CARLO GAVAZZI
Automation Components

CARLO GAVAZZI

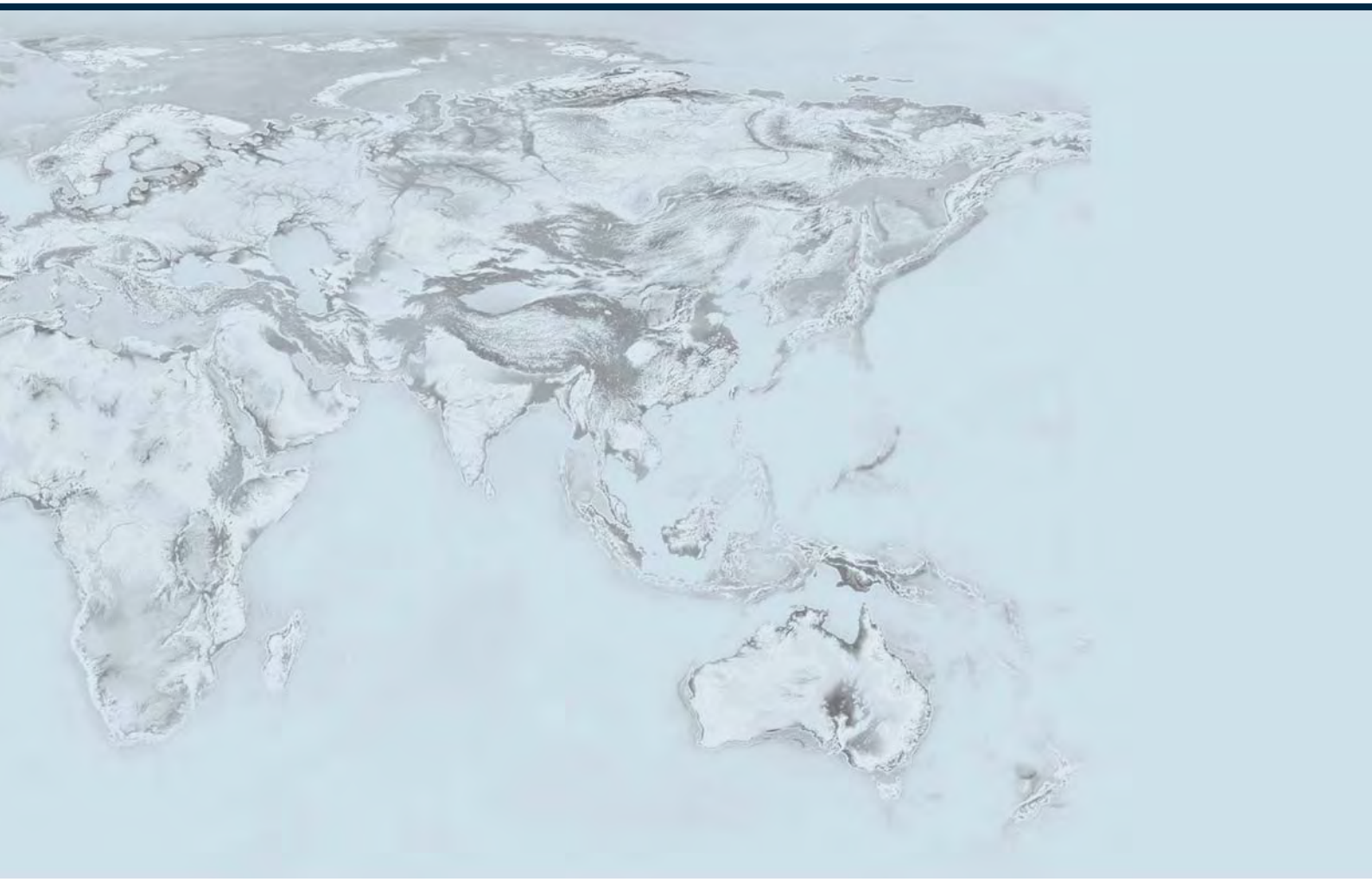
Our Products

CARLO GAVAZZI
Automation Components

Sense

Switch

Control



Fieldbus

EcoEnergy equipment

CARLO GAVAZZI
Automation Components



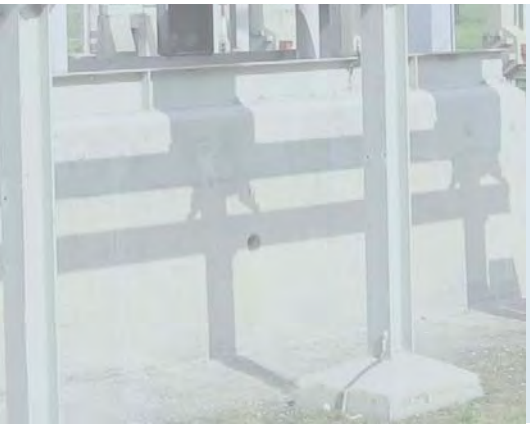

A complete product range

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 automation, building automation and energy.

Our history is full of firsts and our products are installed in a huge number of applications all over the world. With 80 years of successful operation, our experience is unparalleled.
Our core competence in automation spans five product lines: Sense, Switch, Control, Fieldbus and EcoEnergy equipment.

Our wide array of products includes sensors, monitoring relays, timers, solid-state relays, electronic motor controllers, energy management equipment, fieldbus systems and components for renewable energy.

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 21 wholly-owned sales companies and selected representatives in more than 65 countries, from the Pacific Rim in the East to the United States in the West.



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 ISO14001:2004 Environmental Management System standard. Focus is on the reduction of environmental damage arising from our production processes in particular air pollution, chemical waste and rejects.

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 (mm)	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 (mm)	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		
NPN-NO	**IA30ESN15UC**	**IA30CSN15UC**
PNP-NO	**IA30ELN15UC**	**IA30CLN15UC**
NPN-NC	**IA30ESN15UCM1**	**IA30CSN15UCM1**
PNP-NC	**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

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

Types	M8, Short body	M12, 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 34	M12 x 53	M12 x 67
Thread (mm)	M8 x 1 x 30	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	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
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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

Types	M18, Short Body		M30, 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	M5 Basic - Short body		M8 Basic - Short body	
Connections	**2 m cable**	**M5 connector**	**2 m cable**	**M8 connector**
Flush mountable				
Dimensions (mm)	M5 x 28	M5 x 45	M8 x 30	M8 x 45
Thread (mm)	M5 x 1 x 25	M5 x 1 x 25	M8 x 1 x 25	M8 x 1 x 25
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	0.8 mm	0.8 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 25
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	≤ 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 @ 25°C	< 200 mA @ 25°C	< 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	Red	Red	Yellow	Yellow
Approvals/Marks	CE - CSA	CE - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M5 Basic - Long body		
Connections	**2 m cable**	**M8 connector**	**M12 connector**
Flush mountable			
Dimensions (mm)	M8 x 45	M8 x 60	M12 x 69
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 69
Thread (mm)	M8 x 1 x 42	M12 x 1 x 37	M8 x 1 x 40
Operating frequency	2 kHz	800 Hz	800 Hz
Sensing distance (Sn)	4 mm	8 mm	8 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	≤ 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 @ 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

Inductive proximity sensors, 3-wire, DC

Types	M12 basic - Short body		M12 basic - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 41	M12 x 55.2	M12 x 61	M12 x 75.2
Thread (mm)	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO	**IA12DSF02NO**	**IA12ASF02NOM1**	**IA12DLF02NO**	**IA12DLF02NOM1**
PNP-NO	**IA12DSF02PO**	**IA12ASF02POM1**	**IA12DLF02PO**	**IA12ALF02POM1**
NPN-NC	**IA12DSF02NC**	**IA12ASF02NCM1**		
PNP-NC	**IA12DSF02PC**	**IA12ASF02PCM1**		
Non-flush mountable				
Dimensions (mm)	M12 x 45	M12 x 60		
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30		
Operating frequency	2 kHz	2 kHz		
Sensing distance (Sn)	4 mm	2 mm		
References				
NPN-NO	**IA12DSN04NO**	**IA12ASN04NOM1**		
PNP-NO	**IA12DSN04PO**	**IA12ASN04POM1**		
NPN-NC	**IA12DSN04NC**	**IA12ASN04NCM1**		
PNP-NC	**IA12DSN04PC**	**IA12ASN04PCM1**		
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 @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°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	M18 basic - Short body		M18 basic - 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)	5 mm	5 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 @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°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 basic - Short body		M30 basic - 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 66		
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 @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°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	M8 basic - Extended		M12 Extended	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M8 x 35 x 30	M8 x 45	M12 x 50 [short body] M12 x 65 [long body]	M12 x 51 [short body] M12 x 66 [long body]
Thread (mm)	M8 x 1 x 35	M8 x 1 x 30	M12 x 1	M12 x 1
Operating frequency	2 kHz	2 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	2 mm	2 mm	4 mm	4 mm
References				
NPN-NO	**IA08BSF20NO**	**IA08BSF20NOM5**	**ICB12xF04NO**	**ICB12xF04NOM1**
PNP-NO	**IA08BSF20PO**	**IA08BSF20POM5**	**ICB12xF04PO**	**ICB12xF04POM1**
NPN-NC	**IA08BSF20NC**	**IA08BSF20NCM5**	**ICB12xF04NC**	**ICB12xF04NCM1**
PNP-NC	**IA08BSF20PC**	**IA08BSF20PCM5**	**ICB12xF04PC**	**ICB12xF04PCM1**
Non-flush mountable				
Dimensions (mm)	M8 x 30	M8 x 45	M12 x 50 [short body] M12 x 65 [long body]	M12 x 51 [short body] M12 x 66 [long body]
Thread (mm)	M8 x 1 x 27	M8 x 1 x 22	M12 x 1	M12 x 1
Operating frequency	1 kHz	1 kHz	1500 Hz	1500 Hz
Sensing distance (Sn)	4 mm	4 mm	8 mm	8 mm
References				
NPN-NO	**IA08BSN40NO**	**IA08BSN40NOM5**	**ICB12xF08NO**	**ICB12xF08NOM1**
PNP-NO	**IA08BSN40PO**	**IA08BSN40POM5**	**ICB12xF08PO**	**ICB12xF08POM1**
NPN-NC	**IA08BSN40NC**	**IA08BSN40NCM5**	**ICB12xF08NC**	**ICB12xF08NCM1**
PNP-NC	**IA08BSN40PC**	**IA08BSN40PCM5**	**ICB12xF08PC**	**ICB12xF08PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 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 @ 25°C	< 200 mA @ 25°C	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
Housing material	Stainless steel	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	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL	CE - UL

References: x= S (Short) or L (Long)

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

Types	M18 basic - Extended		M30 basic - Extended	
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	500 Hz	500 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	400 Hz	400 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 @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°C	< 200 mA @ 25°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 basic - 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 74	M12 x 82.5
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 VDC	20 - 265 VDC
Voltage drop	≤ 8 VDC	≤ 8 VDC
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 basic - Short body		M18 basic - 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 73	M18 x 71	M18 x 93	M18 x 93
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 VDC	≤ 8 VDC	≤ 8 VDC	≤ 8 VDC
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 Basic - Short Body		M30 Basic - 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 30	M30 x 1.5 x 30
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 99.5	M30 x 79.5	M30 x 103	M30 x 83
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	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 VDC	≤ 8 VDC	≤ 8 VDC	≤ 8 VDC
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 - Short body	M18 - Long body		M30 - Long body
Connections	**2 m cable**	**2 m cable**	**M12 connector**	**2 m cable**
Flush mountable				
Dimensions (mm)	M18 x 41.6	M18 x 55		M30 x 79
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30		M30 x 1.5 x 50
Operating frequency	500 Hz	500 Hz		25 Hz
Sensing distance (Sn)	8 mm	8 mm		10 mm
References				
SCR-NO	**EI1805TBOPS**	**EI1805TBOPL**		**EI3010TBOPL**
Non-flush mountable				
Dimensions (mm)		M18 x 93	M18 x 91	M30 x 103
Thread (mm)		M18 x 1 x 50	M18 x 1 x 50	M30 x 1.5 x 50
Operating frequency		25 kHz	25 kHz	25 kHz
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 VDC	≤ 8 VDC	≤ 8 VDC	≤ 8 VDC
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, analogue output

Types	M8 analog. short	M12 analog. short	M12 analogue long	
Connections	**2 m cable**	**2 m cable**	**2 m cable**	**2 m cable**
Flush mountable				
Dimensions (mm)	M8 x 45	M12 x 50	M12 x 80	M12 x 50
Thread (mm)	M8 x 1 x 40	M12 x 1 x 40	M12 x 1 x 70	M12 x 1 x 45
Sensing distance (Sn)	0.1 - 1.5 mm	0.3 - 5 mm	0.3 - 3 mm	0.1 - 3 mm
Output	20 - 40 mA	0 - 10 mA	1 - 10 mA	20 - 4 mA
References				
PNP	**IA08ALC15AG-K**	**IA12ASC05AK-K**	**IA12ALC03AK-K**	**IA12ALC03AG-K**
specifications				
Rated operating voltage	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT	PT
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Types	M18 analogue long		M30 analogue short	M30 analogue long
Connections	**2 m cable**	**2 m cable**	**2 m cable**	**2 m cable**
Non-flush mountable				
Dimensions (mm)	M18 x 80	M18 x 55	M30 x 55	M30 x 55
Thread (mm)	M18 x 1 x 54	M18 x 1 x 50	M30 x 1.5 x 40	M30 x 1.5 x 50
Sensing distance (Sn)	0 - 5 mm	0.1 - 6 mm	3.5 - 11 mm	0.5 - 10 mm
Output	0 - 1.6 V	20 - 4 mA	0 - 10 V	20 - 4 mA
References				
PNP	**IA18ALC05AH-K**	**IA18ALC06AG-K**	**IA30ASC11AK-K**	**IA30ALC10AG-K**
Characteristics flush and non-flush mountable				
Rated operating voltage	12 - 30 VDC	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT	PT
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	0°C to +50°C	-25°C to +70°C	0°C to +50°C
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	M5 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	15 - 30 VDC	15 - 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	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 tip (mm)	Ø 12 x 16
Operating frequency	1 kHz
Sensing distance (Sn)	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

CARLO GAVAZZI

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	SP	SP
Output current	≤ 200 mA	5 - 200 mA	5 - 200 mA
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	Yellow, green	Yellow, green	Yellow, 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 mH	15-1500 mH
Input	1 Loop	2 Loop
Output	2 x SPDT, 1A / 250 VAC	2 x SPDT, 1A / 250 VAC
References		
24 VAC/DC	**LDP1SA1BM24**	**LDP2TA2BM24**
115 VAC	**LDP1SA1B115**	**LDP2TA2B115**
230 VAC	**LDP1SA1B230**	**LDP2TA2B230**
References		
24 VAC/DC	**LDP1SA1BM24-2**	
115 VAC	**LDP1SA1B115-2**	
230 VAC	**LDP1SA1B230-2**	
References		
24 VAC/DC	**LDP1SA1BM24-3**	**LDP2TA1BM24-3**
115 VAC	**LDP1SA1B115-3**	**LDP2TA1B115-3**
230 VAC	**LDP1SA1B230-3**	**LDP2TA1B230-3**
References		
24 VAC/DC	**LDP1SA1BM24-4**	
115 VAC	**LDP1SA1B115-4**	
230 VAC	**LDP1SA1B230-4**	
Specifications		
Operating temperature	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

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)	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 - 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

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 75.6	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	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 63.6	M30 x 75.6	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	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 75.6	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	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 71.6	M30 x 83.6	M30 x 71.6	M30 x 83.6
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 VDC	20 - 250 VDC	20 - 250 VDC	20 - 250 VDC
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 (Teach-in)	0.5 - 30 mm (Teach-in)	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	< 10 VAC	< 10 VAC	< 10 VAC
Degree of protection	IP 68	IP 68	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
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	-25°C to +85°C	-25°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			
PNP-NO/NC			
Non-flush mountable			
Dimensions (mm)	M18 x		
Thread (mm)	M18 x 1 x		
Operating frequency	30 Hz		
Sensing distance (Sn)	3 - 8 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	Thermoplastic polyester	Thermoplastic polyester
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	> 0.1 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	Polycarbonate	Polycarbonate	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 (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)	16 mm	16 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 - 40 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	Ø32 capacitive level sensors for solid, fluid and granulated substances		
Connections	**With ON delay**	**With OFF delay**	**Without delay**
			
Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	1 Hz	1 Hz	1 Hz
Sensing distance (Sn)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)
References			
120 VAC	**VC11RT12010M**	**VC12RT12010M**	**VC12RN120**
230 VAC	**VC11RT23010M**	**VC12RT23010M**	**VC12RN230**
24 VAC/DC	**VC11RT92410M**	**VC12RT92410M**	**VC12RN924**
Specifications			
Consumption	< 1.5 W	< 1.5 W	< 1.5 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
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	1 s - 10 m
Degree of protection	IP 68	IP 67	IP 67
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
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	CE	CE

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	
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			**CB32CLN12TO**
Thyristor (SCR) NO ATEX			**CB32CLN12TOAX**
Thyristor (SCR) NC			**CB32CLN12TC**
Thyristor (SCR) NC ATEX			**CB32CLN12TCAX**
ON-delay			Yes
Thyristor (SCR) NO			**CB32CLN12TOFT**
Thyristor (SCR) NO ATEX			**CB32CLN12TOFTAX**
Thyristor (SCR) NC			**CB32CLN12TCFT**
Thyristor (SCR) NC ATEX			**CB32CLN12TCFTAX**
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	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX

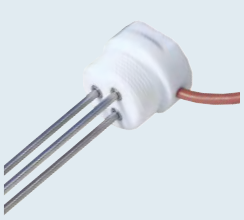
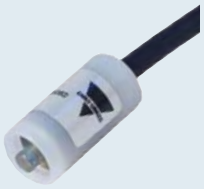
Capacitive level sensors

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

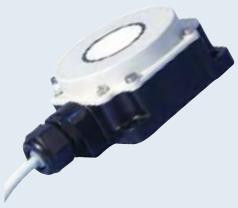
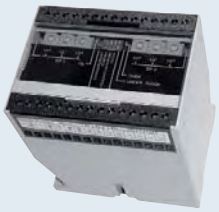
Ultrasonic sensors, M18 plastic, DC, analogue

	Integrated amplifier switching output		Basic analogue 0-10 VDC or 4-20 mA	
Types	**UA18CL..**	**UA18CL..M1**	**UA18CLD..**	**UA18CLD..M1**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 89	M18 x 97	M18 x 89	M18 x 97
References diffuse reflective				
Operating frequency	25 Hz	25 Hz		
Sensing distance (Sn)	100 - 600 mm adj.	100 - 600 mm adj.	100 - 600 mm adj.	100 - 600 mm adj.
Output slope			20 mV/mm	20 mV/mm
NPN-NO	**UA18CLD06NO**	**UA18CLD06NOM1**		
PNP-NO	**UA18CLD06PO**	**UA18CLD06POM1**		
0-10 VDC			**UA18CLD06AK**	**UA18CLD06AKM1**
Output slope			32 µA/mm	20 µA/mm
4-20 mA			**UA18CLD06AG**	**UA18CLD06AGM1**
Operating frequency	8 Hz	8 Hz		
Sensing distance (Sn)	200 - 1500 mm adj.	200 - 1500 mm adj.	200 - 1500 mm adj.	200 - 1500 mm adj.
Output slope			5.5 mV/mm	5.5 mV/mm
NPN-NO	**UA18CLD15NO**	**UA18CLD15NOM1**		
PNP-NO	**UA18CLD15PO**	**UA18CLD15POM1**		
0-10 VDC			**UA18CLD15AK**	**UA18CLD15AKM1**
Output slope			8.8 µA/mm	8.8 µA/mm
4-20 mA			**UA18CLD15AG**	**UA18CLD15AGM1**
References true scan				
Operating frequency		25 Hz		
Sensing distance (Sn)		100 - 600 mm adj.		
PNP-NO		**UA18CLS06POM1**		
Operating frequency		8 Hz		
Sensing distance (Sn)		200 - 1500 mm adj.		
PNP-NO		**UA18CLS15POM1**		
Specifications				
Rated operating voltage	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC
Voltage drop	≤ 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	< 500 mA	< 500 mA	See sensor type	See sensor type
Housing material	PBTB	PBTB	PBTB	PBTB
Operating temperature	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL

Ultrasonic sensors, M30 plastic, DC, analogue

	Integrated Amplifier switching output		Basic analogue 0-10 VDC or 4-20 mA	
Types	**UA30CLD..**	**UA30CLD..M1**	**UA30CLD..**	**UA30CLD..M1**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M30 x 125	M30 x 137	M30 x 125	M30 x 137
References diffuse reflective				
Operating frequency	1 Hz	1 Hz		
Sensing distance (Sn)	300 - 2500 mm adj.	300 - 2500 mm adj.	300 - 2500 mm adj.	300 - 2500 mm adj.
Output slope			3.7 mV/mm	3.7 mV/mm
NPN-NO	**UA30CLD25NO**	**UA30CLD25NOM1**		
PNP-NO	**UA30CLD25PO**	**UA30CLD25POM1**		
0-10 VDC			**UA30CLD25AK**	**UA30CLD25AKM1**
Output slope			5.9 µA/mm	5.9 µA/mm
4-20 mA			**UA30CLD25AG**	**UA30CLD25AGM1**
References true scan				
Operating frequency		1 Hz		
Sensing distance (Sn)		300 - 2500 mm adj.		
PNP-NO		**UA30CLS25POM1**		
Specifications				
Rated operating voltage	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC
Voltage drop	≤ 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	< 500 mA	< 500 mA	See sensor type	See sensor type
Housing material	PBTB	PBTB	PBTB	PBTB
Operating temperature	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL

Ultrasonic sensors, M18 plastic, DC, analogue

	Programmable RS232	Integrated amplifier	Sensor head for UC EU 80-1	Amplifier for UC80CND
Types	**UA30CLD..M7**	**UA30CLD....TI**	**UC80CND80FS..**	**UCEU80-1**
Connections	**M12 connector**	**M12 connector**	**M12 connector**	**Terminals**
				
Dimensions (mm)	M30 x 136	M30 x 128	80 x 80 x 43	100 x 75 x 110
References diffuse reflective				
Operating frequency	5 - 30 Hz Programmable	1 Hz	See Amplifier	
Sensing distance (Sn)	150 - 1500 mm adj.	150 - 1500 mm Teach	800 - 8000 mm	
0-10 VDC	**UA30CLD15FKM7**	**UA30CLD15AKM1TI**		
Sensor head			**UC80CND80FSM1**	
4-20 mA	**UA30CLD15FGM7**			
Operating frequency	5 - 30 Hz Programmable	1 Hz		
Sensing distance (Sn)	250 - 2000 mm adj.	250 - 2000 mm Teach		
PNP-NO		**UA30CLD20POM1TI**		
0-10 VDC	**UA30CLD20FKM7**	**UA30CLD20AKM1TI**		
4-20 mA	**UA30CLD20FGM7**	**UA30CLD20AGM1TI**		
Operating frequency	5 - 30 Hz Programmable	1 Hz		
Sensing distance (Sn)	350 - 3500 mm adj.	350 - 3500 mm adj.		
0-10 VDC	**UA30CLD35FKM7**	**UA30CLD35AKM1TI**		
4-20 mA	**UA30CLD35FGM7**			
Amplifier				
Evaluation unit				**UCEU80**
PLC				
Display				BCD, HEX
RS232				
Sensor supply				
Programmable functions				Full setup
Specifications				
Rated operating voltage	19 - 30 VDC	19 - 30 VDC	19 - 30 VDC	19 - 30 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC		≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 40
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 100 mA Analogue see type	2 x transistor output < 100 mA Analogue see type	< 50 mA	< 200 mA
Housing material	PBTB	PBTB	PET	ABS
Operating temperature	-15°C to +70°C	-15°C to +70°C	0°C to +70°C	0°C to +50°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow
Remarks	Hold/sync. input RS232	Teach Button		Two set points • Over range • Under range Analogue outputs: • 0 - 10 VDC • 4 - 20 mA
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL

Ultrasonic sensors, M12, M18, remote teach

Integrated amplifier, switching output

Types	UA12CLD..M1TR	UA18CLD..TR	UA18CLD..M1TR
Connections	M12 connector	2 m cable	M12 connector
			
Dimensions (mm)	M12 x 79	M18 x 93	M18 x 93
References diffuse reflective			
Operating frequency	20 Hz	1.2 Hz	1.2 Hz
Sensing distance (Sn)	25 - 200 mm adj.	200 - 2000 mm adj.	200 - 2000 mm adj.
NPN-NO/NC	**UA12CLB02NPM1TR**	**UA18CLD20NPTR**	**UA18CLD20NPM1TR**
PNP-NO/NC	**UA12CLB02PPM1TR**	**UA18CLD20PPTR**	**UA18CLD20PPM1TR**
Operating frequency		4.7 Hz	4.7 Hz
Sensing distance (Sn)		100 - 800 mm adj.	100 - 800 mm adj.
NPN-NO/NC		**UA18CLD08NPTR**	**UA18CLD08NPM1TR**
PNP-NO/NC		**UA18CLD08PPTR**	**UA18CLD08PPM1TR**
Operating frequency		4.7 Hz	4.7 Hz
Sensing distance (Sn)		60 - 500 mm adj.	60 - 500 mm adj.
NPN-NO/NC		**UA18CLD05NPTR**	**UA18CLD05NPM1TR**
PNP-NO/NC		**UA18CLD05PPTR**	**UA18CLD05PPM1TR**
Specifications			
Rated operating voltage	10 - 30 VDC	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 4.5 V	≤ 4.5 V	≤ 4.5 V
Degree of protection	IP 65	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Load current	< 100 mA	< 500 mA	< 500 mA
Housing material	Stainless Steel	ABS	ABS
Operating temperature	-20°C to +70°C	-15°C to +70°C	-15°C to +70°C
Approvals/Marks	CE	CE	CE

Ultrasonic sensors, DC, remote teach

	Integrated Amplifier, switching output			Remote teach analogue, 0-10VDC or 4-20mA
Types	**UA30CLD..TR**	**UA30CLD..M1TR**	**UC80CND**	**UC80CND60A.M1TR**
Connections	**2 m cable**	**M12 connector**	**M12 connector**	**M12 connector**
				
Dimensions (mm)	M30 x 123.5	M30 x 125	80 x 80 x 50	80 x 80 x 50
References diffuse reflective				
Operating frequency	1 Hz	1 Hz	1 Hz	
Sensing distance (Sn)	300 - 3500 mm adj.	300 - 3500 mm adj.	600 - 6000 mm adj.	600 - 6000 mm
NPN-NO/NC	**UA30CLD35NPTR**	**UA30CLD35NPM1TR**	**UC80CND60NPM1TR**	
PNP-NO/NC	**UA30CLD35PPTR**	**UA30CLD35PPM1TR**	**UC80CND60PPM1TR**	
Output slope				Adjustable
0 - 10 VDC				**UC80CND60AKM1TR**
Output slope				Adjustable
4 - 20 mA				**UC80CND60AGM1TR**
Specifications				
Rated operating voltage	12 - 30 VDC	12 - 30 VDC	15 - 30 VDC	28 - 30 VDC
Voltage drop	≤ 4.5 V	≤ 4.5 V	≤ 4.5 V	
Degree of protection	IP 67	IP 67	IP 65	IP 65
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 500 mA	< 500 mA	< 500 mA	See sensor type
Housing material	ABS	ABS	ABS	PBTB
Operating temperature	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C
Approvals/Marks	CE	CE	CE	CE

	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

Ultrasonic sensors, DC analogue, remote teach

Remote teach analogue, 0 - 10 VDC or 4 - 20 mA

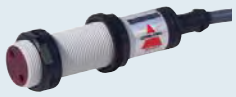
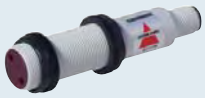
Types	UA18CLD..TR	UA18CLD..M1TR	UA30CLD..TR	UA30CLD..M1TR
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 93	M18 x 93	M30 x 123.5	M30 x 123.5
References diffuse reflective				
Sensing distance (Sn)	200 - 2000 mm	200 - 2000 mm	300 - 3500 mm	300 - 3500 mm
Output slope	Adjustable	Adjustable	Adjustable	Adjustable
0-10 VDC	**UA18CLD20AKTR**	**UA18CLD20AKM1TR**	**UA30CLD35AKTR**	**UA30CLD35AKM1TR**
Output slope	Adjustable	Adjustable	Adjustable	Adjustable
4-20 mA	**UA18CLD20AGTR**	**UA18CLD20AGM1TR**	**UA30CLD35AGTR**	**UA30CLD35AGM1TR**
Sensing distance (Sn)	100 - 800 mm	100 - 800 mm		
Output slope	Adjustable	Adjustable		
0-10 VDC	**UA18CLD08AKTR**	**UA18CLD08AKM1TR**		
Output slope	Adjustable	Adjustable		
4-20 mA	**UA18CLD08AGTR**	**UA18CLD08AGM1TR**		
Sensing distance (Sn)	60 - 500 mm	60 - 500 mm		
Output slope	Adjustable	Adjustable		
0-10 VDC	**UA18CLD05AKTR**	**UA18CLD05AKM1TR**		
Output slope	Adjustable	Adjustable		
4-20 mA	**UA18CLD05AGTR**	**UA18CLD05AGM1TR**		
Specifications				
Rated operating voltage	18 - 30 VDC	18 - 30 VDC	18 - 30 VDC	18 - 30 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	See sensor type	See sensor type	See sensor type	See sensor type
Housing material	PBTB	PBTB	PBTB	PBTB
Operating temperature	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C	-15°C to +70°C
Approvals/Marks	CE	CE	CE	CE

CARLO GAVAZZI

Photoelectric sensors

	M18 plastic, DC, integrated amplifier		M18 metal, DC, integrated amplifier	
Types	**PA18CS.**	**PA18CS.M1**	**E.18..**	**E.18..-1**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 55	M18 x 67	M18 x 55	M18 x 67
Diffuse reflective				
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hzc
Sensing distance (Sn)	100 mm, fixed	100 mm, fixed		
NPN NO+NC	**PA18CSD01NA**	**PA18CSD01NAM1**		
PNP NO+NC	**PA18CSD01PA**	**PA18CSD01PAM1**		
Sensing distance (Sn)	200 mm, fixed	200 mm, fixed		
NPN NO+NC	**PA18CSD02NA**	**PA18CSD02NAM1**		
PNP NC+NC	**PA18CSD02PA**	**PA18CSD02PAM1**		
Sensing distance (Sn)	400 mm, fixed	400 mm, fixed		
NPN NO+NC	**PA18CSD04NA**	**PA18CSD04NAM1**		
PNP NC+NC	**PA18CSD04PA**	**PA18CSD04PAM1**		
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable
NPN NO+NC	**PA18CSD04NASA**	**PA18CSD04NAM1SA**	**EO1804NPAS**	**EO1804NPAS-1**
PNP NC+NC	**PA18CSD04PASA**	**PA18CSD04PAM1SA**	**EO1804PPAS**	**EO1804PPAS-1**
Retro reflective polariz.				
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hz
Sensing distance (Sn)	2 m, fixed	2 m, fixed	2 m, adjustable	2 m, adjustable
NPN NO+NC	**PA18CSP20NA**	**PA18CSP20NAM1**	**EP1820NPAS**	**EP1820NPAS-1**
PNP NO+NC	**PA18CSP20PA**	**PA18CSP20PAM1**	**EP1820PPAS**	**EP1820PPAS-1**
Retro reflective				
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hz
Sensing distance (Sn)	3 m, fixed	3 m, fixed	3 m, adjustable	3 m, adjustable
NPN NO+NC	**PA18CSR30NA**	**PA18CSR30NAM1**	**ER1830NPAS**	**ER1830NPAS-1**
PNP NO+NC	**PA18CSR30PA**	**PA18CSR30PAM1**	**ER1830PPAS**	**ER1830PPAS-1**
Through-beam emitter				
Sensing distance (Sn)	10 m	10 m	20 m	20 m
	PA18CST10	**PA18CST10M1**	**ET1820**	**ET1820-1**
Through-beam Receiver				
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hz
Sensing distance (Sn)	10 m, fixed	10 m, fixed	20 m, adjustable	20 m, adjustable
NPN NO+NC	**PA18CST10NA**	**PA18CST10NAM1**	**ET1820NPAS**	**ET1820NPAS-1**
PNP NO+NC	**PA18CST10PA**	**PA18CST10PAM1**	**ET1820PPAS**	**ET1820PPAS-1**
Retro reflective				
Operating frequency			100 Hz	100 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	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 125 VDC	≤ 125 VDC	≤ 125 VDC	≤ 125 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit(S) Rev. polarity(P)-Transients(T)	SPT	SPT	SPT	SPT
Load current	< 200 mA	< 200 mA	< 200 mA	< 200 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

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	20 Hz	20 Hz	20 Hz	20 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 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 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

CARLO GAVAZZI

Photoelectric sensors

	Integrated amplifier		Integrated amplifier, transparent	
Types	**PD30**	**PD30**	**PD30**	**PD30**
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
Diffuse 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 NC/NC	**PD30CNR06PPMU**	**PD30CNR06PPM5MU**	**PD30CNG02PPMU**	**PD30CNG02PPM5MU**
Dust NPN NO/NC	**PD30CNR06NPDU**	**PD30CNR06NPM5DU**		
Dust PNP NC/NC	**PD30CNR06PPDU**	**PD30CNR06PPM5DU**		
Remote NPN NO/NC	**PD30CNR06NPRT**	**PD30CNR06NPM5RT**	**PD30CNG02NPRT**	**PD30CNG02NPM5RT**
Remote PNP NC/NC	**PD30CNR06PPRT**	**PD30CNR06PPM5RT**	**PD30CNG02PPRT**	**PD30CNG02PPM5RT**
Retro reflective polariz.				
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 NC/NC	**PD30CNP06PPMU**	**PD30CNP06PPM5MU**		
Dust NPN NO/NC	**PD30CNP06NPDU**	**PD30CNP06NPM5DU**		
Dust PNP NC/NC	**PD30CNP06PPDU**	**PD30CNP06PPM5DU**		
Remote NPN NO/NC	**PD30CNP06NPRT**	**PD30CNP06NPM5RT**		
Remote PNP NC/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 NC/NC	**PD30CNT15PPRT**	**PD30CNT15PPM5RT**		
Dust NPN NO/NC	**PD30CNT15NPDU**	**PD30CNT15NPM5DU**		
Dust PNP NC/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	CE - UL508	CE - UL508	CE	CE

Photoelectric sensors

	Integrated amplifier, diffuse reflective		Laser miniature, DC, integrated amplifier	
Types	**PD30**	**PD30**	**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 NC+NC			**LD32CND15PPT**	**LD32CND15PPM5T**
Dust output				
NPN NO/NC	**PD30CND10NPDU**	**PD30CND10NPM5DU**		
PNP NC/NC	**PD30CND10PPDU**	**PD30CND10PPM5DU**		
Remote teach				
NPN NO/NC	**PD30CND10NPRT**	**PD30CND10NPM5RT**		
PNP NC/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 NC+NC	**PD30CNB15PPRT**	**PD30CNB15PPM5RT**	**LD32CNB06PPT**	**LD32CNB06PPM5T**
Retro reflective polariz.				
Operating frequency			4000 Hz	4000 Hz
Sensing distance (Sn)			1 m, Teach-in	1 m, Teach-in
NPN NO+NC			**LD32CNP10NPT**	**LD32CNP10NPM5T**
PNP NC+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	CE - UL508	CE - UL508	CE	CE
Light Source			Laser Class 2	Laser Class 2

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 (Emitter)	**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 - UR	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 polariz.			
Operating frequency	500 Hz	500 Hz	
Sensing distance (Sn)	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			**PC50CNR10RP**
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 A
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 NC+NC	**ED5502PPAP**	**ED5502PPAP-1**	
Sensing distance (Sn)	600 mm, adjustable*	600 mm, adjustable*	
NPN NO+NC	**ED5506NPAP**	**ED5506NPAP-1**	
PNP NC+NC	**ED5506PPAP**	**ED5506PPAP-1**	
NPN/PNP NO+PC			**PD12CNC01BPT** 1 Output
NPN/PNP NO+PC			**PD12CNC04BPT** 4 Outputs
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	IP67	IP67	IP65
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..**
Connections	**2 m cable**	**M8 connector**	**M8 connector**
			
Dimensions (mm)	13 x 30 x 60	13 x 30 x 60	12 x 37.5 x 80
Transparent detection			
Operating frequency	1000 Hz	1000 Hz	
Sensing distance (Sn)	0.8 m, Teach-in	0.8 m, Teach-in	
NPN/PNP NO+PC	**PD60CNG08BPT**	**PD60CNG08BPM5T**	
Sensing distance (Sn)	1.4 m, Teach-in	1.4 m, Teach-in	
NPN/PNP NO+PC	**PD60CNG14BPT**	**PD60CNG14BPM5T**	
Fibre optical sensor plastic fibres			
Operating frequency	1000 Hz	1000 Hz	
Sensing distance (Sn)	200 mm	200 mm	
NPN/PNP NO+PC	**PD60CNX20BP**	**PD60CNX20BPM5**	
Sensing distance (Sn)	200 mm, Teach-in	200 mm, Teach-in	
NPN/PNP NO+PC	**PD60CNX20BPT**	**PD60CNX20BPM5T**	
Fibre optical sensor glass fibres			
Operating frequency	1000 Hz	1000 Hz	
Sensing distance (Sn)	200 mm	200 mm	
NPN/PNP NO+PC	**PD60CNV20BP**	**PD60CNV20BPM5**	
Sensing distance (Sn)	200 mm, Teach-in	200 mm, Teach-in	
NPN/PNP NO+PC	**PD60CNV20BPT**	**PD60CNV20BPM5T**	
Contrast sensor			
Operating frequency	20 kHz	20 kHz	
Sensing distance (Sn)	18 mm (fibre depend.)	18 mm (fibre depend.)	
NPN/PNP NO+PC	**PD60CNK18BPT**	**PD60CNK18BPM5T**	
Fork sensor			
Operating frequency			10 kHz
Sensing distance (Sn)			3 mm, Slot width
NPN/PNP NO+PC			**PF80FNT03BPM5T**
General specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC @ 100 mA ≤ 1.0 VDC @ 10 mA
Degree of protection	IP 65 (IP 67 CNG type)	IP 65 (IP 67 CNG type)	IP65
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	ST
Load current	≤ 100 mA	≤ 100 mA	≤ 40 mA
Housing material	PC	PC	Aluminium, black
Operating temperature	0°C to +60°C	0°C to +60°C	-20°C to +60°C
LED colour	Red	Red	Yellow + Red
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE

Photoelectric sensors

	Integrated amplifier		Through-beam relay output
Types	**PM..**	**PM..**	**PD98**
Connections	**Terminals single relay**	**Terminals mute input**	**Terminal block**
			
Dimensions (mm)	25 x 65 x 81	25 x 65 x 81	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	
Relay SPDT Multivoltage	**PMP12RG / PMP12RI**		
Relay SPST		**PMP12RGM / PMP12RIM**	
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	**PMT12GM / PMT12IM**	**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		**PMT20RGM / PMT20RIM**	**PD98CNT30QMU***
General specifications			
Rated operating voltage	12 - 240 VDC / 24 - 240 VAC	24 VAC/DC ±20%	12 V to 24 VAC/DC
Voltage drop	Relay SPDT	Relay SPST	Relay DPDT
Degree of protection	IP 67	IP 67	IP 54
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT
Load current	≤ 3 A	≤ 3 A	1 A (500 mA)
Housing material	PC/ABS	PC/ABS	PC/ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-20°C to +60°C
LED colour	Yellow	Yellow	Yellow (receiver)
Approvals/Marks	CE - UL - CSA	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 T = Timer	Mute input

* Item number set, emitter + receiver.

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
Outdoor sensing distance (max) m		15 / 40	8 / 15
General specifications			
Technology	Infrared	Infrared	Infrared
Continuous modulation	1.33 kHz	1.33 kHz	
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
Horizontal 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

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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) Rev. 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 level sensors

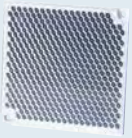
	Integrated amplifier		
Types	**VP0.E.**	**VP ATEX**	**VP E.M**
Connections	**2 m cable**	**2 m cable**	**2 m cable**
			
Dimensions (mm)	3/8" x 74 mm	3/8" x 74 mm	3/8" x 74 mm
Light type	Unmodulated	Unmodulated	Unmodulated
References optical level sensor			
Operating frequency	30 Hz	30 Hz	30 Hz
Sensing 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 operational 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 operational 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
General specifications			
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit(S) Rev. 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	3/8" x 70.5 mm	3/8" x 90.5 mm
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) Rev. 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

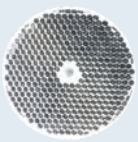
Reflectors, rectangular

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

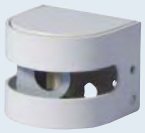



Item Number	**ERT25**	**EM 111-40**	**EM 121-41**	**EM 110-40**
Dimensions (mm)	25 mm x 45.7 m	10.5 x 10.5	Ø20	Ø10
Mounting	Adhesive			
Reduction factor	0.23 (25 x 25 mm)	1 (Micro Cube)	1 (Micro Cube)	1 (Micro Cube)

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.

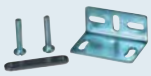
Accessories, photoelectric sensors



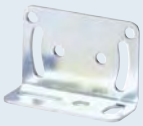

Item Number	**FPD..S.. / FPT..S..**	**FPD..S.. / FPT..S..**	**FGD..S.. / FGT..S..**	**MB-M01**
Dimensions (mm)	1 mm fiber	0.25 to 1 mm fiber	1 mm fiber	
Used for	PD60CNX.. EF1810..	PD60CNX.. EF1810..	PD60CNV..	MOF.. sensors
Description	Plastic fibre optics. Separate fibre heads see datasheet.	Plastic 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	**APA2**	**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**
Used for	Ø4 to M30 sensors
Description	Mounting bracket in plast and steel.

Wind sensors

	Wind vane	Cup anemometer	Anemometer amplifier
Types	**DWS-D-D...**	**DWS-V-D...**	**1056G**
Connections	**2 m cable**	**2 m cable**	**2 m cable**
			
Dimensions (mm)	207 x 162	137 x 145	230 x 140
Use	Wind direction	Wind speed	Wind security alarm
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	
References anemometer amplifier			
Alarm level			At wind speed above 70 km/h
			1056G
General specifications			
Rated operating voltage	12 - 24 VDC	12 - 24 VDC	48, 115, 230 or 400 VAC
Voltage drop	Typ. 4.9 VDC	Typ. 4.9 VDC	
Degree of protection	IP 54	IP 54	IP 65
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	
Operating temperature			-20°C to +60°C
LED colour			Yellow + Green
Approvals/Marks	CE	CE	CE

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 2.2m 4m (W) x 2m (D) 2m (W) x 2.5m (D)	mounting height 2.2m 4m (W) x 2m (D) 2m (W) x 2.5m (D)	mounting height 2.5m~7m 2.5m (W) x 8m (D) 2.5m (W) x 10m (D)
Detection Mode	Bidirectional	Uni & Bidirectional	Uni & Bidirectional
Motion Detecting Speed	0.05~1m/s	0.05~1m/s	0.05~3.0m/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	 24VDC / 120VAC 1 A (resistive) 30W (DC) / 120VA (AC)	 24VDC / 120VAC 1 A (resistive) 30W (DC) / 120VA (AC)	 24VDC / 120VAC 1 A (resistive) 30W (DC) / 120VA (AC)
Hold time	0.5~9s (adjustable)	0.5~9s (adjustable)	0.5~6s (adjustable)
Electrical specifications			
Frequency emitted	24.125GHz	24.125GHz	24.125GHz
Rated supply voltage	12~24VAC ±10% 12~24VDC +30% / -10%	12~24VAC ±10% 12~24VDC +30% / -10%	12~24VAC ±10% 12~24VDC +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 automatic sliding doors

Types	GUARDIAN
Connections	**Cable**

Dimensions (mm)	210 x 77 x 58
Technology	Digital video camera technology 640 x 480
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
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
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
Sensitivity	Adjusting in 7 steps
Presence time	7 step rotary switch: 1min, 5 min
Ambient Light	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
General specifications	
Rated operating voltage	12 - 24 VAC
No load supply current	Max. 230 mA
Test input. Active high	ON > 9 VAC/VDC OFF < 6 VAC/VDC
Test input. Active low	ON < 6 VAC/VDC OFF > 9 VAC/VDC
Type of ESPE	Type 2
Environment protection	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.
UL-approved	cURus: UL325, CSA-C22.2 No. 247
Marking	CE
References	
Detector	**GUARDIAN 1**

Safety light curtains for lift and doors

	Safety Light Curtains for Lift	Safety 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 65	IP 54, IP 65
Operating temperature	-10° to +55°C, R.H. < 95%	-20° to +55°C, R.H. < 95%	-20° to +55°C, R.H. < 95%
Connecting cable	PVC, 5 x 24 AWG	PVC, 5 x 24 AWG	PVC, 5 x 24 AWG
Dimensions (mm)	30 x 2001 x 9.7 mm	30 x 2001 x 9.7 mm [200x] 30 x 2677 x 9.7 mm [250x]	16.4 x 2000 x 26 mm [200x] 16.4 x 2695 x 26 mm [250x]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	BFL104E200	**BFD40E200**	**BFD40S200**
	BFL104E200I	**BFD40E200I**	**BFD40S200I**
	BFL194E200	**BFD40E250**	**BFD40S250**
	BFL194E200I	**BFD40E250I**	**BFD40S250I**

Safety light curtain accessories

Safety light curtain accessories for lift

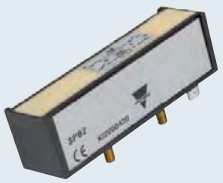
Types	BFLDIN	BFLBOX
		
Dimensions (mm) DIN RAIL housing On surface by screws	81 x 35.5 x 62.7	Internal: 150 x 105 x 80 External: 165 x 120 x 85 (excluded cable glands)
Function	Power supply unit for lift light curtain	Plastic case including BFLDIN
Output specifications		
11-14	SPST relay (NE or ND)	SPST 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	**CONG1O-S2**	**CONG1O-A2**	**CONM13NF-S2**	**CONM13NF-A2**
5 m cable, 3-pin	**CONG1O-S5**	**CONG1O-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

Proximity magnetic sensors, rectangular

	Rectangular			
Types	**S series**	**SPB2 series**	**SPA1 series**	**M and MS series**
				
Dimensions (mm)	11.5 x 79 x 21.2	25.5 x 85 x 24	16 x 90 x 20	8.3 x 37 x 16
Output functions				
	Normally open [A] Normally closed [C] Change-over [S] Bistable [B] Bistable CO [BS]	Bistable	Normally closed, 2 outputs	Normally open [A] Normally closed [C] Change-over [S]
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]	100 VAC [MS1] 230 VAC [MSA1] 500 VAC [MA3, MC3]
Max. switch. current contact	1 A [SS2, SBS2] 3 A [SA, SC, SB2]	3 A	0.5 A [output 1] 4 A [output 2]	0.25 A [MS1] 0.5 A [MA3, MC3] 0.75 A [MSA1]
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]	5 VA [MS1] 10VA [MSA1, MA2, MC3]
Power supply			24 VDC	
General specifications				
Operating distance	8 - 32 mm	5 - 30 mm	12 mm	7 - 35 mm
Output connection	PVC cable	Faston [SPB2] Cable [SPB22MT]	PVC cable	PVC cable
Protection degree	IP 67	IP 67 [SPB22MT] IP 65 [SPB2]	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +80°C	-25°C to +75°C
Housing material	Plastic	Plastic	ABS class V0	Plastic
References				
	SA2	**SPB2**	**SPA1S2**	**MSA1**
	SA8	**SPB22MT**	**SPA1S3**	**MA3**
	SC2			**MC3**
	SC8			**MS1**
	SS2			
	SB2			
	SB2S5			
	SBS2			

Proximity magnetic sensors, rectangular, cylindrical

	Rectangular		Cylindrical	
Types	**MM series**	**FM... series**	**FMM... series**	**FMMP... series**
				
Dimensions (mm)	6.1 x 23.5 x 14 [A6] 7 x 27 x 11 [A3, S1]	Ø 9.3 [A3, C3, S1] M10 x 0.75 [A3S5, A6] M12 x 1 [C3S1]	M8 x 1	Ø 6 x 25 [L25] Ø 6 x 33 [L33] Ø 6 x 38 [L38]
Output functions				
	Normally open [A] Change-over [S]	Normally open [A] Normally closed [C] Change-over [S]	Normally open [A] Change-over [S]	Normally open
Electrical specifications				
Max. switch. voltage contact	100 VAC [S1] 100 VDC [A6] 500 VAC [A3]	100 VAC [S1, A6] 500 VAC [A3, C3]	100 VAC [A6, S1] 500 VAC [A3]	100 VAC
Max. switch. current contact	0.25 A [S1] 0.5 A [A3] 1 A [A6]	0.25 A [S1] 0.5 A [A3, C3, A6]	0.25 A [S1] 0.5 A [A2, A6]	0.4 A
Max. switch. power contact	5 VA [S1] 10 VA [A]	5 VA [A3, C3] 100 VA [S1, A6]	5 VA [S1] 10 VA [A3, A6]	12 VA
Max carry current				1 A
General specifications				
Operating distance	10 - 40 mm	5 - 36 mm	8 - 27 mm	> 8 mm
Output connection	PVC cable [A3, S1] Twin lead cable [A6]	PVC cable	PVC cable	Twin lead cable
Protection degree	IP 67	IP 67	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +70°C	-20°C to +75°C
Housing material	Plastic	Plastic [A3, C3, S1] Nickel plated brass [A6] Brass [A3S5, C3S1]	Stainless steel [A3, S1] Nickel plated brass [A6]	Plastic
References				
	MMA3	**FMA3**	**FMMA3**	**FMMPA7L25**
	MMA6	**FMA3S5**	**FMMA6**	**FMMPA7L33**
	MMS1	**FMA6**	**FMMS1**	**FMMPA7L38**
		FMC3		
		FMC3S1		
		FMS1		

CARLO GAVAZZI

Proximity magnetic sensors, cylindrical

Cylindrical

Types	FMP... series	FS... series	FSLP... series	FSM... series
				
Dimensions (mm)	M12 x 1	Ø 13.5 [A2, A8, C2, A8, S2] M10 x 1.25 [A2S3, S2S1] M12 x 1 [A2S4, S2S4] M16 x 1.5 [B2]	Ø 16	M12 x 1 [A2, A7, S2] M16 x 1 [S2S2, S2S2AT]
Output functions				
	Normally open [A] Normally closed [C] Change-over [S] Bistable [B]	Normally open [A] Normally closed [C] Change-over [S] Bistable [B]	Normally open [A] Bistable [B]	Normally open [A] Change-over [S]
Electrical specifications				
Max. switch. voltage contact	100 VAC [S1] 120 VAC [C7] 230 VAC [A9, C9] 250 VAC [B2, A7]	230 VAC [S2S1] 250 VAC [A2, B2, C2] 1500 VAC [A8, C8, S2, S2S4]	100 VAC [A7] 250 VAC [B2]	24 VDC [A7] 230 VAC [S2] 250 VAC [A2]
Max. switch. current contact	0.25 A [S1] 0.5 A [A7, C7] 3 A [B2, A9, C9]	1 A [S2] 3A [A2, B2, C2, A8, C8]	0.4 A [A7] 3 A [B2]	1 A [S2] 3 A [A2] 50 mA [A7]
Max. switch. power contact	5 VA [S1] 10 VA [A7] 20 VA [C7] 60 VA [A9, C9] 120 VA [B2]	60 VA [S2S1] 100 VA [A2, B2, C2] 120 VA [A8, C8, S2, S2S4]	10 VA [A7] 120 VA [B2]	60 VA [S2] 100 VA [A2] (A7 negligible)
General specifications				
Operating distance	7 - 26 mm	3 - 32 mm	18 - 25 mm (front); >10 - >15 mm (side)	2 - 19 mm
Output connection	PVC cable	PVC cable	PVC cable	Silicone cable [A7, S2S2AT] PVC cable [A2, S2, S2S2]
Protection degree	IP 67	IP 67	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-30° to +80°C	-25°C to +75°C -25°C to +180°C [S2S2AT]
Housing material	Plastic	Plastic [A2, A8, C2, C8, S2, B2] Brass [A2S3/S4, S2S1/S4]	Plastic	Brass [S2S2, S2S2AT] Nickel plated brass [A2, A7, S2]
References				
	FMPA7 [black]	**FSA2**	**FSLPA7**	**FSMA2**
	FMPA9 [black]	**FSA8**	**FSLPB2**	**FSMA7**
	FMPA9S1 [black]	**FSC2**		**FSMS2**
	FMPC7 [red]	**FSC8**		**FSMS2S2**
	FMPC9 [red]	**FSS2**		**FSMS2S2AT**
	FMPS1 [blue]	**FSA2S32MT**		
	FMPB2 [grey]	**FSS2S12MT**		
		FSA2S42MT		
		FSS2S42MT		
		FSB22MT		

Proximity magnetic sensors, slot

	Slot		
Types	**I. series**	**ISY. series**	**IM. series**
			
Dimensions (mm)	40 x 75 x 50.7	10 x 45 x 37	7 x 28 x 18.5
Output functions			
	Normally open [A] Normally closed [C] Change-over [S]	Normally closed [C] Change-over [S]	Normally closed [C] Change-over [S]
Electrical specifications			
Max. switch. voltage contact	230 VAC [IS2] 250 VAC [IA2, IC2] 1500 VAC [IA8, IC8]	100 VAC [S1] 500 VAC [C3]	100 VAC [S1] 500 VAC [C3]
Max. switch. current contact	1 A [IS] 3 A [IA, IC]	0.25 A [S1] 0.5 A [C3]	0.25 A [S1] 0.5 A [C3]
Max. switch. power contact	60 VA [IS] 100 VA [IA2, IC2] 120 VA [IA8, IC8]	5 VA [S1] 10 VA [C3]	5 VA [S1] 10 VA [C3]
General specifications			
Output connection	PVC cable	PVC cable	PVC cable
Protection degree	IP 67	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +75°C
Housing materials	Plastic	Plastic	Plastic
References			
	IA2	**ISYC3**	**IMC3**
	IA8	**ISYS1**	**IMS1**
	IC2		
	IC8		
	IS2		

Level magnetic sensors

Cylindrical

Types	ILM. ILC 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 [5S2, 5S1, 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	XLPE cable	PVC cable
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
Protection degree	IP 67	IP 67	IP 67
Operating temperature	-25 to +120 °C [2,8] -25 to +80 °C [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			
	ILM2	**ILMM5**	**ILMP5**
	ILM8	**ILMM590**	**ILMP5P**
	ILMS2	**ILMM5ATS1**	
		ILMM5S2AT	
		ILMM5S1	
		ILMM5S2	

Types — Magnetic units CL series

Shapes	Rectangular	Trapezoidal	Cylindrical
			

General specifications

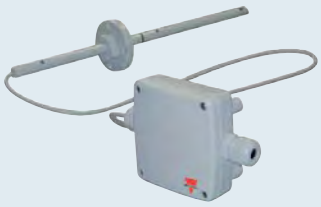
Minimum separation:	Dimensions (mm)	References	Dimensions (mm)	References	Dimensions (mm)	References
10	25 x 14 x 8	**CL1**				
20	44.5 x 12 x 9	**CL2**				
30	59 x 18 x 9	**CL3**				
50	76 x 25 x 18	**CL4**				
Not mandatory			90 x 31 x 22.5	**CL90**	Ø 9.3 x 32	**CL10**
					Ø 13.5 x 65	**CL11**
					Ø 18 x 6	**CL18**
					Ø 23 x 9	**CL23**
					Ø 31 x 10	**CL31**
					Ø 20 x 10.5	**CL20S1**
					Ø 22.1 x 20.5	**CL20S3**
					Ø 50 x 10	**CL50**

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
Output functions			
	Normally open, normally closed [ILMPU, ILMU] Normally open [ILU] Change-over [ILUS2]	Normally open, normally closed [2, 8] Change-over [S2]	Normally open
Electrical specifications			
Max. switch. voltage contact	230 VAC [ILUS2] 240 VAC, 200 VDC [ILMP, ILM] 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	Silicone cable	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]	6 kg/cm^2	
Protection degree	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			
	ILMPU5	**ILSP2**	**FLMA1S1**
	ILMU5	**ILSP8**	
	ILU2	**ILSPS2**	
	ILU8		
	ILUS2		

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 mm^2 (AWG 16)	Screw terminals max. 1.5 mm^2 (AWG 16)	Screw terminals max. 1.5 mm^2 (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	
CO_2 Working range Accuracy @ 20°C 2000ppm 5000ppm	 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	 < 3W < 3W
General specifications		
Cable gland		M16 x 1.5 cable Ø4.5 - 10 mm
Electrical connnections	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	CE - RoHS	CE - RoHS
References		
	For ordering key details, please refer to www.productselection.net	

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 50 [S], Cylindrical ø 45x55 [C]
Category	2G	2G [MQx1EX] 1G [MQx0EX]	2G [ILMx2xEX] 1G [ILMx0xEX]
EX Identification	Ⓔx II2GEExmIIT6	Ⓔx II2GEExmIIT5 [MQx1EX] II1GEExiaIICT6 [MQx1EX]	Ⓔx II2GEExmIIT5 [ILMx2xEX] II1GEExiaIICT6 [ILMx2xEX]
Output functions			
	Normally open	Normally open [MQA] Normally closed [MQC] Change-over [MQS]	Normally open [ILMA] Change-over [ILMS]
Electrical specifications			
Max. switch. voltage contact	230 VAC	230 VAC [MQx1EX] 10.9 V [MQx0EX] 150 VAC [MQS1EX]	230 VAC [ILMx2xEX] 10.9 V [ILMx0xEX]
Max. switch. current contact	3A	0.5 to 3 A [MQx1EX] 15 mA [MQx0EX]	3 A [ILMS2*EX 1A] 15 mA [ILMx0xEX]
Max. switch. power contact	100 VA (FSW 60 VA)	5 to 100 VA [MQx1EX] 41mW [MQx0EX]	100 VA [ILMS2*EX 60 VA] 41 mW [ILMx0xEX]
Effective int. inductance Li	<2 µH (FSW <4 µH)	<3 to <25 µH	<2 µH (ILMS*EX <4 µH)
Effective int. capacitance Ci	<40 pF (FSW <350 pF)	<20 to <300 pF	<40 pF (ILMS*EX <350 pF)
Temperature Class	T6	T5 [MQx1EX] T6 [MQx0EX]	T5 [ILMx2xEX] T6 [ILMx0xEX]
Body material	Stainless steel AISI 303	Self-exting. PP + 30% glass fiber [MQx1EX] PBT (MW series) [MQx0EX]	Stainless steel AISI 316
Approvals/mark	CE - TÜV Nord	CE - TÜV Nord	CE - TÜV Nord
References			
	FSQA2B01EX	**MQA1EX**	**ILMA2SEX**
		MQC1EX	**ILMS2SEX**
		MQS1EX	**ILMA2CEX**
		MQA0EX	**ILMS2CEX**
		MQS0EX	**ILMA0SEX**
			ILMS0SEX
			ILMA0CEX
			ILMS0CEX

Safety magnetic sensors

Types

Safety magnetic sensors

CLS...

General specifications

Degree of protection	IP 67
Operating temperature	-25° to +70°C
Housing material	Plastic; Stainless Steel (CLSA2M)
Approvals/Marks	CE, cULus listed

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**

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 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 - cULus listed

References

	Housing type/Material	Safety Aux. Outputs	Aux. Outputs	REFERENCES
	Rectangular/Plastic	1NO	-	**SMS10**
	Rectangular/Plastic	1NO	1NC	**SMS10NC**
	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	-	**SMS03CM**
	Rectangular/Plastic	2NO	1NC	**SMS03NC**
0.3 m cable with M12 conn.	Rectangular/Plastic	2NO	1NC	**SMS03NCS1**
	Cylindrical/Plastic	1NO+1NC	-	**SMSA2P02**
	Cylindrical/Plastic	1NO	-	**SMSA2P10**
	Cylindrical/Plastic	2NO	-	**SMSA2P30**
	Cylindrical/Plastic	1NO+1NC	-	**SMSA3P02**
	Cylindrical/Plastic	2NO	-	**SMSA3P03**
	Cylindrical/Plastic	2NO	-	**SMSA3P30**
	Cylindrical/Metal	1NO+1NC	-	**SMSA2M02**
	Cylindrical/Metal	1NO	-	**SMSA2M10**

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Safety light curtains

Safety light curtains, safety category 2

Types

SB2AR series

General specifications

Power supply	24 VDC ±20%
Output functions	2 PNP Output
Output connections	M12 4-pole connector for TX M12 5-pole connector for RX
Safety category	2 (EN954-1)
Performance level	e (EN ISO 13894-1:2008)
Housing material	Painted aluminium
Degree of protection	IP 65
Operating Temperature	0° to +55°C
Approvals/Marks	CE - TÜV - cULus listed

References

Resolution	Range	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES
Hand mm 30	0.2-19 m	150	8	8	**SB2AR 30 150 D19**
		300	16	9	**SB2AR 30 300 D19**
		450	24	11	**SB2AR 30 450 D19**
		600	32	12	**SB2AR 30 600 D19**
		750	40	14	**SB2AR 30 750 D19**
		900	48	15	**SB2AR 30 900 D19**
		1050	56	17	**SB2AR 30 1050 D19**
		1200	64	18	**SB2AR 30 1200 D19**
		1350	72	20	**SB2AR 30 1350 D19**
		1500	80	21	**SB2AR 30 1500 D19**
Body mm 90	0.2-19 m	300	5	9	**SB2AR 90 300 D19**
		450	7	10	**SB2AR 90 450 D19**
		600	9	11	**SB2AR 90 600 D19**
		750	11	12	**SB2AR 90 750 D19**
		900	13	13	**SB2AR 90 900 D19**
		1050	15	14	**SB2AR 90 1050 D19**
		1200	17	15	**SB2AR 90 1200 D19**
		1350	19	16	**SB2AR 90 1350 D19**
		1500	21	17	**SB2AR 90 1500 D19**

Safety light curtains

Types	Safety light curtains, safety category 2	Safety light curtains, safety category 4
	SB2...	SB4...
		

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
Auxiliary functions	Total/Partial muting-Override-Auto/manual Reset	Total/Partial muting-Override-Auto/manual Reset
Housing material	Painted aluminium	Painted aluminium
Environment light reiection	IEC-61496-2	IEC-61496-2
Degree of protection	IP 65	IP 65
Operating temperature	-10° to +55°C	-10° 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
Body	0.5-50 m 315-515 mm	515	2	14	**SB2 515 515 D50**				
		815	3	14	**SB2 415 815 D50**				
		915	4	14	**SB2 315 915 D50**				
		1215	4	14	**SB2 415 1215 D50**				
Body	4-50 m 315-515 mm					515	2	14	**SB4 515 515 D50**
						815	3	14	**SB4 415 815 D50**
						915	4	14	**SB4 315 915 D50**
						1215	4	14	**SB4 415 1215 D50**
Body	0.5-25 m 315-515 mm					515	2	14	**SB4 515 515 D25**
						815	3	14	**SB4 415 815 D25**
						915	4	14	**SB4 315 915 D25**
						1215	4	14	**SB4 415 1215 D25**

Safety light curtains

Types

Safety light curtains, safety category 4

	SB4ED	SB4B
		

General specifications

	SB4ED	SB4B
Power supply	24 VDC ±20%	24 VDC ±20%
Output functions	2 PNP	2 PNP
Other function	EDM	EDM, Fixed/Floating Blanking
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
Start/Reset	Auto/Manual selectable	Auto/Manual selectable
Housing material	Painted aluminium	Painted aluminium
Degree of protection	IP 65	IP 65
Operating temperature	0° to +55°C	0° to +55°C
Approvals/Marks	CE - TÜV - cULus listed	CE - TÜV

References

Resolution	Range	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES
Finger mm	14 0.2-6 m	150	16	11	**SB4ED 14 150 D6**	161	21	21	**SB4B 14 161 D6**
		300	32	15	**SB4ED 14 300 D6**	308	42	28	**SB4B 14 308 D6**
		450	48	18	**SB4ED 14 450 D6**	455	63	35	**SB4B 14 455 D6**
		600	64	22	**SB4ED 14 600 D6**	602	84	41	**SB4B 14 602 D6**
		750	80	25	**SB4ED 14 750 D6**	749	105	48	**SB4B 14 749 D6**
		900	96	29	**SB4ED 14 900 D6**	896	126	55	**SB4B 14 896 D6**
		1050	112	33	**SB4ED 14 1050 D6**	1043	147	62	**SB4B 14 1043 D6**
		1200	128	36	**SB4ED 14 1200 D6**	1190	168	68	**SB4B 14 1190 D6**
Hand mm	30 0.2-15 m					180	8	16	**SB4B 30 180 D15**
						327	16	20	**SB4B 30 327 D15**
						474	24	23	**SB4B 30 474 D15**
						621	32	25	**SB4B 30 621 D15**
						768	40	27	**SB4B 30 768 D15**
						915	48	30	**SB4B 30 915 D15**
						1062	56	32	**SB4B 30 1062 D15**
						1209	64	35	**SB4B 30 1209 D15**
						1356	72	38	**SB4B 30 1356 D15**
						1503	80	40	**SB4B 30 1503 D15**
						1650	88	43	**SB4B 30 1650 D15**
Hand mm	30 0.2-19 m	150	8	9	**SB4ED 30 150 D19**				
		300	16	11	**SB4ED 30 300 D19**				
		450	24	13	**SB4ED 30 450 D19**				
		600	32	14	**SB4ED 30 600 D19**				
		750	40	16	**SB4ED 30 750 D19**				
		900	48	18	**SB4ED 30 900 D19**				
		1050	56	19	**SB4ED 30 1050 D19**				
		1200	64	21	**SB4ED 30 1200 D19**				
		1350	72	23	**SB4ED 30 1350 D19**				
		1500	80	25	**SB4ED 30 1500 D19**				
		1650	88	26	**SB4ED 30 1650 D19**				

Safety light curtains

Types

Safety light curtains, safety category 4

SB4M & SB4N series

Resolution	Range	Protected height (mm)	No. of beams	Resolution (mm)	REFERENCES Master	REFERENCES Slave
Finger mm 14	0.2-6 m	161	21	21	**SB4M 14 161 D6**	**SB4N 14 161 D6**
		308	42	28	**SB4M 14 308 D6**	**SB4N 14 308 D6**
		455	63	35	**SB4M 14 455 D6**	**SB4N 14 455 D6**
		602	84	41	**SB4M 14 602 D6**	**SB4N 14 602 D6**
		749	105	48	**SB4M 14 749 D6**	**SB4N 14 749 D6**
		896	126	55	**SB4M 14 896 D6**	**SB4N 14 896 D6**
		1043	147	62	**SB4M 14 1043 D6**	**SB4N 14 1043 D6**
		1190	168	68	**SB4M 14 1190 D6**	**SB4N 14 1190 D6**
Hand mm 30	0.2-15 m	180	8	16	**SB4M 30 180 D15**	**SB4N 30 180 D15**
		327	16	20	**SB4M 30 327 D15**	**SB4N 30 327 D15**
		474	24	23	**SB4M 30 474 D15**	**SB4N 30 474 D15**
		621	32	25	**SB4M 30 621 D15**	**SB4N 30 621 D15**
		768	40	27	**SB4M 30 768 D15**	**SB4N 30 768 D15**
		915	48	30	**SB4M 30 915 D15**	**SB4N 30 915 D15**
		1062	56	32	**SB4M 30 1062 D15**	**SB4N 30 1062 D15**
		1209	64	35	**SB4M 30 1209 D15**	**SB4N 30 1209 D15**
		1356	72	38	**SB4M 30 1356 D15**	**SB4N 30 1356 D15**
		1503	80	40	**SB4M 30 1503 D15**	**SB4N 30 1503 D15**
		1650	88	43	**SB4M 30 1650 D15**	**SB4N 30 1650 D15**

General specifications

Power supply	24 VDC ±20%
Output functions	2 PNP Output
Other function	EDM, Fixed/Floating Blanking, Cascade
Output connections	M12 4-pole connector for TX / M12 8-pole connector for RX
Master/slave connection	M12 5-pole connector
Start/Reset	Auto/Manual selectable
Housing material	Painted aluminium
Environment light reiection	IEC-61496-2
Degree of protection	IP 65
Operating temperature	-10° to +55°C
Approvals/Marks	CE - TÜV Nord - cULus listed

SB4T/L/S series

Resp. Time	Range	Protected height (mm)	No. of beams	Resolution (mm)	Muting sensors	REFERENCES
14 ms	0.5-3 m	515	2	515	Integr. bidirectional	**SB4T 515 515 D3**
		815	3	415	Integr. bidirectional	**SB4T 415 815 D3**
		515	2	515	Integr. unidirectional	**SB4L 515 515 D3**
		815	3	415	Integr. unidirectional	**SB4L 415 815 D3**
14 ms	0.5-25 m	515	2	515	external	**SB4S 515 515 D25**
		815	3	415	external	**SB4S 415 815 D25**

General specifications

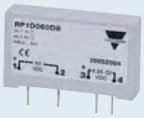
Power supply	24 VDC ±20%
Output functions	2 PNP
Other function	Muting, EDM
Output connections	M12 4-pole connector for TX / M12 8-pole connector for RX
Start/Reset	Auto/Manual selectable
Housing material	Painted aluminium
Environment light reiection	IEC-61496-2
Degree of protection	IP 65
Operating temperature	-10° to +55°C
Approvals/Marks	CE - TÜV Nord - cULus listed


L1
L2
L3
CARLO GAVAZZI
3-Phase AC Compressor Softstarter
RVGF
SUPPLY
T1
T2
T3
VariFlex
RUN
FWD
REV

Switch

CARLO GAVAZZI

Solid state relays PCB type: 1-phase

	AC zero switching			DC switching
Types	**RP1A - RP1B** 3/5/5.5A (AC)	**RP..10A** 10A (AC)	**RAP** 3/5A (AC)	**RP1D** 1A, 4A, 8A (DC)
PCB mounting SSRs, AC and DC operating. Rated insulation voltage ≥4000 Vrms.				
Dimensions (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..] 4-32 VDC [RP1A60..]	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 6 A [RP1A60..]	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 250 A_P [RP1A60..]	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 450 A^2s [RP1A60..]	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 500 V/µs [RP1A60]	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..] 20-660 Vrms [RP1A60..]	10-440 Vrms[RAP40..] 20-530 Vrms[RAP48..]	1- 60 VDC [RP1D060...] 1 - 350 VDC [RP1D350...]
Non rep. peak 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..] 1200 V_P [RP1A60..]	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 - UL - cUL - VDE	CE - UL - cUL	CE - UL - CSA - VDE	CE - UL - cUL
References 1 pole				
	3 A	10 A	3 A	1 A
	RP1A23D3	**RP1A23D10**	**RAP40A3**	**RP1D350D1**
	RP1A40D3	**RP1A40D10**	**RAP48A3**	
	RP1A48D3	**RP1A48D10**		4 A
	5 A	**RP1A60D10**	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 contactors, 1-phase

	Industrial housing panel mount	Industrial housing DIN rail mount	
Types	**RGS**	**RGC**	**RGH**
Single phase, chassis mounting, industrial relays with LED status indicationand IP 20 protection AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.			
Dimensions (mm)	90 x 17.5 x 50.6 Low voltage AC/DC control	90 x 17.5 x 135.6 [RGC..20.] 90 x 22.5 x 135.6 [RGC..30.] 90 x 35.5 x 135.6 [RGC..40.] 90 x 70.0 x 135.6 [RGC..60.]	90 x 17.5 x 135.6 [RGH..20.] 90 x 22.5 x 135.6 [RGH..31.] 90 x 35.5 x 135.6 [RGH..4..] 90 x 70.0 x 135.6 [RGH..60.]
Features	17.5 mm wide Solid State Relay, integrated varistor	Slim Solid State Contactors, integrated varistor, field wiring, 40°C rating	Slim Solid State Contactors, integrated varistor, field wiring, 40°C rating, high I^2t, 1600 Vp
Input specifications			
Control input range	4-32 VDC [RG..D.] 20 - 275 VAC, 24-190 VDC [RG..A.] 11 mADC [RG..D.] 30 mAAC [RG..A.]	4-32 VDC [RG..D.] 20 - 275 VAC, 24-190 VDC [RG..A.] 11 mADC [RG..D.] 30 mAAC [RG..A.]	4-32 VDC [RG..D.] 20 - 275 VAC, 24-190 VDC [RG..A.] 11 mADC [RG..D.] 30 mAAC [RG..A.]
Output specifications			
Rated operational current AC 51	25 AAC [RGS..25.] 50 AAC [RGS..5..] 75 AAC [RGS..7..] 90 AAC [RGS..9..]	20 AAC [RGC..20.] 30 AAC [RGC..30.] 40 AAC [RGC..40.] 60 AAC [RGC..60.]	20 AAC [RGH..20.] 30 AAC [RGH..31.] 40 AAC [RGH..4..] 60 AAC [RGH..60.]
Min. operational current	150 mA [RGS..25.]	150 mA [RGC..20.]	150 mA [RGH..20.]
Non rep. surge current (Itsm) (t=10 ms)	325 Ap [RGS..25.] 600 Ap [RGS..5.] 800 Ap [RGS..7.] 1150 Ap [RGS..9.]	325 Ap [RGC..20.] 600 Ap [RGC..30.] 800 Ap [RGC..40., RGC..60.]	600 Ap [RGH..20.] 1150 Ap [RGH..31.] 600 Ap [RGh..40.] 1150 Ap [RGH..41., RGH..60.]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RGS..25.] 1800 A^2s [RGS..5.] 3200 A^2s [RGS..75] 6600 A^2s [RGS..71., RGS..9.]	525 A^2s [RGC..20.] 1800 A^2s [RGC..30.] 3200 A^2s [RGC..40., RGC..60.]	1800 A^2s [RGH..20.] 6600 A^2s [RGH..31.] 1800 A^2s [RGH..40.] 6600 A^2s [RGH..41., RGH..60.]
Critical dV/dt off-state	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24 - 264 VAC [RG.23..] 42 - 660 VAC [RG.60...]	24 - 264 VAC [RG.23..] 42 - 660 VAC [RG.60...]	24 - 264 VAC [RG.23..] 42 - 660 VAC [RG.60...]
Blocking voltage	800 Vp [RGS.23...] 1200 Vp, 1600 Vp [RGS.60...]	800 Vp [RGC.23...] 1200 Vp, 1600 Vp [RGC.60...]	1600 Vp
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	CE - cULus	CE - cULus
References 1 pole			
230 VAC, 800 Vp	25 AAC: **RGS1A23D25KKE**	20 AAC: **RGC1A23D20KKE**	
	50 AAC: **RGS1A23D50KKE**	30 AAC: **RGC1A23D30KKE**	
	75 AAC: **RGS1A23D75KKE**	40 AAC: **RGC1A23D40KGE**	
	90 AAC: **RGS1A23D90KKE**	60 AAC: **RGC1A23D60KGE**	
600 VAC, 1200 Vp	25 AAC: **RGS1A60D25KKE**	20 AAC: **RGC1A60D20KKE**	
	50 AAC: **RGS1A60D50KKE**	30 AAC: **RGC1A60D30KKE**	
	75 AAC: **RGS1A60D75KKE**	40 AAC: **RGC1A60D40KGE**	
	90 AAC: **RGS1A60D90KKE**	60 AAC: **RGC1A60D60KGE**	
600 VAC, 1600 Vp	50 AAC: **RGS1A60D51KKE**		20 AAC: **RGH1A60D20KKE**
	75 AAC: **RGS1A60D71KKE**		30 AAC: **RGH1A60D31KKE**
	90 AAC: **RGS1A60D91KKE**		40 AAC: **RGH1A60D4.KGE**
			60 AAC: **RGH1A60D60KGE**

CARLO GAVAZZI

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 insulation voltage ≥4000 Vrms.				
Dimensions (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	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.] 5 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] 300 A_P [RS1A...23] 390 A_P [RS1A...40]	300 A_P [RS1A...25] 390 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] ≤450 A^2s [RS1A..25] ≤760 A^2s [RS1A..40]	≤450 A^2s [RS1A..25] ≤760 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 off-state	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..]
Non rep. peak 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 - UL - CSA	CE - UL - CSA	CE - UL - CSA - VDE	CE - UL - CSA

References 1-phase, zero switching:

	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

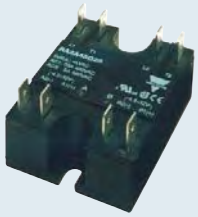
	Industrial Housing zero switching	Industrial Housing Peak switching	Industrial Housing Phase angle
Types	**RM1A..M** 25/50/75/100 A	**RM1C** 25/50/75/100 A	**RM1E** 25/50/100 A
Single phase, chassis mounting, industrial relays with LED status indication and IP20 protection AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.			
Dimensions (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] 1680 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..75]
General specifications			
Operational voltage range	24-265 Vrms [RM1A23M.] 42-440 Vrms [RM1A40M.] 42-530 Vrms [RM1A48M.] 42-660 Vrms [RM1A60M.]	90-440 Vrms [RM1C40D.] 150-660 Vrms [RM1C60D.]	90-280/ 90-265 Vrms [RM1E23AA/V..] 340-460 Vrms [RM1EAA..] 90-550/ 200-550 Vrms [RM1E48AA/V..] 410-660 Vrms [RM1E60..]
Non rep. peak 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..]	<600 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 - UL - CSA	CE - UL - CSA	CE - UL - 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** **RM1C40D50** **RM1C40D75**	**RM1E40AA25**** **RM1E40AA50**** **RM1E40AA100**
480 Vrms	**RM1A48M..**		**RM1E48AA25**** **RM1E48AA50**** **RM1E48AA100**
600 Vrms	**RM1A60M..**	**RM1C60D25** **RM1C60D50** **RM1C60D100**	**RM1E60AA25**** **RM1E60AA50**** **RM1E60AA100**

* RM1E..V.. not CSA certified ** Replace "AA" by "V" for voltage controlled versions

CARLO GAVAZZI

Solid state relays, 1 / 2-phase

AC Switching

Types	RA Sense 25/50/90/110 A	RA Low Noise 10/25 A	RA 2-pole* 25/40 A
Single Phase relays with special functions. 2-Phase industrial relays.			
Dimensions (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	Detects supply and load failure	Complies with EN55022	Two independent poles
Input specifications			
Control input range	7-32 VDC	3-32 VDC	4.5-32 Vrms
Max. input current	4 mA	32 mA	2 x 10 mA
Control supply	20-32 VDC (“40 mA)		
Alarm output PNP NPN	VCC - 2 VDC (“100mA) 2 VDC (“100mA)		
Output specifications			
Rated operational current			
AC 51 @ Ta=25°C	25 A / 50 A / 90 A / 110 A	10 A / 25 A	25 A / 40 A per pole
AC 53a @ Ta=25°C			5 A / 15 A per pole
Min. operational current	200 mArms	2 Arms	150 mArms
Non rep. surge current (t=10 ms)	325 A_P [RA..25..S] 600 A_P [RA..50..S] 1150 A_P [RA..90..S] 1900 A_P [RA..110..S]	90 A_P, t=20 ms [RA..10..L] 200 A_P, t=20 ms [RA..25..L]	325 A_P [RA2A..25] 600 A_P [RA2A..40] 325 A_P [RA2A..25M] 600 A_P [RA2A..40M]
Off-state leakage current	< 6 mArms	< 1 mArms	< 3 mArms
I^2t for fusing (t=10 ms)	525 A^2s [RA..25..S] 1800A^2s [RA..50..S] 6600 A^2s [RA..90..S] 18000 A^2s [RA..110..S]	120 A^2s [RA..10..L] 200A^2s [RA..25..L]	525 A^2s [RA2A..25] 1800 A^2s [RA2A..40] 525 A^2s [RA2A..25M] 1800A^2s [RA2A..40M]
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..]
Non rep. peak voltage	650 V_P [RA12..S] 650 V_P [RA23..S] 1000 V_P [RA40..S] 1200 V_P [RA48..S]	650 V_P [RA24..L] 850 V_P [RA40..L]	650 V_P [RA2A23..] 850 V_P [RA2A40..] 1200 V_P [RA2A48..] 1200 V_P [RA2A60..]
Power factor	≥ 0.5	1	≥0.95 [RA24...] ≥0.50 [RA24...M]
Operating temperature	-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 6.3 mm
Approvals/Marks	CE - UL - CSA	CE - UL - CSA - VDE	CE - UL - CSA - VDE
References			
	25/50/90/110 A	10/25 A	25/40 A per pole
120 Vrms	**RA12..06..S**		
230 Vrms	**RA23..06..S**	**RA2410-D06L**	**RA2A23..**
		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..**
			RA2A60..M

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

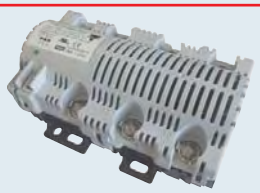
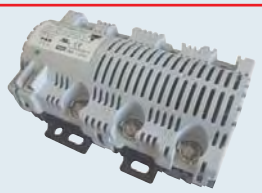
Solid state relays, 1 / 3-phase

	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 (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 A_P [RA..25.] 600 A_P [RA.50.] 1150 A_P [RA..90.] 1900 A_P [RA110.]		325 A_P [RZ3A..25..] 600 A_P [RZ3A..55..] 1150 A_P [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.] 42-660 Vrms [RZ3A60.]
Non rep. peak voltage	<650 V_P [RA12..S] <650 V_P [RA23..S] <1000 V_P [RA40..S] <1200 V_P [RA48..S]		<850 V_P [RZ3A40..] <1200 V_P [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 - UL - CSA	CE - CSA	CE - UL - CSA
References			
230 Vrms	**RA24..-D..**	200VDC: **RD2001-D**	
	RA24..LA..	350VDC: **RD3501-D**	
	RA24..HA..		
400 Vrms	**RA44..-D..**	60VDC: **RD0605-D**	
	RA44..LA..		**RZ3A40D..**
	RA44..HA..		**RZ3A40A..**
480 Vrms	**RA48..-D..**		
	RA48..LA..		
	RA48..HA..		
600 Vrms	**RA60..-D..**		**RZ3A60D..**
			RZ3A60A..

CARLO GAVAZZI

Solid state relays, 1, 2 and 3-phase

Ready for use design - DIN rail mounting

Types	RMD	RMD2H	RMD3H
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.			
Dimensions (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	2ph switching hybrid relay	3ph switching hybrid relay
Input specifications			
Control input range	4-32 VDC [RMD....D20] 24-275 VAC [RMD....A20]	9 - 24 VDC+10% [RMD2..LA..] 15 - 24 VAC+10% [RMD2..LA..] 36 - 120 VAC+10% [RMD2..MA] 90 - 240 VAC+10% [RMD2..HA]	9 - 24 VDC+10% [RMD3..LA..] 15 - 24 VAC+10% [RMD3..LA..] 36 - 120 VAC+10% [RMD3..MA] 90 - 240 VAC+10% [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	90-260 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	≥ 0.9at rated voltage
Operating temperature	-5°C to +55°C	0°C to 70°C	0°C to 70°C
Terminals	Screw type with clamp	Input 6.35 mm FASTON, Output screw	Input 6.35 mm FASTON, Output screw
Approvals/Marks	CE - UL, cUL pending	cURus recognised	cURus recognised
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 relays type Solitron RJ

Ready for use design - DIN rail mounting

Types	Solitron RJ MINI 1 pole 20/30 A	Solitron RJ MIDI 1 pole 45/50/75 A	Solitron RJ POWER 1 pole 70/90 A
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.			
Dimensions (mm)	80 x 22.5 x 103	81.7 x 45 x 103	81.7 x 90 x 103
Features	Built-in snubber network and optional varistor	Built-in snubber network and optional varistor	Built-in snubber network and optional varistor
Control specifications			
Control input range	4-32 VDC [RJ..D.] 24-275 VAC, 24-48 VDC [RJ..A]	4-32 VDC [RJ..D.] 24-275 VAC, 24-48 VDC [RJ..A]	4-32 VDC [RJ..D.] 24-275 VAC, 24-48 VDC [RJ..A]
Max. input current	12 mA [RJ..D.] 17 mA [RJ..A.]	12 mA [RJ..D.] 17 mA [RJ..A.]	12 mA [RJ..D.] 17 mA [RJ..A.]
Output specifications			
Rated operational current			
AC 51 @ Ta=25°C	20 Arms [RJ..20.] 30 Arms [RJ..30.]	45 Arms [RJ..45.] 50 Arms [RJ..50.] 75 Arms [RJ..75.]	70 Arms [RJ..70.] 90 Arms [RJ..90.]
AC 53a @ Ta=25°C	5 Arms [RJ..20.] 15 Arms [RJ..30.]	20 Arms [RJ..45.] 30 Arms [RJ..50.] 30 Arms [RJ..75.]	30 Arms [RJ..70.] 30 Arms [RJ..90.]
Min. operational current	350 mArms [RJ..20.] 150 mArms [RJ..30.]	150 mArms	150 mArms
Non rep. surge current (t=10 ms)	325 A_P [RJ..20.] 600 A_P [RJ..30.]	1150 A_P [RJ..45.] 1900 A_P [RJ..50.] 1900 A_P [RJ..75.]	1900 A_P
On state voltage drop	1.6 Vrms	1.6 Vrms	1.6 Vrms
I^2t for fusing (t=10 ms)	525 A^2s [RJ..20.] 1800 A^2s [RJ..30.]	6600 A^2s [RJ..45.] 18000 A^2s [RJ..50.] 18000 A^2s [RJ..75.]	18000 A^2s [RJ..70.] 18000 A^2s [RJ..90.]
Critical dV/dt off-state	500 V/µs	500 V/µs	500 V/µs
General specifications			
Operational voltage range	24-265 Vrms [RJ1A23..] 42-660 Vrms [RJ1A60..]	24-265 Vrms [RJ1A23..] 42-660 Vrms [RJ1A60..]	24-265 Vrms [RJ1A23..] 42-660 Vrms [RJ1A60..]
Non rep. peak voltage	650 V_P [RJ1A23..] 1200 V_P [RJ1A60..]	650 V_P [RJ1A23..] 1200 V_P [RJ1A60..]	650 V_P [RJ1A23..] 1200 V_P [RJ1A60..]
Power factor	≥ 0.5	≥ 0.5	≥ 0.5
Operating temperature	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C
Terminals	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
1-phase, zero switching	20 A	45 A	70 A
AC control / 230 Vrms	**RJ1A23A20E**	**RJ1A23A45E**	**RJ1A23A70E**
DC control / 230 Vrms	**RJ1A23D20E**	**RJ1A23D45E**	**RJ1A23D70E**
AC control / 600 Vrms	**RJ1A60A20E**	**RJ1A60A45E**	**RJ1A60A70E**
DC control / 600 Vrms	**RJ1A60D20E**	**RJ1A60D45E**	**RJ1A60D70E**
	30 A	50 A	90 A (with fan)
AC control / 230 Vrms	**RJ1A23A30E**	**RJ1A23A50E**	**RJ1A23A90EP**
DC control / 230 Vrms	**RJ1A23D30E**	**RJ1A23D50E**	**RJ1A23D90EP**
AC control / 600 Vrms	**RJ1A60A30E**	**RJ1A60A50E**	**RJ1A60A90EP**
DC control / 600 Vrms	**RJ1A60D30E**	**RJ1A60D50E**	**RJ1A60D90EP**
		75 A (with fan)	
AC control / 230 Vrms		**RJ1A23A75EP**	
DC control / 230 Vrms		**RJ1A23D75EP**	
AC control / 600 Vrms		**RJ1A60A75EP**	
DC control / 600 Vrms		**RJ1A60D75EP**	

* Other options available on request: Instant-on switching (RJ1B..), Over temperature protection (add suffix P),SSR type connection layout (suffix U instead of E), 690 Vrms operation voltage.

CARLO GAVAZZI

1 / 2-phase Solid state relays type Solitron RJ

Ready for use design - DIN rail mounting

Types	RJCS	RJ1P MB	RJ1P	RJ2A MINI
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.				
Dimensions (mm)	81 x 45 x 103	81 x 45 x 122	81.7 x 45 x 103	80 x 22.5 x 125
Features	Integrated under-current monitoring, integrated overtemperature protection	SSR with fieldbus communication interface	Multifunction Phase-angle, Distributed full cycle and Burst control (1s, 3s and 10s)	2 pole switching 1 control input
Control specifications				
Control input range	4-32 VDC	2-wire Modbus RTU	4-20 mA [RJ1P...I...] 0-10 VDC [RJ1P...V...]	4-32 VDC
Max. input current	2 mA		50 mA [RJ1P...I...] 0-1mA [RJ1P...V...]	24 mA
Control supply	24 VDC		24 VAC/DC [RJ1P...V...]	
Max. input current	25 mA		23 mA [RJ1P...V...]	
Output specifications				
Rated operational current				
AC 51 @ Ta=25°C	30 / 50 Arms	50 AACrms	30 / 50 Arms	2 x 12 Arms [RJ2..12] 2 x 18 Arms [RJ2..18]
AC 53a @ Ta=25°C	30 Arms			2 x 5 Arms [RJ2..12] 2 x 15 Arms [RJ2..18]
Min. TEACH/operational current	0.3 / 0.5 Arms	500 mAACrms	150 mArms/ 500mArms	150 Arms [RJ2..12] 350 Arms [RJ2..18]
Non-repet. surge current (t=10 ms)	600 / 1900 A_P	1900 A_P	325/1900 A_P	325 A_P [RJ2..12] 600 A_P [RJ2..18]
Off-state leakage current	< 3 mArms	< 3 mArms	< 3 mArms	< 3 mArms
I^2t for fusing (t=10 ms)	18000 A^2s / 18000 A^2s	18000 A^2s	18000 A^2s / 18000 A^2s	525 A^2s [RJ2..12] 1800 A^2s [RJ2..18]
On state voltage drop	1.6 Vrms	1.6 Vrms	1.6 Vrms	1.6 Vrms
Critical dV/dt off-state	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	24-265 Vrms [RJCS23..] 42-660 Vrms [RJCS60..]	90-265 Vrms	90-265 Vrms [RJ1P23..] 200-550 Vrms [RJ1P48..] 410-660 Vrms[RJ1P60..]	24-280 Vrms[RJ2A22..] 42-530 Vrms[RJ2A48..]
Non-repet. peak voltage	650 V_P [RJCS23..] 1200 V_P [RJCS60..]		650 V_P [RJP23..] 1200 V_P [RJ1P48..] 1200 V_P [RJ1P60..]	650 V_P [RJ2A22..] 1200 V_P [RJ2A48..]
Power factor	≥ 0.5	≥ 0.9 @ 230 VACrms	≥ 0.9	≥ 0.5
Operating temperature	-20° to +60°C	-30° to +70°C	-20° to +60°C	-30° to +70°C
Terminals	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp, Screw plugin connector
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL
References				
1-phase, zero switching	30 / 50 A	50 A	30 / 50 A	12 / 18 A
220 V	**RJCSR1A23D50EPNO**		**RJ1P23V50E**	**RJ2A22D12E**
	RJCSR1A23D50EPPO		**RJ1P23I50E**	**RJ2A22D18E**
230 V	**RJCSR1A23D30EPNO**	**RJ1P23MBT50EBC**	**RJ1P23V30E**	
	RJCSR1A23D30EPPO	**RJ1P23MBT50ECS**	**RJ1P23I30E**	
		RJ1P23MBT50ECV		
480 V			**RJ1P48V50E**	**RJ2A48D12E**
			RJ1P48I50E	**RJ2A48D18E**
			RJ1P48V30E	
			RJ1P48I30E	
600 V	**RJCSR1A60D50EPNO**		**RJ1P60V50E**	
	RJCSR1A60D50EPPO		**RJ1P60I50E**	
	RJCSR1A60D30EPPO		**RJ1P60V30E**	
	RJCSR1A60D30EPPO		**RJ1P60I30E**	

2 / 3-phase Solid state relays type Solitron RJ

Ready for use design - DIN rail mounting

Types	RJ2A MIDI 2 + 1 poles	RJ2A POWER 2 + 1 poles	RJ2A MIDI 2 poles	RJ2A POWER 2 poles
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.				
Dimensions (mm)	81.7 x 45 x 103	81.7 x 90 x 103	81.7 x 45 x 103	81.7 x 90 x 103
Features	2 Pole switching 1 Pole direct 1 Control input	2 Pole switching 1 Pole direct 1 Control input	2 independent poles 2 Control inputs	2 independent poles 2 Control inputs
Control specifications				
Control input range	5-32 VDC [RJ2A..D..] 24-275 VAC/ [RJ2A..A..] 24-190 VDC	5-32 VDC [RJ2A..D..] 24-275 VAC/ [RJ2A..A..] 24-190 VDC	4-32 VDC	4-32 VDC
Max. input current	24 mA	24 mA	15 mA	15 mA
Output specifications				
Rated operational current				
AC 51 @ Ta=25°C	3 x 25 A	3 x 32 A	2 x 30 Arms	2 x 45 Arms
AC 53a @ Ta=25°C	3 x 15 A	3 x 15 A	2 x 30 Arms	2 x 30 Arms
Min. operational current	150 mArms	150 mArms	150 mArms	150 mArms
Non-repet. surge current (t=10 ms)	600 A_P	600 A_P	1900 A_P	1900 A_P
Off-state leakage current	< 3 mArms	< 3 mArms	< 3 mArms	< 3 mArms
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	18000 A^2s	18000 A^2s
Critical dV/dt off-state	500 V/µs	500 V/µs	500 V/µs	500 V/µs
General specifications				
Operational voltage range	24 -280 Vrms [RJ2A22..] 40 -660 Vrms [RJ2A60..]	24-280 Vrms [RJ2A22..] 40-660 Vrms [RJ2A60..]	24-280 Vrms [RJD2A23..] 42-660 Vrms [RJD2A60..]	24-280 Vrms [RJD2A23..] 42-660 Vrms [RJD2A60..]
Non-repet. peak voltage	650 V_P [RJ2A22..] 1200 V_P [RJ2A60..]	650 V_P [RJ2A22..] 1200 V_P [RJ2A60..]	650 V_P [RJD2A23..] 1200 V_P [RJD2A60..]	650 V_P [RJD2A23..] 1200 V_P [RJD2A60..]
Power factor	≥ 0.5	≥ 0.5	≥ 0.5	≥ 0.5
Operating temperature	-30° to +70°C	-30° to +70°C	-30° to +70°C	-30° to +70°C
Storage temperature	-40° to +80°C	-40° to +80°C	-40° to +100°C	-40° to +100°C
Terminals	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp
Approvals/Marks	UL - CSA - CE	UL - CSA - CE	UL - cUL - CE	UL - cUL - CE
References				
	3 x 25 A	3 x 32 A	2 x 30 A	2 x 45 A
AC control / 220 Vrms	**RJ2A22A25E**	**RJ2A22A32E**		
DC control / 220 Vrms	**RJ2A22D25**	**RJ2A22D32**		
DC control / 230 Vrms			**RJD2A23D30E**	**RJD2A23D45E**
AC control / 600 Vrms	**RJ2A60A25E**	**RJ2A60A32E**		
DC control / 600 Vrms	**RJ2A60D25**	**RJ2A60D32**	**RJD2A60D30E**	**RJD2A60D45E**

* Other options available on request: over temperature protection (add suffix "P"). DC control version with integrated overtemperature protection available with type "E" terminals only

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3-phase Solid state relays type Solitron RJ

Ready for use design - DIN rail mounting

Types	RJ3A MIDI* 3 poles	RJ3A POWER 3 poles	RJT3A MIDI 3 poles	RJT3A POWER 3 poles
3-Phase semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.				
Dimensions (mm)	81.7 x 45 x 103 122 x 45 x 103 [with fan]	81.7 x 90 x 103	81.7 x 45 x 103 122 x 45 x 103 [with fan]	81.7 x 90 x 103
Features	3 Pole switching 1 Control input	3 Pole switching 1 Control input	3 independent poles 3 Control inputs	3 independent poles 3 Control inputs
Control specifications				
Control input range	5-32 VDC [RJ3A..D..] 24-275 VAC/ [RJ3A..A..] 24-190 VDC	5-32 VDC [RJ3A..D..] 24-275 VAC/ [RJ3A..A..] 24-190 VDC	4-32 VDC	4-32 VDC
Max. input current	24 mA	24 mA	12 mA	12 mA
Output specifications				
Rated operational current				
AC 51 @ Ta=25°C	3 x 20 A / 3 x 32 A [with fan]	3 x 25 A	3 x 20 A	3 x 25 A
AC 53a @ Ta=25°C	3 x 15 A	3 x 15 A	3 x 15 A	3 x 15 A
Min. operational current	150 mArms	150 mArms	150 mArms	150 mArms
Non-repet. surge current (t=10 ms)	600 A_P	600 A_P	600 A_P	600 A_P
Off-state leakage current	< 3 mArms	< 3 mArms	< 3 mArms	< 3 mArms
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	1800 A^2s	1800 A^2s
Critical dV/dt off-state	500 V/µs	500 V/µs	500 V/µs	500 V/µs
General specifications				
Operational voltage range	24-280 Vrms [RJ3A22..] 40-660 Vrms [RJ3A60..]	24-280 Vrms [RJ3A22..] 40-660 Vrms [RJ3A60..]	24-280 Vrms [RJT3A23..] 40-660 Vrms [RJT3A60..]	24-280 Vrms [RJT3A22..] 40-660 Vrms [RJT3A60..]
Non-repet. peak voltage	650 V_P [RJ3A22..] 1200 V_P [RJ3A60..]	650 V_P [RJ3A22..] 1200 V_P [RJ3A60..]	650 V_P [RJT3A23..] 1200 V_P [RJT3A60..]	650 V_P [RJT3A23..] 1200 V_P [RJT3A60..]
Power factor	≥ 0.5	≥ 0.5	≥ 0.5	≥ 0.5
Operating temperature	-30° to +70°C	-30° to +70°C	-30° to +70°C	-30° to +70°C
Storage temperature	-40° to +80°C	-40° to +80°C	-40° to +80°C	-40° to +80°C
Terminals	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp
Approvals/Marks	UL - CSA - CE	UL - CSA - CE	UL - CSA - CE	UL - CSA - CE
References				
3 Phase, zero switching	3 x 20 A	3 x 25 A	3 x 20 A	3 x 25 A
AC control / 220 Vrms	**RJ3A22A20E**	**RJ3A22A25E**		
DC control / 220 Vrms	**RJ3A22D20**	**RJ3A22D25**		
DC control/ 230 Vrms			**RJT3A23D20**	**RJT3A23D25**
AC control / 600 Vrms	**RJ3A60A20E**	**RJ3A60A25E**		
DC control / 600 Vrms	**RJ3A60D20**	**RJ3A60D25**	**RJT3A60D20**	**RJT3A60D25**
	3 x 32 A [with fan]			
AC control / 220 Vrms	**RJ3A22A32EP****			
DC control / 220 Vrms	**RJ3A22D32EP****			
AC control / 600 Vrms	**RJ3A60A32EP****			
DC control / 600 Vrms	**RJ3A60D32EP****			

* With integrated fan and over-temperature protection.
** Other options available on request: over temperature protection (add suffix "P"). DC control version with integrated overtemperature protection available with type "E" terminals only.

Solid state contactors, type REC

Ready for use design - DIN rail mounting

Types	REC2B	REC3B	REC2R
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.			
Dimensions (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
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 [REC3..20] 5.8 AAC [REC3..21] 7.6 AAC [REC3..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 [REC2..20] 3HP / 3.0 kW [REC2..30] 3HP / 4.0 kW [REC2..40]	2HP / 2.2 kW [REC3..20] 2HP / 2.2 kW [REC3..21] 3HP / 3.0 kW [REC3..30]	3HP / 2.2 kW [REC2..20] 3HP / 3.0 kW [REC2..30]
Min. operational current	150 mA [REC..20]	150 mA [REC..20]	150 mA [REC..20]
Non-repet. surge current (Itsm) (t=20 ms)	325 A_P [REC2..20] 600 A_P [REC2..30] 800 A_P [REC2..40]	325 A_P [REC3B48..20] 600 A_P [REC3B60..20] 600 A_P [REC3..21] 800 A_P [REC3..30]	600 A_P
Off-state leakage current	< 3 mAAC	< 3 mAAC	< 3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [REC..20] 525 A^2s [REC..48..30] 1800 A^2s [REC..60..30] 3200 A^2s [REC..40]	525A^2s [REC3B48..20] 1800 A^2s [REC3B60..20] 1800 A^2s [REC3..21] 3200 A^2s [REC..40]	1800 A^2s
Critical dV/dt off-state	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 V_P [REC..48..] 1600 V_P [REC..60..]	1200 V_P [REC..48..] 1600 V_P [REC..60..]	1200 V_P [REC..48..] 1600 V_P [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 listed	CE - cULus listed	CE - cULus listed
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		

CARLO GAVAZZI

Solid state relays, type Solitron

Ready to use design - DIN rail mounting - Zero switching

Types	Solitron RN 1 pole 30/50/63 A	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 insulation voltage ≥4000 Vrms.			
Dimensions (mm)	120 x 45 x 110 (30A) 120 x 90 x 110 (50/63 A)	120 x 45 x 110 (30 A) 120 x 90 x 110 (50 A)	120 x 45 x 110 (30 A) 120 x 90 x 110 (50 A)
Features	Built-in varistor	High precision temperature control	Detects supply and load failure
Control specifications			
Control input range	5-32 VDC [RN..D] 24-265 Vrms [RN..A]	4-20 mA [RN.F.I.] 0-10 VDC [RN.F.V.]	7-32 VDC
Max. input current	9 mA [RN..D] 12 mA [RN..A]	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 NPN			VCC - 2 VDC (≤ 100 mA) 2 VDC @ (≤ 100 mA)
Output specifications			
Rated operational current			
AC 51 @ Ta=30°C	30 Arms [RN..30] 50 Arms [RN..50] 63 Arms [RN..63]	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 [RN..30] 12 Arms [RN..50] 24 Arms [RN..63]		6 Arms [RN1S...30..] 12 Arms [RN1S...50..]
Min. operational current	200 mArms	500 mArms	200 mArms
Non rep. surge current (t=10 ms)	325 A_P [RN..30] 600 A_P [RN..50] 1150 A_P [RN..63]	325 A_P [RN..30] 600 A_P [RN..50]	325 A_P [RN1S...30..] 600 A_P [RN1S...50..]
Off-state leakage current	< 1 mAAC	< 6 mAAC	< 6 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RN..30] 1800 A^2s [RN..50] 6600 A^2s [RN..63]	525 A^2s [RN.F..30] 1800 A^2s [RN.F..50]	525 A^2s [RN1S...30..] 1800 A^2s [RN1S...50..]
General specifications			
Operational voltage range	24-265 Arms [RN..23..] 42-530 Arms [RN..48..]	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..]
Non rep. peak voltage	800 V_P [RN..23..] 1200 V_P [RN..48..]	800 V_P [RN..F12..] 800 V_P [RN..F23..] 1000 V_P [RN..F48..]	800 V_P [RN1S23..] 1000 V_P [RN1S40..] 1200 V_P [RN1S48..]
Power factor	≥ 0.5	≥ 0.9	≥ 0.5
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Terminals	Screw captive wire clamp	Screw captive wire clamp	Screw captive wire clamp
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

References 1-phase, zero switching:

30 A	**RN1A23A30**	30 A	**RN1F12I30**	30 A	**RN1S23H30NO**
	RN1A23D30		**RN1F12V30**		**RN1S23H30PO**
	RN1A48A30		**RN1F23I30**		**RN1S40H30NO**
	RN1A48D30		**RN1F23V30**		**RN1S40H30PO**
50 A	**RN1A23A50**		**RN1F48I30**		**RN1S48H30NO**
	RN1A23D50		**RN1F48V30**		**RN1S48H30PO**
	RN1A48A50	50 A	**RN1F12I50**	50 A	**RN1S23H50NO**
	RN1A48D50		**RN1F12V50**		**RN1S23H50PO**
63 A	**RN1A23A63**		**RN1F23I50**		**RN1S40H50NO**
	RN1A23D63		**RN1F23V50**		**RN1S40H50PO**
	RN1A48A63		**RN1F48I50**		**RN1S48H50NO**
	RN1A48D63		**RN1F48V50**		**RN1S48H50PO**

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

Solid state relays, type Solitron

Ready to use design - DIN rail mounting

Types	Solitron RN 2 poles 30/50 A	Solitron RN Full Cycle 2 poles 30/50 A	Solitron RN 3-phase 2 + 1 poles 15/30 A
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated insulation voltage ≥4000 Vrms.			
Dimensions (mm)	120 x 45 x 110 (30A) 120 x 90 x 110 (50A)	120 x 45 x 110 (30A) 120 x 90 x 110 (50A)	120 x 45 x 110 (15A) 120 x 90 x 110 (30A)
Features	Current rating is sum of both poles, 2 independently switched poles	High precision economy switching	2 poles switched 1 pole direct
Control specifications			
Control input range	2x5-32 VDC [RN...D.] 2X24-265 Vrms [RN..A.]	4-20 mA [RN.F.I.] 0-10 VDC [RN.F.V.]	5-32 VDC
Max. input current	9 mA/pole [RN...D] 12 mA/pole [RN...A]	50 mA [RN.F.I.] 0.1 mA [RN.F.V.]	10 mA @ 24 VDC
Control supply		7-10 VDC [RN.F.I.] 12-32 VDC/24 VAC [RN.V]	
Output specifications			
Rated operational current			
AC 51 @ Ta=30°C	30 A total sum [RN..30] 50 A total sum [RN..50]	30 A total sum [RN.F..30] 50 A total sum [RN.F..50]	3 x 15 A [RN3A..D15] 3 x 30 A [RN3A..D30]
AC 53a @ Ta=30°C	6 A [RN..30] 12 A [RN..50]		3 x 6 A [RN3A..D15] 3 x 12 A [RN3A..D30]
Min. operational current	200 mArms	500 mArms	200 mArms
Non rep. surge current (t=10 ms)	325 A_P [RN..30.] 600 A_P [RN..50.]	325 A_P [RN.F..30.] 600 A_P [RN.F..50.]	325 A_P [RN3A..D15] 600 A_P [RN3A..D30.]
Off-state leakage current	< 1 mArms	< 6 mArms	< 6 mArms
I^2t for fusing (t=10 ms)	525 A^2s [RN..30.] 1800 A^2s [RN..50.]	525 A^2s [RN.F..30.] 1800 A^2s [RN.F..50.]	525 A^2s [RN3A..30.] 1800 A^2s [RN3A..50.]
Critical dV/dt off-state	500 V/µs	500 V/µs	500 V/µs
General specifications			
Operational voltage range	24-265 Vrms [RN..23..] 42-530 Vrms [RN..48..]	85-140 Vrms [RN..F12..] 85-265 Vrms [RN..F23..] 190-530 Vrms [RN..F48..]	24-265 Vrms [RN3A22..] 42-440 Vrms [RN3A40..] 42-530 Vrms [RN3A48..]
Non rep. peak voltage	800 V_P [RN..23..] 1200 V_P [RN..48..]	800 V_P [RN..F12..] 800 V_P [RN..F23..] 1000 V_P [RN..F48..]	650 V_P [RN3A22..] 800 V_P [RN3A40..] 1200 V_P [RN3A48..]
Power factor	≥ 0.5	≥ 0.9	≥ 0.5
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Terminals	Screw with captive wire clamp	Screw with captive wire clamp	Screw with captive wire clamp
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References 2 / 3-phases, zero switching:			
	2 x 15A/ 30 A total sum	2 x 15A/ 30 A total sum	3 x 15 A
	RN2A23A30	**RN2F12I30**	**RN3A22D15**
	RN2A23D30	**RN2F12V30**	**RN3A40D15**
	RN2A48A30	**RN2F23I30**	**RN3A48D15**
	RN2A48D30	**RN2F23V30**	
	2x25A/ 50 A total sum	**RN2F48I30**	3 x 30 A
	RN2A23A50	**RN2F48V30**	**RN3A22D30**
	RN2A23D50	2x25A/ 50 A total sum	**RN3A40D30**
	RN2A48A50	**RN2F12I50**	**RN3A48D30**
	RN2A48D50	**RN2F12V50**	
		RN2F23I50	
		RN2F23V50	
		RN2F48I50	
		RN2F48V50	

* Other options available on request: Instant-on switching (RN2B..).

CARLO GAVAZZI

Soft starters

Motor control - Soft start and stop

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 30 s	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** (11kW/15HP - 37kW/54HP)	**RSXK..022 - RSXK..066** (11kW/15HP - 37kW/54HP)
	RSDR40066B (37 kW/54 HP)		
	RSDR40080B (45 kW/60 HP)	**RSQK..085 - RSQK..0202** (45kW/60HP - 110kW/175HP)	**RSXK..085 - RSXK..0195** (45kW/60HP - 110kW/175HP)
	RSDR40097B (55 kW/75 HP)		
	RSDR40132B (75 kW/110 HP)	**RSQK..0242 - RSQK..0500** (132kW/200HP - 250kW/300HP)	**RSXK..0230 - RSXK..0430** (132kW/200HP - 250kW/300HP)
	RSDR40160B (90 kW/130 HP)		
	RSDR40195B (110 kW/160 HP)	**RSQK..0600 - RSQK..1100** (320kW/375HP - 630kW/750HP)	**RSXK..0540- RSXK..1150** (315kW/375HP - 630kW/820HP)
	RSDR40230B (132 kW/190 HP)		
	RSDR40280B (160 kW/230 HP)	**RSQK..1200 - RSQK..1800** (710 kW/900HP - 1050kW/1400HP)	**RSXK..1190 - RSXK...1673** (710kW/900HP - 1050kW/1400HP)
	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 - 30 s / 0-30 s	1 - 255 s / 0 - 255 s	1 - 255 s / 0 - 255 s
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	IP 20 (up to 55 kW)	IP 20 (up to 500 kW)	IP 20 (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

Types	RSHR Midi	RSHR	RSHR 3-Phase
Soft starting and stopping of 3-phase motors. Starting / stopping time and initial torque can be independently adjusted.			
Dimensions (mm)	126 x 45x 114	108.5 x 90 x 90	158.5 x 90 x 90
Features	Rotary knobs to adjust start/ stop/ torque paramaters. Internally bypassed. Optional auxiliary relay for end of ramp (V21 option)	Wrong phase sequence detection Motor PTC protection. Device overtemperature protection	Three phase controlled. In Line or In Delta (6-wire) connection. Wrong Phase sequence detection. Motor PTC protection. Phase Loss Detection
Control specifications			
Control input range	24-110 VAC/DC & 110-480 VAC	24-550 VAC/DC (Option "C") 24-600 VAC/DC (Option "D")	24-550 VAC/DC (Option "C") 24-600 VAC/DC (Option "D")
Controlled phases	2	2	3
Output specifications			
Rated operational current			
AC 53b	6A [RSHR..06...] 12A [RSHR..12...] 18A [RSHR..18...]	25A [RSHR..25…] 38A [RSHR..38...] 45A [RSHR..45...]	25A [RSHR..25…] 32A [RSHR..32...]
Operational voltage	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..]	127/220VAC [RSHR22..] 230/400VAC [RSHR40..] 277/480VAC [RSHR48..] 346/600VAC [RSHR60..] 220-480VAC [RSHRM] 400-480VAC [RSHRM]
Overload current profile @ 40ºC	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...]	25A: AC-53a: 4-4:50-7 [RSHR2225.../RSHR4025...] 25A: AC-53a: 4-4:50-3 [RSHR4825.../RSHR6025…/RSHRM] 32A: AC-53a: 4-4:50-50 [RSHR..32...]
Number of starts per hour @40ºC	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…]	7 [RSHR2225.. /RSHR4025...] 3 [RSHR4825.../RSHR6025…/RSHRM] 50 [RSHR..32...]
Assigned motor rating @ 60ºC. (In Line connection) 220V 400V 480V 600V	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)	In Line Connection/In Delta Connection 4kW(5HP) / 7.5kW(10HP) 7.5kW(10HP) / 11kW(15HP) 9kW(10HP) / 15kW(20HP) 11kW(15HP) / 22kW(25HP)
General specifications			
Internally bypassed	Yes	Yes	No
Operational frequency	50/60Hz ±10%	50/60Hz ±10%	50/60Hz ±10%
Ramp up/Ramp down	0.5-10s / 0.5-20s	1-10s / 1-20s	1-10s / 0-30s 0-1s / 0-1s [RSHR...V38]
Initial torque	0-85%	0-70%	0-70%
Operating temperature	-20ºC to +60ºC (-4ºF to +140ºF)	-20ºC to +60ºC (-4ºF to +140ºF)	-20ºC to +60ºC (-4ºF to +140ºF)
Storage temperature	-50ºC to +85ºC (-58ºF to +185ºF)	-50ºC to +85ºC (-58ºF to +185ºF)	-50ºC to +85ºC (-58ºF to +185ºF)
Wrong Phase sequence indication	No	Yes	Yes
Degree of Protection	IP 20	IP 20	IP 20
Approvals	CE - UL - cUL	CE - UL - CSA	CE - UL - cUL

Soft starters

Motor control - Soft start and stop

Types	RSHL	RSE-B
Soft starting and stopping of 3-phase motors. Current limiting (RSHL) or standard ramping/ initial torque settings (RSE-B)		
Dimensions (mm)	126 x 45 x 114	103 x 45 x 80
Features	Internally bypassed. Current Limit start. Optional auxiliary relay output (Option V22). Integrated Overload protection. Selectable preset profles via rotary knob.	Compact Design. Rotary knobs to adjust start/stop and initial torque parameters.
Control specifications		
Control input range	24 - 550 VAC/DC	24 - 110 VAC/DC 110 - 480 VAC
Controlled phases	2	2
Output specifications		
Rated operational current		
AC 53b	2 A [RSHL..02…] 5 A [RSHL..05…] 12 A [RSHL..12…] 18 A [RSHL..18…]	3 A [RSE..03-B] 12 A [RSE..12-B]
Operational voltage	127/220 VAC [RSHL22…..] 230/400 VAC [RSHL48…..] 277/480 VAC [RSHL48…..] 346/600 VAC [RSHL60…..]	127/220 VAC [RSE22..-B] 230/400 VAC [RSE40..-B] 277/480 VAC [RSE48..-B] 346/600 VAC [RSE60..-B]
Overload current profile @ 40°C	2A: AC-53b:4-5:0 5A: AC-53b:4-5:2.4 12 A: AC-53b : 4-5 : 21 [RSHL2212../RSHL4812..] 12 A: AC-53b : 4-5 : 26 [RSHL6012..] 18 A: AC-53b : 4-5 : 62	3 A: AC-53b : 3-5 : 30 12 A: AC-53b : 3-5 : 180
Number of starts per hour @40°C	360 [RSHL..02…] 290 [RSHL..05…] 116 [RSHL2212…/RSHL4812…] 100 [RSHL..12…]	70 [RSE..03-B] 11 [RSE..12-B]
Assigned compressor rating	RSHL..02…/ RSHL..05…/ RSHL..12…/ RSHL..18…	RSE..03-B/ RSE..12-B
@ 220 V	0.5kW(0.5HP)/1.1kW(1.5HP)/3kW(3HP)/4kW(5HP)	0.55kW/3.0kW
@ 400 V	0.75kW(0.75HP)/2.2kW(3HP)/5.5kW(7.5HP)/7.5kW(10HP)	1.1kW/5.5kW
@ 480 V	1.1kW(1HP)/2.2kW(3HP)/5.5kW(7.5HP)/7.5kW(10HP)	1.5kW/5.75kW
@ 600 V	1.1kW(1HP)/3kW(5HP)/7.5kW(10HP)/11kW(15HP)	2.2kW/5.5kW
General specifications		
Internally bypassed	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz ±10%
Ramp up/Ramp down	Depends on profile selection.	0.5-7.5 s / 0.5 s -10 s
Initial torque	Depends on profile selection.	5-70%
Operating temperature	-20°C to +60°C (-4°F to +140°F)	-20°C to +50°C (-4°F to +122°F)
Storage temperature	-50°C to +85°C (-58°F to +185°F)	-50°C to +85°C (-58°F to +185°F)
Wrong Phase sequence indication	Yes	No
Degree of Protection	IP 20	IP 20
Approvals	CE - UL - cUL	CE - UL - CSA

Soft starters

HVAC Compressor soft starters

Types	RSBS	RSBT
Soft starting of 1-Phase (RSBS) and 3-phase (RSBT) scroll compressors		
Dimensions (mm)	60.4* x 137 x 81.4	75 x 45 x 125 [RSBT….V10/V50] 81 x 45 x 125 [RSBT….V11/V51] 97.5 x 45 x 125 [RSBT….V21/V61]
Features	Internally bypassed Current Limit start Optional auxiliary relay output (Option V22)	Three Phase controlled, internally bypassed Auto-adapt function for reduction of inrush current (Patent pending). Optional auxiliary relay output for alarms (RFPMV00 accessory or Option V51/V61)
Control specifications		
Control input range	230 VAC	110 - 400 VAC
Controlled phases	1	3
Output specifications		
Rated operational current		
AC 53b	25 A [RSBS2325..] 32 A [RSBS2332..]	16 A [RSBT..16..] 25 A [RSBT..25..] 32 A [RSBT..32..]
Operational voltage	230 VAC (-15%, + 10%)	220 VAC (-15%, + 10%) [RSBT22..] 400 VAC (-15%, + 10%) [RSBT40..]
Overload current profile @ 40ºC	25 A: AC-53b: 1.6 - 1:60 [RSBS2325..] 32 A: AC-53b: 1.4 - 1:60 [RSBS2332..]	16 A: AC-53b : 2.5 - 1 : 60 25 A: AC-53b : 3.6 - 1 : 60 32 A: AC-53b : 3.4 - 1 : 60
Number of starts per hour	12 (evenly distributed)	12 (evenly distributed)
Assigned compressor rating	RSBS2325… / RSBS2332...	RSBT..16… / RSBT..25… / RSBT..32…
@ 220 V	N/A	4.0 kW (5 Hp) / 5.5 kW (7.5 Hp)/ 9.0 kW (10 Hp)
@ 230 V	3.7 kW (5 HP) / 4 kW (5 HP)	N/A
@ 400 V	N/A	7.5 kW (7.5 Hp) / 11.0 kW (10 Hp) / 15.0 kW (15 Hp)
General specifications		
Internally bypassed	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz ±10%
Ramp up/Ramp down	< 600 ms/0s	< 600 ms/0s
Default Current limit	40 Arms [RSBS2325..V.2..] 45 Arms [RSBS2332..V.2..]	40 Arms [RSBT..16..] 90 Arms [RSBT..25..] 110 Arms [RSBT..32..]
Operating temperature	-20° to +65°C (-4° to +149°F)	-20°C to +60°C (-4°F to +140°F) [RSBT..16EV..] -20°C to +55°C (-4°F to +131°F) [RSBT..25EV..] -20°C to +50°C (-4°F to +122°F) [RSBT..32EV..]
Storage temperature	-30° to +70°C (-22° to +158°F)	-40°C to +85°C (-40°F to +185°F)
Wrong Phase sequence indication	N/A	Yes
Degree of Protection	IP 20	IP 20
Approvals	CE - UL - cUL	CE - UL** - cUL**

* For RSBS23...V22.., auxiliary terminal is 10.5mm protruding.
** For options V50/ V51/ V61.

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Soft starters

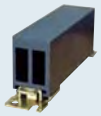
	Motor control - Soft start and stop		Reversing
Types	**RSC..HD+RSO..**	**RSC..AA..+RSO...**	**RR2A**
Soft starting and stopping of 3-phase motors (RSC... + RSO..). Phase angle control of 3-phase heaters (RSC.AA..+RSO). Reversing (RR..).			
Dimensions (mm)	65 x 103 x 74	65 x 103 x 74	41 x 103 x 74
Features	Output for external bypass contactor	User controlled analogue input	Reversing with interlock, optoisolation
Control specifications			
Control input range	10-32 VDC	0-20 mA (A-input) 4-20 mA (B-input)	10-40 VDC
Max. input current	1 mA	20 mA	20 mA
Control supply	10 - 32 VDC	10 - 32 VDC	
Max. supply current	180 mA	180 mA	
Output specifications			
Rated operational current			
AC 51a	16Arms [RSO..10] 25Arms [RSO..25] 50Arms [RSO..50] 90Arms [RSO..90] 110Arms [RSO..110]	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 [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..]	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	0.5-30 s / 0.5-30 s	User controlled	2-pole change-over, built-in transient overvolt. protect, interlocking reversing, LED status indication
Initial torque	10-75%	User controlled	
Bypass contactor supply	Vcc-8 VDC @ 150 mA max.		
Connections	Screw type with clamp	Screw type with clamp	Screw type with clamp
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +80°C
Storage temperature	-40°C to +100°C	-40°C to +100°C	-40°C to +100°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - cUL
References			
	Control module	Control module	5 A
	RSC-HD0M60	**RSC-AAM60**	**RR2A40D150** (1.5 kW)
	Output module: 400 VAC	Output module: 400 VAC	**RR2A40D400** (4.0 kW)
	25 A: **RSO4025** (4 kW*)	25 A: **RSO4025** (4 kW*)	11 A
	50 A: **RSO4050** (11 kW*)	50 A: **RSO4050** (11 kW*)	**RR2A48D220** (2.2 kW)
	90 A: **RSO4090** (15 kW*)	90 A: **RSO4090** (15 kW*)	**RR2A48D550** (5.5 kW)
	110 A: **RSO40110** (22 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

Solid state relays accessories

Heatsink assemblies for 1-phase Solid state relays

Types	RHS 100	RHS 45CX	RHS 45B
			
Dimensions (mm)	82 x 45 x 49	103 x 45 x 55	103 x 45 x 81
Description	Heatsink assembly* with DIN-rail adapter.	Heatsink assembly* with DIN-rail adapter.	Heatsink assembly* with DIN-rail adapter. A fan may be mounted, (RHSF40.24)
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

Types	RHS 90A	RHS 23A *	RHS 23B *
			
Dimensions (mm)	103 x 90 x 80	103 x 22.5 x 37	103 x 22.5 x 83
Description	Heatsink assembly* with DIN-rail adapter. A fan may be mounted, (RHSF60 24)	Heatsink assembly** with DIN-rail adapter and thermal pad	Heatsink assembly** with DIN-rail adapter and thermal pad
Thermal resistance			
without fan	1.35 K/W		
with fan	0.45 K/W		

Heatsink assemblies for 3-phase Solid state relays

Types	RHS 300	RHS 112A	RHS 301
			
Dimensions (mm)	82 x 105 x 60	103 x 112 x 80	83 x 118 x 96
Description	Heatsink assembly* with DIN-rail adapter.	Heatsink assembly* with DIN-rail adapter. A fan may be mounted, (RHSF60-24).	Heatsink assembly* with DIN-rail adapter.
Thermal resistance			
without fan	5.0 K/W	1.1 K/W	0.8 K/W
with fan	Not available	0.4 K/W	

Types	RHS 301F	RHS 320
		
Dimensions (mm)	154 x 122 x 135	100 x 240 x 93
Description	Heatsink assembly* with DIN-rail adapter and integrated fan (230 VAC)	Heatsink assembly for panel mounting
Thermal resistance		
without fan		0.4 K/W
with fan	0.25 K/W	Not available

Selection guide for heatsink assemblies

Thermal Resistance	Heatsink assembly	Thermal Resistance	Heatsink assembly
>5.00 K/W	Heatsink not needed	1.20 K/W	**RHS45B+RHSF40-24**
5.00 K/W	**RHS300**	1.10 K/W	**RHS112A**
3.00 K/W	**RHS100**	0.80 K/W	**RHS301**
2.70 K/W	**RHS45C**	0.45 K/W	**RHS90A+RHSF60-24**
2.00 K/W	**RHS45B**	0.40 K/W	**RHS112A+RHSF60-24 / RHS320**
1.35K/W	**RHS90A**		
1.25 K/W	**RHS45A+RHSF40-24**	0.25K/W	**RHS301 F 230C**
		<0.25K/W	Consult your distributor

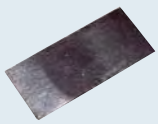
* Heatsink assembly includes mounting screws and thermal paste for semiconductor device. ** Heatsink assembly includes mounting screws and thermal pad attached to heatsink.

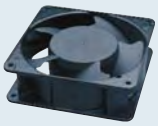
Solid state relays accessories

General accessories

Types	RPM1	RPM1P	RPM2	DIN-rail adaptor
				
Dimensions (mm)	48 x 85 x 12.5	48 x 85 x 12.5	58 x 45 x 9	
Description	Din-rail adaptor for PCB relays. (Relay excluded)	Din-rail adaptor with sockets for plug-in PCB relays	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)** **RPM1PD (with LED)**	**RPM2**	**RHS00**

Types	RM1P20	BBR	RM terminal	RM terminal IP 20
				
Dimensions (mm)	58 x 45 x 9	59 x 45 x 25.5	25.4 x 35.4 x 16.3	25.4 x 35.4 x 16.3
Description	Clip-on IP20 protection Cover for RAM, RM, RS.	Protection cover for RA and RD serie.	RM terminal adaptor for 35mm² cable	RM terminal adaptor for 35mm² cable, IP 20
References				
	RM1P20	**BBR**	**RM635FK**	**RM635FKP**

Types	Thermal paste	Thermal pad RX	Thermal Pad RM, RA	Varistors
				
Dimensions (mm)		17 x 38	35 x 42	
Description	Paste for relay mounting on heatsink	RX Thermal pad. Termal resistance: 0.79 K/W	RM, RS, RA thermal pad. Termal resistance: 0.489 K/W	Solid State Relay protection against voltage transient (voltage surge).
References				
	HTS02S	**RXHT**	**KK071 CUT**	275 V: **RV02** 420 V: **RV04** 510 V: **RV05** 625 V: **RV06** 680 V: **RV07**

Types	Fastons	Thermal pasteFan 24VDC
		
Dimensions (mm)	4.8/6.3	40 x 40 x 109 (RHSF40) / 60 x 60 x 109 (RHSF60)
Description	Screw Faston terminals for RAM, RM, RS serie.	RHSF 40-24 to be mounted with RHS45A, RHS45B RHSF 60-24 to be mounted with RHS90, RHS112
References		
	RM48F0 (flat) **RM48F4** (45° angle)	**RM63F0** (flat) **RM63F4** (45° angle)	**RHSF 40-24** **RHSF 60-24**

Drives

	VariFlex² 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 [RVEFB.20150] 10.5 A [RVEFB.20220] 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			
110 VAC, 1-phase	**RVEFA110020** (0.20 kW-0.25 HP) **RVEFA110040** (0.40 kW-0.50 HP) **RVEFA110075** (0.75 kW-1.00 HP)		
230 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**
230 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)	
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

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Drives

VariFlex² 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, 200-240 VAC; 3-ph, 380-480 VAC	1-ph, 100-120 VAC; 1-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	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	**RVDFA10020** **RVDFA10040** **RVDFA10075**			**RVDFB120150FES** **RVDFB120220FES**
200-240 VAC, 1-phase		**RVDFB120150F** **RVDFB120220F**		
200-240 VAC, 3-phase	**RVDFA120020F** **RVDFA120040F** **RVDFA120075F**	**RVDFB120150F** **RVDFB120220F**	**RVDFA120020FES** **RVDFA120040FES** **RVDFA120075FES**	**RVDFB120150FES** **RVDFB120220FES**
380-480 VAC, 3-phase		**RVDFB340075F** **RVDFB340150F** **RVDFB340220F**		**RVDFB340075FES** **RVDFB340150FES** **RVDFB340220FES**

Drives

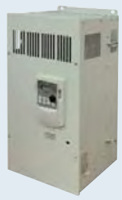
VariFlex² drives - RVCF series

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 accesible 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 accesible 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 accesible 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			
220-240VAC, 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)	
220-240VAC, 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)
380-480VAC, 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

Drives

VariFlex² 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 accesible 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 accesible 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 accesible 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			
220-240VAC, 3-phase	**RVCFD3201100** (11.0 kW - 15.0 HP) **RVCFD3201500** (15.0 kW - 20.0 HP) **RVCFD3201850** (18.5 kW - 25.0 HP)	**RVCFE3202200** (22.0 kW - 30.0 HP) **RVCFE3203000** (30.0 kW - 40.0 HP)	
380-480VAC, 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)

Limit switches - Miniature type

Head Types	**PO** Plain plunger	**PY** Nylon roller plunger	**P8** Cross nylon roller plunger	**RT** Ø14 Nylon roller lever
				
Dimensions (mm) WxHxD	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 (mm) WxHxD	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 (mm) WxHxD	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) 1.1 A/24 V (Cat. DC13)	Protection degree	IP 67
		Approvals	CE - UL (upon request)

* Also available in thermoplastic (T type)

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Limit switches - Limit type

Head types	PO Plain plunger	PR Roller plunger	RH Plastic roller plunger	RT Nylon roller lever
				
Family: L				
	PS21	**PS21**	**PS21**	**PS21**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions (mm) WxHxD	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	**PS42**	**PS42**	**PS42**
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions (mm) WxHxD	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

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 (mm) WxHxD	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 0v.**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 (mm) WxHxD	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 0v.**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 (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

CARLO GAVAZZI

Limit switches - Limit type

Head types	PO Plain plunger	PR Roller plunger	RH Plastic roller lever	RT Nylon roller lever
				
Family: L				
	PS43	**PS43**	**PS43**	**PS43**
	Metal	Metal	Metal	Metal
Dimensions (mm) WxHxD	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 0v.**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 (mm) WxHxD	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 0v.**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

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 (mm) WxHxD	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 0v.**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 (mm) WxHxD	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**	**PS31L-PS11LW-T00**
Slow 1NO+1NC ⊖	**PS31L-PT11W1-T00**	**PS31L-PT11R1-T00**	**PS31L-PT11W0-T00**	**PS31L-PT11LW-T00**
Slow 0v.**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) ** 0v. : overlapping travel paths

CARLO GAVAZZI

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*	Metal
Dimensions (mm) WxHxD	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 (mm) WxHxD	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 (mm) WxHxD	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 (Y type) ** Ov. : overlapping travel paths

Limit switches - Safety type

Head types — Pull wire activated head 16m cable max

Family: R

	PS31	PS43
	Metal	Metal
Dimensions (mm) WxHxD	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 (mm) WxHxD	40 x 162.75 x 44	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 (mm) WxHxD	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**	**PS21K-PS11RT-T00**
Snap 2NC	**PS21K-PS02P0-T00**	**PS21K-PS02PR-T00**	**PS21K-PS02R3-T00**	**PS21K-PS02RT-T00**
Slow 1NO+1NC	**PS21K-PT11P0-T00**	**PS21K-PT11PR-T00**	**PS21K-PT11R3-T00**	**PS21K-PT11RT-T00**
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 (mm) WxHxD	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 (mm) WxHxD	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 for plastic body	IP 65	Rated thermal 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	400V	load factor	0.5
	500V	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

Pilot lights

Series	Type PL High Lens	Type PL Round Lens	Type PL Low Lens	Type PL Teeth Lens
				
General specifications				
Dimensions Ø x H mm	Ø22 x 52*/67	Ø22 x 41*/54	Ø22 x 52*/67	Ø22 x 52*/67
Colours	R, W, B, Y, G**	R, W, B, Y, G**	R, W, B, Y, G**	R, W, B, Y, G**
Light source	LED	LED	LED	LED
Ultrahigh brightness	≥100 cd/m²	≥100 cd/m²	≥100 cd/m²	≥100 cd/m²
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
Types / voltages				
6VAC/DC	**PL22*HL**-06**	**PL22*RL**-06**	**PL22*LL**-06**	**PL22*TL**-06**
12VAC/DC	**PL22*HL**-12**	**PL22*RL**-12**	**PL22*LL**-12**	**PL22*TL**-12**
24VAC/DC	**PL22*HL**-24**	**PL22*RL**-24**	**PL22*LL**-24**	**PL22*TL**-24**
48VAC/DC	**PL22*HL**-48**	**PL22*RL**-48**	**PL22*LL**-48**	**PL22*TL**-48**
110VAC/DC	**PL22*HL**-110**	**PL22*RL**-110**	**PL22*LL**-110**	**PL22*TL**-110**
220VDC	**PL22*HL**-220D**	**PL22*RL**-220D**	**PL22*LL**-220D**	**PL22*TL**-220D**
220VAC	**PL22*HL**-220A**	**PL22*RL**-220A**	**PL22*LL**-220A**	**PL22*TL**-220A**

Series	Type PL Flash Light	Type PL Two Colours	Type PL Flashing Buzzer	Type PL Buzzer
				
General specifications				
Dimensions Ø x H mm	Ø22 x 67	Ø22 x 67	Ø22 x 67	Ø22 x 67
Colours	R, W, B, Y, G**	RG**	R**	K**
Light source	LED	LED	LED	
Sound source			Interrupted	Interrupted
Ultrahigh brightness	≥100 cd/m²	≥100 cd/m²	≥100 cd/m²	≥100 cd/m²
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
Types / voltages				
6 VAC/DC	**PL22SFL**-06**	**PL22STCRG-06**	**PL22SFBZR-06**	**PL22SBZK-06**
12 VAC/DC	**PL22SFL**-12**	**PL22STCRG-12**	**PL22SFBZR-12**	**PL22SBZK-12**
24 VAC/DC	**PL22SFL**-24**	**PL22STCRG-24**	**PL22SFBZR-24**	**PL22SBZK-24**
48 VAC/DC	**PL22SFL**-48**	**PL22STCRG-48**	**PL22SFBZR-48**	**PL22SBZK-48**
110 VAC/DC	**PL22SFL**-110**	**PL22STCRG-110**	**PL22SFBZR-110**	**PL22SBZK-110**
220 VDC	**PL22SFL**-220D**	**PL22STCRG-220D**	**PL22SFBZR-220D**	**PL22SBZK-220D**
220 VAC	**PL22SFL**-220A**	**PL22STCRG-220A**	**PL22SFBZR-220A**	**PL22SBZK-220A**

* C=Compact version; S=Standard version

** R=Red, W=Clear/White, K=Black, B=Blue, Y= Yellow, G=Green

Push buttons

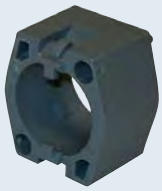
Series	Type PB Flush round push buttons	Type PB Extended push buttons	Type PB Red emergency stop push buttons	Type PB Mushroom push buttons
				
General specifications				
Drilling Diameter Ømm	Ø22 / Ø30	Ø22 / Ø30	Ø22 / Ø30	Ø22 / Ø30
Dimensions Ø x H mm	37 x Ø29 / 39 x Ø35	42 x Ø29 / 44 x Ø35	50 x Ø40-Ø60	50 x Ø40-Ø60
Spring Returned	Yes	Yes	No	Yes
Maintained	Yes	Yes	Yes (turn to release)	Yes
Available colours	R, W, K, B, Y, G*	R, W, K, B, Y, G*	R*	R, Y, G, W, K (only without lamp)*
Lamp add-on possibility	Yes	Yes	No	Yes
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
Standard style	**PB22SF**	**PB22SE**	**PB22SEM**	**PB22SM**
Bezel style	**PB22BF**	**PB22BE**	**PB22BEM**	**PB22BM**
Flush style Ø30 mm	**PB30FF**	**PB30FE**	**PB30FEM**	**PB30FM**

Series	Type PB Short-handle rotary switches	Type PB Long-handle rotary switches	Type PB Key switches	Type PB I/O push button
				
General specifications				
Drilling Diameter Ømm	Ø22 / Ø30	Ø22 / Ø30	Ø22 / Ø30	Ø22 / Ø30
Dimensions Ø x H mm	51 x Ø22 / 53 x Ø30	51 x Ø22 / 53 x Ø30	72 x Ø22 / 68 x Ø30	41 x 54 x 29
Spring Returned	Yes	Yes	No	Yes
Two position	Yes	Yes	Yes	No
Three position	Yes	Yes	Yes	No
Available colours	R, Y, G, B, W, K (only without lamp)*	R, K, Y, G*	Neutral (metal)	RG*
Lamp add-on possibility	Yes	No	No	Yes
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
Standard style	**PB22SSRS**	**PB22SLRS**	**PB22SKRS**	**PB22SIO**
Bezel style	**PB22BSRS**	**PB22BLRS**		
Flush style Ø30 mm	**PB30FSRS**	**PB30FLRS**	**PB30FKRS**	

* R=Red, W=Clear/White, K=Black, B=Blue, Y= Yellow, G=Green

Push buttons

Push Buttons Accessories

Types	Metal holder	Plastic holder	Nut holder
Drives, Inverters			
Dimensions (mm) WxHxD	27 x 43 x 20	30 x 31 x 20	Ø29 x 42 x 23
Material	Zn + PBT	PBT	PC
References	**PBMBM**	**PBMBP**	**PBMBN**

Types	Type PA2 Contact block	Type PALAMP Lamp element (with LED)
		
Dimensions (mm) WxHxD	32 x 29 x 24	35 x 29 x 32
Contact Rating		
AC1	10 A - 250 VAC	
AC15	6 A - 220 VAC	
DC13	6 A - 24 VDC	
Approvals	CE - cULus	CE - cULus
References		
Voltages		
6 VAC/DC		**PALAMP06**
12 VAC/DC		**PALAMP12**
24 VAC/DC		**PALAMP24**
48 VAC/DC		**PALAMP48**
110 VAC/DC		**PALAMP110**
220 VAC		**PALAMP220A**
220 VDC		**PALAMP220D**
Contact Configuration		
Snap 2NO	**PA2200/1**	
Snap 2NC	**PA2020/1**	
Snap 1NC	**PA2010/1**	
Snap 1NO	**PA2100/1**	
Snap 1NO+1NO	**PA2110/1**	
Slow 2NO	**PA2200/2**	
Slow 2NC	**PA2020/2**	
Slow 1NC	**PA2010/2**	
Slow 1NO	**PA2100/2**	
Slow 1NO+1NO	**PA2110/2**	

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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** (2 Poles)
				
Dimensions (mm) HxWxD	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	
Types	**ZPD 8XA ZPD 11XA**	**ZPD 8A ZPD 11A**	**ZMI 2NA ZMI 4NA**	**ZMI 2 / 3 / 4SA**
				
General specifications				
Dimensions (mm) HxWxD	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
Protection degree	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			**ZMI 2NA / ZMI 4NA**	**ZMI 2 / 3 / 4SA**

Midi industrial relays

Midi industrial relays

Types	RPY 1	RPY 2	RPY 3	RPY 4
				
Dimensions (mm) HxWxD	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 (mm) HxWxD	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
Protection degree	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

Power relays

Power relays

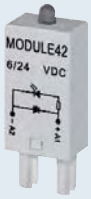
Types	NA (1/2 Poles)	NB (1/2 Poles)	NF (1/2 Poles)	NP (1/2 Poles)
				
Dimensions (mm) HxWxD	36 x 50.5 x 33.5	55 x 50.5 54.5	36 x 50.5 x 54.5	36 x 50.5 x 33.5
No. of Contacts	1 Normally open 2 Normally open	1 Normally open 2 Normally open	1 Normally open 2 Normally open	1 Normally open 2 Normally open
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

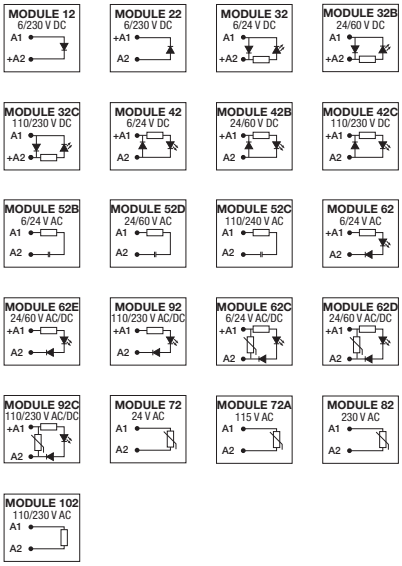
	CF (2 Poles)	CS (2 Poles)
		
Dimensions (mm) HxWxD	26.42 x 68.58 x 34.54	26.42 x 52.32 x 34.54
No. of Contacts	2 Normally open 2 Change-over	2 Normally open 2 Change-over
Contact rating	30 A	30 A
Terminal types	Faston	PCB
Output specifications		
Max. load AC1	30 A (2NO) - 20 A (2CO)	30 A (2NO) - 20 A (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
Protection degree	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	MZ B 1P 5/10 A	MZ 1P 5/10 A	MZ B 1P 5/10 A
	M15 M 8A	MZ 2P 5/10 A	M15 M 8 A	MZ 2P 5/10 A
	M25 1P 12 A	MZ 1P 16 A	M25 1P 12 A	MZ 1P 16 A
	LC 10 A	M15 M 8 A	LC 10 A	M15 M 8 A
		M25 1P 16 A		M25 1P 16 A
		M25 2P 8 A		M25 2P 8 A
		LC 5/16 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



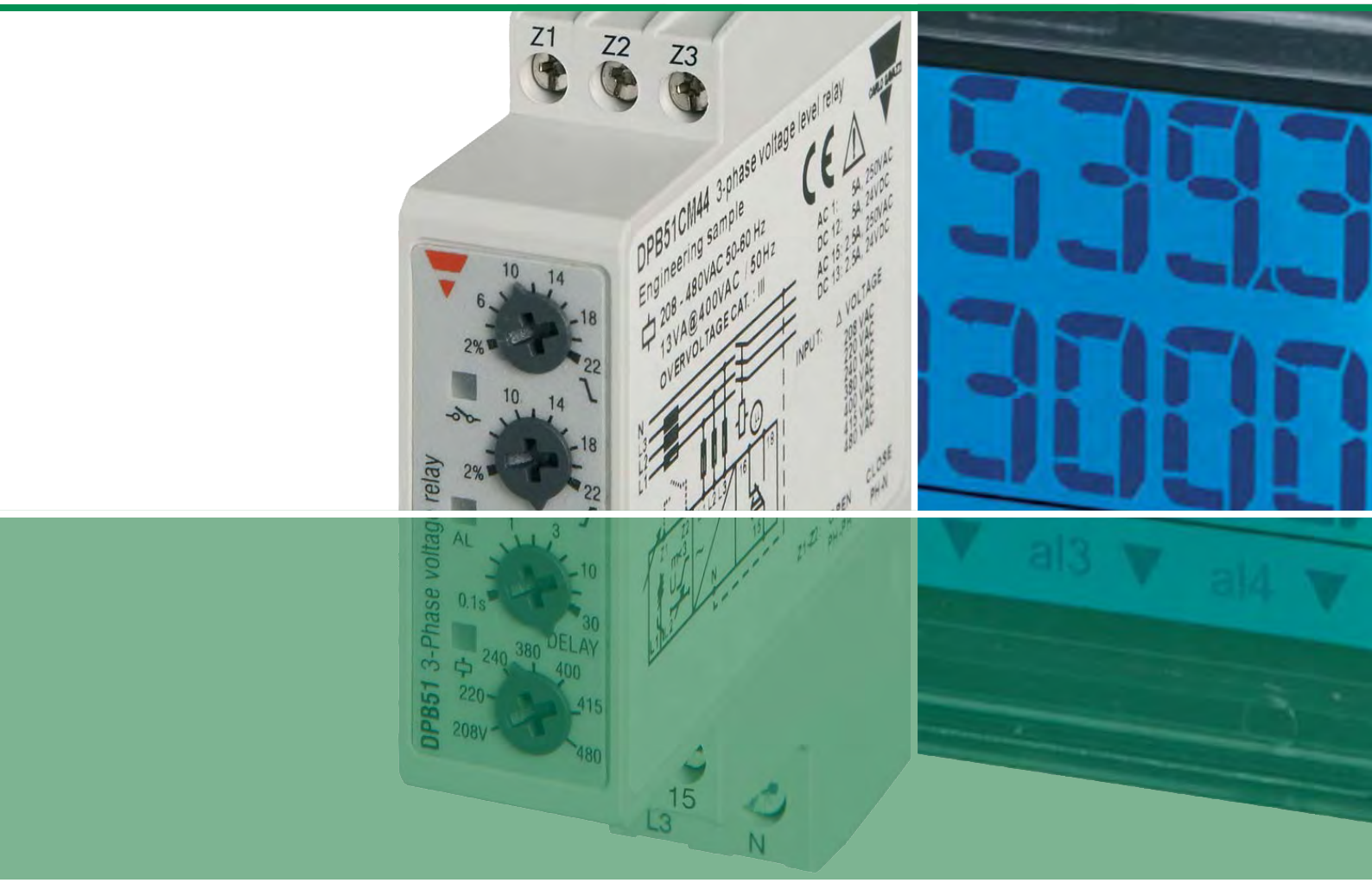


General specifications	
Dimensions (mm) HxWxD	23 x 12.5 x 8.5
Terminal material	CuSn
Protection Degree	IP 40
Operating temperature	-40°C to + 70°C
Ambient humidity	85RH non condensing
Approvals/Conformity	No approvals

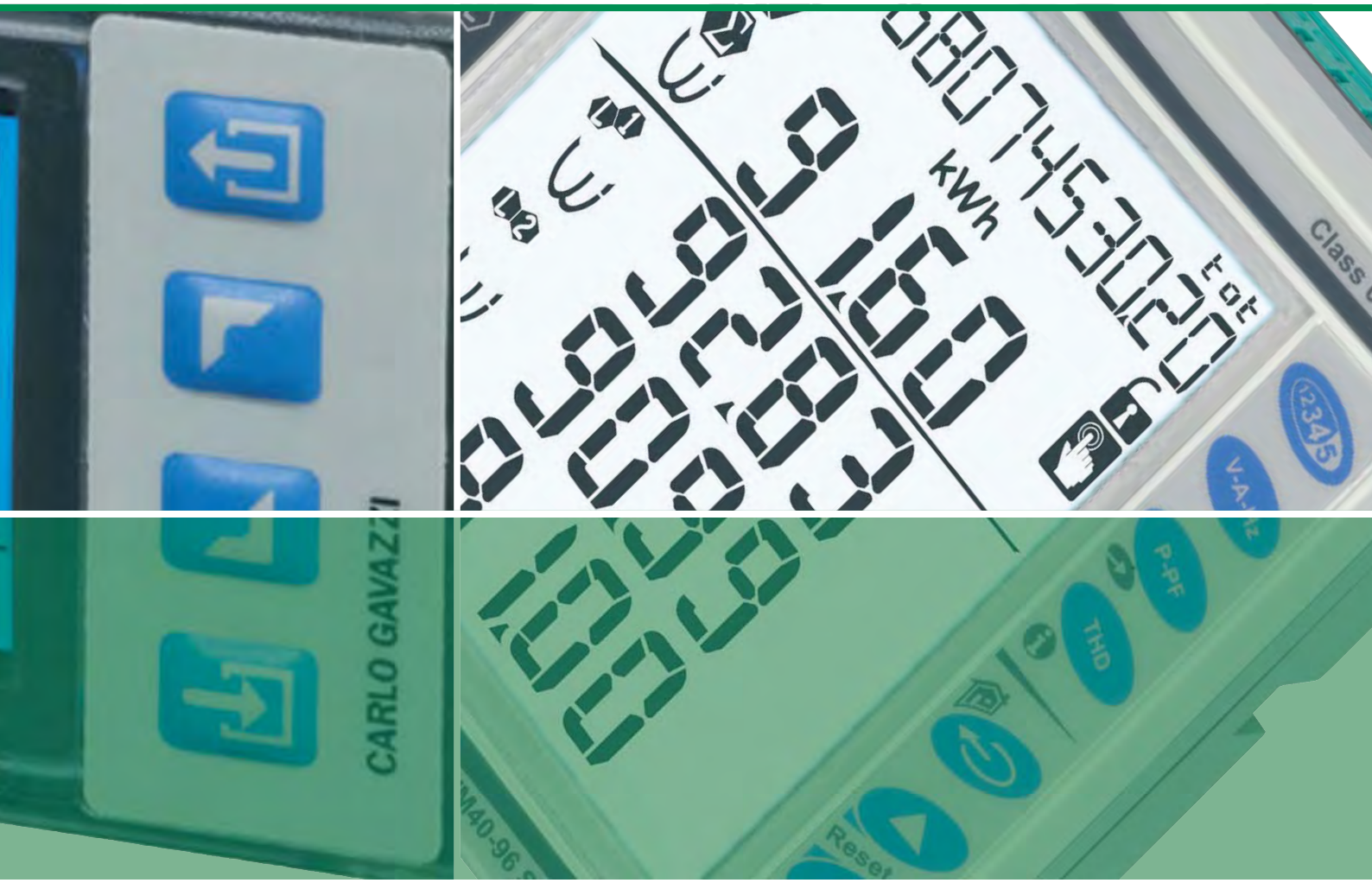
References

Consult your Carlo Gavazzi Partner or Distributor

CARLO GAVAZZI
Automation Components



Control



CARLO GAVAZZI

Monitoring relays

Current relays

Types	DIA 01 PIA 01	DIA 53	DIB 01 PIB 01
			
Dimensions (mm) HxWxD 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 (mm) HxWxD 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 (mm) HxWxD 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 (mm) HxWxD 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 (mm) HxWxD 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 (mm) HxWxD 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	

Monitoring relays

3-phase voltage relays

Types	DPB 71	DPB 02 PPB 02	DPC 01 PPC 01
			
Dimensions (mm) HxWxD 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

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, data-stamping 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] - ENEL DK 5940 [B003]
References			
	DPC71D M23	**DPC02D M23**	**DPC72D M48 B001**
	PPC71D M23	**DPC02D M48**	**DPC72D M48 B002**
	DPC71D M48	**DPC02D M49**	**DPC72D M48 B003**
	PPC71D M48	**DPC02D M69**	
		DPC02D M23 B003	
		DPC02D M48 B003	

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Monitoring relays

	Frequency relays		Cosϕ relays
Types	**DFB 01 PFB 01**	**DFC 01**	**DWA 01 PWA 01**
			
Dimensions (mm) HxWxD 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

Monitoring relays

Power and power factor relays

Types	DWB 01 PWB 01	DWB 02 PWB 02	DWB 03 PWB 03
			
Dimensions (mm) HxWxD 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**

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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 (mm) HxWxD 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		

Timers

	Delay on operate		
Types	**DAA 51 DAA 71**	**FAA 01 FAA 08**	**HAA 08 HAA 14**
			
Dimensions (mm) HxWxD 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 (mm) HxWxD 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 (mm) HxWxD 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	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	

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Timers

Multifunction

Types	DMB 01 PMB 01	DMB 51 PMB 71	FMB 01	DMC 01 PMC 01
				
Dimensions (mm) HxWxD 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] [C] 81 x 35.5 x 67.2 [Mini-D] [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 (mm) HxWxD DIN RAIL housing Plug-in 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] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]
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.		

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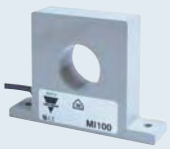
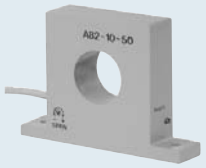
Current transformers

Current transformers for monitoring relays

Types	MI	MP	A 82	E 83
				
Dimensions (mm) HxWxD	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% @ I_n	± 5% @ I_n	± 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 mm²	2 m PVC 2 x 0.5 mm²	A82-10, A82-30: 2m, 3x0.25 m² A82-20: 2m, 2x0.25 m²	Screw terminal 2 x 1.5 mm²
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 (mm) HxWxD	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	0.50	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

References

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

Current transformers

Current transformers

Types	CTD 2	CTD 3	CTD 4
			
Dimensions (mm) HxWxD	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

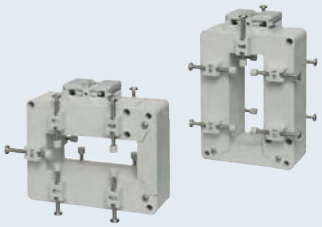
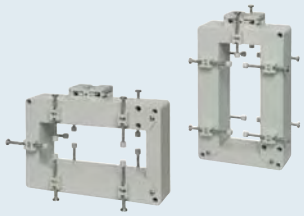
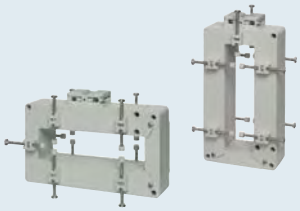
Burden (VA)				Burden (VA)				Burden (VA)			
Class	0.5	1	3	Class	0.5	1	3	Class	0.50	1	5P5
40 A			1.25	50 A			1.75	150 A		2.5	Cl3 5
50 A			1.5	60 A			2	200 A		3.25	Cl3 6
60 A			2	70 A			2.5	250 A	2.5	4.5	2
70 A			2.5	75 A			3	300 A	3	4	3
75 A		1.75	2.5	80 A			3	400 A	6	9	3
80 A		2	2.75	100 A		2	3.5	500 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

Current transformers

Current transformers

Types	CTD 8V CTD 8H	CTD 9V CTD 9H	CTD 10V CTD 10H
			
Dimensions (mm) HxWxD	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	Class	Burden (VA) 0.5	1	3	Class	Burden (VA) 0.5	1	3	Class	Burden (VA) 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

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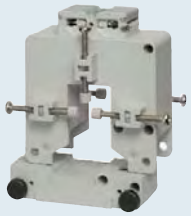
Current transformers

Split core current transformers

Types	CTD 5S	CTD 6S	CTD 8S
			
Dimensions (mm) HxWxD	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

Current transformers

Split core current transformers

Types	CTD 9S	CTD 10S	SCT 166/205
			
Dimensions (mm) HxWxD	177.9 x 91.7 x 60	177.9 x 106.7 x 60	328 x 50 x 166

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	50 to 60 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, 10

Output specifications

Secondary current	5 A 1 A	5 A 1 A	5 A standard (1 A on request)

General specifications

Class	1	1	1/ 3/ 0.5 (on request)
Bus-bar size (mm)	126 x 36	126 x 51	62 x 205
Standards	EN 60044-1	EN 60044-1	BS3938, EN60044-1, DIN42600

Primary current

	Burden (VA)			Burden (VA)			Burden (VA)			
Class	1	3	Class	1	3	Class	0.5	1	3
400 A		3	400 A	1	7	1000 A	-	5	7.5
500 A	2	4	500 A	3	10	1200 A	1.5	5/7.5	10
600 A	4	6	600 A	5	12	1250 A	1.5	1.5/2.5/10	5/15
700 A	4	8	700 A	8	15	1500 A	2.5	5/10	15
750 A	4	8	750 A	10	15	2000 A	5	5/10/15	20
800 A	4	8	800 A	10	15	2500 A	5	5/10/15	20
1000 A	6	10	1000 A	12	20	3000 A	5/10/15	5/10/15/20	30
1200 A	8	12	1200 A	15	25	4000 A	5/10/15	5/10/15/20	30
1250 A	8	12	1250 A	15	25	5000 A	5/10/15/30	5/10/15/30	
1500 A	10	15	1500 A	20	30	6000 A	5/10/15/30	5/10/15/30	
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				

E.g.: 5/10 5= standard 10= on request

References

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

Current sensor and shunt

	Active current sensor	Shunt
Types	**ROG 400**	**DER**
		
Dimensions (mm) HxWxD	54 x 29 x 17	
Input specifications		
	Split core AC current sensor 1-phase AC	Shunt for DC current
Operating frequency	45 to 65 Hz	Continuous current
Rated insulation level	6 kV_{RMS}, 1min	
Output specifications		
Secondary current	4 to 20 mA DC	
General specifications		
Class		0.5
Bus-bar size (mm)	40	
Standards		DIN 43703
Primary current		
Accuracy class depending on the burden output I2 nominal 1 A / 5 A	400 AAC	Measuring range for current 1 to 10000 A Secondary: 60 mV (150 mV or other on request)
References		
	ROG 400	For ordering key details, please refer to www.productselection.net

Accessories and transducer

	Serial converter		Ethernet gateway
Types	**SIU-PC2**	**SIU-PC3**	**SIU-TCP2**
			
Dimensions (mm) HxWxD	Front: 100 x 67	Front: 60 x 37.5	Front: 78 x 65
Function	RS422/RS485 to RS232 converter	RS422/RS485 to USB converter	Ethernet to RS232/485 Gateway
Port 1			
Port Connections	RS232 9-pole, female	USB type A	Ethernet, 10/100Mbps RJ45
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
General specifications			
Power supply	12 to 30 VDC Suggested adapter: SPD12-101 (120 to 240VAC/DC)	Self supplyed by USB port	9 to 30 VDC AD5V1A: AC/DC power supply adapter (on request)
Approvals/Marks	CE - FCC	CE - FCC	CE
References			
	SIU PC2	**SIU PC3**	**SIU TCP2**
	SIU PC2I (2kV insulated)		

CARLO GAVAZZI

Digital panel meters

Ammeters, voltmeters and frequency meters

Types	DI3 DIN	DI3 72	LDI 3
			
Dimensions (mm) HxWxD	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
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 (mm) HxWxD	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
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		

CARLO GAVAZZI

Digital panel meters

Ammeters and voltmeters

Types	LDM 30	LDM 35 H	LDM 40
			
Dimensions (mm) HxWxD	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. Min.	9990 000		9999, 0 (AC) -9999 (DC) 4-digit LED red
Range election/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, please refer to www.productselection.net		

Digital panel meters

Modular meter and conditioner

Types	UDM 35	UDM40/USC	UDM 60
			
Dimensions (mm) HxWxD	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	0.2-2-20mA DC/AC 0.2-2-20V DC/AC [LSX] + AUX 13VDC [LSE] or 25VDC [LSF]; 0.2-2-5A DC/AC; 20-200-500V DC/AC [HSX]; TC: J-K-S-T-E, Pt100-250-500-1000 [TRX]; 0.02-0.2-2-20 kΩ [TRX]	0.2-2-20mA DC/AC 0.2-2-20V DC/AC [LSX] + AUX 13VDC [LSE] or 25VDC [LSF]; 0.2-2-5A DC/AC; 20-200-500V 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. Min.	1999, 0 (AC) -1999 (DC) 3 1/2-digit LED red	9999, 0 (AC) -9999 (DC) 4-digit LED. Colours: red, green, orange	9 999 999 o 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**
			
Dimensions (mm) HxWxD	90 x 18 x 67	90 x 18 x 67	72 x 72 x 65
Description	1-DIN module	1-DIN module	
Function	1-phase energy meter kWh	1-phase energy analyzer 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
Input specifications			
Range code	120 VAC [AV7] 230 VAC [AV8] Ib: 5 A, Imax: 32 AAC; 1-phase	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 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 B (EN50470-3) Class 2 (EN62053-23)	Class B (EN50470-3) Class 2 (EN62053-23)
Display	5+1 DGT (energy), LCD	4 DGT (inst. variables) 5+1 DGT (energies), LCD	3 DGT (inst. variables) 6+1 DGT (energies), LCD
Output specifications			
Out 1 (Pulse)	1-open collector	1-open collector	1 static opto-mosfet
Out 1 (Alarm)		1-relay	None
Out 2 (Serial communication)			None
Inputs			RS485 (2-wire, Modbus) M-BUS by means of VMU-B
General specifications			
Power supply	Self power supply [X]	Self power supply [X]	Self power supply
Approvals/Marks	CE - MID certification	CE - MID certification	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 (mm) HxWxD	71 x 90 x 64.5	71 x 90 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	120/208VL-L [AV6]; 400VL-L [AV5] In: 1/5A, Imax: 10AAC; 120/208VL-L [AV0]; 230VL-L [AV2] 400VL-L [AV9] Ib: 10A, Imax: 64AAC; 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 by means of VMU-B
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 60VAC/DC [L], 115/230VAC [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 meters		Power analyzer
Types	**EM3-DIN**	**EM4-DIN**	**WM22 DIN**
			
Dimensions (mm) HxWxD	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)		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 (mm) HxWxD	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}, 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+-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 (mm) HxWxD	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 60VAC/DC [L], 90 to 260VAC/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 (mm) HxWxD	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-asymmetryloss	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]	RS485 port/ RS232 port + RTC [S1]	RS 485 port/ RS232 port + RTC [S1].Optical port (ANSI type 2)
Internet/Ethernet port		Ethernet port [E2], BACNet-IP [BI]	Ethernet port [E2], BACNet-IP [BI]
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 60VAC/DC [L] 90 to 260VAC/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		

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Energy management

	Modular power quality analyzers	Modular power quality analyzer/transducers	
Types	**WM3 96**	**WM5 96/PQT H**	**PQT 90**
			
Dimensions (mm) HxWxD	96 x 96 x 124	96 x 96 x 124 (WM5-96) 90 x 90 x 140 (PQT-H)	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 (WM5-96), transducer (PQT-H). 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).	3-phase power quality transducer. 32 bit µP based. Alarm outputs, SMS messages. Measurement of all istantaneous variables. Energy, water and gas metering. 2MB memory+Real time clock (on request).
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	240/415 VAC-1/5 AAC [AV5], 400/690 VAC-1/5 AAC [AV7]
Accuracy	±0.5% RDG (V, A)	±0.2% RDG (V, A)	Class 0.5 (A,V)
Active energy	1 (kWh)	Class 0.5 (EN62053-22)	Class 1 (EN61036)
Reactive energy	2 (kvarh)	Class 2 (EN62053-23)	Class 2 (EN61260)
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)	RS 422/485 port, RS232 port + RTC+2MB data module
Internet/Ethernet port		Internet/Ethernet comm. with WEB server capability [E2]	Internet/Ethernet comm. with WEB server capability [E1]
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 2 single/dual 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 2 single/dual 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 6 digital inputs
Analogue output	Up to 2 single/dual analog output modules	Up to 8, by single/dual (mA/V) output modules	Up to 2 single/dual analogue 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 (mm) HxWxD	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: 20mA [A1-3], 10VDC [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 60VAC/DC [L], 90 to 260VAC/DC [H]	18 to 60VAC/DC [L], 90 to 260VAC/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		

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Surge arresters

Surge protection for AC, DC, data lines

Types	DSA_D	DSA_A DSA_P	DSA_S
			
Dimensions (mm) HxWxD DIN RAIL housing	90 x 35 x 60 [52] 90 x 53 x 60 [53X] 90 x 70 x 60 [53C]	90 x 35 x 60 [52] 90 x 70 x 60 [54]	90 x 17.5 x 62
Function	2-pole [52] or 3-pole [53] or Y connection surge arresters for P.V. installations. Removable cartridges. Exhausted cartridge indication contact [C].	1-phase [A] or 3-phase [P] surge arresters for TN and TT systems. Phase-Neutral gas-tube. Removable cartridges. Exhausted cartridge indication contact [C].	Surge arrester for 2-wire data transmission systems. Transmission frequency up to 100 MHz. Screwless connections.
General specifications			
SPD class	Class II	Class II	n.a.
Max. continuous voltage	585 VDC [585] 745 VDC [745] 1000 VDC [1000]	280 VAC (Phase-PE)	19.7 VAC 28 VDC
I_{imp}	n.a.	n.a.	6 kA
I_n (8/20)	20 kA [585, 1000] 15 kA [745]	20 kA	20 kA
I_{max} (8/20)	40 kA	50 kA	n.a.
Response time	< 25 ns	< 25 ns	< 1 ns
Output specifications			
	1 x SPDT relay, N.O.	1 x SPDT relay, N.O.	
Approvals/Marks	CE	CE	CE
References			
	DSA 52 CD 585	**DSA 52 CA 280N**	**DSA 51 XXS**
	DSA 53 CD 585	**DSA 54 CP 280N**	
	DSA 52 CD 745		
	DSA 53 CD 745		
	DSA 53 CD 1000		
	DSA 53 XD 1000		

Counters

Types — Electromechanical counters

	EMCT46/EMCT47	E2CT4	E1CT4	ECH4
				
Version	Micro	Mini	Standard	Combination time and energy meter
Dimensions (mm) HxWxD	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 24VDC	24 to 230VAC 12 to 24VDC	24 to 230VAC 12 to 24VDC	0 to 260VAC 0 to 260VDC
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

Type	FKA	DCT86	DMF861	DMF862
				
Version	LCD-Panel mount	LCD-Panel mount	LCD-Panel mount	LCD-Panel mount
Dimensions (mm) HxWxD	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 (mm) HxWxD	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)	92x45	92x45
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

Type	E1HM4	E2HM4	E2HM35	E1HM35
				
Version	Panel mount	Panel mount	Panel mount	DIN rail
Dimensions (mm) HxWxD	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...130Vdc / 24 Vdc	20...264 Vac - 100...130Vac 10...30 Vdc	115...230 Vac 10...80Vdc	230 Vac 10...27Vdc
References				
	E1HM4xxxxxx	**E2HM4xxxxxx**	**E2HM35xxxxxx**	**E1HM35xxxxxx**

Counters

Types	Hour meter electronic LCD		Electronic time preset counters	
	FSA01	FSA02	FKC01	DMF61 / DMF62
				
Version	LCD panel mount	LCD panel mount	LCD panel mount	LCD panel mount
Dimensions (mm) HxWxD	DIN 24 x 48	DIN 24 x 48	DIN 48 x 48	DIN 48 x 48
Technical data				
Number of digit	7	8	6 x 2 lines	2 x 6
Time range	0.01h; h.min	0.01h; h.min		
Max. Count frequency (Hz)			10.000	s. min. h or hh.mm.ss
Preset			1	61: 1 / 62: 2
Reset	manual	manual	electronic	electronic
Digit height, visible (mm)	8	8		
Panel cut-out (mm)	45 x 22	45 x 22	45 x 45	45 x 45
Mounting type	Panel mount	Panel mount	Panel mount	Panel mount
Max. protection	IP 65 front side	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	90 to 260 VAC 11 to 30 VDC
Output			Relay or Optocoupler	Relay or Optocoupler
Input			2 count inputs, gate, reset and key lock input	2 count inputs, gate, reset, lock, MPI, 4 optional inputs
References				
	FSA01xxxxxx	**FSA02xxxxxx**	**FKC0101xxxx**	**DMF6101xxxx0**
				DMF6201xxxx0

CARLO GAVAZZI

PID controllers

PID controller – PDI series

Types	PDI 110	PDI 380	PDI 390
			
Dimensions (mm) HxWxD	75 x 33 x 64	75 x 33 x 64	75 x 33 x 64
Function	Single display digital controller. 1 configurable input for thermistors. Generic cooling and heating process and ON/OFF control mode applications. Additional configurable digital input. 2 configuable outputs (relays, SSR) 1 for themperature control and 1 for alarm function. Different alarm configutaion available. 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 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.
Input specifications			
Overall accuracy	±0.5% f.s.	±0.5% f.s., ±1% TC-S	±0.5% f.s., ±1% TC-S
Input signal	PTC KTY81-121, NTC 103AT-2	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]
Sampling rate	8 per second	8 per second	8 per second
Display	4 digit 7-segment LED, h 12mm	4 digit 7-segment LED, h 12mm	4+4 digit 7-segment LED, h 7mm
Output specifications			
Output 1	Relay SPDT 16A-AC1 [S], Relay SPST-NO 16A-AC1 [R]	Relay [R], 8mA/8VDC for SSR [O]	Relay [R], 8mA/8VDC for SSR [O]
Output 2	No [X] Relay SPDT 5A-AC1 [R],	No [X] Relay [R], 8mA/8VDC for SSR [O]	No [X] Relay [R], 8mA/8VDC for SSR [O]
Others			
Power supply	12VAC / DC [F] 24VAC / DC [L] 100-240VAC [H]	12VAC / DC [F] 24VAC / DC [L] 100-240VAC [H]	12VAC / DC [F] 24VAC / DC [L] 100-240VAC [H]
Internal Buzzer	No Buzzer [X] Buzzer [B]		
Approvals	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 408	PDI 409	PDI 410
			
Dimensions (mm) HxWxD	48 x 48 x 98	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 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.	Single 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. Led shift index. RS485 communication. CT input for HB alarm. 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	±0.15% f.s.
Input signal	TC (J, K, S, IR), PTC, NTC, mV [E] TC (J, K, S, IR), PT100, mV [C] 0/4-20 mA [I] 0-1V, 0/1-5V, 0/2-10V [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] 0-1V, 0/1-5V, 0/2-10V [V]	Pt100, TC (J, K, S, IR), PTC, NTC, mv, V, mA
Sampling rate	8 per second	8 per second	8 per second
Display	4 digit 7-segment LED, h 12mm	4+4 digit 7-segment LED, h 7mm	4 digit 7-segment LED, h 12mm
Output specifications			
Output 1	Relay [R], 8mA/8VDC for SSR [O]	Relay [R], 8mA/8VDC for SSR [O]	Relay [R], 7mA/14VDC for SSR [O]
Output 2	No [X] Relay [R], 8mA/8VDC for SSR [O]	No [X] Relay [R], 8mA/8VDC for SSR [O]	No [X] Relay [R], 7mA/14VDC for SSR [O]
Output 3	No [X] Relay [R], 8mA/8VDC for SSR [O]	No [X] Relay [R], 8mA/8VDC for SSR [O]	No [X] Relay [R], 7mA/14VDC for SSR [O]
Output 4			No [X] Relay [R], 7mA/14VDC for SSR [O]
Options			
Serial Communication			No [X] RS485 [S]
Heater Break Alarm			No [X] CT input [H]
Others			
Power supply	24VAC / DC [L] 100-240VAC [H]	24VAC / DC [L] 100-240VAC [H]	24VAC / DC [L] 100-240VAC [H]
Approvals	CE - cURus	CE - cURus	CE - cURus
References			
	For ordering key details, please refer to www.productselection.net		

CARLO GAVAZZI

PID controllers

PID controller – PDI series

Types	PDI 420	PDI 430	PDI 720
			
Dimensions (mm) HxWxD	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 second	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 7mm	4 digit 7-segment LED, h 14 mm
Output specifications			
Output 1	Relay [R], 7mA/14VDC for SSR [O]	Relay [R], 7mA/14VDC for SSR [O] 0/4-20mA [C], 0/2-10V [V]	Relay [R], 8mA/8VDC for SSR [O]
Output 2	No [X] Relay [R], 7mA/14VDC for SSR [O]	No [X] Relay [R], 7mA/14VDC for SSR [O] 0/4-20mA [C], 0/2-10V [V]	No [X] Relay [R], 8mA/8VDC for SSR [O]
Output 3	No [X] Relay [R], 7mA/14VDC for SSR [O]	No [X] Relay [R], 7mA/14VDC for SSR [O]	No [X] Relay [R], 8mA/8VDC for SSR [O]
Output 4	No [X] Relay [R], 7mA/14VDC for SSR [O]	No [X] Relay [R], 7mA/14VDC 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		

Switching power supplies

Single phase switching power supplies

Types	5 / 10 / 18W	30 / 60W	90 / 100W
			
Dimensions (mm) HxWxD	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 5W	1 A 340 mA 420 mA 210 mA		
Current SPD 10W	2 A 670 mA 840 mA 420 mA		
Current SPD 18W	3 A 1.2 A 1.5 A 750 mA		
Current SPD 30W		2.5 A 1.25 A 625 mA	
Current SPD 60W		5 A 2.5 A 1.25 A	
Current SPD 90W			3.8 A
Current SPD 100W			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 265VAC 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 SPD24601**	**SPD24901L SPD241001**
Spring terminals	**SPD24051B SPD24101B SPD24181B**	**SPD24301B SPD24601B**	
48 VDC			
Screw terminals		**SPD48301 SPD48601**	**SPD481001**
Spring terminals		**SPD48301B SPD48601B**	

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Switching power supplies

Single phase switching power supplies

Types	120W - 120W(N)	240 W	300 W	480 W
				
Dimensions (mm) HxWxD	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	12.5A 6.25A	20A 10A
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 132VAC, 186 to 264VAC, 210 to 370VDC	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, 24V 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**

Switching power supplies

Three phase switching power supplies

Types	SPD 120 W 3ph	SPD 240 W 3ph	SPD 480 W 3ph	SPD 960 W 3ph
				
Dimensions (mm) HxWxD	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 63Hz	47 to 63Hz	47 to 63Hz	47 to 63Hz
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 functionand 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	**100 W**	**SPD Redundant Module**	**SPM Redundant Module**
			
Dimensions (mm) HxWxD	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**		

Modular switching power supplies

Low profile DIN rail mounting

Types	SPM 1	SPM 3	SPM 4	SPM 5
				
Dimensions (mm) HxWxD	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	5VDC, 12VDC, 15VDC, 24VDC	5VDC, 12VDC, 15VDC, 24VDC	5VDC, 12VDC, 15VDC, 24VDC	5VDC, 12VDC, 15VDC, 24VDC, 24VDC (S ver.)
Current	1.5 A - 0.83 A 0.67 A - 0.42 A	3.0A - 2.1A 2.0A - 1.3A	7.0A - 4.5A 4.0A - 2.5A	12A - 6A - 5A 4.2A - 3.8A
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 - Classl DIV2	UL - cUL - TÜV - CE - Classl DIV2	UL - cUL - TÜV - CE - Classl DIV2	UL - cUL - TÜV - CE - Classl 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 (mm) HxWxD	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**

Safety modules

	Emergency stop and safety gates			Two hand device
Types	**NES02D NES13D**	**NDS12B**	**NA13CT**	**ND12D**
				
Dimensions (mm) HxWxD	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 2 (EN 13849-1: 2007)	3 (EN 954-1)	4 (EN 954-1)
Performance level	e			
Function	Category 0 emergency stop module safety gates (mech. switches)	Category 1 emergency stop module	Category 1 emergency stop module	Two hand device
Output specifications				
	2 x NO safety relay [NES02] 3 x NO safety relay + 1 NC relay [NES13]	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	2 x NO safety relay
Max. load AC1	6 A @ 230 VAC	5 A @ 230 VAC	6 A @ 230 VAC	8 A @ 230 VAC
Max. load DC12	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, 2 x NC, voltage free
General specifications				
Power supply	24 VAC/DC -15% +10%	24 VAC/DC ±10%	18 VAC ±10% 24 VDC ±10%	24 VAC/DC -15% +10% 110 VAC -15% +10% [110CG] 230 VAC -15% +10% [230CG]
Screw Terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA] Detachable [DA]	Fixed	Fixed
Start	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual	Automatic / Manual	Automatic
Approvals/Marks	CE - UL - TÜV	CE	CE - UL	CE - UL - TÜV
References				
	NES 02 D B24 SA	**NDS 12 B B24 SA**	**NA13CT**	**ND12D**
	NES 02 D B24 SC	**NDS 12 B B24 DA**		**ND12D 110CG**
	NES 02 D B24 DA			**ND12D 230CG**
	NES 02 D B24 DC			
	NES 13 D B24 SA			
	NES 13 D B24 SC			
	NES 13 D B24 DA			
	NES 13 D B24 DC			

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Safety modules

	Safety gates (magnetic sensors)		Safety mat & edge	
Types	**NSO02 NSO13**	**NSC02 NSC13**	**NSE02C**	**NST02C**
				
Dimensions (mm) HxWxD	99 x 22.5 x 114	99 x 22.5 x 114	80 x 22.5 x 99.5	80 x 22.5 x 99.5
Safety category	Up to category 4 (EN ISO 13849-1:2008)	Up to category 4 (EN ISO 13849-1:2008)	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	Safety gates module	Safety gates module	Safety mat & edge module	Safety mat module
Output specifications				
	2 x NO safety relay [NSO02] 3 x NO safety relay + 1 NC relay [NSO13]	2 x NO safety relay [NSC02] 3 x NO safety relay + 1 NC relay [NSC13]	2 x NO safety relay	2 x NO safety relay
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	5 A @ 230 VAC	5 A @ 230 VAC
Max. load DC12	6 A @ 24 VDC	6 A @ 24 VDC	5 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, SMS or mechanical	1 x NO, 1 x NC, SMS or mechanical	2-wire mats or safety edges	4-wire mats (SM...)
General specifications				
Power supply	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%	24 VAC/DC ±15%	24 VAC/DC ±15%
Screw Terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed	Fixed
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 - TÜV	CE - TÜV
References				
	NSO 02 D B24 SA	**NSC 02 D B24 SA**	**NSE 02 C B24 SA**	**NST 02 C B24 SA**
	NSO 02 D B24 SC	**NSC 02 D B24 SC**	**NSE 02 C B24 SC**	**NST 02 C B24 SC**
	NSO 02 D B24 DA	**NSC 02 D B24 DA**		
	NSO 02 D B24 DC	**NSC 02 D B24 DC**		
	NSO 13 D B24 SA	**NSC 13 D B24 SA**		
	NSO 13 D B24 SC	**NSC 13 D B24 SC**		
	NSO 13 D B24 DA	**NSC 13 D B24 DA**		
	NSO 13 D B24 DC	**NSC 13 D B24 DC**		

Safety modules

	Safety light curtains	Lift levelling	Standstill monitor	Exstensions
Types	**NLG02D NLG13D**	**NA12DLIFT**	**MF1C**	**NE14D**
				
Dimensions (mm) HxWxD	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 [NLG13]	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				
	NLG 02 D 724 SA	**NA12D LIFT**	**MF1C**	**NE14D**
	NLG 02 D 724 SC			**NE14D 110CG**
	NLG 02 D 724 DA			**NE14D 230CG**
	NLG 02 D 724 DC			
	NLG 13 D 724 SA			
	NLG 13 D 724 SC			
	NLG 13 D 724 DA			
	NLG 13 D 724 DC			


CARLO GAVAZZI
DuplineSafe
Safety Transmitter
GS75102101
Contact Input
PK:
GN:
IN S
Rx
Tx
BN:
GY:
WT:
+D
-D
IN D

Fieldbus

Dupline® Fieldbus: general purpose

Channel generators/interfaces

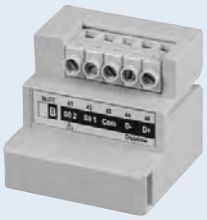
Types	G3490	G3496	G3800
			
Dimensions (mm)	77 x 72 x 70	77 x 72 x 70	77 x 144 x 70
Functions	Standard channel generator.	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus.	Controller and Modbus Interface with built-in GSM Modem (option) or external Radio Modem 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			**G3496 0015**
+GSM Modem, -RS485			**G3496 1015**
-GSM Modem, +RS485			**G3496 0016**
+GSM Modem, +RS485			**G3496 1016**
-GSM Modem, +RS485,+Logging			**G3496 0036**
+GSM Modem, +RS485,+Logging			**G3496 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	-25°C to +60°C	-20°C to +50°C	-25°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

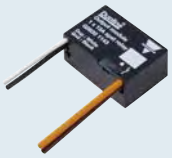
Digital input modules

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	S0 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 +50°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.	5 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	024 = 24 VAC 115 = 115 VAC 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 maximum 32 A.
References				
2 input + 2 output SPST	**G3440 4443**			
4 input + 2 output SPST		**G3440 5543**		
1 x 5 A SPDT			**G3430 1149**	
2 x 5 A SPDT			**G3430 2249**	
4 x 5 A SPST			**G3430 4443**	
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	Digital sensors		Temp. Sensor
Types	**G3439 6470**	**G6110 1145**	**G8910 1101**	**G8911 1010**
				
Dimensions (mm)	77 x 72 x 70	M18 x 55	Ø11 x 68	67 x 35 x 15
Functions	Universal analogue output module for external supply.	Dupline® powered inductive proximity switch.	Dupline® powered magnet proximity switch.	Temperature sensor for outdoor use.
Housing type	DIN-Rail, H4	M18	Cylindrical	Flat pack sensor housing
Electrical specifications				
Number of channels	Selectable	1	1	1
Features/Signal types	4 x analogue outputs. Output type configurable for 0-20 mA, 4-20 mA or 0-10 VDC.	Detects proximity of metal objects.	Detects proximity of magnet.	1 x Analink Range: -30°C to +60°C.
Power Supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered through the Dupline® network.	Powered through the Dupline® network.	Powered through the Dupline® network.
General specifications				
Degree of protection	IP 20	IP 67	IP 67	IP 67
Operating temperature	0°C to +50°C	-25°C to +70°C	-20°C to +50°C	-25°C to +70°C
Storage temperature	-20°C to +85°C	-30°C to +80°C	-20°C to +70°C	-55°C to +85°C
Remarks	Protocol freely selectable (Analink, Multiplexed BCD or 8-bit).	Available with cable or M12 connector. Flush mounting.	Available in Ø 11 plastic housing or with M14 metal thread.	8-bit resolution.
References				
Universal analogue output	**G3439 6470**			
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	-20°C to +85°C	-20°C to +85°C
Remarks		Operates with G3491 0090.	Operates with G3491 0000.
References			
Repeater (Booster)	**D3892 0000**		
RS232 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 DC-bus.
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

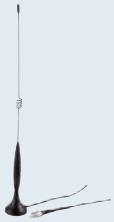
	Software		
Types	**DUPDATACC**	**DUP-SERV-ADD**	**DUP-SERV-SW**
			
Functions	Software package with DDE-driver and ActiveXdriver for G3800. Controller and interface unit.	A data logging, visualization and alarm handling software package to be installed in a windows based PC.	A data logging, visualization and alarm handling software package to be installed in a windows based PC.
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.
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® Fieldbus: general purpose

	Accessories			
Types	**GAP1605**	**GTD50**	**GTU8**	**G3282 2002 230**
				
Dimensions (mm)	120 x 65 x 22	77 x 116 x 41	145 x 90 x 28	77 x 36 x 70
Functions	Dupline® coding device for assigning addresses to Dupline® I/O modules and sensors.	LCD Text Display with 2 rows x 20 characters.	Dupline® test unit for monitoring and control of Dupline® channels.	Dupline® bus separator
Housing type	Handheld.	Panel mounting.	Handheld.	H2 Housing
Electrical specifications				
Number of channels	NA	Selectable.	Adjusts automatically.	2
Features/Signal types		Digital and Analink. User defined text messages linked to Dupline® channels. Read-out of Analink values. Dupline® control via front keys.	Digital, multiplexed BCD, 8-bit analogue signals and 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	18-32 VDC	Powered through the Dupline® network.	230 V
General specifications				
Degree of protection	IP 40	IP 65 (front)	IP 40	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 +60°C	-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				
	GAP1605	**GTD50**	**GTU8**	**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				
	ADAPT 1605	**ANT1**	**ANT2**	**D3212 4000**

Dupline® Fieldbus: general purpose

	Accessories			
Types	**DT01**	**DT02**	**ETHCONV 2**	**ETHCONV 3**
				
Dimensions (mm)	17.5 x 70 x 77	17.5 x 70 x 77	22 x 75.2 x 80	22 x 90 x 100.4
Functions	Cable termination unit standard Dupline®.	Cable termination unit Hi-line.	Ethernet to RS232 converter.	Ethernet to RS232 converter.
Housing type	H1 housing	H1 housing	Metal housing	Metal housing
Electrical specifications				
Number of channels			1	2
Features/Signal types	Removes distortion caused by reflection.	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
Power Supply	No power needed.	No power needed.	12-48 VDC/130 mA	12-30 VDC/305 mA.
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	0°C to +55°C	0°C to +55°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-40°C to +75°C	-40°C to +75°C
Remarks			Automatic dedicated installation tool available.	Automatic dedicated installation tool available.
References				
	DT01	**DT02**		
1 Channel			**ETHCONV2**	
2 Channels				**ETHCONV3**

Dupline® Fieldbus: DuplineSafe

	Output module	Gateway / interface	
Types	**GS3830 0143**	**GS3891 0125**	**GSTI 50**
			
Dimensions (mm)	144 x 77 x 70	144 x 77 x 70	55 x 70 x 15
Functions	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 mounting H8	DIN-rail mounting H8.	Compact plastic housing
Electrical specifications			
Number of channels	2		
Features/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 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
Pollution degree	3 (IEC 60664)		
Operating temperature	-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	Approved according to IEC/EN 61508 and EN 954 Cat 4 by TÜV.	Certified by PNO.	Supports Modbus RTU function code 3 and code 16.
References			
	GS3830 0143	**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	-20°C to +50°C	0°C to +50°C	-10°C to +45°C	0°C to +50°C
Storage temperature	-30°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 and EN 954 Cat 4 by TÜV.		Adapt 7380 is included.	
References				
		GS3892 0000	**GS7380 0080**	**GS7380 0081**
Cable	**GS7510 2101**			
Plug connector	**GS7510 2101-1**			

Dupline® Fieldbus: parking guidance system

	Sensors	Carpark interface	Carpark monitor	Passive indicators
Types	**GP6220../GP6240..**	**GP3496 0005**	**GP3482 9091**	**GP6289..**
				
Dimensions (mm)	Ø118 x 76	77 x 72 x 70	77 x 72 x 70	Ø118 x 76
Functions	Ultrasonic sensors for detection of cars with or without LED indication.	Interface for Modbus-RTU with the function of a slave.	Configurable device for monitoring of free parking bays in an carpark.	Passive indicator for sensor.
Housing type	Direct mounting on ceiling.	Mounting on DIN rail.	Mounting on DIN rail.	Direct mounting on ceiling.
Electrical specifications				
Number of channels	2	-	-	-
Features/Signal types	1 x signal for occupancy. 1 x signal for common calibration.	RS232/RS422/RS485 port for making an interface to the control system. Multidropping of up to16 devices on RS485.	Programmable device with builtin RS485 for displays. 123 sensors can be connected to the Monitor module.	No programming. Only wire connected.
Power Supply	3-wire system with Dupline® and sensor supply.	20-30 VDC 3-wire system	Dupline® 3-wire system with power for the L_1 and L_2 bus.	
General specifications				
Degree of protection	IP 34	IP 20	IP 20	IP 34
Operating temperature	-40°C to +70°C	-40°C to +50°C	-40°C to +50°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**			
Dupline® Master Module		**GP3496 0005**		
Dupline® Carpark monitor			**GP3482 9091 724**	

Dupline® Fieldbus: parking guidance system

	Displays		
Types	**GP67630106**	**GP67630107-08**	**GP67630109-11**
			
Dimensions (mm)	145 x 145 x 60	145 x 240 x 60	145 x 335 x 60
Functions	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	Aluminium box with plexiglass front	Aluminium box with plexiglass front	Aluminium box with plexiglass front
Electrical specifications			
Power Supply	18-24 VDC / 15-25 W	18-24 VDC / 30-50 W	18-24 VDC / 40-60 W
Features			
	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 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 - 90% non condensing	0 - 90% non condensing	0 - 90% non condensing
References			
	GP67630106	**GP67630107**	**GP67630109**
		GP67630108	**GP67630110**
			GP67630111

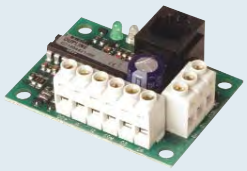
Dupline® Fieldbus: parking guidance system

	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			
	GP6763 0116	**GP6763 0112**	**GP6763 0115**
		GP6763 0113	
		GP6763 0114	

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				
	GH3440 4412	**GH6440 4412**	**GH3485 0000**	**GHTU8**

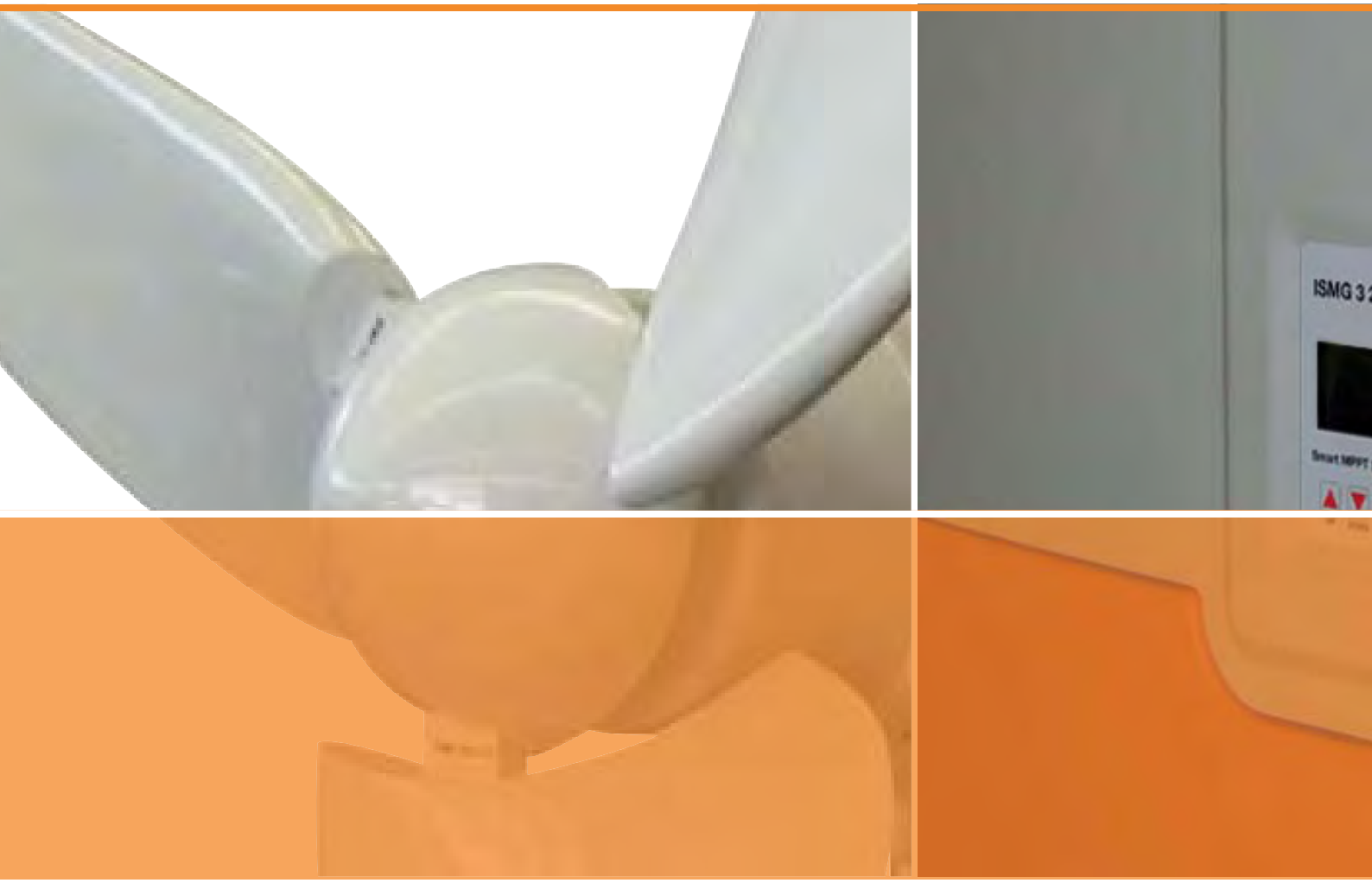
Dupline® Fieldbus: elevator

	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	8
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**

CARLO GAVAZZI
Automation Components



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CARLO GAVAZZI

Solar inverters

Single-phase, grid tied PV inverters

Types	ISMG 1 45 PL3	ISMG 1 45	ISMG 1 50	ISMG 1 60
				
Dimensions (mm) HxWxD	580 x 422 x 182	580 x 422 x 182	580 x 422 x 182	580 x 422 x 182
Features	MPP Tracking controlled by exclusive smart MPPT technology with possibility of managing the different string independently or paralleled all or partially. Transformerless with Electronic RCMU circuit. 2 ports RS232/RS485 for remote monitoring. Anti-islanding circuit and Grid monitoring, integrated DC switch to ensure high safety level. IP 65, Outstanding operating temperature.			
DC input specifications				
DC input Power	3.6 kW	4.0 kW	4.64 kW	5.38 kW
Min / Max Voltage	100 / 500 Vdc	100 / 500 Vdc	100 / 500 Vdc	100 / 500 Vdc
MPP Voltage range	100 to 450	100 to 450	100 to 450	100 to 450
Max Current per String	10 A	10 A	10 A	10 A
Number of strings	2	2	2	3
Number of Trackers	2 indip. (could work a Master Slave)	2 indip. (could work a Master Slave)	2 indip. (could work a Master Slave)	3 indip. (could work as 2+1)
AC output specifications				
Grid connection	Single phase, true sinewave	Single phase, true sinewave	Single phase, true sinewave	Single phase, true sinewave
Nominal AC Power	2.99 kW	3.3 kW	3.8 kW	4.6 kW
Maximum AC Power	2.99 kW	3.8 kW	4.4 kW	5,1 kW (DE version 5.0 kW)
Power factor	> 0.99	> 0.99	> 0.99	> 0.99
Distortion (THD)	< 3%	< 3%	< 3%	< 3%
AC Voltage	Rated 230 Vac	Rated 230 Vac	Rated 230 Vac	Rated 230 Vac
AC rated Current	13 A	14.34 A	16.52 A	20 A
Frequency	Rated 50 Hz	Rated 50 Hz	Rated 50 Hz	Rated 50 Hz
General specifications				
Operating Temperature	-10°C to + 60°C (derating > +60°C, Shutdown @ +75°C)	-10°C to + 60°C (derating > +60°C, Shutdown @ +75°C)	-10°C to + 60°C (derating > +60°C, Shutdown @ +75°C)	-10°C to + 60°C (derating > +60°C, Shutdown @ +75°C)
Humidity	0 to 95% RH	0 to 95% RH	0 to 95% RH	0 to 95% RH
Protection degree	IP 65	IP 65	IP 65	IP 65
Cooling	Forced Ventilation: electronically controlled fans	Forced Ventilation: electronically controlled fans	Forced Ventilation: electronically controlled fans	Forced Ventilation: electronically controlled fans
Max Efficiency	96.2%	96.2%	96.3%	96.3%
EU Efficiency	95.4%	95.4%	95.1%	95.4%
Noise level	< 40 dB	< 40 dB	< 40 dB	< 40 dB
Approvals	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661
References				
Italy		**ISMG 1 45 IT**	**ISMG 1 50 IT**	**ISMG 1 60 IT**
Germany		**ISMG 1 45 DE**	**ISMG 1 50 DE**	**ISMG 1 60 DE**
Spain		**ISMG 1 45 ES**	**ISMG 1 50 ES**	**ISMG 1 60 ES**
France	**ISMG 1 45 FR PL3**	**ISMG 1 45 FR**	**ISMG 1 50 FR**	**ISMG 1 60 FR**
Greece		**ISMG 1 45 GR**	**ISMG 1 50 GR**	**ISMG 1 60 GR**
Others	**ISMG 1 45 EN PL3**	**ISMG 1 45 EN**	**ISMG 1 50 EN**	**ISMG 1 60 EN**

Solar inverters

HF transformer, grid tied PV inverters

Types	ISMGT 1 28	ISMGT 1 38	ISMGT 1 40	ISMGT 1 50
				
Dimensions (mm) HxWxD	768 x 454 x 175	768 x 454 x 175	768 x 454 x 210	768 x 454 x 210
Features	The ISMGT inverters are galvanically insulated between input and output thus suitable for all types of Modules: poly and single crystal, thin film with positive or negative grounding. The front switch interrupts both DC and AC sides. The positive or negative grounding of panels can be set by mean of internal dip switches. It is possible to connect up to 4 separate strings. The units are also equipped with Ground fault fuse in order to increase safety during operation, automatic internal fans reduce temperature when it is exceeding the set value in order to generate more energy also with high environmental temperatures.			
DC input specifications				
DC input Power	3.1 kW	4.1 kW	4.3 kW	5.3 kW
Min / Max Voltage	150 / 600 Vdc	150 / 600 Vdc	150 / 600 Vdc	150 / 600 Vdc
MPP Voltage range	200 to 550	200 to 550	200 to 550	200 to 550
Max Current per String	15 A	15 A	15 A	15 A
Number of strings	3	4	4	4
Number of Trackers	1	1	1	1
AC output specifications				
Grid connection	Single phase, true sinewave	Single phase, true sinewave	Single phase, true sinewave	Single phase, true sinewave
Nominal AC Power	2.8 kW	3.8 kW	4.0 kW	5.0 kW
Maximum AC Power	2.8 kW	3.8 kW	4.0 kW	5.0 kW
Power factor	> 0.99	> 0.99	> 0.99	> 0.99
Distortion (THD)	< 3%	< 3%	< 3%	< 3%
AC Voltage	Rated 230 Vac	Rated 230 Vac	Rated 230 Vac	Rated 230 Vac
AC rated Current	12.2 A	16.6 A	17.4 A	21.8 A
Frequency	Rated 50 Hz	Rated 50 Hz	Rated 50 Hz	Rated 50 Hz
General specifications				
Operating Temperature	-25°C to + 58°C @ full power	-25°C to + 55°C @ full power	-25°C to + 58°C @ full power	-25°C to + 54°C @ full power
Humidity	0 to 95% RH	0 to 95% RH	0 to 95% RH	0 to 95% RH
Protection degree	IP 44	IP 44	IP 44	IP 44
Cooling	Air convection	Forced Ventilation: electronically controlled fans	Forced Ventilation: electronically controlled fans	Forced Ventilation: electronically controlled fans
Max Efficiency	96.4%	96.4%	96.5%	96.5%
EU Efficiency	95.4%	95.7%	95.8%	95.8%
Noise level	< 40 dB	< 40 dB	< 40 dB	< 40 dB
Approvals	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661, G83	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661, G59	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661, G59	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661, G59
References				
Italy	**ISMGT 1 28D IT**	**ISMGT 1 38D IT**	**ISMGT 1 40D IT**	**ISMGT 1 50D IT**
Germany	**ISMGT 1 28D DE**	**ISMGT 1 38D DE**	**ISMGT 1 40D DE**	**ISMGT 1 50D DE**
Spain	**ISMGT 1 28D ES**	**ISMGT 1 38D ES**	**ISMGT 1 40D ES**	**ISMGT 1 50D ES**
France	**ISMGT 1 28D FR**	**ISMGT 1 38D FR**	**ISMGT 1 40D FR**	**ISMGT 1 50D FR**
Greece	**ISMGT 1 28D GR**	**ISMGT 1 38D GR**	**ISMGT 1 40D GR**	**ISMGT 1 50D GR**
UK	**ISMGT 1 28D UK**	**ISMGT 1 38D UK**	**ISMGT 1 40D UK**	**ISMGT 1 50D UK**
Others	**ISMGT 1 28D EN**	**ISMGT 1 38D EN**	**ISMGT 1 40D EN**	**ISMGT 1 50D EN**

CARLO GAVAZZI

Solar inverters

Single-Phase, compact grid tied PV inverters

Types	ISGA120 / ISGE120	ISGA130 / ISGE130	ISGA140 / ISGE140
			
Dimensions (mm) HxWxD	550 x 250 x 187	550 x 250 x 187	550 x 250 x 222
Features	ISGA and ISGE have a very simple but also very robust design and construction. This range has been deigned in order to comply with both European and North American requirements. They have outstanding resistance to frequently occurring distortion and variations of the mains. With the built in graphic display and 5 keys pad it is possible to modify the parameters and to view the production data at any time. They all have built in DC Disconnector, Serial communication port and MC4 connectors for DC inputs.		
DC input specifications			
DC input Power	2.2 kW	3.2 kW	4.3 kW
Min / Max Voltage	330 / 650 Vdc	330 / 650 Vdc	330 / 650 Vdc
MPP Voltage range	330 / 650 Vdc	330 / 650 Vdc	330 / 650 Vdc
Max Current per String	8.2 A	12 A	17 A
Number of strings	1	1	1
Number of Trackers	1	1	1
AC output specifications			
Grid connection	Single phase, true sinewave	Single phase, true sinewave	Single phase, true sinewave
Nominal AC Power	2.0 kW	3.0 kW	4.0 kW
Maximum AC Power	2.99 kW	3.8 kW	4.4 kW
Power factor	1	1	1
Distortion (THD)	< 3%	< 3%	< 3%
AC Voltage	Rated 208 / 240 Vac	Rated 208 / 240 Vac	Rated 208 / 240 Vac
AC rated Current	9.5 A	14.3 A	19.0 A
Frequency	Rated 50 Hz / 60 Hz	Rated 50 Hz / 60 Hz	Rated 50 Hz / 60 Hz
General specifications			
Operating Temperature	-10°C to + 35°C without ISG Cool, -20°C to + 50°C with ISG Cool (shutdown @ 74°C)	-10°C to + 35°C without ISG Cool, -20°C to + 50°C with ISG Cool (shutdown @ 74°C)	-10°C to + 35°C without ISG Cool, -20°C to + 50°C with ISG Cool (shutdown @ 74°C)
Protection degree	IP 44	IP 44	IP 44
Cooling	Natural air convection or forced ventilation with ISG cool	Natural air convection or forced ventilation with ISG cool	Natural air convection or forced ventilation with ISG cool
Max Efficiency	96.75%	96.80%	96.85%
EU Efficiency	95.42%	96.02%	95.94%
Noise level	< 35 dB	< 35 dB	< 35 dB
Approvals	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661
References			
1-phase mains	**ISGE 1 20 MSD**	**ISGE 1 30 MSD**	**ISGE 1 40 MSD**
3-phase mains	**ISGE 1 20**	**ISGE 1 30**	**ISGE 1 40**
USA/Canada	**ISGA 1 20**	**ISGA 1 30**	**ISGA 1 40**

Solar inverters

Single-phase, compact grid tied PV inverters

Types	ISGA155 / ISGE155	ISGA170
		
Dimensions (mm) HxWxD	550 x 250 x 222	550 x 250 x 222
Features	ISGA and ISGE have a very simple but also very robust design and construction. This range has been deigned in order to comply with both European and North American requirements. They have outstanding resistance to frequently occurring distortion and variations of the mains. With the built in graphic display and 5 keys pad it is possible to modify the parameters and to view the production data at any time. They all have built in DC Disconnector, Serial communication port and MC4 connectors for DC inputs.	
DC input specifications		
DC input Power	5.8 kW	7.4 kW
Min / Max Voltage	330 / 650 Vdc	330 / 650 Vdc
MPP Voltage range	330 / 650 Vdc	330 / 650 Vdc
Max Current per String	18 A	25 A
Number of strings	1	1
Number of Trackers	1	1
AC output specifications		
Grid connection	Single phase, true sinewave	Single phase, true sinewave
Nominal AC Power	5.5 kW (DE version 4.6 kW)	7.0 kW
Maximum AC Power	6.0 kW (DE version 4.6 kW)	7.5 kW
Power factor	1	1
Distortion (THD)	< 3%	< 3%
AC Voltage	Rated 208 / 240 Vac	Rated 208 / 240 Vac
AC rated Current	26.0 A	32.6 A
Frequency	Rated 50 Hz / 60 Hz	Rated 50 Hz / 60 Hz
General specifications		
Operating Temperature	-10°C to + 35°C without ISG Cool, -20°C to + 50°C with ISG Cool (shutdown @ 74°C)	-10°C to + 35°C without ISG Cool, -20°C to + 50°C with ISG Cool (shutdown @ 74°C)
Protection degree	IP 44	IP 44
Cooling	Natural air convection or forced ventilation with ISG cool	Natural air convection or forced ventilation with ISG cool
Max Efficiency	96.85%	96.85%
EU Efficiency	96.05%	96.05%
Noise level	< 35 dB	< 35 dB
Approvals	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDEW, VDE0126-1-1, DK5940, RD1663 / RD661
References		
1-phase mains	**ISGE 1 55 MSD**	
3-phase mains	**ISGE 1 55**	
USA/Canada	**ISGA 1 55**	**ISGA 1 70**

CARLO GAVAZZI

Solar inverters

Three-phase, grid tied PV inverters

Types	ISMG 3 17	ISMG 3 22
		
Dimensions (mm) HxWxD	890.5 x 751 x 256	890.5 x 751 x 256
Features	2 different MPP Tracking circuits controlled by smart MPPT technology with possibility of managing the different string independently or paralled. Transformerless with Electronic RCMU circuit. Integrated Graphic display with 5 keys pad and minilogger, 2 ports RS232/RS485 for remote monitoring. Anti-islanding circuit and Grid monitoring, integrated DC switch to ensure high safety level. IP 55, wide operating temperature range.	
DC Input specifications		
DC input Power	17.9 kW	23.1 kW (21 kW)*
Min / Max Voltage	300 / 850 Vdc	300 / 850 Vdc
MPP Voltage range	300 to 850 Vdc	300 to 850 Vdc
Max Current per String	21.6 A	28.9 A
Number of strings	2	2
Number of Trackers	2 indip.	2 indip.
AC Output specifications		
Grid connection	3 phase, balanced, true sinewave	3 phase, balanced, true sinewave
Nominal AC Power	17 kW	22 kW (19.99 kW)*
Maximum AC Power	17 kW	22 kW (19.99 kW)*
Power factor	> 0.99 @ rated power	> 0.99 @ rated power
Distortion (THD)	< 5%	< 5%
AC Voltage	Rated 3 x 400 Vac	Rated 3 x 400 Vac
AC rated Current	24.7 A	31.9 A (29.4 A)*
Frequency	Rated 50 Hz	Rated 50 Hz
General specifications		
Max Operating Temperature	+50°C @ full power	+45°C @ full power
Humidity	0 to 95% RH	0 to 95% RH
Protection degree	IP 65	IP 65
Cooling	Forced Ventilation: electronically controlled fans	Forced Ventilation: electronically controlled fans
Max Efficiency	97.4%	97.6%
EU Efficiency	97.0%	97.2%
Noise level	< 50 dB	< 55 dB
Approvals	CE, VDE0126-1-1, DK5940, RD1663 / RD661	CE, VDE0126-1-1, DK5940, RD1663 / RD661
References		
Italy	**ISMG 3 17 IT**	**ISMG 3 20 IT**
Germany	**ISMG 3 17 DE**	**ISMG 3 20 DE**
Spain	**ISMG 3 17 SP**	**ISMG 3 20 SP**
France	**ISMG 3 17 FR**	**ISMG 3 20 FR**
Greece	**ISMG 3 17 GR**	**ISMG 3 20 GR**
Others	**ISMG 3 17 EN**	**ISMG 3 20 EN**

* Values for Italian version

Solar battery charger

SunBright series

Types	SBC	SBCLC
		
Dimensions (mm) HxWxD	107 x 65 x 35 (6A) 168 x 65 x 35 (10A-20A) 236 x 65 x 35 (30A)	168 x 65 x 35 (10A-20A) 236 x 65 x 35 (30A-45A)
Features	The solar battery charger can be used for 12V and 24V systems. The PWM (Pulse Width Modulation) battery charging has been optimized for longer battery life.	The solar battery charger and a load/light control device can be used for 12V, 24V and 48V systems. The PWM (Pulse Width Modulation) battery charging has been optimized for longer battery life and the state-of-the-art auto detector of day and night has been precisely applied to log the different length of night hours for lighting control.
Electrical specifications		
System Voltage Ratings	12, 24 VDC	12, 24, 48 VDC
Current Ratings	6A, 10A, 20A, 30A	10A, 20A, 30A, 45A
Accuracy	12/24 V: 0.1% ±50mV	12/24 V: 0.1% ±50 mV ; 48 V: 0.1% ±100 mV
Min./Max. operating voltage	9 V / 34 V (6/16 V for the 6 A model)	9 V / 68 V
Max. solar array Voc	50 V (30 V for the 6 A model)	140 V
Current consumption	9 mA (6 mA for the 6 A model)	-25 mA, (idle -3 mA)
High temp shutdown	90°C disconnect solar 70°C reconnect solar	90°C disconnect solar 90°C disconnect / diversion load 70°C reconnect solar / load / diversion Load
LVD (Load Voltage Disconnection)		adjustable
LVR (Load Voltage Reconnection)		adjustable
Overload Capacity		150% of rated current for transient surge
Battery charging		
Charge algorithm	PWM (Pulse Width Modulation), constant voltage	PWM (Pulse Width Modulation), constant voltage
Temp. comp. coeff.	-5 mV/°C / cell (25°C ref)	-5 mV/°C / cell (25°C ref)
Temp. comp. range	0°C to 50°C	0°C to 50°C
Temp. comp. setpoints	PWM, float, equalize (with BTS)	PWM, float, equalize (with BTS)
Battery type	Sealed, Flooded, L-16, NiCad	Sealed, Flooded, L-16, NiCad
Battery charging programs	yes (8 programs)	yes (8 programs)
Environmental data		
Ambient/Storage temp.	-40 to +45°C / -55 to +85°C	-40 to +45°C / -55 to +85°C
Humidity	100% (Not Condensing)	100% (Not Condensing)
Main features		
Adjustable	yes (by DIP switches)	yes (by DIP switches)
LED status	yes (Charge status)	yes (Charge status)
Equalzation	Manual / Auto selectable by Dipswitch	Manual / Auto selectable by Dipswitch
Equalization button	Reset / Stop	Reset / Stop
Light test button		yes
Lighting set-up selector		Always OFF , dust-to-dawn, always ON
Load / Light control		yes
Solar Overload Protection	yes	yes
Battery Temp. Sensor (BTS)	yes	yes
Battery Voltage Sensor (BVS)	yes	yes
Auto detection Day/Night		yes (by measuring night length)
Battery temp compensation	yes	yes
References		
	SBC6A	**SBCLC10A**
	SBC10A	**SBCLC20A**
	SBC20A	**SBCLC30A**
	SBC30A	**SBCLC45A**

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Solar control solution

EOS-Array solar control solution

Types	VMU-M	VMU-S	VMU-P	VMU-O
				
Dimensions (mm) HxWxD	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 16A/1000VDC [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 multicolor LED to show the status of the unit.	Front multicolour 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-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		

Solar control solution

EOS-Array Lite solar control solution

Types	VMU-ML	VMU-S0	VMU-P	VMU-O
				
Dimensions (mm) HxWxD	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 16A/1000VDC [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 from VMU-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		

Solar control solution

DC energy analyzer

Types	VMU-E	VMU-X
		
Dimensions (mm) HxWxD	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)	
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	

Solar control solution

	Web-server
Types	**Eos-Box**
	
Dimensions (mm) WxHxD	225 x 225 x 45
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 in a quick and automatic fashion via the internet, so the data is available wherever you are.
Type	Embedded PC
Operating system	Windows XP embedded
Operation	Fan less
Processor	AMD LX800 500MHz
Chipset	AMD LX+CS5536+ITE8888G
BIOS	Phoenix-Award 4Mbit with RPL/PXE LAN Boot ROM. SmartView and customer CMOS backup
Memory DDR	256MB SODIMM
Memory DOM	8GB
Back-up industrial CompactFlash™	8GB Type II (on request)
Communication port	
RS485	3 ports for Eos Array bus management 1 port for inverter and meters
Ethernet	1 for internet/LAN connection; 1 for local access
USB	3, for local access and external modem connection
LED	
Status and colour	Green for power-on. Orange for DOM memory access
Connections	
RS485	3 pole detachable screw terminal block per port
Ethernet	RJ-45 connector (10/100 Base-T)
USB	High speed USB 2.0
Power supply	
Voltage Supply	100 to 240 VAC
Power Consumption	70 W
References	
	EOSBOXDXXX

CARLO GAVAZZI

Wind generator

Mistral3K

Types	WT 3	WTI 3	WTB 3
			
Dimensions (mm) HxWxD	2500 x 2500 x 2370	535 x 360 x 200	700 x 400 x 200
Features	Designed according to latest concepts in wind generating technologies. Gearless, low weight, easy installation, low noise and tail passive furling to protect the turbine in case of strong winds.	To be used with Mistral 3k Wind turbine. Full MPPT control, anti-islanding protection, grid monitoring. 2 relay outputs for Braking function.	Designed for the actuation of braking function. To be used with Mistral 3k Wind Turbine and WTI3 Inverter. 2 front braking switches override driven by Inverter.
Generator data			
Maximum Output power (@ max speed 13,5m/s)	3 kW		
Rated Output power (@ 11m/s acc. To IEC61400-2)	2 kW		
Generator type	3 phase + N; 18 poles permanent magnets generator		
Turbine data			
Type	HAWT 3 fixed blades propeller		
Start up wind speed	2.5m/s		
Furling protection wind speed	13.5m/s		
Survival wind speed	≥50m/s		
Noise level (acc to IEC61400-11)	<60dB		
Input specifications			
AC input from turbine		3 phase	3 phase
Voltage range		0...240 V	0...240 V
Operating voltage range		30...200 V	30...200 V
AC output specifications			
Grid connection		1 phase	
Nominal AC power		3 kW	
Max AC power		3.3 kW	
AC voltage range		230 Vac ± 5%	
Frequency range		50 Hz	
Max efficiency		>95%	
General Specifications			
Propeller diameter	2.49 m		
Weights	53 kg		
Operation temperature	-20°C ... +50°C	-20°C...+50°C	
Storage temperature		-25°C...+80°C	
Humidity	0...95% RH	0...95% RH	0...95% RH
Degree of protection	IP54	IP43	IP65
Corrosion protection	Anti corrosion protective paint		
Approvals and norms	CE, RoHS, IEC6400-2	EN50178; EN50438, VDE012-1-1 (Interface protection)	
References			
Standard version	**WT 3**	**WTI 3**	**WTB 3**
Installed in cabinet with integrated Braking		**WTC 3**	
With S.P.D. and EM24			**WTB 3FE**

Digital energy production display

DPY series

Types	DPY 3	DPY 4	DPY 5
			
Dimensions (mm) HxWxD	500 x 700 x 80	420 x 500 x 70	800 x 1600 x 80
Features	With DPY 3 display it is possible to remotely show the production data of your own renewable energy production plant, this device can become a powerful marketing tool. The 3 fields can display actual power generation, the total Energy produced and the CO_2 saved. The construction can be indoor or outdoor, furthermore the background, the lettering and the logo can be customized. Can be connected to CG EM 24 or EM26.	With DPY 4 display it is possible to remotely show the production data of your own renewable energy production plant, The 4 rows are completely programmable. The pages are dynamic and can change after a certain programmed time. The bottom line can be scrolling. The background, the lettering and the logo can be customized. Can be connected to CG EM 24 or EM26.	The DPY 5 is the biggest display of the range. It has a real time clock and displays date time and temperature besides the production data: irradiation, actual power, energy, co2 saved and the days since installation.
Display specifications			
Number of lines / fields	3	4	5 / 8
Digits per line	5 + 6 + 6	programmable matrix	8 + 5 + 3 + 4 + 5 + 6 + 6 + 4
Digits dimension (mm)	50 X 70	425 x 30	50 X 70
Pixel type	High brightness LED	High brightness LED	High brightness LED
Brightness regulation	Automatic with crepuscolar sensor	Automatic with crepuscolar sensor	Automatic with crepuscolar sensor
Autoranging	ouly outdoor version	yes	yes
Rolling / Scrolling	no	yes	no
Mechanical specifications			
Housing material	powder coated aluminium	powder coated aluminium	powder coated aluminium
Front screen	Lexan 8mm	Lexan 8mm	Lexan 8mm
Front layout	Vynil 4 colours	Vynil 4 colours	Vynil 4 colours
Fixing / installation	Wall mounting brackets	Wall mounting brackets	Wall mounting brackets
Protection degree Indoor	IP 40	IP 20	IP 40
Protection degree Outdoor	IP 54	No	IP 54
General specifications			
Power supply	230 Vac 50 Hz	230 Vac 50 Hz	230 Vac 50 Hz
Communication	RS232 / RS 485	RS232 / RS 485	RS 485
References			
Indoor Standard	**DPY 30 70 50 HX**	**DPY 40 60 42 I**	**DPY 50 80 160 HX**
Indoor customized	**DPY 30 70 50 HP**	**DPY 40 60 42 IP**	**DPY 50 80 160 HP**
Outdoor Standard	**DPY 30 74 54 EX**		**DPY 50 80 160 EX**
Outdoor customized	**DPY 30 74 54 EP**		**DPY 50 80 160 EP**

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