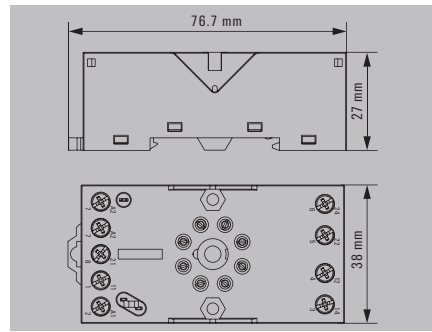


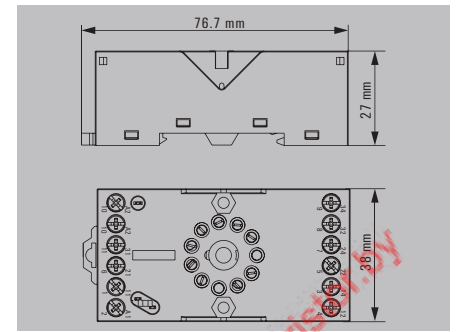
D-SERIES – relay modules

Accessories for DRR relays

Socket module with leaf spring connection, 2 CO contacts



Socket module with leaf spring connection, 3 CO contacts



Technical data

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	300 V
Continuous current	12 A
Rated data	
Ambient temperature (operational)	-40 °C...65 °C
Storage temperature	-40 °C...85 °C
Approvals	CE, cURus, EAC
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.21 kV _{eff} /1 min
Impulse withstand voltage	4.8 kV (1.2/50 µs)
Connection data	
Clamping range (nominal / min. / max.)	/ 0.5 / 2.5 mm ²
Tightening torque	0.5...1 Nm
Stripping length, rated connection	7 mm
Note	

Output		
Rated switching voltage	250 V AC	
Max. switching voltage, AC	300 V	
Continuous current	12 A	
Rated data		
Ambient temperature (operational)	-40 °C...65 °C	
Storage temperature	-40 °C...85 °C	
Approvals	CE, cURus, EAC	
Insulation coordination		
Protection degree	IP20	
Creepage and clearance distance input - output	≥ 4 mm	
Dielectric strength input - output	2.5 KV _{eff} / 1 min.	
Dielectric strength of neighbouring contacts	2.21 kV _{eff} /1 min	
Impulse withstand voltage	4.8 kV (1.2/50 µs)	
Connection data		
Clamping range (nominal / min. / max.)	/ 0.5 / 2.5 mm ²	
Tightening torque	0.5...1 Nm	
Stripping length, rated connection	7 mm	
Note		

Output		
Rated switching voltage	250 V AC	
Max. switching voltage, AC	300 V	
Continuous current	12 A	
Rated data		
Ambient temperature (operational)	-40 °C...65 °C	
Storage temperature	-40 °C...85 °C	
Approvals	CE, cURus, EAC	
Insulation coordination		
Protection degree	IP20	
Creepage and clearance distance input - output	≥ 4 mm	
Dielectric strength input - output	2.5 KV _{eff} / 1 min.	
Dielectric strength of neighbouring contacts	2.21 kV _{eff} /1 min	
Impulse withstand voltage	4.8 kV (1.2/50 µs)	
Connection data		
Clamping range (nominal / min. / max.)	/ 0.5 / 2.5 mm ²	
Tightening torque	0.5...1 Nm	
Stripping length, rated connection	7 mm	
Note		

Ordering data

	Socket, DIN rail mounted
Note	

Type	Qty.	Order No.
SRD ECO 2CO	10	1132810000

Type	Qty.	Order No.
SRD ECO 3CO	10	1132820000

Accessories

LED module / protection modules		
	RC element 6 - 230 V AC	
	Free-wheeling diode 6 - 230 V DC	
Retaining clip	Metal retaining clip	
Screwdriver	Screwdriver, insulated PH1 SlimLine	
	Screwdriver, insulated PH1	
	Screwdriver PH1	

Type	Qty.	Order No.
RIM 5 6/230VAC	10	1174670000
RIM 5 6/230VDC	10	1174650000
DRR CLIP M	10	1134160000
SDIK PH1 SL	1	1274710000
SDIK PH1	1	9008570000
SDK PH1	1	9008480000

Type	Qty.	Order No.
RIM 5 6/230VAC	10	1174670000
RIM 5 6/230VDC	10	1174650000
DRR CLIP M	10	1134160000
SDIK PH1 SL	1	1274710000
SDIK PH1	1	9008570000
SDK PH1	1	9008480000

Note	
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Note	
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Note	
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в Беларусі Заказ г.Мінск viber и тел. +375447584780 email: minsk17@tut.by www.tiristor.by

PWR high-power relay

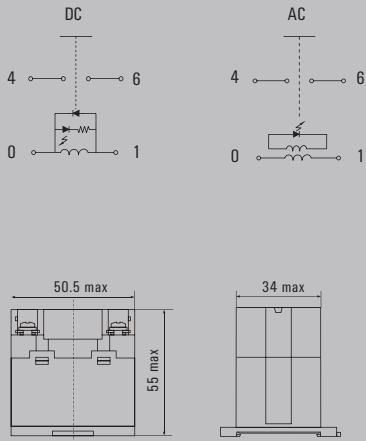
1 NO AC/DC coil

- Max. load current: 30 A



Circuit diagram

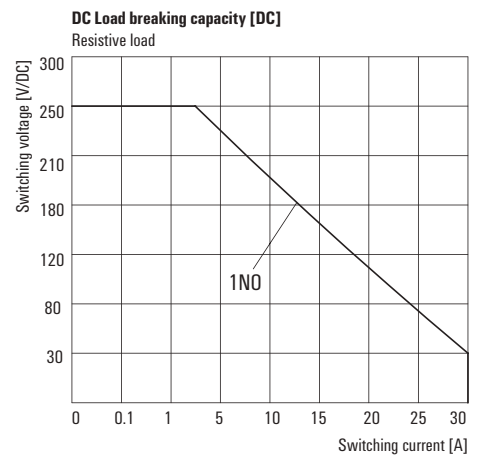
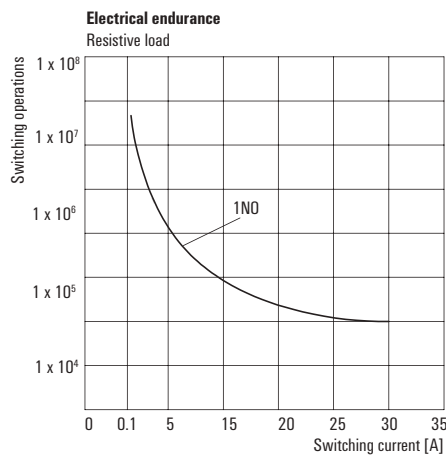
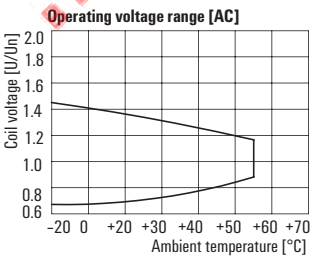
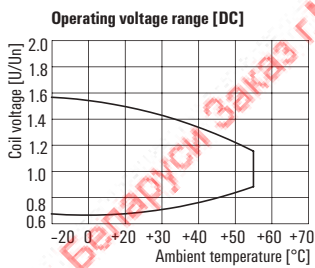
1NO



Technical data

Output	
Rated switching voltage / Continuous current	277 V AC / 30 A
Max. switching voltage, AC	277 V
Inrush current	150 A / 50 ms
Min. switching power	100 mA @ 12 V
DC / AC Switching capacity (resistive), max.	720 W @ 24 V / 8300 VA
Contact material	AgSnO ₂
Mechanical service life	
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-25 °C...55 °C
Storage temperature	-25 °C...55 °C
Humidity	35...85 % rel. humidity, no condensation
Approvals	CE, cURus; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	6 kV (1.2/50 μs)
Dielectric strength input - output	4 kV _{eff} / 1 min
Dielectric strength of neighbouring contacts	
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 5.5 mm
Overvoltage category	III
Pollution degree	3
Dimensions	
Depth x width x height	mm 55 / 50.5 / 34
Note	

Applications



**PWR high-power relay
1 NO AC/DC coil**

Type code	PWR			
Type	PWR			
Type of construction and mounting	173 1N.O. contact, DIN-rail mounting			
Coil voltage	006	6 V DC / 012	12 V DC	
	024	24 V DC / 048	48 V DC	
	110	110 V DC / 220	220 V DC	
	524	24 V AC / 548	48 V AC	
	615	115 V AC / 730	230 V AC	
	880	380 V AC		
LED indicator	L with LED			

Ordering data

	12 V DC 1 NO	24 V DC 1 NO	48 V DC 1 NO	110 V DC 1 NO	220 V DC 1 NO
Input					
Rated control voltage	12 V DC	24 V DC	48 V DC	110 V DC	220 V DC
Rated current AC / DC	/ 160 mA	/ 79.2 mA	/ 39.3 mA	/ 17.3 mA	/ 8.7 mA
Power rating	1.9 W	1.9 W	1.9 W	1.9 W	1.9 W
Pull-in/drop-out voltage, typ.	9 V / 1.8 V DC	18 V / 3.6 V DC	36 V / 7.2 V DC	82.5 V / 16.5 V DC	165 V / 33 V DC
Pull-in/drop-out current, typ.					
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Output					
Switch-on delay	< 20 ms	< 20 ms	< 20 ms	< 20 ms	< 20 ms
Switch-off delay	< 10 ms	< 10 ms	< 10 ms	< 10 ms	< 10 ms

Ordering data						
Rail mounting	Type	PWR173012L	PWR173024L	PWR173048L	PWR173110L	PWR173220L
	Order No.	1219470000	1219480000	1219490000	1219510000	1219520000
	Type					
	Order No.					
Note						

Ordering data

	24 V AC 1 NO	48 V AC 1 NO	115 V AC 1 NO	230 V AC 1 NO	380 V AC 1 NO
Input					
Rated control voltage	24 V AC	48 V AC	115 V AC	230 V AC	380 V AC
Rated current AC / DC	87.3 mA /	43.6 mA /	22.1 mA /	11 mA /	6.1 mA /
Power rating	2.5 VA	2.5 VA	2.5 VA	2.5 VA	2.5 VA
Pull-in/drop-out voltage, typ.	18 V / 3.6 V AC	36 V / 7.2 V AC	86.3 V / 17.3 V AC	172.5 V / 34.5 V AC	285 V / 57 V AC
Pull-in/drop-out current, typ.					
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Output					
Switch-on delay	< 20 ms	< 20 ms	< 20 ms	< 20 ms	< 20 ms
Switch-off delay	< 10 ms	< 10 ms	< 10 ms	< 10 ms	< 10 ms

Ordering data						
Rail mounting	Type	PWR173524L	PWR173548L	PWR173615L	PWR173730L	PWR173880L
	Order No.	1219090000	1219120000	1219130000	1219140000	1219150000
	Type					
	Order No.					
Note						

D-SERIES – relay modules

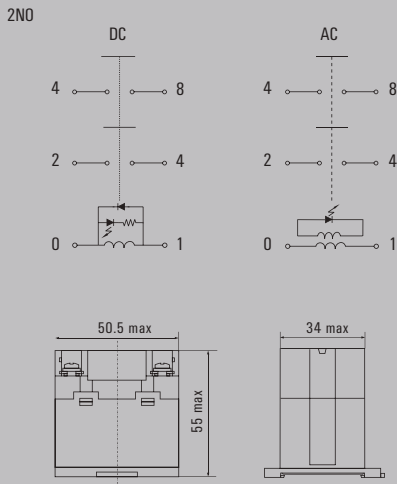
PWR high-power relay

2 NO AC/DC coil

- Max. load current: 25 A



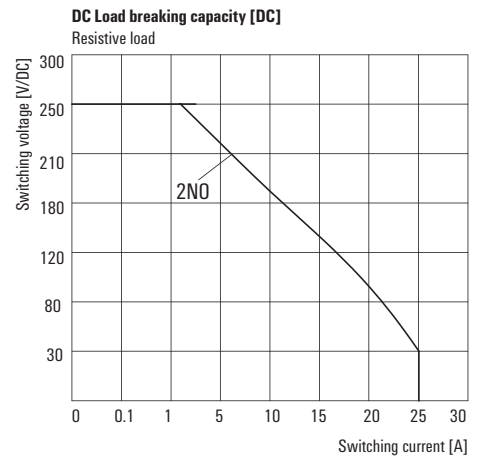
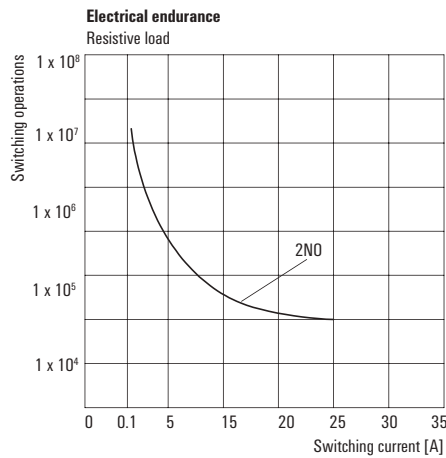
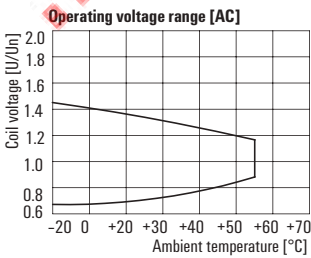
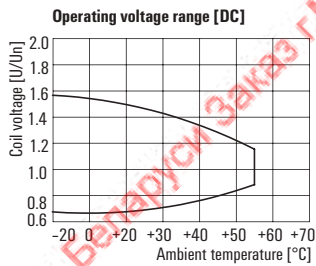
Circuit diagram



Technical data

Output	
Rated switching voltage / Continuous current	277 V AC / 25 A
Max. switching voltage, AC	277 V
Inrush current	120 A / 50 ms
Min. switching power	100 mA @ 12 V
DC / AC Switching capacity (resistive), max.	600 W @ 24 V / 6900 VA
Contact material	AgSnO2
Mechanical service life	
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-25 °C...55 °C
Storage temperature	-25 °C...55 °C
Humidity	35...85 % rel. humidity, no condensation
Approvals	CE, cURus, EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength input - output	4 kV _{eff} / 1 min
Dielectric strength of neighbouring contacts	2 kV _{eff} / 1 min
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 5.5 mm
Overvoltage category	III
Pollution degree	3
Dimensions	
Depth x width x height	mm 55 / 50.5 / 34
Note	

Applications



**PWR high-power relay
2 NO AC/DC coil**

Type code	PWR			
Type	PWR			
Type of construction and mounting	276 2N.O. contact, DIN-rail mounting			
Coil voltage	006	6 V DC / 012	12 V DC	
	024	24 V DC / 048	48 V DC	
	110	110 V DC / 220	220 V DC	
	524	24 V AC / 548	48 V AC	
	615	115 V AC / 730	230 V AC	
	880	380 V AC		
LED indicator	L with LED			

Ordering data

	12 V DC 2 NO	24 V DC 2 NO	48 V DC 2 NO	110 V DC 2 NO	220 V DC 2 NO
Input					
Rated control voltage	12 V DC	24 V DC	48 V DC	110 V DC	220 V DC
Rated current AC / DC	/ 160 mA	/ 79.2 mA	/ 39.3 mA	/ 17.3 mA	/ 8.7 mA
Power rating	1.9 W	1.9 W	1.9 W	1.9 W	1.9 W
Pull-in/drop-out voltage, typ.	9 V / 1.8 V DC	18 V / 3.6 V DC	36 V / 7.2 V DC	82.5 V / 16.5 V DC	165 V / 33 V DC
Pull-in/drop-out current, typ.					
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Output					
Switch-on delay	< 30 ms	< 30 ms	< 30 ms	< 30 ms	< 30 ms
Switch-off delay	< 30 ms	< 30 ms	< 30 ms	< 30 ms	< 30 ms

Ordering data						
Rail mounting	Type	PWR276012L	PWR276024L	PWR276048L	PWR276110L	PWR276220L
	Order No.	1219540000	1219550000	1219560000	1219570000	1219580000
	Type					
	Order No.					
Note						

Ordering data

	24 V AC 2 NO	48 V AC 2 NO	115 V AC 2 NO	230 V AC 2 NO	380 V AC 2 NO
Input					
Rated control voltage	24 V AC	48 V AC	115 V AC	230 V AC	380 V AC
Rated current AC / DC	87.3 mA	43.6 mA /	22.1 mA /	11 mA /	6.1 mA /
Power rating	2.5 VA	2.5 VA	2.5 VA	2.5 VA	2.5 VA
Pull-in/drop-out voltage, typ.	18 V / 3.6 V AC	36 V / 7.2 V AC	86.3 V / 17.3 V AC	172.5 V / 34.5 V AC	285 V / 57 V AC
Pull-in/drop-out current, typ.					
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Output					
Switch-on delay	< 30 ms	< 30 ms	< 30 ms	< 30 ms	< 30 ms
Switch-off delay	< 30 ms	< 30 ms	< 30 ms	< 30 ms	< 30 ms

Ordering data						
Rail mounting	Type	PWR276524L	PWR276548L	PWR276615L	PWR276730L	PWR276880L
	Order No.	1219160000	1219170000	1219180000	1219190000	1219220000
	Type					
	Order No.					
Note						

Coupling modules – the industrial standard

Relay module with 1 to 4 CO contacts



B

The RIDER SERIES and its RCI, RCM, RRD and RPW product lines have been successfully integrated into the entire Weidmüller line of relay products. This modular-designed product series formally complies with international standards. A variety of pluggable versions are available with from one to four CO contacts and your choice of connection method.

Our innovative relay bases with PUSH IN connection systems are available for both the RCI/RCL and RCM product lines. PUSH IN technology is safe and easy to use and it allows you to reduce costs with less wiring time. The relay modules are designed for industrial applications and feature sturdy relay pins and industrial-standard pinning. A mechanically operated, stay-down test button is integrated into the design. It enables switching statuses to be simulated during initial commissioning. Additional product features include LED status indicators and free-wheel diodes (DC).

Our relay kits are particularly convenient to use. They include the relay module with status display and the base with ejection lever. The kits are delivered fully assembled and with completely tested functionality. This saves time during assembly and reduces the number of products required.

Saves time

No-screw PUSH IN connections and cross-connections can reduce wiring time by more than 50 %.



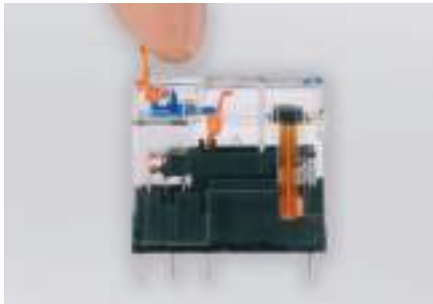
Customised

Suppressor circuitry and LED can be integrated into a relay module or as a pluggable module at the base.



Simple

The stay-down test button simplifies commissioning and service work.



Safe

The heavy-duty industrial pins ensure a reliable connection.



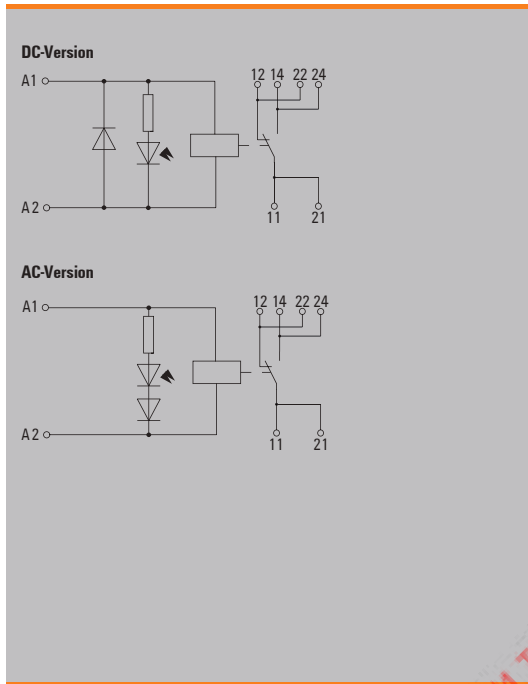
RCI KIT with screw connection

1 CO contact

- 4000 VA switching capacity
- Stable plug-in connections
- LED (AC red / DC green) integrated in relay
- Protective suppressor circuit for DC coil
- Optional test button with latching function and inspection window
- Identification of coils (AC red / DC blue)



B



Technical data

Output	
Rated switching voltage / Continuous current	250 V AC / 16 A ¹⁾
Max. switching voltage, AC	400 V
Inrush current	30 A / 4 s
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	384 W @ 24 V / 4000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 5 x 10 ⁶ Switch. cycles, DC coil 10 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	5 kV _{eff} / 1min
Dielectric strength of neighbouring contacts	
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 8 mm
Overtoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 1 / 2.5
Depth x width x height	mm 70.2 / 15.8 / 77
Note	1) For full continuous current (16 A), relay connections 11 - 21, 12 - 22 and 14 - 24 must be bridged.

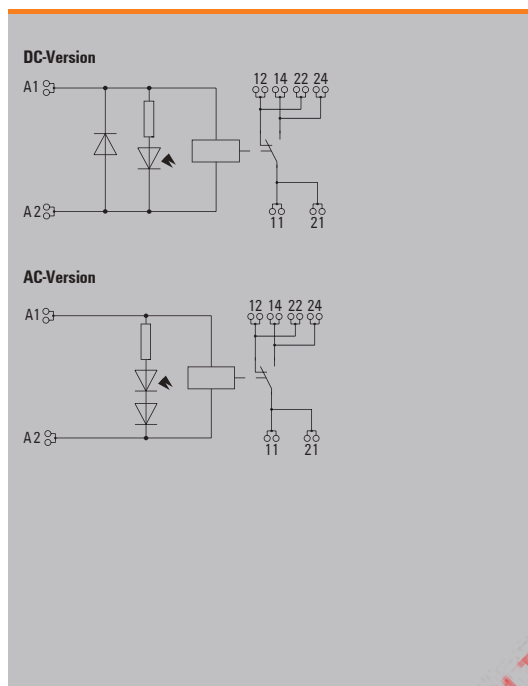
Ordering data

		24 V DC 1CO	24 V AC 1CO	115 V AC 1CO	230 V AC 1CO
Input					
Rated control voltage		24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC		/ 16.7 mA	31.6 mA /	7 mA /	3.5 mA /
Power rating		420 mW	0.75 VA	0.8 VA	0.8 VA
Pull-in/drop-out voltage, typ.		16.8 V / 2.4 V DC	18 V / 3.6 V AC	86.3 V / 17.3 V AC	172.5 V / 34.5 V AC
Status indicator		Green LED	red LED	red LED	red LED
Protective circuit		Free-wheel diode			
Output					
Switch-on delay		≤ 8 ms	≤ 8 ms	≤ 8 ms	≤ 8 ms
Switch-off delay		≤ 6 ms	≤ 6 ms	≤ 6 ms	≤ 6 ms
Ordering data					
with test button	Type	RCIKIT 24VDC 1CO LD/PB	RCIKIT 24VAC 1CO LD	RCIKIT 115VAC 1CO LD/PB	RCIKIT 230VAC 1CO LD/PB
	Order No.	8881580000	8871010000	8897060000	8881600000
without test button	Type	RCIKIT 24VDC 1CO LD	RCIKIT 24VAC 1CO LD/PB	RCIKIT 115VAC 1CO LD	RCIKIT 230VAC 1CO LD
	Order No.	8871000000	8881590000	8897090000	8871020000
Ordering data Spare relay					
	Type	w. test button RCI374AC4	w. test button RCI374R24	w. test button RCI374S15	w. test button RCI374T30
	Order No.	8870250000	8870280000	8870290000	8870300000
		w.o. test button RCI314AC4	w.o. test button RCI314R24	w.o. test button RCI314S15	w.o. test button RCI314T30
		8870100000	8870130000	8870140000	8870150000
Note					

RCI-KITP with PUSH IN connection

1 CO contact

- 4000 VA switching capacity
- Stable plug-in connections
- LED (AC red / DC green) integrated in relay
- Protective suppressor circuit for DC coil
- Optional test button with latching function and inspection window
- Identification of coils (AC red / DC blue)



Technical data

Output	
Rated switching voltage / Continuous current	250 V AC / 16 A ¹⁾
Max. switching voltage, AC	400 V
Inrush current	30 A / 4 s
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	384 W @ 24 V / 4000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 5 x 10 ⁶ Switch. cycles, DC coil 10 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	5 kV _{eff} / 1min
Dielectric strength of neighbouring contacts	
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 8 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.75 / 1.5
Depth x width x height	mm 69.6 / 15.8 / 98
Note	
1) For full continuous current (16 A), relay connections 11 - 21, 12 - 22 and 14 - 24 must be bridged.	

Ordering data

Input		24 V DC 1CO	24 V AC 1CO	115 V AC 1CO	230 V AC 1CO
Rated control voltage		24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC		/ 16.7 mA	31.6 mA /	7 mA /	3.5 mA /
Power rating		420 mW	0.75 VA	0.8 VA	0.8 VA
Pull-in/drop-out voltage, typ.		16.8 V / 2.4 V DC	18 V / 3.6 V AC	86.3 V / 17.3 V AC	172.5 V / 34.5 V AC
Status indicator		Green LED	red LED	red LED	red LED
Protective circuit		Free-wheel diode			
Output					
Switch-on delay		≤ 8 ms	≤ 8 ms	≤ 8 ms	≤ 8 ms
Switch-off delay		≤ 6 ms	≤ 6 ms	≤ 6 ms	≤ 6 ms
Ordering data					
with test button	Type	RCIKITP 24VDC 1CO LD/PB	RCIKITP 24VAC 1CO LD/PB	RCIKITP115VAC 1CO LD/PB	RCIKITP230VAC 1CO LD/PB
	Order No.	8897190000	8897200000	8897210000	8897220000
without test button	Type	RCIKITP 24VDC 1CO LD	RCIKITP 24VAC 1CO LD	RCIKITP 115VAC 1CO LD	RCIKITP 230VAC 1CO LD
	Order No.	8897110000	8897120000	8897130000	8897140000
Ordering data					
Spare relay		w. test button	w.o. test button	w. test button	w.o. test button
	Type	RCI374R24	RCI314R24	RCI374S15	RCI314S15
	Order No.	8870280000	8870130000	8870290000	8870150000
Note					

RIDERSERIES – relay modules

RCI relay

1 CO contact AC/DC coil

- 4000 VA switching capacity
- Stable plug-in connections
- Optional test button with latching function and inspection window
- Optional status indicator (AC red / DC green)
- Optional protective suppressor circuit
- Identification of coils (AC red / DC blue)

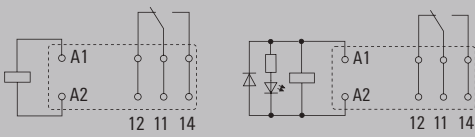


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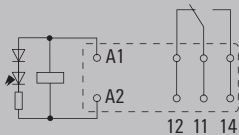
Circuit diagram

View on solder pins

DC coil LED + Diode



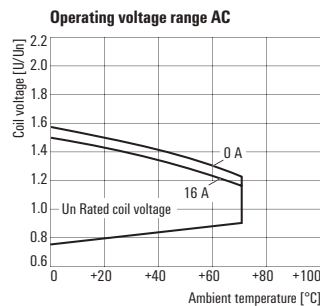
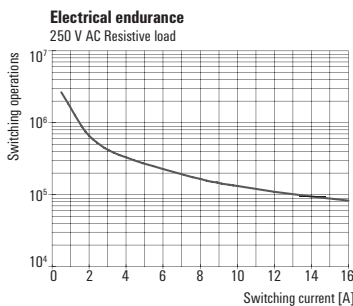
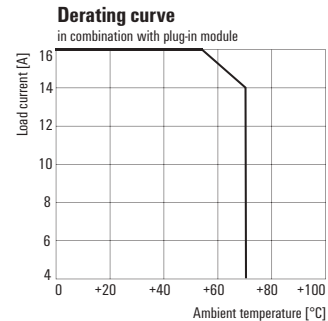
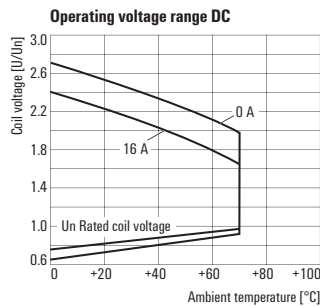
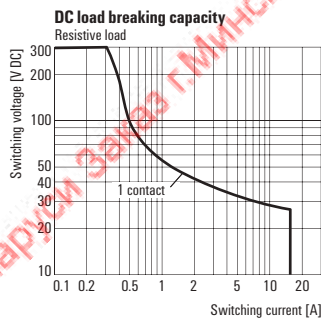
AC coil LED



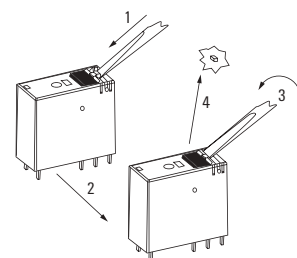
Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 16 A
Max. switching voltage, AC	400 V
Inrush current	30 A / 4 s
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	384 W @ 24 V / 4000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 5 x 10 ⁶ Switch. cycles, DC coil 10 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	5 kV _{eff} / 1min
Dielectric strength of neighbouring contacts	
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 8 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Depth x width x height	mm 25.6 / 13 / 29
Plug-in connection	
Note	

Applications



Removal of snap lock



RCI relay
1 CO contact AC/DC coil

Type code	RCI				
Type	RIDER Control Industrial				
Type of construction	3 1-pole, 16 A 4 2-pole, 8 A				
Type of contact	1 1 CO contact without test button 2 2 CO contacts without test button 7 1 CO contact with test button 8 2 CO contacts with test button				
Contact material	4 AgNi 90/10				
Coil	012 12 V DC 024 24 V DC 048 48 V DC 110 110 V DC 524 24 V AC 615 115 V AC 730 230 V AC AB2 12 V DC+LED+diode AC4 24 V DC+LED+diode AE8 48 V DC+LED+diode BB0 110 V DC+LED+diode R24 24 V AC+LED S15 115 V AC+LED T30 230 V AC+LED				

Ordering data

		12 V DC 1CO	24 V DC 1CO	48 V DC 1CO	110 V DC 1CO
Input					
Rated control voltage		12 V DC	24 V DC	48 V DC	110 V DC
Rated current AC / DC		/ 33.3 mA	/ 16.7 mA	/ 8.7 mA	/ 4.1 mA
Power rating		400 mW	400 mW	400 mW	400 mW
Pull-in/drop-out voltage, typ.		8.4 V / 1.2 V DC	16.8 V / 2.4 V DC	33.6 V / 4.8 V DC	77 V / 11 V DC
Output					
Switch-on delay		≤ 8 ms	≤ 8 ms	≤ 8 ms	≤ 8 ms
Switch-off delay		≤ 6 ms	≤ 6 ms	≤ 6 ms	≤ 6 ms
Ordering data					
Standard	Type	RCI314012	RCI314024	RCI314048	RCI314110
	Order No.	8869800000	8869810000	8869820000	8869830000
with test button	Type	RCI374012	RCI374024		
	Order No.	8869950000	8869960000		
with LED + freewheel diode	Type	RCI314AB2	RCI314AC4	RCI314AE8	RCI314BB0
	Order No.	8870090000	8870100000	8870110000	8870120000
with test button + LED	Type	RCI374AB2	RCI374AC4	RCI374AE8	RCI374BB0
+ Free-wheel diode	Order No.	8870240000	8870250000	8870260000	8870270000
Note					

Ordering data

		24 V AC 1CO	115 V AC 1CO	230 V AC 1CO
Input				
Rated control voltage		24 V AC	115 V AC	230 V AC
Rated current AC / DC		31.6 mA /	6.6 mA /	3.2 mA /
Power rating		0.75 VA	0.75 VA	0.75 VA
Pull-in/drop-out voltage, typ.		18 V / 3.6 V AC	86.3 V / 17.3 V AC	172.5 V / 34.5 V AC
Output				
Switch-on delay		≤ 8 ms	≤ 8 ms	≤ 8 ms
Switch-off delay		≤ 6 ms	≤ 6 ms	≤ 6 ms
Ordering data				
Standard	Type	RCI314524	RCI314615	RCI314730
	Order No.	8869840000	8869850000	8869860000
with test button	Type	RCI374524		RCI374730
	Order No.	8869990000		8870010000
with LED	Type	RCI314R24	RCI314S15	RCI314T30
	Order No.	8870130000	8870140000	8870150000
with test button + LED	Type	RCI374R24	RCI374S15	RCI374T30
	Order No.	8870280000	8870290000	8870300000
Note				

RIDERSERIES – relay modules

RCI relay

2 CO contact AC / DC coil

- 2000 VA switching capacity
- Stable plug-in connections
- Optional test button with latching function and inspection window
- Optional status indicator (AC red / DC green)
- Optional protective suppressor circuit
- Identification of coils (AC red / DC blue)

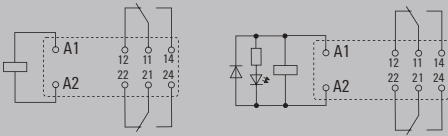


B

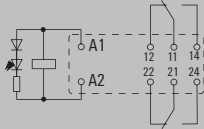
Circuit diagram

View on solder pins
dimensions in mm

DC coil LED + Diode



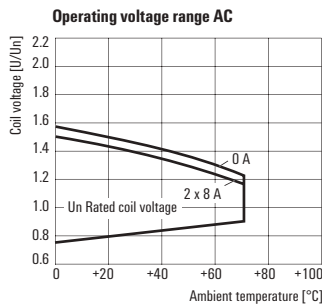
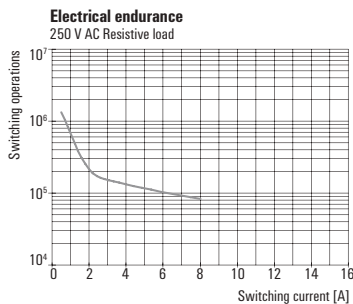
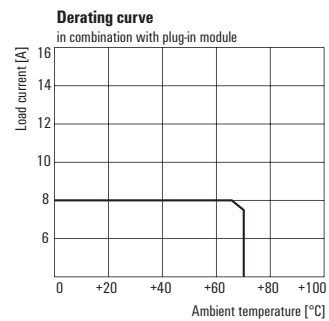
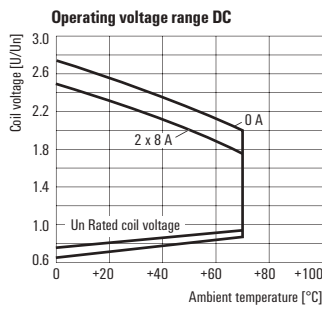
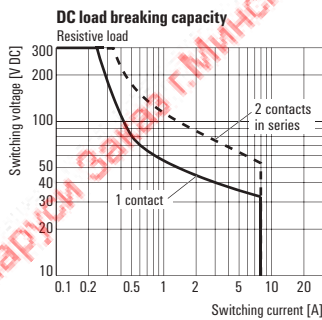
AC coil LED



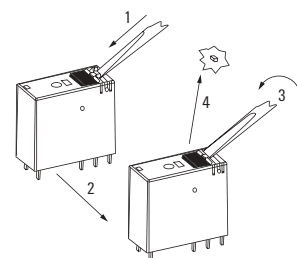
Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 8 A
Max. switching voltage, AC	400 V
Inrush current	15 A / 4 s
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	192 W @ 24 V / 2000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 5 x 10 ⁶ Switch. cycles, DC coil 10 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	5 kV _{eff} / 1min
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 8 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Depth x width x height	mm 25.6 / 13 / 29
Plug-in connection	
Note	
	x = 25.5 without test button / 26.7 with test button

Applications



Removal of snap lock



RCI relay

2 CO contact AC / DC coil

Type code	RCI				
Type	RIDER Control Industrial				
Type of construction	3 1-pole, 16 A				
	4 2-pole, 8 A				
Type of contact	1 1 CO contact without test button				
	2 2 CO contacts without test button				
	7 1 CO contact with test button				
	8 2 CO contacts with test button				
Contact material	4 AgNi 90/10				
Coil	012 12 V DC				
	024 24 V DC				
	048 48 V DC				
	110 110 V DC				
	524 24 V AC				
	615 115 V AC				
	730 230 V AC				
	AB2 12 V DC+LED+diode				
	AC4 24 V DC+LED+diode				
	AE8 48 V DC+LED+diode				
	BB0 110 V DC+LED+diode				
	R24 24 V AC+LED				
	S15 115 V AC+LED				
	T30 230 V AC+LED				

Ordering data

Input		12 V DC 2CO	24 V DC 2CO	48 V DC 2CO	110 V DC 2CO
Rated control voltage		12 V DC	24 V DC	48 V DC	110 V DC
Rated current AC / DC		/ 33.3 mA	/ 16.7 mA	/ 8.7 mA	/ 4.1 mA
Power rating		400 mW	400 mW	400 mW	400 mW
Pull-in/drop-out voltage, typ.		8.4 V / 1.2 V DC	16.8 V / 2.4 V DC	33.6 V / 4.8 V DC	77 V / 11 V DC
Output					
Switch-on delay		≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Switch-off delay		≤ 6 ms	≤ 6 ms	≤ 6 ms	≤ 6 ms
Ordering data					
Standard	Type	RCI424012	RCI424024	RCI424048	RCI424110
	Order No.	8869870000	8869890000	8869900000	8869910000
with test button	Type	RCI484012	RCI484024	RCI484048	RCI484110
	Order No.	8870020000	8870030000	8870040000	8870050000
with LED + freewheel diode	Type	RCI424AB2	RCI424AC4	RCI424AE8	RCI424BB0
	Order No.	8870170000	8870180000	8870190000	8870200000
with test button + LED	Type	RCI484AB2	RCI484AC4	RCI484AE8	RCI484BB0
+ Free-wheel diode	Order No.	8870310000	8870320000	8870330000	8870340000
Note					

Ordering data

Input		24 V AC 2CO	115 V AC 2CO	230 V AC 2CO
Rated control voltage		24 V AC	115 V AC	230 V AC
Rated current AC / DC		31.6 mA /	6.6 mA /	3.2 mA /
Power rating		0.75 VA	0.75 VA	0.75 VA
Pull-in/drop-out voltage, typ.		18 V / 3.6 V AC	86.3 V / 17.3 V AC	172.5 V / 34.5 V AC
Output				
Switch-on delay		≤ 10 ms	≤ 10 ms	≤ 10 ms
Switch-off delay		≤ 6 ms	≤ 6 ms	≤ 6 ms
Ordering data				
Standard	Type	RCI424524	RCI424615	RCI424730
	Order No.	8869920000	8869930000	8869940000
with test button	Type	RCI484524	RCI484615	RCI484730
	Order No.	8870060000	8870070000	8870080000
with LED	Type	RCI424R24	RCI424S15	RCI424T30
	Order No.	8870210000	8870220000	8870230000
with test button + LED	Type	RCI484R24	RCI484S15	RCI484T30
	Order No.	8870350000	8870360000	8870370000
Note				

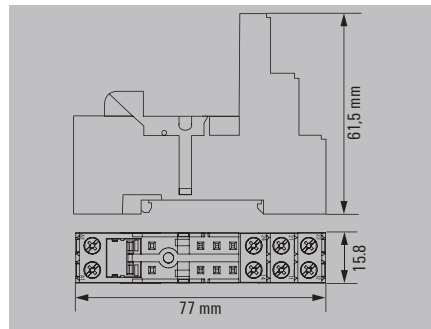
RIDERSERIES – relay modules

Accessories for RCI relays

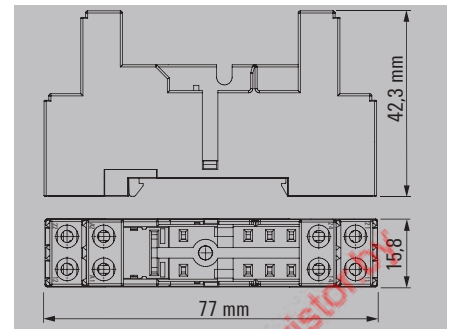
1 CO contact and 2 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Standard-height socket module with clamping yoke connection, 2 CO contacts



Low-height socket module with clamping yoke connection, 2 CO contacts



Technical data

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	400 V
Continuous current	12 A, 16 A ¹⁾
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 10 mm
Dielectric strength input - output	5 kV _{eff} / 1 min
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
Note	
1) For full continuous current (16 A), relay connections 11-21, 12-22 and 14-24 must be bridged.	

Rated switching voltage	250 V AC
Max. switching voltage, AC	400 V
Continuous current	12 A, 16 A ¹⁾
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC
Protection degree	IP20
Creepage and clearance distance input - output	≥ 10 mm
Dielectric strength input - output	5 kV _{eff} / 1 min
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Impulse withstand voltage	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
1) For full continuous current (16 A), relay connections 11-21, 12-22 and 14-24 must be bridged.	

Rated switching voltage	250 V AC
Max. switching voltage, AC	400 V
Continuous current	12 A, 16 A ¹⁾
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	4 kV _{eff} / 1 min
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Impulse withstand voltage	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
1) For full continuous current (16 A), relay connections 11-21, 12-22 and 14-24 must be bridged.	

Ordering data

Socket, DIN rail mounted	
Note	

Type	Qty.	Order No.
SRC-I 2CO	10	8869490000

Type	Qty.	Order No.
SRC-I 2CO N	10	8869480000

Accessories

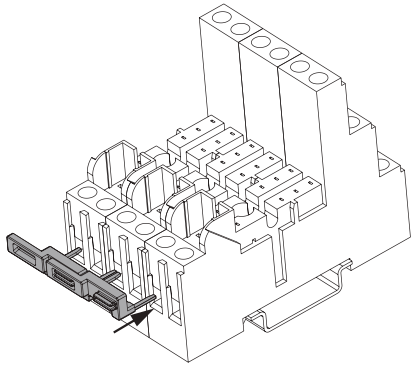
Cross-connection	
Cross-connection, 8-pole	
Retaining clip	
Plastic retaining clip	
Metal retaining clip	
Markers	
Label, not PrintJet compatible, no MultiCard white	
LED module / protection modules	
Free-wheeling diode 6 - 230 V DC	
Load resistance 110 - 230 V UC	
LED 6 - 24 V DC green and freewheeling diode	
LED 24 - 60 V DC green and free-wheeling diode	
LED 110 - 230 V DC green and free-wheeling diode	
LED 6 - 24 V UC green	
LED 24 - 60 V UC green	
LED 110 - 230 V UC green	
RC element 110 - 230 V AC; 4.7 kΩ / 10 nF	
RC element 230 V UC; 1.1 kΩ / 200 nF	
Protective varistor; S07K30	
Protective varistor; S07K130	
Protective varistor; S07K275	
Screwdriver	
SDIK PZ1 SL	
SDIK PZ1	
SDK PZ1	
Note	
Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com	

Type	Qty.	Order No.
SRC-I QV S	10	1132070000
SRC-I CLIP HP	10	8869510000
SRC-I CLIP HM RCI	20	1132090000
SRC-I MARK	10	8869530000
ESG 6/15 SRC-I MC NE WS	200	2558350000
RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 24VUC VAR	10	8869710000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000
SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000

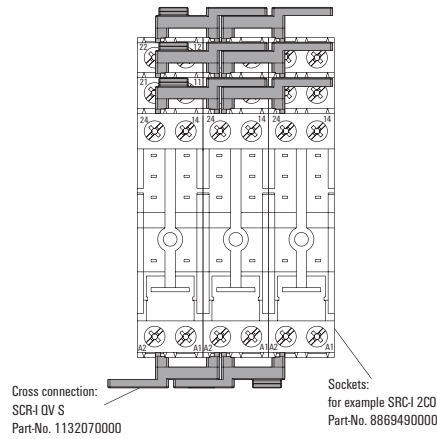
Type	Qty.	Order No.
SRC-I QV S	10	1132070000
SRC-I CLIP HP	10	8869510000
SRC-I CLIP HM RCI	20	1132090000
SRC-I MARK	10	8869530000
ESG 6/15 SRC-I MC NE WS	200	2558350000
RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 24VUC VAR	10	8869710000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000
SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000

Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

Installation of the cross-connection on the relay base



Plug the cross connection into wire-connection opening
and fix it with tighten the screw



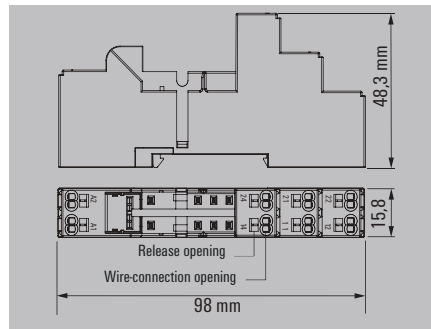
в Беларусі Заказ г.Мінск viber и тел. +375447584780 email: minsk17@tul.by www.tiristor.by

RIDERSERIES – relay modules

Accessories for RCI relays

1 CO contact and 2 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Socket module with
PUSH IN connection, 2 CO contacts

Technical data

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	400 V
Continuous current	12 A, 16 A ¹⁾
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 10 mm
Dielectric strength input - output	5 kV _{eff} / 1 min
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	1.5 / 0.75 / 1.5 mm ²
Tightening torque	...
Stripping length, rated connection	12 mm
Note	1) For full continuous current (16 A), relay connections 11-21, 12-22 and 14-24 must be bridged.

Ordering data

	Socket, DIN rail mounted	
Note		
Type	Qty.	Order No.
SRC-I 2CO P	10	8869500000

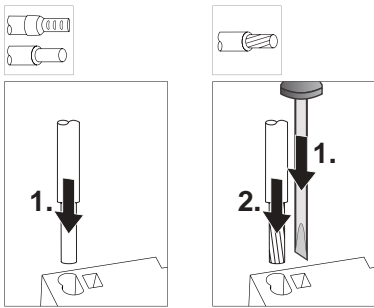
Accessories

Pluggable cross-connection	2-pole	Type	Qty.	Order No.
Retaining clip	Plastic retaining clip Metal retaining clip	SRC-I QV P	10	8870840000
Markers	Label, not PrintJet compatible, no MultiCard white	SRC-I CLIP HP	10	8869510000
LED module / protection modules	Free-wheeling diode 6 - 230 V DC Load resistance 110 - 230 V UC LED 6 - 24 V DC green and freewheeling diode LED 24 - 60 V DC green and free-wheeling diode LED 110 - 230 V DC green and free-wheeling diode LED 6 - 24 V UC green LED 24 - 60 V UC green LED 110 - 230 V UC green RC element 6 - 60 V UC; 470 Ω / 220 nF RC element 110 - 230 V AC; 4.7 kΩ / 10 nF RC element 230 V UC; 1.1 kΩ / 200 nF Protective varistor; S07K30 Protective varistor; S07K130 Protective varistor; S07K275	SRC-I CLIP HM RCI	20	1132090000
Screwdriver	Standard	SRC-I MARK	10	8869530000
Note		ESG 6/15 SRC-I MC NE WS	200	2558350000
		RIM-I 1 6/230V	10	8869580000
		RIM-I 1 R 110/230V	10	8870830000
		RIM-I 2 6/24VDC GN	10	8869600000
		RIM-I 2 24/60VDC GN	10	8869680000
		RIM-I 2 110/230VDC GN	10	8869700000
		RIM-I 3 6/24VUC GN	10	8869640000
		RIM-I 3 24/60VUC GN	10	8869620000
		RIM-I 3 110/230VUC GN	10	8869660000
		RIM-I 3 6/60VAC RC	10	8869770000
		RIM-I 3 110/230VAC RC	10	8869790000
		RIM-I 3 230VAC RC	10	1172210000
		RIM-I 4 24VUC VAR	10	8869710000
		RIM-I 4 110VUC VAR	10	8869730000
		RIM-I 4 230VUC VAR	10	8869750000
		SDIS SL 0.6X3.5X100	1	1274660000

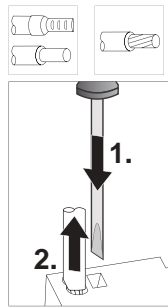
Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

PUSH IN connection operation

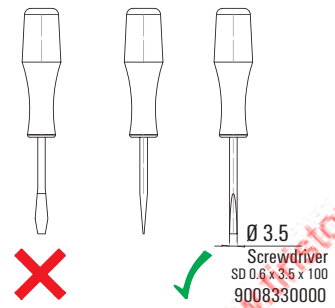
Insert connector



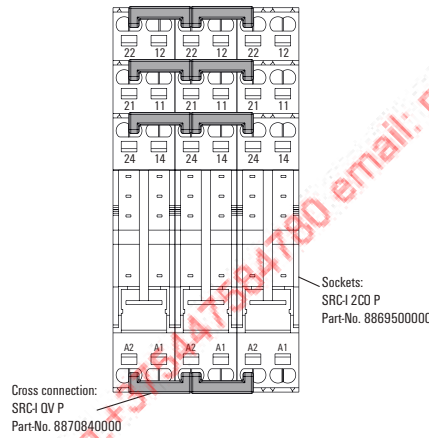
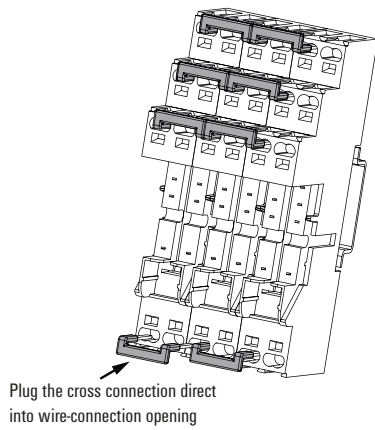
Remove connector



Recommended screwdriver



Installation of the cross-connection on the relay base



If more than 2 poles are connected with stacked cross-connection ridges, then the bottom ridges must be stripped to the appropriate length and shortened for correct fitting.

RIDERSERIES – relay modules

RCM KIT with screw connection

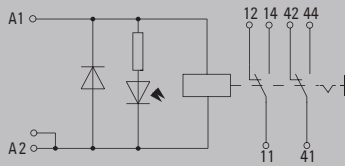
2 CO contacts, AC/ DC coil

Modular system comprising of:

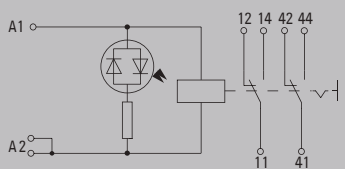
- Relay socket for rail mounting
- LED display unit (AC red / DC green)
- Retaining clip
- Pluggable relays with coil identification (AC red / DC blue)
- Markers



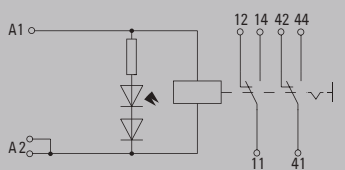
DC-Version



AC-Version



AC-Version 115 V AC / 230 V AC



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 12 A
Max. switching voltage, AC	400 V
Inrush current	24 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	288 W @ 24 V / 3000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 kV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 1 / 2.5
Depth x width x height	mm 78.3 / 27.2 / 77
Screw connection	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 1 / 2.5
Depth x width x height	mm 78.3 / 27.2 / 77
Note	

Ordering data

	24 V DC 2CO LED	24 V AC 2CO LED	115 V AC 2CO LED	230 V AC 2CO LED
Input				
Rated control voltage	24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC	/ 31.3 mA	41.6 mA /	8.8 mA /	4.3 mA /
Power rating	740 mW	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.	18 V / 2.4 V DC	19.2 V / 7.2 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Status indicator	Green LED	red LED	red LED	red LED
Protective circuit	Free-wheel diode			
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
Screw connection	RCMKIT-I 24VDC 2CO LD	RCMKIT-I 24VAC 2CO LD	RCMKIT-I 115VAC 2CO LD	RCMKIT-I 230VAC 2CO LD
Type				
Order No.	8920940000	8920950000	8920960000	8920970000
Type				
Order No.				
Ordering data				
Spare relay (pluggable)	RCM270024	RCM270524	RCM270615	RCM270730
Type				
Order No.	8689860000	8689760000	8689800000	8689820000
Note				

RCM KIT with PUSH IN connection

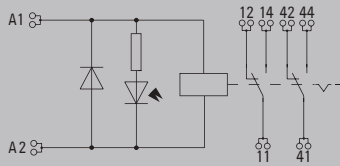
2 CO contacts AC/DC coil

Modular system comprising of:

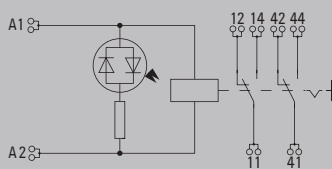
- Relay socket for rail mounting
- LED display unit (AC red / DC green)
- Retaining clip
- Pluggable relays with coil identification (AC red / DC blue)
- Markers



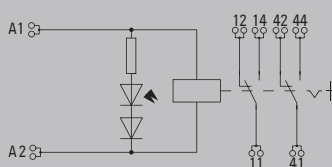
DC-Version



AC-Version



AC-Version 115 V AC / 230 V AC



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 12 A
Max. switching voltage, AC	400 V
Inrush current	24 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	288 W @ 24 V / 3000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.5 KV _{eff} / 1 min.
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.75 / 1.5
Depth x width x height	mm 78.3 / 28 / 98
Note	

Ordering data

		24 V DC 2CO LED	24 V AC 2CO LED	115 V AC 2CO LED	230 V AC 2CO LED
Input					
Rated control voltage		24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC		/ 31.3 mA	41.6 mA /	8.8 mA /	4.3 mA /
Power rating		740 mW	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.		18 V / 2.4 V DC	19.2 V / 7.2 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Status indicator		Green LED	red LED	red LED	red LED
Protective circuit		Free-wheel diode			
Output					
Switch-on delay		≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay		≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data					
PUSH IN connection	Type	RCMKITP-I 24VDC 2CO LD	RCMKITP-I 24VAC 2CO LD	RCMKITP-I 115VAC 2CO LD	RCMKITP-I 230VAC 2CO LD
	Order No.	8921080000	8921090000	8921100000	8921110000
	Type				
	Order No.				
Ordering data					
Spare relay (pluggable)	Type	RCM270024	RCM270524	RCM270615	RCM270730
	Order No.	8689860000	8689760000	8689800000	8689820000
Note					

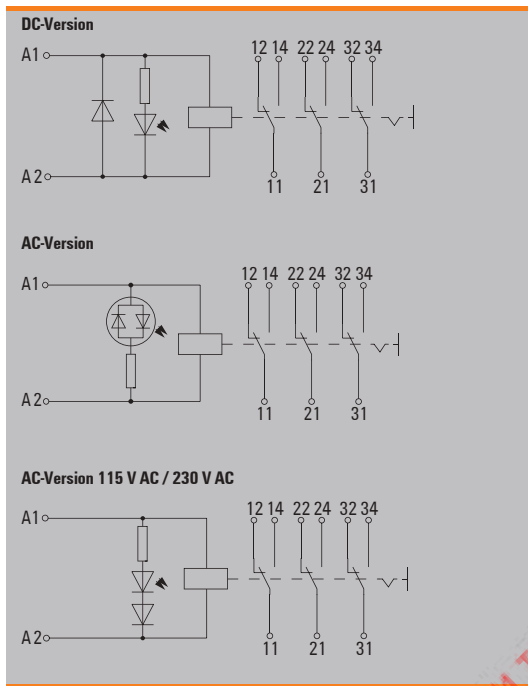
RCM KIT with screw connection
3 CO contacts, AC/ DC coil

Modular system comprising of:

- Relay socket for rail mounting
- LED display unit (AC red / DC green)
- Retaining clip
- Pluggable relay modules
- Identification of coils (AC red / DC blue)
- Markers



B



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 10 A
Max. switching voltage, AC	400 V
Inrush current	20 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	240 W @ 24 V / 2500 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.5 KV _{eff} / 1 min.
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 1 / 2.5
Depth x width x height	mm 71.6 / 27.2 / 73.5
Note	

Ordering data

	24 V DC 3CO LED	24 V AC 3CO LED	115 V AC 3CO LED	230 V AC 3CO LED
Input				
Rated control voltage	24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC	/ 31.3 mA	41.6 mA /	8.8 mA /	4.3 mA /
Power rating	740 mW	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.	18 V / 2.4 V DC	19.2 V / 7.2 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Status indicator	Green LED	red LED	red LED	red LED
Protective circuit	Free-wheel diode			
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
Screw connection	RCMKIT-I 24VDC 3CO LD	RCMKIT-I 24VAC 3CO LD	RCMKIT-I 115VAC 3CO LD	RCMKIT-I 230VAC 3CO LD
Type				
Order No.	8920980000	8920990000	8921010000	8921020000
Type				
Order No.				
Ordering data				
Spare relay (pluggable)	RCM370024	RCM370524	RCM370615	RCM370730
Type				
Order No.	8690040000	8690030000	8689980000	8690000000
Note				

в Беларуси Заказ г.Минск viber и тел. +375447584780 email: minsk17@tut.by www.tiristor.by

RIDERSERIES – relay modules

RCM KIT with screw connection

4 CO contacts, AC/ DC coil

Modular system comprising of:

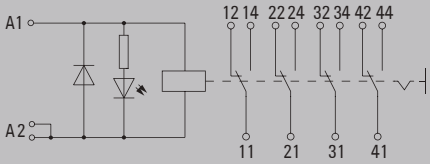
- relay socket for rail mounting
- LED display unit (AC red / DC green)
- retaining clip
- pluggable relays with coil identification (AC red / DC blue)
- Markers

Independent of connection system:

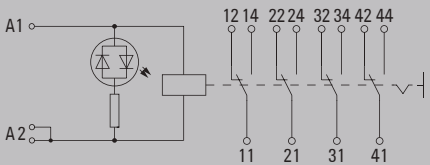
- Screw or PUSH IN connection system



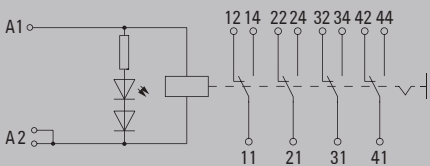
DC-Version



AC-Version



AC-Version 115 V AC / 230 V AC



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 6 A
Max. switching voltage, AC	240 V
Inrush current	12 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	144 W @ 24 V / 1500 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 kV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 kV _{eff} / 1 min
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 1 / 2.5
Depth x width x height	mm 78.3 / 27.2 / 77
Note	

Ordering data

	24 V DC 4CO LED	24 V AC 4CO LED	115 V AC 4CO LED	230 V AC 4CO LED
Input				
Rated control voltage	24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC	/ 31.3 mA	41.6 mA /	8.8 mA /	4.3 mA /
Power rating	740 mW	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.	18 V / 2.4 V DC	19.2 V / 7.2 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Status indicator	Green LED	red LED	red LED	red LED
Protective circuit	Free-wheel diode			
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
Screw connection	Type RCMKIT-I 24VDC 4CO LD	Type RCMKIT-I 24VAC 4CO LD	Type RCMKIT-I 115VAC 4CO LD	Type RCMKIT-I 230VAC 4CO LD
Order No.	8921030000	8921040000	8921050000	8921060000
Ordering data				
Spare relay (pluggable)	Type RCM570024	Type RCM570524	Type RCM570615	Type RCM570730
Order No.	8690200000	8690110000	1180800000	1181100000
Note				

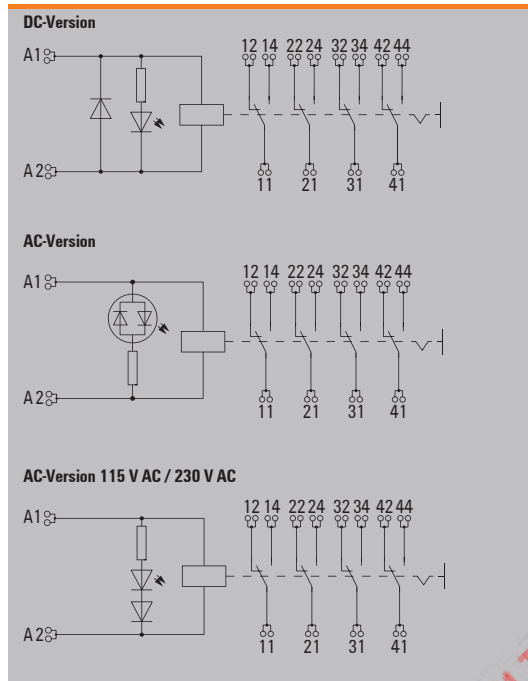
RCM KIT with PUSH IN connection**4 CO contacts AC/DC coil**

Modular system comprising of:

- relay socket for rail mounting
- LED display unit (AC red / DC green)
- retaining clip
- pluggable relays with coil identification (AC red / DC blue)
- Markers

Independent of connection system:

- Screw or PUSH IN connection system

**Technical data**

Output	
Rated switching voltage / Continuous current	240 V AC / 6 A
Max. switching voltage, AC	240 V
Inrush current	12 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	144 W @ 24 V / 1500 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, DNVGL; EAC
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 kV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 kV _{eff} / 1 min
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.75 / 1.5
Depth x width x height	mm 78.3 / 28 / 98
Note	

Ordering data

		24 V DC 4CO LED	24 V AC 4CO LED	115 V AC 4CO LED	230 V AC 4CO LED
Input					
Rated control voltage		24 V DC	24 V AC	115 V AC	230 V AC
Rated current AC / DC		/ 31.3 mA	41.6 mA /	8.8 mA /	4.3 mA /
Power rating		740 mW	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.		18 V / 2.4 V DC	19.2 V / 7.2 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Status indicator		Green LED	red LED	red LED	red LED
Protective circuit		Free-wheel diode			
Output					
Switch-on delay		≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay		≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data					
PUSH IN connection	Type	RCMKITP-I 24VDC 4CO LD	RCMKITP-I 24VAC 4CO LD	RCMKITP-I 115VAC 4CO LD	RCMKITP-I 230VAC 4CO LD
	Order No.	8921120000	8921130000	8921140000	8921150000
	Type				
	Order No.				
Ordering data					
Spare relay (pluggable)	Type	RCM570024	RCM570524	RCM570615	RCM570730
	Order No.	8690200000	8690110000	1180800000	1181100000
Note					

RIDERSERIES – relay modules

RCM relay

2 CO contacts, AC/DC coil

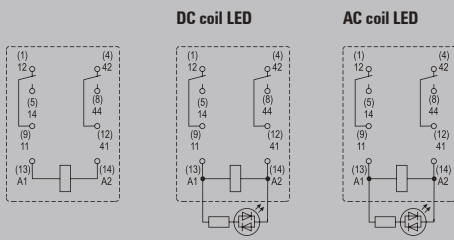
- 3000 VA switching capacity
- Solder and plug connection
- Safe-to-touch test button, selectable locking
- White labelling panel
- Identification of coils (AC red / DC blue)



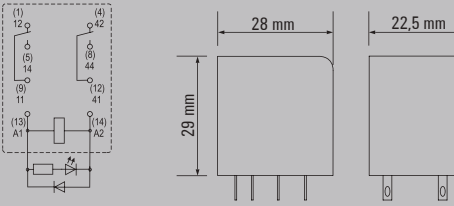
B

Circuit diagram

View on pins from below



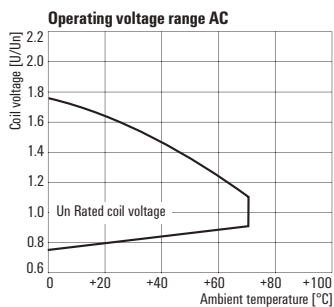
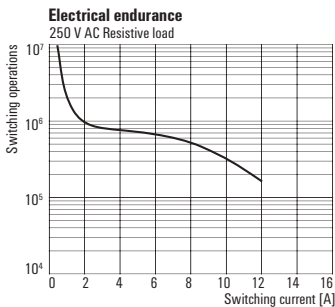
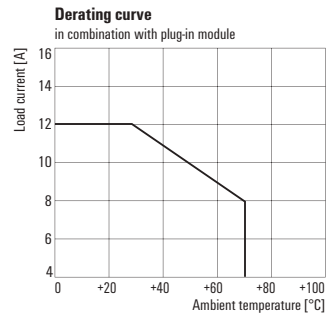
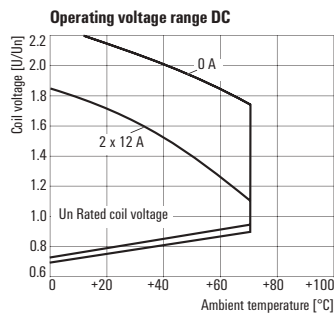
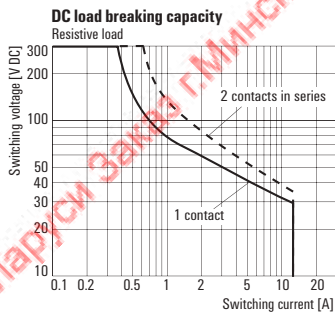
DC coil LED + diode



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 12 A
Max. switching voltage, AC	400 V
Inrush current	24 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	288 W @ 24 V / 3000 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.5 KV _{eff} / 1 min.
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	/ /
Depth x width x height	mm 29 / 22.5 / 28
Plug-in connection	
	/ /
	mm 29 / 22.5 / 28
Note	

Applications



RCM relay
2 CO contacts, AC/DC coil

Type code	RCM					
Type	RIDER Control Multiple					
Contacts	2 2 CO contacts					
	3 3 CO contacts					
	5 4 CO contacts					
Contact material	7 AgNi 90/10, with test button					
	8 AgNi 90/10 hgp, with test button					
Type of construction	0 Standard, 2.8 mm Faston					
DC coil						
006	6 V DC					with LED + diode
012	12 V DC					L06
024	24 V DC					L12 AB2
048	48 V DC					L24 AC4
060	60 V DC					L48 AE8
110	110 V DC					L60
220	220 V DC					M10 BBO
						N20
AC coil						
506	6 V AC					R06
512	12 V AC					R12
524	24 V AC					R24
548	48 V AC					R48
615	115 V AC					S15
730	230 V AC					T30

Ordering data

	12 V DC 2CO	24 V DC 2CO	48 V DC 2CO	110 V DC 2CO
Input				
Rated control voltage	12 V DC	24 V DC	48 V DC	110 V DC
Rated current AC / DC	/ 62.5 mA	/ 31.3 mA	/ 15.6 mA	/ 6.8 mA
Power rating	750 mW	750 mW	750 mW	750 mW
Pull-in/drop-out voltage, typ.	9 V / 1.2 V DC	18 V / 2.4 V DC	36 V / 4.8 V DC	82.5 V / 11.5 V DC
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
without LED	Type RCM270012	Type RCM270024	Type RCM270048	Type RCM270110
AgNi 90/10	Order No. 8689840000	Order No. 8689860000	Order No. 8689880000	Order No. 8689900000
with LED	Type RCM270L12	Type RCM270L24	Type RCM270L48	
AgNi 90/10	Order No. 8689850000	Order No. 8689870000	Order No. 8689890000	
with LED + freewheel diode	Type RCM270AB2	Type RCM270AC4		
AgNi 90/10	Order No. 8957020000	Order No. 8957030000		
	Type			
	Order No.			

Note				
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Ordering data

	24 V AC 2CO	48 V AC 2CO	115 V AC 2CO	230 V AC 2CO
Input				
Rated control voltage	24 V AC	48 V AC	115 V AC	230 V AC
Rated current AC / DC	41.6 mA /	21.3 mA /	8.8 mA /	4.3 mA /
Power rating	1.0 VA	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.	38.4 V / 14.4 V AC	48 V / 18 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
without LED	Type RCM270524	Type RCM270548	Type RCM270615	Type RCM270730
AgNi 90/10	Order No. 8689760000	Order No. 8689780000	Order No. 8689800000	Order No. 8689820000
with LED	Type RCM270R24		Type RCM270S15	Type RCM270T30
AgNi 90/10	Order No. 8689770000		Order No. 8689810000	Order No. 8689830000
	Type			
	Order No.			
	Type			
	Order No.			

Note				
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RIDERSERIES – relay modules

Accessories for RCM relays, 2 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Technical data

Output

Rated switching voltage
Max. switching voltage, AC
Continuous current

Rated data

Ambient temperature (operational)
Storage temperature
Approvals

Insulation coordination

Protection degree
Creepage and clearance distance input – output
Dielectric strength input – output
Dielectric strength of neighbouring contacts
Impulse withstand voltage

Connection data

Clamping range (nominal / min. / max.)
Tightening torque
Stripping length, rated connection

Note

Ordering data

Socket, DIN rail mounted

Note

Accessories

Cross-connection

8-pole

Retaining clip

Plastic retaining clip
Metal retaining clip

Markers

Label, not PrintJet compatible, no MultiCard
white

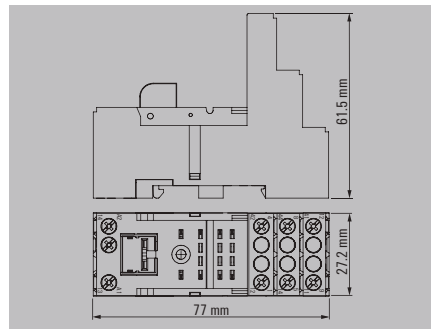
LED module / protection modules

Free-wheeling diode 6 - 230 V DC
Load resistance 110 - 230 V UC
LED 6 - 24 V DC green and freewheeling diode
LED 24 - 60 V DC green and free-wheeling diode
LED 110 - 230 V DC green and free-wheeling diode
LED 6 - 24 V UC green
LED 24 - 60 V UC green
LED 110 - 230 V UC green
RC element 6 - 60 V UC; 470 Ω / 220 nF
RC element 110 - 230 V AC; 4.7 kΩ / 10 nF
RC element 230 V UC; 1.1 kΩ / 200 nF
Protective varistor; S07K30
Protective varistor; S07K130
Protective varistor; S07K275

Screwdriver

Note

Standard version socket module with clamping yoke connection, 2 CO contacts



250 V AC
400 V
12 A

-40 °C...70 °C
-40 °C...70 °C
CE, CSA; cURus; EAC; VDE

IP20
≥ 4 mm
2.5 kV_{eff} / 1 min.
2.5 kV_{eff} / 1 min.

2.5 / 1 / 2.5 mm²
0.5...0.7 Nm
8 mm

Type	Qty.	Order No.
SCM-I 2CO	10	8869400000

Type	Qty.	Order No.
SCM-I QV S	10	1132080000
SCM-I CLIP P	10	8869440000
SCM-I CLIP M	10	8869450000

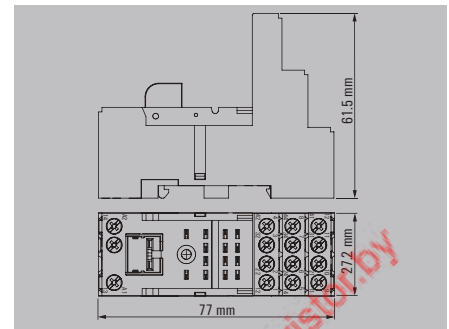
SCM-I MARK	10	8869460000
ESG 9/26 SCM-I MC NE WS	80	2558330000

RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 6/60VAC RC	10	8869770000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 24VUC VAR	10	8869710000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000

SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000

Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

Standard version socket module with clamping yoke connection, 4 CO contacts



250 V AC
250 V
6 A

-40 °C...70 °C
-40 °C...70 °C
CE, CSA; cURus; EAC; VDE

IP20
≥ 4 mm
2.5 kV_{eff} / 1 min.
2 kV_{eff} / 1 min

2.5 / 1 / 2.5 mm²
0.5...0.7 Nm
8 mm

Type	Qty.	Order No.
SCM-I 4CO	10	8869420000

Type	Qty.	Order No.
SCM-I QV S	10	1132080000
SCM-I CLIP P	10	8869440000
SCM-I CLIP M	10	8869450000

SCM-I MARK	10	8869460000
ESG 9/26 SCM-I MC NE WS	80	2558330000

RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 6/60VAC RC	10	8869770000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 24VUC VAR	10	8869710000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000

SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000

Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

Accessories for RCM relays, 2 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Technical data

Output

Rated switching voltage
Max. switching voltage, AC
Continuous current

Rated data

Ambient temperature (operational)
Storage temperature
Approvals

Insulation coordination

Protection degree
Creepage and clearance distance input - output
Dielectric strength input - output
Dielectric strength of neighbouring contacts
Impulse withstand voltage

Connection data

Clamping range (nominal / min. / max.)
Tightening torque
Stripping length, rated connection

Note

Ordering data

Socket, DIN rail mounted

Note

Accessories

Cross-connection

8-pole

Retaining clip

Plastic retaining clip
Metal retaining clip

Markers

Label, not PrintJet compatible, no MultiCard
white

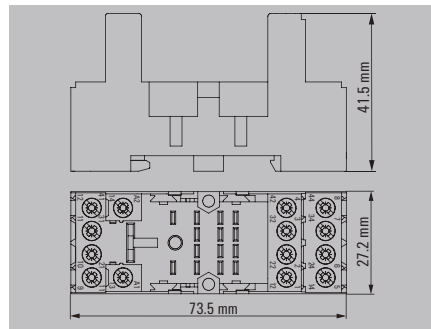
LED module / protection modules

Free-wheeling diode 6 - 230 V DC
Load resistance 110 - 230 V UC
LED 6 - 24 V DC green and freewheeling diode
LED 24 - 60 V DC green and free-wheeling diode
LED 110 - 230 V DC green and free-wheeling diode
LED 6 - 24 V UC green
LED 24 - 60 V UC green
LED 110 - 230 V UC green
RC element 6 - 60 V UC; 470 Ω / 220 nF
RC element 110 - 230 V AC; 4.7 kΩ / 10 nF
RC element 230 V UC; 1.1 kΩ / 200 nF
Protective varistor; S07K30
Protective varistor; S07K130
Protective varistor; S07K275

Screwdriver

Note

Low-height socket module with clamping yoke connection, 4 CO contacts



250 V AC
250 V
6 A

-40 °C...70 °C
-40 °C...70 °C
CE, CSA, cURus, EAC, VDE

IP20
≥ 4 mm
2.5 KV_{eff} / 1 min.
2 KV_{eff} / 1 min

2.5 / 1 / 2.5 mm²
0.5...0.7 Nm
8 mm

Type	Qty.	Order No.
SCM-I 4CO N	10	8869390000

Type	Qty.	Order No.
SCM-I QV S	10	1132080000

SCM-I CLIP N	10	8875620000
SCM-I CLIP M	10	8869450000

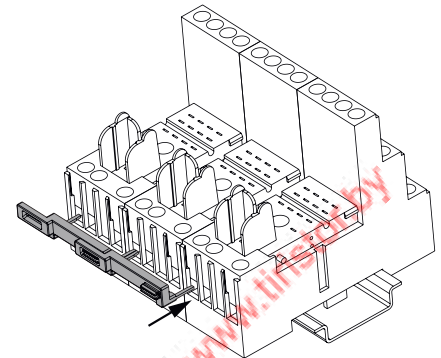
SCM-I MARK	10	8869460000
ESG 9/26 SCM-I MC NE WS	80	2558330000

RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 6/60VAC RC	10	8869770000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 24VUC VAR	10	8869710000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000

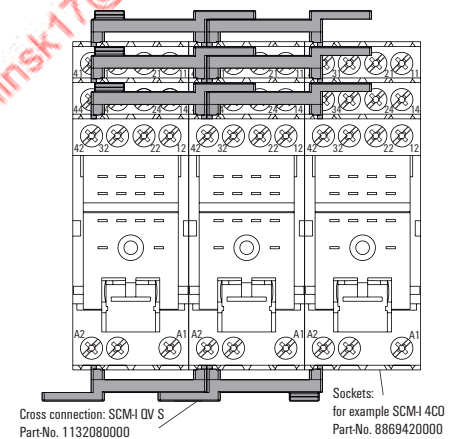
SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000

Article numbers for LED modules with red LED are to be found at catalog.weidmuller.com

Cross-connection 1132080000 installed in the same way as the plug-in module 8869420000:



Plug the cross connection into wire-connection opening and fix it with tighten the screw



RIDERSERIES – relay modules

Accessories for RCM relays, 2 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Technical data

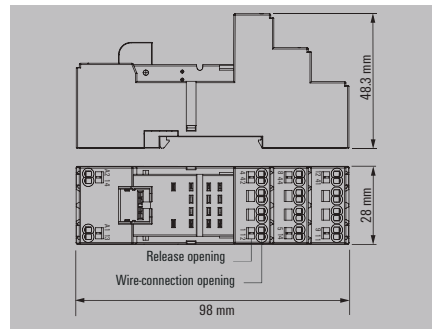
Output
Rated switching voltage
Max. switching voltage, AC
Continuous current
Rated data
Ambient temperature (operational)
Storage temperature
Approvals
Insulation coordination
Protection degree
Creepage and clearance distance input - output
Dielectric strength input - output
Dielectric strength of neighbouring contacts
Impulse withstand voltage
Connection data
Clamping range (nominal / min. / max.)
Tightening torque
Stripping length, rated connection
Note

Ordering data

	Socket, DIN rail mounted
Note	

Accessories

Retaining clip	
	Metal retaining clip
	Plastic retaining clip
Cross-connection	
	2-pole
Markers	
	Label, not PrintJet compatible, no MultiCard
	white
LED module / protection modules	
	Free-wheeling diode 6 - 230 V DC
	Load resistance 110 - 230 V UC
	LED 6 - 24 V DC green and freewheeling diode
	LED 24 - 60 V DC green and free-wheeling diode
	LED 110 - 230 V DC green and free-wheeling diode
	LED 6 - 24 V UC green
	LED 24 - 60 V UC green
	LED 110 - 230 V UC green
	RC element 6 - 60 V UC; 470 Ω / 220 nF
	RC element 110 - 230 V AC; 4.7 kΩ / 10 nF
	RC element 230 V UC; 1.1 kΩ / 200 nF
	Protective varistor; S07K130
	Protective varistor; S07K275
	Protective varistor; S07K30
Screwdriver	
	Standard
Note	

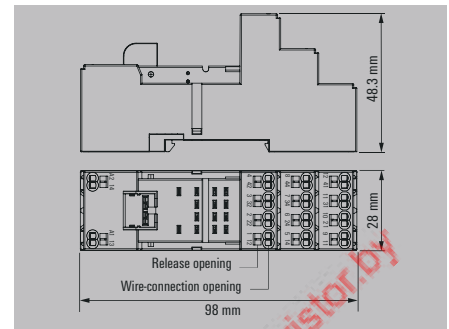
Socket module with
PUSH IN connection, 2 CO contacts

250 V AC
400 V
12 A
-40 °C...70 °C
-40 °C...70 °C
CE, CSA, cURus, EAC, VDE
IP20
≥ 4 mm
2.5 kV _{eff} / 1 min.
2.5 kV _{eff} / 1 min.
1.5 / 0.75 / 1.5 mm ²
...
12 mm

Type	Qty.	Order No.
SCM-I 2CO P	10	8876220000

Type	Qty.	Order No.
SCM-I CLIP M	10	8869450000
SCM-I CLIP P	10	8869440000
SCM-I QV P	10	8870850000
SCM-I MARK	10	8869460000
ESG 9/26 SCM-I MC NE WS	80	2558330000
RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 6/60VAC RC	10	8869770000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000
RIM-I 4 24VUC VAR	10	8869710000
SDIS SL 0.6X3.5X100	1	1274660000

Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

Socket module with
PUSH IN connection, 4 CO contacts

250 V AC
250 V
6 A
-40 °C...70 °C
-40 °C...70 °C
CE, CSA, cURus, EAC, VDE
IP20
≥ 4 mm
2.5 kV _{eff} / 1 min.
2 kV _{eff} / 1 min.
1.5 / 0.75 / 1.5 mm ²
...
12 mm

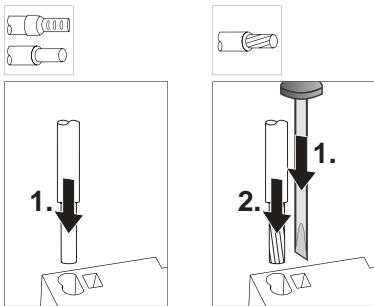
Type	Qty.	Order No.
SCM-I 4CO P	10	8869430000

Type	Qty.	Order No.
SCM-I CLIP M	10	8869450000
SCM-I CLIP P	10	8869440000
SCM-I QV P	10	8870850000
SCM-I MARK	10	8869460000
ESG 9/26 SCM-I MC NE WS	80	2558330000
RIM-I 1 6/230V	10	8869580000
RIM-I 1 R 110/230V	10	8870830000
RIM-I 2 6/24VDC GN	10	8869600000
RIM-I 2 24/60VDC GN	10	8869680000
RIM-I 2 110/230VDC GN	10	8869700000
RIM-I 3 6/24VUC GN	10	8869640000
RIM-I 3 24/60VUC GN	10	8869620000
RIM-I 3 110/230VUC GN	10	8869660000
RIM-I 3 6/60VAC RC	10	8869770000
RIM-I 3 110/230VAC RC	10	8869790000
RIM-I 3 230VAC RC	10	1172210000
RIM-I 4 110VUC VAR	10	8869730000
RIM-I 4 230VUC VAR	10	8869750000
RIM-I 4 24VUC VAR	10	8869710000
SDIS SL 0.6X3.5X100	1	1274660000

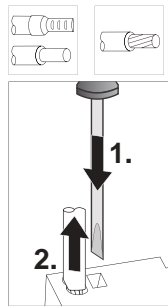
Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

PUSH IN connection operation

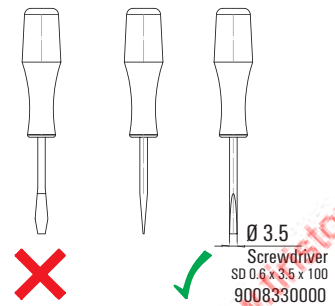
Insert connector



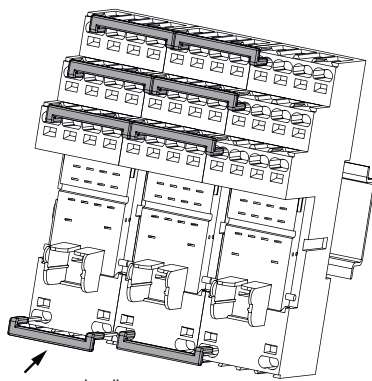
Remove connector



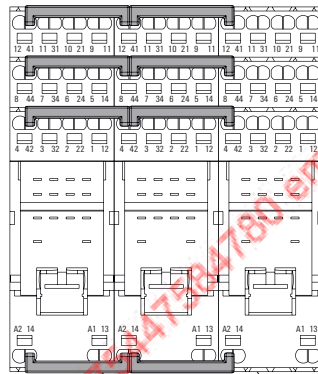
Recommended screwdriver



Installation of the cross-connection



Plug cross connection direct into wire-connection opening



Cross connection:
SCM-I QV P
Part-No. 8870850000

Sockets:
SCM-I xCO P

If more than 2 poles are connected with stacked cross-connection ridges, then the bottom ridges must be stripped to the appropriate length and shortened for correct fitting.

RCM relay

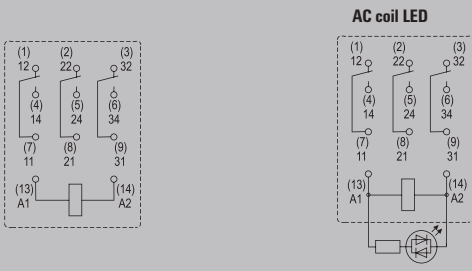
3 CO contacts, AC/DC coil

- 2500 VA switching capacity
- Solder and plug connection
- Safe-to-touch test button, selectable locking
- White labelling panel
- Identification of coils (AC red / DC blue)

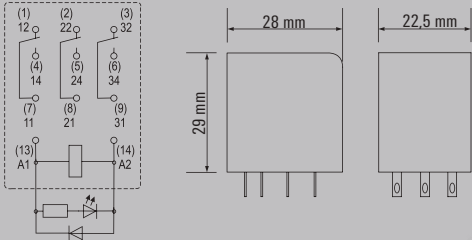


Circuit diagram

View on pins from below



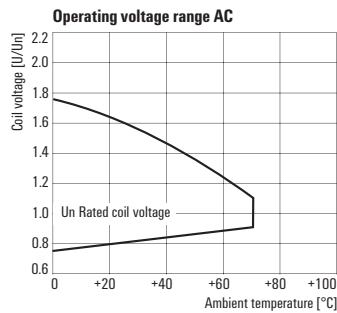
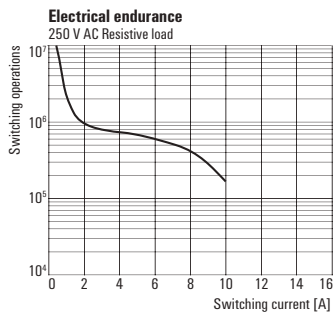
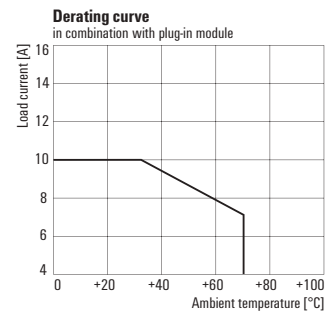
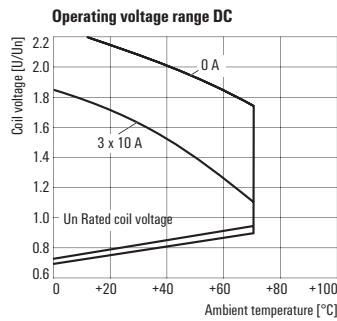
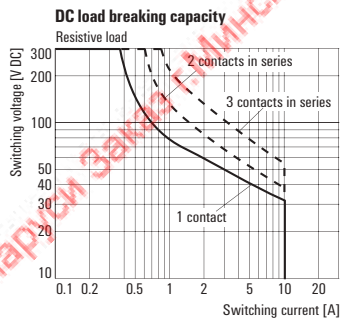
DC coil LED + diode



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 10 A
Max. switching voltage, AC	400 V
Inrush current	20 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	240 W @ 24 V / 2500 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.5 KV _{eff} / 1 min.
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	/ /
Depth x width x height	mm 29 / 22.5 / 28
Plug-in connection	
	/ /
	mm 29 / 22.5 / 28
Note	

Applications

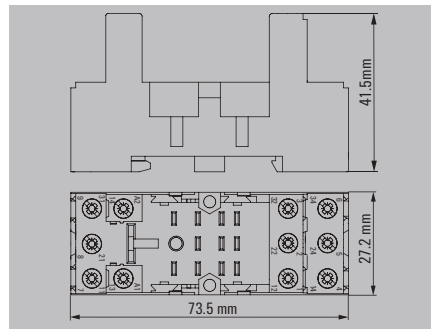


RIDERSERIES – relay modules

Accessories for RCM relays, 3 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Low-height socket module with clamping yoke connection, 3 CO contacts



Technical data

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	400 V
Continuous current	10 A
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	2.5 kV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2.5 kV _{eff} / 1 min.
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
Note	

Ordering data

Type	Qty.	Order No.
SCM-I 3CO N	10	8869410000

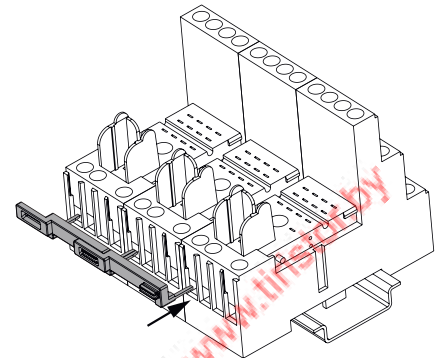
Accessories

Cross-connection	Type	Qty.	Order No.
8-pole	SCM-I QV S	10	1132080000
Retaining clip			
Metal retaining clip	SCM-I CLIP M	10	8869450000
Plastic retaining clip	SCM-I CLIP N	10	8875620000
Markers			
Label, not PrintJet compatible, no MultiCard	SCM-I MARK	10	8869460000
white	ESG 9/26 SCM-I MC NE WS	80	2558330000
LED module / protection modules			
Free-wheeling diode 6 - 230 V DC	RIM-I 1 6/230V	10	8869580000
Load resistance 110 - 230 V UC	RIM-I 1 R 110/230V	10	8870830000
LED 6 - 24 V DC green and freewheeling diode	RIM-I 2 6/24VDC GN	10	8869600000
LED 24 - 60 V DC green and free-wheeling diode	RIM-I 2 24/60VDC GN	10	8869680000
LED 110 - 230 V DC green and free-wheeling diode	RIM-I 2 110/230VDC GN	10	8869700000
LED 6 - 24 V UC green	RIM-I 3 6/24VUC GN	10	8869640000
LED 24 - 60 V UC green	RIM-I 3 24/60VUC GN	10	8869620000
LED 110 - 230 V UC green	RIM-I 3 110/230VUC GN	10	8869660000
RC element 6 - 60 V UC; 470 Ω / 220 nF	RIM-I 3 6/60VAC RC	10	8869770000
RC element 110 - 230 V AC; 4.7 kΩ / 10 nF	RIM-I 3 110/230VAC RC	10	8869790000
RC element 230 V UC; 1.1 kΩ / 200 nF	RIM-I 3 230VAC RC	10	1172210000
Protective varistor; S07K30	RIM-I 4 24VUC VAR	10	8869710000
Protective varistor; S07K130	RIM-I 4 110VUC VAR	10	8869730000
Protective varistor; S07K275	RIM-I 4 230VUC VAR	10	8869750000
Screwdriver			
	SDIK PZ1 SL	1	1274730000
	SDIK PZ1	1	9008900000
	SDK PZ1	1	9008530000

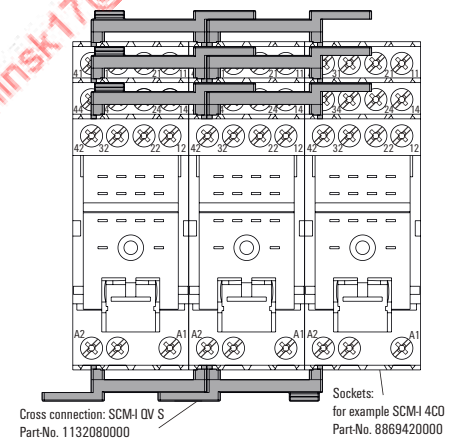
Note

Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

Cross-connection 1132080000 installed in the same way as the plug-in module 8869420000:



Plug the cross connection into wire-connection opening and fix it with tighter the screw



в Беларуси Заказ г.Минск viber и тел. +375447584780 email: minsk17@tut.by www.tiristor.by

RIDERSERIES – relay modules

RCM relay

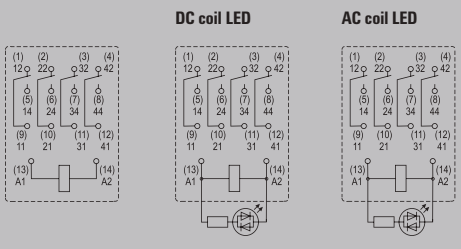
4 CO contacts, AC/DC coil

- 1500 VA switching capacity
- Solder and plug connection
- AC/DC versions also with gold-plated contacts
- Safe-to-touch test button, selectable locking
- White labelling panel
- Identification of coils (AC red / DC blue)

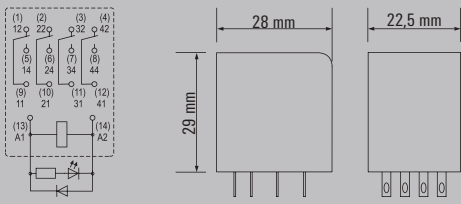


Circuit diagram

View on pins from below



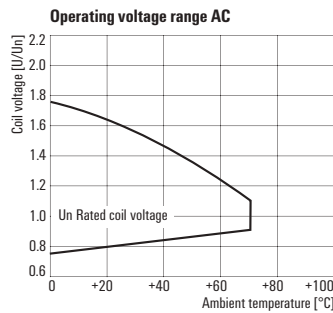
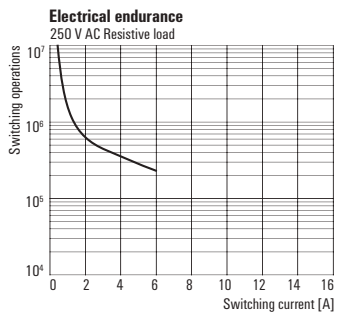
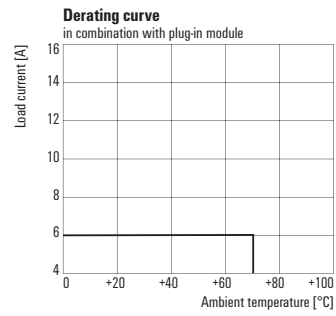
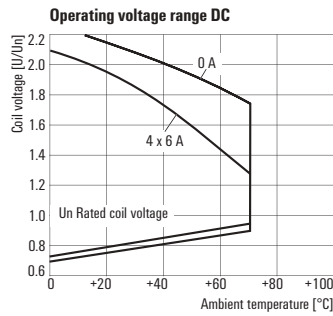
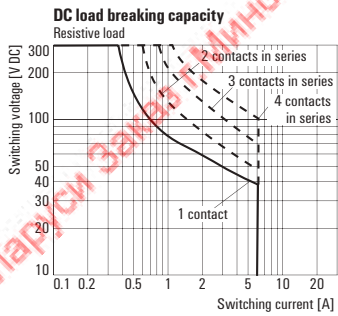
DC coil LED + diode



Technical data

Output	
Rated switching voltage / Continuous current	240 V AC / 6 A
Max. switching voltage, AC	240 V
Inrush current	12 A / 20 ms
Min. switching power	1 mA @ 24 V, 10 mA @ 12 V, 100 mA @ 5 V
DC / AC Switching capacity (resistive), max.	144 W @ 24 V / 1500 VA
Contact material	AgNi 90/10
Mechanical service life	AC coil 20 x 10 ⁶ Switch. cycles, DC coil 30 x 10 ⁶ Switch. cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordinates	
Rated voltage	250 V
Impulse withstand voltage	5 kV (1.2/50 µs)
Dielectric strength input - output	2.5 kV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 kV _{eff} / 1 min
Dielectric strength to mounting rail	
Creepage and clearance distance input - output	≥ 4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	/ /
Depth x width x height	mm 29 / 22.5 / 28
Plug-in connection	
Note	

Applications



RCM relay
4 CO contacts, AC/DC coil

Type code	RCM				
Type	RIDER Control Multiple				
Contacts	2 2 CO contacts				
	3 3 CO contacts				
	5 4 CO contacts				
Contact material	7 AgNi 90/10, with test button				
	8 AgNi 90/10 hgp, with test button				
Type of construction	0 Standard, 2.8 mm Faston				

DC coil			with LED + diode
006	6 V DC	L06	
012	12 V DC	L12	AB2
024	24 V DC	L24	AC4
048	48 V DC	L48	AE8
060	60 V DC	L60	
110	110 V DC	M10	BBO
220	220 V DC	N20	
AC coil			
506	6 V AC	R06	
512	12 V AC	R12	
524	24 V AC	R24	
548	48 V AC	R48	
615	115 V AC	S15	
730	230 V AC	T30	

Ordering data

	12 V DC 4CO	24 V DC 4CO	48 V DC 4CO	110 V DC 4CO
Input				
Rated control voltage	12 V DC	24 V DC	48 V DC	110 V DC
Rated current AC / DC	/ 62.5 mA	/ 31.3 mA	/ 15.6 mA	/ 6.8 mA
Power rating	750 mW	750 mW	750 mW	750 mW
Pull-in/drop-out voltage, typ.	9 V / 1.2 V DC	18 V / 2.4 V DC	36 V / 4.8 V DC	82.5 V / 11.5 V DC
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
without LED Type	RCM570012	RCM570024	RCM570048	RCM570110
AgNi 90/10 Order No.	8054360000	8690200000	8074670000	8074700000
with LED Type	RCM570L12	RCM570L24	RCM570L48	RCM570M10
AgNi 90/10 Order No.	8690180000	8690220000	8690230000	8690240000
without LED Type	RCM580012	RCM580024	RCM580048	
AgNi 5µm Au Order No.	on request	8694460000	on request	
with LED + freewheel diode Type	RCM570AB2	RCM570AC4	RCM570AE8	RCM570BBO
AgNi 90/10 Order No.	8957160000	8957170000	8957180000	8957190000

Note				

Ordering data

	24 V AC 4CO	48 V AC 4CO	115 V AC 4CO	230 V AC 4CO
Input				
Rated control voltage	24 V AC	48 V AC	115 V AC	230 V AC
Rated current AC / DC	41.6 mA /	21.3 mA /	8.8 mA /	4.3 mA /
Power rating	1.0 VA	1.0 VA	1.0 VA	1.0 VA
Pull-in/drop-out voltage, typ.	19.2 V / 7.2 V AC	38.4 V / 14.4 V AC	92 V / 34.5 V AC	184 V / 69 V AC
Output				
Switch-on delay	≤ 15 ms	≤ 15 ms	≤ 15 ms	≤ 15 ms
Switch-off delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Ordering data				
without LED Type	RCM570524	RCM570548	RCM570615	RCM570730
AgNi 90/10 Order No.	8690110000	1180900000	1180800000	1181100000
with LED Type	RCM570R24	RCM570R48	RCM570S15	RCM570T30
AgNi 90/10 Order No.	8690120000	8690130000	8690150000	8690160000
Type			RCM580615	RCM580730
Order No.			8824860000	7940007637
Type				
Order No.				

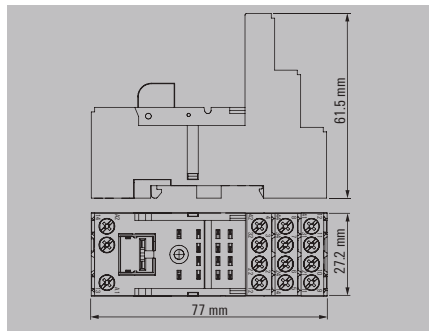
Note				

RIDERSERIES – relay modules

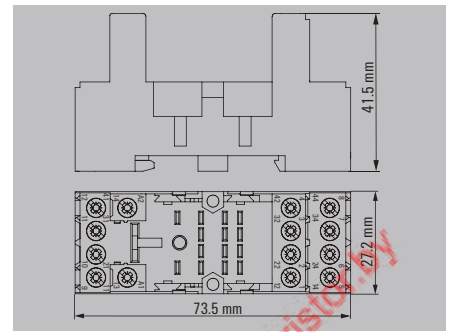
Accessories for RCM relays, 4 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Standard version socket module with clamping yoke connection, 4 CO contacts



Low-height socket module with clamping yoke connection, 4 CO contacts



Technical data

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	250 V
Continuous current	6 A
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 KV _{eff} / 1 min
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
Note	

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	250 V
Continuous current	6 A
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 KV _{eff} / 1 min
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
Note	

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	250 V
Continuous current	6 A
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	2.5 KV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 KV _{eff} / 1 min
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	2.5 / 1 / 2.5 mm ²
Tightening torque	0.5...0.7 Nm
Stripping length, rated connection	8 mm
Note	

Ordering data

	Socket, DIN rail mounted
Note	

Type	Qty.	Order No.
SCM-H 4CO	10	8869420000

Type	Qty.	Order No.
SCM-H 4CO N	10	8869390000

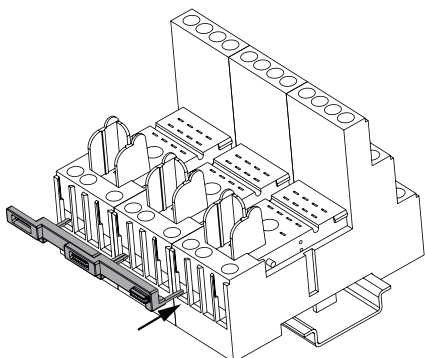
Accessories

Cross-connection	8-pole
Retaining clip	Plastic retaining clip Metal retaining clip
Markers	Label, not PrintJet compatible, no MultiCard white
LED module / protection modules	Free-wheeling diode 6 - 230 V DC Load resistance 110 - 230 V UC LED 6 - 24 V DC green and freewheeling diode LED 24 - 60 V DC green and free-wheeling diode LED 110 - 230 V DC green and free-wheeling diode LED 6 - 24 V UC green LED 24 - 60 V UC green LED 110 - 230 V UC green RC element 6 - 60 V UC; 470 Ω / 220 nF RC element 110 - 230 V AC; 4.7 kΩ / 10 nF RC element 230 V UC; 1.1 kΩ / 200 nF Protective varistor; S07K30 Protective varistor; S07K130 Protective varistor; S07K275
Screwdriver	
Note	

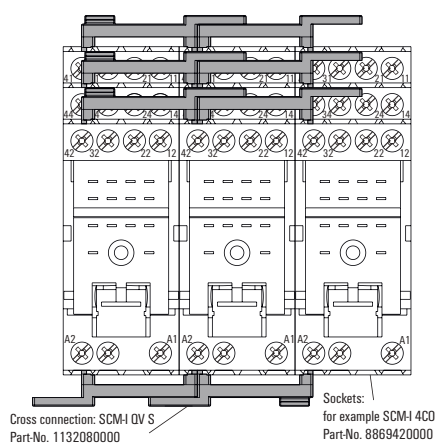
Type	Qty.	Order No.
SCM-H QV S	10	1132080000
SCM-H CLIP P	10	8869440000
SCM-H CLIP M	10	8869450000
SCM-H MARK	10	8869460000
ESG 9/26 SCM-H MC NE WS	80	2558330000
RIM-H 1 6/230V	10	8869580000
RIM-H 1 R 110/230V	10	8870830000
RIM-H 2 6/24VDC GN	10	8869600000
RIM-H 2 24/60VDC GN	10	8869680000
RIM-H 2 110/230VDC GN	10	8869700000
RIM-H 3 6/24VUC GN	10	8869640000
RIM-H 3 24/60VUC GN	10	8869620000
RIM-H 3 110/230VUC GN	10	8869660000
RIM-H 3 6/60VAC RC	10	8869770000
RIM-H 3 110/230VAC RC	10	8869790000
RIM-H 3 230VAC RC	10	1172210000
RIM-H 4 24VUC VAR	10	8869710000
RIM-H 4 110VUC VAR	10	8869730000
RIM-H 4 230VUC VAR	10	8869750000
SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000
Note	Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com	

Type	Qty.	Order No.
SCM-H QV S	10	1132080000
SCM-H CLIP N	10	8875620000
SCM-H CLIP M	10	8869450000
SCM-H MARK	10	8869460000
ESG 9/26 SCM-H MC NE WS	80	2558330000
RIM-H 1 6/230V	10	8869580000
RIM-H 1 R 110/230V	10	8870830000
RIM-H 2 6/24VDC GN	10	8869600000
RIM-H 2 24/60VDC GN	10	8869680000
RIM-H 2 110/230VDC GN	10	8869700000
RIM-H 3 6/24VUC GN	10	8869640000
RIM-H 3 24/60VUC GN	10	8869620000
RIM-H 3 110/230VUC GN	10	8869660000
RIM-H 3 6/60VAC RC	10	8869770000
RIM-H 3 110/230VAC RC	10	8869790000
RIM-H 3 230VAC RC	10	1172210000
RIM-H 4 24VUC VAR	10	8869710000
RIM-H 4 110VUC VAR	10	8869730000
RIM-H 4 230VUC VAR	10	8869750000
SDIK PZ1 SL	1	1274730000
SDIK PZ1	1	9008900000
SDK PZ1	1	9008530000
Note	Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com	

Cross-connection 1132080000 installed in the same way as the plug-in module 8869420000:



Plug the cross connection into wire-connection opening and fix it with tighten the screw

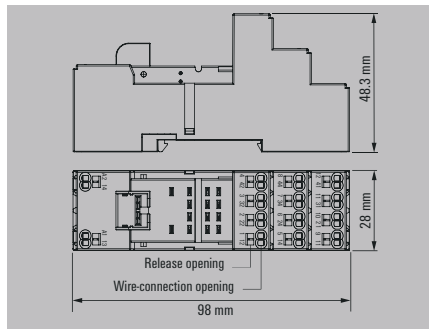


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RIDERSERIES – relay modules

Accessories for RCM relays, 4 CO contacts

- Tool-free unlocking of the terminal rail
- Wide assortment of functional modules

Socket module with
PUSH IN connection, 4 CO contacts

Technical data

Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	250 V
Continuous current	6 A
Rated data	
Ambient temperature (operational)	-40 °C...70 °C
Storage temperature	-40 °C...70 °C
Approvals	CE, CSA, cURus, EAC, VDE
Insulation coordination	
Protection degree	IP20
Creepage and clearance distance input - output	≥ 4 mm
Dielectric strength input - output	2.5 kV _{eff} / 1 min.
Dielectric strength of neighbouring contacts	2 kV _{eff} / 1 min.
Impulse withstand voltage	
Connection data	
Clamping range (nominal / min. / max.)	1.5 / 0.75 / 1.5 mm ²
Tightening torque	...
Stripping length, rated connection	12 mm
Note	

Ordering data

Type	Qty.	Order No.
SCM-I 4CO P	10	8869430000
Note	Socket, DIN rail mounted	

Accessories

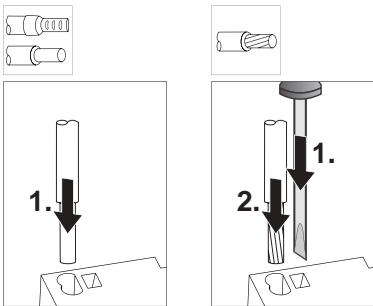
Retaining clip	Type	Qty.	Order No.
Plastic retaining clip	SCM-I CLIP P	10	8869440000
Metal retaining clip	SCM-I CLIP M	10	8869450000
Cross-connection			
2-pole	SCM-I QV P	10	8870850000
Markers			
Label, not PrintJet compatible, no MultiCard white	SCM-I MARK	10	8869460000
	ESG 9/26 SCM-I MC NE WS	80	2558330000
LED module / protection modules			
Free-wheeling diode 6 - 230 V DC	RIM-I 1 6/230V	10	8869580000
Load resistance 110 - 230 V UC	RIM-I 1 R 110/230V	10	8870830000
LED 6 - 24 V DC green and freewheeling diode	RIM-I 2 6/24VDC GN	10	8869600000
LED 24 - 60 V DC green and free-wheeling diode	RIM-I 2 24/60VDC GN	10	8869680000
LED 110 - 230 V DC green and free-wheeling diode	RIM-I 2 110/230VDC GN	10	8869700000
LED 6 - 24 V UC green	RIM-I 3 6/24VUC GN	10	8869640000
LED 24 - 60 V UC green	RIM-I 3 24/60VUC GN	10	8869620000
LED 110 - 230 V UC green	RIM-I 3 110/230VUC GN	10	8869660000
RC element 6 - 60 V UC; 470 Ω / 220 nF	RIM-I 3 6/60VAC RC	10	8869770000
RC element 110 - 230 V AC; 4.7 kΩ / 10 nF	RIM-I 3 110/230VAC RC	10	8869790000
RC element 230 V UC; 1.1 kΩ / 200 nF	RIM-I 3 230VAC RC	10	1172210000
Protective varistor; S07K130	RIM-I 4 110VUC VAR	10	8869730000
Protective varistor; S07K275	RIM-I 4 230VUC VAR	10	8869750000
Protective varistor; S07K30	RIM-I 4 24VUC VAR	10	8869710000
Screwdriver			
Standard	SDIS SL 0.6X3.5X100	1	1274660000

Note

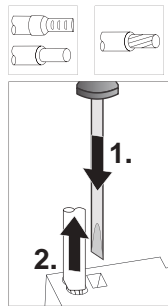
Article numbers for LED modules with red LED are to be found at catalog.weidmueller.com

PUSH IN connection operation

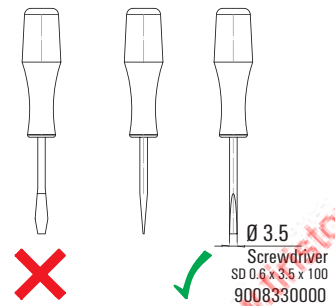
Insert connector



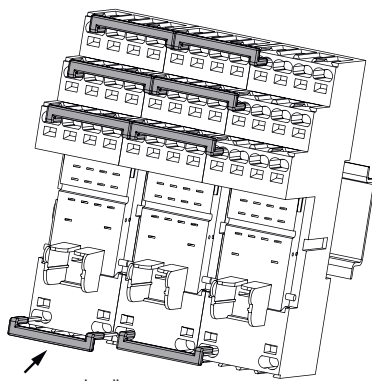
Remove connector



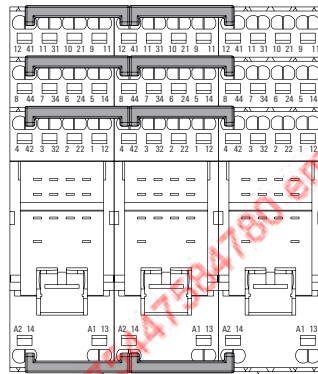
Recommended screwdriver



Installation of the cross-connection



Plug cross connection direct into wire-connection opening



Cross connection:
SCM-I QV P
Part-No. 8870850000

Sockets:
SCM-I xCO P

If more than 2 poles are connected with stacked cross-connection ridges, then the bottom ridges must be stripped to the appropriate length and shortened for correct fitting.

Signal monitoring in safety-critical circuits

Coupling relays with forcibly guided contacts

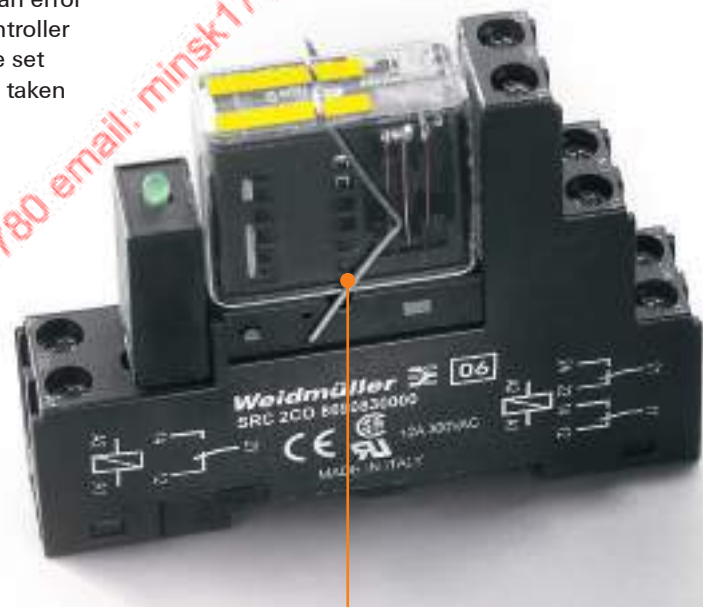
B

Weidmüller has expanded the RIDERSERIES to include a relay variant with forcibly guided contacts. Relays with forcibly guided contacts have a 99 % diagnostics coverage and an excellent reputation for use in safety systems.

The contacts interlock mechanically with each other in order to ensure a synchronous switching status of both contacts. This guarantees that the alert contact will maintain the same switching status in the event of an error (for example, if the working contact melts from an overload). The controller (or safety controller) detects the alert contact and then compares the set point and actual values. If a difference occurs, measures can then be taken to protect equipment and human life.

Resistant to vibration

A metal clip ensures that the relay module remains secure even under vibration / mechanical shock conditions.



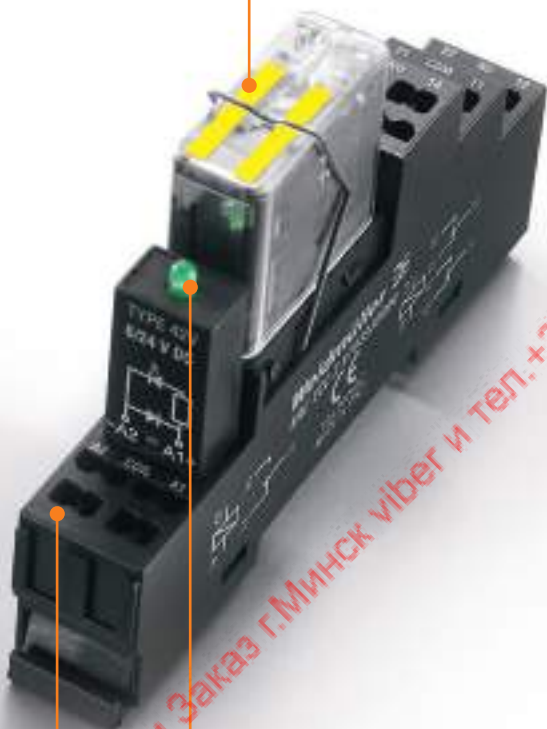
A variety of connection options

The base is available either with the proven screw clamp connection or the time saving tension clamp connection.



Convenient

Relay modules can be replaced quickly in the event of a fault without removing the connecting cable.



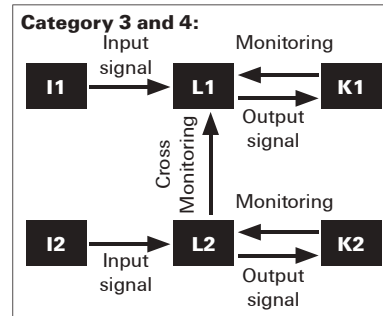
On site diagnostics

An easy to view LED display module with an integrated free wheeling diode is used to protect the series connected electronics.



Safety-based output relay controls

By connecting two coupling relays together with a safety based controller or safety switching devices, it is possible to set up a safe and efficient control mechanism that complies with the structure specified in EN ISO 13849-1 (Category 3 and 4).



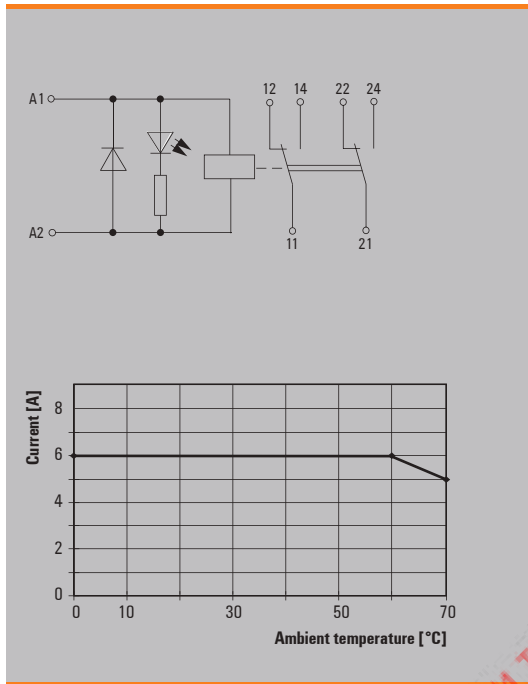
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RIDERSERIES FG – relay module with forcibly guided contacts

RCI KIT with forcibly guided contacts

2 CO DC coil

- Modular system comprising of:
- Relay socket for rail mounting
 - LED indicator unit
 - Retaining clip
 - Pluggable relay modules
 - Markers



Technical data

Output		
Rated switching voltage / Continuous current	250 V AC / 6 A	
Max. switching voltage, AC	250 V	
Inrush current	15 A / 20 ms	
Min. switching power	1 mA @ 24 V, 10 mA @ 10 V, 100 mA @ 5 V	
DC / AC Switching capacity (resistive), max.	144 W @ 24 V / 1500 VA	
Contact material	AgCuNi	
Mechanical service life	> 50 x 10 ⁶ switching cycles	
Max. switching frequency at rated load	0.1 Hz	
Rated data		
Ambient temperature (operational)	-40 °C...70 °C	
Storage temperature	-40 °C...85 °C	
Humidity	40 °C / 95 % rel. humidity, no condensation	
Approvals	CE, EAC	
Insulation coordinates		
Rated voltage	250 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength input - output	2.5 KV _{eff} / 1 min.	
Dielectric strength of neighbouring contacts	2.5 KV _{eff} / 1 min.	
Dielectric strength to mounting rail		
Creepage and clearance distance input - output	≥ 10 mm	
Overvoltage category	III	
Pollution degree	2	
Dimensions		
Clamping range (nominal / min. / max.)	mm ²	2.5 / 0.5 / 2.5
	mm	61.6 / 15.6 / 77.6
Depth x width x height	mm	63.8 / 16 / 98.1
	mm	63.8 / 16 / 98.1
Note		

Ordering data

Input		24 V DC 2CO LED	
Rated control voltage		24 V DC	
Rated current AC / DC		/ 31.6 mA	
Power rating		700 mW	
Pull-in/drop-out voltage, typ.		18 V / 2.4 V DC	
Status indicator		Green LED	
Protective circuit		Free-wheel diode	
Output			
Switch-on delay		≤ 12 ms	
Switch-off delay		≤ 6 ms	
Ordering data			
Screw connection	Type	RCIKIT 24VDC 2CO LD/FG	
	Order No.	1218410000	
Tension-clamp conn.	Type	RCIKITZ 24VDC 2CO LD/FG	
	Order No.	1218390000	
Ordering data			
Spare relay	Type	RCI42424FG	
	Order No.	1218380000	
Note			

Power electronics

Power electronics	Power solid-state relays - Overview	C.2
	Power solid-state relays	C.4

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Power solid state relays

Switch high AC loads up to 75 A completely wear-free and noiseless

C

Due to their high shock and vibration resistance, the large switching current and the option of simple fusing, our power solid state relays outperform by far any electromagnetic relays, especially in the process industry.

The compact modules have low power drive requirements, fast response times and operate odourless. The optional 1PH-Control-Unit allows the current monitoring of up to five parallel connected loads.

Our new power solid state relays are ideally suited for a multitude of diverse tasks: switching pipe trace heating, phase controls for infrared heating, and permanent current monitoring.

High current load integral

The high current load integral I^2t of 6,000 A²s allows affordable conductor protection using standard circuit breakers for variants with 35 A load current.



Simple current monitoring

The optional, plug-on monitoring module warns when current drops by 16 % or more. Short-circuit, line-break and defective loads are detected.



High output current

Ideal for controlling pipe trace heating due to the high output current of 50 or 75 A. The compact design allows directing mounting at application site.



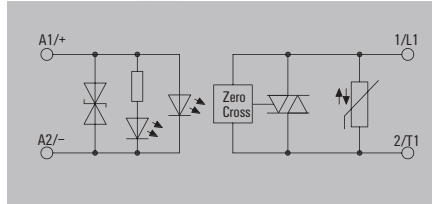
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Power solid-state relays

PSSR - 1-phase

- Single-phase load circuit: 12-275 V AC / 25 A
- Ready-to-use: snap on-connect-ready
- Zero-cross switch
- Noiseless, wear-free switching
- Attachable monitoring module

PSSR 24 V DC / 1 PH AC 25 A



Technical data

Control side	
Rated control voltage	3.5...32 V DC
Power rating	< 500 mW
Cut-in / dropout voltage	3 V / 2 V DC
Input frequency	10 Hz
Status indicator	LED yellow
Protective circuit	Suppressor diode
Load side	
Solid-state type	Triac (zero-cross switch)
Rated switching voltage	12...275 V AC
Continuous current	17 A (AC51) at 40 °C, 3.5 A (AC 53)
Min. switching current	5 mA
Max. switching current	25 A
Voltage drop at max. load	≤1.25 V
Leakage current	≤ 1 mA
Short-circuit-proof / Protective circuit, load side	No / Varistor
Switch-on delay / Switch-off delay	≤ 10 ms / ≤ 10 ms
Output voltage frequency range	50...60 Hz
Pulse load, max. current	250 A (10 ms), non-recurrent
Load category	AC 51, AC 53
Load limit integral (I²t) <10 ms	340 A²s
General data	
Ambient temperature (operational)	-55 °C...100 °C
Storage temperature	-55 °C...125 °C
Humidity	40...85 % (indoor) no condensation
Approvals	CE: cURus; EAC
Standards	EN 60947-4-3, EN 60950, IEC 60335-1
Insulation coordinates	
Impulse withstand voltage	4 kV (1.2/50 µs)
Clearance and creepage distances for control side - load side	≥ 6,5 mm
Overvoltage category	III
Pollution degree	2

Dimensions	
Clamping range (rated / min. / max.) control side	mm² 1.5 / 0.13 / 3.3
Clamping range (rated / min. / max.) load side	mm² 6 / 1.5 / 6
Note	

Ordering data

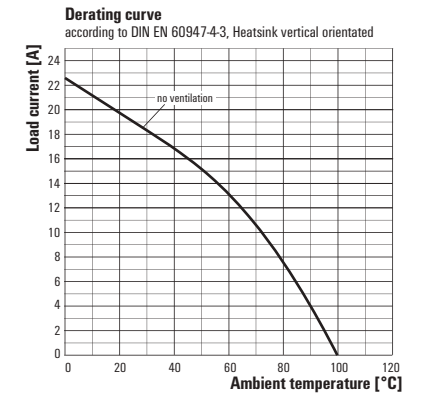
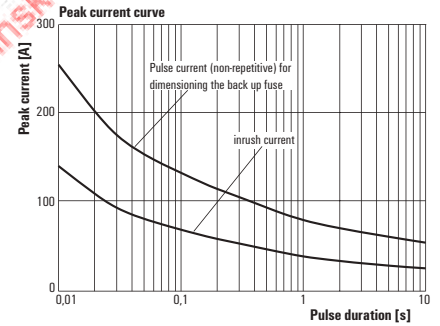
Screw connection

Type	Qty.	Order No.
PSSR 24VDC/1PH AC 25A	1	1406200000

Note	Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.
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Accessories

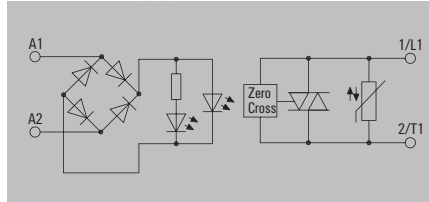
Note	
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PSSR - 1-phase

- Single-phase load circuit: 12-275 V AC / 25 A
- Ready-to-use: snap on-connect-ready
- Zero-cross switch
- Noiseless, wear-free switching
- Attachable monitoring module

PSSR 230 V AC / 1 PH AC 25 A



Technical data

Control side

Rated control voltage
Power rating
Cut-in / dropout voltage

Input frequency
Status indicator
Protective circuit

Load side

Solid-state type
Rated switching voltage
Continuous current
Min. switching current
Max. switching current
Voltage drop at max. load
Leakage current
Short-circuit-proof / Protective circuit, load side
Switch-on delay / Switch-off delay
Output voltage frequency range
Pulse load, max. current
Load category
Load limit integral (I²t) <10 ms

General data

Ambient temperature (operational)
Storage temperature
Humidity
Approvals
Standards

Insulation coordinates

Impulse withstand voltage
Clearance and creepage distances for control side - load side
Overvoltage category
Pollution degree

Dimensions

Clamping range (rated / min. / max.) control side mm²
Clamping range (rated / min. / max.) load side mm²

Note

160...240 V AC/DC

≤ 1.38 VA

160 V / 5 V AC

160 V / 5 V DC

10 Hz

LED yellow

Rectifier

Triac (zero-cross switch)

12...275 V AC

17 A (AC51) at 40 °C, 3.5 A (AC 53)

5 mA

25 A

≤ 1.25 V

≤ 1 mA

No / Varistor

≤ 30 ms / ≤ 30 ms

50...60 Hz

250 A (10 ms), non-recurrent

AC 51, AC 53

340 A²s

-55 °C...100 °C

-55 °C...125 °C

40...85 % (indoor) no condensation

CE, cURus, EAC

EN 60947-4-3, EN 60950, IEC 60335-1

4 kV (1.2/50 μs)

≥ 6,5 mm

III

2

1.5 / 0.13 / 3.3

6 / 1.5 / 6

Ordering data

Screw connection

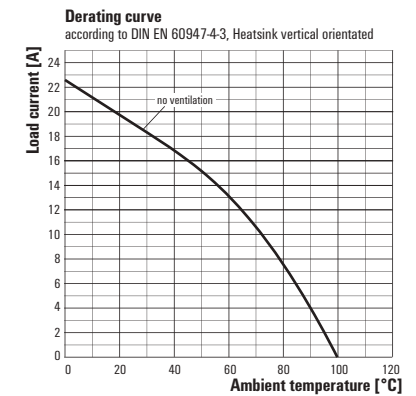
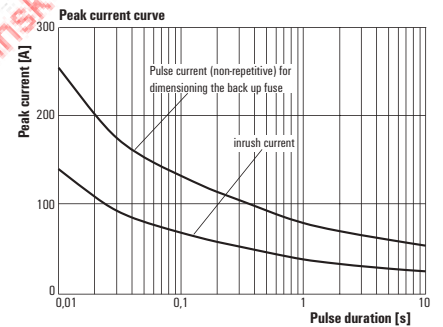
Type	Qty.	Order No.
PSSR 230VAC/1PH AC 25A	1	1406220000

Note

Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

Accessories

Note

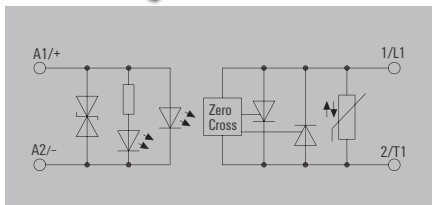


Power solid-state relays

PSSR - 1-phase

- Single-phase load circuit: 24–510 V AC / 35 A
- Ready-to-use: snap on-connect-ready
- Zero-cross switch
- Noiseless, wear-free switching
- Attachable monitoring module
- High capacity for handling surge currents
I²t = 6000 A²s (10 ms)
- Fusing with B circuit breaker possible

PSSR 24 V DC / 1 PH AC 35 A



Technical data

Control side	
Rated control voltage	3.5...32 V DC
Power rating	≤ 280 mW
Cut-in / dropout voltage	3 V / 2 V DC
Input frequency	10 Hz
Status indicator	LED yellow
Protective circuit	Suppressor diode
Load side	
Solid-state type	Thyristor (zero-cross switch)
Rated switching voltage	24...510 V AC
Continuous current	23 A (AC51) at 40 °C, 12 A (AC 53)
Min. switching current	5 mA
Max. switching current	50 A
Voltage drop at max. load	≤ 1.35 V
Leakage current	≤ 1 mA
Short-circuit-proof / Protective circuit, load side	No / Varistor
Switch-on delay / Switch-off delay	≤ 10 ms / ≤ 10 ms
Output voltage frequency range	50...60 Hz
Pulse load, max. current	1100 A (10 ms), non-recurrent
Load category	AC 51, AC 53
Load limit integral (I ² t) <10 ms	6000 A ² s
General data	
Ambient temperature (operational)	-55 °C...100 °C
Storage temperature	-55 °C...125 °C
Humidity	40...85 % (indoor) no condensation
Approvals	CE: cURus; EAC
Standards	EN 60947-4-3, EN 60950, IEC 60335-1
Insulation coordinates	
Impulse withstand voltage	4 kV (1.2/50 μs)
Clearance and creepage distances for control side - load side	≥ 6,5 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (rated / min. / max.) control side	mm ² 1.5 / 0.13 / 3.3
Clamping range (rated / min. / max.) load side	mm ² 6 / 1.5 / 6
Note	

Ordering data

Screw connection

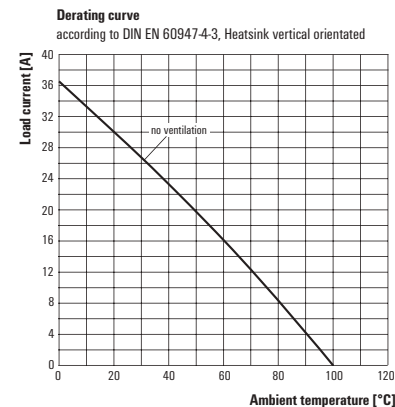
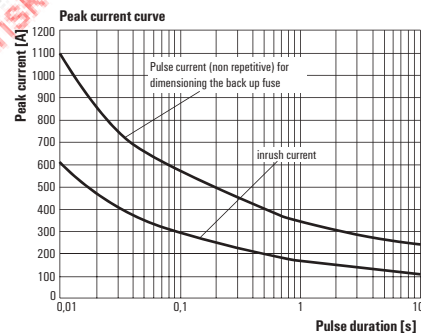
Type	Qty.	Order No.
PSSR 24VDC/1PH AC 35A	1	1406210000

Note

Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

Accessories

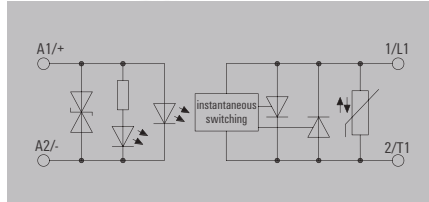
Note



PSSR - 1-phase

- Load circuit 1-phase 24...510 V AC, 22 A at 40°C ambient temperature
- Ready-to-use: snap on-connect-ready
- Instantaneous-switching output
- Wear-free & silent switching
- Plug-in monitoring module

PSSR 24 V DC / 1 PH AC 22 A I



Technical data

Control side

Rated control voltage
Power rating
Cut-in / dropout voltage
Input frequency
Status indicator
Protective circuit

3.5...32 V DC
< 500 mW
3 V / 2 V DC
10 Hz
LED yellow
Suppressor diode

Load side

Solid-state type
Rated switching voltage
Continuous current
Min. switching current
Max. switching current
Voltage drop at max. load
Leakage current
Short-circuit-proof / Protective circuit, load side
Switch-on delay / Switch-off delay
Output voltage frequency range
Pulse load, max. current
Load category
Load limit integral (I²t) <10 ms

Thyristor (instantaneous-switching)
24...510 V AC
22 A (AC51) at 40 °C, 7 A (AC 53)
5 mA
50 A
≤1.25 V
≤ 1 mA
No / Varistor
≤0,1 ms / ≤ 10 ms
50...60 Hz
530 A (10 ms), non-recurrent
AC 51, AC 53
1400 A²s

General data

Ambient temperature (operational)
Storage temperature
Humidity
Approvals
Standards

-55 °C...100 °C
-55 °C...125 °C
40...85 % (indoor) no condensation

Insulation coordinates

Impulse withstand voltage
Clearance and creepage distances for control side - load side
Overvoltage category
Pollution degree

4 kV (1.2/50 µs)
≥ 6,5 mm
III
2

Dimensions

Clamping range (rated / min. / max.) control side mm²
Clamping range (rated / min. / max.) load side mm²

1.5 / 0.13 / 3.3
6 / 1.5 / 6

Note

Ordering data

Screw connection

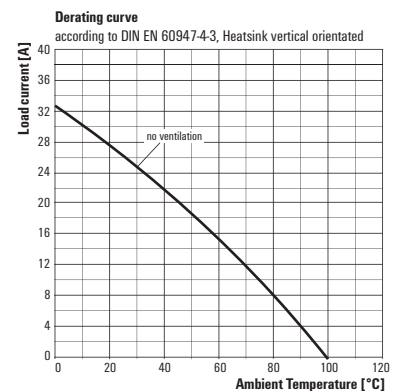
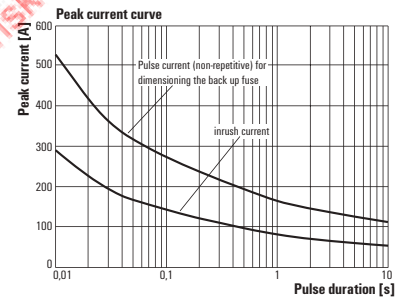
Type	Qty.	Order No.
PSSR 24VDC/1PH AC 22A I	1	2531050000

Note

Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

Accessories

Note

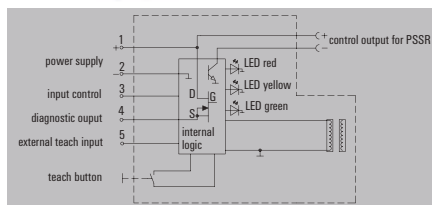


Power solid-state relays

PSSR control unit

- Monitoring of up to 5 consumers connected in parallel
- Can be attached to the single-phase PSSRs
- Error message feedback output
- Undercurrent switching threshold: $0.84 \times I_{teach}$
- Teach button on the module and external teach input

PSSR 1 PH CONTROL UNIT



Technical data

Control side	
Rated control voltage	4...30 V DC
Rated control current	≤ 2.5 mA
Cut-in / dropout voltage	2 V DC
Rated control voltage (external teach input)	4...30 V DC
Nominal control current (external teach input)	≤ 2.5 mA
Supply	
Supply voltage	8...30 V DC
Current consumption	≤ 20 mA (feedback output unloaded), ≤ 120 mA (switched feedback output max. loaded)
Feedback output	
Solid-state type	MOS-FET
Nominal switching voltage	8...30 V DC
Continuous current	0.1 A
Undercurrent switching threshold	$0.84 \times I_{teach}$
Current measurement range AC, min.	2 A
Current measurement range AC, max.	40 A
Switch-on delay	≤ 100 ms
Switch-off delay	≤ 100 ms
Control output to the PSSR	
Nominal switching voltage	8...30 V DC
Solid-state type	Transistor
Switch-on delay	≤ 15 ms
Switch-off delay	≤ 16 ms
General data	
Ambient temperature (operational)	-40 °C...80 °C
Storage temperature	-40 °C...125 °C
Humidity	40...85 % (indoor) no condensation
Current sensor hole diameter	9 mm
Approvals	CE, EAC
Standards	EN 60947-4-3, EN 60950
Insulation coordinates	
Impulse withstand voltage	
Clearance and creepage distances for control side - load side	
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

Ordering data

Type	Qty.	Order No.
PSSR 1PH CONTROL UNIT	1	1406230000

Note

Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

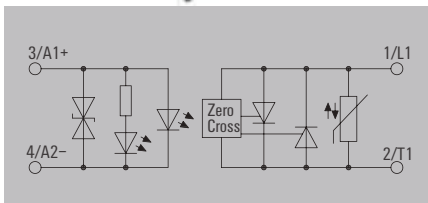
Accessories

Note

PSSR - 1-phase

- Single-phase load circuit: 24–600 V AC / 50 A
- Compact design
- Zero-cross switch
- Noiseless, wear-free switching

PSSR 24 V DC / 1 PH AC 50 A HP



Technical data

Control side	
Rated control voltage	3.5...32 V DC
Power rating	≤ 280 mW
Cut-in / dropout voltage	3 V / 2 V DC
Input frequency	10 Hz
Status indicator	Green LED
Protective circuit	Suppressor diode
Load side	
Solid-state type	Thyristor (zero-cross switch)
Rated switching voltage	24...600 V AC
Continuous current	52 A (AC51) at 40 °C, mounted on heatsink with 0.75 K/W
Min. switching current	5 mA
Max. switching current	60 A
Voltage drop at max. load	≤ 1.35 V
Leakage current	≤ 1 mA
Short-circuit-proof / Protective circuit, load side	No / Varistor
Switch-on delay / Switch-off delay	≤ 10 ms / ≤ 10 ms
Output voltage frequency range	50 / 60 Hz
Pulse load, max. current	700 A (10 ms), non-recurrent
Load category	AC 51
Load limit integral (I ² t) <10 ms	2450 A ² s
General data	
Ambient temperature (operational)	-55 °C...100 °C
Storage temperature	-55 °C...125 °C
Humidity	40...85 % (indoor) no condensation
Approvals	CE: cURus; EAC
Standards	EN 60947-4-3, EN 60950, IEC 60335-1
Insulation coordinates	
Impulse withstand voltage	4 kV (1.2/50 μs)
Clearance and creepage distances for control side - load side	≥ 8 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (rated / min. / max.) control side	mm ² 1.5 / 0.75 / 2.5
Clamping range (rated / min. / max.) load side	mm ² 10 / 1.5 / 10
Note	

Type	Qty.	Order No.
PSSR 24VDC/1PH AC50A HP	2	1406240000

Ordering data

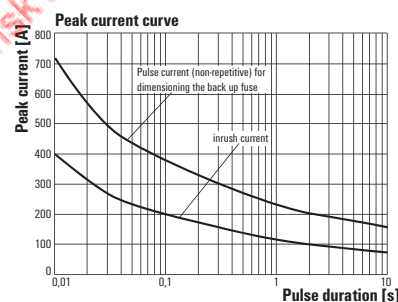
Screw connection

Note

Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

Accessories

Note

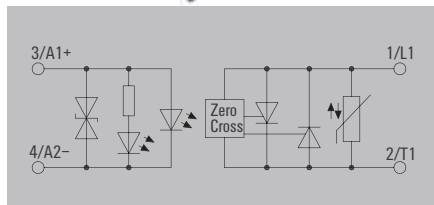


Power solid-state relays

PSSR - 1-phase

- Single-phase load circuit: 24–600 V AC / 75 A
- Compact design
- Zero-cross switch
- Noiseless, wear-free switching
- High capacity for handling surge currents
I²t = 6000 A²s (10 ms)
- Fusing with B circuit breaker possible

PSSR 24 V DC / 1 PH AC 75 A HP



Technical data

Control side	
Rated control voltage	3.5...32 V DC
Power rating	≤ 280 mW
Cut-in / dropout voltage	3 V / 2 V DC
Input frequency	10 Hz
Status indicator	Green LED
Protective circuit	Suppressor diode
Load side	
Solid-state type	Thyristor (zero-cross switch)
Rated switching voltage	24...600 V AC
Continuous current	62 A (AC51) at 40 °C, mounted on heatsink with 0.75 K/W
Min. switching current	5 mA
Max. switching current	90 A
Voltage drop at max. load	≤ 1.4 V
Leakage current	≤ 1 mA
Short-circuit-proof / Protective circuit, load side	No / Varistor
Switch-on delay / Switch-off delay	≤ 10 ms / ≤ 10 ms
Output voltage frequency range	50 / 60 Hz
Pulse load, max. current	1100 A (10 ms), non-recurrent
Load category	AC 51
Load limit integral (I ² t) <10 ms	6000 A ² s
General data	
Ambient temperature (operational)	-55 °C...100 °C
Storage temperature	-55 °C...125 °C
Humidity	40...85 % (indoor) no condensation
Approvals	CE: cURus; EAC
Standards	EN 60947-4-3, EN 60950, IEC 60335-1
Insulation coordinates	
Impulse withstand voltage	4 kV (1.2/50 μs)
Clearance and creepage distances for control side - load side	≥ 8 mm
Overtoltage category	III
Pollution degree	2

Dimensions	
Clamping range (rated / min. / max.) control side	mm ² 1.5 / 0.75 / 2.5
Clamping range (rated / min. / max.) load side	mm ² 10 / 1.5 / 10
Note	

Ordering data

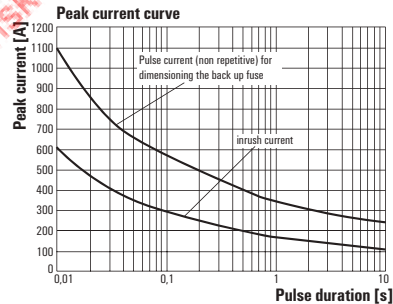
Screw connection

Type	Qty.	Order No.
PSSR 24VDC/1PH AC75A HP	2	1406250000

Note	Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.
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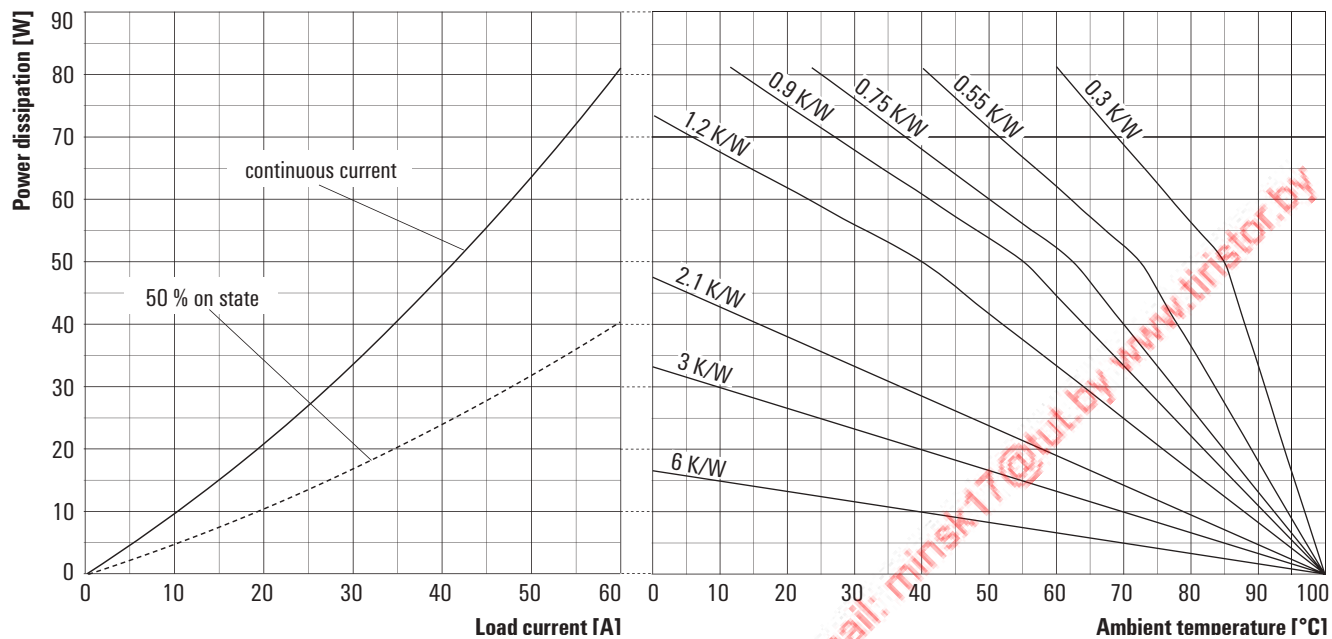
Accessories

Note	
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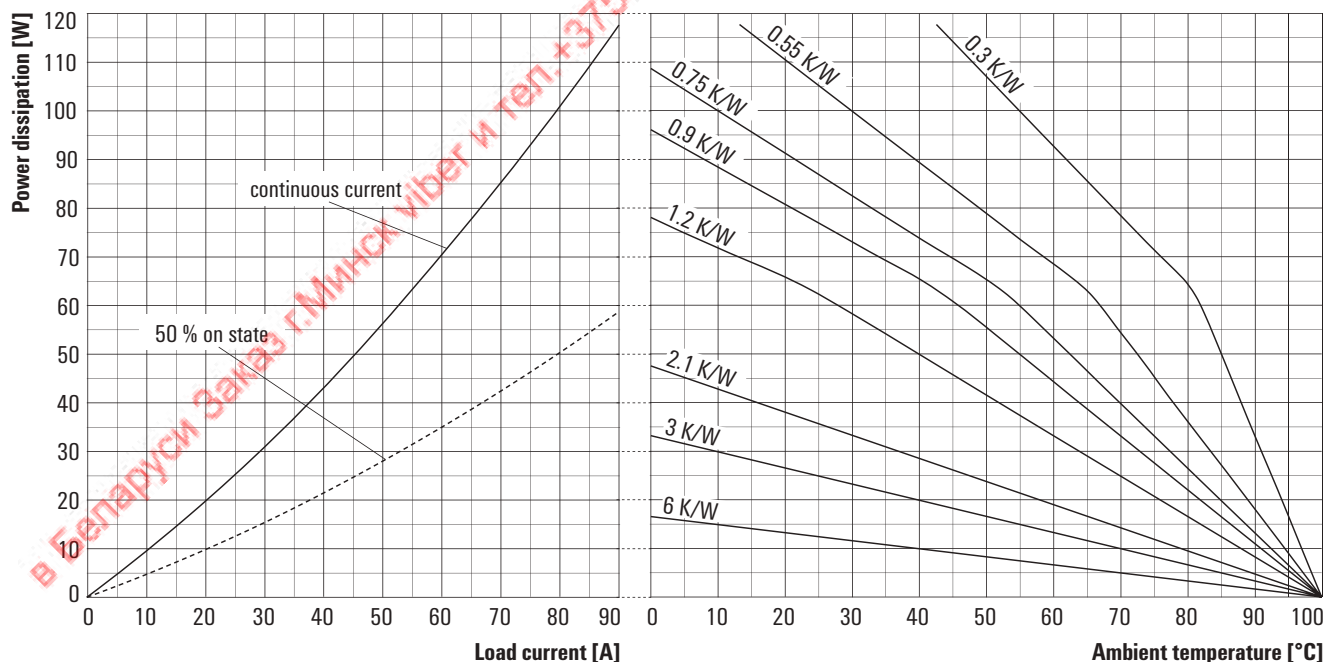


Power loss and selection of heat sink

Order No. 1406240000



Order No. 1406250000

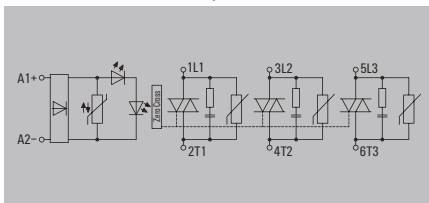


Power solid-state relays

PSSR - 3-phase

- Three-phase load circuit 24...520 V AC / 20 A at 55°C
- Ready-to-use: snap on - connect - ready
- Zero-cross switch
- Wear-free and noiseless switching

PSSR 24 V DC / 3 PH AC 20 A



Technical data

Control side

Rated control voltage
Power rating
Cut-in / dropout voltage

Input frequency
Status indicator
Protective circuit

Load side

Solid-state type
Rated switching voltage
Continuous current
Min. switching current
Max. switching current
Voltage drop at max. load
Leakage current
Short-circuit-proof / Protective circuit
Switch-on delay / Switch-off delay
Output voltage frequency range
Pulse load, max. current / Cartridge fuse
Load category
Load limit integral (I²t) <10 ms

General data

Ambient temperature (operational)
Storage temperature
Humidity
Approvals
Standards

Insulation coordination

Rated voltage
Impulse withstand voltage
Clearance and creepage distances for control side - load side
Overvoltage category
Pollution degree

Dimensions

Clamping range (rated / min. / max.) control side mm²
Clamping range (rated / min. / max.) load side mm²

Note

Ordering data

Screw connection

Type	Qty.	Order No.
PSSR 24VDC/3PH AC 20A	1	8952130000

Note

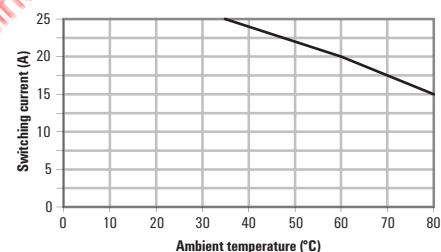
Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

Accessories

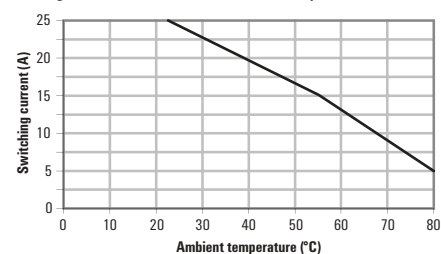
Note

Type	Qty.	Order No.

Derating curve with moderate ventilation and 50 % operational running time



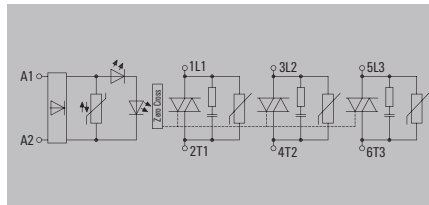
Derating curve without ventilation and in continual operation



PSSR - 3-phase

- Three-phase load circuit 24...520 V AC / 20 A at 55°C
- Ready-to-use: snap on - connect - ready
- Zero-cross switch
- Wear-free and noiseless switching

PSSR 230 V AC / 3 PH AC 20 A



Technical data

Control side	
Rated control voltage	90...240 V AC / DC
Power rating	0.4...2.6 W
Cut-in / dropout voltage	90 V / 15 V AC 90 V / 15 V DC
Input frequency	10 Hz
Status indicator	Green LED
Protective circuit	RC element, Varistor
Load side	
Solid-state type	Triac (zero-cross switch)
Rated switching voltage	24...520 V AC
Continuous current	20 A @ 55 °C, 12 A (AC 53)
Min. switching current	5 mA
Max. switching current	
Voltage drop at max. load	1.4 V
Leakage current	< 1 mA
Short-circuit-proof / Protective circuit	No / RC element, Varistor
Switch-on delay / Switch-off delay	30 ms / 30 ms
Output voltage frequency range	50 / 60 Hz
Pulse load, max. current / Cartridge fuse	300 A (10 ms), non-recurrent /
Load category	AC 53: 3 x 12 A
Load limit integral (I ² t) <10 ms	1500 A ² s
General data	
Ambient temperature (operational)	-40 °C...80 °C
Storage temperature	-40 °C...100 °C
Humidity	40...85 % (indoor) no condensation
Approvals	cURus; EAC
Standards	DIN EN 60950, IEC 60947-4-3
Insulation coordination	
Rated voltage	
Impulse withstand voltage	4 kV (1.2/50 µs)
Clearance and creepage distances for control side - load side	≥ 6.4 mm
Overvoltage category	III
Pollution degree	2
Dimensions	
Clamping range (rated / min. / max.) control side	mm ² 1.5 / 0.75 / 2.5
Clamping range (rated / min. / max.) load side	mm ² 10 / 1.5 / 10
Note	

Type	Qty.	Order No.
PSSR 230VAC/3PH AC 20A	1	8952140000

Ordering data

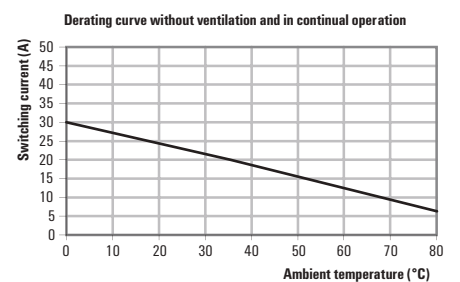
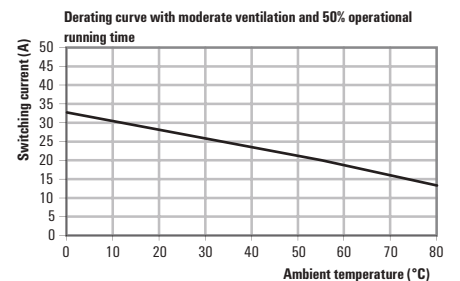
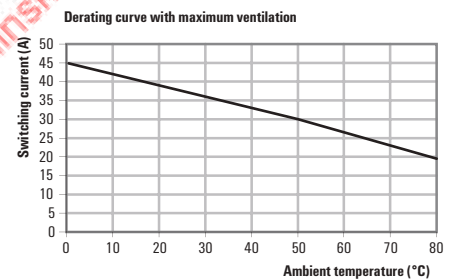
Screw connection

Note

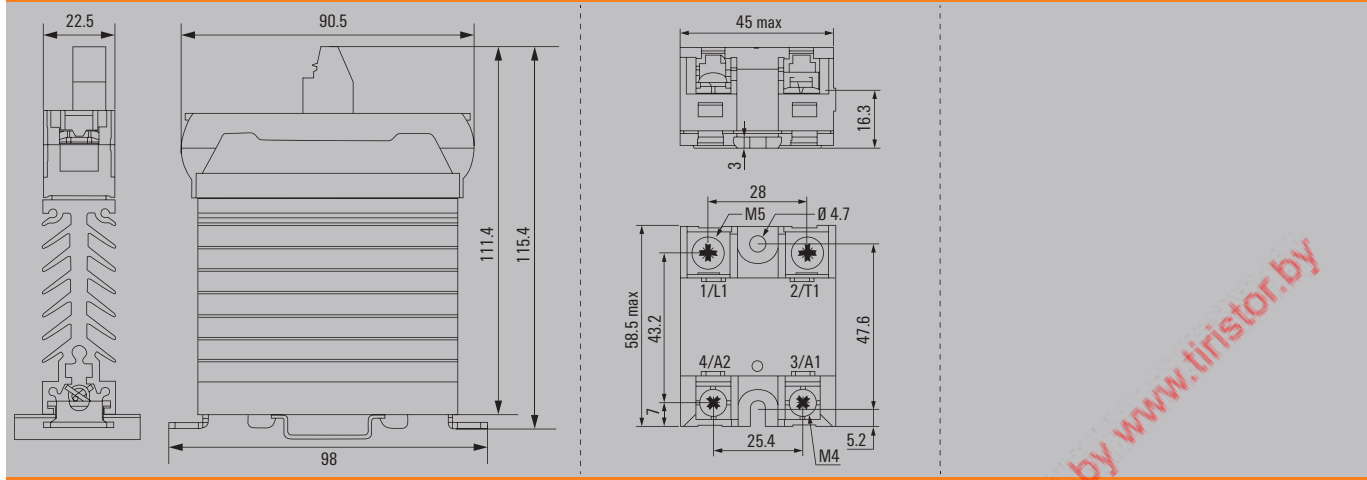
Accessories and dimensioned drawings: refer to the Power Solid-state Relay Accessories page.

Accessories

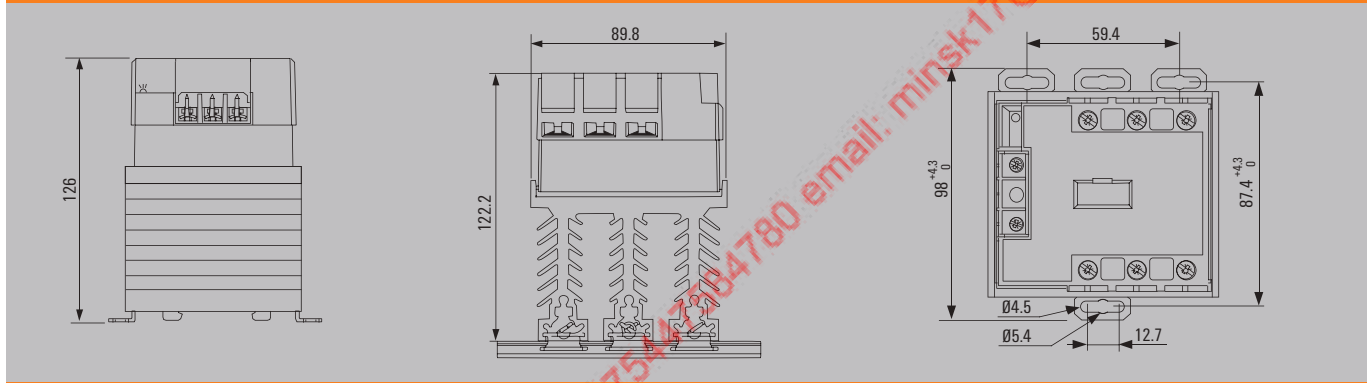
Note



Dimensioned drawing for PSSR, single-phase

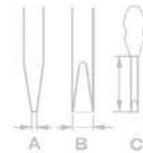


Dimensioned drawing for PSSR, three-phase



Uninsulated screwdriver

Weidmüller SoftFinish screwdriver for general uses. Blade made from fully hardened, high-alloy chromium-vanadium-molybdenum steel, matt chrome finish.



SD S

Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1, ChromTop tip, SoftFinish® grip

Type	Size / AF	A	B	C	Order No.
SDS 0.6x3.5x100		0.6	3.5	100	9008330000



SDK PZ

Crosshead screwdriver, Pozidriv, SDK PZ DIN 5262, ISO 8764/2-PZ, output to ISO 8764/1-PZ, ChromTop tip, SoftFinish® grip

SDK PZ2	2			100	9008540000
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Safety relay

Safety relay	SAFESERIES SIL relays - Overview	D.2
	SAFESERIES SIL relays	D.6

в Беларусі Заказ г.Мінск viber и тел. +375447584780 email: minsk17@tut.by www.timstor.by

SAFESERIES SIL relays

Functional safety for process applications

Whether for a burner control system, secure emergency shut down or, for example, for pump controllers – our safety relay guarantees safe conditions and encompasses highly superior and significant features.

Their integration into distributed control systems (DCSs) is even better, with an input filter which makes the SIL circuit immune to the test impulse which is typically used by a DCS. You will also benefit from simple maintenance: the fuses are accessible from the outside and can easily be changed. You can see the status of the safety and the monitoring devices clearly on the displays mounted directly to the device.

All devices are accredited though certification by the internationally recognised TÜV-NORD group – for secure process applications around the globe. Let's connect.

Safe control of back-up systems

Equipped with wide range input voltages in the monitoring circuit from 24 V AC/DC to 230 V AC/DC, the relay is designed for individual use, e.g. in back-up systems or the overfill prevention devices of tank farms.



Safe monitoring of furnace firing systems

The feed-in of fuel must be interrupted as soon as a boiler plant reaches any safety criterion limits. The SAFESERIES offers you a safety switch-off for the feed-in of fuel to furnace firing systems up to safety integrity level (SIL) 3.





Safe activation and deactivation

This universal device can be used for either the energise-to-safe or de-energise-to-safe operation modes, as you wish. This makes it suitable, e.g. for pump controllers or extinguishing systems.



You have strict requirements for the functional reliability of your systems

We connect your safety-related applications reliably

D



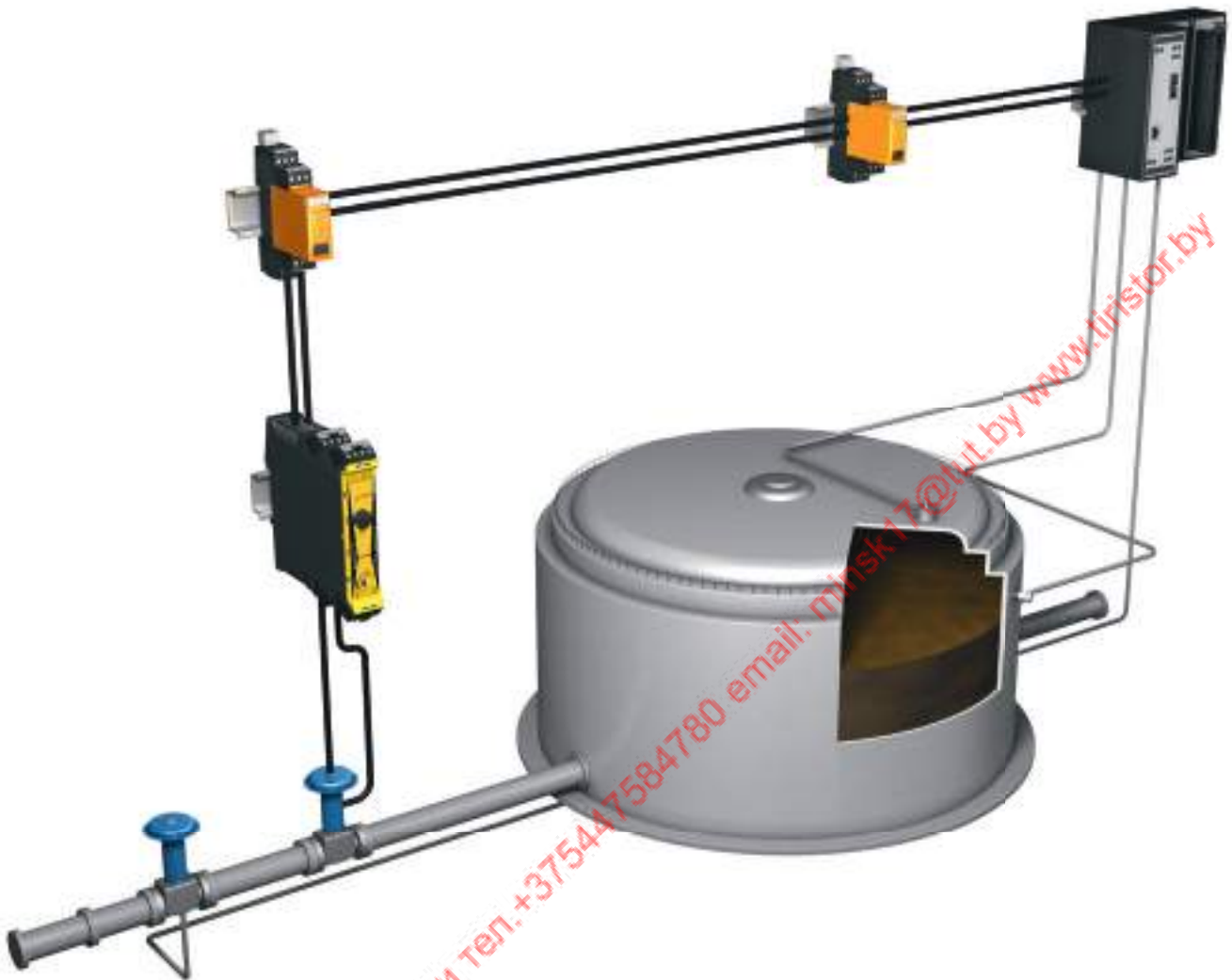
Safe process and power technology is a top priority for you. For example, a reliable emergency shutdown, which initiates appropriate countermeasures in hazardous situations, is indispensable. These might extend to the automatic shutdown of the system or subsystems within it.

As a specialist in industrial connectivity, we offer a comprehensive solution for safety-sensitive areas, from the control room through to the field.

The SAFESERIES SIL relay is ideally suited for use in safety-related applications. It is designed for low and high demand modes.

With the wide range input voltage in the protective circuit of 24 V UC to 230 V UC, for example, you can control back-up systems with high DC voltage. You get additional flexibility for your applications with the optional "G3" coating for use in harsh environments.

The safe and reliable coupling of measuring instruments, actuators and sub-assemblies to the safety-relevant signal circuit is handled by our VARITECTOR SPC, the lightning and surge protection for signal circuits. Certified for safety requirement level SIL 3 according to EN 61508, and accredited by TÜV NORD, it can easily be incorporated into your safety calculations.



SAFESERIES

- Certified to EN 61508 for SIL3
- Wide voltage input from 24 to 230 V AC/DC for the monitoring of field signals
- Variant with G3 protection for extreme conditions
- Other variants for burner management or on/off switching



VARITECTOR SPC

- 2 analogue or 4 digital signals on a width of just 17.8 mm
- Monitoring with status indicator and message function
- Testable with V-TEST according to IEC62305
- Variants with SIL certification or EX approval

SIL3 relay

- Immune against test pulses from Triconex® output modules
- For the use with the systems Tricon™, Trident™ and Tri-GP™ a proof of compatibility is available
- Externally accessible fuse
- TÜV certified "Approved Safety Function"

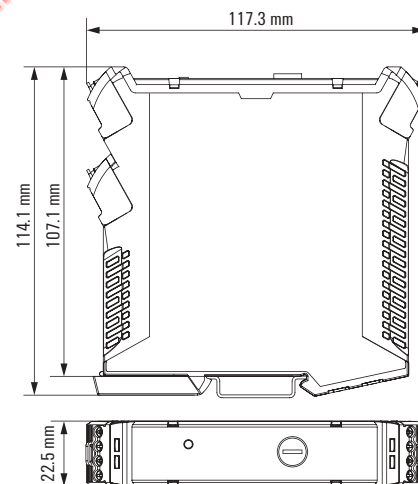
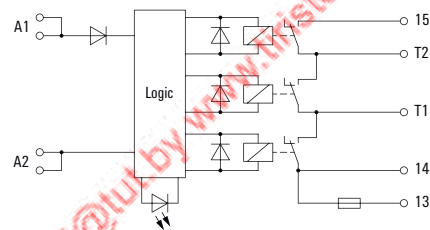
SCS 24 V DC P1SIL3DS I



The SCS 24VDC P1SIL3DS I safety relay is used in areas that require a functionally safe shutdown. This component fulfils the requirements of EN 61508, SIL 3.

Technical data

Temperatures	
Ambient temperature (operational)	-25...50 °C
Storage temperature	-40...85 °C
Input (safety circuit)	
Rated control voltage	24 V DC (16...36 V DC)
Power consumption	50 mA
Status indicator	LED yellow
Output (safety circuit)	
Contact design	NO contact
max. switching current, internal fuse	5 A
max. switching current, external fuse	5 A
max. permitted switching voltage	250 V AC / 30 V DC
max. permitted switching current	5 A
min. switching power	10 mA @ 12 V
max. switching power	2000 VA
Switch-on time	≤ 25 ms
Base material of the contact	AgNi
Internal fuse	5 A time-lag
External back-up fuse	5 A time lag
Short-circuit-proof	No
Insulation coordination	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 6 mm
Dielectric strength input - output	3.51 kV _{eff} /5 s
Dielectric strength to mounting rail	
Impulse withstand voltage	6 kV (1.2/50 μs)
Overtoltage category	III
Pollution degree	2
Further details of approvals / standards	
Standards	EN 61010-2-201:2013 + AC:2013, EN 61326-1:2013, EN 61326-3-1:2008, EN 61326-3-2:2008



Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

Ordering data

Type	Qty.	Order No.
SCS 24VDC P1SIL3DS I	1	2500980000

Note

SAFESERIES SIL relays

SIL3 relays

- Energised / de-energised to safe
- All pins can be disconnected
- Test inputs for testing the relay contacts
- Externally accessible fuse
- TÜV certified "Approved Safety Function"

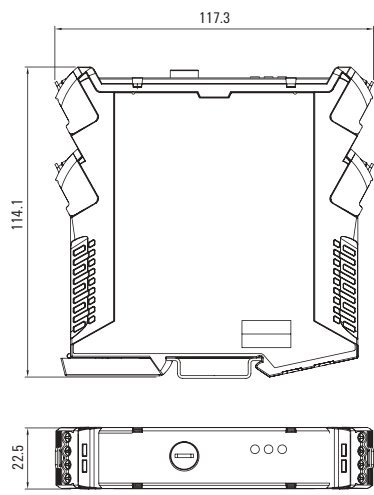
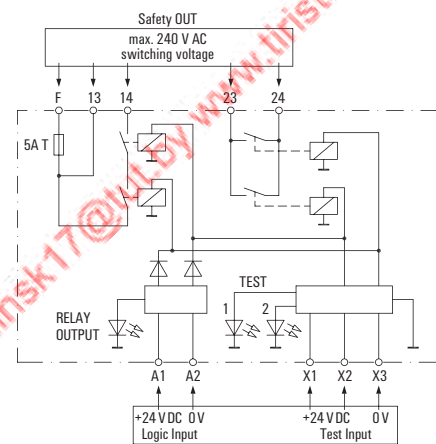
SCS 24 V DC P2SIL3DSES



The safety relay SCS 24VDC P2SIL3DSES is used in areas that require functionally safe deactivation or activation. The requirements according to EN 61508, SIL3 can be fulfilled with this module.

Technical data

Temperatures	
Ambient temperature (operational)	-25 °C...50 °C
Storage temperature	-40 °C...85 °C
Input (safety circuit)	
Rated control voltage	24 V DC -15 / +20%
Guaranteed current consumption of 24 VDC -10%	35 mA
Power consumption	45 mA
Status indicator	LED yellow
Test inputs	
Rated control voltage	24 V DC
Status indicator	LED red flashing: test input is triggered
Number of test inputs	2
Output (safety circuit)	
Contact design	1 x de-energised to safe (NO contact), 1 x energised to safe (NO contact)
max. switching current, internal fuse	5 A (refer to derating curve)
max. switching current, external fuse	5 A (refer to derating curve)
max. permitted switching voltage	250 V AC
max. permitted switching current	8 A
min. switching power	10 mA @ 12 V
max. switching power	2000 VA
Switch-on time	< 5,5 ms (DTS), < 5 ms (ETS)
Base material of the contact	AgNi 0.15 gold flashed
Internal fuse	5 A time-lag
External back-up fuse	5 A time lag
Short-circuit-proof	No
Insulation coordination	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 5,5 mm
Creepage and clearance distance output - output	≥ 5,5 mm
Dielectric strength input - output	4 kV _{eff} / 1 min
Dielectric strength output - output	4 kV _{eff} / 1 min
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Impulse withstand voltage	6 kV (1.2/50 µs)
Overvoltage category	III
Pollution degree	2
Further details of approvals / standards	
Standards	EN 50178, EN 61000, EN 61326-3-2



Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

Ordering data

Type	Qty.	Order No.
SCS 24VDC P2SIL3DSES	1	1319270000

Note

Note

SIL3 relays

- Positively-driven contacts
- 2-channel design
- Insert according to EN 50156
- TÜV certified "Approved Safety Function"

SCS 24 V DC P2SIL3ES

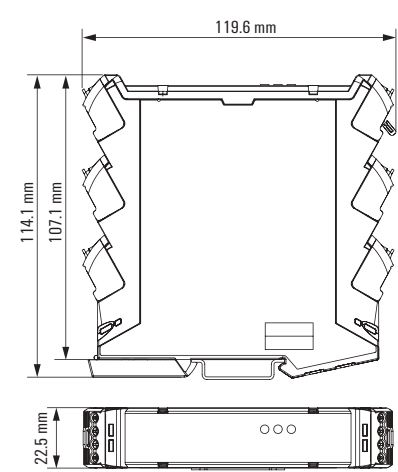
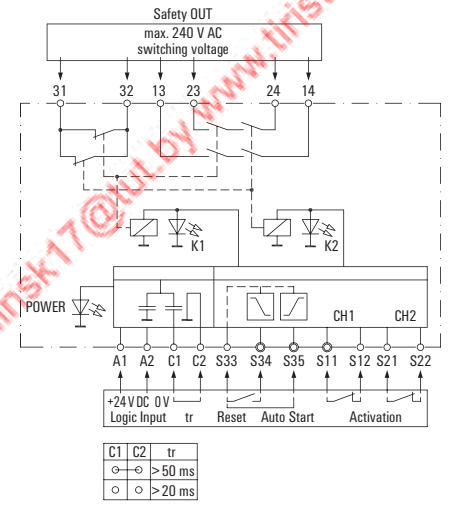


The feed-in of fuel must be interrupted as soon as a boiler plant reaches any safety criterion limits. The safety relay SCS 24VDC P2SIL3ES enables you to carry out a safety shutdown of the fuel supply, to safety level SIL 3.

Technical data

Temperatures	
Ambient temperature (operational)	-25 °C...55 °C
Storage temperature	-40 °C...85 °C
Start circuit	
Operating voltage	22 V DC, from internal power supply
Function	falling edge (button via S33/S34), rising edge (permanent bridge via S33/S35)
Input (supply)	
Rated control voltage	24 V DC ±15 %, 24 VDC +15% / -10% during auto-start
Current consumption	55 mA (release circuit enabled), 6 mA (release circuit not enabled)
Guaranteed current consumption at 24 V DC -10%	35 mA
Response time	with bridge via C1/C2: typ. 50 ms, without bridge via C1/C2: typ. 20 ms
Status display	LED green, power, LED yellow, signal
Short-circuit detection	Yes, max 4 s up to switch-off (Polyfuse)
Monitoring circuit	
Operating voltage	22 V DC, from internal power supply
Input	2, each externally bridgeable
Output (release circuit)	
Contact version	2 NO positively-driven (EN 50205 type B)
Switching voltage AC, max.	250.000000 V
max. permitted switching current	6 A
min. switching power	10 mA @ 12 V
max. switching power	2000 VA
Switch-on time	55 ms (C1/C2 bridged, switched via A1/A2), 30 ms (opening/closing of monitoring circuit)
Switch-off time	20 ms (C1/C2 bridged, switched via A1/A2), 15 ms (opening/closing of monitoring circuit)
Contact base material	AgSnO
max. switching current, external fuse	5 A
external back-up fuse	5 A time lag
Feedback output	
Contact version	1 NC positively-driven (EN 50205 type B)
Switching voltage AC, max.	250 V
Max. switching current	1 A
Insulation coordination	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 5.5 mm
Creepage and clearance distance output - output	≥ 5.5 mm
Dielectric strength input - output	4 kV _{eff} / 1 min
Dielectric strength output - output	4 kV _{eff} / 1 min
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Impulse withstand voltage	6 kV (1.2/50 μs)
Overvoltage category	III
Pollution degree	2
Further details of approvals / standards	
Standards	EN 50178, EN 61000, EN 61326-3-2, EN ISO 13849-1 (PLe)
Dimensions	
Clamping range (nominal / min. / max.)	1.5 / 0.13 / 2.5 mm ²
Depth x width x height	114.1 / 22.5 / 119.6 mm
Note	

Temperatures	
Ambient temperature (operational)	-25 °C...55 °C
Storage temperature	-40 °C...85 °C
Start circuit	
Operating voltage	22 V DC, from internal power supply
Function	falling edge (button via S33/S34), rising edge (permanent bridge via S33/S35)
Input (supply)	
Rated control voltage	24 V DC ±15 %, 24 VDC +15% / -10% during auto-start
Current consumption	55 mA (release circuit enabled), 6 mA (release circuit not enabled)
Guaranteed current consumption at 24 V DC -10%	35 mA
Response time	with bridge via C1/C2: typ. 50 ms, without bridge via C1/C2: typ. 20 ms
Status display	LED green, power, LED yellow, signal
Short-circuit detection	Yes, max 4 s up to switch-off (Polyfuse)
Monitoring circuit	
Operating voltage	22 V DC, from internal power supply
Input	2, each externally bridgeable
Output (release circuit)	
Contact version	2 NO positively-driven (EN 50205 type B)
Switching voltage AC, max.	250.000000 V
max. permitted switching current	6 A
min. switching power	10 mA @ 12 V
max. switching power	2000 VA
Switch-on time	55 ms (C1/C2 bridged, switched via A1/A2), 30 ms (opening/closing of monitoring circuit)
Switch-off time	20 ms (C1/C2 bridged, switched via A1/A2), 15 ms (opening/closing of monitoring circuit)
Contact base material	AgSnO
max. switching current, external fuse	5 A
external back-up fuse	5 A time lag
Feedback output	
Contact version	1 NC positively-driven (EN 50205 type B)
Switching voltage AC, max.	250 V
Max. switching current	1 A
Insulation coordination	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 5.5 mm
Creepage and clearance distance output - output	≥ 5.5 mm
Dielectric strength input - output	4 kV _{eff} / 1 min
Dielectric strength output - output	4 kV _{eff} / 1 min
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Impulse withstand voltage	6 kV (1.2/50 μs)
Overvoltage category	III
Pollution degree	2
Further details of approvals / standards	
Standards	EN 50178, EN 61000, EN 61326-3-2, EN ISO 13849-1 (PLe)
Dimensions	
Clamping range (nominal / min. / max.)	1.5 / 0.13 / 2.5 mm ²
Depth x width x height	114.1 / 22.5 / 119.6 mm
Note	



Ordering data

Note	
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Type	Qty.	Order No.
SCS 24VDC P2SIL3ES	1	1319280000

в Беларусі Заказ г.Мінск вібер и тел. +375447584780 email: minsk17@tut.by www.tiristor.by

Timer

Timer	IT-TIMER - Timing relay	E.2
	BT-SERIES - Overview	E.6
	BT-SERIES - Timer	E.8
	MCZ-SERIES - Timer	E.12

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Compact timing relay for easy adjustment of the control signals

IT-TIMER multi-functional timing relay with multi-voltage input

Timing relays are frequently used in automation engineering in order to compensate malfunctions caused by high cycle rates. Short pulses are extended and hence are reliably identified by downstream control components.

The timing relay offers high functionality on a small footprint. Due to the flat front panel, an easy-to-read LED display as well as operating elements adjustable by standard tools, the configuration is particularly straightforward.

With the IT-TIMER, Weidmüller offers a highly efficient multi-functional timing relay with multi-voltage input, which fulfils the product standards in accordance with IEC 61812-1.



The IT-TIMER timing relays are used in factory automation for easy adjustment of the control signals.

Your special advantages:

A compact device with easy configuration of the time functions

Its compact size, the multi-voltage input and an easy configuration of the time functions make the IT-TIMER a smart solution for your application.

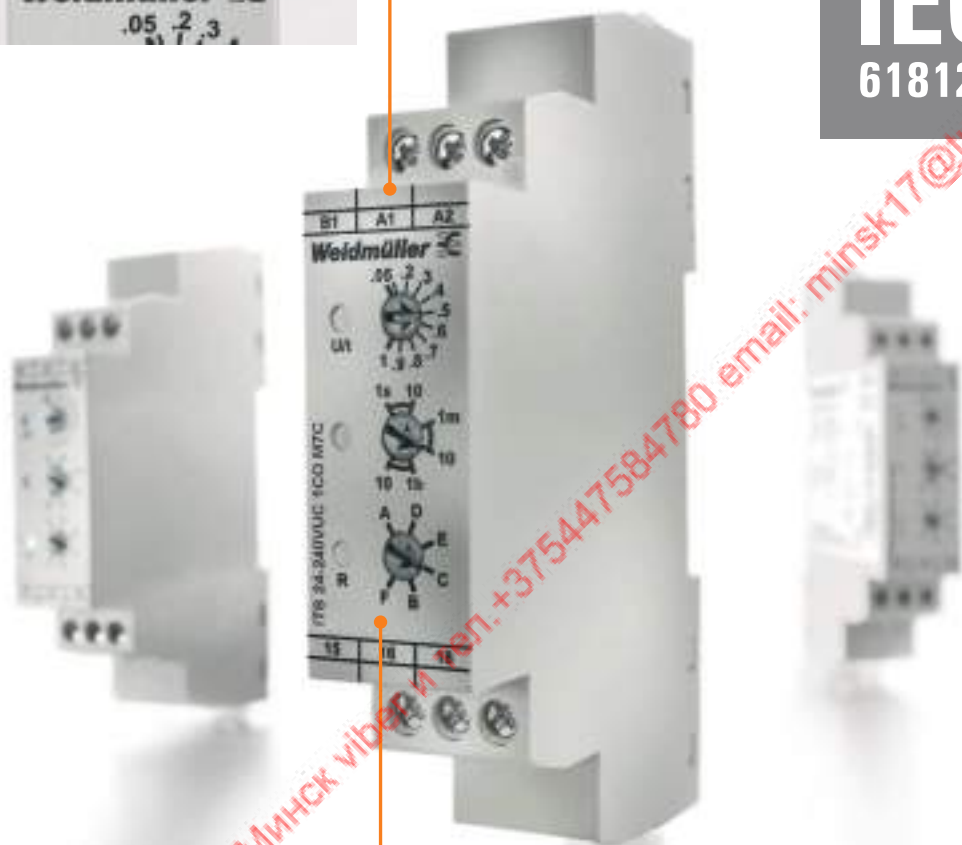
Multi-voltage input

The timing relay operates from 24 V DC up to 48 V DC and from 24 V AC up to 240 V AC. It can therefore be used in a wide range of applications.



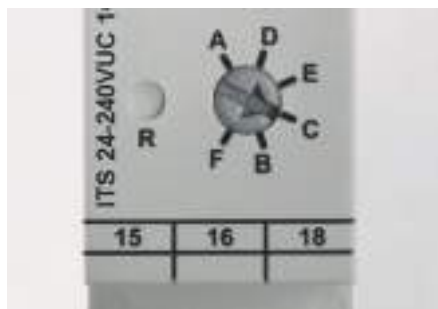
Global standard

International usage is guaranteed in accordance with the standard IEC 61812-1.



Seven timing functions

Due to its multi-functional concept, the IT-TIMER covers a broad range of typically needed time functions.



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Timer

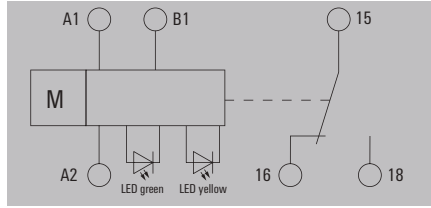
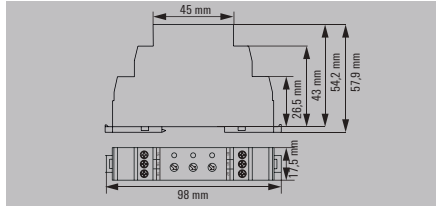
E

IT TIMER – Timing relay

Timing relay

- Multi-voltage input:
24...48 V DC
24...240 V AC
- Space-saving construction
- 7 time functions with separate control input

ITS 24-240 V UC 1 CO M7C



Technical data

Input	
Rated control voltage	24...48 V DC - 15 % / + 10 % / 24...240 V AC - 15 % / + 10 %
Power rating	8 VA @ 230 V AC, 0.4 W at 24 V DC
Status indicator	LED green (U/t): flashes when time runs, lights permanently with supply voltage applied, LED yellow (R): relay closed
Repeat accuracy	< 0.5 % or ±5 ms
Basic accuracy	< 1.5 % (of scale-end value)
Setting tolerance	5 %
Min. pulse duration	50 ms
Time ranges	0.05 s - 1 s, 0.5 s - 10 s, 3 s - 60 s, 0.5 min - 10 min, 3 min - 1 h, 0.5 h - 10 h
Max. reset time after voltage interruption	100
Output	
Rated switching voltage	250 V AC
Max. switching voltage, AC	250
Max. switching voltage, DC	30 V
Continuous current	5 A
AC switching capacity (resistive), max.	1250 VA
DC switching capacity (resistive), max.	90 W
Max. switching frequency at rated load	0.1 Hz
Contact material	AgNi
Mechanical service life	1 x 10 ⁶ switching cycles
General data	
Ambient temperature (operational)	-25 °C...50 °C
Storage temperature	-40 °C...70 °C
Humidity	25 - 75%, no condensation
Version	with separate control input
Resistance to vibration EN 61812-1	10 Hz...60 Hz: 0.15 mm, 60 Hz...150 Hz: 2 g
Approvals	CE
Insulation coordination	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 1.5 mm
Dielectric strength input - output	1.6 kV
Impulse withstand voltage	2.5 kV
Protection degree	IP20
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 0.25 / 2.5
Depth x width x height	mm 57.9 / 17.5 / 98
Note	

Type	Qty.	Order No.
ITS 24-240VUC 1CO M7C	1	2496190000
ITS 24-240VUC M7C PU10	10	2545120000

Ordering data

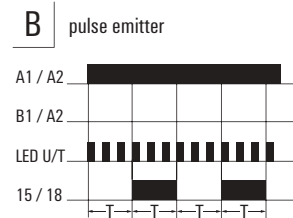
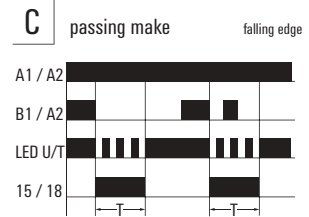
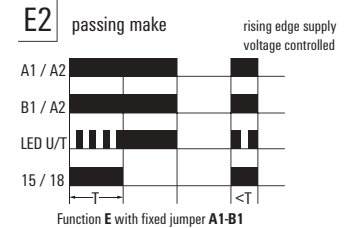
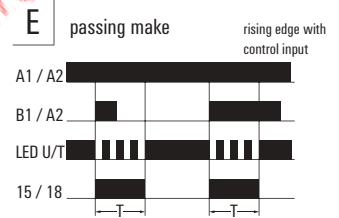
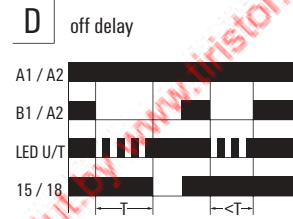
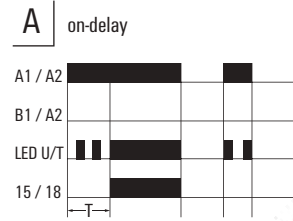
	Screw connection
	Screw connection

Note

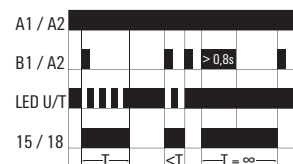
Accessories

Note

Time functions



F Flip-flop / latching



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Installation timer

The electronic timer from the BT product range offers ideal solutions for industrial applications.

The BT product range provides the following functions:

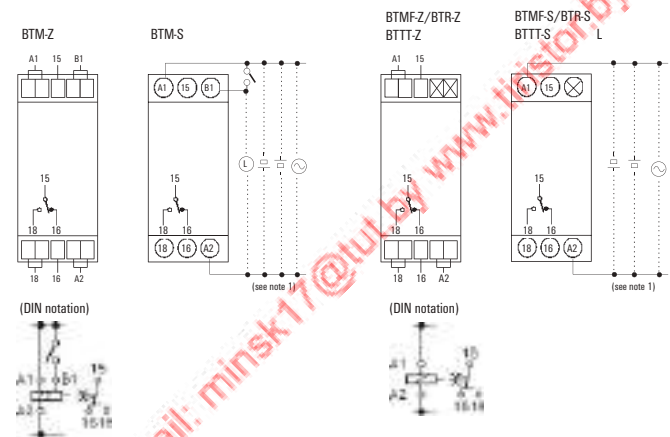
- Pick-up delay (BTR)
- Pulse emitter (BTTT)
- Multifunction with control input (BTM)
- Multifunction without control input (BTMF)
- Star-delta change-over

Time ranges and power supplies for timer


Using the central button, you can select the functions of the modules over either 4 or 8 time ranges.

The multi-voltage supply range offers a wide bandwidth for industrial use (see technical data).

Connection of the timer



Note: 1. Pole numbers are not necessary for DC voltage supply.

2. The contact symbol of BTM is marked with  as it provides several operating modes and differs from the delayed contacts of conventional timer.



Time ranges

Display of time scale	Time ranges
0.1 s	0.1 to 1.2 s
1 s	1 to 12 s
0.1 min	0.1 to 1.2 min
1 min	1 to 12 min
0.1 h	0.1 to 1.2 h
1 h	1 to 12 h
10 h	10 to 120 h

Note:

If the rotary button for time adjustment is set to "0", the output will be switched without delay.

Choosing the time range

The time range is chosen by turning the rotary switch for the ON-time scale and OFF-time scale. The time scales are visible in the display to the left of the rotary switch in the following order: 0.1 s, 1 s, 0.1 m, 1 m, 0.1 h, 1 h.

Note:

The time scales "1 s" and "0.1 h" are given twice. Both adjustments represent the same time scale.

Locking/unlocking of selectors and time setting dial

The rotary switches for the ON/OFF time adjustment and the option selector for the time scale can be locked with the locking key.

This pen-style special tool is available separately. To lock either rotary switches or the option selector, simply insert the locking key into the keyhole bottom right of the rotary switch/option selector and turn it clockwise until the button/switch is totally covered by the red cover. To unlock, simply turn the key in the opposite direction.

Connection system

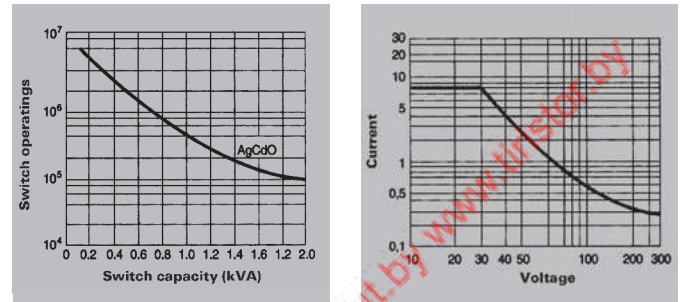
The units offers the following connection technologies:

Screw connection

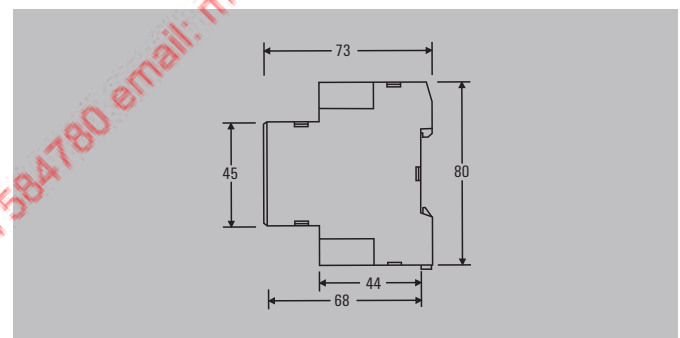
- 2 x 1.5 mm² with wire end ferrule,
- 2 x 2.5 mm² without wire end ferrule

Tension clamp connection

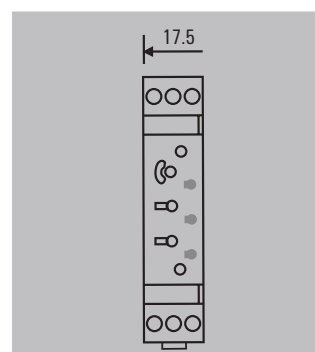
- 2 x 1.5 mm² with wire end ferrule,
- 2 x 1.5 mm² without wire end ferrule



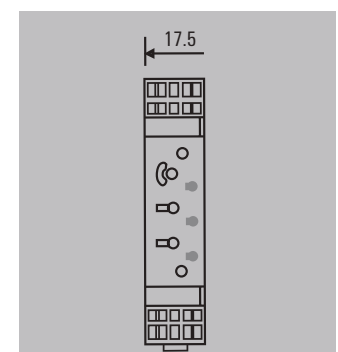
Dimensions



Screw connection



Tension clamp connection



Installation timer

- Screw or tension clamp connection
- LED status indicator
- Approvals

Input: voltage present
 Output: output active
 508
 EN 61812-1
 IEC 60947-5-1
 IEC 60664-1
 EN 55011
 22.2 Nr. 14
 IEC 60664-1
 EN 61812-1
 IEC 60947-5-1
 EN 50082-2



Type designation:

- B** = Building
- T** = Timer
- R** = Response Delay
- TT** = Two Times
- M** = Multifunction, 8 ranges
- MF** = Multifunction, 4 ranges
- DS** = Delta, Star
- S** = Screw
- Z** = Tension

Input		Contacts hard gold plated	
Rated voltage		24 ... 230 V AC, 50/60 Hz, 24 ... 48 V DC	
Voltage tolerance		85 ... 110 % of rated voltage	
Breaking voltage		Max. 2.4 V AC/DC	
Power consumption per type	V AC	21...33 VA at 230 V	
	V DC	0.6...1.3 W at 24 V	
Reset time		Min. 0.1 s (BTDS: 0.5 s)	
Insulation			
Insulation resistance		100 MΩ min., at 500 V DC	
Insulation test voltage	between input and output, to enclosure	2000 V AC, 50/60 Hz, 1 min	
	between non-adjacent contacts	1000 V AC, 50/60 Hz, 1 min	
Ingress protection class		IP30, terminal block IP20	
Output			
Contact/contact material		1 change-over contact (BTDS 2 NOC) / AgNi 90/10	
Switch output		5 A at 250 V AC, resistive load (cos φ=1)	
Service life	mechanical min.	10 ⁷ switching cycles (no load, 1800/h)	
	electrical min.	10 ⁶ switching cycles (5A at 250 V AC, resistive load at 1800/h)	
Time range		0,10 s...120 h	
Repetition accuracy		± 1 %	
Other data			
Flammability class as per UL94		V-2	
Ambient temperature/storage temperature		-10...+55 °C / -25...+65 °C (without condensation)	
Humidity		35...85 % rel. humidity, no condensation	
Clamping range (nominal/min/max)	mm ²	Screw connection	Tension clamp connection
		1.5 / 0.5 / 2.5	1.5 / 0.2 / 1.5
Depth x Width x Height	mm	73.0 x 17.5 x 80.0	

Accessories

Designation
Locking and adjusting key

Type	Qty.	Order No.
BT Lock Pen	1	8659840000

Multifunction relay with control input (BTM)



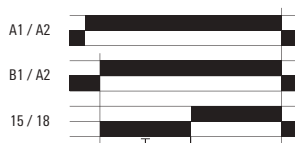
Ordering data

Connection system	Type	Qty.	Order No.
Screw connection	BTM-S	1	8647700000
Tension clamp	BTM-Z	1	8647710000

Functions

Function A - on-delay

Connect power supply (A1/A2). When the input signal (B1/A2) is applied, the set time T begins to delay. After the time has expired, the output R (15/18) disconnects the load. To reset, the input signal needs to be switched off.



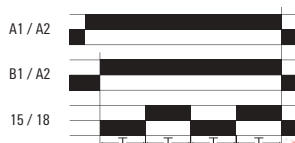
Function E - passing make function (Watchdog)

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) connects the load immediately. At the end of the set delay time T, output R (15/18) switches the load off again.



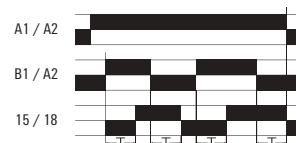
Function B - pulse emitter (starting at normal position)

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) switches the load synchronously and alternately between the normal and operated positions within the set time T. In this function, the cycle starts at the normal position.



Function G - on and off-delay function

Connect power supply (A1/A2). Time delay T begins after applying the input signal (B1/A2). At the end of this time, output R (15/18) connects the load (on-delayed). After the input signal (B1/A2) has been switched off again, the output switches the load off again after the set time (off-delayed).



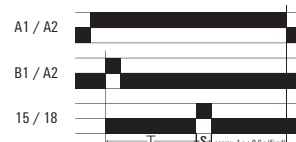
Function B2 - pulse emitter (starting at operated position)

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) switches the load synchronously and alternately between the normal and operated positions within the set time T. In this function, the cycle starts at the operated position.



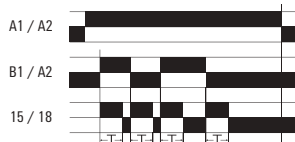
Function J - on-delay with pulse

Connect power supply (A1/A2). Time delay T begins after applying the input signal (B1/A2). At the end of this time, the output R (15/18) connects the load for 1 second.



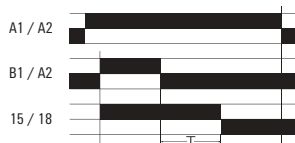
Function C - interval time-delay

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) connects the load for the set time T. Output R (15/18) switches the load off again at the end of time T. After switching off the input signal (B1/A2), output R (15/18) connects the load again for the set time T. Output R (15/18) switches the load off again at the end of time T.



Function D - off-delay function

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) connects the load. The time delay T begins after the input signal (B1/A2) has been switched off. At the end of time T, output R (15/18) switches the load off again.



Multi-function relay without control input (BTMF)



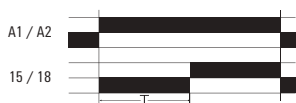
Ordering data

Connection system	Type	Qty.	Order No.
Screw connection	BTMF-S	1	8647680000
Tension clamp	BTMF-Z	1	8647690000

Functions

Function A – on-delay

When the input signal (A1/A2) is applied, the on-delay lasting for the set time T starts. The output R (15/18) connects the load at the end of the set time. To reset, the power supply has to be switched off.



Function B2 – pulse emitter (starting at operated condition)

After applying the input signal (A1/A2), output R (15/18) switches the load synchronously and alternately between the normal and operated positions within the set time T. In this function, the cycle starts at the operated position.



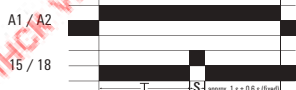
Function E – passing make function

After applying the input signal (A1/A2), output R (15/18) connects the load immediately. At the end of the set delay time T, output R (15/18) switches the load off again.



Function J – on-delay with pulse

Time delay T begins after applying the input signal (A1/A2). At the end of this time, the output R (15/18) connects the load for 1 second.



Timer (BTR)



Ordering data

Connection system	Type	Qty.	Order No.
Screw connection	BTR-S	1	8647720000
Tension clamp	BTR-Z	1	8647730000

Functions

Function A – on-delay

When the power supply is connected (A1/A2), the on-delay lasting for the set time T starts. The output R (15/18) connects the load at the end of the set time.



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Timer (BTTT)



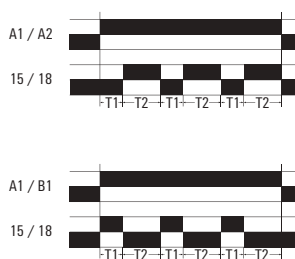
Ordering data

Connection system	Type	Qty.	Order No.
Screw connection	BTTT-S	1	8647740000

Functions

Function BTTT - pulse emitter

When the power supply is connected (A1/A2), the repeat cycle begins with two independently adjustable times. The standard setting is to start at the normal position. A bridge between connections A1 and A2 allows the module to start at the operated position.



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Timer

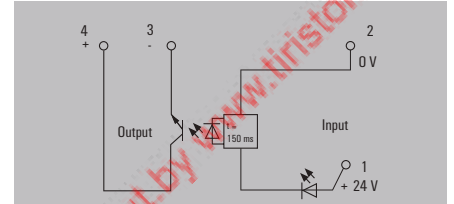
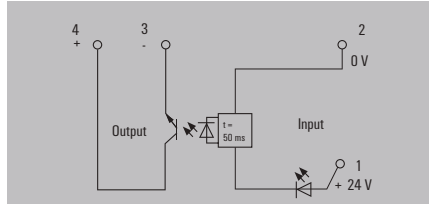
E

Miniconditioner MCZ T0

- Components for lengthening short pulses for the PLC
- Fixed switch-off delay
- Low input power
- Screw connection system
- Width 6 mm
- For mounting on TS 35

24 V DC 50 ms

24 V DC 150 ms



Technical data

Input	
Rated control voltage	24 V DC ±10 %
Rated current AC / DC	/ 6.7 mA ±10 %
Power rating	160 mW
Min. pulse duration	2 ms
Status indicator	Green LED
Output	
Rated switching voltage	5...48 V DC
Continuous current	20 mA
Switch-off delay	50 ms
Max. switching frequency at rated load	5 Hz
Rated data	
Ambient temperature (operational)	-25 °C...50 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC
Insulation coordinates	
Rated voltage	300 V
Overvoltage category	IV
Dielectric strength input - output	1 kV _{eff} / 1 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Impulse withstand voltage	6 kV (1.2/50 µs)
Pollution degree	2

Input	
Rated control voltage	24 V DC ±10 %
Rated current AC / DC	/ 6.7 mA ±10 %
Power rating	160 mW
Min. pulse duration	2 ms
Status indicator	Green LED
Output	
Rated switching voltage	5...48 V DC
Continuous current	20 mA
Switch-off delay	150 ms
Max. switching frequency at rated load	3 Hz
Rated data	
Ambient temperature (operational)	-25 °C...50 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC
Insulation coordinates	
Rated voltage	300 V
Overvoltage category	IV
Dielectric strength input - output	1 kV _{eff} / 1 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Impulse withstand voltage	6 kV (1.2/50 µs)
Pollution degree	2

Input	
Rated control voltage	24 V DC ±10 %
Rated current AC / DC	/ 6.7 mA ±10 %
Power rating	160 mW
Min. pulse duration	2 ms
Status indicator	Green LED
Output	
Rated switching voltage	5...48 V DC
Continuous current	20 mA
Switch-off delay	150 ms
Max. switching frequency at rated load	3 Hz
Rated data	
Ambient temperature (operational)	-25 °C...50 °C
Storage temperature	-40 °C...85 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE, CSA, cURus, EAC
Insulation coordinates	
Rated voltage	300 V
Overvoltage category	IV
Dielectric strength input - output	1 kV _{eff} / 1 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Impulse withstand voltage	6 kV (1.2/50 µs)
Pollution degree	2

Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 1.5
Depth x width x height	mm 63.2 / 6.1 / 91
Note	
For mounting on TS 35 rail	

Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 1.5
Depth x width x height	mm 63.2 / 6.1 / 91
Note	
For mounting on TS 35 rail	

Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 1.5
Depth x width x height	mm 63.2 / 6.1 / 91
Note	
For mounting on TS 35 rail	

Ordering data

Tension-clamp connection

Type	Qty.	Order No.
MCZ T0 24VDC/50MS	10	8324590000

Type	Qty.	Order No.
MCZ T0 24VDC/150MS	10	8286410000

Note

Note

Note

Accessories

Note

AP MCZ end plate 8389030000

AP MCZ end plate 8389030000

Service and support

Service and support	Our expertise for your requirements	V.2
	Benefit from optimum support when using our products	V.4

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Our expertise for your requirements

Service connects - worldwide

Automation technology functions are becoming more complex in a globally-oriented world facing ambitious targets in terms of energy efficiency and smart production. We are your equal partners for the best connections in Industrial Connectivity. Our worldwide network of industrial managers for machine construction, process automation, energy and traffic engineering and for device manufacturers know the challenges you face and can support you in your specific applications.

Training course on technologies, applications and the detailed functionality of our products is available to you locally or at our headquarter in Germany. Our personal support can answer any questions reliably and expertly. Our online services are available 365 day a year around the clock to provide answers to your questions on our products - from user documentation through software to planning tools.

In short: Weidmüller's global service combines our expertise with your requirements.





Professional advice on planning

Our global network of industrial managers has extensive experience in automation technology and electrical connectivity. This expertise allows us to assist you with advice and planning support in order to work with you on resolving the everyday challenges of your applications.



Technology and application training

Industrial automation is moving towards smart production. It faces the challenges of new technologies and applications. Our varied range of training courses develops this knowledge further or provides more in-depth information on the handling of our products and solutions. Our seminars are modular and can be customised. We can train you and your employees in our academy, on your premises if you wish or online in our webinars at any time.



Customised installation

The challenges for the future are reducing costs and increasing efficiency. This requires intelligent, individual solutions which are tailored to your requirements. We can offer a highly qualified customer-specific production service in our application centre. Whether you need modified products, pre-assembled terminal rails or complete small cabinets: we produce the solutions developed for your application quickly and flexibly.

Online support and downloads

Exactly the right help and information on our solutions and products

If our products are used in your automation technology applications, you need the best possible individual support, from planning through installation to operation.

For every stage of your application, we can offer the right tools and information for our products and solutions. Up-to-date, uncomplicated, comprehensive and around the clock via our service portal at www.weidmueller.com/service.

Fast access to our support and services is available via Weidmüller webcodes. Simply select the service you want on the right hand side, then enter the webcode made up of five digits with a preceding hashtag into the search field in the top right corner of www.weidmueller.com and it will bring up the details you need.

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Online and personal support

From planning through installation to operation, we can provide exactly the right help and information for each step of your application based on our solutions and products: up-to-date, uncomplicated and comprehensive, around the clock, online or in person.



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Approvals, certificates and declaration of conformity
Webcode #11374

Here you will find information on the CE declaration of conformity, on RoHS and REACH and other company related certificates and approvals.

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V

Technical appendix/Glossary

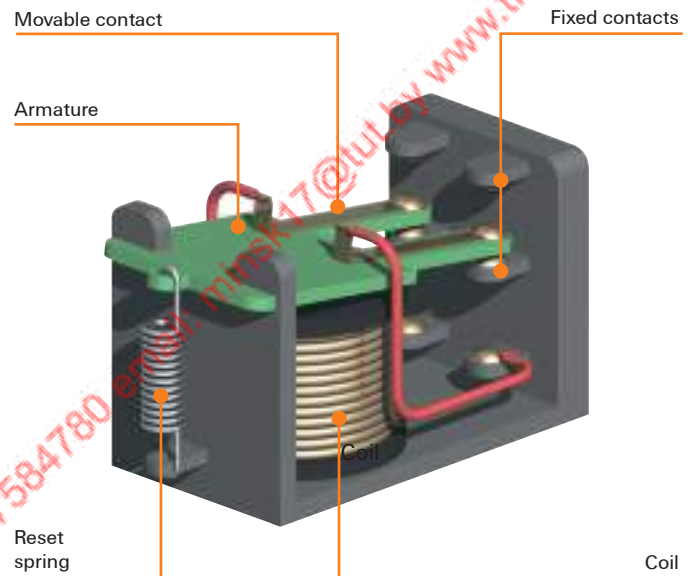
Technical appendix/Glossary	Relay modules and solid-state relays – Comparison	W.2
	Technical appendix: Relay modules	W.4
	Glossary: Relay modules	W.8
	Technical appendix: Solid-state relays	W.28
	Glossary: Solid-state relays	W.36

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Relay modules and solid-state relays – Comparison

Advantages of electromechanical relay modules (EMR)

- + AC and DC operation in load circuit possible
Versatile (advantage as interface between different plant equipment)
- + No leakage current in the load circuit
A semi-conductor does not achieve 100 % isolation
- + Low residual voltage in the load circuit
Low voltage drop
- + No power loss in the load circuit
In contrast to the semi-conductor in opto modules there is no electrical resistance in the contacts of the electromechanical relay modules that can lead to a rise in temperature when under load. Therefore, heat sinks are not necessary.
- + Multiple contacts possible
A single control signal can switch several load circuits.
- + Control circuit less sensitive to *transients**)
Unwanted switching operations caused by voltage fluctuations are prevented by the make capacity of the magnetic coil.

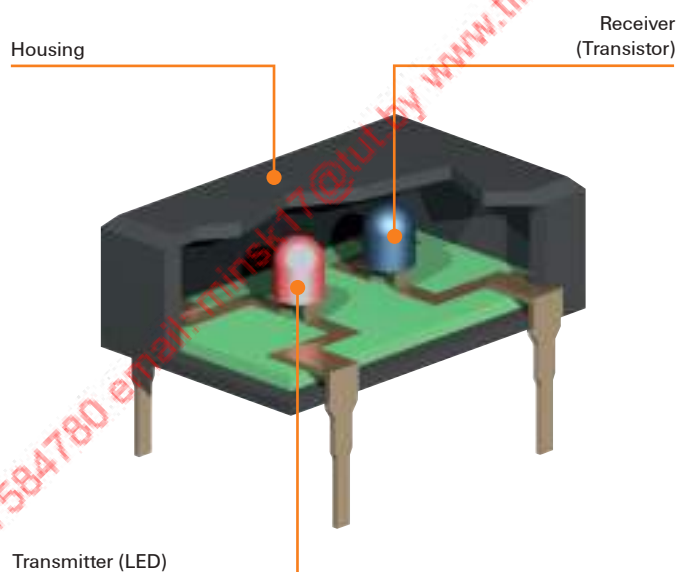


*) Refer to page W.8 in the Glossary for a detailed explanation of this term.

Depending on the requirements, the choice between electromechanical and solid-state relays is made based on the different advantages that the different versions offer:

Advantages of solid-state relays (SSR)

- + Long operational lifetime and reliability
No moving parts or contact wear
- + Small dimensions
Saves space on the PCB and mounting rail
- + Low control power
An LED is activated - no mechanical parts are moved
- + Fast response times
Fast switching, which allows high frequencies to be achieved
- + No contact bounce
Reduces switching delays
- + No switching noise
Suitable for use in noise-sensitive environments
- + Not susceptible to shock and vibration
Prevents unwanted switching statuses
- + No electromagnetic radiation due to switching sparks or coils
No interference of adjacent assemblies or electronics components



Relay modules – an overview

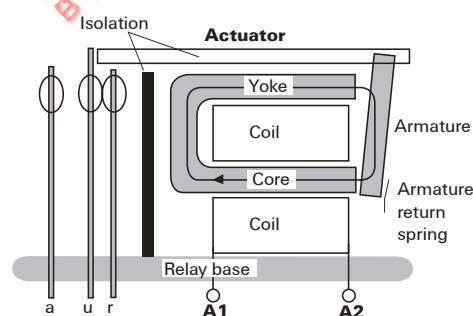
Historical background

The term 'relay' was originally used for a station where stagecoaches were able to change their tired horses for fresh ones. The term 'relay' was given a totally different meaning by the English physicist Charles Wheatstone (1802–1875). In Wheatstone's times, departing trains were advised of by a bell ringing at the next railway station up the line.

This was achieved by connecting a battery in the first station to a bell in the second. However, as the railway stations were generally several kilometres apart the power arriving at the second station was often insufficient to ring the bell. Wheatstone invented a switchgear apparatus that was installed at the second railway station. This continued to function even with low power supply levels. The switchgear apparatus switched a second electrical circuit that actuated the bell. This was the birth of the electromagnetic relay.

How a relay functions

A relay is an electromagnetic switch comprising of two galvanically isolated circuits. Firstly the control circuit and secondly the open circuit with the normally open contact. As soon as the control circuit is energised, the coil creates a magnetic field in the core/yoke and attracts the armature. The actuator now actuates the switch at the output, the normally open contact (make contact) closes and the normally closed contact (break contact) opens. When the control circuit is turned off, the magnetic field diminishes and the return spring returns the armature to its initial position. The actuator moves the normally open (make contact) back to its normal position, the normally open contact opens, the normally closed contact (break contact) closes.



Consequently, with low power input – battery power for example – a relay provides the option of switching heavy loads as well as being able to serve as a switching amplifier. Thanks to the isolation between the input and output, relays are also suitable for providing separation when the power of the control and the open circuits differ. Equipped with several NO (make) contacts, a relay can also be utilised for multiplying signals.

From relay to relay module

There are two alternative methods that make a relay module suitable for use in industrial applications: mounting onto a PCB – in combination with the corresponding assembly techniques and circuitry – or plugging onto a specially designed relay base.

Generally, the design and rating data determine if a relay coupler is or is not suitable for a particular application.

For example, relay modules with plugged on relays are only partly suitable for use in applications subjected to heavy vibrations. In this case, relay modules with soldered relays should be preferred. Low, compact designs such as those provided by the RIDERSERIES are utilised in small consumer units where the overall available height is limited. Conversely, the compact design of the TERMSERIES helps to save space in electrical cabinets.

Protective separation

It is essential that all electrical equipment required to provide protective separation be designed in such a manner that the insulation cannot be impaired, for example by mechanical errors. If a mechanical error occurs in a relay (bent soldering pin, broken winding wire or broken spring), 'protective separation' must be guaranteed. Relays are specified and tested in accordance with EN 61810-1. However, the standard makes no reference to EN 50178 (Electronic equipment for use in power installations); equally no definition is given for the term 'protective separation'. Things are made worse by the fact that different measurement conditions are given for the test voltages stipulated for relays. As a consequence, the test voltages cannot be applied to the standards EN 50178 or EN 61140. And because the user is nevertheless increasingly deploying electrical equipment that is supposed to guarantee 'protective separation', a large number of manufacturers of relays point to the EN 61140 and carry out the tests accordingly. And of course the values are then 'protective separation' conform.

Standards

The following individual standards are applied in accordance with the corresponding requirements:

Relay modules

- DIN EN 50178:
Electronic equipment for use in power installations

Relays

- DIN EN 61810-1:
Electromechanical elementary relays (electromechanical elementary relays without specified time response characteristics)
Part 1: General and safety requirements

Relay base

- DIN EN 61984
Connectors - Safety requirements and tests

EMC – Electromagnetic compatibility

DIN EN 61000-6-1

Part 6-1: Generic standards; Immunity for residential, commercial and light-industrial environments

DIN EN 61000-6-2

Part 6-2: Generic standards - Immunity for industrial environments

DIN EN 61000-6-3

Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments

DIN EN 61000-6-4

Part 6-4: Generic standards - Emission standard for industrial environments

Coil suppression circuit

In DC circuits, the inductance of the relay coil generates a release voltage when de-energised that is capable of damaging or destroying the connected control electronics. A free wheel diode connected in parallel to the coil limits the release voltage, protects the control electronics and prevents induction of the cut-off voltage to other signal lines.

Large circuits or long cable runs are subjected to increased electrical and electromechanical interference and damage. Malfunctions or even total failure of the relay module can result. The radiated interference, and not to forget leakage currents emanating from trigger modules, can also mean that a triggered relay does not drop out. As standards specify that the drop-out voltage is limited to about 15 percent of the rated voltage, the interference voltage generated can be sufficient to prevent the relay from opening. One way of resolving this problem is to connect an RC combination line side to filter out disturbances and provide capacitive suppression of interference voltages.

TERMSERIES products are supplied ex works with these protective circuits already integrated in the electronics; for the RIDERSERIES these are available as modular series electronics.

The same principles apply as with contact protection circuits.

Relay modules – an overview

Switching large and small capacities

Basically, the reliability of the contacts in a relay reaches a maximum at a medium current load thanks to the continuous self-cleaning effect. As the contact load increases and hence leads to more severe erosion of the contacts, the switching reliability decreases with an increasing number of switching operations. This reduces the service life of the contacts. Although at very low loads the minimal erosion of the contacts does raise the service life more or less to the level of the mechanical service life, the lack of a self-cleaning effect contributes to a lower contact reliability.

Reliable contact at low currents, especially when only small voltages are involved as well, depends on the choice of contact material. Contacts of silver-nickel, which is standard for the majority of Weidmüller relays, are generally suitable for currents of approx. 10 mA and higher. Such large-surface contacts can switch both low and high currents. However, at low currents occasional failures can occur due to erosion and the lack of the self-cleaning effect. The higher the current, the more reliable is the contact – thanks to the self-cleaning. Silver-nickel is suitable as a contact material for low currents/voltages. It provides, however, only **moderate switching reliability**. If this is acceptable, then conventional standard relays represent an inexpensive solution.

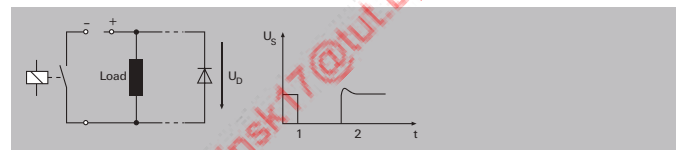
For applications that call for **improved contact reliability** or low currents/voltages, conventional relays with hard-plated gold contacts are preferable because they do not erode and therefore operate more reliably.

If **maximum switching reliability** is necessary, especially for low currents/voltages, a relay should not be your first choice. In these instances Weidmüller advises the use of solid-state relays. Wear and abrasion caused by mechanical movements are non-existent in solid-state relays.

Protective circuits for the contacts

The switching of inductive or capacitive loads produces switching sparks which can influence the electrical service life of the relays. The following protective circuits for the contacts reduce contact wear:

Diode



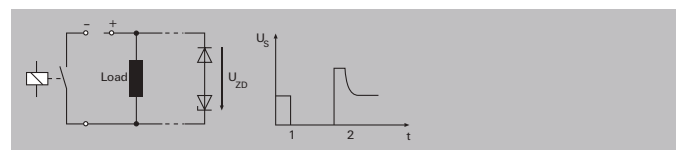
Free-wheeling diodes (DC)

Free-wheeling diodes are used primarily to protect against overvoltages, which occur through self-induction when switching off inductive DC loads (electric motors, relay coils). Voltage spikes are limited to the equivalent value of the diode forward voltage and excess voltage is discharged via the diode. However, this leads to a delay in the voltage drop and as such also delays the switching operation.

Advantage: Can be used for all capacities, low surge, minimum space required, low price

Disadvantage: Very long release delay

Diode and Z-diode



Zener diode / suppressor diode (DC)

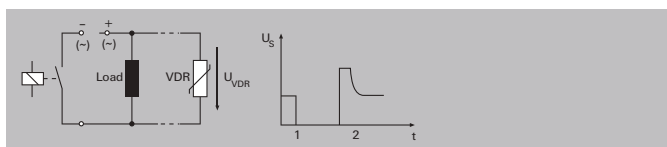
These function as normal diodes in the forward conducting direction. In the blocking direction they become low resistant at a certain voltage (breakdown voltage).

High levels of overvoltages can lead to the destruction of the zener diode / suppressor diode.

Advantage: Low surge (defined by Z-diode), short release delay

Disadvantage: Cannot be used for large capacities

Varistor

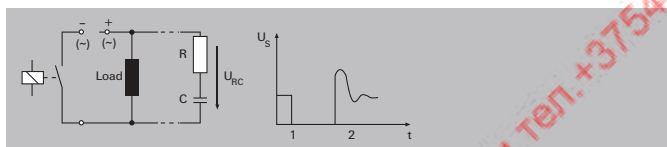


Varistor (AC/DC)

The functional principle of the varistor is also based on a breakdown voltage, but with faster reaction times. This allows higher levels of energy to be shunted, however, these lead to the component aging. This in turn reduces the breakdown voltage over time and increases the leakage current.

- Advantage: Low surge, short release delay
- Disadvantage: High current load on the contacts when switching on; more complicated and expensive at greater capacities

RC combination



RC-element (AC)

The RC element compensates voltage spikes by means of a capacitor. Due to the charging and discharging characteristics interference pulses are filtered out when the voltage is rising and not first when overload is reached. For this reason, RC elements are used to protect against interference pulses and exclude faulty switching operations.

- Advantage: Short release delay, low price
- Disadvantage: Cannot be used for all operating voltages and capacities

$U_s =$ Voltage progression 1 = Closing 2 = Opening

Glossary: Relay modules

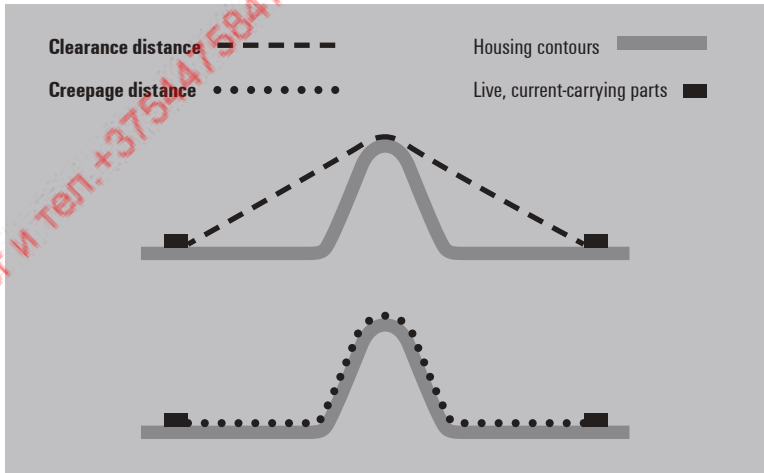
A

AC	Refers both to alternating values (such as voltage or current) as well as to those devices and variables which reference these devices. Specifications are valid for 50 Hz, unless otherwise indicated.
AC coil, alternating current coil	Relay; excitation with alternating current (AC). Specifications are valid for 50 Hz, unless otherwise indicated.
Adhesion (contacts)	This refers to when the relay armature does not return back to its starting position after the coil voltage has been turned off. The armature can get stuck if there is too much retentivity in the iron core or if the reset force is too small.
Approvals and testing marks	<p>Testing approvals are independent confirmation from governmental or private registration services and testing facilities. They certify that the product complies with the relevant regulations and maintains the specified product characteristics. Note: The ordering scheme gives you the choice of many variations, but not all variations are established as standard types (order numbers). Therefore, they may not be included in the list of approved relays. Technical specifications and list of approved types are available on request.</p> <p>CSA Canadian Standards Association, Canada GL Germanischer Lloyd, Germany TÜV Technical Monitoring Association, Germany UL Underwriters Laboratories, Inc., USA; UR Component Recognition Mark for the United States cUR UL Component Recognition Mark for Canada cURus UL Component Recognition Mark for the United States and Canada cULus UL Component Listing Mark for the United States and Canada VDE VDE testing location, Germany (advisory reports with production monitoring)</p>

B

B10	The number of switching cycles for a load where 10 % of the relays fail. This value is used to determine the probability of system failure.
Bounce (chatter)	An unintended phenomenon that may arise during the closing or opening of a contact circuit when the contact elements touch and separate again before they have reached their final positions.
Bounce times	The time (average value) between the first and last closing (or first and last opening) of a relay contact. These times are valid when the rated voltage is used for excitation, without other components in series or in parallel to the coil, and at the reference temperature.
Breaking capacity	Maximum switching current that a relay contact can switch off under specified conditions, whereby the switching current must not be greater than the nominal current.
Burn-off	Loss of contact material due to switching electrical arcs.

W

C	
CE	<p>Abbreviation for Communauté Européenne (the European Community). Manufacturers use the CE label to confirm that their products comply with the corresponding EC directives and the "essential requirements" therein. The EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC are currently binding.</p>
Clearance and creepage distances	<p>Clearance and creepage distances are critical factors that affect the insulating capacity of electrical components. The creepage distance denotes the minimum clearance that two live parts along a surface must have in order to prohibit a flow of current across the insulating material at the specified operating voltage. The operating voltage, the choice of insulation material (material group) and the protective measures taken against contamination (pollution degree) all influence the creepage distance. The clearance distance denotes the minimum direct clearance (through the air) that two live parts must have to one another in order to prohibit a charge passing through the air (an arc). The expected surge voltage (rated impulse voltage) forms the basis for calculating the distances. The surge protection category and pollution severity are further factors that influence dimensional design considerations.</p> 
Coil resistance	<p>DC resistance of a relay coil at the reference temperature (+20 °C); Higher coil temperatures increase the resistance value by 0.4 % / K. For actual operations, the excitation voltage should be adjusted accordingly (> sparkover value). For AC coils, the inductive resistance is much greater than the DC value. This is why the current consumption of the coil is also specified at nominal excitation.</p>
Coil specifications	<p>The coil specifications are specified according to IEC 61810-1. Unless otherwise specified, these values apply under the following conditions: ambient temperature 23 °C; coil at ambient temperature (cold coil, without pre-excitation); 50 Hz for AC voltage excitation; operating range of class 2; densely assembled (mounting gap of 0 mm). A relative duty cycle of 100 % (continuous excitation) is permitted.</p>

Combination of relay and plug-in socket, Insulation requirements

The combination of relay and plug-in socket is described in the new relay standard IEC 61810-1. The relay sockets must meet the requirements of IEC 61984 and the insulation requirements of IEC 60664-1. Even if the socket itself already meets (or surpasses) the insulation requirements, there may still be reduced clearance and creepage distances (and thus reduced insulation rated voltage) for the combination of the relay and plug-in socket. Restrictions – such as a reduced voltage range or reduced pollution degree – should be expected for the relay/socket combination. This should be taken into consideration for miniature multi-pole relays with plug-in sockets which have minimal gaps between the contact circuits.

In addition to the insulation properties, the thermal properties of the combined relay/socket are very important (refer to the derating curves). The plug-in frames from different manufacturers cannot be compared directly, which is why the technical specifications are only guaranteed for approved relay/socket combinations. Possible risks of fire or reduced dielectric strength may result when non-approved combinations are in use.

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Contact material

The list below provides an overview of the most important performance coatings and contact materials. The load capacity of the contacts and their life span can vary depending on the contact material and construction used. It is important to achieve the best combination of relay function and contact material. The specifications for individual relay types are only partially valid for other variants.

1) Performance coatings:

Pure gold – the best corrosion resistance but too soft when used as solid metal; high tendency toward cold welding in layer thickness > 1 µm (gold-flashed); only functions as a gold gilding and does not protect against corrosive gases.

2) Contact material:

Hard gold (hard gold-plated) - Very good corrosion resistance for dry loads; measuring and switching circuits; control inputs (1 mV – 10 V, 0.1 mA – 100 mA); low and constant contact resistance with the smallest switching power; low cold-welding tendency and low current/voltage switching; recommended operating range > 1 V, 1 mA, 50 mW. After switching higher loads (> 10 V, 100 mA), small loads can no longer be switched.

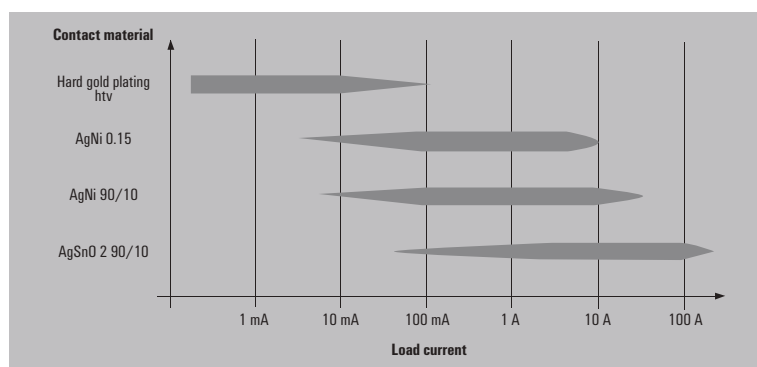
Silver Nickel AgNi90/10 - High resistance to burn-off; minimal tendency towards cold welding; higher contact resistance than AgNi0,15; circuits with medium to high loads; DC and AC circuits (solenoid valves, fans, heaters); not suitable for high capacitive in-rush currents; range of use > 12 V, 10 mA.

Fine-grain silver AgNi0,15 - Relatively low contact resistance; low resistance to corrosive gases; all-purpose use for average loads and low loads; preferably in DC circuits (solenoid valves, fans, heaters); not suitable for high currents; range of use > 12 V, 10 mA.

Silver-tin-oxide AgSnO2 - Minimal tendency to weld; high resistance to burn-off at high switching capacity; low material migration; circuits with high input and output loads; DC and AC circuits (lamp loads, capacitive loads, fluorescent tubes, switching power supplies, etc.). Well suited for resistive, inductive and capacitive DC applications due to low occurrence of material migration, range of use > 12 V, 100 mA..

Silver-cadmium oxide AgCdO – minimal tendency to weld; high resistance to burn-off; especially suitable for switching inductive loads; AC circuits, range of use > 12 V, 100 mA.

Tungsten W – highest melting point; for high switching frequency at minimal duty cycle; as a lead contact in circuits with high in-rush and switch-off loads.

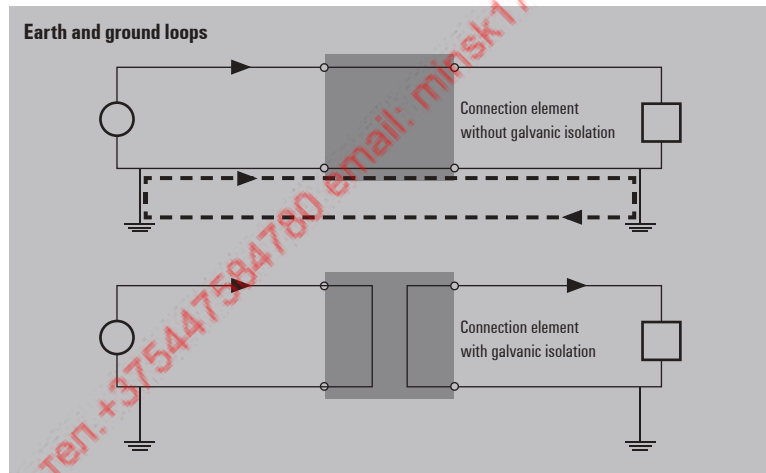


<p>Derating / derating curve</p>	<p>The continuous current is reduced at higher ambient temperatures; this is shown using a derating curve (a load reduction curve). Current flow generates heat, which increases as the current increases. Electrical components have an upper temperature limit which limits their ability to function.</p> <p>The temperature influencing the components is a combination of the ambient temperature and the heat generated by the current. So to ensure that the limit temperature is not exceeded, the current must be reduced when the overall temperature rises. The derating curve depicts the relationship between the prevailing temperature and the resulting maximum amperage with regards to the temperature limit.</p> <div data-bbox="592 786 1358 1122" style="text-align: center;"> <p>The graph shows a downward-sloping curve representing the relationship between current strength and temperature. The area under the curve is labeled 'Operating range', and the area above the curve is labeled 'Over the limit'. The y-axis is 'Current strength' and the x-axis is 'Temperature'.</p> </div>
<p>Dielectric strength, test voltage</p>	<p>Voltage (RMS value for AC voltage, 50 Hz, 1 min) which can be applied between mutually insulated relay components during the voltage test.</p>
<p>Dimensions</p>	<p>Dimensions in millimetres.</p> <div data-bbox="592 1279 1034 1603" style="text-align: center;"> <p>The drawing shows a top view of the relay module with dimensions 'Length' and 'Height' indicated. To the right, a side view shows the 'Width' of the module.</p> </div>
<p>DIN rail</p>	<p>Unless otherwise noted, Weidmüller's products are built and tested for mounting on DIN rail (rails according to TH35-7.5 / EN60175). Other installations (e.g. TH35-15) may function but have not been tested or approved.</p>
<p>Duty cycle, relative duty cycle</p>	<p>Describes the ratio of the excitation duration of a relay (duty cycle) to the entire cycle time in intermittent, continuous or short-time operations. The duty cycle is expressed as a percentage of the total cycle duration.</p>

E

Earth and ground loops

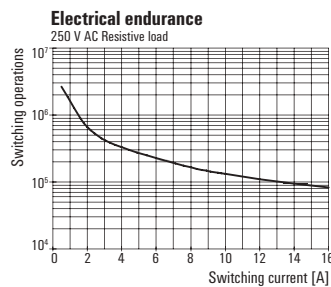
Denotes the connection of two potentials via their earth or ground connection. A potential difference between the earth or ground connection of two devices (for example, a sensor and controller) that are directly wired to one another causes current flow via the earth of the shared housing. These interference currents can lead to different problems, for example in the acquisition of measurement signals or when controlling actuators. When transmitting switching or measurement signals using a device with electrical isolation between the control and load circuits, it is important that a closed circuit via the earth or ground connection can never occur – so that no interference currents are generated.



Electrical lifespan curve

The curve for the electrical lifespan specifies the typical lifespan as the mean cycles to failure (MCTF) and is based on the Weibull distribution. No guaranteed minimum values can be interpreted from this statistical data.

Note: The curve for the electrical lifespan applies only to the specified contact materials (or those in the datasheet). The lifespans for other contact materials cannot be derived from this curve. It is also not possible to derive information about the electrical lifespan by extrapolating the curve.



W

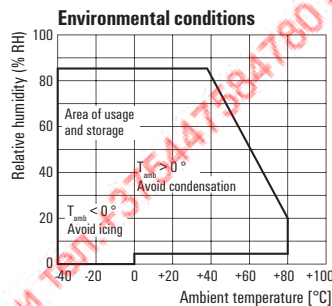
Electrical lifespan, lifespan of contact	<p>Number of switching cycles for a relay with electrical contact load under full operational capacity (according to IEC 61810-1 and IEC 61810-2). Unless indicated otherwise, the contact data and electrical lifespan are valid under the following conditions:</p> <ul style="list-style-type: none"> • On NO contact, • AC mains frequency of 50 Hz, • 50 % relative duty cycle, • Nominal switching frequency, • Contact load, schedule A, • Resistive load, • Rated voltage (coil), • Ambient temperature 23 °C, • Protection degree RTII - flux-proof • Individual assembly • Vertically installed (the connections of a PCB relay point downwards). <p>The electrical lifespan is specified according to the criteria for “useful life”, severity level B according to IEC 61810-2. The data does not cover all usage beyond the specified electrical lifespan. The user is obliged to avoid such situations. Experience shows that the electrical lifespan remains relatively constant up to a 0.8 power factor. When working with loads that have a power factor less than 0.8, we recommend consulting with the user.</p>
Error, relay failure	<p>According to IEC 61810, a relay failure is defined as the occurrence of malfunctions that exceed a certain number:</p> <ul style="list-style-type: none"> • Malfunction On contact closing • Malfunction on contact opening (contact bridging for CO contact, as special type of malfunction during contact opening) or as • Insufficient dielectric strength. <p>Such malfunctions must be considered in the scope of the application – they should not create any risks. Depending on the specific loads and the contact power, a malfunction can cause excessive heat or even a fire. The user is responsible for taking the necessary precautions in accordance with the relevant regulations.</p>
<h2>F</h2>	
Flammability according to UL	<p>Indicates the flammability class according to the specification from UL 94 (Underwriters Laboratories, Inc., USA). Flammability tests according to UL 94: for testing plastic materials and classifying the propagation/extinction characteristics when the material burns. The UL 94 flammability classes which are relevant to relays are V-0, V-1, V-2 and HB.</p>

G

Galvanic isolation	Potential-free isolation between electrical components. Electrical (or galvanic) isolation means that no charge can flow from one circuit to another. There is no conductive electrical connection between the circuits. The circuits can nevertheless exchange electrical power or signals via magnetic fields, infrared radiation or by charge displacements.
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H

Humidity / condensation	Standard conditions: annual average relative humidity > 75 % at an ambient temperature of 21 °C, in 30 days, evenly distributed throughout the year, and 95 % at ambient temperature w of 25 °C. On other days: occasionally 85 % at 23 °C. No icing or condensation is allowed - affects storage and/or operation. When storing or operating under other conditions, you must take steps to avoid temperature changes which could cause icing or condensation. Operating and storage should be within the limits specified in the graphic.
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**I**

Impulse withstand voltage	The highest withstand voltage of a specified shape and polarity that does not lead to an insulation breakthrough or flash-over, under the specific conditions.
Inductive loads	Refer to usage categories.
Inrush current	Specified as the switching current by resistive loads that can turn on a relay under defined conditions. The data refers to the NO contact, nominal voltage, and a current value for a duration of max. 20 ms for at least 100 switching cycles, or 4 seconds with a relative duty cycle of 10 %, unless otherwise indicated.

W

Insulating material group	<p>According to their CTI (comparative tracking index) values, the insulating materials are categorised in one of the following four groups:</p> <p>Group I 600 CTI Group II 400 CTI < 600 Group IIIa 175 CTI < 400 Group IIIb 100 CTI < 175</p> <p>The figures for the comparative tracking index, according to IEC 60112 (DIN IEC 60112 / DIN VDE 0303-1) are determined using special samples prepared for this purpose with test solution A.</p>
Insulation according to EN 50178	<p>Specifications for insulation coordination with:</p> <ul style="list-style-type: none"> • Type of insulation • Nominal voltage of the supply system • Pollution severity level • Impulse withstand voltage • Surge voltage category

M

Max. switching current	The max. switching current indicates the maximum level of current that can be switched.
Max. switching frequency at rated load	The number of switching operations that occur in a specific unit of time. The maximum switching frequency for average loads may be higher than the value specified for the nominal load when the switching characteristics of the load (such as arcing) do not cause the contact temperature to increase. The maximum switching frequency for no-load switching can also be used for loads where no arcing will take place (purely resistive loads cause no significant arcs up to 12 V or 50 mA at 12 – 250 V, because the arc breaks off fairly quickly through the contact opening (insulation)).
Max. switching power	The switching capacity is calculated as the product of the switching voltage and the switching power (in VA for AC; in W for DC).
Mechanical service life	Number of switching cycles for de-energised relay contacts, where a relay must remain functional within specific conditions.
Micro-switch-off	<p>Reasonable contact opening in at least one contact that ensures functional safety.</p> <p>Note: The contact opening has a requirement for the dielectric strength but not for the dimensions.</p>
Minimum switching capacity	Calculated product of switching current and switching voltage – a measure of reliable switching. Low contact resistance values are realised only above a certain load. Greatly increased resistances may occur at lower switching loads which can prevent the load circuit from being safely switched. The minimum contact loads for different contact materials should also be taken into account.
Mono-stable relay, switching behaviour	A relay is referred to as mono-stable when its contacts return to the idle state automatically after the energising parameter (the input voltage) is switched off.
Mono-stable, non-polarized relay, neutral relay	The switch position change in a neutral, mono-stable relay does not depend on the polarity of its excitation.

Mounting distance	Distance between two adjacent components when using parallel, uni-directional positioning; or the distance to other electrical components. Because of the insulation requirements, you may need to increase the minimum gap between the components or select a different positioning. These values refer to components in "single-file arrangement", unless otherwise indicated. Also relevant for this definition: <ul style="list-style-type: none"> • Density of assembly: assembled with minimum mounting clearances; this minimum distance is determined by the insulation requirements at 230 V AC and/or mechanical requirements for the installation (e.g. use of sockets), • Individual installation: components are mounted with gaps so that there is NO thermal influences from adjacent components.
Mounting position	Mechanical and electronic relays can usually be installed in any position when there are no qualifying limitations. To ensure the proper current flow and heat dissipation, the connections must be properly contacted and the cross-sections must be adequate. Several factors must be taken into consideration when positioning: including the insulation requirements, heat dissipation and the possible mutual magnetic influence.

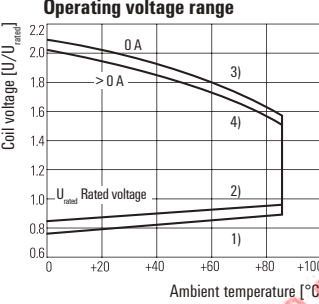
N

Nominal current (contact)	Current that a relay contact can switch off or on under specific conditions, or the current that the relay accessories can conduct. The nominal current specification covers the following data, unless otherwise specified: <ul style="list-style-type: none"> • Contact current, switching current • Continuous current limit The conditions for the relay are specified under the contact lifespan; For accessories, the nominal current is specified for a relative duty cycle of 50 %, at the nominal switching frequency, and for an ambient temperature of 23 °C.
Nominal switching voltage (contact)	Voltage between the switching contacts - before the contact closes or after it opens.
Nominal torque	The specified value for the torque of the screws (screw connection) must not be exceeded.
Number of contacts	Number of working contacts in a relay (normally-open, normally-closed or change-over)

O

Operating temperature	Permissible ambient temperature – relative to a specific relative humidity – at which a product should be operated at nominal load.
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Operational voltage range	<p>Allowable input voltage range – depending on the ambient temperature. The top part of the range is specified by the maximum voltage; the lower part of the range is specified by the response/minimum voltage.</p> <p>Curve 1: response time/minimum voltage U_0 (without pre-excitation) Curve 2: response time/minimum voltage U_1 (after pre-excitation) Curve 3: maximum voltage U_2, contact current = 0 A Curve 4: maximum voltage at contact current I_{nom}</p> 
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P

Packing unit	Indicates the smallest amount (a pack, for example) or the quantity per carton.
Plug-in cycles	Sockets and accessories are designed for 10 insertion cycles without electrical load – unless otherwise specified.
Pollution severity level	<p>Pollution (contamination) includes any foreign material – whether it is solid, liquid or gaseous (ionised gas) – which is capable of influencing the surface resistance of the insulating material. The standard defines four degrees of pollution. Their numbering and classification is based on the quantity of the contaminant or the frequency with which the contaminant reduces the dielectric strength and/or surface resistance.</p> <p>Pollution degree 1:</p> <ul style="list-style-type: none"> there is no contamination or only dry occurrences of non-conductive pollution. The pollution has no influence. <p>Pollution degree 2:</p> <ul style="list-style-type: none"> there is only non-conductive pollution. Temporary occurrences of conductivity caused by condensation may also occur. <p>Pollution degree 3:</p> <ul style="list-style-type: none"> conductive pollution or dry, non-conductive pollution that can become conductive due to condensation is likely to occur. <p>Pollution degree 4:</p> <ul style="list-style-type: none"> the contamination leads to continual conductivity which can be caused by contaminants such as conductive dust, rain or snow. <p>Note: Pollution degree 3 is typical for industrial environments and similar settings; pollution degree 2 is typical for households or similar.</p>

Positively-driven contacts	Arrangement of contacts in accordance with EN 50205, with at least one NO and one NC contact; mechanically constructed so that the NO and NC contacts of the entire contact system can never (even in the event of a malfunction) be closed at the same time. Such relays are used in safety engineering controls in order to prevent injury and property damage.
Power rating	The nominal value of the power that is converted when the nominal control voltage is applied.
Protection degree - (IEC 60529), IP	<p>The degree of protection afforded by an enclosure is indicated by the IP Code (IP = International Protection). This specification is equally valid for industrial relays and accessories.</p> <p>For the purposes of "component" relays (such as PCB relays), refer to the RT protection degree.</p> <p>A two-digit number is used to indicate the protection provided against touch contact and foreign bodies (the first number) and against humidity (the second number).</p> <p>Protection levels for touch contact and foreign bodies (the first digit): the first digit indicates the degree of protection inside the housing against ingress of solid foreign objects and against any human access to hazardous parts.</p> <p>0: no protection 1: protection for large body parts with a diameter > 50 mm 2: finger protection (diameter 12 mm) 3: tools and wires (diameter > 2.5 mm) 4: tools and wires (diameter > 1 mm) 5: full protection against touch contact 6: full protection against touch contact</p> <p>Degree of water protection (the second digit)</p> <p>The second digit indicates the degree of protection provided against the ingress of water into the housing:</p> <p>0: no protection 1: protection against vertically falling drops of water 2: protection against water droplets falling diagonally (up to 15°) 3: protection against water spray that falls at an angle up to 60° from vertical 4: protection against splashed water from all sides 5: protection against water jets 6: protection against powerful jets of water (flooding) 7: protection against sporadic submersion 8: protection against constant submersion</p>
Pull-in / drop-out current, AC/DC coil	Value of the coil current at which a relay responds (spark-over) or drops out.

R

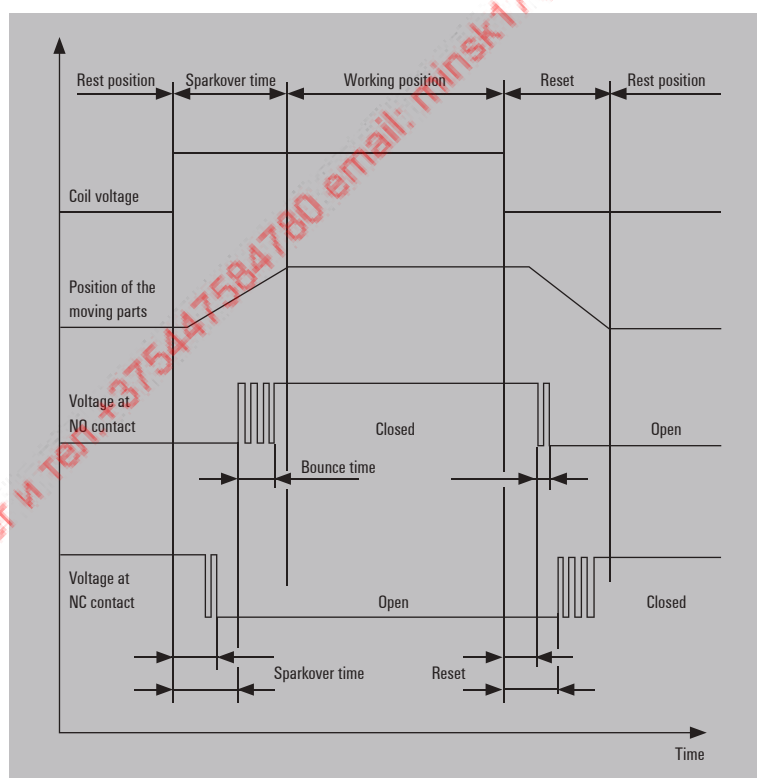
Rated control voltage	The nominal value of the sparkover voltage for the relay.
Rated voltage (Isolation)	Voltage level at which the insulation specifications are measured – this is the basis for sizing the creepage distance.

Relay times (time response)

Because of the self-inductance of the coil and the inertia of the moving parts, the steps involved in operating a relay do not occur instantaneously. The following chart illustrates several time-function terms for the main contact variants of non-delayed switching relays.

These specified times are valid when the rated voltage is used for excitation, without other components in series or in parallel to the coil, and at the reference temperature.

- Sparkover time
- Drop-out/reset time
- Bounce time
- Min. excitation period

**Relays and sockets**

The relays in this catalogue have been designed, specified and tested in accordance with the relay standard IEC 61810-1 "Electro-mechanical elementary relays - part 1: General considerations and safety-related requirements". Where the appropriate approvals have been specified in the data sheet, the relays and sockets have been tested according to IEC 61810 or EN 61984 and UL 508.

Reliability

Electro-mechanical components such as relays are subject to wear (both mechanical and electrical). A typical "bathtub curve" depicts the reliability. This means that there may be isolated statistical exceptions which are below the typical levels of reliability.

Reset

Process in which a mono-stable relay resets from the working position to the rest position.

Reset time	Time interval (average) between when a mono-stable relay is in its working state with the coil voltage switched off and the time at which the final output circuit is closed or opened (not including the bounce time). These specified times are valid when the rated voltage is used for excitation, without other components in series or in parallel to the coil, and at the reference temperature.
Reset voltage	Value of the input voltage at which a mono-stable relay reliably returns to the rest position while at the reference temperature.
Response	The process in which the relay transitions from the normally-closed (break) contact position into the normally-open (make) contact position.
Response voltage / drop-out voltage AC/DC coil	Value of the coil voltage at which a relay responds (spark-over) or drops out.
Rest position	The switched position of a mono-stable relay in its unexcited state.
RoHS Directive 2002/95/EC	RoHS stands for "Restriction of (the use of certain) Hazardous Substances". According to the EU Directive 2002/95/EC from 01.07.2006, all EU member nations must forbid the use of hazardous substances which damage human health and the environment (including mercury (Hg), cadmium (Cd), lead (Pb), hexavalent chrome (Cr6), polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE)) in new electrical and electronic devices. The term "compliant" means that the entire product group meets the requirements of the RoHS Directive. The maximum weight percentage in homogeneous materials is below the limits specified in the directive: 0.1 % for lead, hexavalent chrome, mercury, PBB and PBDE; and below 0.01 % for cadmium, or qualifies for an exemption in accordance with the annex to the RoHS Directive .

S

Self-heating	The heating up of an operational component based on the power loss from the relay coil and the switching contacts.
Series-circuit relay contacts	When two or more NO contacts in a relay are connected in series, the contact opening is increased while switching off. Arcs which occur from DC loads are cleared more quickly which results in reduced burn-off on the contact. This increases the electrical lifespan and the breaking (switch-off) capacity. <div style="text-align: center;"> <p>DC load breaking capacity</p> </div>

W

SIL	Safety Integrity Level. The components must meet the requirements of IEC 61508 in order to reduce risk. This standard provides general requirements for avoiding and minimising device and equipment outages. It stipulates organisation and technical requirements concerning device design and operation. Four safety levels are defined (from SIL1 for minimal risk to SIL4 for very high risk) for classifying facilities and risk-reduction measures. Measures taken to reduce risk must be more reliable when the classified risk level is higher.
Standardised labelling of connections	A1, A2: coil 13, 14: NO contact (contact closes when applying a voltage to the coil) 11, 12: NC contact 11, 12, 14: CO contact (11 is the common contact, i.e. the root)
Status indicator	The status LED display on the input control circuit can differ from the state of the contact circuit in the following cases: <ul style="list-style-type: none"> • when there are welded-together or broken switching elements, • when there is interference or residual voltages on the signal lines. A reduction in light intensity may result when the ambient temperatures are greater than 50 °C.
Storage temperature	The permitted ambient temperature, related to a specific relative humidity level, for which the product should be stored while in a current-free state.
Surge voltage category	<p>The overvoltage category of a circuit or an electrical system is numbered conventionally (from I to IV) and is based on limiting the assumed surge voltage values that can occur in a circuit (or electrical system with different mains voltages). The assignment to a particular overvoltage category is dependent on the measures which are used to influence (reduce) the surge voltages.</p> <p>Overvoltage category I</p> <ul style="list-style-type: none"> • Devices that are intended to be connected to the permanent electrical building installation. <p>The measures for limiting transient surge voltages to the proper level are taken outside of the device. The protective mechanisms can either be in the permanent installation or between the permanent installation and the device.</p> <p>Overvoltage category II</p> <ul style="list-style-type: none"> • Devices that are intended to be connected to the permanent electrical building installation (such as household appliances or portable tools). <p>Overvoltage category III</p> <ul style="list-style-type: none"> • Devices that are a part of the permanent installation and other devices where a higher degree of availability is required. This includes the distributor panels, power switches, distribution systems (including cable, busbars, distributor boxes, switches and outlets) that are part of the permanent installation, devices intended for industrial use, and devices that are continually connected to the permanent installation (such as stationary motors). <p>Overvoltage category IV</p> <ul style="list-style-type: none"> • Devices that are intended to be used on or near the power feed in a building's electrical installation – ranging from the main distribution to the mains power system. This includes electrical meters, surge protection switches and ripple control equipment.

Switch-off delay	Usual time interval from switching off the coil voltage of a switched relay until the first opening or closing of the last output circuit (not including the bounce time).
Switch-on delay	Usual time interval from switching on the coil voltage of an idle relay until the first opening or closing of the last output circuit (not including the bounce time). Coil voltage: pulse or square wave excitation, with rated voltage at the reference temperature of 20 °C.
Switching capacity	The calculated product of the switching current and switching voltage (in W for DC, in VA for AC).
Switching current	Current strength required to switch a relay on or off.
Switching cycle	A single occurrence of the sparkover and subsequent reset.
Switching voltage	The voltage between the switch contacts (contact elements) that is applied prior to the closing or after the opening of the contact (DC for DC voltage; AC for AC voltage).
Switching voltage, max.	The maximum allowable voltage between the contact elements prior to closing and after opening a relay contact.

T

Test button, manual operation	For operating the relay manually: the test button is used only for test purposes during the initial commissioning and testing of equipment. The test button is not appropriate for normal on/off switching and has not been designed for continuous electrical load while in the mechanical ON position. The button should also not be used as a switch. Before pressing the test button, make sure there is no danger posed by loads or other connected devices. Only trained personnel should operate the test button. This prevents the facility's safety mechanisms from being circumvented and the insulation requirements from being compromised.
Transients	Transients are short-term current or voltage spikes caused by interferences in the mains supply grid or by electromagnetic radiation. On the control side of the optocoupler these can trigger unintended switching operations or, in extreme cases, cause the destruction of the component. In an AC-driven load circuit, transients can lead to the maximum permissible forward voltage being exceeded, which in turn can activate the thyristor or Triac. As these operate at quite high switching speeds, even very short pulses can suffice to falsely trigger a switching operation.
Type code	The ordering scheme gives you the choice of many variations, but not all possible variations in the current product line are established as standard types (building codes, ordering designations). Special versions are available on request to meet customer specifications.

W

Type of contact	<p>DIN 41020 describes various switching functions of the relay contacts and the specific contact configurations, constructions and descriptions based on these functions.</p> <ul style="list-style-type: none"> • NO (normally open) contact: contact which is closed in the relay's operating position and open in its rest position. • NC (normally closed) contact: contact which is closed in the relay's rest position and open in its working position. • CO (change-over) contact: a CO consists of an NO and an NC contact with a common terminal (root) connection. When changing the switch position, first the previously closed contact opens and then the previously opened contact closes. <p>Note: A temporary electrical connection may be established between the NC and NO contacts due to the switch-off arc.</p>
Type of insulation	<p>Quality of the insulation system, depending on the design and application conditions:</p> <ul style="list-style-type: none"> • Functional insulation: insulation between live components – necessary so the relay functions properly. • Basic insulation: insulation of live parts to provide basic protection against electrical shock. • Doubled insulation: consisting of a base insulation and additional insulation. • Reinforced insulation: a single "enhanced" insulation of active components, which ensures the same protection against electric shock as doubled insulation. The doubled insulation is composed of a base insulation and an additional insulation; the extra insulation protects against electric shock if the basic insulation fails.

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U

Usage category according to EN 60947 (mechanical relays)	AC1: non-inductive or slightly inductive load, such as heating elements AC14: small electro-magnetic loads (< 72 VA), such as mini-contactors AC15: small electro-magnetic loads (< 72 VA), such as power contactors DC1: non-inductive or slightly inductive load, such as heating elements DC13: electro-magnetic loads, such as solenoid valves
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W

Wash resistant	Wash-resistant relays can withstand a washing process. During the wash process, none of the cleaning agent should be able to penetrate inside the relay.
Withstand test voltage	The voltage applied to a device under specific test conditions which causes no breakthrough or flash-over of the test piece.

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Definition / mode of operation

Opto modules – mode of operation

Opto modules are electronic components for switching load circuits by means of a control circuit. On the one hand this allows applications with different performance ratings to be operated by relatively low switching currents. And on the other *electrical isolation**) between control and load circuits is provided to assure protection of components should a malfunction occur.

In contrast to electromechanical relay modules opto modules do not have any mechanical parts that are prone to wear. To enable the switching operation a light signal is triggered via an LED in the control circuit that causes a light-sensitive semiconductor receiver to complete a connected load circuit. Transmitter (LED) and receiver (for example a phototransistor) are embedded in a light conducting plastic material and encased in a light-proof casing that protects against outside influences.

Two design types are differentiated:

Face-to-face design with LED and transistor mounted across from each other with direct light contact

Coplanar design with LED and transistor on the same level. In this case the beam of light is transferred by reflection according to the principle of fibre-optics.

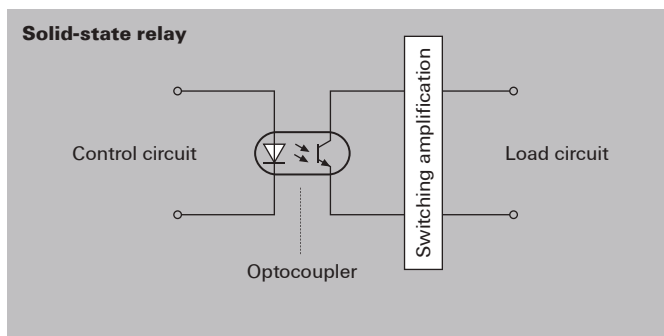
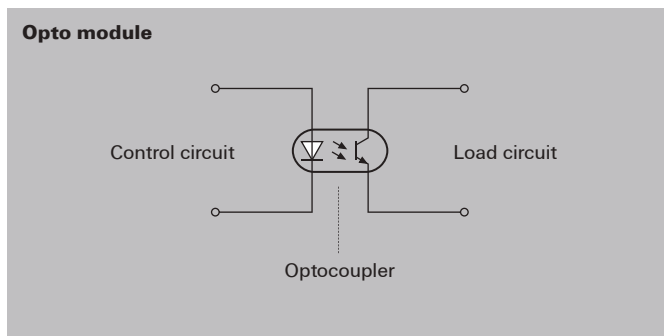
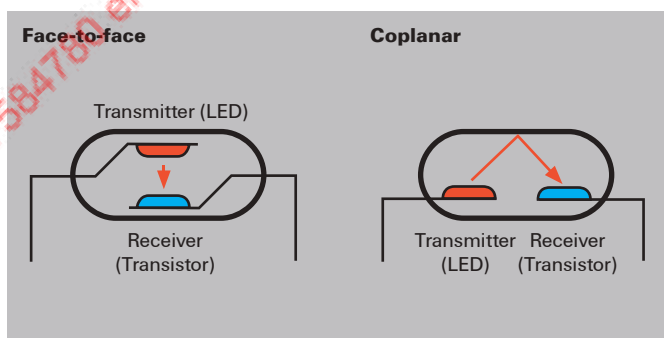
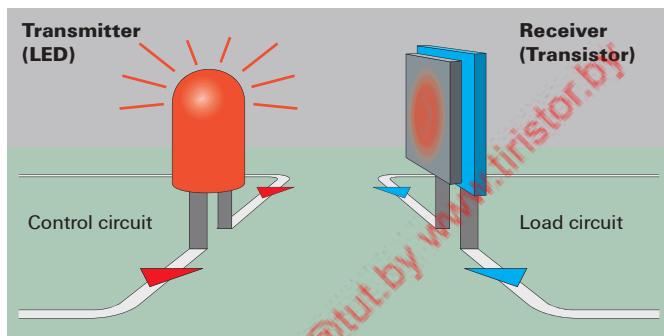
Opto module

The voltage, which can be applied to the opto output itself, is restricted by the sensitivity of the semiconductor receiver (phototransistor). In applications in which only low currents or voltages are required in the load circuit it is possible to use the component without an additional auxiliary circuit in an opto module.

Solid-State Relay

In order to switch higher currents it is necessary to make adaptations to accommodate the different performance levels of the phototransistor and the load circuit (switching amplification).

Modules other than optos equipped with a switching amplifier are called **solid-state relays** (SSR).



* Refer to page W.36 in the Glossary for a detailed explanation of this term.

Basic functions

Opto modules and solid-state relays are generally used in the following fields of applications:

Potential isolation

Many applications require that the control circuit is electrically isolated from the load circuit. This primarily protects the control level from interference from the field, such as:

- Interference currents e.g. from *earth and ground loops**)
- Interference pulses e.g. from inductive effects of *transients**)

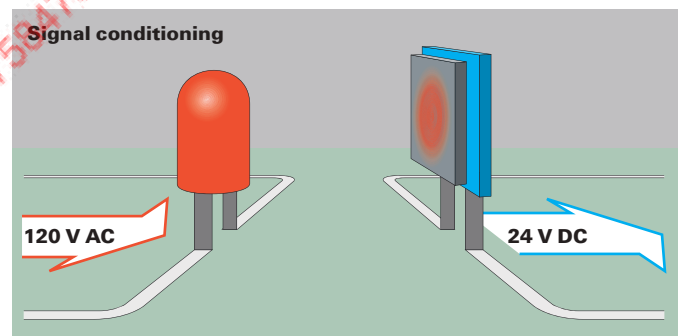
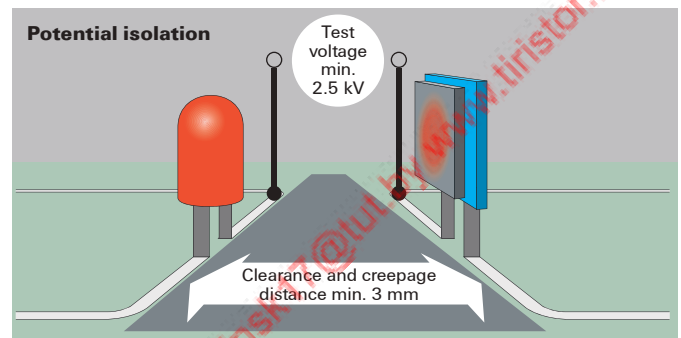
The separation of the control and load circuits in the opto module provides the required isolation. However, this must withstand an isolation test of at least 2.5 kV in all opto modules and solid-state relays. To guarantee isolation it is necessary that a minimum of 3 mm clearance and *creepage distance**) be maintained in all components.

Signal conditioning

The separation of the load and control circuits, in conjunction with the variety of options this offers to configure both circuits separately, means that opto modules are often used for signal conditioning purposes. This allows the different electrical potentials of signals from the control and load circuits (for example sensors and control) to be equalised.

Switching amplification

Applications with current and voltage values that exceed the capacity of the phototransistor require an auxiliary circuit on the output side of the opto module for switching amplification purposes. During the switching operation the opto module LED activates a base current in the phototransistor. This activates a second semiconductor (transistor, thyristor) selected to meet application requirements which then becomes conductive for the load current.



* Refer to page W.36 in the Glossary for a detailed explanation of this term.

Control circuit

The input circuits (control circuit)

Most industrial applications cannot be connected directly to an opto module, generally requiring voltage regulation by means of series-connected resistances or capacitors. To obtain exact-as-possible switching points a *Schmitt Trigger**) can be used to assign the control signals an unambiguous status (0 - 1) when moving from high to low or low to high, which is then passed on to the opto module.

Depending on the design, all Weidmüller opto modules and solid-state relays are equipped with suitable protective devices (varistors, diodes) and filters to protect against interference pulses from the control circuit.

DC input:

An additional reverse-polarity protection diode guarantees protection against the opto module being destroyed if the control voltage is incorrectly wired. The switching status of the control circuit is signalled by a status indicator.

AC/DC input:

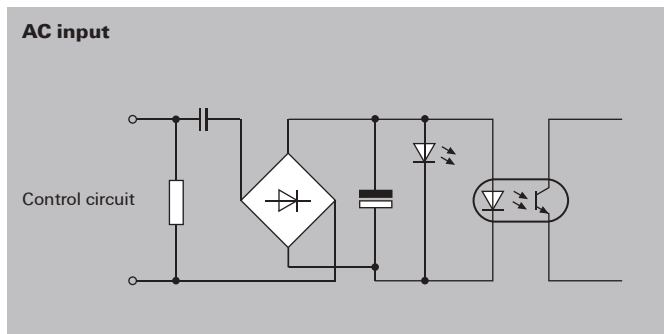
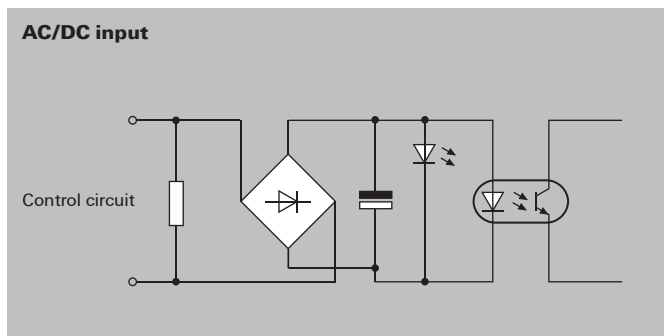
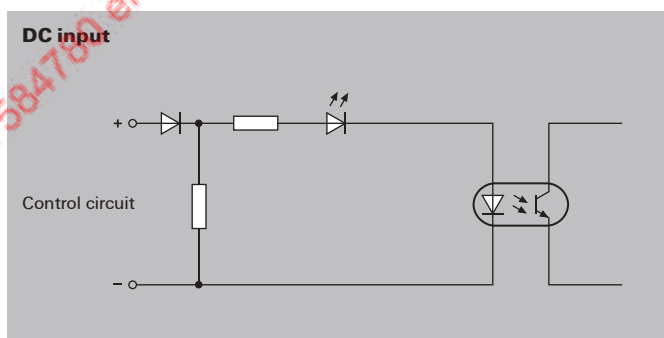
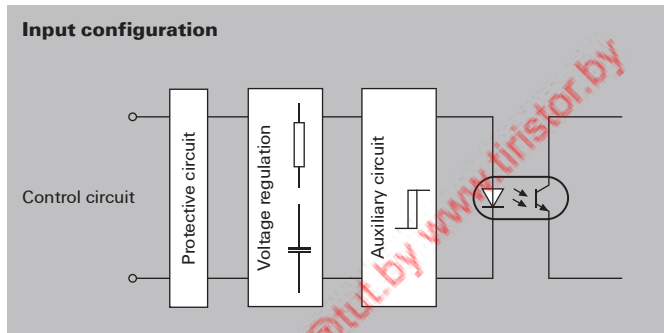
A rectifier with smoothing capacitor is connected in series for AC control voltages. Reverse polarity protection for DC current is not necessary. The following construction corresponds to a DC circuit.

Due to the smoothing capacitor the switching frequency of AC control signals is fundamentally less than half the mains frequency. A higher switching frequency would result in the control signal being constantly switched through in rhythm with the mains frequency.

The advantage of being able to choose between an AC or a DC current input contrasts with the disadvantage that the smoothing capacitor also restricts the switching frequency of the DC control signal.

AC input:

The circuit diagram corresponds in principle with an AC/DC circuit. Instead of series resistors it is possible to use capacitors to regulate the voltage in a purely AC operation. In contrast to resistors there is no power loss with capacitors and as a result no heat that needs to be dissipated.



* Refer to page W.36 in the Glossary for a detailed explanation of this term.

Load circuit

The output circuit (load circuit)

As a rule, an operating voltage range is stated for the rated switching voltage of opto modules and solid-state relays (for example 5 ... 48 V DC); it is not permitted to exceed or fall below this value.

The same applies to continuous current. Exceeding this value too often can result in premature wear-out and destruction of the opto modules semiconductor.

As a direct correlation exists between the current and ambient temperature a *derating curve**) is provided for all opto modules and solid-state relays.

Overvoltages are shunted by protective devices such as diodes or varistors.

To prevent damage caused by current spikes (for example starting or off pulses) some modules are equipped with a *power boost**) which is capable of carrying higher levels of current than the maximum stated for a short period of time.

It is possible to connect AC or DC loads subject to the output circuit having corresponding amplifier semiconductors.

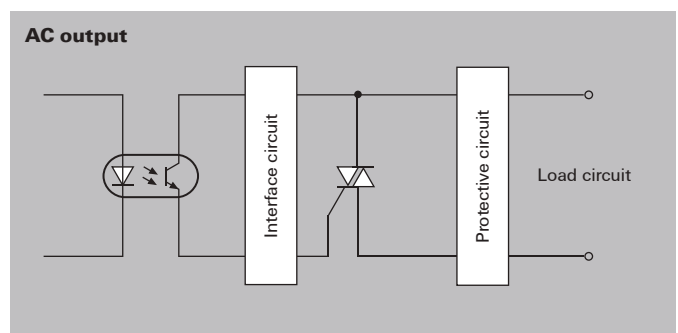
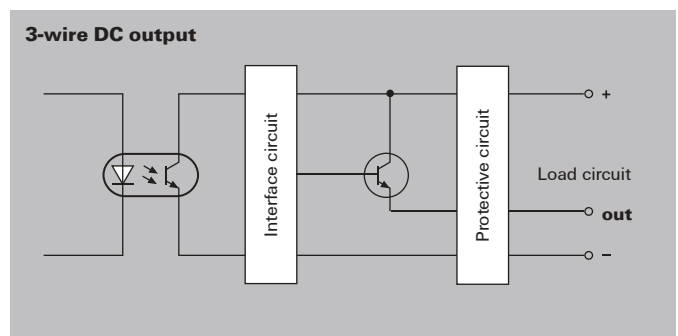
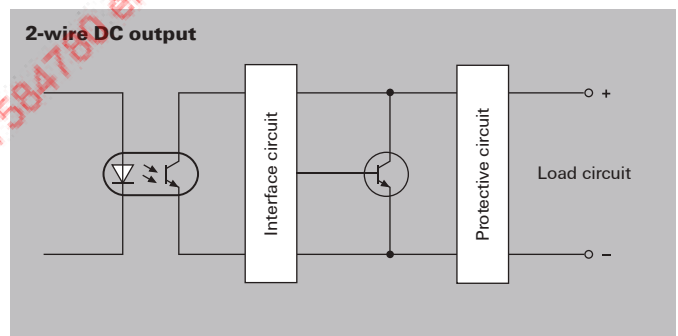
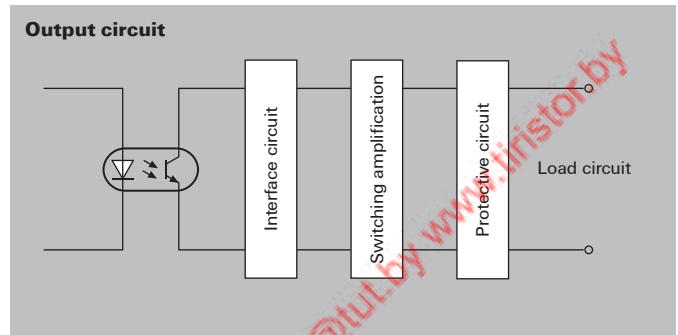
DC output:

With a 2-pole DC output the connection terminals are to be considered in the same manner as with a conventional switch. All that is required is that care is taken to observe the predetermined polarity.

With a 3-pole DC connection an auxiliary voltage assists the output circuit to control the amplifying transistor more precisely. Several applications also require this auxiliary voltage for short-circuit protection in the interface or protective circuitry.

AC output:

To activate AC switching and control devices a semiconductor is connected on the load side of the opto module component to switch the AC voltage (TRIAC or thyristor).



* Refer to page W.36 in the Glossary for a detailed explanation of this term.

Switching amplification

The phototransistor of the opto module has a low current and voltage rating. As a consequence, an additional semiconductor element is accessed for larger output loads that is capable of switching the corresponding rated switching voltages and rated switching currents.

Bipolar Transistor (DC)

Used for low currents (0.5 A).

The bipolar transistor has short response times, which makes high switching frequencies possible as a result.

MOSFET (DC)

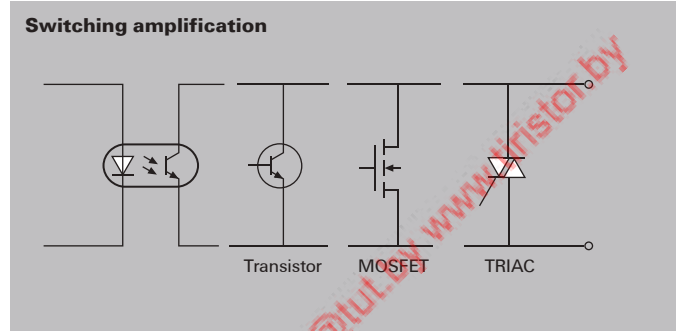
Used for high load currents (up to 10 A).

The low contact resistance of the MOSFET create only very small leakage currents ($< 10 \mu\text{A}$) with low power loss.

Triac (AC)

A Triac combines the functional principle of antiparallel connected thyristors in a single component.

The mode of function of a thyristor is comparable with that of a one-way diode. Therefore, an opposing parallel circuit configuration consisting of two thyristors is used for AC currents.



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Switching diverse loads

The different types of loads resulting from the possible applications (resistive, inductive, capacitive loads) represent a particular challenge for the load circuit arrangements of opto modules and solid-state relays. With reference to the planned application, one should always be aware of what effects the loads will have on the modules and how the corresponding protective devices have to be designed.

Generally speaking, it must be ensured that the power loss at the amplifier semiconductor does not exceed the permitted limit for any length of time. This would lead to overheating and finally to the destruction of the component.

Switching resistive loads

Due to the fact that in resistive loads the amperage in the load circuit and the voltage across the amplifier semiconductor are inversely proportional to one another these do not generally pose a problem. It is sufficient to adhere to the maximum current and voltage ratings of the modules.

Switching glow lamps represents a special case. It is possible that when being switched on that overcurrents 10 to 20 times the operating current can occur due to the low cold resistance.

Therefore, the components must be designed to cope with these possible overloads situations which correspond to the effect of capacitive loads.

Switching capacitive loads

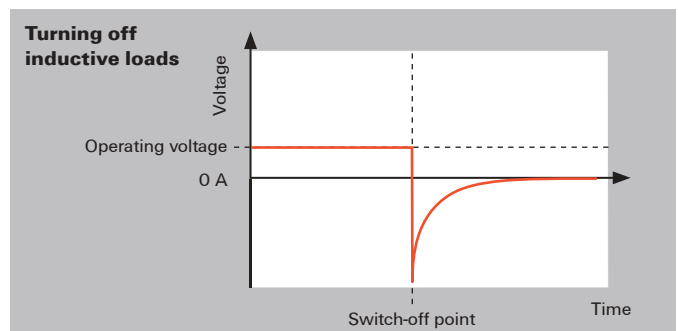
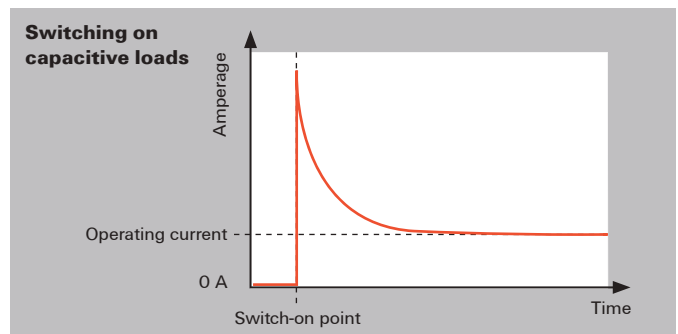
Capacitive loads occur if there is a capacitor in the load circuit. The effect is similar to a short-circuit at the point of activation and results in a high inrush current.

If this current is not limited it can lead to the destruction of the amplifier semiconductor.

Switching inductive loads

Problems can arise with inductive loads when they are being switched off, in particular when coils are used in the load circuit. The flow of current in the coil builds up a magnetic field that suddenly collapses and creates a high induction voltage.

This voltage spike has to be short-circuited via a diode connected in parallel (free-wheeling diode). However, the time required leads to delayed release.



Protective measures

The construction of the opto module enables fast and sensitive switching, however, the component is also more prone to interference. For this reason, all Weidmüller opto modules and solid-state relays are equipped with a variety of measures to protect against overloading and interference pulses.

Free-wheeling diodes (DC)

Free-wheeling diodes are used primarily to protect against overvoltages, which occur through self-induction when switching off inductive DC loads (electric motors, relay coils). Voltage spikes are limited to the equivalent value of the diode forward voltage and excess voltage is discharged via the diode. However, this leads to a delay in the voltage drop and as such also delays the switching operation.

Zener diode / suppressor diode (DC)

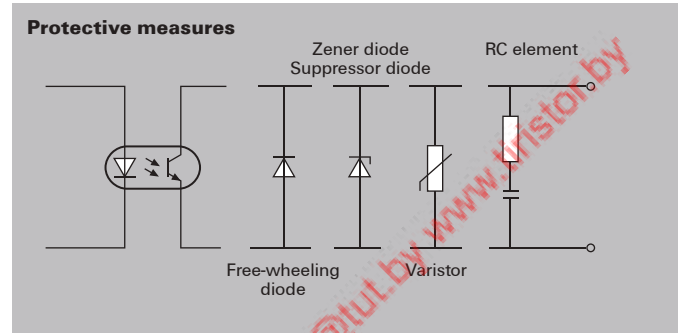
These function as normal diodes in the forward conducting direction. In the blocking direction they become low resistant at a certain voltage (breakdown voltage). High levels of overvoltages can lead to the destruction of the zener diode / suppressor diode.

Varistor (AC/DC)

The functional principle of the varistor is also based on a breakdown voltage, but with faster reaction times. This allows higher levels of energy to be shunted, however, these lead to the component aging. This in turn reduces the breakdown voltage over time and increases the leakage current.

RC-element (AC)

The RC element compensates voltage spikes by means of a capacitor. Due to the charging and discharging characteristics interference pulses are filtered out when the voltage is rising and not first when overload is reached. For this reason, RC elements are used to protect against interference pulses and exclude faulty switching operations.



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Glossary: Solid-state relays

A

AC	Refers both to alternating values (such as voltage or current) as well as to those devices and variables which reference these devices. Specifications are valid for 50 Hz, unless otherwise indicated.
Approvals and testing marks	<p>Testing approvals are independent confirmation from governmental or private registration services and testing facilities. They certify that the product complies with the relevant regulations and maintain the specified product characteristics. Note: The ordering scheme gives you the choice of many variations, but not all variations are established as standard types (order numbers). Therefore, they may not be included in the list of approved relays. Technical specifications and list of approved types are available on request.</p> <p>CSA Canadian Standards Association, Canada GL Germanischer Lloyd, Germany TÜV Technical Monitoring Association, Germany UL Underwriters Laboratories, Inc., USA; UR Component Recognition Mark for the United States cUR UL Component Recognition Mark for Canada cURus UL Component Recognition Mark for the United States and Canada cULus UL Component Listing Mark for the United States and Canada VDE VDE testing location, Germany (advisory reports with production monitoring)</p>

C

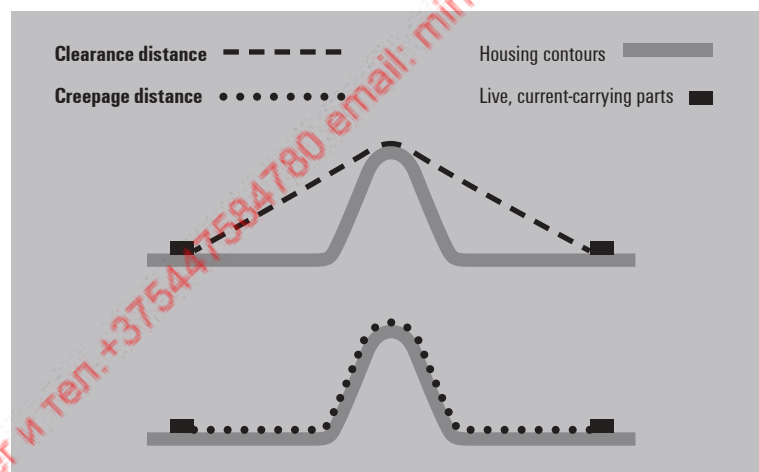
CE	<p>Abbreviation for Communauté Européenne (the European Community). The CE marking is a way for the manufacturer to confirm that their product complies with the relevant EC directives and the "essential requirements" contained therein. The EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC are currently binding.</p>
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Clearance and creepage distances

Clearance and creepage distances are critical factors which influence the insulation capability of electrical components. The creepage distance denotes the minimum clearance that two live parts along a surface must have in order to prohibit a flow of current across the insulating material at the specified operating voltage.

In addition to the operating voltage, the choice of insulating material (material group) and the protective measures to counteract pollution (pollution severity) affect the creepage distance. The clearance distance denotes the minimum direct clearance (through the air) that two live parts must have to one another in order to prohibit a charge passing through the air (an arc). The expected surge voltage (rated impulse voltage) forms the basis for calculating the distances. The surge protection category and pollution severity are further factors that influence dimensional design considerations.

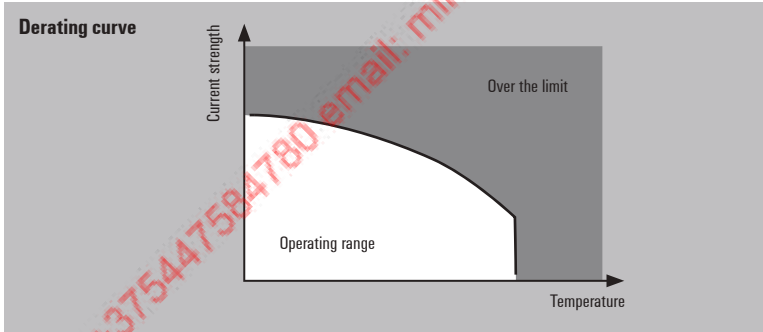
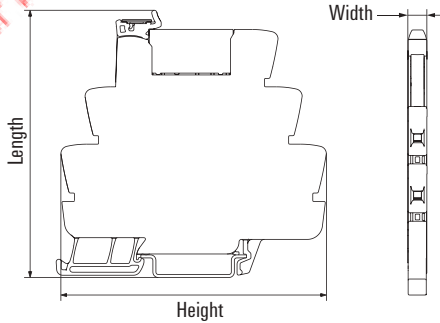
**Continuous current**

The current can be continuously conducted without exceeding the overheating values under defined conditions.

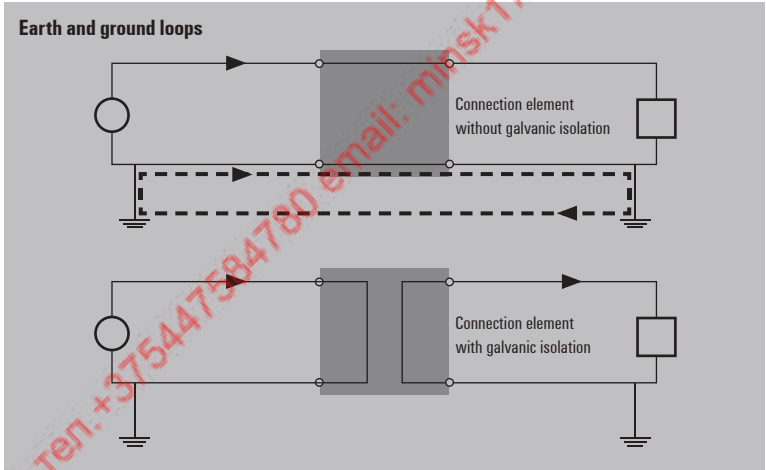
Cut-in (switch-on) voltage

The voltage level at which an opto module or solid-state relay is conductive.

D

DC	Refers to the electrical variables such as voltage or current (DC, DC voltage) that are not dependent on time.
Derating / derating curve	<p>The continuous current is reduced at higher ambient temperatures; this is shown using a derating curve (a load reduction curve). Current flow generates heat, which increases as the current increases. Electrical components have an upper temperature limit which limits their ability to function. The temperature influencing the components is a combination of the ambient temperature and the heat generated by the current. So to ensure that the limit temperature is not exceeded, the current must be reduced when the overall temperature rises. The derating curve depicts this relationship between the prevailing temperature and the resulting maximum amperage with regard to the limit temperature.</p> 
Dimensions	<p>Dimensions in millimetres.</p> 
DIN rail	Unless otherwise noted, Weidmüller's products are built and tested for mounting on DIN rail (rails according to TH35-7.5 / EN60175). Other installations (e.g. TH35-15) may function but have not been tested or approved.
Dropout voltage	The voltage level at which an opto module or solid-state relay blocks itself.

W

<p>E</p> <p>Earth and ground loops</p>	<p>Denote the connection of two potentials via their earth or ground connection. A potential difference between the earth or ground connection of two devices (for example, a sensor and controller) that are directly wired to one another causes current flow via the earth of the shared housing. These interference currents can lead to different problems, for example in the acquisition of measurement signals or when controlling actuators. When transmitting switching signals or measurement signals using a device with electrical isolation between the control and load circuits, it is important that a closed circuit via the earth or ground connection can never occur – so that no interference currents are generated.</p> 
<p>F</p> <p>Flammability according to UL</p>	<p>Indicates the flammability class according to the specification from UL 94 (Underwriters Laboratories, Inc., USA). Flammability tests according to UL 94: for testing plastic materials and classifying the propagation/extinction characteristics when the material burns. The UL 94 flammability classes which are relevant to the relay are V-0, V-1, V-2 and HB.</p>
<p>G</p> <p>Galvanic isolation</p>	<p>Potential-free isolation between electrical components. Electrical (or galvanic) isolation means that no charge can flow from one circuit to another. There is no conductive electrical connection between the circuits. The circuits can nevertheless exchange electrical power or signals via magnetic fields, infrared radiation or by charge displacements.</p>

H

<p>Humidity / condensation</p>	<p>Standard conditions: annual average relative humidity > 75 % at an ambient temperature of 21 °C, in 30 days, evenly distributed throughout the year, and 95 % at ambient temperature w of 25 °C. On other days: occasionally 85 % at 23 °C. No icing or condensation is allowed - affects storage and/or operation.</p> <p>When storing or operating under other conditions, you must takes steps to avoid temperature changes which could cause icing or condensation. Operating and storage should be within the limits specified in the graphic.</p> <div data-bbox="592 779 922 1086" data-label="Figure"> <p>The graph titled 'Environmental conditions' plots Relative humidity (% RH) on the y-axis (0 to 100) against Ambient temperature [°C] on the x-axis (-40 to +100). A horizontal line is drawn at 85% RH from -40°C to +40°C. A diagonal line descends from +40°C at 85% RH to +80°C at 20% RH. The region above the horizontal line is labeled 'Area of usage and storage'. The region between the horizontal and diagonal lines is labeled 'T_{amb} > 0° Avoid condensation'. The region below the horizontal line is labeled 'T_{amb} < 0° Avoid icing'.</p> </div>
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I

<p>Impulse withstand voltage</p>	<p>The highest withstand voltage of a specified shape and polarity that does not lead to an insulation breakthrough or flash-over, under the specific conditions.</p>
<p>Inductive loads</p>	<p>Refer to load category</p>
<p>Input frequency</p>	<p>The number of switching operations that occur in a specific unit of time. The maximum switching frequency for medium loads may be higher than the value specified for the nominal load, as long as the switching of the load does not result in an increased temperature.</p>
<p>Insulating material group</p>	<p>According to their CTI (comparative tracking index) values, the insulating materials are categorised into one of the following four groups: Group I 600 CTI Group II 400 CTI < 600 Group IIIa 175 CTI < 400 Group IIIb 100 CTI < 175</p> <p>The figures for the comparative tracking index, according to IEC 60112 (DIN IEC 60112 / DIN VDE 0303-1) are determined using special samples prepared for this purpose with test solution A.</p>
<p>Insulation according to EN 50178</p>	<p>Specifications for insulation coordination with:</p> <ul style="list-style-type: none"> • Type of insulation • Nominal voltage of the supply system • Pollution severity level • Impulse withstand voltage • Surge voltage category

W

L

Leakage current	The current on the load side of an opto module or solid-state relay that flows towards the output stage while in a blocked state.
Load category (solid-state relay)	Classification of the load of a solid state relay, in accordance with EN 62314 LC A – resistive loads or minimally inductive loads LC B – motor loads LC C – electrical discharge lamps LC D – incandescent filament lamps LC E – transformers LC F – capacitive loads

M

Max. switching current	The max. switching current indicates the maximum level of current that can be switched.
Max. switching power	The switching capacity is calculated as the product of switching voltage and switching current (in VA for AC / in W for DC).
Mounting distance	Distance between two adjacent components in parallel, uni-directional positioning; or the proximity to other electrical components. Because of the insulation requirements, you may need to increase the minimum distance between the components or select a different positioning. These values refer to components in "single-file arrangement", unless otherwise indicated. Also relevant for this definition: <ul style="list-style-type: none"> • density of assembly: assembled with minimum mounting clearances; this minimum distance is determined by the insulation requirements at 230 V AC and/or mechanical requirements for the installation (e.g. use of sockets), • individual installation: components are mounted with gaps so that there are no thermal influences from adjacent components.
Mounting position	Mechanical and electronic relays can usually be installed in any position when there are no qualifying limitations. To ensure the proper current flow and heat dissipation, the connections must be properly contacted and the cross-sections must be adequate. Several factors must be taken into consideration when positioning: including the insulation requirements, heat dissipation and the possible mutual magnetic influence.

N

Nominal control current	Input current that is required, under specific conditions, to switch the output.
Nominal switching voltage	Voltage at the output - before the closing or opening of the contact.
Nominal torque	The specified value for the torque of the screws (screw connection) must not be exceeded.

O

Operating temperature	Permissible ambient temperature – relative to a specific relative humidity – at which a product should be operated at nominal load.
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W

P

Packing unit	Indicates the smallest amount (a pack, for example) or the quantity per carton.
Plug-in cycles	Sockets and accessories are designed for 10 insertion cycles without electrical load – unless otherwise specified.
Pollution severity level	<p>Pollution (contamination) includes any foreign material – whether it is solid, liquid or gaseous (ionised gas) – which is capable of influencing the surface resistance of the insulating material. The standard defines four degrees of pollution. Their numbering and classification is based on the quantity of the contaminant or the frequency with which the contaminant reduces the dielectric strength and/or surface resistance.</p> <p>Pollution degree 1:</p> <ul style="list-style-type: none"> • there is no contamination or only dry occurrences of non-conductive pollution. The pollution has no influence. <p>Pollution degree 2:</p> <ul style="list-style-type: none"> • there is only non-conductive pollution. Temporary occurrences of conductivity caused by condensation may also occur. <p>Pollution degree 3:</p> <ul style="list-style-type: none"> • conductive pollution or dry, non-conductive pollution that can become conductive due to condensation is likely to occur. <p>Pollution degree 4:</p> <ul style="list-style-type: none"> • the contamination leads to continual conductivity which can be caused by contaminants such as conductive dust, rain or snow. <p>Note: Pollution degree 3 is typical for industrial environments and similar settings; pollution degree 2 is typical for households or similar.</p>
Power rating	The nominal value of the power that is converted when the nominal control voltage is applied.

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W

Protection degree - (IEC 60529), IP	<p>The degree of protection afforded by an enclosure is shown using the IP Code (IP = International Protection). This information is equally relevant for industrial relays and accessories.</p> <p>For the purposes of "component" relays (such as PCB relays), refer to the RT protection degree.</p> <p>A two-digit number is used to indicate the protection provided against touch contact and foreign bodies (the first number) and against humidity (the second number).</p> <p>Protection levels for touch contact and foreign bodies (the first digit): the first digit indicates the degree of protection inside the housing against ingress of solid foreign objects and against any human access to hazardous parts.</p> <p>0: no protection 1: protection for large body parts with a diameter > 50 mm 2: finger protection (diameter 12 mm) 3: tools and wires (diameter > 2.5 mm) 4: tools and wires (diameter > 1 mm) 5: full protection against touch contact 6: full protection against touch contact</p> <p>Degree of water protection (the second digit)</p> <p>The second digit indicates the degree of protection provided against the ingress of water into the housing:</p> <p>0: no protection 1: protection against vertically falling drops of water 2: protection against water droplets falling diagonally (up to 15°) 3: protection against water spray that falls at an angle up to 60° from vertical 4: protection against splashed water from all sides 5: protection against water jets 6: protection against powerful jets of water (flooding) 7: protection against sporadic submersion 8: protection against constant submersion</p>
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R

Rated control voltage	The nominal value of the sparkover (response) voltage for the solid-state relay
Rated voltage (Isolation)	Voltage level at which the insulation specifications are measured – this is the basis for sizing the creepage distance.
ROHS Directive 2002/95/EC	<p>RoHS stands for the "Restriction of (the use of certain) Hazardous Substances" According to the EU Directive 2002/95/EC from 01.07.2006, all EU member nations must forbid the use of hazardous substances which damage human health and the environment (including mercury (Hg), cadmium (Cd), lead (Pb), hexavalent chrome (Cr6), polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE)) in new electrical and electronic devices.</p> <p>The term "compliant" means that the entire product group meets the requirements of the RoHS Directive. The maximum weight percentage in homogeneous materials is below the limits specified in the directive: 0.1 % for lead, hexavalent chrome, mercury, PBB and PBDE; and below 0.01 % for cadmium, or qualifies for an exemption in accordance with the annex to the RoHS Directive .</p>

Surge voltage category	<p>The overvoltage category of a circuit or an electrical system is numbered conventionally (from I to IV) and is based on limiting the assumed surge voltage values that can occur in a circuit (or electrical system with different mains voltages). The assignment to a particular overvoltage category is dependent on the measures which are used to influence (reduce) the surge voltages.</p> <p>Overvoltage category I</p> <ul style="list-style-type: none"> • Devices that are intended to be connected to the permanent electrical building installation. <p>The measures for limiting transient surge voltages to the proper level are taken outside of the device. The protective mechanisms can either be in the permanent installation or between the permanent installation and the device.</p> <p>Overvoltage category II</p> <ul style="list-style-type: none"> • Devices that are intended to be connected to the permanent electrical building installation (such as household appliances or portable tools). <p>Overvoltage category III</p> <ul style="list-style-type: none"> • Devices that are a part of the permanent installation and other devices where a higher degree of availability is required. This includes the distributor panels, power switches, distribution systems (including cables, busbars, distributor boxes, switches and outlets) that are part of the permanent installation, devices intended for industrial use, and devices that are continually connected to the permanent installation (such as stationary motors).
Switch-off delay	The usual time interval from switching off the control voltage of a conducting solid-state relay to the time when the output circuit is blocked.
Switch-on delay	The usual time interval from switching on the control voltage of a closed solid-state relay to the time when the output circuit is conductive.

T

Transients	Transients are short-term current or voltage peaks caused by interferences in the mains supply grid or by electromagnetic radiation. On the control side of the optocoupler these can trigger unintended switching operations or, in extreme cases, cause the destruction of the component. In an AC-driven load circuit, transients can lead to the maximum permissible forward voltage being exceeded, which in turn can activate the thyristor or Triac. As these operate at quite high switching speeds, even very short pulses can suffice to falsely trigger a switching operation.
Type of insulation	Quality of the insulation system, depending on the design and application conditions: <ul style="list-style-type: none"> • Functional insulation: insulation between live components – necessary so the relay functions properly. • Basic insulation: insulation of live parts to provide basic protection against electrical shock. • Doubled insulation: consisting of a base insulation and additional insulation. • Reinforced insulation: a single “enhanced” insulation of active components, which ensures the same protection against electric shock as doubled insulation. The doubled insulation is composed of a base and an additional insulation; the extra insulation protects against electric shock if the basic insulation fails.

V

Voltage drop	The reduction of voltage via the opto module, when measured under full load
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W

Withstand test voltage	The voltage applied to a device under specific test conditions which causes no breakthrough or flash-over of the test piece.
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в Беларусі Закаж г.Мінск viberg и тел +375447504150 email: minsk17@opt.by

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в Беларусі Заказ г.Мінск viber и тел. +375447584780 email: minsk17@tut.by www.tinstor.by

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RCM370730	8690000000	B.74
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RCM570524	8690110000	B.76
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RCM570548	1180890000	B.89
RCM570615	1180800000	B.76
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RCM570730	1181100000	B.76
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RCM570730	1181100000	B.89
RCM570A82	8957160000	B.89
RCM570AC4	8957170000	B.89
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RCM570BB0	8957190000	B.89
RCM570L12	8690180000	B.89
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RCM580730	794007637	B.89
RCMKIT1 115VAC 2CO LD	8920960000	B.72
RCMKIT1 115VAC 3CO LD	8921010000	B.74
RCMKIT1 115VAC 4CO LD	8921050000	B.76
RCMKIT1 230VAC 2CO LD	8920970000	B.72
RCMKIT1 230VAC 3CO LD	8921020000	B.74
RCMKIT1 230VAC 4CO LD	8921060000	B.76
RCMKIT1 24VAC 2CO LD	8920950000	B.72
RCMKIT1 24VAC 3CO LD	8920990000	B.74
RCMKIT1 24VAC 4CO LD	8921040000	B.76
RCMKIT1 24VDC 2CO LD	8920940000	B.72
RCMKIT1 24VDC 3CO LD	8920980000	B.74
RCMKIT1 24VDC 4CO LD	8921030000	B.76
RCMKITP1 115VAC 2CO LD	8921100000	B.73
RCMKITP1 115VAC 4CO LD	8921140000	B.77
RCMKITP1 230VAC 2CO LD	8921100000	B.73
RCMKITP1 230VAC 4CO LD	8921150000	B.77
RCMKITP1 24VAC 2CO LD	8921090000	B.73
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RIM 2 6/24VDC	7760056015	B.16
RIM 2 6/24VDC	7760056015	B.22
RIM 2 6/24VDC	7760056015	B.26
RIM 2 6/24VDC	7760056015	B.36
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RIM 3 110/230VAC	7760056014	B.16
RIM 3 110/230VAC	7760056014	B.22
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SCM CUP N	8875620000	B.86
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SCM CUP P	8869440000	B.90
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SRC1 CLIP HM RCI	1132090000	B.70
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SRC1 CLIP HP	8869510000	B.70
SRC1 MARK	8869530000	B.68
SRC1 MARK	8869530000	B.70
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TRZ 120VAC RC 2CD AU	1123920000	A.27
TRZ 120VAC RC 2CD EMPTY	1124170000	A.53
TRZ 120VUC 1CD	1122920000	A.9
TRZ 120VUC 1CD 16A	1479890000	A.19
TRZ 120VUC 1CD AGSNO	2153580000	A.15
TRZ 120VUC 1CD AU	1123170000	A.11
TRZ 120VUC 1CD EMPTY	1123410000	A.52
TRZ 120VUC 2CD	1123650000	A.25
TRZ 120VUC 2CD AU	1123900000	A.27
TRZ 120VUC 2CD EMPTY	1124140000	A.53
TRZ 12VDC 1CD	1122870000	A.9
TRZ 12VDC 1CD 16A	1479820000	A.19
TRZ 12VDC 1CD AGSNO	2152890000	A.15
TRZ 12VDC 1CD AU	1123110000	A.11
TRZ 12VDC 1CD EMPTY	1123350000	A.52
TRZ 12VDC 2CD	1123600000	A.25
TRZ 12VDC 2CD AU	1123840000	A.27
TRZ 12VDC 2CD EMPTY	1124090000	A.53
TRZ 230VAC RC 1CD	1122950000	A.9
TRZ 230VAC RC 1CD 16A	1479920000	A.19
TRZ 230VAC RC 1CD AGSNO	2152930000	A.15
TRZ 230VAC RC 1CD AU	1123200000	A.11
TRZ 230VAC RC 1CD EMPTY	1123440000	A.52
TRZ 230VAC RC 2CD	1123690000	A.25
TRZ 230VAC RC 2CD AU	1123930000	A.27
TRZ 230VAC RC 2CD EMPTY	1124180000	A.53
TRZ 230VUC 1CD	1122930000	A.9
TRZ 230VUC 1CD 16A	1479900000	A.19
TRZ 230VUC 1CD AGSNO	2153690000	A.15
TRZ 230VUC 1CD AU	1123180000	A.11
TRZ 230VUC 1CD EMPTY	1123420000	A.52
TRZ 230VUC 2CD	1123670000	A.25
TRZ 230VUC 2CD AU	1123910000	A.27
TRZ 230VUC 2CD EMPTY	1124150000	A.53
TRZ 24-230VUC 1CD	1122970000	A.12
TRZ 24-230VUC 1CD 16A	1479930000	A.20
TRZ 24-230VUC 1CD AGSNO	2154980000	A.16
TRZ 24-230VUC 1CD AU	1123210000	A.13
TRZ 24-230VUC 1CD EMPTY	1123450000	A.52
TRZ 24-230VUC 1NO HC	1479950000	A.22
TRZ 24-230VUC 1NO HCP	1479980000	A.23
TRZ 24-230VUC 2CD	1123700000	A.28
TRZ 24-230VUC 2CD AU	1123940000	A.29
TRZ 24-230VUC 2CD EMPTY	1124190000	A.53
TRZ 24VDC 1CD	1122880000	A.9
TRZ 24VDC 1CD 16A	1479840000	A.19
TRZ 24VDC 1CD AGSNO	1984550000	A.16
TRZ 24VDC 1CD AU	1123120000	A.11
TRZ 24VDC 1CD EMPTY	1123370000	A.52
TRZ 24VDC 1NO HC	1479940000	A.22
TRZ 24VDC 1NO HCP	1479970000	A.23
TRZ 24VDC 2CD	1123610000	A.25
TRZ 24VDC 2CD AU	1123850000	A.27
TRZ 24VDC 2CD EMPTY	1124100000	A.53
TRZ 24VDC ACT	1391670000	A.17
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TRZ 24VUC 2CD	1123620000	A.25
TRZ 24VUC 2CD AU	1123870000	A.27
TRZ 24VUC 2CD EMPTY	1124110000	A.53
TRZ 48VUC 1CD	1122900000	A.9
TRZ 48VUC 1CD 16A	1479870000	A.19
TRZ 48VUC 1CD AGSNO	2153080000	A.15
TRZ 48VUC 1CD AU	1123140000	A.11
TRZ 48VUC 1CD EMPTY	1123390000	A.52
TRZ 48VUC 2CD	1123630000	A.25
TRZ 48VUC 2CD AU	1123880000	A.27
TRZ 48VUC 2CD EMPTY	1124120000	A.53
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TRZ 5VDC 1CD 16A	1479800000	A.19
TRZ 5VDC 1CD AGSNO	2152870000	A.15
TRZ 5VDC 1CD AU	1123100000	A.11

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TRZ 5VDC 1CD EMPTY	1123340000	A.52
TRZ 5VDC 2CD	1123590000	A.25
TRZ 5VDC 2CD AU	1123830000	A.27
TRZ 5VDC 2CD EMPTY	1124080000	A.53
TRZ 60VUC 1CD	1122910000	A.9
TRZ 60VUC 1CD 16A	1479880000	A.19
TRZ 60VUC 1CD AGSNO	2153560000	A.15
TRZ 60VUC 1CD AU	1123150000	A.11
TRZ 60VUC 1CD EMPTY	1123400000	A.52
TRZ 60VUC 2CD	1123640000	A.25
TRZ 60VUC 2CD AU	1123890000	A.27
TRZ 60VUC 2CD EMPTY	1124130000	A.53
TW TXS/TXZ R3.2	1240800000	A.54
TXS SUPPLY	1240780000	A.54
TXZ SUPPLY	1240790000	A.54

W

WEW 35/2	1061200000	A.94
WEW 35/2 SW	1061210000	A.54
WEW 35/2 SW	1061210000	A.82
WS 10/6 M MC NE WS	1818400000	A.54
WS 10/6 MC NE WS	1828450000	A.94
WS 12/6 MC NE WS	1609900000	A.70
WS 12/6 MC NE WS	1609900000	A.82

Z

ZOV 1.5N/R12.8/10 GE	1193700000	A.54
ZOV 1.5N/R6.4/10 BL	1390350000	A.54
ZOV 1.5N/R6.4/10 GE	1193680000	A.54
ZOV 1.5N/R6.4/10 RT	1391640000	A.54
ZOV 1.5N/R6.4/10 SW	1391630000	A.54
ZOV 1.5N/R6.4/19 BL	1391620000	A.54
ZOV 1.5N/R6.4/19 GE	1193690000	A.54
ZOV 1.5N/R6.4/19 RT	1391610000	A.54
ZOV 1.5N/R6.4/19 SW	1391600000	A.54
ZOV 1.5N/R6.4/2 GE	1193670000	A.54
ZOV 4N/10 BL	1794050000	A.70
ZOV 4N/10 BL	1794050000	A.82
ZOV 4N/10 BL	1794050000	A.94
ZOV 4N/10 GE	1758260000	A.70
ZOV 4N/10 GE	1758260000	A.82
ZOV 4N/10 GE	1758260000	A.94
ZOV 4N/10 RT	1794040000	A.70
ZOV 4N/10 RT	1794040000	A.82
ZOV 4N/10 RT	1794040000	A.94
ZOV 4N/10 SW	1794060000	A.70
ZOV 4N/10 SW	1794060000	A.82
ZOV 4N/10 SW	1794060000	A.94
ZOV 4N/2 BL	1793960000	A.70
ZOV 4N/2 BL	1793960000	A.82
ZOV 4N/2 BL	1793960000	A.94
ZOV 4N/2 GE	1758250000	A.70
ZOV 4N/2 GE	1758250000	A.82
ZOV 4N/2 GE	1758250000	A.94
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ZOV 4N/2 SW	1793970000	A.70
ZOV 4N/2 SW	1793970000	A.82
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ZOV 4N/20 BL	1909100000	A.70
ZOV 4N/20 BL	1909100000	A.82
ZOV 4N/20 BL	1909100000	A.94
ZOV 4N/20 GE	1909020000	A.70
ZOV 4N/20 GE	1909020000	A.82
ZOV 4N/20 GE	1909020000	A.94
ZOV 4N/20 RT	1909150000	A.70
ZOV 4N/20 RT	1909150000	A.82
ZOV 4N/20 RT	1909150000	A.94
ZOV 4N/20 SW	1909120000	A.70
ZOV 4N/20 SW	1909120000	A.82
ZOV 4N/20 SW	1909120000	A.94
ZOV 4N/3 BL	1793990000	A.70
ZOV 4N/3 BL	1793990000	A.82
ZOV 4N/3 BL	1793990000	A.94
ZOV 4N/3 GE	1762630000	A.70
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ZOV 4N/3 RT	1793980000	A.70
ZOV 4N/3 RT	1793980000	A.82
ZOV 4N/3 RT	1793980000	A.94
ZOV 4N/3 SW	1794000000	A.70
ZOV 4N/3 SW	1794000000	A.82
ZOV 4N/3 SW	1794000000	A.94
ZOV 4N/4 BL	1794020000	A.70
ZOV 4N/4 BL	1794020000	A.82
ZOV 4N/4 BL	1794020000	A.94
ZOV 4N/4 GE	1762620000	A.70
ZOV 4N/4 GE	1762620000	A.82
ZOV 4N/4 GE	1762620000	A.94
ZOV 4N/4 RT	1794010000	A.70
ZOV 4N/4 RT	1794010000	A.82
ZOV 4N/4 RT	1794010000	A.94
ZOV 4N/4 SW	1794030000	A.70
ZOV 4N/4 SW	1794030000	A.82
ZOV 4N/4 SW	1794030000	A.94

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052000000

0526700000	ISPF QB75 SW	A.82
0526760000	ISPF QB75 RT	A.82
0526780000	ISPF QB75 BL	A.82

053000000

0535200000	QB 75/6.2/15	A.82
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106000000

1061200000	WEW 35/2	A.94
1061210000	WEW 35/2 SW	A.54
1061210000	WEW 35/2 SW	A.82

112000000

1122740000	TRS 5VDC 1CD	A.9
1122750000	TRS 12VDC 1CD	A.9
1122770000	TRS 24VDC 1CD	A.9
1122780000	TRS 24VDC 1CD	A.9
1122790000	TRS 48VDC 1CD	A.9
1122800000	TRS 60VDC 1CD	A.9
1122810000	TRS 120VDC 1CD	A.9
1122820000	TRS 230VDC 1CD	A.9
1122830000	TRS 120VAC RC 1CD	A.9
1122840000	TRS 230VAC RC 1CD	A.9
1122850000	TRS 24-230VDC 1CD	A.12
1122860000	TRZ 5VDC 1CD	A.9
1122870000	TRZ 12VDC 1CD	A.9
1122880000	TRZ 24VDC 1CD	A.9
1122890000	TRZ 24VDC 1CD	A.9
1122900000	TRZ 48VDC 1CD	A.9
1122910000	TRZ 60VDC 1CD	A.9
1122920000	TRZ 120VDC 1CD	A.9
1122930000	TRZ 230VDC 1CD	A.9
1122940000	TRZ 120VAC RC 1CD	A.9
1122950000	TRZ 230VAC RC 1CD	A.9
1122970000	TRZ 24-230VDC 1CD	A.12
1122980000	TRS 5VDC 1CD AU	A.11
1122990000	TRS 12VDC 1CD AU	A.11
1123000000	TRS 24VDC 1CD AU	A.11
1123010000	TRS 24VDC 1CD AU	A.11
1123020000	TRS 48VDC 1CD AU	A.11
1123030000	TRS 60VDC 1CD AU	A.11
1123040000	TRS 120VDC 1CD AU	A.11
1123050000	TRS 230VDC 1CD AU	A.11
1123070000	TRS 120VAC RC 1CD AU	A.11
1123080000	TRS 230VAC RC 1CD AU	A.11
1123090000	TRS 24-230VDC 1CD AU	A.13
1123100000	TRZ 5VDC 1CD AU	A.11
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1123120000	TRZ 24VDC 1CD AU	A.11
1123130000	TRZ 24VDC 1CD AU	A.11
1123140000	TRZ 48VDC 1CD AU	A.11
1123150000	TRZ 60VDC 1CD AU	A.11
1123170000	TRZ 120VDC 1CD AU	A.11
1123180000	TRZ 230VDC 1CD AU	A.11
1123190000	TRZ 120VAC RC 1CD AU	A.11
1123200000	TRZ 230VAC RC 1CD AU	A.11
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1123230000	TRS 12VDC 1CD EMPTY	A.52
1123240000	TRS 24VDC 1CD EMPTY	A.52
1123250000	TRS 24VDC 1CD EMPTY	A.52
1123270000	TRS 48VDC 1CD EMPTY	A.52
1123280000	TRS 60VDC 1CD EMPTY	A.52
1123290000	TRS 120VDC 1CD EMPTY	A.52
1123300000	TRS 230VDC 1CD EMPTY	A.52
1123310000	TRS 120VAC RC 1CD EMPTY	A.52
1123320000	TRS 230VAC RC 1CD EMPTY	A.52
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1123430000	TRZ 120VAC RC 1CD EMPTY	A.52
1123440000	TRZ 230VAC RC 1CD EMPTY	A.52
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1123550000	TRS 120VAC RC 2CD	A.25
1123570000	TRS 230VAC RC 2CD	A.25
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1123590000	TRZ 5VDC 2CD	A.25
1123600000	TRZ 12VDC 2CD	A.25
1123610000	TRZ 24VDC 2CD	A.25
1123620000	TRZ 24VDC 2CD	A.25

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1123630000	TRZ 48VDC 2CD	A.25
1123640000	TRZ 60VDC 2CD	A.25
1123650000	TRZ 120VDC 2CD	A.25
1123670000	TRZ 230VDC 2CD	A.25
1123680000	TRZ 120VAC RC 2CD	A.25
1123690000	TRZ 230VAC RC 2CD	A.25
1123700000	TRZ 24-230VDC 2CD	A.28
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1123720000	TRS 12VDC 2CD AU	A.27
1123730000	TRS 24VDC 2CD AU	A.27
1123740000	TRS 24VDC 2CD AU	A.27
1123750000	TRS 48VDC 2CD AU	A.27
1123770000	TRS 60VDC 2CD AU	A.27
1123780000	TRS 120VDC 2CD AU	A.27
1123790000	TRS 230VDC 2CD AU	A.27
1123800000	TRS 120VAC RC 2CD AU	A.27
1123810000	TRS 230VAC RC 2CD AU	A.27
1123820000	TRS 24-230VDC 2CD AU	A.29
1123830000	TRZ 5VDC 2CD AU	A.27
1123840000	TRZ 12VDC 2CD AU	A.27
1123850000	TRZ 24VDC 2CD AU	A.27
1123870000	TRZ 24VDC 2CD AU	A.27
1123880000	TRZ 48VDC 2CD AU	A.27
1123890000	TRZ 60VDC 2CD AU	A.27
1123900000	TRZ 120VDC 2CD AU	A.27
1123910000	TRZ 230VDC 2CD AU	A.27
1123920000	TRZ 120VAC RC 2CD AU	A.27
1123930000	TRZ 230VAC RC 2CD AU	A.27
1123940000	TRZ 24-230VDC 2CD AU	A.29
1123950000	TRS 5VDC 2CD EMPTY	A.53
1123970000	TRS 12VDC 2CD EMPTY	A.53
1123980000	TRS 24VDC 2CD EMPTY	A.53
1123990000	TRS 24VDC 2CD EMPTY	A.53
1124000000	TRS 48VDC 2CD EMPTY	A.53
1124010000	TRS 60VDC 2CD EMPTY	A.53
1124020000	TRS 120VDC 2CD EMPTY	A.53
1124030000	TRS 230VDC 2CD EMPTY	A.53
1124040000	TRS 120VAC RC 2CD EMPTY	A.53
1124050000	TRS 230VAC RC 2CD EMPTY	A.53
1124070000	TRS 24-230VDC 2CD EMPTY	A.53
1124080000	TRZ 5VDC 2CD EMPTY	A.53
1124090000	TRZ 12VDC 2CD EMPTY	A.53
1124100000	TRZ 24VDC 2CD EMPTY	A.53
1124110000	TRZ 24VDC 2CD EMPTY	A.53
1124120000	TRZ 48VDC 2CD EMPTY	A.53
1124130000	TRZ 60VDC 2CD EMPTY	A.53
1124140000	TRZ 120VDC 2CD EMPTY	A.53
1124150000	TRZ 230VDC 2CD EMPTY	A.53
1124170000	TRZ 120VAC RC 2CD EMPTY	A.53
1124180000	TRZ 230VAC RC 2CD EMPTY	A.53
1124190000	TRZ 24-230VDC 2CD EMPTY	A.53
1126920000	TOS 5VDC 48VDC0,1A	A.31
1126930000	TOS 12VDC 48VDC0,1A	A.31
1126940000	TOS 24VDC 48VDC0,1A	A.31
1126950000	TOS 24VDC 48VDC0,1A	A.31
1126960000	TOS 48VDC 48VDC0,1A	A.31
1126970000	TOS 60VDC 48VDC0,1A	A.31
1126980000	TOS 120VDC 48VDC0,1A	A.31
1126990000	TOS 230VDC 48VDC0,1A	A.31
1127000000	TOS 120VAC RC 48VDC0,1A	A.31
1127010000	TOS 230VAC RC 48VDC0,1A	A.31
1127020000	TOS 24-230VDC 48VDC0,1A	A.32
1127030000	TOZ 5VDC 48VDC0,1A	A.31
1127040000	TOZ 12VDC 48VDC0,1A	A.31
1127050000	TOZ 24VDC 48VDC0,1A	A.31
1127060000	TOZ 24VDC 48VDC0,1A	A.31
1127070000	TOZ 48VDC 48VDC0,1A	A.31
1127080000	TOZ 60VDC 48VDC0,1A	A.31
1127090000	TOZ 120VDC 48VDC0,1A	A.31
1127100000	TOZ 230VDC 48VDC0,1A	A.31
1127110000	TOZ 120VAC RC 48VDC0,1A	A.31
1127120000	TOZ 230VAC RC 48VDC0,1A	A.31
1127130000	TOZ 24-230VDC 48VDC0,1A	A.32
1127140000	TOS 5VDC 24VDC2A	A.35
1127150000	TOS 12VDC 24VDC2A	A.35
1127170000	TOS 24VDC 24VDC2A	A.35
1127180000	TOS 24VDC 24VDC2A	A.35
1127190000	TOS 48VDC 24VDC2A	A.35
1127200000	TOS 60VDC 24VDC2A	A.35
1127210000	TOS 120VDC 24VDC2A	A.35
1127220000	TOS 230VDC 24VDC2A	A.35
1127230000	TOS 120VAC RC 24VDC2A	A.35
1127240000	TOS 230VAC RC 24VDC2A	A.35
1127250000	TOS 24-230VDC 24VDC2A	A.36
1127270000	TOZ 5VDC 24VDC2A	A.35
1127280000	TOZ 12VDC 24VDC2A	A.35
1127290000	TOZ 24VDC 24VDC2A	A.35
1127300000	TOZ 24VDC 24VDC2A	A.35
1127310000	TOZ 48VDC 24VDC2A	A.35
1127320000	TOZ 60VDC 24VDC2A	A.35
1127330000	TOZ 120VDC 24VDC2A	A.35
1127340000	TOZ 230VDC 24VDC2A	A.35
1127350000	TOZ 120VAC RC 24VDC2A	A.35
1127370000	TOZ 230VAC RC 24VDC2A	A.35
1127380000	TOZ 24-230VDC 24VDC2A	A.36
1127390000	TOS 5VDC 230VAC1A	A.39
1127400000	TOS 12VDC 230VAC1A	A.39
1127410000	TOS 24VDC 230VAC1A	A.39
1127420000	TOS 24VDC 230VAC1A	A.39

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1127440000	TOS 60VDC 230VAC1A	A.39
1127450000	TOS 120VDC 230VAC1A	A.39
1127470000	TOS 230VDC 230VAC1A	A.39
1127480000	TOS 120VAC RC 230VAC1A	A.39
1127490000	TOS 230VAC RC 230VAC1A	A.39
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1127510000	TOZ 5VDC 230VAC1A	A.39
1127520000	TOZ 12VDC 230VAC1A	A.39
1127530000	TOZ 24VDC 230VAC1A	A.39
1127540000	TOZ 24VDC 230VAC1A	A.39
1127550000	TOZ 48VDC 230VAC1A	A.39
1127570000	TOZ 60VDC 230VAC1A	A.39
1127580000	TOZ 120VDC 230VAC1A	A.39
1127590000	TOZ 230VDC 230VAC1A	A.39
1127600000	TOZ 120VAC RC 230VAC1A	A.39
1127610000	TOZ 230VAC RC 230VAC1A	A.39
1127620000	TOZ 24-230VDC 230VAC1A	A.40
1127630000	TOS 24VDC 24VDC3,5A	A.42
1127640000	TOS 24-230VDC 24VDC3,5A	A.42
1127650000	TOZ 24VDC 24VDC3,5A	A.42
1127670000	TOZ 24-230VDC 24VDC3,5A	A.42
1127680000	TOS 24VDC 230VAC1A	A.44
1127690000	TOS 24-230VDC 230VAC1A	A.44
1127700000	TOZ 24VDC 230VAC1A	A.44
1127710000	TOZ 24-230VDC 230VAC1A	A.44
1127720000	TOS 24VDC EMPTY	A.53
1127730000	TOS 24-230VDC EMPTY	A.53
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113000000

1132070000	SRC1 QV S	B.12
1132070000	SRC1 QV S	B.16
1132070000	SRC1 QV S	B.68
1132080000	SCM1 QV S	B.22
1132080000	SCM1 QV S	B.26
1132080000	SCM1 QV S	B.80
1132080000	SCM1 QV S	B.81
1132080000	SCM1 QV S	B.86
1132080000	SCM1 QV S	B.90
1132090000	SRC1 CLIP HM RC1	B.68
1132090000	SRC1 CLIP HM RC1	B.70
1132260000	SSS RELAIS 5V/230V 1AAC	A.51
1132290000	SSR 24VDC/max.240VAC 1A	A.51
1132310000	SSR 24VDC/0-24VDC 3,5A	A.51
1132810000	SRD ECO 2CD	B.52
1132820000	SRD ECO 3CD	B.52
1133360000	DRR270012L	B.49
1133370000	DRR270024L	B.49
1133380000	DRR270048L	B.49
1133390000	DRR270110L	B.49
1133400000	DRR270220L	B.49
1133410000	DRR370012L	B.51
1133420000	DRR370024L	B.51
1133430000	DRR370048L	B.51
1133440000	DRR370110L	B.51
1133450000	DRL170012L	B.29
1133460000	DRL170024L	B.29
1133470000	DRL170048L	B.29
1133480000	DRL170110L	B.29
1133490000	DRL170220L	B.29
1133510000	DRL270012L	B.31
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1133550000	DRL270220L	B.31
1133560000	DRR370220L	B.51
1133570000	DRL370012L	B.33
1133580000	DRL370024L	B.33
1133590000	DRL370048L	B.33
1133600000	DRL370110L	B.33
1133610000	DRL37	

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1219940000	DRH174012LT	B.41
1219950000	DRH174024LT	B.41
1219960000	DRH174048LT	B.41
1219970000	DRH174110LT	B.41
1219980000	DRH174220LT	B.41
1219990000	DRH174524LT	B.41

1220000000

1220010000	DRH174548LT	B.41
1220020000	DRH174615LT	B.41
1220030000	DRH174730LT	B.41
1220040000	DRH275012LT	B.43
1220050000	DRH275024LT	B.43
1220060000	DRH275048LT	B.43
1220070000	DRH275110LT	B.43
1220080000	DRH275220LT	B.43
1220090000	DRH275524LT	B.43
1220110000	DRH275548LT	B.43
1220120000	DRH275615LT	B.43
1220130000	DRH275730LT	B.43
1220140000	DRH276012LT	B.45
1220150000	DRH276024LT	B.45
1220170000	DRH276048LT	B.45
1220180000	DRH276110LT	B.45
1220190000	DRH276220LT	B.45
1220200000	DRH276524LT	B.45
1220210000	DRH276548LT	B.45
1220220000	DRH276615LT	B.45
1220230000	DRH276730LT	B.45
1220250000	SPW ECO 3CD	B.46
1220260000	DRW/DRH CLIP M	B.46
1220670000	RSS112012	A.50

1240000000

1240780000	TXS SUPPLY	A.54
1240790000	TXZ SUPPLY	A.54
1240800000	TW TXS/TXZ R3.2	A.54

1250000000

1254880000	TOP 24VDC/24VDC 4A	A.69
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1270000000

1274660000	SDIS SL 0.6X3.5X100	B.70
1274660000	SDIS SL 0.6X3.5X100	B.82
1274660000	SDIS SL 0.6X3.5X100	B.92
1274710000	SDIK PH1 SL	B.12
1274710000	SDIK PH1 SL	B.16
1274710000	SDIK PH1 SL	B.22
1274710000	SDIK PH1 SL	B.26
1274710000	SDIK PH1 SL	B.52
1274720000	SDIK PH2 SL	B.36
1274720000	SDIK PH2 SL	B.37
1274720000	SDIK PH2 SL	B.46
1274730000	SDIK PZ1 SL	B.68
1274730000	SDIK PZ1 SL	B.80
1274730000	SDIK PZ1 SL	B.81
1274730000	SDIK PZ1 SL	B.86
1274730000	SDIK PZ1 SL	B.90
1275100000	TDS 24VDC/24VDC 4A	A.69

1280000000

1283230000	MOS 24VDC/8-30VDC 2A E	A.77
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1300000000

1303760000	SCS 24VDC P1SIL3DS M	D.6
1303890000	SCS 24VDC P1SIL3DS	D.6
1304040000	SCS 24VDC P1SIL3DS MG3	D.6

1310000000

1319270000	SCS 24VDC P2SIL3DSES	D.8
1319280000	SCS 24VDC P2SIL3ES	D.9

1320000000

1323880000	SD TO 0,6X3,0	A.54
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1380000000

1381900000	TRS 24VDC ACT	A.17
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1390000000

1390350000	ZOV 1.5N/R6.4/10 BL	A.54
1391600000	ZOV 1.5N/R6.4/19 SW	A.54
1391610000	ZOV 1.5N/R6.4/19 RT	A.54
1391620000	ZOV 1.5N/R6.4/19 BL	A.54
1391630000	ZOV 1.5N/R6.4/10 SW	A.54
1391640000	ZOV 1.5N/R6.4/10 RT	A.54
1391670000	TRZ 24VDC ACT	A.17
1391680000	TOS 24VDC ACT	A.37
1391690000	TOZ 24VDC ACT	A.37

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1406200000	PSSR 24VDC/1PH AC 25A	C.4
1406210000	PSSR 24VDC/1PH AC 35A	C.6
1406220000	PSSR 230VAC/1PH AC 25A	C.8
1406230000	PSSR 1PH CONTROL UNIT	C.5
1406240000	PSSR 24VDC/1PH AC50A HP	C.9
1406250000	PSSR 24VDC/1PH AC75A HP	C.10

1420000000

1421450000	SSR 10-32VDC/0-35VDC 5A	A.51
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1460000000

1463520000	TIA F10	A.56
1463530000	TIA SUBD 15S	A.57
1463540000	TIAL F10	A.58
1463550000	TIAL F20	A.59

1470000000

1479650000	TRS 5VDC 1CD 16A	A.19
1479670000	TRS 12VDC 1CD 16A	A.19
1479680000	TRS 24VDC 1CD 16A	A.19
1479690000	TRS 24VDC 1CD 16A	A.19
1479700000	TRS 48VDC 1CD 16A	A.19
1479710000	TRS 60VDC 1CD 16A	A.19
1479730000	TRS 120VDC 1CD 16A	A.19
1479740000	TRS 230VDC 1CD 16A	A.19
1479750000	TRS 120VAC RC 1CD 16A	A.19
1479760000	TRS 230VAC RC 1CD 16A	A.19
1479770000	TRS 24-230VDC 1CD 16A	A.20
1479780000	TRS 24VDC 1NO HC	A.22
1479790000	TRS 24-230VDC 1NO HC	A.22
1479800000	TRZ 5VDC 1CD 16A	A.19
1479810000	TRS 24VDC 1NO HCP	A.23
1479820000	TRZ 12VDC 1CD 16A	A.19
1479830000	TRS 24-230VDC 1NO HCP	A.23
1479840000	TRZ 24VDC 1CD 16A	A.19
1479850000	TRZ 24VDC 1CD 16A	A.19
1479870000	TRZ 48VDC 1CD 16A	A.19
1479880000	TRZ 60VDC 1CD 16A	A.19
1479890000	TRZ 120VDC 1CD 16A	A.19
1479900000	TRZ 230VDC 1CD 16A	A.19
1479910000	TRZ 120VAC RC 1CD 16A	A.19
1479920000	TRZ 230VAC RC 1CD 16A	A.19
1479930000	TRZ 24-230VDC 1CD 16A	A.20
1479940000	TRZ 24VDC 1NO HC	A.22
1479950000	TRZ 24-230VDC 1NO HC	A.22
1479970000	TRZ 24VDC 1NO HCP	A.23
1479980000	TRZ 24-230VDC 1NO HCP	A.23

1490000000

1492520000	KQIG-M3/-1	B.12
1492520000	KQIG-M3/-1	B.16
1492530000	KQIG-M3.5/-1	B.12
1492600000	KQIG-M3/2.5	B.12
1492600000	KQIG-M3/2.5	B.16
1492610000	KQIG-M3.5/2.5	B.12

1520000000

1520980000	ESG 9/26 SCM ECO MC NE WS	B.22
1520980000	ESG 9/26 SCM ECO MC NE WS	B.26
1520990000	ESG 9/26 SCM ECO MC NE GE	B.22
1520990000	ESG 9/26 SCM ECO MC NE GE	B.26
1521000000	ESG 9/26 SCM ECO MC NE GR	B.22
1521000000	ESG 9/26 SCM ECO MC NE GR	B.26

1540000000

1542360000	DRMKIT 24VDC 2CD LD	B.18
1542370000	DRMKIT 220VDC 2CD LD	B.18
1542380000	DRMKIT 24VAC 2CD LD	B.18
1542390000	DRMKIT 230VAC 2CD LD	B.18
1542410000	DRMKIT 24VDC 4CD LD	B.19
1542420000	DRMKIT 220VDC 4CD LD	B.19
1542430000	DRMKIT 24VAC 4CD LD	B.19
1542450000	DRMKIT 230VAC 4CD LD	B.19
1542460000	DRMKIT 24VDC 2CD LD/PB	B.18
1542470000	DRMKIT 220VDC 2CD LD/PB	B.18
1542480000	DRMKIT 24VAC 2CD LD/PB	B.18
1542490000	DRMKIT 230VAC 2CD LD/PB	B.18
1542510000	DRMKIT 24VDC 4CD LD/PB	B.19
1542520000	DRMKIT 220VDC 4CD LD/PB	B.19
1542530000	DRMKIT 24VAC 4CD LD/PB	B.19
1542540000	DRMKIT 230VAC 4CD LD/PB	B.19

1600000000

1609900000	WS 12/6 MC NE WS	A.70
1609900000	WS 12/6 MC NE WS	A.82

1750000000

1758250000	ZOV 4N/2 GE	A.70
1758250000	ZOV 4N/2 GE	A.82

1758250000	ZOV 4N/2 GE	A.94
1758260000	ZOV 4N/10 GE	A.70
1758260000	ZOV 4N/10 GE	A.82
1758260000	ZOV 4N/10 GE	A.94

1760000000

1762620000	ZOV 4N/4 GE	A.70
1762620000	ZOV 4N/4 GE	A.82
1762620000	ZOV 4N/4 GE	A.94
1762630000	ZOV 4N/3 GE	A.70
1762630000	ZOV 4N/3 GE	A.82
1762630000	ZOV 4N/3 GE	A.94

1790000000

1793950000	ZOV 4N/2 RT	A.70
1793950000	ZOV 4N/2 RT	A.82
1793950000	ZOV 4N/2 RT	A.94
1793960000	ZOV 4N/2 BL	A.70
1793960000	ZOV 4N/2 BL	A.82
1793960000	ZOV 4N/2 BL	A.94
1793970000	ZOV 4N/2 SW	A.70
1793970000	ZOV 4N/2 SW	A.82
1793970000	ZOV 4N/2 SW	A.94
1793980000	ZOV 4N/3 RT	A.70
1793980000	ZOV 4N/3 RT	A.82
1793980000	ZOV 4N/3 RT	A.94
1793990000	ZOV 4N/3 BL	A.70
1793990000	ZOV 4N/3 BL	A.82
1793990000	ZOV 4N/3 BL	A.94
1794000000	ZOV 4N/3 SW	A.70
1794000000	ZOV 4N/3 SW	A.82
1794000000	ZOV 4N/3 SW	A.94
1794010000	ZOV 4N/4 RT	A.70
1794010000	ZOV 4N/4 RT	A.82
1794010000	ZOV 4N/4 RT	A.94
1794020000	ZOV 4N/4 BL	A.70
1794020000	ZOV 4N/4 BL	A.82
1794020000	ZOV 4N/4 BL	A.94
1794030000	ZOV 4N/4 SW	A.70
1794030000	ZOV 4N/4 SW	A.82
1794030000	ZOV 4N/4 SW	A.94
1794040000	ZOV 4N/10 RT	A.70
1794040000	ZOV 4N/10 RT	A.82
1794040000	ZOV 4N/10 RT	A.94
1794050000	ZOV 4N/10 BL	A.70
1794050000	ZOV 4N/10 BL	A.82
1794050000	ZOV 4N/10 BL	A.94
1794060000	ZOV 4N/10 SW	A.70
1794060000	ZOV 4N/10 SW	A.82
1794060000	ZOV 4N/10 SW	A.94

1810000000

1818400000	WS 10/6 M MC NE WS	A.54
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1820000000

1828450000	WS 10/6 MC NE WS	A.94
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1900000000

1909020000	ZOV 4N/20 GE	A.70
1909020000	ZOV 4N/20 GE	A.82
1909020000	ZOV 4N/20 GE	A.94
1909100000	ZOV 4N/20 BL	A.70
1909100000	ZOV 4N/20 BL	A.82
1909100000	ZOV 4N/20 BL	A.94
1909120000	ZOV 4N/20 SW	A.70
1909120000	ZOV 4N/20 SW	A.82
1909120000	ZOV 4N/20 SW	A.94
1909150000	ZOV 4N/20 RT	A.70
1909150000	ZOV 4N/20 RT	A.82
1909150000	ZOV 4N/20 RT	A.94

1980000000

1984090000	RSS110024	A.50
1984100000	RSS110005	A.50
1984110000	RSS110012	A.50
1984120000	RSS110060	A.50
1984540000	TRS 24VDC 1CD AGSNO	A.15
1984550000	TRZ 24VDC 1CD AGSNO	A.15
1984560000	TRS 12VDC 1CD C1D2	A.47
1984570000	TRS 24VDC 1CD C1D2	A.47
1984580000	TRS 24VDC 1CD C1D2	A.47
1984590000	TRS 120VACRC 1CD C1D2	A.47
1984600000	TRS 230VACRC 1CD C1D2	A.47
1984610000	TRS 24-230VDC 1CD C1D2	A.47
1984620000	TRS 12VDC 1COAU C1D2	A.49
1984630000	TRS 24VDC 1COAU C1D2	A.49
1984640000	TRS 120VACRC 1COAU C1D2	A.49
1984650000	TRS 24-230VDC 1COAUC1D2	A.49

1990000000

1990960000	TOS 24VDC 24VDC5A	A.43
1990970000	TOS 24-230VDC 24VDC5A	A.43

1990980000	TOZ 24VDC 24VDC5A	A.43
1990990000	TOZ 24-230VDC 24VDC5A	A.43

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4061190000	SSS RELAIS 24V/24V 2ADC	A.51
4061200000	SSS RELAIS 60V/24V 2ADC	A.51
4061210000	SSS RELAIS 24V/230V 1AAC	A.51
4061220000	SSS RELAIS 60V/230V 1AAC	A.51
4061230000	SSS RELAIS 60V/24V 0,1ADC	A.51
4061590000	RSS113005	A.50
4061590000	RSS112024	A.50
4061600000	RSS112060	A.50
4061610000	RSS113012	A.50
4061630000	RSS113060	A.50
4064310000	SSS RELAIS 5V/24V 2ADC	A.51
4064320000	SSS RELAIS 5V/24V 0,1ADC	A.51

4070000000

4074580000	RCL425012	A.50
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7760000000

7760056014	RIM 3 110/230VAC	B.12
7760056014	RIM 3 110/230VAC	B.16
7760056014	RIM 3 110/230VAC	B.22
7760056014	RIM 3 110/230VAC	B.26
7760056014	RIM 3 110/230VAC	B.36
7760056015	RIM 2 6/24VDC	B.12
7760056015	RIM 2 6/24VDC	B.16
7760056015	RIM 2 6/24VDC	B.22
7760056015	RIM 2 6/24VDC	B.26
7760056015	RIM 2 6/24VDC	B.36
7760056016	RIM 2 24/60VDC	B.12
7760056016	RIM 2 24/60VDC	B.16
7760056016	RIM 2 24/60VDC	B.22
7760056016	RIM 2 24/60VDC	B.26
7760056016	RIM 2 24/60VDC	B.36
7760056017	RIM 2 110/230VDC	B.12
7760056017	RIM 2 110/230VDC	B.16
7760056017	RIM 2 110/230VDC	B.22
7760056017	RIM 2 110/230VDC	B.26
7760056018	RIM 3 24/60VUC	B.12
7760056018	RIM 3 24/60VUC	B.16
7760056018	RIM 3 24/60VUC	B.22
7760056018	RIM 3 24/60VUC	B.26
7760056018	RIM 3 24/60VUC	B.36
7760056045	RIM 3 110/230VAC LED	B.12
7760056045	RIM 3 110/230VAC LED	B.16
7760056045	RIM 3 110/230VAC LED	B.22
7760056045	RIM 3 110/230VAC LED	B.26
7760056045	RIM 3 110/230VAC LED	B.36
7760056050	DRM270012	B.21
7760056051	DRM270024	B.21
7760056052	DRM270048	B.21
7760056053	DRM270110	B.21
7760056054	DRM270220	B.21
7760056055	DRM270524	B.21
7760056056	DRM270548	B.21
7760056057	DRM270615	B.21
7760056058	DRM270730	B.21
7760056059	DRM270012L	B.21
7760056060	DRM270024L	B.18
7760056060	DRM270024L	B.21
7760056061	DRM270048L	B.21
7760056062	DRM270110L	B.21
7760056063	DRM270220L	B.18
7760056063	DRM270220L	B.21
7760056064	DRM270524L	B.18
7760056064	DRM270524L	B.21
7760056065	DRM270548L	B.21
7760056066	DRM270615L	B.21
7760056067	DRM270730L	B.18
7760056067	DRM270730L	B.21
7760056068	DRM270012LT	B.21
7760056069	DRM270024LT	B.18
7760056069	DRM270024LT	B.21
7760056070	DRM270048LT	B.21
7760056071	DRM270110LT	B.21
7760056072	DRM270220LT	B.18
7760056072	DRM270220LT	B.21
7760056073	DRM270524LT	B.18
7760056073	DRM270524LT	B.21
7760056074	DRM270548LT	B.21
7760056075	DRM270615LT	B.21
7760056076	DRM270730LT	B.18
7760056076	DRM270730LT	B.21
7760056077	DRM270024LD	B.21
7760056078	DRM570012	B.25
7760056079	DRM570024	B.25
7760056080	DRM570048	B.25
7760056081	DRM570110	B.25
7760056082	DRM570220	B.25
7760056083	DRM570524	B.25
7760056084	DRM570548	B.25
7760056085	DRM570615	B.25
7760056086	DRM570730	B.25
7760056087	DRM570012L	B.25
7760056088	DRM570024L	B.19
7760056088	DRM570024L	B.25
7760056089	DRM570048L	B.25
7760056090	DRM570110L	B.25

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7760056091	DRM570220L	B.25
7760056092	DRM570524L	B.19
7760056092	DRM570524L	B.25
7760056093	DRM570548L	B.25
7760056094	DRM570615L	B.25
7760056095	DRM570730L	B.19
7760056095	DRM570730L	B.25
7760056096	DRM570012LT	B.25
7760056097	DRM570024LT	B.19
7760056097	DRM570024LT	B.25
7760056098	DRM570048LT	B.25
7760056099	DRM570110LT	B.25
7760056100	DRM570220LT	B.19
7760056100	DRM570220LT	B.25
7760056101	DRM570524LT	B.19
7760056101	DRM570524LT	B.25
7760056102	DRM570548LT	B.25
7760056103	DRM570615LT	B.25
7760056104	DRM570730LT	B.19
7760056104	DRM570730LT	B.25
7760056105	DRM570024LD	B.25
7760056106	FS 2CO	B.22
7760056107	FS 4CO	B.26
7760056108	DRM/DRL CLIP M	B.22
7760056108	DRM/DRL CLIP M	B.26
7760056108	DRM/DRL CLIP M	B.36
7760056169	RIM 1 6/230VDC	B.12
7760056169	RIM 1 6/230VDC	B.16
7760056169	RIM 1 6/230VDC	B.22
7760056169	RIM 1 6/230VDC	B.26
7760056169	RIM 1 6/230VDC	B.36
7760056225	SLD F 2CO	B.36
7760056226	SLD F 3CO	B.36
7760056227	SLD F 4CO	B.37
7760056234	SLD CLIP 3CO M	B.36
7760056235	SLD CLIP 4CO M	B.37
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7760056249	Test Lever Block DRH/DRW	B.41
7760056249	Test Lever Block DRH/DRW	B.43
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7760056263	SCM 2CO ECO	B.22
7760056264	SCM 4CO ECO	B.26
7760056296	DR13 14012	B.11
7760056297	DR13 14024	B.11
7760056298	DR13 14048	B.11
7760056299	DR13 14110	B.11
7760056300	DR13 14524	B.11
7760056301	DR13 14615	B.11
7760056302	DR13 14730L	B.11
7760056303	DR13 14012L	B.11
7760056304	DR13 14024L	B.11
7760056305	DR13 14048L	B.11
7760056306	DR13 14110L	B.11
7760056307	DR13 14524L	B.11
7760056308	DR13 14615L	B.11
7760056309	DR13 14730L	B.11
7760056310	DR13 14012LD	B.11
7760056311	DR13 14024LD	B.11
7760056312	DR13 14048LD	B.11
7760056313	DR13 14110LD	B.11
7760056314	DR13 14524LD	B.11
7760056315	DR13 14012LTD	B.11
7760056316	DR13 14024LTD	B.11
7760056317	DR13 14048LTD	B.11
7760056318	DR13 14110LTD	B.11
7760056319	DR13 14524LTD	B.11
7760056320	DR13 14615LT	B.11
7760056321	DR13 14730LT	B.11
7760056322	DR1424024	B.15
7760056323	DR1424048	B.15
7760056324	DR1424110	B.15
7760056325	DR1424254	B.15
7760056326	DR1424615	B.15
7760056327	DR1424730	B.15
7760056328	DR1424012L	B.15
7760056329	DR1424024L	B.15
7760056330	DR1424048L	B.15
7760056331	DR1424110L	B.15
7760056332	DR1424524L	B.15
7760056333	DR1424615L	B.15
7760056334	DR1424730L	B.15
7760056335	DR1424012LD	B.15
7760056336	DR1424024LD	B.15
7760056337	DR1424048LD	B.15
7760056338	DR1424110LD	B.15
7760056339	DR1424012LTD	B.15
7760056340	DR1424024LTD	B.15
7760056341	DR1424048LTD	B.15
7760056342	DR1424110LTD	B.15
7760056343	DR1424524LT	B.15
7760056344	DR1424615LT	B.15
7760056345	DR1424730LT	B.15
7760056348	SDI 1CO F ECO	B.12
7760056349	SDI 2CO F ECO	B.12
7760056350	SDI 1CO	B.12
7760056351	SDI 2CO	B.12
7760056352	SDI CLIP	B.12
7760056352	SDI CLIP	B.16
7760056352	SDI CLIP	B.19

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7940007637	RCM580730	B.89
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7940018455	RIM 3 110/230VUC	B.16
7940018455	RIM 3 110/230VUC	B.22
7940018455	RIM 3 110/230VUC	B.26
7940018455	RIM 3 110/230VUC	B.36
7940018457	RIM 3 6/24VUC	B.12
7940018457	RIM 3 6/24VUC	B.16
7940018457	RIM 3 6/24VUC	B.22
7940018457	RIM 3 6/24VUC	B.26
7940018457	RIM 3 6/24VUC	B.36

8050000000

8054360000	RCM570012	B.89
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8070000000

8074670000	RCM570048	B.89
8074700000	RCM570110	B.89

8230000000

8237710000	MCZ R 230VAC	A.85
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8280000000

8286410000	MCZ TO 24VDC/150MS	E.12
8287730000	MCZ O 24VUC	A.90

8320000000

8324590000	MCZ TO 24VDC/50MS	E.12
8324610000	MCZ O 24VDC	A.92

8360000000

8365940000	MCZ O 24VUC	A.90
8365980000	MCZ R 24VDC	A.85

8380000000

8389030000	AP MCZ1.5 1674	A.94
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8390000000

8390590000	MCZ R 24VUC	A.85
8398940000	MCZ O 5VTTL	A.92

8420000000

8420880000	MCZ R 120VAC	A.85
8421060000	MCZ O 120VUC	A.91
8421380000	MCZ O 230VAC	A.91

8440000000

8442960000	MCZ R 24VDC 5uAu	A.85
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8460000000

8467470000	MCZ R 110VDC	A.85
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8490000000

8499550000	MCZ R 24Vdc 1NO TRAK	A.87
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8570000000

8574070000	MCZ R 48...110Vdc 1NO TRAK	A.87
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8640000000

8647680000	TIMER BTMF-S	E.10
8647690000	TIMER BTMF-Z	E.10
8647700000	TIMER BTM-S	B.90
8647710000	TIMER BTM-Z	E.9
8647720000	TIMER BTR-S	E.10
8647730000	TIMER BTR-Z	E.10
8647740000	TIMER BTM-T	E.11

8650000000

8659840000	BT LOCK PEN	E.8
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8680000000

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8689760000	RCM270524	B.79
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8689800000	RCM270615	B.73
8689800000	RCM270615	B.79
8689810000	RCM270S15	B.79
8689820000	RCM270730	B.72

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8869580000	RIM1 1 6/230V	B.81
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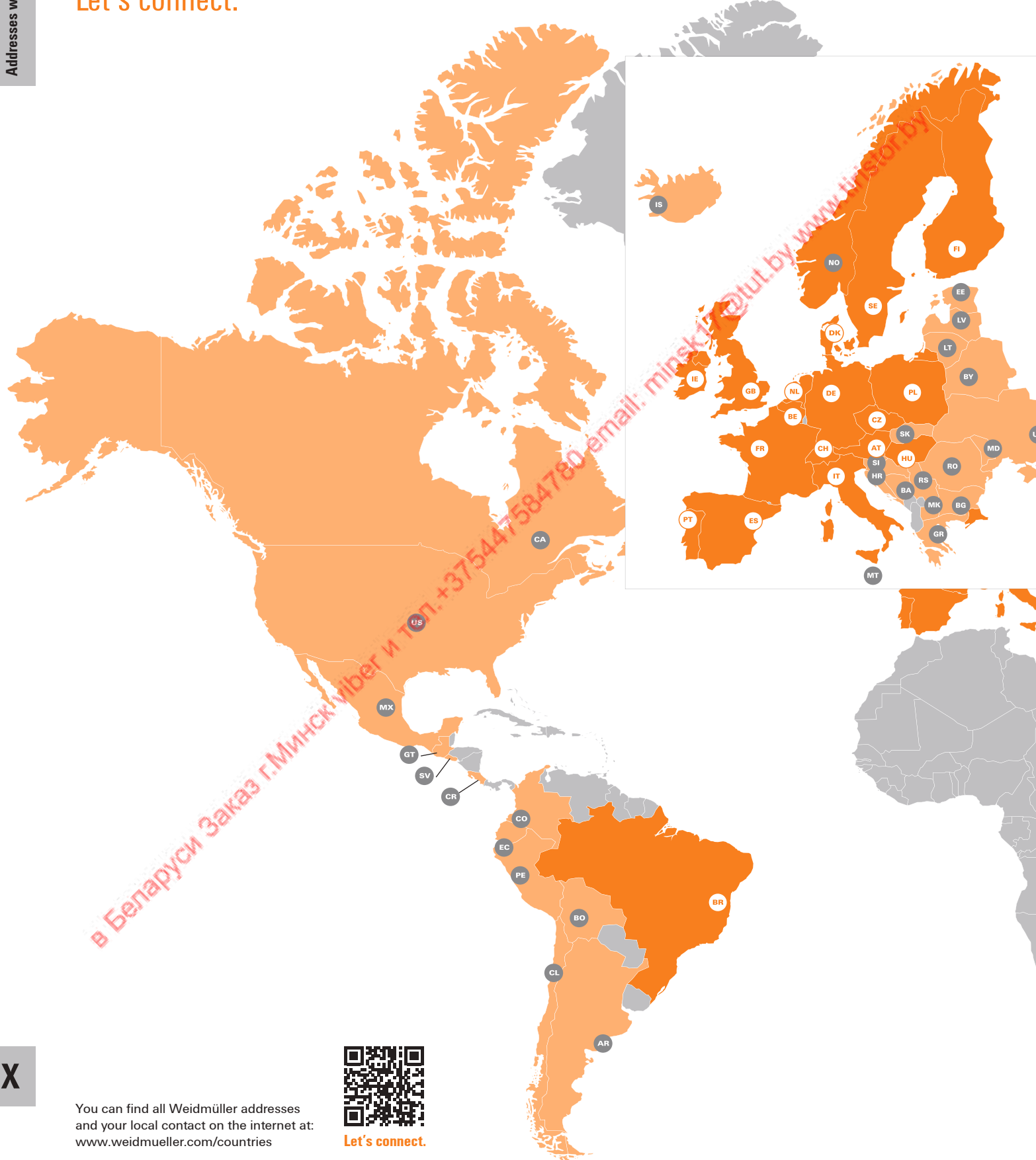
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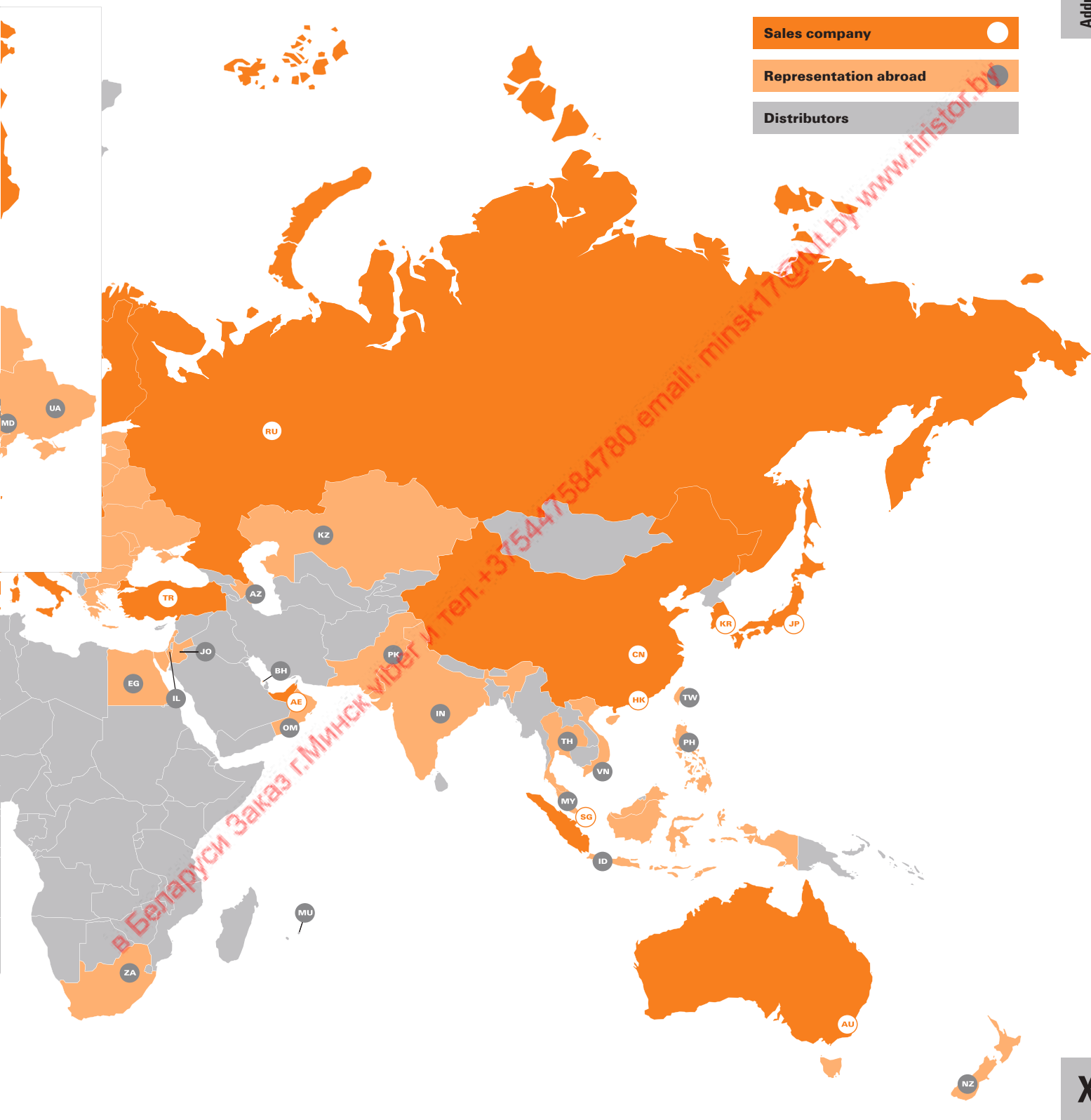


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