

Our Products



Sense



Switch



Control



Safety

A lifetime of commitment to automation

A lifetime of commitment to automation

IKUINEN SITOUTUMINEN AUTOMAATIOON

En livslang forpligtigelse indenfor automation

TIJDLOZE VERBINTENIS MET AUTOMATISERING

Unsere Verpflichtung an die Automatisierung

UNA VITA DEDICATA ALL'AUTOMAZIONE

Toda una vida de compromiso con la automatización

UN ENGAGEMENT DE PÉRENNITÉ DANS L'AUTOMATISATION

สินค้าอัตโนมัติขึ้น มีความสำคัญต่อทุกชีวิต

一生对自动化的承诺

ЦЕЛАЯ ЖИЗНЬ ПОСВЯЩЕНА АВТОМАТИЗАЦИИ





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A guarantee of reliability

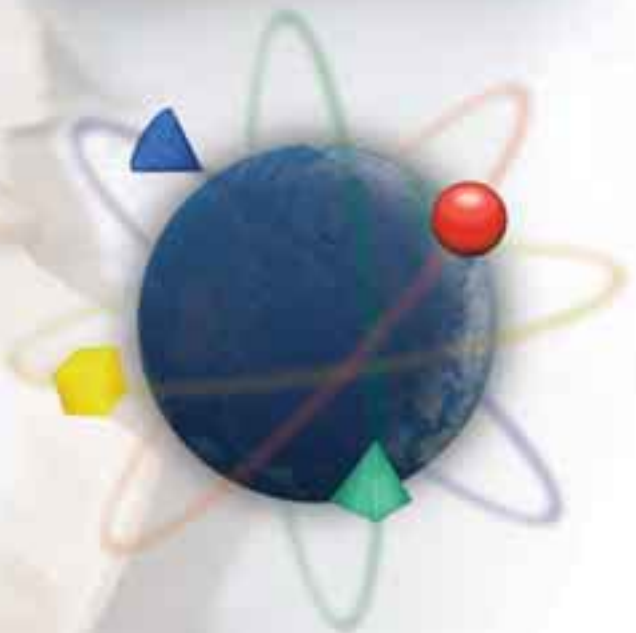


Sense



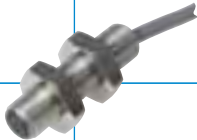
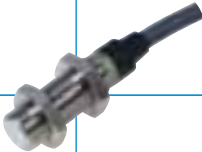
***Identifying,
understanding,
delivering and
implementing Solutions***

***... locally,
nationally
and globally !***





Proximity Sensors Inductive, 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)	2.0 mm		4.0 mm	4.0 mm
References				
NO	IA08BSF02DO		IA12DSF04DO	IA12DSF04DOM1
NC	IA08BSF02DC		IA12DSF04DC	IA12DSF04DCM1
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)	4.0 mm		8.0 mm	8.0 mm
References				
NO	IA08BSN04DO		IA12DSN08DO	IA12DSN08DOM1
NC	IA08BSN04DC		IA12DSN08DC	IA12DSN08DCM1
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 color	Yellow		Yellow	Yellow
Approvals/Marks	CE - UL - CSA		CE - UL - CSA	CE - UL - CSA

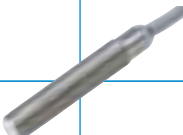


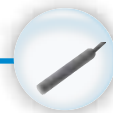


Types	M18, Short Body		M30, Short Body	
Connections	2 m Cable	M12 Connector	2 m Cable	M12 Connector
Flush Mountable				
Dimensions (mm)	M18 x 42	M18 x 55	M30 x 44	M30 x 55
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	500 Hz	500 Hz	400 Hz	400 Hz
Sensing distance (Sn)	8.0 mm	8.0 mm	15 mm	15 mm
References				
NO	IA18DSF08DO	IA18DSF08DOM1	IA30DSF15DO	IA30DSF15DOM1
NC	IA18DSF08DC	IA18DSF08DCM1	IA30DSF15DC	IA30DSF15DCM1
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				
Sensing distance (Sn)	14 mm	14 mm	22 mm	22 mm
References				
NO	IA18DSN14DO	IA18DSN14DOM1	IA30DSN22DO	IA30DSN22DOM1
NC	IA18DSN14DC	IA18DSN14DCM1	IA30DSN22DC	IA30DSN22DCM1
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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Proximity Sensors Inductive, 3-Wire, DC

Types	M5 Basic - Short Body		M8 Basic - Short Body	
Connections	2 m Cable	M8 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 30	M8 x 1 x 25
Operating frequency	4 kHz	4 kHz	2 kHz	2 kHz
Sensing distance (Sn)	1.2 mm	1.2 mm	1.5 mm	1.5 mm
References				
NPN-NO	IA05BSF10NO	IA05BSF10NOM5	IA08BSF15NO	IA08BSF15NOM5
PNP-NO	IA05BSF10PO	IA05BSF10POM5	IA08BSF15PO	IA08BSF15POM5
NPN-NC	IA05BSF10NC	IA05BSF10NCM5	IA08BSF15NC	IA08BSF15NCM5
PNP-NC	IA05BSF10PC	IA05BSF10PCM5	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)	PT	PT	SPT	SPT
Output current	< 150 mA @ 25°C	< 150 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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Flush Mountable

Dimensions (mm)	M8 x 45	M8 x 60	M8 x 69
Thread (mm)	M8 x 1 x 45	M8 x 1 x 40	M8 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	M8 x 69
Thread (mm)	M8 x 1 x 42	M8 x 1 x 37	M8 x 1 x 40
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2.5 mm	2.5 mm	2.5 mm

References

NPN-NO	IA08BLN25NO	IA08BLN25NOM5	IA08BLN25NOM1
PNP-NO	IA08BLN25PO	IA08BLN25POM5	IA08BLN25POM1
NPN-NC	IA08BLN25NC	IA08BLN25NCM5	IA08BLN25NCM1
PNP-NC	IA08BLN25PC	IA08BLN25PCM5	IA08BLN25PCM1

Characteristics
Flush and Non-Flush Mountable

Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.5 VDC	≤ 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 color	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Proximity Sensors Inductive, 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 30	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		
PNP-NO	IA12DSF02PO	IA12ASF02POM1		
NPN-NC				
PNP-NC				
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				
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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



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	IA18DLF05PO	IA18ALF05POM1
PNP-NO	IA18DSF05PO	IA18ASF05POM1		
NPN-NC			IA18DLF05PC	
PNP-NC				
Non-Flush Mountable				
Dimensions (mm)	M18 x 49.6	M18 x 63		
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30		
Operating frequency	1.5 kHz	1.5 kHz		
Sensing distance (Sn)	8 mm	8 mm		
References				
NPN-NO	IA18DSN08NO	IA18ASN08NOM1		
PNP-NO	IA18DSN08PO	IA18ASN08POM1		
NPN-NC				
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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Proximity Sensors Inductive, 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	IA30DSF10NO IA30DSF10PO	IA30ASF10NOM1 IA30ASF10POM1	IA30DLF10PO	IA30ALF10POM1
NPN-NO				
PNP-NO				
NPN-NC				
PNP-NC				
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	IA30DSN15NO IA30DSN15PO	IA30ASN15NOM1 IA30ASN15POM1		
NPN-NO				
PNP-NO				
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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Types	M8 Basic - Extended		M12 Basic - Extended	
Connections	2 m Cable	M8 Connector	2 m Cable	M12 Connector
Flush Mountable				
Dimensions (mm)	M8 x 35 x 30	M8 x 45	M12 x 41	M12 x 55.2
Thread (mm)	M8 x 1 x 35	M8 x 1 x 30	M12 x 1 x 30	M12 x 1 x 30
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	IA12DSF04NO	IA12ASF04NOM1
PNP-NO	IA08BSF20PO	IA08BSF20POM5	IA12DSF04PO	IA12ASF04POM1
NPN-NC	IA08BSF20NC	IA08BSF20NCM5		
PNP-NC	IA08BSF20PC	IA08BSF20PCM5		
Non-Flush Mountable				
Dimensions (mm)	M8 x 30	M8 x 45	M12 x 45	M12 x 59.2
Thread (mm)	M8 x 1 x 27	M8 x 1 x 22	M12 x 1 x 30	M12 x 1 x 30
Operating frequency	1 kHz	1 kHz	800 Hz	800 Hz
Sensing distance (Sn)	4 mm	4 mm	8 mm	8 mm
References				
NPN-NO	IA08BSN40NO	IA08BSN40NOM5	IA12DSN08NO	IA12ASN08NOM1
PNP-NO	IA08BSN40PO	IA08BSN40POM5	IA12DSN08PO	IA12ASN08POM1
NPN-NC	IA08BSN40NC	IA08BSN40NCM5		
PNP-NC	IA08BSN40PC	IA08BSN40PCM5		
Characteristics				
Flush and Non-Flush Mountable				
Rated operating voltage	10 - 30 VDC	10 - 30 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)	PT	PT	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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

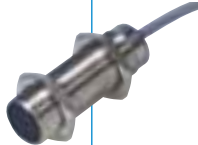


Proximity Sensors Inductive, 3-Wire, DC, Extended Range

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 30
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				
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
NPN-NC				
PNP-NC				
Characteristics				
Flush and Non-Flush Mountable				
Rated operating voltage	10 - 30 VDC	10 - 30 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)	PT	PT	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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

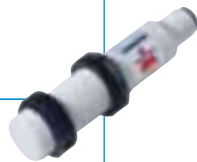


Types	M8-Analog.-Short	M12-Analog.-Short	M12-Analogue-Long	
Connections	2 m Cable	2 m Cable	2 m Cable	2 m Cable
				
Dimensions (mm)	M8 x 45	M12 x 50	M12 x 80	M12 x 50
Thread (mm)	M8 x 1 x 40	M12 x 1 x 40	M12 x 1 x 70	M12 x 1 x 45
Sensing distance (Sn)	0.1 - 1.5 mm	0.3 - 5 mm	0.3 - 3 mm	0.1 - 3 mm
Output	20 - 40 mA	0 - 10 mA	1 - 10 mA	20 - 4 mA
References				
PNP	IA08ALC15AG-K	IA12ASC05AK-K	IA12ALC03AK-K	IA12ALC03AG-K
Characteristics				
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 +70°C	0°C to +70°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-Analog.-Short	M30-Analog.-Long
Connections	2 m Cable	2 m Cable	2 m Cable	2 m Cable
				
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				
Rated operating voltage	12 - 30 VDC	18 - 30 VDC	17 - 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



Proximity Sensors Capacitive, TRIPLESIELD™

Types	M18-DC TRIPLESIELD™		M18-AC TRIPLESIELD™		
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	CA18CLF08NA	CA18CLF08NAM1		
	PNP-NO	CA18CLF08PA	CA18CLF08PAM1		
	NPN-NC	CA18CLF08NA	CA18CLF08NAM1		
	PNP-NC	CA18CLF08PA	CA18CLF08PAM1		
	Thyristor (SRC) NO			CA18CLF08TO	
	Thyristor (SRC) NC			CA18CLF08TC	
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	CA18CLN12NA	CA18CLN12NAM1		
	PNP-NO	CA18CLN12PA	CA18CLN12PAM1		
	NPN-NC	CA18CLN12NA	CA18CLN12NAM1		
	PNP-NC	CA18CLN12PA	CA18CLN12PAM1		
	Thyristor (SRC) NO			CA18CLN12TO	
	Thyristor (SRC) NC			CA18CLN12TC	
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 color	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

Sense



Types

M30-DC TRIPLESIELD™

Connections

2 m Cable

M12 Connector

2 m Cable

M12 Connector

Flush Mountable

Dimensions (mm)
Thread (mm)
Operating frequency
Sensing distance (Sn)



M30 x 63.6
M30 x 1.5 x 50
50 Hz
2 - 16 mm (adjustable)

M30 x 75.6
M30 x 1.5 x 50
50 Hz
2 - 16 mm (adjustable)

M30 x 63.6
M30 x 1.5 x 50
50 Hz
2 - 16 mm (adjustable)

M30 x 75.6
M30 x 1.5 x 50
50 Hz
2 - 16 mm (adjustable)

References

NPN-NO
PNP-NO
NPN-NC
PNP-NC

EC3016NPASL
EC3016PPASL
EC3016NPASL
EC3016PPASL

EC3016NPASL-1
EC3016PPASL-1
EC3016NPASL-1
EC3016PPASL-1

EC3016NPAPL
EC3016PPAPL
EC3016NPAPL
EC3016PPAPL

EC3016NPAPL-1
EC3016PPAPL-1
EC3016NPAPL-1
EC3016PPAPL-1

Non-Flush Mountable

Dimensions (mm)
Thread (mm)
Operating frequency
Sensing distance (Sn)



M30 x 63.6
M30 x 1.5 x 50
50 Hz
4 - 25 mm (adjustable)

M30 x 75.6
M30 x 1.5 x 50
50 Hz
4 - 25 mm (adjustable)

M30 x 63.6
M30 x 1.5 x 50
50 Hz
4 - 25 mm (adjustable)

M30 x 75.6
M30 x 1.5 x 50
50 Hz
4 - 25 mm (adjustable)

References

NPN-NO
PNP-NO
NPN-NC
PNP-NC

EC3025NPASL
EC3025PPASL
EC3025NPASL
EC3025PPASL

EC3025NPASL-1
EC3025PPASL-1
EC3025NPASL-1
EC3025PPASL-1

EC3025NPAPL
EC3025PPAPL
EC3025NPAPL
EC3025PPAPL

EC3025NPAPL-1
EC3025PPAPL-1
EC3025NPAPL-1
EC3025PPAPL-1

Characteristics Flush and Non-Flush Mountable

Rated operating voltage
Voltage drop
Degree of protection
Protection Short-circuit (S)
Reverse polarity (P)
Transients (T)
Output current
Housing material
Operating temperature
LED color
Approvals/Marks

10 - 40 VDC
< 2.5 VDC
IP 67
PST
< 200 mA
Stainless steel
-25°C to +80°C
Yellow
CE - UL - CSA

10 - 40 VDC
< 2.5 VDC
IP 67
PST
< 200 mA
Stainless steel
-25°C to +80°C
Yellow
CE - UL - CSA

10 - 40 VDC
< 2.5 VDC
IP 67
PST
< 200 mA
Thermoplastic polyester
-25°C to +80°C
Yellow
CE - UL - CSA

10 - 40 VDC
< 2.5 VDC
IP 67
PST
< 200 mA
Thermoplastic polyester
-25°C to +80°C
Yellow
CE - UL - CSA



Proximity Sensors Capacitive, TRIPLESIELD™

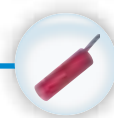
Types	M30-AC TRIPLESIELD™			
Connections	2 m Cable	M12 Connector	2 m Cable	M12 Connector
Flush Mountable				
Dimensions (mm)	M30 x 63.6	M30 x 75.6	M30 x 63.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)
References				
NPN-NO				
PNP-NO				
NPN-NC				
PNP-NC				
Thyristor (SRC) NO	EC3016TBAPL	EC3016TBAPL-6	EC3016TBASL	EC3016TBASL-6
Thyristor (SRC) 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	50 Hz
Sensing distance (Sn)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)
References				
NPN-NO				
PNP-NO				
NPN-NC				
PNP-NC				
Thyristor (SRC) NO	EC3025TBAPL	EC3025TBAPL-6	EC3025TBASL	EC3025TBASL-6
Thyristor (SRC) 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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Types	M18 Teach-in TRIPLESIELD™		M30 Teach-in TRIPLESIELD™	
Connections	2 m Cable	M12 Connector	2 m Cable	M12 Connector
Flush Mountable				
Dimensions (mm)	M18 x 89.55	M18 x 89.2	M30 x 99.2	M30 x 90.45
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	15 Hz	15 Hz	15 Hz	15 Hz
Sensing distance (Sn)	0.1 - 12 mm (Teach-in)	0.1 - 12 mm (Teach-in)	0.1 - 20 mm (Teach-in)	0.1 - 20 mm (Teach-in)
References				
NPN-NO	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
PNP-NO	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
NPN-NC	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
PNP-NC	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
Non-Flush Mountable				
Dimensions (mm)	M18 x 89.55	M18 x 89.2	M30 x 99.2	M30 x 90.45
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	15 Hz	15 Hz	15 Hz	15 Hz
Sensing distance (Sn)	0.1 - 20 mm (Teach-in)	0.1 - 20 mm (Teach-in)	0.1 - 20 mm (Teach-in)	0.1 - 40 mm (Teach-in)
References				
NPN-NO	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
PNP-NO	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
NPN-NC	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
PNP-NC	CA18CLC20BP	CA18CLC20BPM1	CA30CLC40BP	CA30CLC40BPM1
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)	PT	PT	PT	PST
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
LED color	Yellow	Yellow	Yellow	Yellow
Special failures	Teach-in , Humidity compensation, Dirt and moisture compensation, Alarm output	Teach-in , Humidity compensation, Dirt and moisture compensation, Alarm output	Teach-in , Humidity compensation, Dirt and moisture compensation, Alarm output	Teach-in , Humidity compensation, Dirt and moisture compensation, Alarm output
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA



Sense



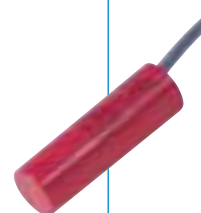
Capacitive Level Sensors for solid, fluid and granulated substances

Functions

With ON delay

With OFF delay

Without delay



Dimensions (mm)
Thread
Operating frequency
Sensing distance (Sn)

Ø32 x 101
Smooth
1 Hz
4 - 12 mm (adjustable)

Ø32 x 101
Smooth
1 Hz
4 - 12 mm (adjustable)

Ø32 x 101
Smooth
1 Hz
4 - 12 mm (adjustable)

References

120 VAC
230 VAC
24 VAC/DC

VC11RT12010M
VC11RT23010M
VC11RT92410M

VC12RT12010M
VC12RT23010M
VC12RT92410M

VC12RN120
VC12RN230
VC12RN924

General Characteristics

Consumption
Hysteresis

< 1.5 W
1.5 mm at 7 mm sensing distance

< 1.5 W
1.5 mm at 7 mm sensing distance

< 1.5 W
1.5 mm at 7 mm sensing distance

Output
Relay SPDT
2 A / 240 VAC

Relay SPDT
2 A / 240 VAC
1 s - 10 m

Relay SPDT
2 A / 240 VAC
1 s - 10 m

Relay SPDT
2 A / 240 VAC
1 s - 10 m

Time delay

1 s - 10 m

1 s - 10 m

1 s - 10 m

Degree of protection

Thermoplastic polyester

Thermoplastic polyester

Thermoplastic polyester

Housing material

-20°C to +70°C

-20°C to +70°C

-20°C to +70°C

Operating temperature

-20°C to +70°C

-20°C to +70°C

-20°C to +70°C

LED color

Yellow

Yellow

Yellow

Approvals/Marks

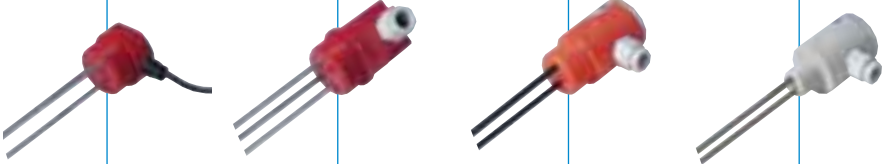
CE - UL - CSA

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CE - UL - CSA



Proximity Sensors Conductive

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 (VNYI)	Yes	Yes
Isolation	Polyethylene	Polyethylene	Polyethylene	Polypropylene
Housing				
Pipe thread	1 1/2"	1 1/2"	1/2" (VPC x05) or 1" (VPC x10)	1/2" (VPP x05) or 1" (VPP 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		
Characteristics				
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

Types	VT / VT1	VS2	VH1 / VH2	A 94-10
Connections	Cable (Silicone)	Screw connection	Cable (Neoprene)	Cable (Neoprene)
				
Electrodes				
Number of electrodes	1, 2, 3 or 4	2	1 (hanging)	2 (hanging)
Diameter/length (mm)	D5/1000	D4/400	D18/365 or D32/755	D22/750
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Isolation of electrodes	Yes (VTI)	Yes	No (VH1) - Yes (VH2)	No
Isolation	Teflon	Teflon	Nylon 6	
Housing				
Pipe thread	1 1/2"			
Material	Teflon	Silumin/Stainless steel	Nylon 6	Polyester
References				
1 electrodes	VT1 VTI1		VH1 or VH2	
2 electrodes	VT2 VTI2	VS2		A 94-10
3 electrodes	VT3 VTI3			
4 electrodes	VT4 VTI4			
Characteristics				
Degree of protection	IP 67	IP 54	IP 67	IP 67
Operating temperature	0°C to +145°C	0°C to +120°C	0°C to +90°C	0°C to +60°C
Approvals/Marks	CE	CE	CE	CE

Sense



Amplifiers for charging/discharging, alarm indication				
Types	S196	S1961	S197	SV190
				
Function	Filling or emptying. Selectable by toggle switches. Conductive liquids.	Filling or emptying. Selectable by toggle switches. Conductive liquids.	Emptying or filling (4 alarm levels). Conductive liquids.	Filling or emptying. Capacitive sensors
Adjustable Sensitivity	Yes 3.5-30 k Ω (ON) 15-60 k Ω (OFF)	Yes 0.2-220 k Ω	No Fixed	No Fixed
Probe voltage	6 Vpp	6 Vpp	12 VAC	12 VDC 60 mA
Output	Relay-1 DPDT-8A/250V	Relay-1 SPDT-5A/250V	Relay-1 SPDT-10A/250V	Relay-SPDT-10A/250V
Power supply	24/115/230 VAC	24/115/230 VCA or 24 VDC	24/115/230 VCA	24/115/230 VAC or 24 VDC
Recommended sensors	VPP, VN, VNI, VNY, VPC VNYI, VT, VTI, VS, VH	VPP, VN, VNI, VNY, VPC VNYI, VT, VTI, VS, VH	A94-10, A94-20 VH1, VH2	Optical: VPA, VPB, VPO1, 02, 03, 04, 22, 23, 24 Capacitive: DR, EC
References				
24 VAC				
Output - SPDT	S196 156 024	S1961 156 024	S197 256 024	SV 190 024
Output - DPDT	S196 166 024			
115 VAC				
Output - SPDT	S196 156 115	S1961 156 115	S197 256 115	SV 190 115
Output - DPDT	S196 166 115			
230 VAC				
Output - SPDT	S196 156 230	S1961 156 230	S197 256 230	SV 190 230
Output - DPDT	S196 166 230			
24 VDC				
Output - SPDT		S1961 156 724		SV 190 724
Output - DPDT				
Characteristics				
Output LED colour	Yellow	Yellow	Yellow	Red
Operating temperature	20°C to +50°C	20°C to +50°C	20°C to +50°C	20°C to +50°C
Mounting	Plug 11 pin circular	Plug 11 pin circular	Plug 11 pin circular	Plug 11 pin circular
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

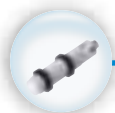


Ultrasonic Sensors, M18 Plastic, DC, Analogue

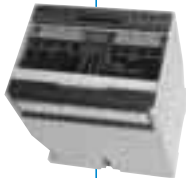
	Integrated Amplifier Switching output	Integrated Amplifier Switching output	Basic analogue 0-10 VDC or 4-20 mA	Basic analogue 0-10 VDC or 4-20 mA
Types	UA18CL..	UA18CL..M1	UA18CLD..	UA18CLD..M1
Connections	2 m Cable	M12 Connector	2 m Cable	M12 Connector
				
Dimensions (mm)	M18 x 89	M18 x 97	M18 x 89	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		
Characteristics				
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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE	CE



	Integrated Amplifier		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	UA18CLD25NOM1		
PNP-NO	UA30CLD25PO	UA18CLD25POM1		
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		300 - 2500 mm adj.		
Sensing distance (Sn)		1 Hz		
PNP-NO		UA30CLS25POM1		
Characteristics				
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 color	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE	CE



Ultrasonic Sensors, M30, Square-head, Programmable

	Programmable RS232	Integrated Amplifier	Sensor head for UC EU 80-1	Amplifier for UC80CND
Types	UA30CLD..M7	UA30CLD....TI	UC80CND80FS..	UCEU80-1
Connections	M16 Connector	M12 Connector	M12 Connector	Terminals
				
Dimensions (mm)	M18 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	UA30CLD20FKM7	UA30CLD20POM1TI		
0-10 VDC	UA30CLD20FGM7	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				UCEU80-1
-PLC				
-Display				BCD, HEX
-RS232				
-Sensor supply				
Programmable functions				Full setup
Characteristics				
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	IP67	IP67	IP67	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	CE	CE	CE



	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 Hz
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
Characteristics				
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)				
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	CE	CE	CE



Photoelectric Sensors

	M18 Plastic, AC, Integrated Amplifier		M18 Metal, AC, Integrated Amplifier	
Types	PA18CL	PA18CL.M6	PA18AL	PA18AL..M6
Connections	2 m Cable	M12 Connector	2 m Cable	M12 Connector
				
Dimensions (mm)	M18 x 71.5	M18 x 83.5	M18 x 71.5	M18 x 83.5
Diffuse reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	100 mm, fixed	100 mm, fixed		
Thyristor (SCR) NC	PA18CLD01TC	PA18CLD01TCM6		
Thyristor (SCR) NO	PA18CLD01TO	PA18CLD01TOM6		
Sensing distance (Sn)	200 mm, fixed	200 mm, fixed		
Thyristor (SCR) NC	PA18CLD02TC	PA18CLD02TCM6		
Thyristor (SCR) NO	PA18CLD02TO	PA18CLD02TOM6		
Sensing distance (Sn)	400 mm, fixed	400 mm, fixed		
Thyristor (SCR) NC	PA18CLD04TC	PA18CLD04TCM6		
Thyristor (SCR) NO	PA18CLD04TO	PA18CLD04TOM6		
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable
Thyristor (SCR) NC	PA18CLD04TCSA	PA18CLD04TCM6SA	PA18ALD04TCSA	PA18ALD04TCM6SA
Thyristor (SCR) NO	PA18CLD04TOSA	PA18CLD04TOM6SA	PA18ALD04TOSA	PA18ALD04TOM6SA
Retro reflective Polariz.				
Operating frequency	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
Characteristics				
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



	Miniature, DC, Integrated amplifier			
Types	PD40..	PD40..M5	PD40..	PD40..M5
Connections	2 m Cable	M8 Connector pigtail	2 m Cable	M8 Connector pigtail
				
Dimensions (mm)	10 x 40 x 13.5	10 x 40 x 13.5	20 x 32 x 10	20 x 32 x 10
Diffuse reflective				
Operating frequency	500 Hz	500 Hz		
Sensing distance (Sn)	250 mm, adjustable	250 mm, adjustable		
NPN NO/NC	PD40CND25NP	PD40CND25NPM5		
PNP NO/NC	PD40CND25PP	PD40CND25PPM5		
Diffuse reflective background suppress.				
Operating frequency			250 Hz	250 Hz
Sensing distance (Sn)			80 mm, adjustable	80 mm, adjustable
NPN NO/NC			PD40CNB08NP	PD40CNB08NPM5
PNP NO/NC			PD40CNB08PP	PD40CNB08PPM5
Retro reflective Polariz.				
Operating frequency	500 Hz	500 Hz		
Sensing distance (Sn)	1.5 m, adjustable	250 mm, adjustable		
NPN NO/NC	PD40CNP15NP	PD40CNP15NPM5		
PNP NO/NC	PD40CNP15PP	PD40CNP15PPM5		
Through-beam Emitter				
Sensing distance (Sn)	4 m	4 m		
	PD40CNT40	PD40CNT40M5		
Through-beam Receiver				
Operating frequency	500 Hz	500 Hz		
Sensing distance (Sn)	4 m, adjustable	4 m, adjustable		
NPN NO/NC	PD40CNT40NP	PD40CNT40NPM5		
PNP NO/NC	PD40CNT40PP	PD40CNT40PPM5		
Fibre Optical Sensor Glass fibres				
Operating frequency	500 Hz	500 Hz		
Sensing distance (Sn)	120 mm (fibre depend.)	120 mm (fibre depend.)		
PNP NO/NC	PD40CNX12NP	PD40CNX12NPM5		
Characteristics				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC
Degree of protection	IP 67 (IP 65 CNX type)	IP 67 (IP 65 CNX type)	IP 67	IP 67
Protection Short-circuit(S)	SPT	SPT	SPT	SPT
Rev. polarity(P)-Transients(T)	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Load current	ABS	ABS	ABS	ABS
Housing material	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Operating temperature	Yellow	Yellow	Yellow	Yellow
LED colour	CE	CE	CE	CE
Approvals/Marks				



Photoelectric Sensors

	Miniature, DC, Integrated Amplifier		DC, Integrated Amplifier	
Types	PD32.	PD32.M5	E.55...	E.55...-1
Connections	2 m Cable	M8 Connector	2 m Cable	M12 Connector
				
Dimensions (mm)	12 x 20 x 32	12 x 20 x 32	35 x 55 x 15	35 x 55 x 15
Diffuse reflective				
Operating frequency	1000 Hz	1000 Hz	500 Hz (*100 Hz)	500 Hz (*100 Hz)
Sensing distance (Sn)	500 mm, Teach-in	500 mm, Teach-in	200 mm, adjustable	200 mm, adjustable
NPN NO+NC	PD32CND50NPT	PD32CND50NPM5T	ED5502NPAP	ED5502NPAP-1
PNP NC+NC	PD32CND50PPT	PD32CND50PPM5T	ED5502PPAP	ED5502PPAP-1
Sensing distance (Sn)			600 mm, adjustable*	600 mm, adjustable*
NPN NO+NC			ED5506NPAP	ED5506NPAP-1
PNP NC+NC			ED5506PPAP	ED5506PPAP-1
Diffuse reflective background suppress.				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	120 mm, Teach-in	120 mm, Teach-in		
NPN NO+NC	PD32CNB12NPT	PD32CNB12NPM5T		
PNP NC+NC	PD32CNB12PPT	PD32CNB12PPM5T		
Retro reflective Polariz.				
Operating frequency	1000 Hz	1000 Hz	250 Hz	250 Hz
Sensing distance (Sn)	3 m, Teach-in	3 m, Teach-in	2 m, adjustable	2 m, adjustable
NPN NO+NC	PD32CNP30NPT	PD32CNP30NPM5T	EP5520NPAP	EP5520NPAP-1
PNP NC+NC	PD32CNP30PPT	PD32CNP30PPM5T	EP5520PPAP	EP5520PPAP-1
Through-beam Emitter				
Sensing distance (Sn)	6 m	6 m	5 m	5 m
	PD32CNT60	PD32CNT60M5	ET5505	ET5505-1
Through-beam Receiver				
Operating frequency	500 Hz	500 Hz	100 Hz	100 Hz
Sensing distance (Sn)	6 m, Teach-in	6 m, Teach-in	5 m, adjustable	5 m, adjustable
NPN NO+NC	PD32CNT60NPT	PD32CNT60NPM5T	ET5505NPAP	ET5505PPAP
PNP NO+NC	PD32CNT60PPT	PD32CNT60PPM5T	ET5505NPAP-1	ET5505PPAP-1
Transparent detection				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	500 mm, Teach-in	500 mm, Teach-in		
NPN NO+NC	PD32CNG05NPT	PD32CNG05NPM5T		
PNP NO+NC	PD32CNG05PPT	PD32CNG05PPM5T		
Characteristics				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.4 VDC	≤ 2.4 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67a
Protection Short-circuit (S)				
Reverse polarity (P)				
Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 200 mA	≤ 200 mA
Housing material	ABS	ABS	PC/ABS	PC/ABS
Operating temperature	-25°C to +60°C	-25°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow	Yellow
Approvals/Marks	CE - cUL	CE - cUL	CE	CE

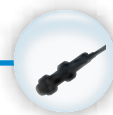
Sense



	DC, Integrated Amplifier		DC, Integrated Amplifier	
Types	PA.	PA...-1	PB.	PB...-1
Connections	2 m Cable	M12 Connector	2 m Cable	M12 Connector
				
Dimensions (mm)	36 x 18 x 63	36 x 18 x 63	18 x 75 x 36	18 x 75 x 36
Diffuse reflective background suppress.				
Operating frequency	1000 Hz	1000 Hz	1000 Hz	1000 Hz
Sensing distance (Sn)	150 mm, adjustable	150 mm, adjustable	150 mm, adjustable	150 mm, adjustable
NPN NO+NC	PA15INPA	PA15INPA-1	PB15INPA	PB15INPA-1
PNP NC+NC	PA15IPPA	PA15IPPA-1	PB15IPPA	PB15IPPA-1
Retro reflective Polariz.				
Operating frequency	1000 Hz	1000 Hz	1000 Hz	1000 Hz
Sensing distance (Sn)	3 m, adjustable	3 m, adjustable	3 m, adjustable	3 m, adjustable
NPN NO+NC	PA3PNPA	PA3PNPA-1	PB3PNPA	PB3PNPA-1
PNP NC+NC	PA3PPPA	PA3PPPA-1	PB3PPPA	PB3PPPA-1
Through-beam Emitter				
Sensing distance (Sn)			12 m	12 m
NPN NO+NC			PB12TN	PB12TN-1
PNP NC+NC			PB12TP	
Through-beam Receiver				
Operating frequency			1000 Hz	1000 Hz
Sensing distance (Sn)			12 m, adjustable	12 m, adjustable
NPN NO+NC			PB12RNPA	PB12RNPA-1
PNP NO+NC			PB12RPPA	PB12RPPA-1
Characteristics				
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
Load current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	Aluminium	Aluminium	Reinforced ABS	Reinforced ABS
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE	CE



	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	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	
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
Characteristics			
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



	Integrated Amplifier Colour Sensors	Integrated Amplifier	
Types	PD12..	MHTR	MNTR
Connections	M12 Connector	2 m Cable	2 m Cable
			
Dimensions (mm)	61 x 26 x 125	M12 x 61	Ø20 x 86
Diffuse reflective			
Operating frequency	500 Hz		
Sensing distance (Sn)	4-50 mm (fiber depend.)		
NPN/PNP NO+NC	PD12CNC01BPT 1 Output		
NPN/PNP NO+NC	PD12CNC04BPT 4 Outputs		
Through-beam Emitter			
Sensing distance (Sn)		5 m MHT05	5 m MNT05
Through-beam Receiver			
Operating frequency		100 Hz	100 Hz
Sensing distance (Sn)		5 m, fixed	5 m, fixed
NPN NO		MHR05NNO	MNR05NNO
NPN NC		MHR05NNC	MNR05NNC
PNP NO		MHR05PNO	MNR05PNO
PNP NC			
Characteristics			
Rated operating voltage	12-240 VDC / 24-240 VAC	10 - 30 VDC	10 - 30 VDC
Voltage drop	Relay SPDT	≤ 2 VDC	≤ 2 VDC
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S)			
Reverse polarity (P)			
Transients (T)	PT	PT	PT
Load current	≤ 3 A	< 200 mA	≤ 200 mA
Housing material	Reinforced ABS/PC	Luran®	PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow + Green	Yellow	None
Approvals/Marks	CE - UL - CSA	CE	CE



	Integrated Amplifier	
Types	PD60..	PD60..M5
Connections	2 m Cable	M8 Connector
		
Dimensions (mm)	13 x 30 x 60	13 x 30 x 60
Transparent detection		
Operating frequency	1000 Hz	1000 Hz
Sensing distance (Sn)	0.8 m, Teach-in	0.8 m, Teach-in
NPN/PNP NO/NC	PD60CNG08BPT	PD60CNG08BPM5T
Sensing distance (Sn)	1.4 m, Teach-in	1.4 m, Teach-in
NPN/PNP NO/NC	PD60CNG14BPT	PD60CNG14BPM5T
Fibre Optical Sensor Plastic fibres		
Operating frequency	1000 Hz	1000 Hz
Sensing distance (Sn)	200 mm (T=teach-in)	200 mm (T=teach-in)
NPN/PNP NO/NC	PD60CNX20BP; PD60CNX20BPT	PD60CNX20BPM5; PD60CNX20BPM5T
Fibre Optical Sensor Glass fibres		
Operating frequency	1000 Hz	1000 Hz
Sensing distance (Sn)	200 mm (T=teach-in)	200 mm (T=teach-in)
NPN/PNP NO/NC	PD60CNV20BP; PD60CNV20BPT	PD60CNV20BPM5; PD60CNV20BPM5T
Contrast Sensor		
Operating frequency	20 kHz	20 kHz
Sensing distance (Sn)	18 mm (fibre depend.)	18 mm (fibre depend.)
NPN/PNP NO/NC	PD60CNK18BPT	PD60CNK18BPM5T
Characteristics		
Rated operating voltage	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC
Degree of protection	IP 65 (IP 67 CNG type)	IP 65 (IP 67 CNG type)
Protection Short-circuit (S)		
Reverse polarity (P)		
Transients (T)	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA
Housing material	PC	PC
Operating temperature	0°C to +60°C	0°C to +60°C
LED colour	Red	Red
Approvals/Marks	CE	CE





	Integrated Amplifier		
Types	PM..	PM..	PM..
Connections	Terminals Transistor	Terminals Single Relay	Terminals Dual Relay
			
Dimensions (mm)	25 x 65 x 81	25 x 65 x 81	25 x 65 x 81
Diffuse reflective			
Oper. freq. / Sens. dist. (Sn)	100 Hz / 0.8 m, adjustable	20 Hz	
NPN NO+NC	PMD8NG / NGT PMD8NI / NIT		
PNP NC+NC	PMD8PG / PGT PMD8PI / PIT		
Sensing distance (Sn)		0.8 m, adjustable	
Relay SPDT Multivoltage		PMD8RG / RGT PMD8RI / RIT	
Retro reflective Polariz.			
Oper. freq. / Sens. dist. (Sn)	100 Hz / 6 m, fixed	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed
NPN NO+NC	PMP6NG / NGT PMP6NI / NIT		
PNP NC+NC	PMP6PG / PGT PMP6PI / PIT		
Relay SPDT Multivoltage		PMP12RG PMP12RI	PMP12RS
Retro reflective			
Oper. freq. / Sens. dist. (Sn)	100 Hz / 10 m, fixed		
NPN NO+NC	PMR10NG / NGT PMR10NI / NIT		
PNP NC+NC	PMR10PG / PGT PMR10PI / PIT		
Relay SPDT Multivoltage		PMR10RG / RGT PMR10RI / RIT	PMR10RS
Through-beam Emitter			
Sensing distance (Sn)	20 m		20 m
	PMT20G PMT20I		PMT20GS
Through-beam Receiver			
Oper. freq. / Sens. dist. (Sn)	100 Hz / 20 m, fixed	20 Hz / 20 m, fixed	20 Hz / 20 m, fixed
NPN NO/NC	PMT20NG / NGT PMT20NI / NIT		
PNP NO/NC	PMT20PG / PGT PMT20PI / PIT		
Relay SPDT Multivoltage		PMT20RG / RGT PMT20RI / RIT	PMT20RS
Characteristics			
Rated operating voltage	10 - 40 VDC	12 - 240 VDC / 24 - 240 VAC	24 VAC/DC $\pm 20\%$
Volt. drop / Degree of protect.	≤ 2.5 VDC / IP 67	Relay SPDT / IP 67	Relay 2 x SPST / IP 67
Protection Short-circuit(S)			
Rev. polarity(P)-Transients(T)	SPT	PT	PT
Load curr. / Housing mat.	≤ 200 mA / PC/ABS	≤ 3 A / PC/ABS	≤ 3 A / PC/ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - cUL
Remarks	G = PG 13.5 Outlet I = 1/2"NPT Outlet - T = Timer	G = PG 13.5 Outlet I = 1/2"NPT Outlet - T = Timer	G = PG 13.5 Outlet I = 1/2"NPT Outlet - T = Timer



Photoelectric Sensors

	Sensors	Amplifier 1-channel	Amplifier 2-channels	Amplifier 3-channels
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
Through-beam Emitter				
Sensing distance (Sn)	15 m			
Ø12 x 20	MPFT15-4 MPFT15-4C			
Ø18 x 25	MPFT15-D18-4 MPFT15-D18-4C			
M14 x 23	MPFT15-M14-4 MPFT15-M14-4C			
Through-beam Receiver				
Sensing distance (Sn)	15 m			
Ø12 x 20	MPFT15-4 MPFT15-4C			
Ø18 x 25	MPFT15-D18-4 MPFT15-D18-4C			
M14 x 23	MPFT15-M14-4 MPFT15-M14-4C			
Amplifier		1-Channel	2-Channel	3-Channel
12-24 VAC/DC ±15%		MPF1-912RSL	MPF2-912RSL	MPF3-912RSL
Low current		MPF1-912RS	MPF2-912RS	MPF3-912RS
12-24 VAC/DC ±15%		MPF1-115RS	MPF2-115RS	MPF3-115RS
115 VAC ±15%		MPF1-230RS	MPF2-230RS	MPF3-230RS
230 VAC ±15%				
Characteristics				
Rated operating voltage	Powered by amplifier	See amplifier reference	See amplifier reference	See amplifier reference
Output		1 x 2 SPST in serie	2 x 2 SPST in serie	3 x 2 SPST in serie
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		PC	PC	PC
-Sensor Ø12 + D18	PC + ABS			
-Sensor	PC + Stainless steel			
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	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL
Remarks	C = Pigtail connector version			
Optical angle (degrees)	± 5			



	Sensors for Amplifiers			
Types	MOF..	MNF..	MCF..	MDF..
Connections	10 m Cable	Terminals	Terminals	Terminals
				
Dimensions (mm)	Ø10 x 42	Ø20 x 80	Ø13.5 x 65	Ø13.5 x 55
Through-beam Emitter				
Sensing distance (Sn)	5 m			
Max. ±2° optical angle	MOFT5 MOFT5-M12-2			
Sensing distance (Sn)	20 m			
Max. ±2° optical angle	MOFT20 MOFT20-M12-2			
Sensing distance (Sn)	50 m			
Max. ±2° optical angle	MOFT50 MOFT50-M12-2			
Sensing distance (Sn)	20 m			
Max. ±5° optical angle	MOFT20-5 MOFT20-M12-5			
Sensing distance (Sn)	20 m	15 m	30 m	30 m
Max. ±8° optical angle	MOFT20-8 MOFT20-M12-8 MOFT20-M14-8	MNFT15 MMFT15	MCFT30	MDFR30
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 MOFR-M12-2 MOFR-5 MOFR-M12-5 MOFR-8 MOFR-M12-8 MOFR-M14-8	MNFR15 MMFR15	MCFR30	MDFR30
Max. ±5° optical angle				
Max. ±8° optical angle				
Characteristics				
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	IP 66 - IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)				
Transients (T)	SPT	SPT	SPT	SPT
Housing material Sensor	Ø10: PC M14 + M14: PC + SS	PC M14 + M14: PC + SS	Acetal, glass reinforced	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	CE	CE



Types	Amplifiers for Sensors			
Connections	11-pole plug	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	35 x 80 x 81.5
Description	Standard amplifier S1421 with timedelay	8 different frequencies for neighbour immunity	Master / Slave	Automatic sensitivity adjustment
References Amplifier				
24 VDC $\pm 15\%$	S1420156724	S1422156724	S1423156724	S1425156724
24 VAC $\pm 15\%$	S1420156024	S1422156024	S1423156024	S1425156024
115 VAC $\pm 15\%$	S1420156115	S1422156115	S1423156115	S1425156115
230 VAC $\pm 15\%$	S1420156230	S1422156230	S1423156230	S1425156230
24 VDC $\pm 15\%$	S1421156724			
24 VAC $\pm 15\%$	S1421156024			
115 VAC $\pm 15\%$	S1421156115			
230 VAC $\pm 15\%$	S1421156230			
Characteristics				
Rated operating voltage	See Amplifier type	See Amplifier type	See Amplifier type	See Amplifier type
Output	1 x SPDT 2 x Transistor NPN	1 x SPDT 2 x Transistor NPN	1 x SPDT 2 x Transistor NPN	1 x SPDT 2 x Transistor NPN
Load current resistive load	10 A @ 250 VAC / 25 VDC SPDT 100 mA 40 VDC, NPN	10 A @ 250 VAC / 25 VDC SPDT 100 mA 40 VDC, NPN	10 A @ 250 VAC / 25 VDC	10 A @ 250 VAC / 25 VDC SPDT 100 mA 40 VDC, NPN
Operation frequency	15 Hz, S1420.. 5 Hz, S1421	30 Hz	15 Hz @ 2 systems 7 A @ 6 systems	10 Hz
Degree of protection	IP 20	IP 20	IP 20	IP 20
Protection Short-circuit (S)				
Reverse polarity (P)				
Transients (T)	PT	PT	PT	PT
Housing material				
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	CE - UL - CSA	CE - UL - CSA	CE	CE
Remarks	S1421 Built-in time delay 0-10 s			



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 $\pm 15\%$	S1430UAP912			
15-30 VAC/DC $\pm 10\%$		S1430RAL915	S1430ROS915	
18-33 VDC				
No. of channels				2 channels
-NPN output, NO				PAM 02AN3ANO
-PNP output, NO				PAM 02AN3APO
-Relay output				PAM 02156
No. of channels				4 channels
-NPN output, NO				PAM 04AN3ANO
-PNP output, NO				PAM 04AN3APO
-Relay output				PAM 04156
No. of channels				6 channels
-NPN output, NO				PAM 06AN3ANO
-PNP output, NO				PAM 06AN3APO
-Relay output				PAM 06156
References Extension Modules				
No. of channels				2 channels
- NPN output, NO				PAM 02CN3ANO
- NPN output, NC				PAM 02CN3ANC
- PNP output, NO				PAM 02CN3APO
- PNP output, NC				PAM 02CN3APC
No. of channels				4 channels
- NPN output, NO				PAM 04CN3ANO
- NPN output, NC				PAM 04CN3ANC
- PNP output, NO				PAM 04CN3APO
- PNP output, NC				PAM 04CN3APC
Characteristics				
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 2 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 30 Hz @ 6 channels
Operation frequency	16 Hz	12.5 Hz	12.5 Hz	30 Hz @ 6 channels
Degree of protection	IP 20	IP 20	IP 20	IP 20
Protection Short-circuit (S)				
Reverse polarity (P)				
Transients (T)	SPT	PT	PT	SPT
Housing material Amplifier:	Noryl	Noryl	Noryl	
Sensors: Ø 18 + D18				
Sensors: M14				
Sensors:				
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.



Optical Level Sensors

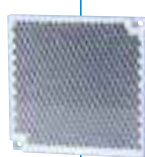
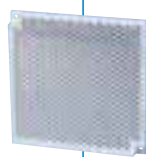
	Integrated Amplifier		
Types	VP0.E.	VPA..../VPB....	VPA....-1/VPB....-1
Connections	2 m Cable	2 m Cable	M12 Connector
			
Dimensions	3/8" x 74 mm	3/8" x 70.5 mm	3/8" x 90.5 mm
Light type	Unmodulated	Modulated	Modulated
References			
Optical Level Sensor			
Operating frequency	30 Hz	30 Hz	30 Hz
Sensing 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	Stainless steel/polysulphone	Stainless steel/polysulphone
NPN NO	VP02E		
NPN NC	VP01E		
PNP NO	VP02EP		
PNP NC	VP01EP		
NPN NO+NC			
PNP NO+NC			
Housing material	Polyamide 12		
NPN NO	VP04E	VPA1MNA	VPA1MNA-1
NPN NC	VP03E	VPA1MPA	VPA1MPA-1
PNP NO	VP04EP		
PNP NC	VP03EP		
NPN NO+NC			
PNP NO+NC			
Housing material		Stainless steel and glass	Stainless steel and glass
NPN NO+NC			
PNP NO+NC			
Housing material			
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
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	≤ 2.5 VDC	≤ 2.5 VDC
Off-state current	≤ 12 mA	≤ 7 mA	≤ 7 mA
Load current	< 200 mA	< 200 mA	< 200 mA
AC-types (SCR)			
Rated operational voltage	110 or 230 VAC		
Voltage drop	≤ 9 VAC		
Off-state current	≤ 7 mA		
Load current	< 10 - 100 mA		
Characteristics			
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit(S)			
Rev. polarity(P)-Transients(T)	PT	SPT	SPT
Operating temperature	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
LED colour	Yellow	Yellow	No LED
Pressure	10 bar @ +60°C	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE - UL - CSA - EEX	CE - UL - CSA	CE - UL - CSA

Sense





Reflectors, rectangular



ITEM NUMBER
Dimensions (mm)
Mounting (screws not incl.)
Reduction factor

ER100
100 x 100 x 9.2
2 x M3 screws
1.2

ER840
84.5 x 84.5 x 9
2 x M3.5 screws
0.96

ER681
52 x 119 x 27
4 x M4 screws
0.92

ER686
55.3 x 126 x 9
2 x M6 screws
0.92

Reflectors, rectangular



ITEM NUMBER
Dimensions (mm)
Mounting (screws not incl.)
Reduction factor

ER4060
60 x 41 x 8
2 x M3.5 screws
0.81

ER5060
55.5 x 61 x 8
2 x M4 screws
0.80

ER42182
186 x 46.5 x 8
2 x M6 screws
0.65

ER5080
80 x 54 x 8
Adhesive
0.60

Reflectors, rectangular



ITEM NUMBER
Dimensions (mm)
Mounting (screws not incl.)
Reduction factor

ER483
32.5 x 65 x 8
2 x M3.5 screws
0.55

ER8
82 x 37 x 5.5
Adhesive
0.51

ER665
18.5 x 120 x 65
2 x M4 screws
0.45

ER530
19 x 72.5 x 8.4
2 x M3.5 screws
0.45

Reflectors, rectangular



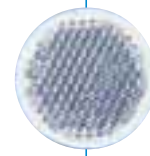
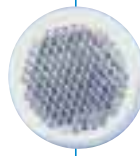
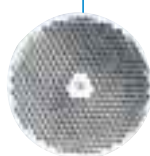
ITEM NUMBER
Dimensions (mm)
Mounting (screws not incl.)
Reduction factor

ER390
23.5 x 47.5 x 8
2 x M3.5 screws
1.39

ER1
51 x 17.5 x 5
Adhesive
0.20

ER640
13 x 17 x 5
Adhesive
0.16

Reflectors, cylindrical



ITEM NUMBER
Dimensions (mm)
Mounting (screws not incl.)
Reduction factor

ER4
Ø 84 x 7.4
1 x M4 screw
1

ER460
Ø 46 x 6.5
Adhesive
0.55

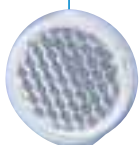
ER420
Ø 42 x 6.3
Adhesive
0.54

ER423
Ø 41.5 x 6
2 x M3 screws
0.54



Photoelectric Sensors, Accessories

Reflectors, cylindrical

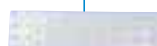


ITEM NUMBER
Dimensions (mm)
Mounting (screws not incl.)
Reduction factor

ER692
Ø 35 x 5.5
Adhesive
0.53

ER689
Ø 25 x 5.5
Adhesive
0.39

Reflectors, Tape



ERT25
25 mm x 45.7 m
Adhesive
0.23 (25 x 25 mm)

ERT50
50 mm x 45.7 m
Adhesive
0.34 (50 x 50 mm)

Accessories, Photoelectric Sensors



ITEM NUMBER
Used for
Description

6IODC
S1430...
Plug conversion.

AMPF-MB1
MPFT15-4 & MPFR-4
Plastic mounting bracket for wall mounting.

AMPF-MB2
MPFT15-4 & MPFR-4
Adaptor for fitting to an Ø18 mm rubberprofile.

AMPF-MB3
MPFT15-4 & MPFR-4
Metal mounting bracket for harsh environment.



ITEM NUMBER
Used for
Description

APA18-AK
M18 photoelectrics
Ø2, Ø4, and Ø8 mm aperture.

APA18-RAR
M18 photoelectrics
90° mirror for angle detection.

APA2
PA.. sensors
Mounting bracket in steel, black.

APA3
PA.. sensors
Mounting bracket in anodized aluminium.



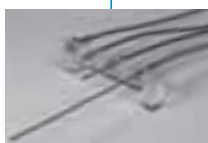
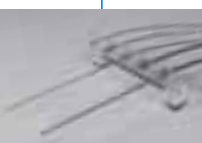
ITEM NUMBER
Dimensions (mm)
Used for
Description

APB-1
PB
Mounting bracket in steel, black.

MB02
PM
Long mounting bracket for wall mounting in steel, black.

MB-M01
MOF.. sensors
Ball mounting bracket for flexible mounting.

AMB4-30
Cylindrical 4 - 30 mm
Universal sensor mounting bracket



Dimensions (mm)
Used for
ITEM NUMBER
Description

1 mm fiber
PD60CNX.. EF1810..
FDP..S.. / FPT..S..
Plastic fibre optics.
Separate fibre heads see datasheet.

0.25 to 1 mm fiber
PD60CNX.. EF1810..
FGD..S.. / FGT..S..
Glass fibre optics.
Various fibre heads see datasheet.

1 mm fiber
PD60CNV..
FGD..S.. / FGT..S..
Glass fibre optics.
Various fibre heads see datasheet.

65 x 27 x 130
Stand-alone sensors
ST-03
Sensor tester for:
NAMUR and
2-, 3- or 4-wire DC.





General Accessories, Sensors

ITEM NUMBER

Dimensions (mm)

Used for

2 m cable

5 m cable

Description

M8 connector

3-wire DC Sensors

CONH5A-S2**CONH5A-S5**

High-end connector

M8 connector

3-wire DC Sensors

CONH5A-A2**CONH5A-A5**

High-end connector

M8 connector

4-wire DC Sensors

CONG5A-S2**CONG5A-S5**

Low-cost connector

M8 connector

4-wire DC Sensors

CONG5A-A2**CONG5A-A5**

Low-cost connector

ITEM NUMBER

Dimensions (mm)

Used for

2 m cable, 3-pin

5 m cable, 3-pin

2 m cable, 4-pin

5 m cable, 4-pin

Description

M12 connector

2-, 3- or 4-wire DC

CONG10-S2**CONG10-S5****CONG1A-S2****CONG1A-S5**

High-end connector

M12 connector

2-, 3- or 4-wire DC

CONG10-A2**CONG10-A5****CONG1A-A2****CONG1A-A5**

High-end connector

M12 connector

2-, 3- or 4-wire DC

CONH10-S2**CONH10-S5****CONH1A-S2****CONH1A-S5**

High-end connector

M12 connector

2-, 3- or 4-wire DC

CONH10-A2**CONH10-A5****CONH1A-A2****CONH1A-A5**

High-end connector

ITEM NUMBER

Dimensions (mm)

Used for

2 m cable, 3-pin

5 m cable, 3-pin

Description

1/2" connector

2-wire AC

CONH3A-S2**CONH3A-S5**

High-end connector

1/2" connector

2-wire AC

CONH3A-A2**CONH3A-A5**

High-end connector

M12 connector

2-wire AC

CONH6A-S2**CONH6A-S5**

High-end connector

M12 connector

2-wire AC

CONH6A-A2**CONH6A-A5**

High-end connector

ITEM NUMBER

Dimensions (mm)

User for

No cable 4-pin

Description

M12 connector

2-, 3- or 4-wire DC

CONH1A-S

Terminal connection

M12 connector

2-, 3- or 4-wire DC

CONH1A-A

Terminal connection

Connectors available with PUR cable and/or LED indication on request



Proximity Magnetic Sensors, Rectangular

Types

S series



SP.B.2 series



SPA.1 series



External Dimensions (mm)

21.2 x 11.5 x 79

24 x 25.5 x 85

16 x 90 x 20

References

Output -Normally open
Function -Normal. closed
-Change-over
-Bistable
-Bistable CO

S.A.2 S.A.8
S.C.2 S.C.8
S.S.2
S.B.2 S.B.2/S5
S.BS.2

SP.B.2
SP.B.2/2MT

SPA.1/S2
SPA.1/S3

Output -Faston
Connection -Cable
GND Connection
-Within the output cable
-Thin plate fixed on the case

Electrical Character.

Max. switch. voltage contact
Max. switch. current contact
Max. switch. power contact
Power supply
Output 1 / Output 2

220 - 1500 V
1 - 3 A
60 - 120 VA

250 V
3 A
100 VA

24 VDC
Max. 5VA-0.5 A / Max. 100VA-4 A

General Character.

Operating distance / Case
Prot. degree / Operat. temp.
Output connection
Output function
Output function E1 / E2

8 - 32 mm / Plastic
IP 67 / -25°C to +75°C
PVC cable

5 - 30 mm / Plastic
IP 67 or IP 65 / -25°C to +75°C
Bistable

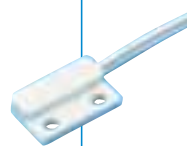
12 mm / ABS class V0
IP 67 / -25°C to +80°C
PVC cable
NC

Types

M and MS series



MM series



Output function

NO

Cable break. detection	EX applicat. addressed	REFERENCES
Yes	-	MS.A.1
-	-	M.A.3
-	Yes	M.A.1/2MT
NC	Yes	M.C.1/2MT
-	-	M.C.3
S	-	M.S.1

External dimensions	Output connection	REFERENCES
14x23.5x6.1	Twin lead cable	MM.A.6
7x27x11	PVC cable	MM.A.3
-	-	-
-	-	-
7x27x11	PVC cable	MM.S.1

Electrical Characterist.

Contact

Max. swit. voltage
100 - 500 V

Max. swit. current
0.25 - 0.75 A

Max. swit. power
5 - 10 VA

Max. swit. voltage
100 - 500 V

Max. swit. current
0.25 - 1 A

Max. swit. power
5 - 10 VA

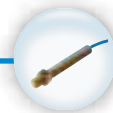
General Characterist.

External dimensions (mm.)
Operating distance
Output connection
Protection degree
Operating temperature
Case

8.3 x 37 x 16
7 - 35 mm.
PVC cable
IP 67
-25° to +80°C
-10° to +80°C **M.A.1/2MT M.C.1/2MT**
Plastic or Auto extinguishing polipropylene with 30% fiber glass

See references
10 - 50 mm.
See references
IP 67
-25° to +75°C
Plastic





Types

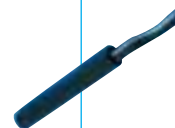
FM.. series



FMM.. series



FMMP.. series



FMP... series



External Dimensions (mm)

Ø 9.3 M10 M12 x 1

M 8 x 1

Ø 6

M 12 x 1

Output Function

Normally Open

FM.A.3 FM.A.3/S5
FM.A.6 FM.A.6/S2

FMM.A.3 FMM.A.6

FMMP.A.7

FMP.A.7 FMP.A.9
FMP.A.9/S1

Normally Closed

FM.C.3 FM.C.3/S1

FMM.S.1

FMP.C.7 FMP.C.9
FMP.S.1 FMP.B.2

Change-over

FMS.1

Bistable

Electrical Characteristics

Max. switch. voltage contact

100 - 500 V

100 - 500 V

100 V

100 - 250 V

Max. switch. current contact

0.25 - 0.5 A

0.25 - 0.5 mA

0.4 A

0.25 - 3 A

Max. switch. power contact

5 - 10 VA

5 - 10 VA

10 VA

5 - 120 VA

Max. carry current

0.75 A

General Characteristics

Output connection

PVC Cable

PVC Cable

Twin-lead Cable

PVC Cable

Operating distance

5 - 25 mm.

8 - 27 mm.

>8 mm.

Degree of protection

IP 67

IP 67

IP 67

IP 67

Operating temperature

-25°C to +75°C

-25°C to +70°C

-20°C to +75°C

-25°C to +75°C

Case

Plastic / Brass

Stainless steel

Plastic

Plastic

Types

FS... series



FSLP.. series



Output function

Normally Open

Ø 13.5 mm

REFERENCES FS.A.2 ; FS.A.8

Normally Closed

Ø 13.5 mm

FS.C.2 ; FS.C.8

Change-over

Ø 13.5 mm

FS.S.2

Normally Open

M10 x 1.25

FS.A.2/S3/2MT

Change-over

M10 x 1.25

FS.S.2/S1/2MT

Normally Open

M12 x 1

FS.A.2/S4/2MT

Change-over

M12 x 1

FS.S.2/S4/2MT

Bistable

M16 x 1.5

FS.B.2/2MT

Electrical Character.

Contact

Max swit. voltage

220 - 1500 V

Max swit. current

1 - 3 A

Max swit. power

10 - 120 VA

Max swit. voltage

100 ÷ 250 V

Max swit. current

0.4 ÷ 3 A

Max swit. power

10 ÷ 120 VA

General Characterist.

Output connection

PVC Cable

PVC Cable

Operating distance

3 - 12 mm

18 ÷ 25 mm (front); 10 ÷ 15 mm (side)

Protection degree

IP 67

IP 67

Operating temperature

-25° to +75°C

-30° ÷ +80°C

Case

Plastic

Plastic

Modular Guide External

20 x 200 x 10 mm

Dimensions



Proximity Magnetic Sensors, Cylindrical and Slot

Types

FSM... series

FSQ... series



Output Function

Normally Open

Dimensions	REFERENCES
M12 x 1	FSM.A.2
M12 x 1	FSM.A.7

External dimensions	REFERENCES
M12 x 1	FSQ.A.3/A01/2MT/HF
PG 13.5	FSQ.A.2/B03/2MT/HF/C
PG 13.5	FSQ.A.2/B01/1MT/C
PG 13.5	FSQ.A.2/B04/1MT/C

Change-over

M12 x 1	FSM.S.2
M16 x 1	FSM.S.2/S2
M16 x 1	FSM.S.2/S2AT

Electrical Character.

Max. switch. voltage contact

220 - 500 V

Max. switch. current contact

0.05 ÷ 3 A

Max. switch. power contact

50 - 100 VA

250 - 500 V

0.5 - 3 A

10 - 100 VA

General Characterist.

Output connection

Halogen free cable

REFERENCES
Silicone / PVC Cable

Silicon cable with metallic sheath

Operating distance

7 - 23 mm.

Protection degree

IP 67

Operating temperature

-25° to +75°C

Case

Brass - Nickel plated brass

REFERENCES
FSQ.A.3/A01/2MT/HF
FSQ.A.2/B03/2MT/HF/C
FSQ.A.2/B01/1MT/C
FSQ.A.2/B04/1MT/C

7 - 30 mm.

IP 67

-25° to +75°C

Stainless steel:

AISI 303 Stainless steel:

FSQ.A.3/A01/2MT/HF

FSQ.A.2/B03/2MT/HF/C

FSQ.A.2/B01/1MT/C

FSQ.A.2/B04/1MT/C

High temp. applications

Explosive Environm. appl.

FSM.S.2/S2AT

FSQ.A.2/B03/2MT/HF/C

FSQ.A.2/B01/1MT/C

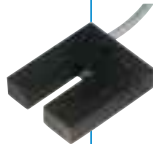
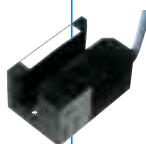
FSQ.A.2/B04/1MT/C

Types

I. series

ISY. series

IM. series



Dimensions-external (mm)

75 x 50.7 x 40 mm

45 x 37 x 10 mm

28 x 18.5 x 7 mm

Output connection

Normally open

I.A.2 **I.A.8**

Normal. closed

I.C.2 **I.C.8**

Change-over

I.S.2

ISY.C.3

ISY.S.1

IM.C.3

IM.S.1

Electrical Character.

Max. switch. voltage contact

220 - 1500 V

Max. switch. current contact

1 - 3 A

Max. switch. power contact

60 - 120 VA

230 - 500 V

0.75 - 0.5 A

5 - 10 VA

230 - 500 V

0.75 - 0.5 A

5 - 10 VA

General Character.

Output connection

PVC Cable

Protection degree

IP 67

Operating temperature

-25°C to +75°C

Case

Plastic

PVC Cable

IP 67

-25°C to +75°C

Plastic

PVC Cable

IP 67

-25°C to +75°C

Plastic





Types

ILM. ILC series



Operating temperature
-10° to +120°C
-10° to +200°C
-20° to +120°C
-25° to +120°C
-25° to +70°C
-25° to +70°C
-25° to +80°C

Output connection	Explosive environment applications	REFERENCES
Silicon cable		ILM.2 ; ILM.8
Silicon cable		ILM.S.2
PVC cable	Yes	ILM.S.2/EX+GS50
PVC cable	Yes	ILM.S.2/EX/5MT + CG45X55
		ILC

Electrical Characteristics

Contact

Max swit. voltage	Max swit. current	Max swit. power
220 - 1500 V	1 - 3 A	60 - 120 VA

General Characteristics

Output connection
Output function
Min. liquid specific gravity
Max. pressure
Float diameter
Special application
Protection degree
Case

PVC Cable
NO, NC, Change-over
0.75 kg/dm ³
20 kg/cm ²
Ø 50 / Ø 45 mm.
ILM.S.2/EX series - Explosive environments
IP 67
AISI 316 Stainless steel

ILMM. series



Output function	REFERENCES
NO / NC	ILMM.5 ; ILMM.5/90
NO / NC	ILMM.5/AT/S1
NO	ILMM.5/S2/AT
NO	ILMM.5/S1 ; ILMM.5/S2

Max swit. voltage	Max swit. current	Max swit. power
240 Vac; 200 Vdc	0.5 A	50 VA

XLPE Cable
See references
0.75 kg/cm ³
10 kg/cm ²
Ø 28 mm.
ILMM.5/AT/S1 - ILMM.5/S2/AT - High temp. versions
IP 68
AISI 304 / 316 Stainless steel

Types

ILMP series



Output function

NO - NC

NO - CO

Float diameter	Operating Temperature	Weight	REFERENCES
Ø 25 mm	-20° to +80°C	15 g	ILMP.5
Ø 25 mm	-20° to +80°C	18 g	ILMP.5/P

Electrical Characteristics

Contact

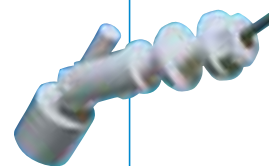
Max swit. voltage	Max swit. current	Max swit. power
200VDC; 240VAC	0.5 A	50 VA

General Characteristics

Output connection
Min. liquid specific gravity
Max. pressure
Protection degree / Case

PVC Cable
ILMP.5: 0.65 kg/dm ³ - ILMP.5/P: 0.7 kg/dm ³
2 kg/cm ²
IP 68 / Plastic

ILMPU - ILU - ILMU series



Float diameter	Operating Temperature	REFERENCES
Ø 17.5 mm	-20° to +80°C	ILMPU.5
Ø 31 mm	-20° to +80°C	ILMU.5
Ø 45 mm	-25° to +100°C	ILU.2 ; ILU.8
	-25° to +100°C	ILU.S.2
	-25° to +100°C	ILU.S.2/S1

Max swit. voltage	Max swit. current	Max swit. power
220 - 1500 V	0.5 - 3 A	50 - 120 VA

Silicon / PVC cable
0.7-0.75 kg/dm ³
2-100 kg/cm ²
IP 68 / Plastic

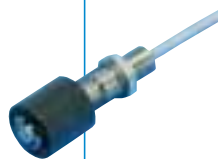


Level Magnetic Sensors

Types

ILSP. series

Magnetic Flux Sensor FLM. series



External dimensions (mm)

References

Float diameter: Ø 44 mm.

Ø 25 mm.

Electrical Characteristics

Max. switch. voltage contact

Max. switch. current contact

Max. switch. power contact

Max. carry current

General Characteristics

Output connection

Output function

Operating distance Don

Release distance Doff

Float

Min. liquid specific gravity

Max. pressure

Operating temperature

-25° to +100°C:

-25° to +80°C:

-30° to +105°C

Protection degree

Case and spring

Output
function

NO-NC-CO **ILSP.2 ; ILSP.8**

NO-NC-CO **ILSP.S2**

NO **ILSP.3M/S2**

220 - 1500 V

0.5 - 3 A

10 - 120 VA

Silicon Cable

0.65-0.75 kg/dm³

2-6 kg/cm²

ILSP.2 - ILSP.8 - ILSP.S.2

ILSP.3M/S2

IP 68

Plastic

M10 x 1

FLM.A.1/S1

200 V

0.4 A

10 VA

0.75 A

HT105 PVC cable ended with
6.35 mm. faston receptacle

NO

5 mm

Don - 2 mm

Temperature resistant
plastic material

FLM.A.1/S1

IP 67

Stainless steel

Types

Magnetic Units CL series

Shapes

Rectangular

Trapezoidal

Cylindrical



Dimensions
(mm.)

REFERENCES

Minimum separation:

10

20

30

50

Not mandatory

25 x 14 x 8

CL.1

44.5 x 12 x 9

CL.2

59 x 18 x 9

CL.3

76 x 25 x 18

CL.4

Dimensions
(mm.)

REFERENCES

90 x 31 x 22.5

CL.90

Dimensions
(mm.)

REFERENCES

Ø 9.3 x 32

CL.10

Ø 13.5 x 65

CL.11

Ø 18 x 6

CL.18

Ø 23 x 9

CL.23

Ø 31 x 10

CL.31

Ø 25.1 x 9.3

CL.20/S1

Ø 22.1 x 10.5

CL.20/S3

Ø 50 x 10

CL.50





Head Type

P0-Plunger rounded



PR-Plunger with roller



P9-Plunger with 90° turned roller



RT-Side rotary lever



LS31M (Metal)

Contact-Dimensions

Snap 1NO+1NC	☹
Slide 1NO+1NC	☹
Dimensions (mm) HxWxD	

LS31M-CS11P0-M00
LS31M-CT11P0-M00
40 x 74.7 x 16
2m PVC cable **

LS31M-CS11PR-M00
LS31M-CT11PR-M00
40 x 70.3 x 16
2m PVC cable **

LS31M-CS11P9-M00
LS31M-CT11P9-M00
40 x 70.3 x 16
2m PVC cable **

LS31M-CS11RT-M00
LS31M-CT11RT-M00
40 x 91 x 16
2m PVC cable **

LS21M (Metal *)

Contact-Dimensions

Snap 1NO+1NC	☹
Slide 1NO+1NC	☹
Dimensions (mm) HxWxD	

LS21M-CS11P0-M00
LS21M-CT11P0-M00
30 x 59.8 x 16
2m PVC cable **

LS21M-CS11PR-M00
LS21M-CT11PR-M00
30 x 70 x 16
2m PVC cable **

LS21M-CS11P9-M00
LS21M-CT11P9-M00
30 x 70 x 16
2m PVC cable **

LS21M-CS11RT-M00
LS21M-CT11RT-M00
30 x 92 x 16
2m PVC cable **

Head Type

Plunger rounded panel mounting



Plunger with roller panel mounting



Plunger with 90° roller, panel mount.



Side rotary lever with M12 connect.



LS31M (Metal)

Contact-Dimensions

Snap 1NO+1NC	☹
Slide 1NO+1NC	☹
Dimensions (mm) HxWxD	

LS31M-CS11P0-M0L
LS31M-CT11P0-M0L
40 x 71 x 16
2m PVC cable **

LS31M-CS11PR-M0L
LS31M-CT11PR-M0L
40 x 83.9 x 16
2m PVC cable **

LS31M-CS11P9-M0L
LS31M-CT11P9-M0L
40 x 83.9 x 16
2m PVC cable **

LS31M-1S11RT-M00
LS31M-1T11RT-M00
40 x 74.7 x 16
M12 connector

LS21M (Metal)

Contact-Dimensions

Snap 1NO+1NC	☹
Slide 1NO+1NC	☹
Dimensions (mm) HxWxD	

LS21M-CS11P0-M0L
LS21M-CT11P0-M0L
30 x 74.7 x 16
2m PVC cable **

LS21M-CS11PR-M0L
LS21M-CT11PR-M0L
30 x 86.4 x 16
2m PVC cable **

LS21M-CS11P9-M0L
LS21M-CT11P9-M0L
30 x 86.4 x 16
2m PVC cable **

LS21M-1S11RT-M00
LS21M-1T11RT-M00
30 x 92 x 16
M12 connector

General Characteristics (For all types)

Mechanical life	>15 000 000 cycles	Rated thermal current (Ith)	10A (IEC947-5-1)
Operating frequency	30 op./min.	Rated insulation voltage (Ui)	500VAC (IEC947-5-1)
Operating speed	1...1500 mm/s	Insulation resistance (500VDC)	100MΩ
Rated operating current (Ie)	6A/230V (Cat. AC15, A300) 3A/24V (Cat. DC13, A300)	Protection degree	IP67

* also available in thermoplastic (H Type)

** also available with M12 connector



Limit Switches, L & G Family (L General Purpose, G Doors)

Head Type

P0-Plunger rounded



PR-Plunger with roller



RH-Roller lever side actuation



RT-Side rotary lever



LS21 (Thermoplastic *)

Contacts-Dimensions

Snap 1NO+1NC	⊖
Snap 2NO+2NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS21L-PS11P0-H00
LS21L-PS22P0-H00
LS21L-PT11P0-H00
LS21L-PO11P0-H00
LS21L-PT20P0-H00
LS21L-PT02P0-H00
30.5 x 77.5 x 33

LS21L-PS11PR-H00
LS21L-PS22PR-H00
LS21L-PT11PR-H00
LS21L-PO11PR-H00
LS21L-PT20PR-H00
LS21L-PT02PR-H00
30.5 x 85.5 x 33

LS21L-PS11RH-H00
LS21L-PS22RH-H00
LS21L-PT11RH-H00
LS21L-PO11RH-H00
LS21L-PT20RH-H00
LS21L-PT02RH-H00
30.5 x 95 x 33

LS21L-PS11RT-H00
LS21L-PS22RT-H00
LS21L-PT11RT-H00
LS21L-PO11RT-H00
LS21L-PT20RT-H00
LS21G-PTIIRT-H00
30.5 x 106 x 33

LS42 (Thermoplastic *)

Contacts-Dimensions

Snap 1NO+1NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS42L-PS11P0-H00
LS42L-PT11P0-H00
LS42L-PO11P0-H00
LS42L-PT20P0-H00
LS42L-PT02P0-H00
56.5 x 67 x 33

LS42L-PS11PR-H00
LS42L-PT11PR-H00
LS42L-PO11PR-H00
LS42L-PT20PR-H00
LS42L-PT02PR-H00
56.5 x 77.5 x 33

LS42L-PS11RH-H00
LS42L-PT11RH-H00
LS42L-PO11RH-H00
LS42L-PT20RH-H00
LS42L-PT02RH-H00
56.5 x 87 x 33

LS42L-PS11RT-H00
LS42L-PT11RT-H00
LS42L-PO11RT-H00
LS42L-PT20RT-H00
LS42G-PTIIRT-H00
56.5 x 98 x 33

LS43 (Metal)

Contacts-Dimensions

Snap 1NO+1NC	⊖
Snap 2NO+2NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS43L-PS11P0-M00
LS43L-PS22P0-M00
LS43L-PT11P0-M00
LS43L-PO11P0-M00
LS43L-PT20P0-M00
LS43L-PT02P0-M00
62 x 89.5 x 35.5

LS43L-PS11PR-M00
LS43L-PS22PR-M00
LS43L-PT11PR-M00
LS43L-PO11PR-M00
LS43L-PT20PR-M00
LS43L-PT02PR-M00
62 x 99.5 x 35.5

LS43L-PS11RH-M00
LS43L-PS22RH-M00
LS43L-PT11RH-M00
LS43L-PO11RH-M00
LS43L-PT20RH-M00
LS43L-PT02RH-M00
62 x 111.5 x 35.5

LS43L-PS11RT-M00
LS43L-PS22RT-M00
LS43L-PT11RT-M00
LS43L-PO11RT-M00
LS43L-PT20RT-M00
LS43G-PTIIRT-M00
62 x 120 x 35.5

LS31 (Thermoplastic *)

Contacts-Dimensions

Snap 1NO+1NC	⊖
Snap 2NO+2NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Slide 1NO+3NC	⊖
Dimensions (mm) HxWxD	

LS31L-PS11P0-H00
LS31L-PS22P0-H00
LS31L-PT11P0-H00
LS31L-PO11P0-H00
LS31L-PT20P0-H00
LS31L-PT02P0-H00
LS31L-PT13P0-H00
56 x 106.5 x 36

LS31L-PS11PR-H00
LS31L-PS22PR-H00
LS31L-PT11PR-H00
LS31L-PO11PR-H00
LS31L-PT20PR-H00
LS31L-PT02PR-H00
LS31L-PT13PR-H00
56 x 117.5 x 36

LS31L-PS11RH-H00
LS31L-PS22RH-H00
LS31L-PT11RH-H00
LS31L-PO11RH-H00
LS31L-PT20RH-H00
LS31L-PT02RH-H00
LS31L-PT13RH-H00
56 x 128.6 x 36

LS31L-PS11RT-H00
LS31L-PS22RT-H00
LS31L-PT11RT-H00
LS31L-PO11RT-H00
LS31L-PT20RT-H00
LS31G-PTIIRT-H00
LS31G-PT13RT-H00
56 x 137 x 36

General Characteristics (For all types)

Mechanical life	>15 000 000 cycles	Rated thermal current (Ith)	10A (IEC947-5-1)
Operating frequency	30 op./min.	Rated insulation voltage (Ui)	500VAC (IEC947-5-1)
Operating speed	1...1500 mm/s	Insulation resistance (500VDC)	100MΩ
Rated operating current (Ie)	6A/230V (Cat. AC15, A300)	Protection degree	IP66
	10A/24V (Cat. DC13, A300)		

* also available in metal (M type)

** Ov. : overlapping travel paths





Head Type

**W1-Side rot. lever
Ø50 mm. vert. adj.**

**R1-Side rot. lever
adjustment**

**B0-Offset side
rotary lever**

**LW-Cat
whisker**

LS21 (Thermoplastic *) Contacts-Dimensions

Snap 1NO+1NC	⊖
Snap 2NO+2NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS21L-PS11W1-H00
LS21L-PS22W1-H00
LS21L-PT11W1-H00
LS21L-PO11W1-H00
LS21L-PT20W1-H00
LS21L-PT02W1-H00
30.5 x (127.5-172.5) x 33

LS21L-PS11R1-H00
LS21L-PS22R1-H00
LS21L-PT11R1-H00
LS21L-PO11R1-H00
LS21L-PT20R1-H00
LS21G-PTIIR1-H00
30.5 x (100.5-156.5) x 33

LS21L-PS11B0-H00
LS21L-PS22B0-H00
LS21L-PT11B0-H00
LS21L-PO11B0-H00
LS21L-PT20B0-H00
LS21G-PTIIB0-H00
30.5 x 101 x 33

LS21L-PS11LW-H00
LS21L-PS22LW-H00
LS21L-PT11LW-H00
LS21L-PO11LW-H00
LS21L-PT20LW-H00
LS21L-PT20LW-H00
30.5 x 190 x 33

LS42 (Thermoplastic *) Contacts-Dimensions

Snap 1NO+1NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS42L-PS11W1-H00
LS42L-PT11W1-H00
LS42L-PO11W1-H00
LS42L-PT20W1-H00
LS42L-PT02W1-H00
56.5 x (119.5-164.5) x 33

LS42L-PS11R1-H00
LS42L-PT11R1-H00
LS42L-PO11R1-H00
LS42L-PT20R1-H00
LS42L-PT02R1-H00
56.5 x (92.5-148.5) x 33

LS42L-PS11B0-H00
LS42L-PT11B0-H00
LS42L-PO11B0-H00
LS42L-PT20B0-H00
LS42G-PTIIB0-H00
56.5 x 93 x 33

LS42L-PS11LW-H00
LS42L-PT11LW-H00
LS42L-PO11LW-H00
LS42L-PT20LW-H00
LS42L-PT02LW-H00
56.5 x 182 x 33

LS43 (Metal) Contacts-Dimensions

Snap 1NO+1NC	⊖
Snap 2NO+2NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS43L-PS11W1-M00
LS43L-PS22W1-M00
LS43L-PT11W1-M00
LS43L-PO11W1-M00
LS43L-PT20W1-M00
LS43L-PT02W1-M00
62 x (141.5-186.5) x 35.5

LS43L-PS11R1-M00
LS43L-PS22R1-M00
LS43L-PT11R1-M00
LS43L-PO11R1-M00
LS43L-PT20R1-M00
LS43L-PT20R1-M00
62 x (114.5-170.5) x 35.5

LS43L-PS11B0-M00
LS43L-PS22B0-M00
LS43L-PT11B0-M00
LS43L-PO11B0-M00
LS43L-PT20B0-M00
LS43G-PTIIB0-M00
62 x 115 x 35.5

LS43L-PS11LW-M00
LS43L-PS22LW-M00
LS43L-PT11LW-M00
LS43L-PO11LW-M00
LS43L-PT20LW-M00
LS43L-PT02LW-M00
62 x 205 x 35.5

LS31 (Thermoplastic *) Contacts-Dimensions

Snap 1NO+1NC	⊖
Snap 2NO+2NC	⊖
Slide 1NO+1NC	⊖
Slide Ov.**1NO+1NC	⊖
Slide 2NO	⊖
Slide 2NC	⊖
Slide 1NO+3NC	⊖
Dimensions (mm) HxWxD	

LS31L-PS11W1-H00
LS31L-PS22W1-H00
LS31L-PT11W1-H00
LS31L-PO11W1-H00
LS31L-PT20W1-H00
LS31L-PT02W1-H00
LS31L-PT13W1-H00
56 x (158.5-203.5) x 36

LS31L-PS11R1-H00
LS31L-PS22R1-H00
LS31L-PT11R1-H00
LS31L-PO11R1-H00
LS31L-PT20R1-H00
LS31L-PT02R1-H00
LS31L-PT13R1-H00
56 x (131.5-187.5) x 36

LS31L-PS11B0-H00
LS31L-PS22B0-H00
LS31L-PT11B0-H00
LS31L-PO11B0-H00
LS31L-PT20B0-H00
LS31G-PTIIB0-H00
LS31L-PT13B0-H00
56 x 106.5 x 36

LS31L-PS11LW-H00
LS31L-PS22LW-H00
LS31L-PT11RT-H00
LS31L-PO11LW-H00
LS31L-PT20LW-H00
LS31L-PT02LW-H00
56 x 132 x 36

* also available in Metal (M Type)
Ov. ** = Overlapping travel paths

Head features:

PO also available with Gasket.
RH also available with Gasket, Vertical Actuation.
W1 also available Horizontal and Vertical adjustment.
LW also available with glass fiber or aluminium rod



Safety Switches

Head Type

Separated key without interlock



Family: **S**

LS21

thermoplastic *

LS42

thermoplastic *

LS43

metal

LS31

thermoplastic *

Contacts-Dimensions

Slide 1NO+1NC	⊖
Slide 2NC	⊖
Slide 1NO+3NC	⊖
Dimensions (mm) HxWxD	

LS21S-PT1105-H00

LS21S-PT0205-H00

30.5 x 99 x 33 mm.

LS42S-PT1105-H00

LS42S-PT0205-H00

56 x 88.5 x 33 mm.

LS43S-PT1105-M00

LS43S-PT0205-M00

62 x 104 x 35.5 mm.

LS31S-PT1105-H00

LS31S-PT0205-H00

LS31S-PT1305-H00

40 x 116 x 36 mm.

Head Type

Separated key with latching-230 VAC ***



Separated key with latching-24 VDC ***



Hinge switch operated lever *



Family: **E
H**

LS43 (big size)

LS43 (big size)

LS21

LS21

Contacts-Dimensions

Slide 1NO+1NC	⊖
Slide 2NC	⊖
Slide 1NO+3NC	⊖
Dimensions (mm) HxWxD	

LS43E-PT1I 25-H00

LS43E-PA0225-H00

LS43E-PT1325-H00

56 x 144.5 x 39.5

LS43E-PT1I D5-H00

LS43E-PA02D5-H00

LS43E-PT13D5-H00

56 x 144.5 x 39.5

LS21H-PT11HC-H00

LS21H-PT02HC-H00

30.5 x 77.5 x 33 mm.

LS21H-PT11HL-H00

LS21H-PT02HL-H00

30.5 x 77.5 x 33 mm.

Head Type

Hinge switch shaft 12/24 mm ****



Hinge switch shaft 10/50 mm ****



Hinge switch shaft 10/150 mm ****



Family: **H**

LS21

LS21

LS21

Contacts-Dimensions

Slide 1NO+1NC	⊖
Slide 2NC	⊖
Dimensions (mm) HxWxD	

LS21H-PT11H0-H00

LS21H-PT02H0-H00

30.5 x 76.5 x 33

LS21H-PT11H1-H00

LS21H-PT02H1-H00

30.5 x 76.5 x 33 mm.

LS21H-PT11H4-H00

LS21H-PT02H4-H00

30.5 x 76.5 x 33 mm.

General Characteristics (For all types)

Mechanical life	>10 000 000 cycles	Rated operating current (Ie)	10A/24V (Cat. DC13, A300)
Operating frequency	30 op./min.	Rated thermal current (Ith)	10A (IEC947-5-1)
Operating speed	1...1500 mm/s	Rated insulation voltage (Ui)	500VAC (IEC947-5-1)
	(5...500mm/s hinge switches)	Insulation resistance (500VDC)	100MΩ
Rated operating current (Ie)	6A/230V (Cat. AC15, A300)	Protection degree	IP66

Remarks

Family E, feature: **25** also available 110 VAC.
 Family H, feature: **H1** also available 8/63 shaft (H2 Type)
H4 also available 8/114 shaft (H3 Type)
HL also available hinge right (HR Type)
 also available with metal body (M Type)

*** **00** mechanically locked, unlocked at V>0V or by slot rotation
LO mechanically locked, unlocked at V>0V or by lock rotation
 ** **U0** locked at V>V0, unlocked at V=0V
 **** 12/24 mm: 12mm outer diameter, 24 mm pin length





Head Type

PO-Plunger rounded



PR-Plunger with roller



RH-Roller lever, side actuation



RT-Side rotary lever



Family: K

LS21

Thermoplastic *

LS21

Thermoplastic *

LS21

Thermoplastic *

LS21

Thermoplastic *

Contacts-Dimensions

Slide 1NO+1NC



Slide 2NC



Dimensions (mm) HxWxD

LS21K-PT11P0-HK0

LS21K-PT02P0-HK0

30.5 x 77.5 x 33

LS21K-PT11PR-HK0

LS21K-PT02PR-HK0

30.5 x 85.5 x 33

LS21K-PT11RH-HK0

LS21K-PT02RH-HK0

30.5 x 95 x 33

LS21K-PT11RT-HK0

LS21K-PT02RT-HK0

30.5 x 106 x 33



Family: K

LS42

Thermoplastic *

LS42

Thermoplastic *

LS42

Thermoplastic *

LS42

Thermoplastic *

Contacts-Dimensions

Slide 1NO+1NC



Slide 2NC



Dimensions (mm) HxWxD

LS42K-PT11P0-HK0

LS42K-PT02P0-HK0

56 x 67 x 33

LS42K-PT11PR-HK0

LS42K-PT02PR-HK0

56 x 77.5 x 33

LS42K-PT11RH-HK0

LS42K-PT02RH-HK0

56 x 87 x 33

LS42K-PT11RT-HK0

LS42K-PT02RT-HK0

56 x 98 x 33

Head Type

Side rotary lever
Ø50 mm. vert. adj.Offset side
rotary lever

Family: K

Size LS21

Thermoplastic *

Size LS21

Thermoplastic *

Size LS42

Thermoplastic *

Contacts-Dimensions

Slide 1NO+1NC



Slide 2NC



Slide 2NC



Dimensions (mm) HxWxD

LS21K-PT11W1-HK0

LS21K-PT02W1-HK0

30.5 x (127.5-172.5) x 33

LS21K-PT11B0-HK0

LS21K-PT02B0-HK0

30.5 x 101 x 33

LS42K-PT11B0-HK0

LS42K-PT02B0-HK0

56 x 93 x 33

General Characteristics (For all types)

Mechanical life >10 000 000 cycles

Operating frequency 30 op./min.

Operating speed 1...1500 mm/s

Rated operating current (Ie) 6A/230V (Cat. AC15, A300)

10A/24V (Cat. DC13, A300)

Rated thermal current (Ith) 10A (IEC947-5-1)

Rated insulation voltage (Ui) 500VAC (IEC947-5-1)

Insulation resistance (500VDC) 100MΩ

Protection degree IP66

* also available in metal (M Type)
other types available



Safety Switches

Head Type

Pull wire activated head 6m cable max.



Family: R

LS21
Thermoplastic *

LS42
Thermoplastic *

LS43
Metal

LS31
Thermoplastic *

Contacts-Dimensions

Slide 2NC ⊖
Dimensions (mm) HxWxD

LS21R-PTIIN6-H00
30.5 x 111.5 x 33

LS42R-PTIIN6-H00
56 x 101 x 33

LS43R-PTIIN6-M00
62 x 122 x 35.5

LS31R-PTIIN6-H00
40 x 140 x 36

Head Type

Pull wire activated head 6m cable max.



Family: R

LS21
Thermoplastic *

LS42
Thermoplastic *

LS43
Metal *

LS31
Thermoplastic *

Contact-Dimensions

Slide 2NC ⊖
Dimensions (mm) HxWxD

LS21R-PTIIN6-HK0
30.5 x 111.5 x 33

LS42R-PTIIN6-HK0
56 x 101 x 33

LS43R-PTIIN6-MK0
62 x 122 x 35.5

LS31R-PTIIN6-HK0
40 x 140 x 36

Head Type

Ring activated head
12m cable max.

Ring activated head
50m cable max.



Family: R

LS43R
Metal

LS43R
Metal

LS43R
Metal

LS43R
Metal

Contact-Dimensions

Snap 1NO+1NC ⊖
Snap 2NC ⊖
Dimensions (mm) HxWxD

LS43R-PS1IN7-M00
LS43R-PS0ZN7-M00
56 x 186 x 39.5

LS43R-PS11N7-MK0
LS43R-PS02N7-MK0
56 x 186 x 39.5

LS43R-PS1IN8-M00
LS43R-PS0ZN8-M00
56 x 186 x 39.5

LS43R-PS11N8-MK0
LS43R-PS02N8-MK0
56 x 186 x 39.5

* also available in metal (M Type).

Switch



Switch





Solid State Relays PCB type: 1-Phase

Types	AC Zero switching			DC switching
	RP1A - RP1B 3A, 5A, 5.5A (AC)	RAP 3A, 5A (AC)	RP.10A 10A (AC)	RP530 1A, 3A (DC)
PCB mounting SSRs, AC operating frequency range 45÷65 Hz. Rated insulation voltage ≥4000 Vrms.				
Dimensions (mm) H x W x D	25.4 x 43 x 10.5	25.4 x 43 x 10.5	37 x 43 x 22	25.4 x 43 x 10.5
Features	High maximum current	LED indication High blocking voltage	With integral heatsink	Ideal for DC valve coils
Input Specifications				
Control input range	3-32 VDC [RP1A23.. 3-32 VDC [RP1A40.. 4-32 VDC [RP1A48..]	3.5-40 VDC [RAP40.. 4.5-40 VDC [RAP48..]	3-32 VDC [RP1A23.. 3-32 VDC [RP1A40.. 4-32 VDC [RP1A48.. 4-32 VDC [RP1A60..]	3-32 VDC
Max. input current	10 mA	12 mA	10 mA	32 mA
Output Specifications				
Rated operational current AC 51 @ Ta=25°C	3 A [RP1...D3] 5 A [RP1...D5] 5.5 A [RP1...D6]	3 A [RAP...A3] 5 A [RAP...A5]	10 A	DC 1: 1.0 A [RP5..-1-0] DC 5: 0.5 A DC 13: 1.0
AC 53a @ Ta=25°C	2 A [RP1...D3] 3 A [RP1...D5] 5 A [RP1...D6]	2.5 A [RAP...A3] 3 A [RAP...A5]	6 A	DC 1: 3.0 A [RP5..-3-0] DC 5: 2.0 A DC 13: 3.0
Min. operational current	20 mA	20 mA	10 mA	1 mA
Non rep. surge current (t=20 ms)	65 A _p [RP1...D3] 80 A _p [RP1...D5] 300 A _p [RP1...D6]	60 A _p [RAP...A3] 90 A _p [RAP...A5]	200A _p	
Off-state leakage current	≤1 mA	≤1 mA	≤3 mA	≤1 mA
I ² t for fusing (t=20 ms)	20 A ² s [RP1...D3] 50 A ² s [RP1...D5] 400 A ² s [RP1...D6]	18 A ² s [RAP...A3] 40 A ² s [RAP...A5]	310A ² s	
Critical dV/dt off-state	250 V/μs	100 V/ms	500 V/μs	
General Specifications				
Operational voltage range	12-265Vrms [RP1A23.. 12-440Vrms [RP1A40.. 12-530Vrms [RP1A48..]	10-440Vrms [RAP40.. 20-530Vrms [RAP48..]	12-265Vrms [RP1A23.. 12-440Vrms [RP1A40.. 12-530Vrms [RP1A48.. 12-660Vrms [RP1A60..]	3-60 VDC [RP530060.. 3-200 VDC [RP530200.. 3-350 VDC [RP530350..]
Non rep. peak voltage	650 V _p [RP1A23.. 850 V _p [RP1A40.. 1000 V _p [RP1A48..]	1000 V _p [RAP40.. 1200 V _p [RAP48..]	650 V _p [RP1A23.. 850 V _p [RP1A40.. 1000 V _p [RP1A48.. 1200 V _p [RP1A60..]	
Power factor	0.5	0.2	0.5	
Operating temperature	-20°C to +70°C	-20°C to +70°C	-30°C to +80°C	-20°C to +70°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 - CSA - VDE	CE - UL - cUL	CE
References				
1 pole	3 A RP1A23D3 RP1A40D3 RP1A48D3 5 A RP1A23D5 RP1A40D5 RP1A48D5 5.5 A RP1A23D6 RP1A40D6 RP1A48D6	3 A RAP40A3 RAP48A3 5 A RAP40A5 RAP48A5	10 A RP1A23D10 RP1A40D10 RP1A48D10 RP1A60D10	1 A RP530200-1-0 RP530350-1-0 3 A RP530060-3-0

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





Types

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) H x W x D

Features

Input Specifications

Control input range

Max. input current

Output Specifications

Rated operational current

AC 51 @ Ta=25°C

AC 53a @ Ta=25°C

Min. operational current

Non rep. surge current

(t=10 ms)

Off-state leak current

I²t for fusing

(t=10 ms)

Critical dV/dt off-state

General Specifications

Operational voltage range

Non rep. peak voltage

Power factor

Operating temperature

Terminals

Approvals/Marks

References

1-phase, zero switching:

230 Vrms

400 Vrms

480 Vrms

600 Vrms

Industrial Housing
zero switchingRS1A
10/25/40 A

58.2 x 44.8 x 28.8

Ideal for Ohmic loads

RS1A..A
25/40 A

58.2 x 44.8 x 28.8

AC line control.
Ohmic loadsIndustrial Housing
zero / instant-on switchingRAM1A
25/50/75/100/125 A

58.2 x 44.8 x 28.8

Built-in snubber
VDE approvalRM1A
25/50/75/100 A

58.2 x 44.8 x 28.8

Built-in Varistor

4-32 VDC [RS..D]
18-36 VAC/DC [RS..LA]12 mA [RS..D]
15 mA [RS..LA.]

10 A, 25 A, 40 A

150 mA
100 A_P [RS1A..10]
230 A_P [RS1A..23]
300 A_P [RS1A..40]<3 mA
≤50 A²s [RS1A..10]
≤310 A²s [RS1A..25]
≤450 A²s [RS1A..40]

>250 V/μs

42-265Vrms [RS1A23..]
42-440Vrms [RS1A40..]
42-530Vrms [RS1A48..]≥650 V_P [RS1A23..]
≥850 V_P [RS1A40..]
≥1200 V_P [RS1A48..]

≥0.95

-20°C to +70°C

Screw type with clamp

CE - UL - CSA

10/25/40 A

RS1A23D..
RS1A23LA..RS1A40D..
RS1A40LA..RS1A48D..
RS1A48LA..80-130 VAC [RS1A..A1]
200-260 VAC [RS1A..A2]
360-400 VAC [RS1A..A4]

13 mA

25 A, 40 A

150 mA
230 A_P [RS1A..25]
300 A_P [RS1A..40]<3 mA
≤310 A²s [RS1A..25]
≤450 A²s [RS1A..40]

>250 V/μs

42-265Vrms [RS1A23..]
42-440Vrms [RS1A40..]≥650 V_P [RS1A23..]
≥850 V_P [RS1A40..]

≥0.95

-30°C to +70°C

Screw type with clamp

CE - UL - CSA

25/40 A

RS1A23A1..
RS1A23A2..
RS1A23A4..RS1A40A2..
RS1A40A4..4-32 VDC [RAM..D]
20-280 VAC /
22-48 VDC [RAM..A.]12 mA [RAM1..D.]
20 mA [RAM1..A.]25A, 50A, 75A, 100A
125A
5A, 15A, 17A, 20A, 30A150 mA
250 A_P [RAM1..25]
600 A_P [RAM1..50]
800 A_P [RAM1..75]
1000 A_P [RAM1..100]
1500 A_P [RAM1..125]<3 mA
≤310 A²s [RAM1..25]
≤1800 A²s [RAM1..50]
≤3200 A²s [RAM1..75]
≤6600 A²s [RAM1..100]
≤18000 A²s [RAM1..125]

1000 V/μs

24-265Vrms [RAM1.23..]
24-660Vrms [RAM1.60..]<650 V_P [RAM1.23..]
<1200 V_P [RAM1.60..]

≥0.5

-40°C to +80°C

Screw type with clamp

CE - UL - CSA - VDE

25 /50/75/100/125 A

RAM1A23D..
RAM1A23A..RAM1A60D..
RAM1A60A..4-32 VDC [RM..D.]
24-265 VAC /
24-48 VDC [RM..A.]10 mA [RM1..D.]
5 mA [RM1..A.]

25A, 50A, 75A, 100A

5A, 15A, 20A, 30A

150 mA
250 A_P [RM1..25]
600 A_P [RM1..50]
1000 A_P [RM1..75]
1500 A_P [RM1..100]<3 mA
≤310 A²s [RM1..25]
≤1800 A²s [RM1..50]
≤6600 A²s [RM1..75]
≤18000 A²s [RM1..100]

500 V/μs

24-265Vrms [RM1.23..]
42-440Vrms [RM1.40..]
42-530Vrms [RM1.48..]
42-660Vrms [RM1.60..]<650 V_P [RM1.23..]
<850 V_P [RM1.40..]
<1200 V_P [RM1.48..]
<1400 V_P [RM1.60..]

≥0.5

-20°C to +70°C

Screw type with clamp

CE - UL - CSA

25 /50/75/100 A

RM1A23D..
RM1A23A..RM1A40D..
RM1A40A..RM1A48D..
RM1A48A..RM1A60D..
RM1A60A..

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



Solid State Relays, 1-Phase

Types

Single phase, chassis mounting, industrial relays with LED status indication* and IP20 protection*
*(excluding RA/RB types).
AC operating frequency range 45÷65 Hz.
Rated insulation voltage ≥4000 Vrms.

Dimensions (mm) H x W x D

Features

Input Specifications

Control input range

Max. input current

Output Specifications

Rated operational current

AC 51 @ Ta=25°C

AC 53a @ Ta=25°C

AC 56a @ Ta=25°C

Min. operational current

Non rep. surge current

(t=10 ms)

Off-state leak current

I_{ft} for fusing

(t=10 ms)

General Specifications

Operational voltage range

Non rep. peak voltage

Power factor

Operating temperature

Terminals

Approvals/Marks

References

1-phase:

230 Vrms

400 Vrms

480 Vrms

600 Vrms

Industrial Housing
Zero switching

RM1A..M
25/50/75/100 A



58.2 x 44.8 x 28.8

Low voltage

AC/DC control

Industrial Housing
Peak switching

RM1C
25/50A



58.2 x 44.8 x 28.8

Ideal for

transformers

Industrial Housing
Phase angle

RM1E
25/50/100 A



58.2 x 44.8 x 28.8

Infra-red lamps

Light dimming

Industrial Housing
Zero switching

RA
25/50/90/110 A



58.2 x 44.8 x 28.8

General purpose

4.25-36 VDC /
4.25-27 VAC

18 mA @ 24 VAC/DC

25A, 50A, 75A, 100A
5A, 15A, 20A, 30A

150 mA

250 A_P [RM1A..M25]
600 A_P [RM1A..M50]
1000 A_P [RM1A..M75]
1500 A_P [RM1A..M100]

<3 mA

≤310 A²s [RM1A..M25]
≤1800 A²s [RM1A..M50]
≤6600 A²s [RM1A..M75]
≤18000 A²s [RM1A..M100]

24-265Vrms [RM1A23M.]
42-440Vrms [RM1A40M.]
42-530Vrms [RM1A48M.]
42-660Vrms [RM1A60M.]

≥650 V_P [RM1A23M.]
≥850 V_P [RM1A40M.]
≥1200 V_P [RM1A48M.]
≥1400 V_P [RM1A60M.]

≥0.5

-20°C to +70°C

Screw type with clamp

CE - UL - CSA

25/50/75/100 A

RM1A23M..

RM1A40M..

RM1A48M..

RM1A60M..

4.25-32 VDC

18 mA

25A, 50A

10A, 20A

150 mA

250 A_P [RM1C..25]
600 A_P [RM1C..50]

<3 mA

≤310 A²s [RM1C..25]
≤1800 A²s [RM1C..50]

24-440Vrms [RM1C40D.]
24-660Vrms [RM1C60D.]

800 V_P [RM1C40D.]
1400 V_P [RM1C60D.]

≥0.95

-30°C to +80°C

Screw type with clamp

CE - UL - cUL

25/50 A

RM1C40D25
RM1C40D50

RM1C60D25
RM1C60D50

4-20 mA @ 10 VDC

25A, 50A, 100A
5A, 15A, 20A,

150 mA

250 A_P [RM1E..25]
600 A_P [RM1E..50]
1000 A_P [RM1E..100]

<3 mA

≤310 A²s [RM1E..25]
≤1800 A²s [RM1E..50]
≤6600 A²s [RM1E..100]

90-440Vrms [RM1E.40.]
410-660Vrms [RM1E.60.]

<850 V_P [RM1E.40.]
<1400 V_P [RM1E.60.]

≥0.75

0°C to +70°C

Screw type with clamp

CE - UL - cUL

25/50/100 A

RM1E40AA25
RM1E40AA50
RM1E40AA100

RM1E60AA25
RM1E60AA50
RM1E60AA100

3-32 VDC [RA..D.]
10-90 VDC [RA..LA]
90-280 VAC/DC [RA..HA]

22 mA [RA..D.]
17 mA [RA..LA/HA..]

25A, 50A, 90A, 110A
5A, 15A, 20A, 30A

20 mA

250 A_P [RA..25.]
600 A_P [RA..50.]
1000 A_P [RA..90.]
1500 A_P [RA110.]

<3 mA

<310 A²s [RA..25.]
<1800 A²s [RA..50.]
<5000 A²s [RA..90.]
<11250 A²s [RA..110.]

24-280Vrms [RA24.06.]
42-480Vrms [RA44.08.]
42-530Vrms [RA48.12.]
24-690Vrms [RA60.16.]

<650 V_P [RA24.06.]
<850 V_P [RA44.08.]
<1200 V_P [RA..48..12]
<1600 V_P [RA..60..16]

≥0.5

-20°C to +70°C

Screw type with clamp

CE - UL - CSA

25/50/90/110 A

RA24..-D..
RA24..LA..
RA24..HA..

RA44..-D..
RA44..LA..
RA44..HA..

RA48..-D..
RA48..LA..
RA48..HA..

RA60..-D..
RA60..LA..
RA60..HA..

* Other options available on request: Higher current rating (125 A), FASTON terminals (RA..TF), Low cost Triac type (RA..T), see Accessories for heatsinks.





Types

AC Switching

DC Switching

RA Sense
 25/50/90/110 A

RA Low Noise
 10/25 Arms

RA 2-pole*
 25/40 Arms

RD
 1.5 ADC

 Relays with special
 function.

 Dimensions (mm) H x W x D
 Features

58.2 x 44.8 x 28.8

 Detects supply
 and load failure

58.2 x 44.8 x 28.8

 Complies with
 EN55022

58.2 x 44.8 x 28.8

 Two independent
 poles

58.2 x 44.8 x 28.8

 Ideal for DC
 valve coils

Input Specifications

Control input range

7-32 VDC

Max. input current

4 mA

Control supply

20-32 VDC (≤ 4 mA)

Alarm output

PNP

VCC - 2VDC (100mA)

NPN

2VDC @ 100mA

3-32 VDC

32 mA

4.5-32 Vrms

2 x 10 mA

3-32 VDC

32 mA

Output Specifications

Rated operational current

AC 51 @ Ta=25°C

AC 53a @ Ta=25°C

Min. operational current

Non rep. surge current

(t=10 ms)

Off-state leakage current

I₂t for fusing (t=10ms)

25A/50A/90A/110A

200 mArms

250 A_p [RA..25..S]600 A_p [RA..50..S]1000 A_p [RA..90..S]1500 A_p [RA..110..S]

< 6 mArms

310 A²s [RA..25..S]1800 A²s [RA..50..S]5000 A²s [RA..90..S]11250 A²s [RA..110..S]

10A / 25A

2 Arms

90 A_p [RA..10..L]200 A_p [RA..25..L]

< 1 mArms

120 A²s [RA..10..L]200 A²s [RA..25..L]

25 A / 40A per pole

5 A / 15A

200 mArms

230 A_p [RA2A..25]300 A_p [RA2A..40]230 A_p [RA2A..25M]550 A_p [RA2A..40M]

< 3 mArms

265 A²s [RA2A..25]450 A²s [RA2A..40]265 A²s [RA2A..25M]1800 A²s [RA2A..25M]

DC1: 1A / 5A

1 mA

1 mA

General Specifications

Operational voltage range

Non rep. peak voltage

Power factor

Operating temperature

Terminals

Approvals/Marks

60-140Vrms [RA12..S]

170-250Vrms [RA23..S]

150-440Vrms [RA40..S]

180-530Vrms [RA48..S]

600 V_p [RA12..S]600 V_p [RA23..S]1000 V_p [RA40..S]1200 V_p [RA48..S] ≥ 0.5

-20°C to +70°C

Screw / 5 way plug

CE - UL - CSA

180-265Vrms [RA24..L]

340-530Vrms [RA40..L]

650 V_p [RA24..L]850 V_p [RA40..L]

1.0

-20°C to +70°C

Screw type with clamp

CE - UL - CSA - VDE

24-265Vrms [RA2A23..]

42-440Vrms [RA2A40..]

42-530Vrms [RA2A48..]

42-660Vrms [RA2A60..]

650 V_p [RA2A23..]850 V_p [RA2A40..]1200 V_p [RA2A48..]1200 V_p [RA2A60..] ≥ 0.95 [RA24...] ≥ 0.50 [RA24...M]

-20°C to +70°C

FASTONS 6.3 mm

CE - UL - cUL

3-60 VDC [RD0605..D]

3-200 VDC [RD2001..D]

3-350 VDC [RD3501..D]

-20°C to +70°C

Screw type with clamp

CE - CSA

References

120 Vrms

230 Vrms

400 Vrms

480 Vrms

600 Vrms

25 / 50 / 90 / 110 A

RA12..06..S**RA23..06..S****RA40..10..S****RA48..12..S**

10 / 25 A

RA2410-D06L**RA2425-D06L****RA4010-D08L****RA4025-D08L**

25 / 40 A per pole

RA2A23..**RA2A23..M****RA2A40..****RA2A40..M****RA2A48..****RA2A48..M****RA2A60..****RA2A60..M**

1 A

200VDC: **RD2001-D**350VDC: **RD3501-D**

5 A

60VDC: **RD0605-D**

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



Solid State Relays type SOLITRON

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) H x W x D
Features

Control Specifications

Control input range

Max. input current

Output Specifications

Rated operational current
AC51 @ Ta= 25°C

AC53a @ Ta= 25°C

Min. operational current
Non-repet. surge current
(t=10 ms)

Off-state leakage current
I²t for fusing (t=10 ms)

On state voltage drop
Critical dV/dt off-state

General Specifications

Operational voltage range

Non-repet. peak voltage

Power factor

Operating temperature

Terminals

Approvals/Marks

References

1-phase, zero switching
AC control / 230 Vrms
DC control / 230 Vrms
AC control / 600 Vrms
DC control / 600 Vrms

AC control / 230 Vrms
DC control / 230 Vrms
AC control / 600 Vrms
DC control / 600 Vrms

AC control / 230 Vrms
DC control / 230 Vrms
AC control / 600 Vrms
DC control / 600 Vrms

80 x 22.5 x 103

Built-in snubber network

4-32 VDC [RJ..D.]
24-275 Vrms [RJ..A.]

12mA [RJ..D.],
17mA [RJ..A.]

20 Arms [RJ..20.]
30 Arms [RJ..30.]

5 Arms [RJ..20.]
15 Arms [RJ..30.]

350 mArms

250 Ap [RJ..20.]
400 Ap [RJ..30.]

<3 mArms
310 A²s [RJ..20.]
1800 A²s [RJ..30.]

1.6 Vrms

500 V/μs

24-265 Vrms [RJ1A23..]
42-660 Vrms [RJ1A60..]

650 V_P [RJ1A23..]
1200 V_P [RJ1A60..]

≥ 0.5

-30° to +80°C

Screw with captive wire clamp

CE - UL - CSA

20 A

RJ1A23A20E

RJ1A23D20E

RJ1A60A20E

RJ1A60D20E

30 A

RJ1A23A30E

RJ1A23D30E

RJ1A60A30E

RJ1A60D30E

81.7 x 45 x 103

Built-in snubber network

4-32 VDC [RJ..D.]
24-275 Vrms [RJ..A.]

12mA [RJ..D.],
17mA [RJ..A.]

45 Arms [RJ..45.]
50 Arms [RJ..50.]
75 Arms [RJ..75.]
20 Arms [RJ..45.]
30 Arms [RJ..50.]
30 Arms [RJ..75.]

150 mArms

1150 Ap [RJ..45.]
1900 Ap [RJ..50.]
1900 Ap [RJ..75.]

<3 mArms
6600 A²s [RJ..45.]
18000 A²s [RJ..50.]
18000 A²s [RJ..75.]

1.6 Vrms

500 V/μs

24-265 Vrms [RJ1A23..]
42-660 Vrms [RJ1A60..]

650 V_P [RJ1A23..]
1200 V_P [RJ1A60..]

≥ 0.5

-30° to +80°C

Screw with captive wire clamp

CE - UL - CSA

45 A

RJ1A23A45E

RJ1A23D45E

RJ1A60A45E

RJ1A60D45E

50 A

RJ1A23A50E

RJ1A23D50E

RJ1A60A50E

RJ1A60D50E

75 A (with fan)

RJ1A23A75E

RJ1A23D75E

RJ1A60A75E

RJ1A60D75E

81.7 x 90 x 103

Built-in snubber network

4-32 VDC [RJ..D.]
24-275 Vrms [RJ..A.]

12mA [RJ..D.],
17mA [RJ..A.]

70 Arms [RJ..70.]
90 Arms [RJ..90.]

30 Arms [RJ..70.]
30 Arms [RJ..90.]

150 mArms

1900 Ap

<3 mArms
18000 A²s [RJ..70.]
18000 A²s [RJ..90.]

1.6 Vrms

500 V/μs

24-265 Vrms [RJ1A23..]
42-660 Vrms [RJ1A60..]

650 V_P [RJ1A23..]
1200 V_P [RJ1A60..]

≥ 0.5

-30° to +80°C

Screw with captive wire clamp

CE - UL - CSA

70 A

RJ1A23A70E

RJ1A23D70E

RJ1A60A70E

RJ1A60D70E

90 A (with fan)

RJ1A23A90E

RJ1A23D90E

RJ1A60A90E

RJ1A60D90E

* 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.





Ready for 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 Low noise
1 pole 25 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) H x W x D
 Features

120 x 45 x 110 (30A)
 120 x 90 x 110 (50/63 A)
 Built-in varistor

120 x 45 x 110 (30 A)
 120 x 90 x 110 (50 A)
 High precision temperature control

120 x 45 x 110 (25 A)
 Complies with EN55022

120 x 45 x 110 (30 A)
 120 x 90 x 110 (50 A)
 Detects supply and load failure

Control Specifications

Control input range

5-32 VDC [RN..D]
 24-265 Vrms [RN..A]
 9 mA [RN..D]
 12 mA [RN..D]

Max. input current

4-20 mA [RN.F.I.]
 0-10 VDC [RN.F.V.]
 50 mA [RN.F.I.]
 0.1 mA [RN.F.V.]
 7-10 VDC [RN.F.I.]
 12-32VDC/24VAC [RN.V.]

20-30 Vrms

7-32 VDC

Control supply

26 mA

4 mA

Alarm output PNP
NPN20-32 VDC (≤ 4 mA)

Vcc - 2VDC (100mA)
 2VDC@100mA

Output Specifications

Rated operational current
 AC 51 @ Ta=30°C

30 Arms [RN..30]
 50 Arms [RN..50]
 63 Arms [RN..63]
 6 Arms [RN..30]
 12 Arms [RN..50]
 24 Arms [RN..63]

30 Arms [RN.F.30]
 50 Arms [RN.F.50]

24 Arms

30 Arms [RN1S...30..]
 50 Arms [RN1S...50..]

AC 53a @ Ta=40°C

4 Arms

6 Arms [RN1S...30..]
 12 Arms [RN1S...50..]

Min. operational current

200 mArms

500 mArms

2 Arms

200 mArms

Non rep. surge current
(t=10 ms)

250 A_p [RN..30]
 600 A_p [RN..50]
 1000 A_p [RN..63]

250 A_p [RN..30]
 600 A_p [RN..50]

230 A_p

250 A_p [RN1S...30..]
 600 A_p [RN1S...50..]

Off-state leakage current

<1 mArms

<6 mArms

<8 mArms

<6 mArms

I²t for fusing

310 A²s [RN..30]
 1800 A²s [RN..50]
 5000 A²s [RN..63]

310 A²s [RN.F.30]
 1800 A²s [RN.F.50]

265 A²s

310 A²s [RN1S...30..]
 1800 A²s [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..]

100-265 Arms [RN1L23..]
 100-440 Arms [RN1L40..]
 100-530 Arms [RN1L48..]

120-265 Arms [RN1L23..]
 150-440 Arms [RN1L40..]
 180-530 Arms [RN1L48..]

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 [RN1L23..]
 1000 V_p [RN1L40..]
 1200 V_p [RN1L48..]

800 V_p [RN1S23..]
 1000 V_p [RN1S40..]
 1200 V_p [RN1S48..]

Power factor

 ≥ 0.5 ≥ 0.9 ≥ 0.5 ≥ 0.5

Operating temperature

-20°C to +70°C

-20°C to +70°C

+10°C to +60°C

-20°C to +70°C

Terminals

Screw captive wire clamp

Screw captive wire clamp

Screw captive wire clamp

Screw captive wire clamp

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

CE - UL - CSA

CE - UL - CSA

References

1-phase, zero switching

30 A **RN1A23A30**
RN1A23D30
RN1A48A30
RN1A48D30
 50 A **RN1A23A50**
RN1A23D50
RN1A48A50
RN1A48D50
 63 A **RN1A23A63**
RN1A23D63
RN1A48A63
RN1A48D63

30 A **RN1F12I30**
RN1F12V30
RN1F23I30
RN1F23V30
RN1F48I30
RN1F48V30
 50 A **RN1F12I50**
RN1F12V50
RN1F23I50
RN1F23V50
RN1F48I50
RN1F48V50

25 A **RN1L23M25**
RN1L40M25
RN1L48M25

30 A **RN1S23H30NO**
RN1S23H30PO
RN1S40H30NO
RN1S40H30PO
RN1S48H30NO
RN1S48H30PO
 50 A **RN1S23H50NO**
RN1S23H50PO
RN1S40H50NO
RN1S40H50PO
RN1S48H50NO
RN1S48H50PO



Solid State Relays type SOLITRON

Ready for 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) H x W x D
Features

Control Specifications

Control input range

Max. input current

Control supply

Output Specifications

Rated operational current
AC51 @ Ta= 30°C

AC53a @ Ta= 30°C

Min. operational current

Non-rep. surge current
(t=10 ms)

Off-state leakage current
I²t for fusing (t=10 ms)

Critical dV/dt off-state

General Specifications

Operational voltage range

Non-repet. peak voltage

Power factor

Operating temperature

Terminals

Approvals/Marks

References

3-phases, zero switching

120 x 45 x 110 (30A)
120 x 90 x 110 (50A)

Current rating is sum of both poles

2x5-32 VDC [RN...D.]
2X24-265 Vrms [RN...A.]

9 mA/pole [RN...D]
12 mA/pole [RN...A]

30 A total sum [RN...30]
50 A total sum [RN...50]
6 A [RN...30]
12 A [RN...50]

200 mArms

250 A_P [RN...30.]

600 A_P [RN...50.]

<1 mArms

310 A²s [RN...30.]

1800 A²s [RN...50.]

500 V/μs

24-265 Vrms [RN...23..]
42-530 Vrms [RN...48..]

800 V_P [RN...23..]
1200 V_P [RN...48..]

≥0.5

-20° to +70°C

Screw with captive wire clamp

CE - UL - CSA

30 A total sum

RN2A23A30

RN2A23D30

RN2A48A30

RN2A48D30

50 A total sum

RN2A23A50

RN2A23D50

RN2A48A50

RN2A48D50

120 x 45 x 110 (30A)
120 x 90 x 110 (50A)

High precision economy switching

4-20 mA [RN.F.I.]
0-10 VDC [RN.F.V.]

50 mA [RN.F.I.]
0.1 mA [RN.F.V.]

7-10 VDC [RN.F.I.]
12-32 VDC/24 VAC [RN.V]

30 A total sum [RN.F..30]
50 A total sum [RN.F..50]

500 mArms per pole

250 A_P [RN.F..30.]

600 A_P [RN.F..50.]

<6 mArms

310 A²s [RN.F..30.]

1800 A²s [RN.F..50.]

500 V/μs

85-140 Vrms [RN..F12..]
85-265 Vrms [RN..F23..]
190-530 Vrms [RN..F48..]

800 V_P [RN..F12..]
800 V_P [RN..F23..]
1000 V_P [RN..F48..]

≥0.9

-20° to +70°C

Screw with captive wire clamp

CE - UL - CSA

30 A total sum

RN2F12I30

RN2F12V30

RN2F23I30

RN2F23V30

RN2F48I30

RN2F48V30

50 A

RN2F12I50

RN2F12V50

RN2F23I50

RN2F23V50

RN2F48I50

RN2F48V50

120 x 45 x 110 (15A)
120 x 90 x 110 (30A)

2 poles switched
1 pole direct

5-32 VDC

10 mA @ 24 VDC

3 x 15 A [RN3A..D15]
3 x 30 A [RN3A..D30]
3 x 6 A [RN3A..D15]
3 x 12 A [RN3A..D30]

200 mArms

250 A_P [RN3A..D15]

600 A_P [RN3A..D30.]

<6 mArms

310 A²s [RN3A..30.]

1800 A²s [RN3A..50.]

500 V/ms

24-265 Vrms [RN3A22..]
42-440 Vrms [RN3A40..]
42-530 Vrms [RN3A48..]

650 V_P [RN3A22..]
800 V_P [RN3A40..]
1200 V_P [RN3A48..]

≥0.5

-20° to +70°C

Screw with captive wire clamp

CE - UL - CSA

3 x 15 A

RN3A22D15

RN3A40D15

RN3A48D15

3 x 30 A

RN3A22D30

RN3A40D30

RN3A48D30

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

**Types**

Soft starting and stopping of 3-phase motors. Starting / stopping time and initial torque can be independently adjusted by built-in potentiometers. Switching of 1-phase transformers to minimise inrush current.

Dimensions (mm) H x W x D

Features

Control Specifications

Control input range

Max. input current

Rated insulation voltage

Dielectric voltage

Impulse withstand volt.

Output Specifications

Rated operational current

Overload current profile

Operational voltage

General Specifications

Frequency range

Ramp up / Ramp down

Initial torque

Kick-start

Ramp profiles

Over-temp. protection

Relay output

Connections

Capacity max. power

Capacity max. control

Operating temperature

Storage temperature

Degree of protection

Approvals/Marks

References

Motor Control:

3-phase/2-pole switching

Transformer switching:

1 pole switching

**Motor Control - Soft Start and Stop
2 Pole Switching****Transformer
Switching****RSE..-B**

80 x 45 x 103

Up to 5.5 kW
at 400VAC**RSE..-C**

80 x 90 x 103

Up to 11.0 kW
at 400VAC**RSE..-CR1**

80 x 90 x 103

User selected ramp
profiles**TSE..**

80 x 45 x 103

Reduces inrush
currentA1-A2: 24-110VAC/DC
A1-A3: 110-480VACA1-A2: 12 mA
A1-A3: 5 mA

630 Vm

2 kVrms

4 kV (1.2/50 µs)

AC53b: integral by-
passing of semiconductor
3 A [RSE..03..]
12 A [RSE..12..]3 A:AC-53b:3-5:30
12 A:AC-53b:3-5:180127/220 Vrms [RSE22..]
230/400 Vrms [RSE40..]
227/480 Vrms [RSE48..]
346/600 Vrms [RSE60..]

50-60 Hz

0.5-7.5s / 0.5-10s

70-100% on max.
5 % on min.

No

General purpose

No

No

Screw terminals

2 x 2.5 mm x 4

2 x 2.5 mm x 4

-20°C to +50°C

-50°C to +85°C

IP 20

CE - UL - CSA

3 A

RSE2203-B (0.55 kW)**RSE4003-B** (1.1 kW)**RSE4803-B** (1.5 kW)**RSE6003-B** (2.2 kW)

12 A

RSE2212-B (3.0 kW)**RSE4012-B** (5.5 kW)**RSE4812-B** (5.75 kW)**RSE6012-B** (0.55 kW)A1-A2: 24-110VAC/DC
A1-A3: 110-480VACA1-A2: 12 mA
A1-A3: 5 mA

630 Vm

2 kVrms

4 kV (1.2/50 µs)

AC53b: integral by-
passing of semiconductor
25 A

25 A:AC-53b:4-3:120

127/220 Vrms [RSE22..]
230/400 Vrms [RSE40..]
227/480 Vrms [RSE48..]
346/600 Vrms [RSE60..]

50-60 Hz

0.5-10s / 0.5-20s

50%±5% on max.
5 % on min.

No

General purpose

Yes

No

Screw terminals

10 mm or 2x 6 mm

2.5 mm

-20°C to +50°C

-50°C to +85°C

IP 20

CE - UL - CSA

25 A

RSE2225-C (5.5 kW)**RSE4025-C** (11 kW)**RSE4825-C** (15 kW)**RSE6025-C** (15 kW)A1-A2: 24-110VAC/DC
A1-A3: 110-480VACA1-A2: 12 mA
A1-A3: 5 mA

630 Vm

2 kVrms

4 kV (1.2/50 µs)

AC53b: integral by-
passing of semiconductor
25 A

25 A:AC-53b:4-3:120

127/220 Vrms [RSE22..]
230/400 Vrms [RSE40..]
227/480 Vrms [RSE48..]
346/600 Vrms [RSE60..]

50-60 Hz

0.5-20s / 0.5-20s

50%±5% on max.
5 % on min.

200 ms

Pump compressor

Yes

Over-temperature

End of ramp

Wrong phase sequence

Screw terminals

10 mm or 2x 6 mm

2.5 mm

-20°C to +50°C

-50°C to +85°C

IP 20

CE - UL - CSA

25 A

RSE2225-CR1 (5.5 kW)**RSE4025-CR1** (11 kW)**RSE2485-CR1** (15 kW)**RSE6025-CR1** (15 kW)

4-32 VDC

12 mA

AC51: <16 A
AC51: >16 A
with external thyristor
module90/135 Vrms [TSE.110.]
160/270 Vrms [TSE.230.]
280/440 Vrms [TSE.400.]
350/550 Vrms [TSE.480.]

45-65 Hz

Trasformer selector

Load can be single
phase transformer with
EI-cut strip-wound core
or toroidal core with any
secondary load or it can
be a parallel connection
of different types of
1- phase transformers

Screw terminals

2.5 mm

2.5 mm

0°C to +50°C

-50°C to +85°C

IP 20

CE

16 A

TSE6-1A1113100**TSE6-1A2113100****TSE6-1A3113100****TSE6-1A4113100**

30 A / 50 A / 63 A

TSE6-1A1213100**TSE6-1A2213100****TSE6-1A3213100****TSE6-1A4213100**

* Other options available on request: Single pole up to 12 A/400 V/4.7 kW (RSE..-BS), Relay output on 25 A 400 V/15 kW (RSE..-C10).



3-Phase Control Devices

Types

Soft starting and stopping of 3-phase motors (RSC...+RSO...). Phase angle control of 3-phase heaters (RSC.AA...+RSO). Switching and reversing (RZ..., RR...).

Dimensions (mm) H x W x D
Features

Control Specifications

Control input range

Max. input current

Control supply

Max supply current

Output Specifications

Rated operational current

Operational voltage

General Specifications

Ramp up / Ramp down

Initial torque

Bypass contactor supply

Connections

Operating temperature

Storage temperature

Approvals/Marks

References

Motor Control 3 Pole Switching

RSC..HD..+RSO...



74 x 103 x 65

Output for external bypass contactor

10-32 VDC

1 mA

10-32 VDC

180 mA

AC53a:
5 Arms [RSO..25]
15 Arms [RSO..50]
30 Arms [RSO..90]
40 Arms [RSO..110]

150-250Vrms [RSO22..]
220-420Vrms [RSO40..]
400-510Vrms [RSO48..]
400-625Vrms [RSO60..]

0.5-30 s / 0.5-30 s

10-75%

Vcc-8VDC@150mA max.

Screw type with clamp

-20°C to +70°C

-40°C to +100°C

CE - UL - CSA

Control module

RSC-HD0M60

Output module: 400VAC

25A: RSO4025 (4kW*)

50A: RSO4025 (11kW*)

90A: RSO4025 (15kW*)

110A: RSO4025 (22kW*)

Output module can be 200,400,480,600 VAC.

*Correct heatsink assembly required.

For further details please consult datasheet.

RSC..AA..+RSO...



74 x 103 x 65

User controlled analogue input

0-20 mA (A-input)
4-20 mA (B-input)

10-32 VDC

180 mA

AC53a:
5 Arms [RSO..25]
15 Arms [RSO..50]
30 Arms [RSO..90]
40 Arms [RSO..110]

150-250Vrms [RSO22..]
220-420Vrms [RSO40..]
400-510Vrms [RSO48..]
400-625Vrms [RSO60..]

User controlled

User controlled

Screw type with clamp

-20°C to +70°C

-40°C to +100°C

CE - UL - CSA

Control module

RSC-AAM60

Output module: 400VAC

25A: RSO4025 (4kW*)

50A: RSO4025 (11kW*)

90A: RSO4025 (15kW*)

110A: RSO4025 (22kW*)

Switching

RZ3A



74 x 103 x 41

3-phase switching

4-32 VDC [RZ3A..D.]
5 VDC [RZ3A..LD.]
24-265 Vrms [RZ3A..D.]
23 / 15 / 15 mA

AC51:
25 / 40 / 55 / 75 Arms
AC53a:
5 / 8 / 15 / 20 Arms
I²t for fusing (t=10 ms)
265/450/1800/6600 A²s
24-440Vrms [RZ3A..40.]
42-660Vrms [RZ3A..60.]
850 V_p [RZ3A..40.]
1200 V_p [RZ3A..60.]

3-phase, zero switching,
built-in transient overvolt.
protect., LED status indic.

Screw type with clamp

-30°C to +80°C

-40°C to +100°C

CE - UL - CSA

25 A / 50 A / 75 A

3 x 400 Vrms:

RZ3A40D..

RZ3A40LD..

RZ3A40A..

3 x 600 Vrms:

RZ3A60D..

RZ3A60LD..

RZ3A60A..

Reversing

RR2I



74 x 103 x 41

Reversing with interlock

10-40 VDC [RR2I.HAP]
90-140Vrms VDC [RR2I.LAP]
180-265 Vrms [RR2I.HAP]
35 / 29 / 15 mA

AC51:
10 / 25 / 40 Arms
AC53a:
1.5 / 3.5 / 6 Arms
I²t for fusing (t=10 ms)
72 / 265 / 450 A²s

120-440Vrms [RR2I..40.]
120-530Vrms [RR2I..48.]
1200 V_p [RR2I..40.]
1400 V_p [RR2I..48.]

3-phase, built-in transient
overvolt. protect., interlock
revers., LED status indic.

Screw type with clamp

-20°C to +70°C

-40°C to +100°C

CE - UL - CSA

10 A / 25 A / 40 A

2 x 400 Vrms:

RR2I4005.. (0.5kW)

RR2I4015.. (1.5kW)

RR2I4030.. (3.0kW)

2 x 480 Vrms:

RR2I4805.. (0.5kW)

RR2I4805.. (1.5kW)

RR2I4805.. (3.0kW)

Switch



Heatsink assemblies for 1-phase Solid State Relays

Types

RHS 100

RHS 45 A

RHS 45 B

RHS 90

Dimensions (mm) H x W x D
(mounted relay)

82 x 45 x 75

103 x 45 x 84

103 x 45 x 109

103 x 90 x 109

Description

Heatsink assembly*
with DIN-rail adapter.Heatsink assembly*
with DIN-rail adapter.
A fan may be
mounted, (RHSF40-24)Heatsink assembly*
with DIN-rail adapter.
A fan may be mounted,
(RHSF40-24)Heatsink assembly*
with DIN-rail adapter.
A fan may be mounted,
(RHSF60-24)

Thermal resistance

Without fan

3.0 K/W

2.7 K/W

2.0 K/W

1.35 K/W

With fan

Not available

1.25 K/W

1.2 K/W

0.45 K/W

References

RHS 100

RHS 45 A

RHS 45 B

RHS 90

Heatsink assemblies for 3-phase Solid State Relays

Types

RHS 300

RHS 112

RHS 301

RHS 301F

Dimensions (mm) H x W x D
(mounted relay)

82 x 105 x 60

103 x 112 x 109

82 x 118 x 109

145 x 122 x 135

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.Heatsink assembly*
with DIN-rail adapter
and integrated fan
(230 VAC)

Thermal resistance

Without fan

5.0 K/W

1.1 K/W

0.8 K/W

With fan

Not available

0.4 K/W

0.25 K/W

References

RHS 300

RHS 112

RHS 301

RHS 301 F 230C

SELECTION GUIDE FOR
HEATSINK ASSEMBLIES

Thermal Resistance

>5.00 K/W

Heatsink assembly

Heatsink not needed

5.00 K/W

RHS300

3.00 K/W

RHS100

2.70 K/W

RHS45A

2.00 K/W

RHS45B

1.35K/W

RHS90

1.25 K/W

RHS45A & RHSF40-24

Thermal Resistance

1.20 K/W

Heatsink assembly

1.10 K/W

RHS45B & RHSF40-24

0.80 K/W

RHS112

0.45 K/W

RHS301

0.40 K/W

RHS90 & RHSF60-24

0.25K/W

RHS112 & RHSF60-24

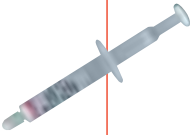
<0.25K/W

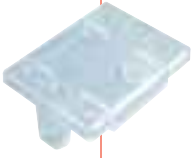
RHS301 F 230C

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



Solid State Relay, Accessories

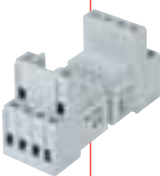
General accessories				
Types	Thermal paste	DIN-rail adaptor	Varistors	Fans 24 VDC
				
Dimensions (mm) H x W x D (mounted relay)				40 x 40 x 109 (RHSF40) 60 x 60 x 109 (RHSF60)
Description	Essential accessory for relay mounting on heatsink	DIN-rail adaptor for heatsinks. Integrated in kits RHS100, RHS300, RHS301.	Solid State Relay protection against voltage transient (voltage surge).	RHSF40-24 to be mounted with RHS45A, RHS45B, RHSF60-24 to be mounted with RHS90, RHS112,
References	HTS02S	RHS00	250 V: RV02 420 V: RV04 510 V: RV05 625 V: RV06 680 V: RV07	RHSF40-24 RHSF60-24

Types	RPM1	RMIP20	BBR	Fastons
				
Dimensions (mm) H x W x D	23.6 x 85 x 12.5	58 x 45 x 9	59 x 45 x 25.5	4.8/6.3
Description	Din-rail adaptor for PCB relays. (Relay excluded)	Clip-on IP20 protection Cover for RAM, RM, RS serie.	Protection cover for RA, RB, RD serie.	Screw Faston terminals for RAM, RM, RS serie.
References	RPM1	RMIP20	BBR	RMF0 (flat) RMF4 (45° angle)





	Industrial Relays		Midi Industrial Relays	
Types	RCP 8 (2 Poles)	RCP 11 (3 Poles)	RMI 2-10 (2 Poles)	RMI 4-5 (4 Poles)
				
Dimensions (mm) H x W x D	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 - 12 - 24 - 48 60 - 110	5 - 6 - 12 - 24 - 48 60 - 110
Voltage ranges VAC	6 - 12 - 24 - 48 115/120 - 230	6 - 12 - 24 - 48 115/120 - 230	6 - 12 - 24 - 48 115/120 - 230	6 - 12 - 24 - 48 115/120 - 230
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-TUV-IMQ	UL-CSA-TUV-IMQ	UL-CSA-TUV-IMQ	UL-CSA-TUV-IMQ
References				
5 VDC	RCP80026DC	RCP110036DC	RMIA/B2-105DC	RMIA/B4-55DC
6 VDC	RCP80026AC	RCP110036AC	RMIA/B2-106AC	RMIA/B4-56AC
6 VAC	RCP800212AC	RCP1100312AC	RMIA/B2-106DC	RMIA/B4-56AC
12 VAC	RCP800212DC	RCP1100312DC	RMIA/B2-1012AC	RMIA/B4-512AC
12 VDC	RCP800224AC	RCP1100324AC	RMIA/B2-1012DC	RMIA/B4-512DC
24 VAC	RCP800224AC	RCP1100324AC	RMIA/B2-1024AC	RMIA/B4-524AC
24 VDC	RCP800224DC	RCP1100324DC	RMIA/B2-1024DC	RMIA/B4-524DC
48 VAC	RCP800248AC	RCP1100348AC	RMIA/B2-1048AC	RMIA/B4-548AC
48 VDC	RCP800248DC	RCP1100348DC	RMIA/B2-1048DC	RMIA/B4-548DC
60 VDC	RCP800260DC	RCP1100360DC	RMIA/B2-1060DC	RMIA/B4-560DC
100 VDC	RCP8002100DC	RCP11003100DC		
110 VDC	RCP8002110DC	RCP11003110DC	RMIA/B2-10110DC	RMIA/B4-5110DC
115/120 VAC	RCP8002115/120AC	RCP11003115/120AC	RMIA/B2-10115AC	RMIA/B4-5115AC
230 VAC	RCP8002230DC	RCP11003230DC	RMIA/B2-10230AC	RMIA/B4-5230AC

	ZPD 8 / ZPD 11		ES 15/2N - ES 15/4N	
				
General Specifications				
Dimensions (mm) H x W x D	65 X 27 X 38	Octal and Undecal socket.	42.5 x 75 x 27	14 pole socket. Plug-in terminal connection.
Rated volt. / Rated curr.	400 VAC / 10 A		300 VAC / 12 A	
Insulation voltage	> 3 kV	Unintentional touch protection.	> 4 kV	Unintentional touch protection.
Socket material	Self-ext. PA6 + GF (V1)	Standardized markings.	Self-ext. PA6 + GF (V2)	
Mounting	DIN-rail		DIN-rail	
Protection degree	IP 20		IP 20	
Approvals	CE,UL,CSA (10A 300VCA)		CE,UL,CSA	
References				
For RCP 8 / RCP 11 Relay	ZPD 8	ZPD 11		
For RMI2-10 / RMI4-5 Relay			ES 15/2N	ES 15/4N



Power Relays

Types

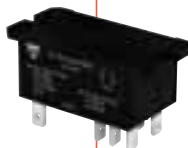
CGQ (1 Pole)



CGQ F4 (1 Pole)



CF (2 Poles)



CS (2 Poles)



Dimensions
(mm) H x W x D
Terminal types
No. of Contacts

20.1 x 32.2 x 27
PCB
1 Normally open
1 Change-over

27.8 x 32.4 x 27.5
PCB and Fast-On
1 Normally open
1 Change-over

26.42 x 68.58 x 34.54
Fast-On
2 Normally open
2 Change-over

26.42 x 52.32 x 34.54
PCB
2 Normally open
2 Change-over

Contact rating

30 A

30 A

30 A

30 A

Output Specifications

Max. load AC1
Electrical life
Switching power

30 A (1NO) - 20 A (1CO)
 1×10^5
2 HP at 250 VAC

30 A (1NO) - 20 A (1CO)
 1×10^5
2 HP at 250 VAC

30 A (2NO) - 20A (2CO)
 1×10^5
8310 VA / 840 W

30 A (2NO) - 20 A (2CO)
 1×10^5
8310 VA / 840 W

General Specifications

Voltage ranges VDC
Voltage ranges VAC

5 - 6 - 9 - 12 - 15
18 - 24 - 48 - 70 - 110
12 - 24 - 120 - 208
240 - 277

5 - 6 - 9 - 12 - 15
18 - 24 - 48 - 70 - 110
12 - 24 - 120 - 208
240 - 277

6 - 12 - 24 - 48
24 - 120 - 240 - 277

6 - 12 - 24 - 48
24 - 120 - 240 - 277

Insulation Coil/Contact
Consumption

2500/4000 VAC
DC=0.9 W - AC=2 VA

2500/4000 VAC
DC=0.9 W - AC=2 VA

4000 VAC
DC=1.7 W - AC=4 VA

4000 VAC
DC=1.7 W - AC=4 VA

Approvals/Conformity

UL-cUL

UL-cUL

UL-cUL

UL-cUL

References

Consult your Carlo Gavazzi
Partner or Distributor

From 5 to 110 VDC
From 12 to 277 VAC

From 5 to 110 VDC
From 12 to 277 VAC

From 6 to 48 VDC
From 24 to 277 VAC

From 6 to 48 VDC
From 24 to 277 VAC

Types

NA (1/2 Poles)



NF (1/2 Poles)



NP (1/2 Poles)



Dimensions
(mm) H x W x D
Terminal types
No. of Contacts

36 x 50.5 x 33.5
Fast-On
1 Normally open
2 Normally open

36 x 68.58 x 33.5
Fast-On
1 Normally open
2 Normally open

36 x 50.5 x 33.5
PCB
1 Normally open
2 Normally open

Contact rating

30 A

30 A

30 A

Output Specifications

Max. load AC1
Electrical life
Switching power

30 A (1NO) - 25 A (2NO)
 1×10^5
7500 VA / 840 W

30 A (1NO) - 25 A (2NO)
 1×10^5
7500 VA / 840 W

30 A (1NO) - 25 A (2NO)
 1×10^5
7500 VA / 840 W

General Specifications

Voltage ranges VDC
Voltage ranges VAC

3 - 6 - 12 - 24 - 48
100 - 110 - 200
6 - 12 - 24 - 48
120 - 220

3 - 6 - 12 - 24 - 48
100 - 110 - 200
6 - 12 - 24 - 48
120 - 220

3 - 6 - 12 - 24 - 48
100 - 110 - 200
6 - 12 - 24 - 48
120 - 220

Insulation Coil/Contact
Consumption

4000 VAC
DC=1.9 W - AC=2.7 VA

4000 VAC
DC=1.9 W - AC=2.7 VA

4000 VAC
DC=1.9 W - AC=2.7 VA

Approvals/Conformity

UL-cUL

UL-cUL

UL-cUL

References

Consult your Carlo Gavazzi
Partner or Distributor

From 3 to 200 VDC
From 6 to 220 VAC

From 3 to 200 VDC
From 6 to 220 VAC

From 3 to 200 VDC
From 6 to 220 VAC





Types

	MZ (1 Pole)	MZ (2 Poles)	M15 - M15 R1/R2 (1 Pole)	M25 (1or 2 Poles)
				
Dimensions (mm) H x W x D	25.2/26.5 x 29.4 x 12.5	25.2/26.5 x 29.4 x 12.5	15 x 29 x 10	15.7 x 29 x 12.7
Terminal types	PCB	PCB	PCB	PCB
No. of Contacts	1 Normally open 1 Change-over	2 Normally open 2 Change-over	1 Normally open 1 Change-over	1 Change-over (1 pole) 2 Change-over (2 poles)
Contact rating	5 A - 10 A - 16 A	5 A - 10 A	8 A	12 A - 16 A (1 pole) 8 A (2 poles)
Output Specifications				
Max. load AC1	6 A - 12 A - 20 A	6 A - 12 A	10 A	9 A - 13 A - 18 A
Min. load	100 mA at 24 mVDC	100 mA at 24 mVDC	100 mA at 24 mVDC	100 mA at 24 mVDC
Electrical life	3.5 x 10 ⁵ cycles (5/10A) 1.5 x 10 ⁵ cycles (16A)	2.5 x 10 ⁵ cycles (5 A) 8 x 10 ⁴ cycles (10 A)	100.000 cycles	1x10 ⁵ cycles
Switching power	1250/2500/4000 VA	1250/2500 VA	2000 VA	4000/3000/2000 VA
General Specifications				
Voltage ranges VDC	3 - 5 - 6 - 9 - 12 24 - 36 - 48 - 60 80 - 100 - 110	3 - 5 - 6 - 9 - 12 24 - 36 - 48 - 60 80 - 100 - 110	3-5-6-8-12-18-24-48 110 (M15) 3-5-6-8- 12-18-24-48 (M15R)	5 - 6 - 12 - 24 - 48 60 - 110
Voltage ranges VAC	6 - 12 - 24 - 48 - 60 110 - 230	6 - 12 - 24 - 48 - 60 110 - 230		
Insulation Coil/Contact	4000 VAC	4000 VAC	4000 VAC	4000 VAC
Consumption	See PCB General Cat.	See PCB General Cat.	220 mW	5 00 mW
Approvals/Conformity	UL - CSA - VDE - IMQ S - N - D - F - SEV	UL - CSA - VDE - IMQ S - N - D - F - SEV	UL - CSA - VDE - IMQ S - N - D - F - SEV	cUL - VDE
References				
Consult your Carlo Gavazzi Partner or Distributor	From 1.8 to 160 VDC From 6 to 264 VAC	From 2.5 to 260 VDC From 6 to 260 VAC	3 to 110 VDC (M15) 3 to 48 VDC (M15R)	From 5 to 110 VDC

Types

	ZD 25 - ZD 32 - ZD 35 - ZD 50	ES 50/3
		
General Specifications		
Rated volt. / Rated curr.	300 VAC / 12 A	300 VAC / 12 A
Insulation voltage	> 5 kV	> 5 kV
Socket material	Self-ext. PA 6 + GF (V1)	Self-ext. PA 6 + GF (V1)
Mounting	DIN-rail	DIN-rail
Protection degree	IP 20	IP 20
Approvals	UL, CSA (12 A 300 VCA)	UL, CSA (12 A 300 VCA)
References		
For detailed informations consult your Carlo Gavazzi Partner or Distributor	ZD 25 For relay: M15 F 8 A ZD 32 For relay: M15 E 8 A ZD 35 For relay: MZ 1P 5/10 A M15 M 8A M25 1P 12 A ZD 50 For relay: MZ B 1P 5/10 A MZ 2P 5/10 A MZ 1P 16 A M15 M 8 A M25 1P 16 A M25 2P 8 A	ES 50/3 For relay: MZ B 1P 5/10 A MZ 2P 5/10 A MZ 1P 16 A M15 B 8 A



Subminiature Relays

Types

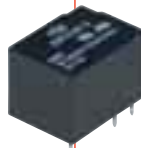
EZH



ESH



EMH



VM



Dimensions

(mm) H x W x D

Terminal types

No. of Contacts

Contact rating

10 x 12.5 x 7.5

PCB

1 Change-over

1 A

12 x 15.7 x 11

PCB

1 Change-over

2 A

15 x 21.5 x 16.5

PCB

1 Change-over

6 A

20.5 x 20.5 x 10.5

PCB

1 Change-over

5 A

Output Specifications

Max. load AC1

Min. load

Electrical life

Switching power

1 mA / 10 mVDC

1 x 10⁵ cycles

30 W / 62.5 VA

1 mA / 80 mVDC

1 x 10⁵ cycles

30 W / 60 VA

10 mA / 5 mVDC

10⁵ cycles

144 W / 720 VA

100 mA / 5 VDC

10⁵ cycles

150 W / 1250 VA (φ1)

625 W / 75 VA (φ0.4)

General Specifications

Voltage ranges VDC

Insulation Coil/Contact

Consumption

Approvals/Conformity

1.5 - 3 - 5 - 6 - 9
12 - 24

1000 VAC

150 mW

UL - cUL

3 - 5 - 6 - 9 - 12 - 24

500 V

200 mW

UL - cUL

3 - 5 - 6 - 9 - 12 - 18
24 - 48

2000 VAC

450 mW

UL - cUL

5 - 6 - 9 - 12 - 18
24 - 48

2000 VAC

360 mW

UL - cUL

References

Consult your Carlo Gavazzi
Partner or Distributor

From 1.5 to 24 VDC

From 3 to 24 VDC

From 3 to 48 VDC

From 5 to 48 VDC

Types

JF



TFL2



ZFH A



VTH



Dimensions

(mm) H x W x D

Terminal types

No. of Contacts

Contact rating

15.3 x 20.5 x 10.6

PCB

1 Normally open

1 Change-over

5 A

10.6 x 20.2 x 10

PCB

2 Change-over

2 A

12 x 20.2 x 9.9

PCB

2 Change-over

1.25 A

14.8 x 19.2 x 15.4

PCB

1 Change-over

10 A

Output Specifications

Max. load AC1

Min. load

Electrical life

Switching power

10 mA / 5 VDC / 5 VAC

10⁵ cycles

150 W / 1250 VA

100 µA / 10 mVDC

5 x 10⁵ cycles

60 W / 125 VA

10 µA / 10 mVDC

1 x 10⁶ cycles

30 W / 50 VA

100 mA / 12 VDC

10⁵ cycles

1750 VA (AgCdO cont.)

2500 VA (AgSnO₂ cont.)

General Specifications

Voltage ranges VDC

Insulation Coil/Contact

Consumption

Approvals/Conformity

3 - 5 - 6 - 9 - 12 - 24
12 - 24

4000 VAC

200 mW

UL - cUL

5 - 6 - 9 - 12 - 15
24

1500 VAC

150 mW

UL - cUL

4.5 - 5 - 6 - 9 - 12 -
18 - 24 - 48

1000 VAC

150 mW

UL - cUL

5 - 6 - 9 - 12 - 18 -
24 - 48

1500 VAC

360 mW

UL - cUL

References

Consult your Carlo Gavazzi
Partner or Distributor

From 3 to 24 VDC

From 5 to 24 VDC

From 4.5 to 48 VDC

From 5 to 48 VDC

Control





Monitoring Relays

Types

Current relays

**DIA 01
PIA 01**

DIA 53

**DIB 01
PIB 01**

DIB 71



Dimensions (mm) H x W x D
DIN RAIL housing
Plug-in housing
Function

80 x 22.5 x 99.5 [D]
80 x 36 x 90 [P]
Over current
monitoring relay.
1 phase AC/DC
Dir. input or on CT 5A.
Set-point adjustable.
Hysteresis adjustable.

81.5 x 17.5 x 67 [Mini-D]
Over current
monitoring relay.
1 phase AC.
Set-point adjustable.
2-wire connection.
Own power supply.
12 mm hole for
insulated current
carrying wire.

80 x 22.5 x 99.5 [D]
80 x 36 x 90 [P]
Over/under current
monitoring relay.
1 phase AC/DC TRMS.
Direct input or on
CT 5A.
Set-point adjustable.
Hysteresis adjustable.
Time delay adjustable.

81.5 x 35.5 x 67 [Mini-D]
Over/under current
monitoring relay.
1 phase AC/DC TRMS.
Direct input or on
CT 5A.
Set-point adjustable.
Hysteresis adjustable.
Time delay adjustable.

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
[500 MA]
0.1-5 A AC/DC [5A]
1-10 A AC/DC [10A]

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]

Output Specifications

1 x SPDT relay

1 x SPDT relay

1 x SPDT relay

Max. load AC1
Max. load DC12
Electrical life

8 A / 250 VAC
5 A / 24 VDC
>1 x 10⁵ operations

100 mA

8 A / 250 VAC
8 A / 250 VAC
>1 x 10⁵ operations

5 A / 250 VAC
5 A / 250 VAC
>1 x 10⁵ operations

General Specifications

Power supply

24 VDC [724]
48 VDC [748]
24/48 VAC [B48]
115/230 VAC [B23]

40 VDC max.

24 VDC [724]
48 VDC [748]
24/48 VAC [B48]
115/230 VAC [B23]

24/48 VAC [B48]
115/230 VAC [B23]

Approvals/Marks

CE - UL - CSA

CE - UL

CE - UL - CSA

CE

References

References:
... = insert code for
Power Supply.

DIA01C 724 5A
PIA01C 724 5A
DIA01C 748 5A
PIA01C 748 5A
DIA01C B48 5A
PIA01C B48 5A
DIA01C B23 5A
PIA01C B23 5A

DIA53 S 724 20A
DIA53 S 724 50A
DIA53 S 724 100A

DIB01C ... 5MA
DIB01C ... 50MA
DIB01C ... 500MA
DIB01C ... 5A
DIB01C ... 10A
PIB01C ... 5MA
PIB01C ... 50MA
PIB01C ... 500MA
PIB01C ... 5A
PIB01C ... 10A

DIB71CB48 5mA
DIB71CB48 50mA
DIB71CB48 500mA
DIB71CB48 5A
DIB71CB23 5mA
DIB71CB23 50mA
DIB71CB23 500mA
DIB71CB23 5A





	Current relays		Voltage relays	
Types	DIB 02 PIB 02	DIC 01 PIC 01	DUA 01 PUA 01	DUB 01 PUB 01
				
Dimensions (mm) H x W x D	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P]	80 x 45 x 99.5 [D] 80 x 36 x 90 [P]	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P]	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P]
DIN housing				
Plug-in housing				
Function	Over/under current monitoring relay. 1 phase AC/DC TRMS. Input on shunt or CT MI/MP. Set-point adjustable. Hysteresis adjustable. Time delay adjustable.	Process signal monitoring relay. 1 phase AC/DC TRMS. Direct input, CT A82 or CT MI/MP. 2 Set-point Separately adjustable. Hysteresis adjustable. 2 delay functions separately adjustable.	Over current and voltage monitoring relay. 1 phase AC/DC. Set-point adjustable. Hysteresis adjustable.	Over/under voltage monitoring relay. 1 phase AC/DC TRMS comparator. Set-point adjustable. Hysteresis adjustable. Time delay adjustable.
Input Specifications				
Measuring range	6 - 150 mV AC/DC 0,4 - 4Vp	0.5 - 20 mA AC/DC 0.1 - 10 V AC/DC 0,4 - 4Vp	2-500 V AC/DC 0,4 - 4 Vp	0.1-10 V AC/DC [10V] 2-500 V AC/DC [500V]
Output Specifications				
	1 x SPDT relay	1 x SPDT relay [P] 2 SPDT relay [D]	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 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 VDC [724] 48 VDC [748] 24/48 VAC [B48] 115/230 VAC [B23]	24 VDC [724] 48 VDC [748] 24/48 VAC [B48] 115/230 VAC [B23]	24 VDC [724] 48 VDC [748] 24/48 VAC [B48] 115/230 VAC [B23]	24 VDC [724] 48 VDC [748] 24/48 VAC [B48] 115/230 VAC [B23]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References	DIB02C 724 150MV PIB02C 724 150MV DIB02C 748 150MV PIB02C 748 150MV DIB02C B48 150MV PIB02C B48 150MV DIB02C B23 150MV PIB02C B23 150MV	DIC01D 724 AV0 PIC01C 724 AV0 DIC01D 748 AV0 PIC01C 748 AV0 DIC01D B48 AV0 PIC01C B48 AV0 DIC01D B23 AV0 PIC01C B23 AV0	DUA01C 724 500V PUA01C 724 500V DUA01C 748 500V PUA01C 748 500V DUA01C B48 500V PUA01C B48 500V DUA01C B23 500V PUA01C B23 500V	DUB01C 724 10V PUB01C 724 500V DUB01C 724 10V PUB01C 724 500V DUB01C 748 10V PUB01C 748 500V DUB01C 748 500V PUB01C 748 10V DUB01C 748 500V PUB01C 748 10V DUB01C B23 500V PUB01C B23 10V DUB01C B23 500V PUB01C B23 500V



Monitoring Relays

Types

Voltage relays

DUB 71

**DUB 02
PUB 02**

**DUC 01
PUC 01**

DUA 52



Dimensions (mm) H x W x D
DIN RAIL housing
Plug-in housing
Function

81.5 x 35.5 x 67 [Mini-D]
Over/under voltage monitoring relay.
1 phase AC/DC TRMS comparator.
Set-point adjustable.
Hysteresis adjustable.
Time delay adjustable.

80 x 22,5 x 99.5 [D]
80 x 36 x 90 [P]
Over/under voltage monitoring relay.
1 phase (own power supply) AC/DC TRMS
Over/under voltage set-up separately adjustable.
Hysteresis adjustable.
Time delay adjustable (ON/OFF).

80 x 45 x 99.5 [D]
80 x 36 x 90 [P]
Over/under voltage monitoring relay.
1 phase AC/DC.
2 Set-point Separately adjustable.
Hysteresis adjustable.
2 delay functions separately adjustable.

81.5 x 17.5 x 67 [Mini-D]
Under voltage monitoring relay.
DC battery.
Set-point adjustable.
Hysteresis adjustable.
Measures on own power supply.

Input Specifications

Measuring range

0.1-10 V AC/DC [10V]
2-500 V AC/DC [500V]

24/115/230 VAC

2-500 V AC/DC [500V]

8-28 VDC [724]
38-58 VDC [748]

Output Specifications

1 x SPDT relay

1 x SPDT relay

1 x SPDT relay [P]
2 x SPDT relays [D]

1 x SPDT relay

Max. load AC1

5 A / 250 VAC

8 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 10⁵ operations

>1 x 10⁵ operations

>1 x 10⁵ operations

>1 x 10⁵ operations

General Specifications

Power supply

24/48 VAC [B48]
115/230 VAC [B23]

24/115/230 VAC

24 VDC [724]
48 VDC [748]
24/48 VAC [B48]
115/230 VAC [B23]

8-28 VDC [724]
38-58 VDC [748]

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

CE - UL - CSA

CE - UL

References

DUB71C B48 10V
DUB71C B48 500V
DUB71C B23 10V
DUB71C B23 500V

DUB02C T23
PUB02C T23

DUC01D 724 500V
PUC01C 724 500V
DUC01D 748 500V
PUC01C 748 500V
DUC01D B48 500V
PUC01C B48 500V
DUC01D B23 500V
PUC01C B23 500V

DUA52 C724
DUA52 C748





	3-phase voltage relays			
Types	DPA 01 PPA 01	DPA 51	DPA 53	DPB 01 PPB 01
				
Dimensions (mm) H x W x D DIN housing Plug-in housing Function	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P] Phase sequence, total and partial phase loss monitoring relay. 3 phases AC (own power supply). Regenerated voltage.	81.5 x 17.5 x 67 [Mini-D] Phase sequence, total and partial phase loss monitoring relay. 3-Phases AC (own power supply). Regenerated voltage.	81.5 x 17.5 x 67 [Mini-D] Under voltage, phase sequence, total and partial phase loss monitoring relay. 3-Phases AC (own power supply). Regenerated voltage.	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P] Over and under voltage monitoring relay with phase loss/phase sequence. 3 phases +N (own power supply). 2 set-point separately adjustable. Time delay adjustable.
Input Specifications Measuring range	208-600 VAC	208-480 VAC	208-240 VAC [M23] 380-480 VAC [M48]	208-240 VAC [M23] 380-480 VAC [M48]
Output Specifications	1 x SPDT relay [C] 1 x DPDT relay [D]	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	>1 x 10 ⁵	>1 x 10 ⁵	>1 x 10 ⁵
General Specifications Power supply	208-480 VAC [M44] 208-240 VAC [M23] 380-480 VAC [M48] 380-600 VAC [M60]	208-480 VAC	208-240 VAC [M23] 380-480 VAC [M48]	208-240 VAC [M23] 380-480 VAC [M48]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL	CE - UL - CSA
References	DPA01C M44 PPA01C M44 DPA01C M60 DPA01D M23 PPA01D M23 DPA01D M48 PPA01D M48	DPA51C M44	DPA53C M23 DPA53C M48	DPB01C M23 PPB01C M23 DPB01C M48 PPB01C M48



Monitoring Relays

Types

3-phase voltage relays

3-Phase multi-function relays

DPB 71

DPB 02
PPB 02

DPC 01
PPC 01

DPC 02



Dimensions (mm) H x W x D
DIN housing
Plug-in housing
Function

81.5 x 35.5 x 67 [Mini-D]

Over and under voltage monitoring relay with phase loss/phase sequence.
3 phases +N (own power supply).
2 set-point separately adjustable.
Time delay adjustable.

80 x 22.5 x 99.5 [D]
80 x 36 x 90 [P]

Asymmetry monitoring relay with phase sequence/phase loss.
3 phases +N (own power supply).
Adjustable asymmetry.
Time delay adjustable.

80 x 45 x 99.5 [D]
80 x 36 x 90 [P]

Over and under voltage monitoring relay with phase loss/phase sequence and asymmetry.
3 phases +N (own power supply).
Set-point separately adjustable by function.

80 x 45 x 99.5 [D]

Over and under voltage/over and under frequency with phase loss and phase sequence monitoring relay.
TRMS 3 phases+N (own power supply).
Separately adjustable set-point. Separately adjustable delay time.
Adjustable frequency range.

Input Specifications

Measuring range

208-240 VAC [M23]
380-480 VAC [M48]

208-240 VAC [M23]
380-480 VAC [M48]

208-240 VAC [M23]
380-480 VAC [M48]
600-690 VAC [M69]

Voltage:
208-240 VAC [M23]
380-480 VAC [M48]
600-690 VAC [M69]
Frequency: 50/60 HZ

Output Specifications

Max. load AC1

1 x SPDT relay

5 A / 250 VAC

Max. load DC12

5 A / 24 VDC

Electrical life

>1 x 10⁵ operations

1 x SPDT relay

8 A / 250 VAC

5 A / 24 VDC

>1 x 10⁵ operations

2 x SPDT relays

8 A / 250 VAC

5 A / 24 VDC

>1 x 10⁵ operations

2 x SPDT relay

8 A / 250 VAC

5 A / 24 VDC

>1 x 10⁵ operations

General Specifications

Power supply

208-240 VAC [M23]
380-480 VAC [M48]

208-240 VAC [M23]
380-480 VAC [M48]

208-240 VAC [M23]
380-480 VAC [M48]
600-690 VAC [M69]

208-240 VAC [M23]
380-415 VAC [M48]
600-690 VAC [M69]

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

CE - UL - CSA - GL

CE - UL - CSA

References

DPB71CM23
DPB71CM48

DPB02C M23
PPB02C M23
DPB02C M48
PPB02C M48

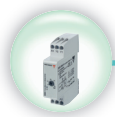
DPC01D M23
PPC01D M23
DPC01D M48
PPC01D M48
DPC01D M69

DPC02 D M23
DPC02 D M48
DPC02 D M69





Types	Frequency, Power factor (cosφ) and Power relays			Mini-E Timers
	DFB 01 PFB 01	DWB 01 PWB 01	DWB 02 PWB 02	EAS EBS ECS
				
Dimensions (mm) H x W x D DIN housing Plug-in housing Function	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P] Frequency monitoring relay. 1-Phase AC (own power supply). 2 set-point separately adjustable. Time delay adjustable.	80 x 45 x 99.5 [D] 80 x 36 x 90 [P] Power factor monitoring relay. 1 or 3-Phase AC (own power supply). Direct input or through external CT. 2 set-point separately adjustable. Time delay adjustable. Power ON delay adjustable.	80 x 45 x 99.5 [D] 80 x 36 x 90 [P] Active power monitoring relay. 1 or 3-Phase AC (own power supply). Direct input or through external CT. 2 set-point separately adjustable. Time delay adjustable. Power ON delay adjustable.	49 x 22.5 x 56 [Mini-E] EAS - Delay on operate (automatic start) thyristor output. EBS - Interval (automatic start). ECS - Symmetrically recycler (ON/OFF automatic start). DIN-rail or chassis mounting.
Input Specifications Range	50 / 60 Hz	cos φ : 0.1-0.99	208-690 VAC 0.5-5 A AC 1-10 A AC 0,4 - 4 Vp	[10S] : 0.5 s - 10 s [1M] : 0.1 m - 1 m [10M] : 1 m - 10 m
Output Specifications Max. load AC1 Max. load DC12 Electrical life	1 x SPDT relay 8 A / 250 VAC 5 A / 24 VDC >1 x 10 ⁵ operations	1 x SPDT relay 8 A / 250 VAC 5 A / 24 VDC >1 x 10 ⁵ operations	1 x SPDT relay 8 A / 250 VAC 5 A / 24 VDC >1 x 10 ⁵ operations	Static output 500 mA _{rms}
General Specifications Power supply	24-240 VAC	208-240 VAC [M23] 380-480 VAC [M48] 600-690 VAC [M69]	208-240 VAC [M23] 380-480 VAC [M48] 600-690 VAC [M69]	24-230 VAC/DC [EAS] 24-230 VAC [EBS/ECS]
Approvals/Marks	CE - UL - CSA	CE - UL	CE - UL	CE - UL - CSA
References	DFB01C M24 PFB01C M24	DWB01C M23 10A PWB01C M23 10A DWB01C M48 10A PWB01C M48 10A DWB01C M69 10A	DWB02C M23 10A PWB02C M23 10A DWB02C M48 10A PWB02C M48 10A DWB02C M69 10A	EAS S M23 10S EAS S M23 1M EAS S M23 10M EBS S M23 10S EBS S M23 1M EBS S M23 10M ECS S M23 A 10S ECS S M23 B 10S ECS S M23 A 1M ECS S M23 B 1M ECS S M23 A 10M ECS S M23 B 10M



Types

Delay on Operate

True delay on release

DAA 01
PAA 01

DAA 51

D/PBB 01
D/PBB 02

DBB 51



Dimensions (mm) H x W x D

DIN housing
Plug-in housing

Function

Function code

Input Specifications

Time range

Output Specifications

Max. load AC1

Max. load DC12

Electrical life

General Specifications

Power supply

Approvals/Marks

References

80 x 22.5 x 99.5 [D]
80 x 36 x 90 [P]

Delay on operate
(automatic start).

Op

0.1 s - 1 s
1 s - 10 s
6 s - 60 s
60 s - 600 s
0.1 s - 1 h
1 s - 10 h
10 s - 100 h

1 x SPDT relay [C]
2 x SPDT [D]

8 A / 250 VAC

5 A / 24 VDC

>10⁵ operations

24 VDC /
24 to 240 VAC [C]
24 to 240 VAC/DC [D]

CE - UL - CSA

DAA01C M24
PAA01C M24
DAA01D M24
PAA01D M24

81,5 x 17.5 x 67 [mini-D]

Delay on operate
(automatic start).

Op

0.1 s - 1 s
1 s - 10 s
6 s - 60 s
60 s - 600 s
0.1 s - 1 h
1 s - 10 h
10 s - 100 h

1 x SPDT relay

8 A / 250 VAC

5 A / 24 VDC

>10⁵ operations

24 VDC /
24 to 240 VAC

CE - UL - CSA

DAA51C M24

80 x 22.5 x 99.5 [D]
80 x 36 x 90 [P]

True delay on release.

Tr

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

1 x SPDT relay [C]
1 x DPDT relay [D]

8 A / 250 VAC

5 A / 24 VDC

>10⁵ operations

24-240 VAC/DC

CE - UL

DBB01C M24
PBB01C M24
DBB01D M24
PBB01D M24
DBB02C M24
PBB02C M24
DBB02D M24
PBB02D M24

81.5 x 17.5 x 67 [mini-D]

True delay on release.

Tr

1 s - 10 s [10S]
6 s - 60 s [1M]
60 s - 600 s [10M]

1 x SPDT relay

5 A / 250 VAC

5 A / 24 VDC

>10⁵ operations

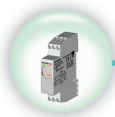
24 VDC
24 - 240 VAC

CE

DBB51 C M24 10S
DBB51 C M24 1M
DBB51 C M24 10M



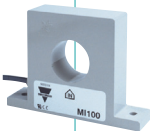
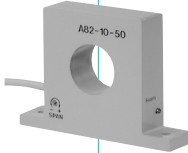
	Recycler		Multifunction	
Types	DCB 01 PCB 01	DCB 51	DMB 01 PMB 01	DMB 51
				
Dimensions (mm) H x W x D	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P]	81.5 x 17.5 x 67 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P]	81.5 x 17.5 x 67 [Mini-D]
DIN housing				
Plug-in housing				
Function	Asymmetrical recycler with ON and OFF time first. One shot. Two state delay on operate.	Asymmetrical recycler with ON or OFF first.	Multifunction.	Multifunction.
Function code	Aa - Ab - Sh - Dt	Aa - Ab	Op - Dr - In - R - Rb Id - Io	Op - Dr - In - R - Rb Id - Io
Input Specifications				
Time range	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 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	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] 2 x SPDT relays [D]	1 x SPDT relay	1 x SPDT relay [C] or 2 SPDT [D]	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	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	5 A / 24 VDC
Electrical life	>10 ⁵ operations	>10 ⁵ operations	>10 ⁵ operations	>10 ⁵ operations
General Specifications				
Power supply	24 VDC / 24 - 240 VAC [C] 24 - 240 VAC/DC [D]	24 VDC / 24 to 240 VAC	24 VDC / 24 to 240 VAC [C] or 24 to 240 VAC/DC [D]	24 VDC / 24 to 240 VAC [M24] 12 to 240 VAC/DC [W24]
Approvals/Marks	CE - UL	CE - UL	CE - UL - CSA	CE - UL - CSA
References				
	DCB01 C M24 PCB01 C M24 DCB01 D M24 PCB01 D M24	DCB51C M24	DMB01C M24 PMB01C M24 DMB01D M24 PMB01D M24	DMB51C M24 DMB51C W24



Types	Multifunction	Fully programmable	Star delta	
	DMC 01 PMC 01	DHA 51	DAC 01 PAC 01	DAC 51
Dimensions (mm) H x W x D	80 x 22.5 x 99.5 [D] 80 x 45 x 99.5 [D] 80 x 36 x 90 [P]	81.5 x 17.5 x 67 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 90 [P]	81.5 x 17.5 x 67 [Mini-D]
Plug-in housing				
Function	Multifunction.	Fully programmable.	Star delta.	Star delta.
Function code	Op - Oa - In - Ia - Nr Na - Dr	Whatever needed and much more	SD	SD
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 - 99 h x time step	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 to 130 ms between star and delta position	50 to 130 ms between star and delta position
Output Specifications				
	1 x SPDT relay [C] 2 x SPDT relays [D]	1 x SPDT relay	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	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	>10 ⁵ operations	>10 ⁵ operations	>10 ⁵ operations	>10 ⁵ operations
General Specifications				
Power supply	24 VDC [724] 24/48 VAC [B48] 115/230 VAC [B23] 24 VAC [024] 115 VAC [115] 230 VAC [230]	24 VDC / 24 - 240 VAC	24-240 VAC/DC [M24] 380 - 415 VAC [M40]	24 - 240 VAC/DC
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL
References				
	DMC01C 724 DMC01C B23 DMC01C B48 PMC01C 724 PMC01C 024 PMC01C 115 PMC01C 230 DMC01D 724 DMC01D B23 DMC01D B48 PMC01D 029 PMC01D 115 PMC01D 230 PMC01D 724	DHA51C M24S8 DHA51C M24S16 DHA51C M24S32	DAC01C M24 PAC01C M24 DAC01C M40 PAC01C M40	DAC51C M24





Types	Current Transformers for monitoring relays			
	MI	MP	A 82	E 82
				
Dimensions (mm) H x W x D DIN housing Plug-in housing	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	55.4 x 22.5 x 47.4
Function	1-phase AC. Output voltage. Cable hole.	3-phase AC. Output voltage. Cable hole.	1-phase AC. Output 0/4-20 mA AC. Cable hole. Led indication.	1-phase AC. Output 4-20 mA AC. Cable hole. DIN-rail mounting.
Input Specifications				
Input current	0.5 - 5 A [5] 2 - 20 A [20] 10 - 100 A [100] 50 - 500 A [500]	0.5 - 5 A [5] 2 - 20 A [20] 10 - 100 A [100] 50 - 500 A [500]	0 - 25 A AC [25] 0 - 50 A AC [50] 0 - 100 A AC [100] 0 - 250 A AC [250] 0 - 500 A AC [500]	3 input ranges per unit. [25]:0-5/0-10/0-25 A AC [50]:0-20/0-30/0-50 A AC
Max. current continuously	20 A AC [5] 50 A AC [20] 250 A AC [100] 750 A AC [500]	20 A AC [5] 50 A AC [20] 250 A AC [100] 750 A AC [500]	30 A AC [25] 60 A AC [50] 120 A AC [100] 300 A AC [250] 600 A AC [500]	50 AAC [25] 100 AAC [50]
Dielectric voltage	6 kV CA _{rms}	6 kV CA _{rms}	6 kV CA _{rms}	
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 which are drawn through the holes of the current metering transformer.	A82 - 10: 0-20 mA AC A82 - 20: 4-20 mA AC The output voltage is proportional to the input current.	4 - 20 mA AC The output voltage is proportional to the input current.
Output tolerance	+ / -5% @I _n	+ / -5% @I _n	+ / -2% @50Hz	+ / -2% @50Hz
Rated insulation voltage (cable)	250 VAC _{rms}	250 VAC _{rms}	250 VAC _{rms}	
General Specifications				
Cable hole diameter	10.5 mm [5/20] 27 mm [100/500]	3 x 12 mm [5/20] 3 x 27 mm [100/500]	27 mm	12 mm
Connection cable	2 m PVC 2 x 0.5 mm ²	2 m PVC 2 x 0.5 mm ²	A82-10:2m, 2x0.25 m ² A82-20:2m, 2x0.25 m ²	Screw terminal 2 x 1.5 mm ²
Operating temperature	-20°C to +60°C -20°C to +60°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
References				
	MI 5 MI 20 MI 100 MI 500	MP 3005 MP 3020 MP 3100 MP 3500	A 82-10 25 A 82-10 50 A 82-10 100 A 82-10 250 A 82-10 500 A 82-20 25 A 82-20 50 A 82-20 100 A 82-20 250 A 82-20 500	E 82-10 25 E 82-10 50



PID controls - PDI series

Types

PDI 20

PDI 40

PDI 42



Dimensions

(mm) H x W x D

Function

24 x 48 x 107

Single loop PID-controller PID, ON/OFF and neutral zone selectable by key pad. Autotuning, direct or reverse PID control and dynamic setpoint capability. Relay or SSR control output. One independent alarm setpoint. Simple display.

48 x 48 x 107

Single loop PID-controller PID, ON/OFF and neutral zone selectable by key pad. Autotuning, direct or reverse PID control and dynamic setpoint capability. Relay or SSR control output. One independent alarm setpoint. Simple display.

48 x 48 x 107

Single loop PID-controller PID, ON/OFF and neutral zone selectable by key pad. Autotuning, direct or reverse PID control and dynamic setpoint capability. Relay or SSR control output. Heater break alarm. Double line display.

Input Specifications

Accuracy

RTD (Pt100, Ni100)

(@ 25°C±5°C, R.H. ≤ 60%)

TC (@ 25°C±5°C, R.H. ≤ 60%)

PTC (KTY81, 990Ω @25°C)

(@ 25°C±5°C, R.H. ≤ 60%)

Process Signals

(@ 25°C±5°C, R.H. ≤ 60%)

Temperature drift

RTD

TC

PTC (KTY81, 990Ω @25°C)

Processing signals

Range code

Available probes

Range code

Process signals

Sampling rate

Display

± 0.5% f.s., ± 1dgt

± 0.5% f.s., ± 1dgt

± 0.5% f.s., ± 1dgt

± 0.5% f.s., ± 1dgt

± 150 ppm/°C

± 150 ppm/°C

± 150 ppm/°C

± 150 ppm/°C

Pt100[T2], Ni100[T2], KTY81[T3]

TC-J[T1], TC-K[T1], TC-S[T1]

4-20 mA[C1], 0-20 mA [C2]

0-10 VDC [V1]

1 time/second

7-segment LED, h 12 mm

± 0.5% f.s., ± 1dgt

± 0.5% f.s., ± 1dgt

± 0.5% f.s., ± 1dgt

± 0.5% f.s., ± 1dgt

± 150 ppm/°C

± 150 ppm/°C

± 150 ppm/°C

± 150 ppm/°C

Pt100[T2], Ni100[T2], KTY81[T3]

TC-J[T1], TC-K[T1], TC-S[T1]

4-20 mA[C1], 0-20 mA [C2]

0-10 VDC [V1]

1 time/second

7-segment LED, h 7 mm

± 0.25% f.s., ± 1dgt

± 0.25% f.s., ± 1dgt

± 10 ppm/°C

± 10 ppm/°C

Pt100[T], TC-J[T], TC-K[T]

TC-R[T], TC-S[T], TC-T[T]

1 time/second

7-segment LED, h 7 mm

Output Specifications

Out 1

Relay [R]

SSR [O]

Out 2

None [X]

1 Relay (alarm/control) [R]

1 SSR (alarm/control) [O]

Alarm output

Relay [R]

SSR [O]

None [X]

1 Relay (alarm/control) [R]

1 SSR (alarm/control) [O]

Relay [R] ([R1] 2nd Out)

SSR (24 VDC) [O] ([R1] 2nd Out)

None [X]

1 Relay [R1]

1 SSR [O1]

Temperature alarm output

Relay [R2]

SSR (24 VDC) [O2]

Heater break alarm output

Relay [R3]

SSR (24 VDC) [O3]

Fast-on

Connection [XX]

Screw connection [ZX]

Options

General Specifications

Power supply

22 VAC / DC [L]

90-240 VAC [H]

Approvals/Marks

CE

Ordering References

See pag. 100

See pag. 100

See pag. 100





Types

PID controls - PDI series

PDI 45



PDI 92



PDI 95



Dimensions
(mm) H x W x D
Function

48 x 48 x 112

Single loop PID-controller, PID, PID velocity and ON/OFF selectable controls, autotuning, self tuning, fast tuning, direct and reverse PID control. Up to 2 relays/SSR or analogue signal outputs. Double line display.

96 x 48 x 100

Single loop PID-controller, PID, and ON/OFF selectable controls, autotuning, direct and reverse PID control. Up to 2 relays/SSR or analogue signal outputs. Up to 3 independent alarm setpoints. Double line display.

96 x 48 x 100

Single PID-controller, PID, PID velocity and ON/OFF selectable controls, autotuning, self tuning, fast tuning, direct and reverse PID control. Up to 2 relays/SSR or analogue signal outputs. Soft start/stop. Double line display.

Input Specifications

Accuracy
RTD (Pt100, Ni100)
(@ 25°C±5°C, R.H. ≤ 60%)
TC (B, E, J, K, L, N, R, S, T, U)
(@ 25°C±5°C, R.H. ≤ 60%)
PTC (KTY81, 990Ω @25°C)
(@ 25°C±5°C, R.H. ≤ 60%)
Process Signals (20mA, 10V)
(@ 25°C±5°C, R.H. ≤ 60%)
Temperature drift
RTD
TC
PTC (KTY81, 990Ω @25°C)
Processing signals
Range Code
available probes
Range Code
Process Signals
Sampling rate
Display

± 0.15% f.s., ± 1dgt

± 0.15% f.s., ± 1dgt

± 0.05% f.s., ± 1dgt]

± 10 ppm/°C

± 10 ppm/°C

± 10 ppm/°C

Pt100, Pt100 JIS, TC-B-E-J-K, N-R-S-T-L-U [T]

0/4-20 mADC [C], 0/1-5 VDC [V], 0/2-10 VDC [W]

5 times/second

7-segment LED, h 7 mm

± 0.25% f.s., ± 1dgt

± 0.25% f.s., ± 1dgt

± 10 ppm/°C

± 10 ppm/°C

Pt100, TC-J, TC-K, TC-R, TC-S, TC-T [T]

1 time/second

7-segment LED, h 7 mm

± 0.15% f.s., ± 1dgt

± 0.15% f.s., ± 1dgt

± 0.05% f.s., ± 1dgt

± 10 ppm/°C

± 10 ppm/°C

± 10 ppm/°C

Pt100 (IEC, JIS), TC-B-E-J-K, N-R-S-T-L-U [T]

0/4-20 mADC [C], 0/1-5 VDC [V], 0/2-10 VDC [W]

5 times/second

7-segment LED, h 7 mm

Output Specifications

Out 1 and Out 2

Relay [R] ([R1] 2nd Out)
SSR (24 VDC) [O] ([O1] 2nd Out)
0/4-20 mADC [C] ([C1] 2nd Out)
0/2-10 VDC [V] ([V1] 2nd Out)

Relay + SSR (24 VDC) [R]
2nd Out: Relay [R]
2nd Out: SSR (24 VDC) [O]

Relay + SSR [R]
0/4-20 mADC [C], 0/2-10 VDC [V]
2nd Out: Relay [R]
SSR (24 VDC) [O] 2nd Out
0/4-20 mADC [C], 0/2-10 VDC [V]

Alarm output

Heater break alarm output
Relay [R2]
SSR (24 VDC) [O2]
Motor driven value control
Relay [M]

Heater break alarm output
Relay [R], up to 2 Out;
SSR (24 VDC) [O], up to 2 Out;
Motor driven value control
Relay [R] or SSR (24 VDC) [O]

Heater break alarm output
Relay [R], up to 2 Out;
SSR (24 VDC) [O], up to 2 Out;
Motor driven value control
Relay [R] or SSR (24 VDC) [O]
RS485 [XS], AUX inputs [XI]

Option

Screw connection [ZX], screw connection + RS485 [ZS], screw connection + AUX [ZI]

General Specifications

Power supply

24 VAC / DC [L]
90-240 VAC [H]

24 VAC / DC [L]
90-240 VAC [H]

24 VAC / DC [L]
90-240 VAC [H]

Approvals/Marks

CE - UL - cUL

CE - UL - cUL

CE - UL - cUL

Ordering References

See pag. 100

See pag. 100

See pag. 100



Current transformers and shunts

Types

Cable/Bus-bar type current transformers. Standard output 5 A (1 A on request). Rated primary currents from 40 to 2000 A. DIN-rail or panel mounting.

Dimensions

(mm) H x W x D

Input Specifications

Operating frequency

Max. system voltage

Rated insulation level

Security factor

Output Specifications

Secondary current

General Specifications

Class

Bus-bar size (mm)

Standards

Primary Current

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

Ordering References

Current Transformers 1-Phase

TADK



TADK2



TAD 2



TAD 3



115.5 x 75 x 44

115.5 x 75 x 44

98.5 x 58 x 44

98.5 x 58 x 44

Current transformer
1-phase AC

40 to 60 Hz

0.72 kV

3 kV/1 min @ 50 Hz

≤5

Current transformer
1-phase AC

40 to 60 Hz

0.72 kV

3 kV/1 min @ 50 Hz

≤5

Current transformer
1-phase AC

40 to 60 Hz

0.72 kV

3 kV/1 min @ 50 Hz

≤5

Current transformer
1-phase AC

40 to 60 Hz

0.72 kV

3 kV/1 min @ 50 Hz

≤5

5 A standard
(1 A on request)

5 A standard
(1 A on request)

5 A standard
(1 A on request)

5 A standard
(1 A on request)

0.5

0.5

0.5 / 1 / 3

0.5 / 1

25 x 3

25 x 3

20 x 8

21 x 14 or 31 x 11

IEC 60185

IEC 60185

IEC 60185

IEC 60185

Burden (VA)

Class 0.5 1 3

1 A 10

5 A 10

10 A 10

15 A 10

25 A 10

40 A 10

Burden (VA)

Class 0.5 1 3

1 A 10

5 A 10

10 A 10

15 A 10

25 A 10

40 A 10

50 A 10

60 A 10

80 A 10

100 A 10

150 A 10

200 A 10

250 A 10

Burden (VA)

Class 0.5 1 3

40 A 3

50 A 3

60 A 3

80 A 3

100 A 3 4

150 A 3 4 6

200 A 3 4 6

250 A 5 8 10

300 A 5 8 10

Burden (VA)

Class 0.5 1 3

100 A 3

150 A 3 4

200 A 3 4

250 A 5 8

300 A 5 8

400 A 6 10

500 A 6 10

600 A 6 10

See pag. 101

See pag. 101

See pag. 101

See pag. 101



5Types

Cable/Bus-bar type current transformers. Standard output 5 A (1 A on request). Rated primary currents from 40 to 2000 A. DIN-rail or panel mounting.

Dimensions
(mm) H x W x D

Input Specifications

Operating frequency
Max. system voltage
Rated insulation level
Security factor

Output Specifications

Secondary current

General Specifications

Class
Bus-bar size (mm)
Standards

Primary Current

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

Ordering References

Current Transformers 1-Phase			Shunts
TAD 4	TAD 6	TAD 8	DER
			
115.5 x 75 x 44	145 x 105 x 44	140 x 120 x 55	
Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC	Shunt for DC current
40 to 60 Hz	40 to 60 Hz	40 to 60 Hz	Continuous current
0.72 kV	0.72 kV	0.72 kV	
3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	
≤5	≤5	≤5	
5 A standard (1 A on request)	5 A standard (1 A on request)	5 A standard (1 A on request)	
0.5 / 1	0.5 / 1	0.5 / 1 / 5 P10	0.5
32 x 16 or 41 x 11	55 x 22 or 65 x 20	82 x 32 or 65 x 34	DIN 43703
IEC 60185	IEC 60185	IEC 60185	
Burden (VA) Class 0.5 1 3	Burden (VA) Class 0.5 1 3	Burden (VA) Class 0.5 1 5P10	Measuring range for current 1 to 10000 A
100 A 3	400 A 6 12	400 A 4 12 5	Secondary: 60 mV (150 mV or other on request)
150 A 3	500 A 6 12	500 A 6 12 5	
200 A 4	600 A 10 20	600 A 10 20 5	
250 A 6	800 A 10 20	800 A 15 20 5	
300 A 6	1000 A 20 40	1000 A 20 40 5	
400 A 10	1200 A 20 40	1200 A 30 40 5	
500 A 10	1500 A 30 60	1500 A 40 60 5	
600 A 10	2000 A 30 60	2000 A 50 60 5	
800 A 10		2500 A 60 100 5	
See pag. 101	See pag. 101	See pag. 101	See pag. 101



Converters/Transducers - Serial Interfaces

	Single phase Transducer	3-digit meter	Serial communication	Serial communication
Types	CVT-DIN	DI3-DIN	SIU-DIN 8585	SIU-PC85
				
Dimensions (mm) H x W x D	89 x 71.5 x 58.5	89 x 52.5 x 58.5	89 x 71.5 x 58.5	165 x 80 x 33
Function	Single phase transducer 1-phase AC, DC. Measurements V, A, Hz.	3-digit meter. 1-phase AC, DC. Voltmeter, ammeter frequency meter.	Serial communication and line amplifier and driver.	Serial communication and line adapter RS 232 to RS 422/RS 485, RS 422/ RS 485 to RS 232 Protected against overvoltage and reverse voltage connections
Input Specifications				
Range code	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]	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]	RS485 / RS422	RS232/RS485/RS422
Accuracy	0.5%	0.5% (0.1% frequency meter)		
Baud rate				Max. 19200
Output Specifications				
Rated output	0 to 20 mA [1] 4 to 20 mA [2] 0 to 10 V [3] 0 to ± 1 V [4]		RS422	RS232/RS485/RS422
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]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]
Approvals/Marks	CE	CE - CSA	CE	CE
References				
Power Supply	See pag. 101	See pag. 101	SIU-DIN8585A SIU-DIN8585B SIU-DIN8585C SIU-DIN8585D	SIU-PC85A SIU-PC85B SIU-PC85C SIU-PC85D





	Ammeter and Voltmeter	Ammeter and Voltmeter	Ammeter and Voltmeter	Thermometer and Ohmmeter
Types	LDI-3	LDI-35 AV0	LDI-35 AV2	LDI-35 CF
Dimensions (mm) H x W x D	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	Microprocessor based indicator. AC/DC Ammeter/Voltmeter. 3-digits display.	Microprocessor based indicator/controller, AC/DC ammeter/voltmeter, 3 1/2-digits or 3-digits + dummy zero display	Microprocessor based indicator/controller. AC/DC ammeter/voltmeter 3 1/2-digits or 3-digits + dummy zero display	Microprocessor based indicator/controller. Temperature resistance Measur. in C° or F° 3 1/2-digits or 3-digits + dummy zero display
Input Specifications				
Range code	[AV1]: 1 AAC/100 VAC [AV5]: 5 AAC/500 VAC [AV6]: 1 ADC/60 mV /100 V/500 VDC	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-L-K-S-T [CFX/CFP] 200.0Ω [CFX] 2000Ω [CFP]
Accuracy	±0.5% full scale	±0.3% full scale	DC: ±0.3%, AC: ±0.5%	TC, PT100/1000, resist. ± 0.3% full scale Ni 100 ± 0.5% full scale
Indication	Max. Min.	3 1/2-dgt: 1999, 3+0-dgt: 9990, 3 1/2-dgt: -1999 3+0-dgt: -1990,	3 1/2- dgt: 1999 3+0-dgt: 9990, 3 1/2-dgt: -1999 (DC), 0 (AC), 3+0-dgt: -1990 (DC), 0 (AC)	Depending on range and type of the temperature probe
Resistance				0 to 200Ω (2000Ω)
Range selection/decimal point pos.	Selectable by DIP-switch		Programmable	
Sampling rate	1 time/s	4 times/s	4 times/s	2 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 V AC/DC	1 optional alarm [1] 5 A/250 V AC/DC	1 optional alarm [1] 5 A/250 V AC/DC. Excit. output 40mA/15VDC [AX]
General Specifications				
Power supply	230 VAC [D], 24 [A], 48 [B], 115 [C] VAC	120 [E], 230 [D], 240[F] VAC, 24 [A] 48 [B], 115 [C] VAC, 9-32 [3] VDC, 40-150 [6] VDC,	120 [E], 230 [D], 240[F] VAC, 24 [A] 48 [B], 115 [C] VAC, 9-32 [3] VDC, 40-150 [6] VDC,	120 [E], 230 [D], 240[F] VAC, 24 [A] 48 [B], 115 [C] VAC, 9-32 [3] VDC, 40-150 [6] VDC,
Option	IP65 [IX], tropicalization [XT]	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	EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - CSA	CE - CSA	CE - CSA	CE - CSA
Ordering References	See pag. 101	See pag. 101	See pag. 101	See pag. 101



Digital Panel Meters

	AC/DC Ammeter	AC/DC Voltmeter	Temperat./Resist. Measurement	Rate Meter
Types	MDI 40 A	MDI 40 V	MDI 40 CF	MDI 40 TF
Dimensions (mm) H x W x D	48 x 96 x 124	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Description	Microprocessor-based meter/controller. AC/DC Ammeter. 3 3/4-digit display. Two alarm setpoints	Microprocessor-based meter/controller. AC/DC Voltmeter. 3 3/4-digit display. Two alarm setpoints	Microprocessor-based meter/controller. Temperature and resistance measurement. (C° or F°). 3 3/4-digit display.	Microprocessor-based meter/controller. Rate speed, frequency and period measurement. 4 -digit display.
Input Specifications				
Range code	2 mA, 20 mA, 2 A, 5 A (40 to 400 Hz) [AOB] 200 mA [A4X]; TRMS 2 mA, 20 mA, 2 A, 5 A (40-1000 Hz) [AOT]	200 mV, 2 V, 20 V, 200 V, 500 V, (40 to 400 Hz) [VOB] TRMS 200 mV, 2 V, 20 V; 200 V, 500 V, (40 to 1000 Hz) [VOT]	Pt100, Ni100, 200Ω, TC: J, L, K, T, E [CFX]; Pt1000, 2000Ω, TC: J, L, K, T, E [CFP]	0.001 to 500 Hz [TF1] 0.1 to 50 MHz [TF2] Sygnal type: DC signal (PNP, NPN, NAMUR, TTL free of voltage contacts. Voltage up to 30 VDC; AC signals pick-up voltages up to 500 VAC
Accuracy	AC/DC: ±0.1% full scale AC TRMS: ±0.2% full scale	AC/DC: ±0.1% full scale AC TRMS: ±0.2% full scale	Pt100/1000 ±0.15%FS Tc (5°C to the limit) ±0.15%FS	9999, 0 (AC) -1999 (DC)
Indication	DC: max. 3999 min. -1999 AC & AC TRMS: max. 3999, min. 0	DC: max. 3999 min. -1999 AC & AC TRMS: max. 3999, min. 0	Depending on range and type of the temp. probe	
Range selection/decimal	Programmable	Programmable		Programmable
Sampling rate	4 times/s	4 times/s	2 times/s	
Functions	Password protection Scaling factor Diagnostics Programm.Digital filter Max./Min. data hold AC/DC selection	Password protection Scaling factor Diagnostics Programm.Digital filter Max./Min. data hold AC/DC selection	Password protection Scaling factor Diagnostics Programm.Digital filter Measurement selection	Password protection Scaling factor Diagnostics Programm.Digital filter Range selection
Output Specifications				
	Analogue from 0 to 20 mA from 0 to 10V [A]. Serial RS485 unidirectional [R]. Serial RS485 bidirectional [S] [W]=[A]+R, [Y]=[A]+[S]	Analogue from 0 to 20 mA from 0 to 10V [A]. Serial RS485 unidirectional [R]. Serial RS485 bidirectional [S] [W]=[A]+R, [Y]=[A]+[S]	Analogue from 0 to 20 mA from 0 to 10V [A]. Serial RS485 unidirectional [R]. Serial RS485 bidirectional [S] [W]=[A]+R, [Y]=[A]+[S]	Analogue from 0 to 20 mA from 0 to 10V [A]. Serial RS485 unidirectional [R]. Serial RS485 bidirectional [S] [W]=[A]+R, [Y]=[A]+[S]
General Specifications				
Power supply	120[E], 230[D], 240[F], 24[A], 48[B], 115[C] VAC, 9 to 32[3] VDC, 40 to 150 [6] VDC	120[E], 230[D], 240[F], 24[A], 48[B], 115[C] VAC, 9 to 32[3] VDC, 40 to 150 [6] VDC	120[E], 230[D], 240[F], 24[A], 48[B], 115[C] VAC, 9 to 32[3] VDC, 40 to 150 [6] VDC	120[E], 230[D], 240[F], 24[A], 48[B], 115[C] VAC, 9 to 32[3] VDC, 40 to 150 [6] VDC
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - CSA	CE - CSA
Option	Interactive setpoints [01], trop. + IP65 [XT]	Interactive setpoints [01], trop. + IP65 [XT]	Interactive setpoints [01], trop. + IP65 [XT]	Tropicalization + IP65 [XT]
Ordering References	See pag. 101	See pag. 101	See pag. 101	See pag. 101





	Housing	Input Module	Output Module	AC/DC Ammeter and Voltmeter
Types	EDM 35	EDM 35	EDM 35	DI3-72
Dimensions (mm) H x W x D	48 x 96 x 89			72 x 72 x 75
Description	MODULAR Main units including 3 1/2 digit display, and slots for the input, output power supply modules. 2 LED indicat. for alarm conditions.	Input modules to be inserted in main unit. The input modules convert the input signal and contain a jumper for the choice of the range.	Output modules to be inserted in main unit. Excitation output, analogue output and digital output (single or dual) are available.	Microprocessor based indicator. AC/DC Ammeter /Voltmeter. 3 digits display.
	DISPLAY 3 1/2 - digits 7 segments LED display. Height: 14.2 mm.	RANGE CODE Voltmeter DC: -199.9 to +199.9mV [V1D] -1.999 to +1.999V [V2D] -19.99 to +19.99mV [V3D] -199.9 to +199.9V [V4D] -600 to +600V [V5D] Voltmeter AC: 0 to 199.9mV [V1A] 0 to 1.999V [V2A] 0 to 19.99mV [V4A] 0 to 600V [V5A] DC[A*D]/AC[A*A] Amm: -199.9 to +199.9μA [*1*] -1.999 to +1.999mA [*2*] -19.99 to +19.99mA [*3*] -199.9 to +199.9mA [*4*] -1999 to +1999mA [*5*] -5.00 to +5.00V [A6D] -10.00 to +10.00 [A7D] 0 to 5.00A [A6A] 0 to 10.00A [A7A] Ohmmeters: 0 to 199.9Ω [R1D] 0 to 1.999Ω [R2D] 0 to 19.99kΩ [R3D] 0 to 199.9kΩ [R4D] Thermometers: -100.0 to 199.9°C [P1C] -100 to 850°C [P2C] -148 to 199.9°F [P1F] -148 to 1562°F [P3F] Thermocouple type J: -100 to 760°C [-JC] -148 to 1400°F [-JF] Thermocouple type K: -100 to 1250°C [-KC] -148 to 1999°F [-KF] Frequency meter: 5.0 to 199.9Hz [F1X]* 10.0 to 1999Hz [F2X]	OUTPUT Signal output: 0 to 20 mA ±1% [2] 4 to 20 mA ±1% [1] 0 to 10 V ±1% [4] Drift: ±20 ppmm/°C Excitation output: 12 VDC ±20% [5] 24 VDC ±20% [6] Relay output: 2 SPDT Relay 5 A / 250 VAC [2]	RANGE CODE [AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC ±0.5% full scale Max. 999 [AV1/AV5] 000, [AV6]: -99 Selectable by DIP-switch
Indication	Min.: -1999 Max.: 1999			
Programmable parameters	Range selection Decimal point position Electrical input Display range Overrange indicat.: EEE Underrange indicat.: -EE			DISPLAY 3-digits red LED. Height: 14.2 mm.
General Specifications				
Power supply	48 VAC [6], 24 VAC [7], 230 VAC [4], 12 to 48 VDC [3]			24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]
Safety Standards	EN 60801-4, IEC 60801-5			EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - UL - CSA			CE - UL - CSA
Option	None [XXY] High efficiency Red display [CXY] Green display [DXY] Program lock: [XPY]			

Ordering References

See pag. 102

See pag. 102

See pag. 102

See pag. 102



Energy Management

	Energy Meter	Energy Meter	Power Analyzer	Multifunction Meter
Types	EM1-DIN	EM2-DIN	WM1-DIN	WM12-DIN
				
Dimensions (mm) H x W x D	89 x 35 x 58.5	89 x 107 x 58.5	89 x 71.5 x 58.5	90 x 107 x 64
Function	1-phase energy meter. 1-phase system. Active energy measurement.	1 or 3-phase energy meter. 1-phase, 3-phase, 3 or 4 wires. Active reactive energy metering (partial and total).	1 or 3-phase power analyzer. 1-phase, 3-phase, 3 or 4 wires. Measurement of: V_{L-N} or V_{L-L} , A, W, VA, var, Wh, VAh, varh.	3-phase multifunction power indicator. System: V_{LL} , V_{LN} , An, VA, VAdmd, Wdmd, W, var, PF, Hz. Max: A, Wdmd. Single phase: V_{LL} , V_{LN} , A, VA, W, var, PF
Input Specifications				
Range code	230 VAC - 22.5 AAC [AV8]	250/433 VAC - 5 AAC [AV5]	400 VAC(1-phase)/500 VAC(3-phase)-5/27AAC 3-phase system with neutral [27A]. As above but for measurement on 3-phase without neutral [TX instead of PX] $\pm 2\%$ fs $\pm 0.5\%$ (V, A)	400/660V _{L-L} /5(6)AAC [AV5] 100/208V _{L-L} /5(6)AAC [AV6]
Accuracy	Class2 (EN61036)	$\pm 1\%$ RDG	$\pm 2\%$ fs $\pm 0.5\%$ (V, A)	Class 0.5 (V-A)
Display	5+1 digits Electromech. display	6-digits backlighted LCD	3-digits red LED	3x3 DGT LED
Sampling Rate				1.5 samples/s
Output Specifications				
Serial communication		RS 485 output + 1 relay NO [XS] Standard [XX]	RS 485 (1-phase 3-phase system with neutral [RX]) RS 485 (1-phase 3-phase system without neutral [SX]); both instead of "PX"	RS 485 port (on request) [S]
Pulse	1 pulse output (on request): 10 pulse/kWh		1 programmable open collector pulse out [PX]*	
Alarm		1 relay output (driven only by serial comm.)	1 SSR alarm output [1]** instead of 0 (no alarm)	
General Specifications				
Power supply	230 VAC [D]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	115 VAC [C] 230 VAC [D]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]
Approvals/Marks	CE	CE	CE	CE
References				
* Only without alarm				
** Only without pulse				
No serial Output	24 VAC 48 VAC 115 VAC 230 VAC	EM1-DIN AV8 1 D XX EM1-DIN AV8 1 D PX	EM2-DIN AV5 3 A XX EM2-DIN AV5 3 B XX EM2-DIN AV5 3 C XX EM2-DIN AV5 3 D XX EM2-DIN AV5 3 A XS EM2-DIN AV5 3 B XS EM2-DIN AV5 3 C XS EM2-DIN AV5 3 D XS	WM1-DIN 27A A D O PX WM1-DIN 27A A D O XX WM1-DIN 27A A C O XX WM1-DIN 27A A D O XX WM1-DIN 27A A C O RX WM1-DIN 27A A D O RX
Serial Output	24 VAC 48 VAC 115 VAC 230 VAC			
Ordering References				

See pag. 103





	Power Analyzer	Energy Meter	Energy Meter
Types	WM2-DIN	EM3-DIN	EM4-DIN
			
Dimensions (mm) H x W x D	89 x 107 x 58.5	162.5 x 90 x 63	162.5 x 90 x 63
Description		MODULAR	MODULAR
Function	1 or 3-phase power analyzer. 1-phase, 3-phase, 3 or 4 wires. Measurement of: kW, kvar PF, V _{L-L} , V _{L-N} , A, kWh tot/par, kvarh tot/par.	2-phase, 3-phase 3 or 4 wires energy meter. Direct connection up to 90 A. 6+1 dgt electro- mechanical display.	3-phase energy meter. Direct connection up to 90 A. Back-lighted LCD display. 3 1/2 dgt instantaneous variables read out, 8+ 7 1/2 dgt energy read out Measurement of system and phase variables, energy by timeperiods, m ³ H ₂ O and m ³ GAS.
Input Specifications			
Range code	433 VAC - 5 AAC [AV5]	208V _{L-L} [AV8], 400V _{L-L} [AV9], 660V _{L-L} [AV3]/20(90)AAC. 3-phase unbalanced load [3]	100V _{L-L} [AV6], 208V _{L-L} [AV4], 400V _{L-L} [AV5], 660V _{L-L} [AV7] 5(10) AAC; 208V _{L-L} [AV0], 400V _{L-L} [AV1], 660V _{L-L} [AV3] 20(90) AAC;
Accuracy	±1% fs		
Active energy		Class 2: (EN61036)	Class 1: (EN61036)
Reactive energy		Class 3: (EN61268)	Class 2: (EN61268)
Display	3-digits backlighted LCD (6-digits for energy)		
Output Specifications			
Out 1 (Pulse)	1 programmable open collector pulse out [P]	Dual pulse outputs (NPN transistor) [O]	Dual pulse output module (NPN trans.) [O]
Out 1 (Alarm)			1 alarm output module [O] (NPN trans.) 30 VDC//100 mA Max.
Out 2 (Serial communication)	RS 485 output [PS] Standard [PX]		RS422/485 serial port [SO]
Inputs			2 digital inputs module
General Specifications			
Power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	Self power supply [X]: 400VAC 208VAC VL-L Auxiliary power supply: 230VAC[D], 115VAC[C]	Self power supply: 400VAC 208VAC VL-L Auxiliary power supply: 230[D], 115[C], 48[B], 24 [A]VAC 18 to 60 VDC [4]
Approvals/Marks	CE	CE	CE
References	WM2-DIN AV5 3 A P X WM2-DIN AV5 3 B P X WM2-DIN AV5 3 C P X WM2-DIN AV5 3 D P X WM2-DIN AV5 3 A P S WM2-DIN AV5 3 B P S WM2-DIN AV5 3 C P S WM2-DIN AV5 3 D P S		
Ordering References		See pag. 102	See pag. 102



	Power Analyzer	Power Transducer	Power Transducer
Types	WM22-DIN	SPT-90	PQT-90
			
Dimensions (mm) H x W x D	162.5 x 90 x 63	90 x 90 x 138	90 x 90 x 138
Description	MODULAR	MODULAR	MODULAR
Function	3-phase power analyzer. Direct connection up to 90 A. Back-lighted LCD display. 4 x 3 1/2 dgt instantaneous variables read out, 7 1/2 dgt energy read out. Measurement of system and phase variables. Measurement of THD.	3-phase transducer. 1-phase, 3-phase 3 or 4 wires. Measurement of: W, Wdmd, VA, var, PF, Wh, VAh, varh, V _{L-L} sys, VL1-N, VL2-N, VL3-N, Hz. Programming unit or programming software	Power quality transducer. 32 bit μ P based. Alarm outputs, SMS messages. Measurement of all instantaneous variables. Energy, water and gas metering. 2MB memory+ Real time clock (on request).
Input Specifications			
Range code	100V _{L-L} [AV6], 208V _{L-L} [AV4], 400V _{L-L} [AV5], 660V _{L-L} [AV7] 5(10) AAC; 208V _{L-L} [AV0], 400V _{L-L} [AV1], 660V _{L-L} [AV3] 20(90) AAC;	100VAC 1A[AV1]; 100VAC 5A[AV3]; 433VAC 1A [AV4]; 433VAC 5A[AV5]; 690VAC 5A[AV7]	240/415 VAC-1/5 AAC [AV5] 400/690 VAC-1/5 AAC [AV7]
Accuracy		$\pm 5\%$ fs	class 0.5 (V-A)
Active energy	Class 1: (EN61036)		
Reactive energy	Class 2: (EN61268)		
Sampling Rate			10 samples /s
Output Specifications			
Out 1 (Pulse)	Dual pulse output module (NPN trans.)[O]	Single /dual pulse, open collector	Up to 2 single/dual open collector or relay modules
Out 1 (Alarm)	1 alarm output module [O] (NPN tr) 30 VDC//100 mA Max.	Single/dual alarm setpoint relay	Up to 2 single/dual open collector or relay modules
Out 2 (Analogue)	1 analogue output : 0 to 20 mADC [A1], or 0 to 10 VDC [V1]	Single/dual analogue output	
Out 2 (Serial communication)	RS422/485 serial port [S0]	RS485 multidrop bidirectional	RS 422/485 port, RS232 port + RTC+2MB data or RS232+RTC
Inputs		3 digital inputs	Up to 6 digital inputs
Options		Programming key-pad [K]; RS232 Port [S]	Up to 2 single/dual analog. output modules
General Specifications			
Power supply	Self power supply: 400VAC 208VAC VL-L Auxiliary power supply: 230[D], 115[C], 48[B], 24 [A]VAC 18 to 60 VDC [4]	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	CE - UL - CSA	CE
Ordering References	See pag. 102	See pag. 103	See pag. 103





	Energy Meter	Multifunction Meter	Power Analyzer
Types	EM2-96	WM12-96	WM2-96
			
Dimensions (mm) H x W x D	96 x 96 x 124	96 x 96 x 46	96 x 96 x 124
Description	MODULAR 3-phase energy meter. 1-phase, 3-phase, 3 or 4 wires. Active reactive energy metering (partial and total).	3-phase multifunction power indicator. System: V_{LL} , V_{LN} , A_n , V_A , V_{Admd} , W_{dmd} , W , var , PF , Hz . Max: A , W_{dmd} Single phase: V_{LL} , V_{LN} , A , V_A , W , var , PF	MODULAR 3-phase power analyzer. 1-phase, 3-phase, 3 or 4 wires. Measurements of: kW , $kvar$, PF , kWh , $kvarh$, A , V_{LL} , $VL1-N$, avg $VL2-N$, $VL3-N$.
Input Specifications			
Range Code	433 VAC _{L-L} -5 AAC [AV5] [AC1014]; 690 _{L-L} VAC- 5 AAC [AV7] [AC1015]	400/660V _{L-L} /5(6)AAC [AV5] 100/208V _{L-L} /5(6)AAC [AV6]	433 VAC _{L-L} -5 AAC [AV5] [AC1014]; 690 _{L-L} VAC- 5 AAC [AV7] [AC1015]
Accuracy	$\pm 1\%$ fs RDG	Class 0.5 (V-A)	$\pm 0.5\%$ fs (V, A)
Display	6-digit backlit LCD	3x3 DGT LED	3-digit backlit LCD (6-digits for energy).
Sampling Rate	3 times /s	1.5 samples/s	3 times /s
Output Specifications			
Serial communication output	RS 422/485 port	RS 485 port (on request) [S]	RS 422/485 port
Alarm output	Single relay SPDT; dual relay SPDT;		
Pulse output	Single NPN transistor; dual NPN transistor		Single NPN transistor; dual NPN transistor; Single relay SPDT; dual relay SPDT
General Specifications			
Power supply	24 VAC 48 VAC 115VAC 230 VAC 18 to 60 VAC/DC 90 to 260 VAC/DC	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	24 VAC 48 VAC 115VAC 230 VAC 18 to 60 VAC/DC 90 to 260 VAC/DC
Approvals/Marks	CE - UL - CSA	CE	CE - UL - CSA
Note	The alarm outputs are driven only by the serial communication.		
Ordering References	See pag. 102	See pag. 103	See pag. 102



	Power Analyzer	Utility Meter	Power Analyzer	Power Analyzer
Types	WM23-96	WM24-96	WM3-96	WM4-96
				
Dimensions (mm) H x W x D	96 x 96 x 140	96 x 96 x 140	96 x 96 x 124	96 x 96 x 124
Description	3-phase power quality analyzer System: V_{LN} , V_{LL} , An, VA, VAdmd, Wdmd, W, var, PF, Hz, total/partial varh, gas, H ₂ O. Single phase: V_{LN} , V_{LL} , A, W, var, PF, THD.	3-phase universal utility meter System: V_{LN} , VA, VAdmd, Wdmd, W, var, PF, Hz, total/partial varh, gas, H ₂ O. Single phase: V_{LN} , A, W, var, PF	3-phase power quality analyzer 32 bit μP based. 1-phase, 3-phase, 3 or 4 wires. Measurements of: kW, kvar, PF, kWh, kvarh, A, V_{L-L} , VL1-N, avg VL2-N, VL3-N, THD, VL1, VL2, VL3, Hz, Wdmd, VAdmd.	Universal utility meter and power analyzer. 32 bit μP based. Load profile indication. Alarm outputs, SMS messages. Measurement of all instantaneous variables. Energy, water and gas meter.
Input Specifications				
Range Code	57/100V _{L-L} /5(6)AAC [AV6], 120/208V _{L-L} /5(6)AAC [AV4], 230/400V _{L-L} /5(6)AAC [AV5], 380/660V _{L-L} /5(6)AAC [AV7]	57/100V _{L-L} /5(6)AAC [AV6], 120/208V _{L-L} /5(6)AAC [AV4], 230/400V _{L-L} /5(6)AAC [AV5], 380/660V _{L-L} /5(6)AAC [AV7]	433 VAC-1/5 AAC [AV5] 690 VAC-1/5 AAC [AV7]	433 VAC-1/5 AAC [AV5] 690 VAC-1/5 AAC [AV7]
Accuracy	Class 0.5 (V-A)	Class 0.5 (V-A)	$\pm 0.5\%$ fs (V, A)	$\pm 0.5\%$ fs (V, A)
Display	4x3 1/2 DGT LCD (back lighted)	4x3 1/2 DGT LCD (back lighted)	4x4 digits backligh. LCD (4x9 digits for energy).	4x4 digits backligh. LCD (4x9 digits for energy).
Sampling Rate	1.5 samples/s	1.5 samples/s	10 times /s	10 times /s
Output Specifications				
Serial communication output	RS 485 port (on request) [S1] RS 232 port (on request) [S]	RS 485 port (on request) [S1] RS 232 port (on request) [S]	RS 422/485 port RS232 port + RTC	RS 422/485 port, RS232 port + RTC + 2MB data or RS232 + RTC
Alarm output	Up to 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules	Up to 2 single/dual 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 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules
Digital input	Up to 3 (W/VAdmd sync.)	Up to 3 (time per. mngrt.)	Up to 3 digital inputs	Up to 6 digital inputs
Analogue output	Up to 1 (mA/V) analog. output module		Up to 2 single/dual analog. output modules	
General Specifications				
Power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC 90 to 260 VAC/DC	18 to 60 VAC/DC 90 to 260 VAC/DC
Approvals/Marks	CE	CE	CE - UL - CSA	CE - UL - CSA
Ordering References				
	See pag. 103	See pag. 103	See pag. 104	See pag. 104

Safety





Safety Modules

Types

Safety gate & Emergency Stop Safety Modules



Safety gate & Emergency Stop delayed Safety Modules



Power supply

24 VAC / VDC

Safety Category	Safety Outputs	REFERENCES
4	3 NO	NA1/3-D
	2 NO	MA1-D
	2 NO	MS1-D
2	2 NO	MA1-B
1	1 NO	MS2-A
	1 NO	M22A2/1-A
4	3 NO	NA1/3-D/230

Safety Category	Safety Outputs	Delay Safety Outputs	REFERENCES
3	–	3 NO	NA1/3-C-T
2	1 NO	1 NO	MA2-B-T

230 VAC

General Characteristics

Power drain

100 mA; 2VA (M22A2/1-A)

Response time

≤30 ms

Time delay

–

Protection degree

IP 30 - IP 40

Operating temperature

0 to +55°C

Case (mm)

Modular, 16 terminals, width 22.5, 25 or 45

400 mA (MA2-B-T); < 3 VA (NA1/3-C-T)

Adjustable ; Fixed (NA1/3-C-T)

IP 30 - IP 40

0 to +55°C; –25 to +55 °C (NA1/3-C-T)

Modular, 16 terminals; with 22,2; 45

Types

Two Hand Safety Modules



Light Curtain Safety Modules



Safety Mat Modules



Power Supply

24 VAC / VDC

Safety Outputs	REFERENCES
2 NO	MD1-D
2 NO	ND1/2-D
2 NO	ND1/2-D/230

230 VAC

General Characteristics

Output functions

Safety

2 NO force guided

Auxiliary

1 Optocoupled (MD1-D)
1 NC + 1 PNP (ND1/2-D)
(ND1/2-D/230)

Controlled devices (Max.)

1

Power supply

24 VAC/VDC; 230 VAC

Power drain

150 mA

Response time

≤ 30 ms

Max. mat protected area

–

Protection degree

IP 30 - IP 40

Safety category

IIIC and 4

Operating temperature

0 to +55°C

Case type and width (mm)

Modular, 16 terminals; 22,5

Safety Outputs	REFERENCES
3 NO	NL1/3-D

3 NO force guided

1

24 VAC/DC

2.5 VA / 2.5 W

≤ 30 ms

Housing: IP 40

Terminals: IP 20

4

0 to +55°C

Modular, 16 terminals; 22,5

Safety Outputs	REFERENCES
2 NO	NT1/2-D
2 NO	MT1-D

2 NO force guided

1 Optoc. 55 V / 50 mA (MT1-D)
1 NO 250 VAC / 1.25 A (MT1-D)

1

24 VAC/DC ±10% (50-60 Hz)

70 - 150 mA

20 m²

IP 30

4

0 to +55°C

Modular, 12 terminals; 22,5
Modular, 34 terminals; 90





Types

Standstill Monitor
Safety ModulesLift level
ModulesExtension
ModulesPortable control
Devices DCP

Supply voltage

24 VAC / VDC

Safety Outputs	REFERENCES
2 NO	MF1-C

Safety Outputs	REFERENCES
2 NO	NA1/2-D-LIFT
2 NO	MA1-D-LIFT

Zero D. Delayed	Safety	Safety	REFER.
Outp.	Outp.		
4 NO			NE1/4-D
4 NO			NE1/4-D/230

Zero D. Safety	Closing	Delay	REFER.
Outp.	Outp.		
1 NO	3s±10%		DCP

General
Characteristics

Outputs Safety
function Auxiliary

2 NO 230 VAC 8 A
force guided

2 NO force guided

See References

1 NO 230 VAC 2 A
forced guide

Controlled devices (Max.)
Power supply

1-phase or 3-phase signal
24 VAC/DC
±15%(50-60 Hz)MA1-D LIFT: 1 NPN opt.
55 V / 50 mA
1
24 VAC/DC
±15% (50-60 Hz)24 VAC/DC
±15% (50-60 Hz)
230 VAC (NE1/4-D/230)24 VAC/DC
±10% (50 - 60 Hz)

Power drain

300 mA @ 24 Vdc

100 mA

200 mA

400 mA

Response time

≤500 ms

≤25 ms

≤30 ms

≤25 ms

Response value (Vs)

200 - 1000 mVpp

Response value hysteresis

2 x Vs

Input voltage

≤500 Vrms

Input signal frequency

≤1.5 KHz

Cycle period

≤30s

Protection degree

IP 30

IP 30

IP 30

IP 65

Safety category

3

4

2

Operating temperature

0 to +55°C

0 to +55°C

0 to +55°C

0 to +55°C

Portable control unit Case

-External dimensions

Plastic
115 x 85 x 91 mm

Safety module Case

-External dimensions

Modular, 16 terminals
45 mmModular, 16 terminals
22,5 or 45 mmModular, 16 terminals
22,5 NE1/4-DPlastic
120 x 160 x 90 mm



Safety Mat System Model SM..



Mechanical Characteristics

Material	NBR rubber
Thickness	~ 15 mm
Resolution	15 mm
Min. operating pressure	300 g/cm ²
Maximum load	100 Kg/cm ²
Mechanical life	>10 ⁶ cycles

General Characteristics

Single Unit	1.5 x 2.5 m
Max Dimensions	Other dimensions upon request
Covering	Antislip
Covering stiffness	~ 70 SH
Chemical resistance	
Excellent:	Oils - Greases - Water
Good:	Acids - Detergents - Alcohol
	Abrasive powder
Poor:	Solvents - Gasoline
Border	Aluminium
Floor fixing	With screws
Weight	9.3 Kg/m ²
Protection degree	IP 65 or IP 67
Operating temperature	+5° to +40°C

Safety Magnetic Sensors SMS...



Rectangular	10 mm
	20 mm
Rectangular	20 mm
Rectangular	2NO: 20 mm
	NC: 17 mm
Cylindrical	$15 \div 4$ mm
Cylindrical	$22 \div 4$ mm

Electrical Characteristics

Max. switch. voltage contact
Max. switch. power contact

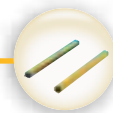
General Characteristics

External dimensions (mm)	88 x 25 x 13
	M18 x 1 SMS-A2P-02; SMS-A2P-10
Suitable magnetic unit	CLS; CLS-A2 (SMS-A2P-*)
Output connection	Cable (PVC, AWG 26, L=2 m.)
Protection degree	IP 67
Operating temperature	-25° to +70°C
Case	Plastic; PBT + 30 % glass (SMS-A2P-*)

Safety Outputs	Max. switch. Power Cont.	Aux. Outp.	REFERENCES
1NO+1NC	0.25 VA	-	SMS-01
1NO+1NC	0.25 VA	-	SMS-02
1NO+1NC	NO: 0.5 A	-	SMS-02/S1
1NO+1NC	NC: 0.25 A	-	SMS-02/S1
2NO	0.25 VA	-	SMS-03
2NO	0.25 VA	1NC	SMS-03/NC
2NO	0.25 VA	1NC	SMS-03/NC
1NO+1NC	0.25 VA	-	SMS-A2P-02
1NO	0.25 VA	-	SMS-A2P-10

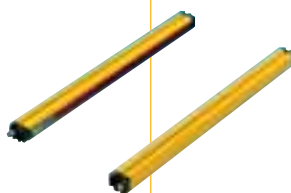
100 VAC
5 VA

	SHAPE	REFERENCES
88 x 25 x 13	Rectangular	CLS
Ø25.1 x 9.3mm	Cylindrical	CLS-A2
IP 67		
-25° to +70°C		
Plastic		

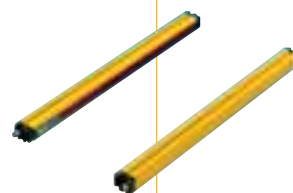


Types

Safety Light Curtains, Safety Category 2 SB2...



Safety Light Curtains, Safety Category 4 SB4...



Resolution
Finger mm
14

Scann. dist.
0.2-6 m

Hand mm
35

0.2-15 m

Body mm
315 - 515

4-50 m

Body mm
315 - 515

0.5-50 m

Body mm
315 - 515

0.5-25 mm

Height of the controlled area mm	No. of beams	Resp. time ms	REFERENCES
187	8	15	SB2-35/187-D15
334	16	17	SB2-35/334-D15
481	24	18	SB2-35/481-D15
628	32	20	SB2-35/628-D15
775	40	22	SB2-35/775-D15
922	48	23	SB2-35/922-D15
1069	56	25	SB2-35/1069-D15
1216	64	27	SB2-35/1216-D15
1363	72	28	SB2-35/1363-D15
1510	80	30	SB2-35/1510-D15
1657	88	32	SB2-35/1657-D15
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

Height of the controlled area mm	No. of beams	Resp. time ms	REFERENCES
161	21	18	SB4-14/161-D6
308	42	22	SB4-14/308-D6
455	63	26	SB4-14/455-D6
602	84	31	SB4-14/602-D6
749	105	35	SB4-14/749-D6
187	8	15	SB4-35/187-D15
334	16	17	SB4-35/334-D15
481	24	18	SB4-35/481-D15
628	32	20	SB4-35/628-D15
775	40	22	SB4-35/775-D15
922	48	23	SB4-35/922-D15
1069	56	25	SB4-35/1069-D15
1216	64	27	SB4-35/1216-D15
1363	72	28	SB4-35/1363-D15
1510	80	30	SB4-35/1510-D15
1657	88	32	SB4-35/1657-D15
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
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

General Character.

Power supply

Output functions

Output connections

Auxiliary functions

Material

Environment light rejection

Mechanical protection

Operating temperature

24 VDC $\pm 20\%$

2 PNP Output

M12 4-pole connector for TX

M12 8-pole connector for RX

Total/Partial muting-Override-Auto/manual Reset

Painted aluminium

IEC-61496-2

IP 65

-10° to +55°C

24 VDC $\pm 20\%$

2 PNP Output

M12 4-pole connector for TX

M12 8-pole connector for RX

Total/Partial muting-Override-Auto/manual Reset

Painted aluminium

IEC-61496-2

IP 65

-10° to +55°C



Types

Electrical protections for Power lines



Nominal working Voltage

230 / 380 VAC

230 VAC

230 / 380 VAC

230 VAC

Max. working Power	Connect.	Radio freq. filter	Din slide	REFERENCES
-	Terminals	NO	Omega type 2.5 mod.	DRP
-	Terminals	NO	Omega type 1.0 mod.	SE-01
-	Terminals	NO	G type 1.0 mod.	SE-01/S1
400 VA	Terminals	YES	Omega type 2.5 mod.	DRP-A2
4000 VA	Terminals	YES	Omega type 2.5 mod.	DRP-A20
4000 VA	Terminals	YES	Omega type 2.5 mod.	SE-02
-	Termin.boards	NO	NO	POEM-01
-	Wir.3x2.4mm ²	NO	NO	POEM-02
2000 VA	German socket	NO	NO	UN-01/1T/A
2000 VA	Italian socket	NO	NO	UN-01/2I/A

General Characteristics

Static breakdown voltage
Dynamic breakdown voltage
Nominal discharge current
Response time

COMMON MODE PROTECTION	DIFFERENTIAL MODE PROTECTION
620 V with slew rate 100 V/s	560 V with slew rate 100 V/s
<1200 V with slew rate 1 kV/m s	<850 V with slew rate 1 kV/ms
6.5 kA with pulse 8/20 us	6.5 kA with pulse 8/20 m s
<500 ns	<25 ns

Types

Electrical protections for data and Telematic lines



Nominal working Voltage

12 V

5 V

24 V

12 V

2 V

24 V

Protocol	Max. working current	Case	REFERENCES
Half duplex	0.45 A	Modular	TZ-006/B
Half duplex	0.19 A	Modular	TZ-037
Half/full duplex	0.45 A	Modular	TZ-038
RS-232/C		Modular	TZ-039
RS-232/C		DB9 connector	TZ-050
RS-232/C		DB25 connector	TZ-056
RS-422 RS-485		Modular	TZ-066
RS-449 RS-423		DB15 connector	TZ-057
Current loop	0.14 A	Modular	TZ-042
Current loop	0.14 A	G type DIN slide	SE-CL/A
Twin-ax	0.45 A		TZ-061
TV-CC			CX-06
Data lines with 2 wires	0.45 A	Modular 2 wires	TZ-016/B
Data lines with 2 wires	0.45 A	G type DIN slide	SE-24
Data lines with 4 wires	0.45 A	Modular 4 wires	TZ-040

General Characteristics

Common Mode Protection
Differential Mode Protection

Yes
Yes



Dupline®

Fieldbus Installationbus



Dupline® is a range of highly modular datapoint oriented building blocks which can be combined to form very cost-effective solutions for a wide spectrum of applications in the industrial and building installation field.

Use of existing wiring provides significant cost-reductions

Due to the robustness of Dupline® it has been possible to make use of existing wiring in numerous installations. Examples hereof are telephone wires and multi-core cables. This has provided significant cost-reductions e.g. in railway and alarm applications.

Modem links

Dupline® systems can be linked via private line modem or the public telephone network

Individual addressing of I/O's

In the Dupline® system the addressing is oriented towards the individual I/O's rather than to entire modules. Only I/O's which have been assigned an address occupy transmission capacity. Unused I/O's e.g. an 8 input module can be left as spares for future use. An input and an output which have been coded to the same address will be linked together e.g. as a peer-to-peer connection.

Input of the same signal from different locations

Dupline® allows coding of more inputs to the same address, they will then operate in parallel as an OR function. If e.g. it is desired to control a light from different locations in a room or building it can be done by programming the relevant light switches for the same address as the relay switching the light. No matter which light switch sends a pulse, the light relay will toggle. This provides a high degree of flexibility for future changes or enhancements, since additional switches can be added or existing switches can be re-coded without the need to reconfigure or expand the I/O-capacity of the system.

Output of the same signal at different locations

Dupline® also allows coding of more outputs to the same address, making it possible to output any signal status at any point in the system and as many times as desired. This can e.g. be used to create a status indication at numerous locations of all the alarms and lights in a building.

Pre-determinable output status

The status of the digital outputs can be pre-determined to ensure that a safe operational status is automatically established in case of a failure.

Bi-directional communication

Digital and analog signals can be transmitted in any direction



BUILDING AUTOMATION

Applications

Lighting Control
Temperature Control
Ventilation Control
Rollerblind Control
Monitoring of energy consumption
Monitoring of doors, locks and windows
Monitoring of fire alarms
Water leakage detection

Specific tasks

ON/OFF switching and dimming of lights.
Detection of signals from light switches and feedback to light switch LED's.
Detection of signals from infrared remote controls or PIR sensors.
Measurement of room- and outdoor-temperature.
Control of heating elements and/or valves.
ON/OFF switching of ventilators.
Control of rollerblinds motors up/down with interlocking.
Registration of pulses form energy meters.
Monitoring of alarms from smoke detectors, doors/windows, water leakage and PIR sensors.

Dupline® key benefits

Dupline® is easy to install and to maintain and can be handled by non-expert electricians.
Bus-powered devices like light switches, temperature sensors, smoke detectors and PIR sensors make products and installation cost-effective, fast and flexible.
Free topology makes installation easy and flexible.
Bus-wires do not need to be shielded and can run in the same cable/conduit/pipe as the power due to the noise immunity of Dupline®.
WINDOWS 98-configurable controller is flexible and easy to program due to an object-oriented approach.
The installation can easily be enhanced, changed or retrofit without reconfiguring the control system.



WATER INDUSTRY

Applications

Control and monitoring of remote pump stations from a central distribution point.
Monitoring of valves in vacuum-based sewage systems.
Control and monitoring of irrigation systems (golf-courses, agriculture etc).
Control and monitoring of waste water treatment plants.
Gestion des alarmes / télégestion dans les stations éloignées

Specific tasks

Start/stop of pumps
Monitoring of pumps (voltage, current, temperature, alarms)
Open/close valves
Monitoring of valve positions
Level measurement
Flow measurement
Pressure measurement
Leakage detection

Dupline® key benefits

Dupline® can transmit up to 10 km without a repeater
Long distance connections through existing telephone wires can be implemented through private line modems
Existing wires can be used for Dupline®
Bus-powered magnet proximity sensors are unique for monitoring of valve positions in vacuum-based sewage systems where no electric power is available
Dupline® can handle both digital and analog signals
It is easy to engineer, install and maintain the installation due to the straight forward and flexible nature of Dupline
Cost-effective solutions



ALARM AND SECURITY

Applications

Fire alarm systems
Monitoring of fire doors (e.g. on ships)
Monitoring of security fences
Prison security and alarms
Factory machine alarms
Alarm monitoring on conveyor systems (e.g. mines and tunnels)
Monitoring of emergency lighting
Control of CCTV cameras

Specific tasks

Monitoring of smoke detectors
Temperature measurement
Detection of fire doors open/closed through limit switches or magnets
Detection of doors/windows open/closed
Monitoring of sensors on security fences
Transmission of alarms from machine monitoring devices to a central location
Monitoring of pull-cord switches and conveyor belt alarm signals with exact position indication (e.g. mines and tunnels)
Frequent checking of emergency light operation and reporting to central location

Dupline® key benefits

Bus-powered small-sized input modules and sensors like inductive, magnet proximity, PIR and temperature makes installation cost-effective, fast and flexible
Steep learning curve when electricians are trained to install and maintain systems
Free topology provides easy and flexible installation
Noise-immune, robust and well-proven system
Simple point-to-point transfer of signals is easy to make
Use of existing wiring reduces cost
Transfer of alarm signals over long distances
Easy to expand and change the installed system



TRAFFIC SYSTEMS

Applications

Monitoring of alarm signals from railway crossings and reporting to central location.
Control and monitoring of trackshifter heating.
Control of railway tunnel ventilation.
Remote control of unmanned railway stations.
Control and monitoring of emergency generators in airports.
Control and monitoring of taxi and runway lights in airports.

Specific tasks

MGathering of alarm signals over long distances (several kilometers)
Measurement of trackshifter temperatures
Measurement of environmental temperature and humidity
Open/close gas valves
Firing of gas heater
Measurement of gas concentration
ON/OFF switching of lights and ventilators over long distances
Monitoring of the status of runway lights and announce alarms to control tower

Dupline® key benefits

Dupline® can transmit up to 10 km without a repeater
There is no limit to the transmission distance when repeaters are cascaded
Existing wires can be used for Dupline® and can run in the same cable conduit as the power
It is easy to engineer, install and maintain the installation due to the straight forward and flexible nature of Dupline®
Dupline® solves the combination of long distance transmission and high distribution of I/O's in an economical way

For more information see: www.dupline.com

Ordering Key

PDI20A T1 H R X

Type _____
 Range Code _____
 Power supply _____
 Control output (OUT 1) _____
 Alarm output (OUT 2) _____

PDI40A T1 D R X XX

Type _____
 Range Code _____
 Power supply _____
 Control output (OUT 1) _____
 Alarm output (OUT 2) _____
 Options _____

PDI42A T H R X XX

Type _____
 Range Code _____
 Power supply _____
 Control output (OUT 1) _____
 Alarm output (OUT 2) _____
 Options _____

PDI45A T H R XX X XX

Type _____
 Range Code _____
 Power supply _____
 Control output (OUT1) _____
 Control/alarm output (OUT2) _____
 Motor driven valve control _____
 Options _____

PDI92A T H R X X X X

Type _____
 Range Code _____
 Power supply _____
 Control output (OUT1) _____
 Control output (OUT2) _____
 1st Alarm output _____
 2nd Alarm output _____
 3rd Alarm output _____

PDI95A T H R X X X X X

Type _____
 Range Code _____
 Power supply _____
 Control output (OUT1) _____
 Control output (OUT2) _____
 Motor driven valve control _____
 1st Alarm output _____
 2nd Alarm output _____
 3rd Alarm output _____
 Options _____

TADK 40A 5A

Type _____
 Primary current _____
 Secondary current _____

TAD 40A 5A

Type _____
 Primary current _____
 Secondary current _____

DER 1A 60mV

Type _____
 Primary current _____
 Secondary current _____

CVT-DIN AV1 A D 0 1 X

Type _____
 Range code _____
 Power supply _____
 Rated output _____
 Calibration _____

DI3-DIN AV5 A D 0 XX

Type _____
 Range code _____
 Power supply _____

LDI3 AV5 D 0 XX XX

Type _____
 Range code _____
 Power supply _____
 Options _____

LDI35 AV0 D 0 XX XX

Type _____
 Range code _____
 Power supply _____
 Setpoints _____
 Options _____

MDI40 VOB D 2 A XX IX

Type _____
 Range code _____
 Power supply _____
 Setpoints _____
 Signal output _____
 Options _____

EDM35 V1D 4 1 X XXY

Type _____
 Range code _____
 Power supply _____
 Relay output _____
 Signal output _____
 Options _____

DI3-72 AV6 D D 0 XX

Type _____
 Range code _____
 Power supply _____
 Options _____

EM3-DIN AV9 3 X X

Type _____
 Range code _____
 Power supply _____
 Out 1 _____

EM4-DIN AV9 3 X X XX

Type _____
 Range code _____
 Power supply _____
 Out 1 _____
 Out 2 _____

WM22-DIN AV5 3 X X XX

Type _____
 Range code _____
 Power supply _____
 Out 1 _____
 Out 2 _____

EM2-96 AV5 3 D XX X

Type _____
 Range code _____
 Power supply _____
 Out 1 (alarm) _____
 Out 2 (serial communication) _____

WM2-96 AV5 3 D XX X

Type _____
 Range code _____
 Power supply _____
 Out 1 (pulse) _____
 Out 2 (serial communication) _____

WM12-96 AV5 3 D XX

Type _____
 Range code _____
 Power supply _____
 Options _____

WM12-DIN AV5 3 D X

Type _____
 Range code _____
 Power supply _____
 RS485 (on request) _____

WM23-96 AV5 3 H XX XX XX XX X

Type _____
 Range code _____
 Power supply _____
 Out 1 (analogue) _____
 Out 2 (RS485) _____
 Out 3 (alarm and/or pulse, digital inputs) _____
 Out 4 (alarm and/or pulse) _____
 Options (RS232) _____

WM24-96 AV5 3 H XX XX XX XX X

Type _____
 Range code _____
 Power supply _____
 Out 2 (RS485) _____
 Out 3 (alarm and/or pulse, digital inputs) _____
 Out 4 (alarm and/or pulse) _____
 Options (RS232) _____

SPT-90 AV5 1 H X A1 XX X

Type _____
 Range code _____
 System(1:1ph,3-ph.bal;3:3-ph.unbal.) _____
 Power supply _____
 Out 1 (alarm or pulse) _____
 Out 2 (analogue) _____
 Out 2 (serial communication) _____
 Options _____

PQT-90 AV5 3 H XX XX XX XX X

Type _____
 Range code _____
 Power supply _____
 Out 1 (analogue) _____
 Out 2 (analogue or RS485) _____
 Out 3 (alarm and/or pulse, digital inputs) _____
 Out 4 (alarm and/or pulse) _____
 Options(RS232 + clock + 2MB memory) _____

Ordering Key

WM3-96 AV5 3 H XX XX XX XX X

Type _____
 Range code _____
 Power supply _____
 Out 1 (analogue) _____
 Out 2 (analogue or RS485) _____
 Out 3 (alarm and/or pulse, digital inputs) _____
 Out 4 (alarm and/or pulse) _____
 Options (RS232 + clock) _____

WM4-96 AV5 3 H XX XX XX XX X

Type _____
 Range code _____
 Power supply _____
 In 1 (digital inputs + AUX) _____
 Out 2 (RS485) _____
 Out 3 (alarm and/or pulse, digital inputs) _____
 Out 4 (alarm and/or pulse) _____
 Options (RS232 + clock + 2MB memory) _____

Modular flush mounting

Type	Ch.	SPT 90	PQT 90	EM2 96	WM2 96	WM23 96	WM3 96	WM24 96	WM4 96	Ordering code
WM23-96 base 100VLL						•				AH2302
WM23-96 base 208VLL						•				AH2301
WM23-96 base 400VLL						•				AH2300
WM23-96 base 660VLL						•				AH2303
WM24-96 base 100VLL								•		AJ2402
WM24-96 base 208VLL								•		AJ2401
WM24-96 base 400VLL								•		AJ2400
WM24-96 base 660VLL								•		AJ2403
SPT-90 base 57/100V-1AAC 1-ph		•								AA1000
SPT-90 base 57/100V-5AAC 1-ph		•								AA1001
SPT-90 base 250/433V-1AAC 1-ph		•								AA1002
SPT-90 base 250/433V-5AAC 1-ph		•								AA1003
SPT-90 base 400/690V-5AAC 1-ph		•								AA1004
SPT-90 base 57/100V-1AAC 3-ph		•								AA1006
SPT-90 base 57/100V-5AAC 3-ph		•								AA1007
SPT-90 base 250/433V-1AAC 3-ph		•								AA1008
SPT-90 base 250/433V-5AAC 3-ph		•								AA1009
SPT-90 base 400/690V-5AAC 3-ph		•								AA1010
EM2-96 base 250/433V-5AAC 3-ph				•						AC1014
EM2-96 base 400/690V-5AAC 3-ph				•						AC1015
WM2-96 base 250/433V-5AAC 3-ph					•					AB1012
WM2-96 base 400/690V-5AAC 3-ph					•					AB1013
WM3-96 base							•			AD1016
WM4-96 base									•	AD1040
PQT-90 base			•							AD1047
240/415V-1/5AAC input for WM3/4, PQT			•				•		•	AQ1018
400/690V-1/5AAC input for WM3/4, PQT			•				•		•	AQ1019
24VAC power supply				•	•	•		•		AP1025
48VAC power supply				•	•	•		•		AP1024
115VAC power supply				•	•	•		•		AP1023
230VAC power supply		•		•	•	•		•		AP1022
18-60VAC/DC power supply		•	•	•	•	•	•	•	•	AP1021
90-260VAC/DC power supply		•	•	•	•	•	•	•	•	AP1020
Programming unit		•								AR1017
20mADC analogue output	1	•				•	•			AO1050
10VDC analogue output	1	•	•			•	•			AO1051
±5mADC analogue output	1	•	•			•	•			AO1052
±10mADC analogue output	1	•	•			•	•			AO1053
±20mADC analogue output	1	•	•			•	•			AO1054
±1VDC analogue output	1	•	•			•	•			AO1055
±5VDC analogue output	1	•	•			•	•			AO1056
±10VDC analogue output	1	•	•			•	•			AO1057
20mADC analogue output	2	•	•			•	•			AO1026
10VDC analogue output	2	•	•			•	•			AO1027
±5mADC analogue output	2	•	•			•	•			AO1028
±10mADC analogue output	2	•	•			•	•			AO1029
±20mADC analogue output	2	•	•			•	•			AO1030
±1VDC analogue output	2	•	•			•	•			AO1031
±5VDC analogue output	2	•	•			•	•			AO1032
±10VDC analogue output	2	•	•			•	•			AO1033
RS485 port	1	•	•	•	•	•	•	•	•	AR1034
Relay output (pulse/alarm)	1	•	•		•	•	•	•	•	AO1058
Relay output (pulse/alarm)	2		•			•	•	•	•	AO1035
Open collector output (pulse/alarm)	1	•	•		•	•(*)	•	•	•	AO1059
Open collector output (pulse/alarm)	2		•			•(*)	•	•	•	AO1036
Open collector output (pulse/alarm)	4		•				•		•	AO1037
Digital inputs	3	•	•			•	•	•	•	AQ1038
Digital inputs + Aux	3		•					•	•	AQ1042
RS232 port + RTC	1	•				•	•	•		AR1039
RS232 port + RTC + 2MB data memory	1		•						•	AR1041

(*) Only for alarm purpose

A lifetime of commitment to automation

IKUINEN SITOUTUMINEN AUTOMAATIOON

En livslang forpligtigelse indenfor automation

TIJDLOZE VERBINTENIS MET AUTOMATISERING

Unsere Verpflichtung an die Automatisierung

UNA VITA DEDICATA ALL'AUTOMAZIONE

Toda una vida de compromiso con la automatización

UN ENGAGEMENT DE PÉRENNITÉ DANS L'AUTOMATISATION

สินค้าอัตโนมัติขึ้น มีความสำคัญต่อทุกชีวิต

一生对自动化的承诺

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CARLO GAVAZZI
Automation Components

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