electrical specifications			
Number of channels	8	128 inputs and 128 outputs	Selectable
Features/Signal types	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3	Possibility for 3-wire operation with DC-power on the 3'rd wire
Power Supply	700 = 10 - 30 VDC	700 = 20 - 30 VDC	700 = 20 - 30 VDC
General specifications			
Degree of protection			IP 20
Operating temperature	-20°C to +50°C	-20°C to +60°C	0°C to +50°C
Storage temperature			-50°C to +85°C
Remarks			Built-in protocol for specific PLC brands for easy interfacing
References			
NPN	**G2140 5510 700**		
PNP	**G2140 5520 700**		
Standard protocol		**G2196 0000 700**	**G3496 0000**
Lucky Goldstar K-series		**G2196 0001 700**	**G3496 0001**
GE-Fanuc 90-30 series		**G2196 0002 700**	**G3496 0002**
Mitsubishi FX & A-series		**G2196 0003 700**	**G3496 0003**
Omron		**G2196 0004 700**	**G3496 0004**
Modbus RTU Slave		**G2196 0005 700**	**G3496 0005**
Allen-Bradley			**G3496 0006**
Schneider			**G3496 0007**
Koyo			**G3496 0008**
Matsushita			**G3496 0009**
Siemens			**G3496 0010**
Toshiba			**G3496 0011**
IDEC			**G3496 0012**

Touch screen display and datalogger

	Touch screen displays		Programming software
Types	**BTM-T4-24**	**BTM-T7-24**	**Wizard**
			
Dimensions (mm)	147 x 107 x 56	187 x 147 x47	
Functions	High definition 4" Win CE display, 64K colours, programmable graphic pages and functions, datalogger, alarms management	High definition 7" Win CE display, 64K colours, programmable graphic pages and functions, datalogger, alarms management	The Wizard software offers full vector graphic capabilities to create pages for data acquisition, alarm handling, calendar based with real-time clock scheduler for timed actions (daily and weekly schedulers, exception dates), recipes, users and passwords, e-mail and RSS feeds, rotating menus
Technical specifications			
Power supply	24 VDC ±20%	24 VDC ±20%	
Outputs			Configuration file
Communication	Modbus RTU, Modbus TCP/IP	Modbus RTU, Modbus TCP/IP	Ethernet port
General specifications			
Operating temperature	-0° to +50°C	-0° to +50°C	
Degree of protection	IP20	IP20	
Mounting	Wall box	Wall box	
Operating system			Windows XP, Windows Vista, Windows 7
Marks/Approvals	CE	CE	
References			
NPN	**BTM-T4-24**	**BTM-T7-24**	**Wizard Studio**

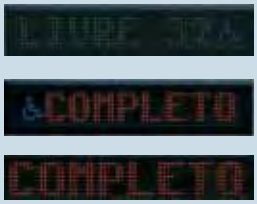
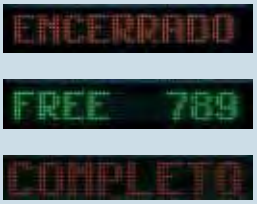
Dupline® Fieldbus: parking guidance system

	Sensors	Carpark monitor	Passive indicators	Bus controll indicators
Types	**GP6220../GP6240..**	**GP3482 9091**	**GP6289..**	**GP6265..**
				
Dimensions (mm)	Ø118 x 76	77 x 72 x 70	Ø118 x 76	Ø118 x 76
Functions	Ultrasonic sensors for detection of cars with or without LED indication	Configurable device for monitoring of free parking bays in an carpark	Passive indicator for sensor	3 coloured bus controlled indicator
Housing type	Direct mounting on ceiling	Mounting on DIN rail	Direct mounting on ceiling	Direct mounting on ceiling
Electrical specifications				
Number of channels	2- 3	-	-	1 - 2
Features/Signal types	1 x signal for occupancy. 1 x signal for common calibration	Programmable device with builtin RS485 for displays. 120 sensors can be connected to the Monitor module	No programming. Only wire connected	Colours can be controlled via the Dupline® bus
Power Supply	3-wire system with Dupline® and sensor supply	Dupline® 3-wire system with power for the L1 and L2 bus		3-wire system with Dupline® and LED supply
General specifications				
Degree of protection	IP 34	IP 20	IP 34	IP 34
Operating temperature	-40°C to +70°C	-40°C to +50°C	-40°C to +70°C	-40°C to +70°C
Storage temperature	-40°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
References				
Red/Green LED	**GP6220 2201**		**GP6289 0101**	
Red/Blue LED	**GP6220 2202**		**GP6289 0102**	
Without LED	**GP6240 2224**			
Red/Green/Orange LED	**GP6220 3301**			**GP6265 2301**
Red/Green/Blue LED	**GP6220 3302**			**GP6265 2302**
Red/Blue/Orange LED	**GP6220 3303**			**GP6265 2303**
Red/Green LED US-version	**GP6220 2201-US**		**GP6289 0101-US**	
Red/Blue LED US-version	**GP6220 2202-US**		**GP6289 0102-US**	
Without LED US-version	**GP6240 2224-US**			
Red/Green/Orange LED US-version	**GP6220 3301-US**			**GP6265 2301-US**
Red/Green/Blue LED US-version	**GP6220 3302-US**			**GP6265 2302-US**
Red/Blue/Orange LED US-version	**GP6220 3303-US**			**GP6265 2303-US**
Dupline® Carpark monitor		**GP3482 9091 724**		

Dupline® Fieldbus: parking guidance system

	Carpark interface	Displays		
Types	**GP3496 0005**	**GP67630106**	**GP67630107-08**	**GP67630109-11**
				
Dimensions (mm)	77 x 72 x 70	145 x 145 x 60	145 x 240 x 60	145 x 335 x 60
Functions	Interface for Modbus-RTU with the function of a slave	Able to show green arrow, red cross or single digit	Able to show green arrow, red cross or single digit, together with disabled sign	3 character display with high flexibility to show digits, arrow, cross and disabled sign
Housing type	Mounting on DIN rail	Aluminium box with plexiglass front	Aluminium box with plexiglass front	Aluminium box with plexiglass front
Electrical specifications				
Power Supply	20-30 VDC 3-wire system	18-24 VDC / 15-25 W	18-24 VDC / 30-50 W	18-24 VDC / 40-60 W
Features				
	RS232/RS422/RS485 port for making an interface to the control system. Multidropping of up to16 devices on RS485	Guides the driver by showing moving green arrow or red cross for a lane or area in the carpark	Guides the disabled driver by showing moving green arrow or red cross for a lane or area in the carpark	Guides the driver or disabled driver by showing moving green arrow or red cross as well as number of free spaces for a lane or area in the carpark
General specifications				
Degree of protection	IP 20	IP 55	IP 55	IP 55
Pollution degree	-	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-40°C to +50°C	-15°C to +50°C	-15°C to +50°C	-15°C to +50°C
Storage temperature	-50°C to +85°C	-	-	-
Humidity	-	0 - 90% non condensing	0 - 90% non condensing	0 - 90% non condensing
References				
Dupline® Master Module	**GP3496 0005**			
1 segment display		**GP67630106**		
2 segment display			**GP67630107**	
			GP67630108	
3 segment display				**GP67630109**
				GP67630110
				GP67630111

Dupline® Fieldbus: parking guidance system

	Displays		
Types	**GP67630116**	**GP6763 0112 - 14**	**GP6763 0115**
			
Dimensions (mm)	145 x 430 x 60	145 x 910 x 60 (113+114) 145 x 815 x 60 (112)	210 x 1170 x 60
Functions	4 character display with high flexibility to show digits, arrow and cross	8 character display. 113+114 has also disabled, red cross or green arrow function	9 character display. 113+114 has also disabled, red cross or green arrow function
Housing type	Aluminium box with plexiglass front	Aluminium box with plexiglass front	Aluminium box with plexiglass front
Electrical specifications			
Power Supply	18-24 VDC / 60-100 W	18 - 24 VDC 35-50 W power consumption	18 - 24 VDC Typical 35 W power consumption
Features			
	Guides the driver by showing moving green arrow or red cross as well as number of free spaces for a lane or area in the carpark	Show a text on max. 8 character. The text is of costumers own choise. RS 485 communication	Show a text on max. 9 character. The text is of costumers own choise. RS 485 communication
General specifications			
Degree of protection	IP 55	IP 55	IP 55
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-15°C to +50°C	-15°C to +50°C	-15°C to +50°C
Humidity	0 to 90% non condensing	0 to 90% non condensing	0 to 90% non condensing
References			
4 segment display	**GP6763 0116**		
8 segment display		**GP6763 0112**	
		GP6763 0113	
		GP6763 0114	
9 segment display			**GP6763 0115**

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