

Relay modules and solid-state relays in 6 mm width

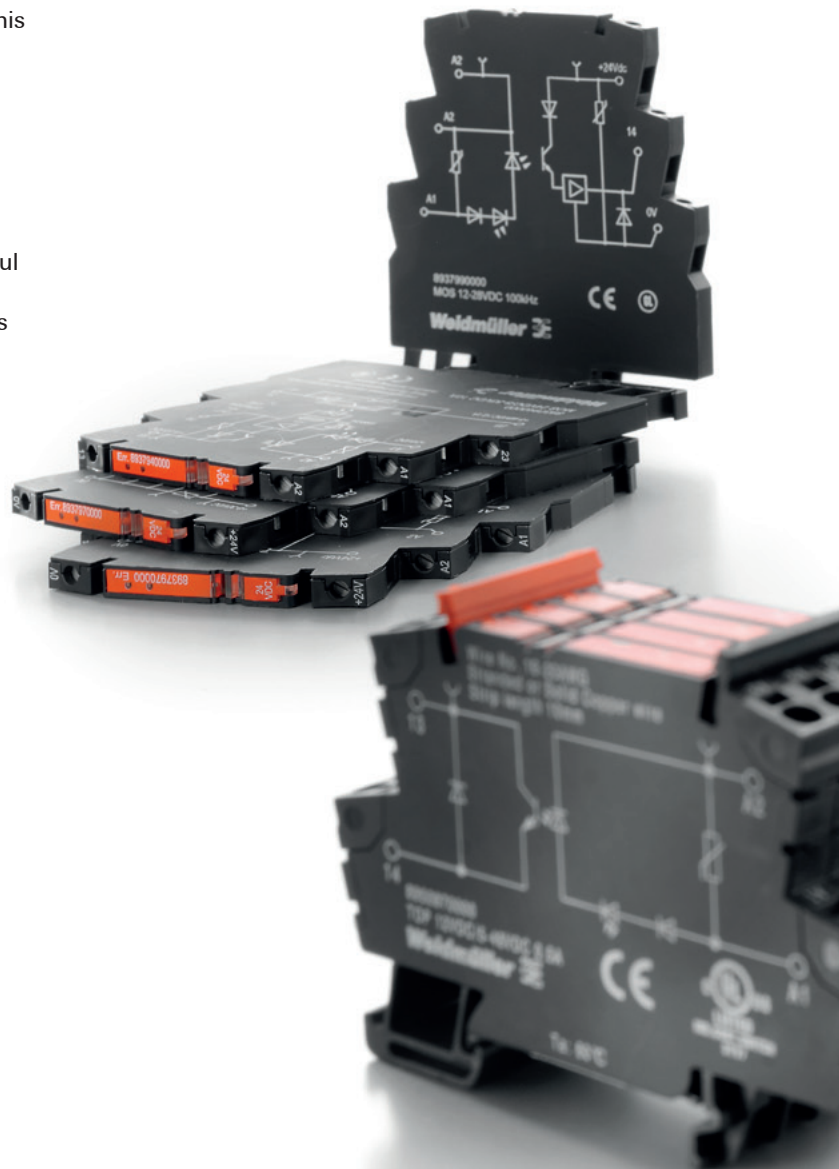
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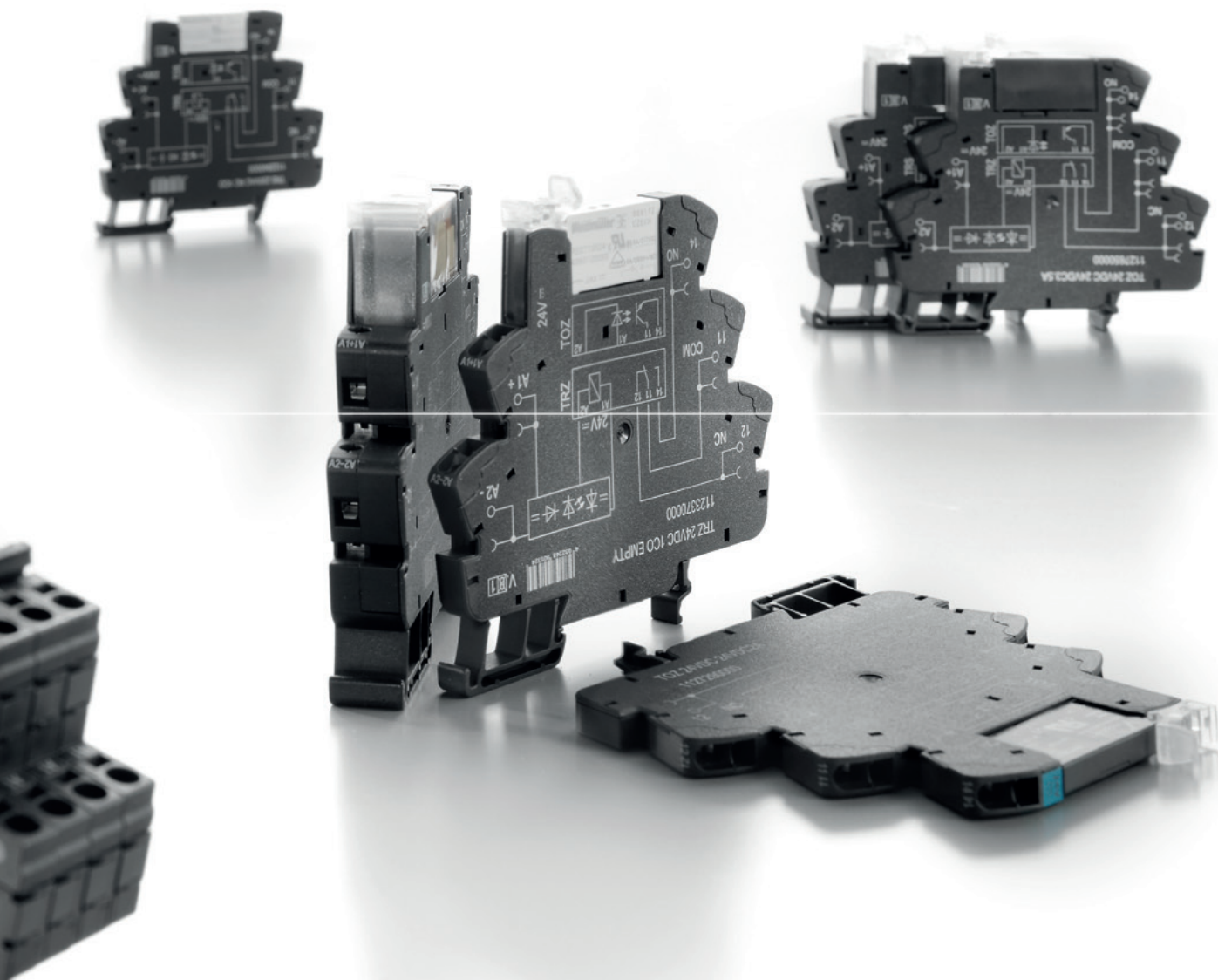
Coupling modules in a terminal block design

Relay modules and solid-state relays in 6 mm width

Weidmüller's relay couplers and solid-state relays feature excellent electrical characteristics. They also take advantage of the same reliable connection technology that has proven itself countless times in terminal products. This product line is ideally complimented by a wide variety of system accessories such as labelling material and end brackets. This helps to reduce your inventory overhead and stock levels. During the design of compact components, it is especially challenging to maintain minimal power loss since the small housing can exchange very little power with its surroundings. This challenge has already been mastered by Weidmüller since 1989. It was the first product in the terminal block format to come to market and it has been continually improved since then. Two compact but powerful semiconductor switches TERMOPTO and MICROOPTO also meet this challenge. The new TERMSERIES combines the proven properties of the established product lines with innovative technical solutions. A variable-voltage input has been specifically developed for the 6 mm disc design. This is the first time that the control of relay modules and solid-state relays can be used with voltages from 24 to 230 V DC/DC in this width. Another highlight is the ejector with integrated fibre-optic technology, which apart from allowing the simple and safe removal of the relay module and the solid-state relay, also illuminates the status indicator.

See for yourself, the quality of the Weidmüller's 6 mm products.

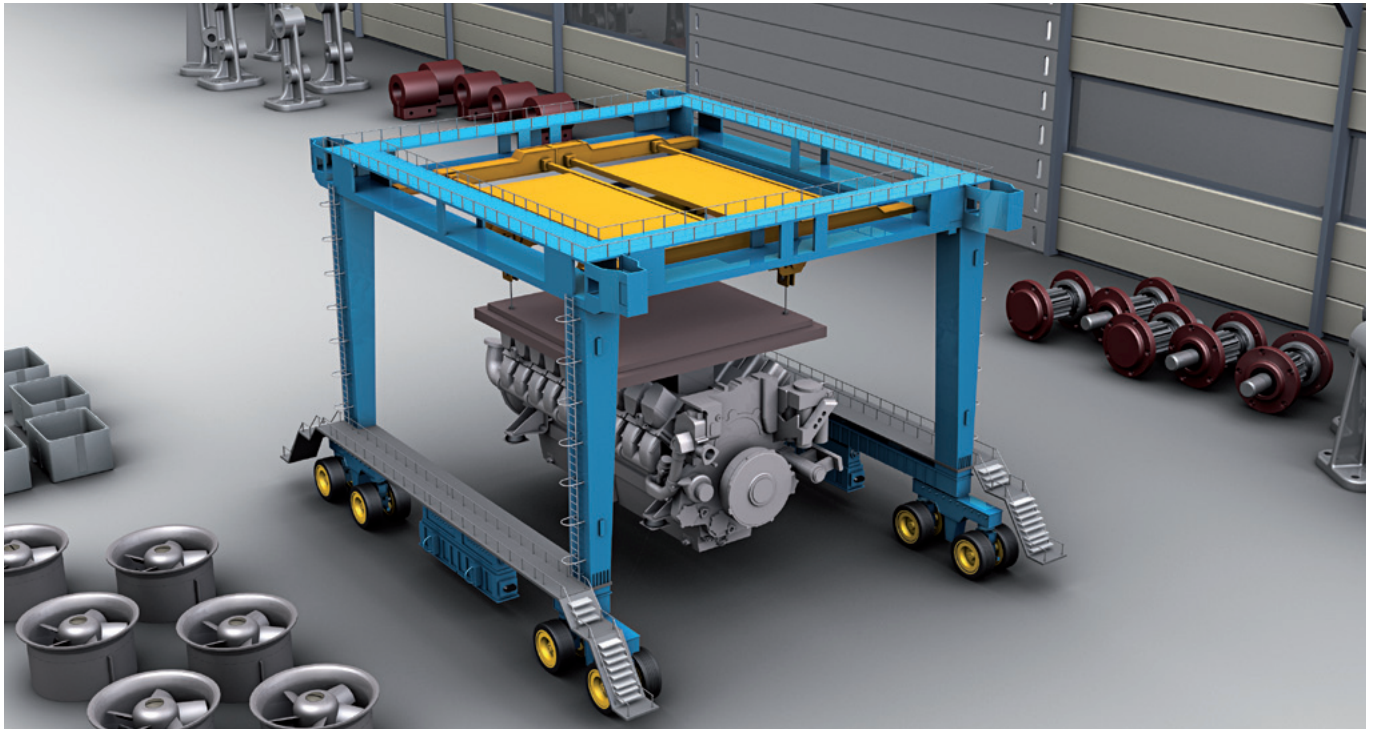




Seamless integration is your wish

Enjoy the solutions in our TERMSERIES, MICROOPTO and SAI series

Let's connect.

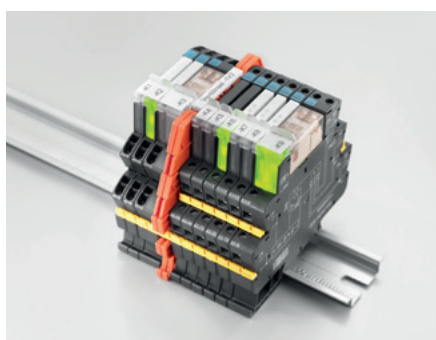
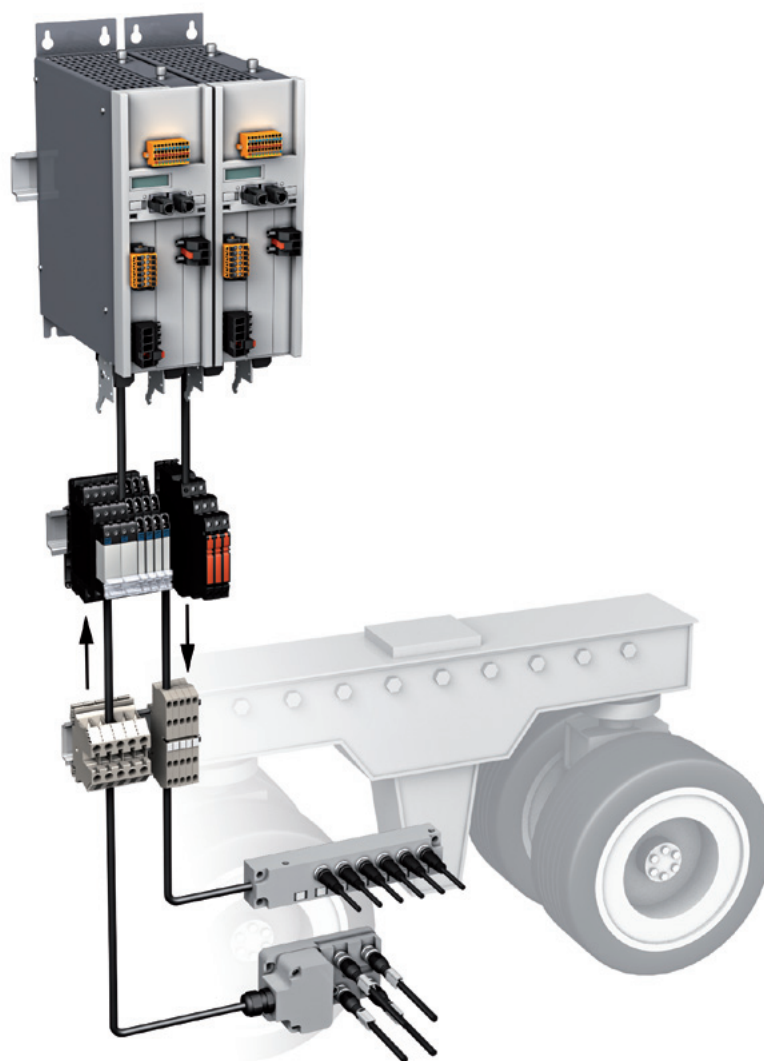


Materials and time savings in system and process automation are influenced by two critical factors. On the one hand, it is important to be able to work on complex systems with numerous sensor connections and a broad range of voltage inputs. On the other hand, the reliability of the actuator connections in terms of lifetime and speed play a major role.

The components in our TERMSERIES, MICROOPTO and SAI distributor series offer you this, in perfect combination. Our unique TERMSERIES multi-voltage input represents a universal relay coupler for all voltage inputs between 24 V and 230 V UC. These products also boast a slim terminal format and an eye-catching LED status display.

The MICROOPTO short circuit-proof semiconductor switch has the benefit of a practically unlimited lifetime, compared to traditional relay technology. Any alarms, e.g. such as those set off by a short circuit on the output side, are directly analysed by the SPS, which reports the service needed – for instance, examining the supply line or a solenoid valve – to the relevant post.

Our solution is rounded off with the SAI distributor in IP68, which ensures safe, protected and flexible signal connections in the field, such as those for the crane forward/reverse switch and for wear-and-tear monitors, overheating switches and impact sensors in materials handling technology.



TERMSERIES

- 6 and 12 mm relay couplers and semiconductor switches
- Multi-voltage input for 24 V to 230 V DC and AC
- Ideal visibility thanks to the illuminated ejector
- Partition plates and cross-connections for universal use



MICROOPTO Solenoid

- Semiconductor relays of 6 mm width earthed to mounting rail
- Short-circuit-proof output
- Short circuit alarm via signal contact
- MTBF means a long lifetime of more than 1,100 years



SAI distributors and lines

- M12 distributors which can be freely assembled in various formats
- Torsion-resistant wires available
- Very slim M8 distributor in line format
- All-metal distributor available

TERMSERIES – The All-rounder

Relays and solid-state relays for all purposes

Relay modules are universal isolating elements for use in electrical automation. There are always different requirements for them because of this versatility. With the development of our TERMSERIES relay modules and solid-state relays, we have used these practical requirements as our highest benchmark.

Depending on the application, you can choose the product with the fixed-voltage inputs or with the multi-voltage input, which is currently a unique feature in this thin 6 mm terminal block format. Our practical design is reflected in the high-quality design without any sharp edges, a large number of variants with screw and tension-clamp connections, and a clear status display even in difficult viewing conditions. The product shape allows it to be installed in many different positions. Unlimited cross-connectivity, even across partition plates, assures versatile usage for your application regardless of how unusual your needs are.

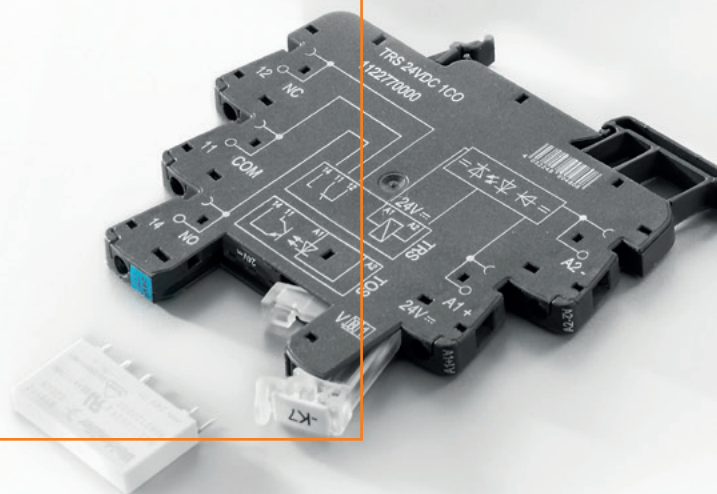
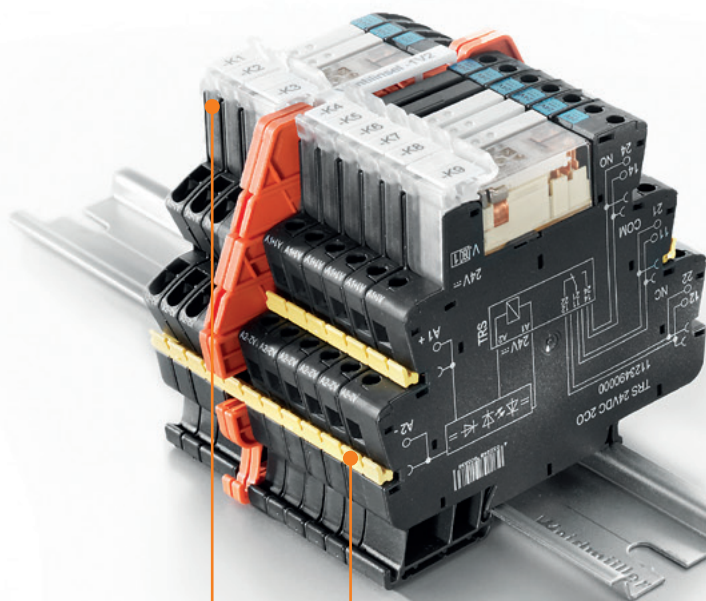
Always the best overview

A distinct status display is available through an LED that completely illuminates the ejector. This ensures the safe removal of the switching element.



Well-designed handling of cross-connections

An exceptionally simple shortening of the cross-connections to the necessary length allows indentations between the poles. An additional bar supports the handling and mounting without having to grasp the contacts.



Clear marking

The unique legibility of all labelling is assured in different mounting positions and this, together with different voltage variant colour identification, reduces the danger of a false connection.



Unique multi-voltage input

Whether retro-fitting machines or in plant construction: with the multi-voltage input from 24 V to 230 V UC, the input signals are always optimally matched to your automation application.



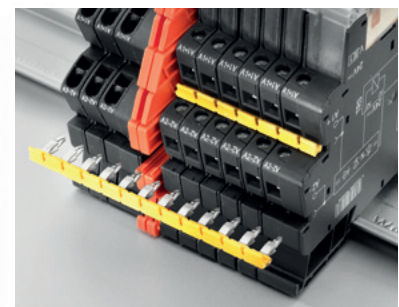
Any desired combinations

The variants with single or dual CO-contacts have the same shape and can be cross-connected with each other.



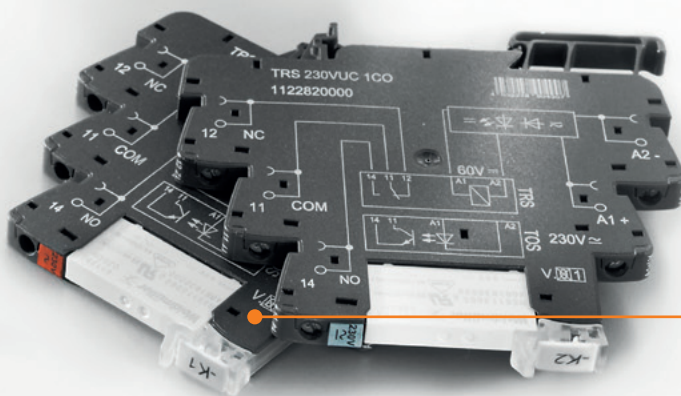
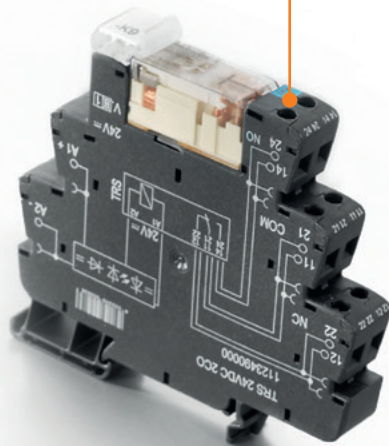
Custom-fit cross-connection

These cross-connectors are especially impressive because of their ease of use, good visibility and universal inter-connectivity – also across partition plates. Even the screw and tension-clamp variants can be cross-connected to each other.



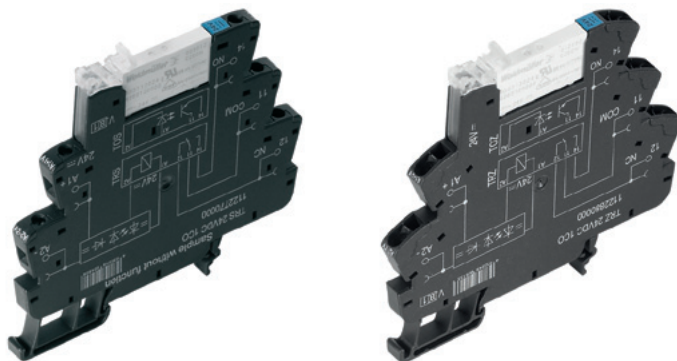
Partition plates for safety and clarity

The partition plate is a unique accessory because of its many different uses. It is used to group signals together visibly, to electrically isolate assemblies, or to add labelling for a better overview.



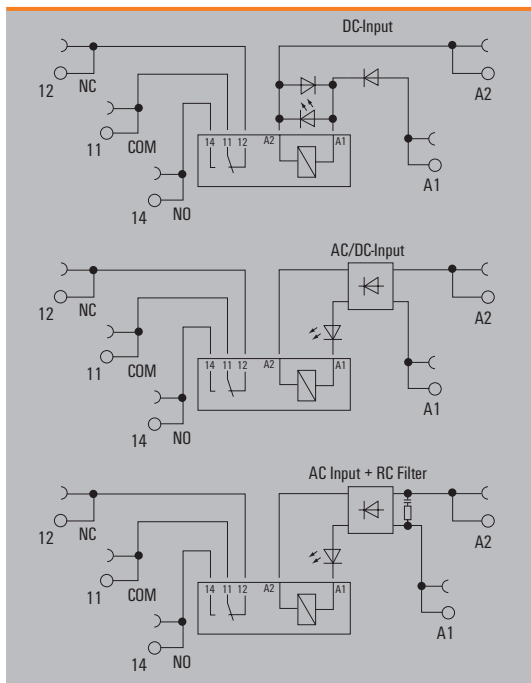
1 CO contact
AC/DC/UC coil

- Space saving, just 6.4 mm modular width
- AgNi contact
- Screw and tension clamp connection



Relay modules and solid-state relays in 6 mm width

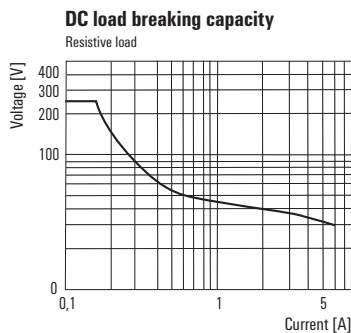
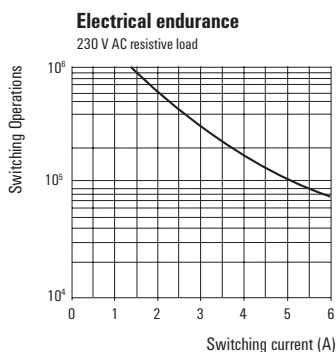
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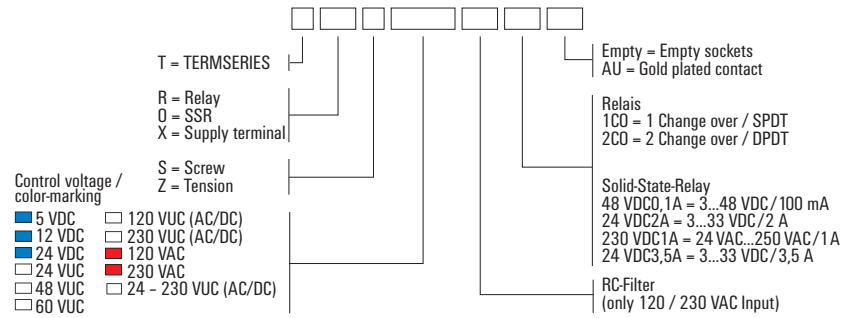
Technical data

Output			
Rated switching voltage / Continuous current	250 V AC / 6 A		
Max. switching voltage, AC	250 V		
Making current	6 A		
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA		
Max. switching power	1500 VA		
Contact material	AgNi		
Mechanical service life	5 x 10 ⁶ switching cycles		
Max. switching frequency at rated load	0.1 Hz		
Rated data			
Ambient temperature (operational)	-40 °C...+60 °C		
Storage temperature	-40 °C...+85 °C		
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation		
Approvals	CE; cULus; GL		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	6 kV (1.2/50 µs)		
Dielectric strength input - output			
Dielectric strength, contact / contact			
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.		
Creepage and clearance distance input - output	≥ 5.5 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions			
Clamping range (nominal / min. / max.)	mm ²	Screw connection	Tension clamp connection
		1.5 / 0.14 / 1.5	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90	88 / 6.4 / 90
Note			
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.			

Applications



1 CO contact
AC/DC/UC coil



Ordering data

	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Input					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Rated current AC / DC	/ 35.8 mA	/ 18 mA	/ 10 mA	10.1 mA / 6.4 mA	8 mA / 7 mA
Power rating	200 mW	210 mW	240 mW	270 mVA / 154 mW	240 mVA / 192 mW
AC response/dropout Volt				16.6 V / 5 V	29 V / 10 V
DC response/dropout Volt	3.3 V / 1 V	8 V / 2 V	16.6 V / 5 V	16.6 V / 5 V	29 V / 10 V
AC pickup/dropout current				4 mA / 1 mA	4 mA / 1.3 mA
DC pickup/dropout current	21.6 mA / 8 mA	9 mA / 3 mA	7 mA / 2 mA	4 mA / 1.2 mA	4 mA / 1.2 mA
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Rectifier	Rectifier
Output					
Switch-on delay	< 7 ms	< 7 ms	< 6 ms	< 4 ms	< 8 ms
Switch-off delay	< 4 ms	< 8 ms	< 7 ms	< 1.2 ms	< 4 ms
Ordering data					
Screw connection Type	TRS 5VDC 1CO	TRS 12VDC 1CO	TRS 24VDC 1CO	TRS 24VUC 1CO	TRS 48VUC 1CO
Order No.	1122740000	1122750000	1122770000	1122780000	1122790000
Tension clamp conn. Type	TRZ 5VDC 1CO	TRZ 12VDC 1CO	TRZ 24VDC 1CO	TRZ 24VUC 1CO	TRZ 48VUC 1CO
Order No.	1122860000	1122870000	1122880000	1122890000	1122900000
Note					
Spare relay Type: RSS113005	Orderno.: 4061580000	Spare relay Type: RSS113012	Orderno.: 4061610000	Spare relay Type: RSS113024	Orderno.: 4060120000

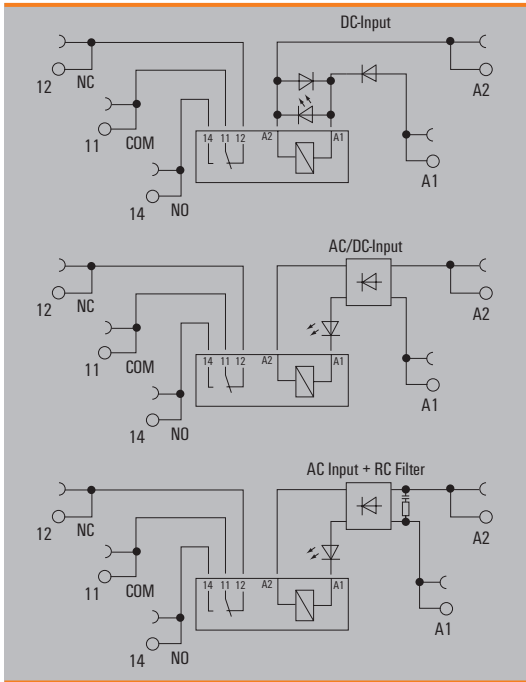
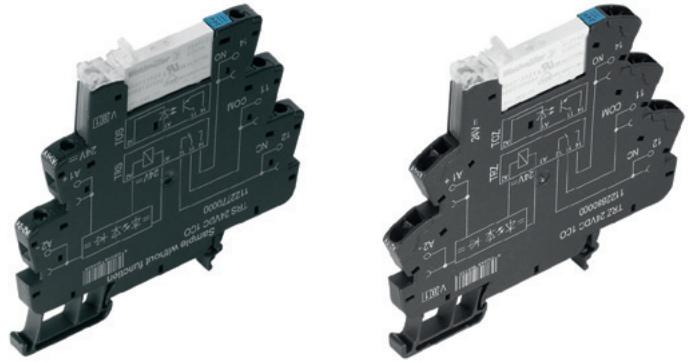
Ordering data

	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Input					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC ±10%	120 V AC ±10 %	230 V AC ±10 %
Rated current AC / DC	6.1 mA / 3,3 mA	4 mA / 3.5 mA	3.5 mA / 2.9 mA	7 mA	10.1 mA
Power rating	360 mW	0.48 VA, 420 mW	0.8 VA, 700 mW	0.84 VA	2.3 VA
AC response/dropout Volt	35 V / 11 V	79 V / 60 V	159 V / 100 V	79 V / 60 V	145 V / 90 V
DC response/dropout Volt	40 V / 10 V		159 V / 99 V		
AC pickup/dropout current		4 mA / 2.5 mA	2,2 mA / 1,3 mA	4 mA / 2.5 mA	9.13 mA / 4.78 mA
DC pickup/dropout current			1.7 mA / 0.7 mA		
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	Rectifier	Rectifier
Output					
Switch-on delay	< 6 ms	< 8 ms	< 22 ms	< 5.3 ms	< 22 ms
Switch-off delay	< 6.5 ms	< 7 ms	< 30 ms	< 4 ms	< 30 ms
Ordering data					
Screw connection Type	TRS 60VUC 1CO	TRS 120VUC 1CO	TRS 230VUC 1CO	TRS 120VAC RC 1CO	TRS 230VAC RC 1CO
Order No.	1122800000	1122810000	1122820000	1122830000	1122840000
Tension clamp conn. Type	TRZ 60VUC 1CO	TRZ 120VUC 1CO	TRZ 230VUC 1CO	TRZ 120VAC RC 1CO	TRZ 230VAC RC 1CO
Order No.	1122910000	1122920000	1122930000	1122940000	1122950000
Note					
Spare relay Type: RSS113060	Orderno.: 4061630000	Spare relay Type: RSS113060	Orderno.: 4061630000	Spare relay Type: RSS113060	Orderno.: 4061630000

1 CO contact with hard gold-plated contacts

AC/DC/UC coil

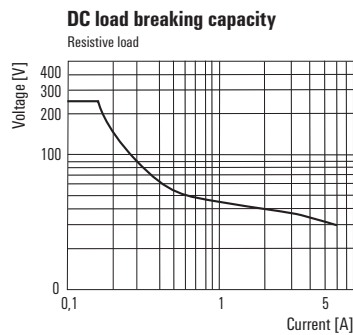
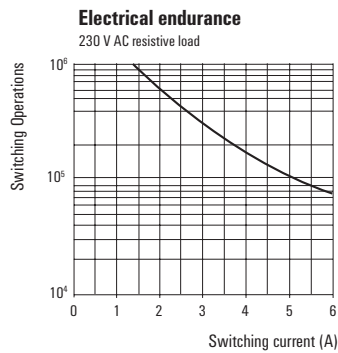
- Space saving, just 6.4 mm modular width
- AgNi contact with gold plating
- Screw and tension clamp connection



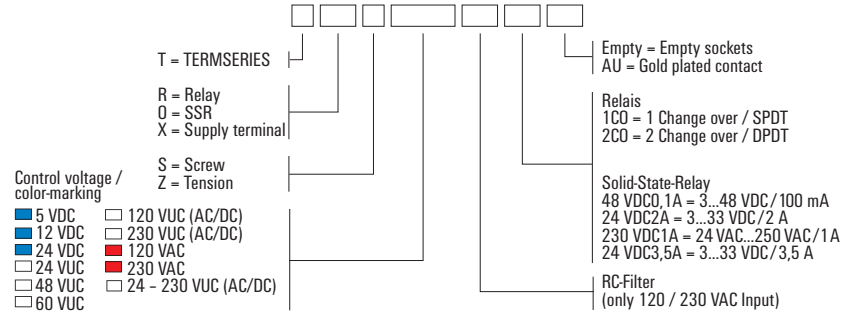
Technical data

Output			
Rated switching voltage / Continuous current	250 V AC / 6 A		
Max. switching voltage, AC	250 V		
Making current	6 A		
Min. switching power	1 V / 1 mA		
Max. switching power	1500 VA		
Contact material	AgNi 5µm Au		
Mechanical service life	5 x 10 ⁶ switching cycles		
Max. switching frequency at rated load	0.1 Hz		
Rated data			
Ambient temperature (operational)	-40 °C...+60 °C		
Storage temperature	-40 °C...+85 °C		
Humidity	5-95% rel. humidity, T _a = 40°C, no condensation		
Approvals	CE; cULus; GL		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	6 kV (1.2/50 µs)		
Dielectric strength input - output			
Dielectric strength, contact / contact			
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.		
Creepage and clearance distance input - output	≥ 5.5 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions		Screw connection	Tension clamp connection
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90	88 / 6.4 / 90
Note			
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.			

Applications



1 CO contact with hard gold-plated contacts
AC/DC/UC coil



Ordering data

	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Input					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Rated current AC / DC	/ 35.8 mA	/ 18 mA	/ 10 mA	10.1 mA / 6.4 mA	8 mA / 7 mA
Power rating	200 mW	210 mW	240 mW	270 mVA / 154 mW	240 mVA / 192 mW
AC response/dropout Volt				16.6 V / 5 V	29 V / 10 V
DC response/dropout Volt	3.3 V / 1 V	8 V / 2 V	16.6 V / 5 V	16.6 V / 5 V	29 V / 10 V
AC pickup/dropout current				4 mA / 1 mA	4 mA / 1.3 mA
DC pickup/dropout current	21,6 mA / 8 mA	9 mA / 3 mA	7 mA / 2 mA	4 mA / 1.2 mA	4 mA / 1.2 mA
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Rectifier	Rectifier
Output					
Switch-on delay	< 7 ms	< 7 ms	< 6 ms	< 4 ms	< 8 ms
Switch-off delay	< 4 ms	< 8 ms	< 7 ms	< 1.2 ms	< 4 ms
Ordering data					
Screw connection Type	TRS 5VDC 1CO AU	TRS 12VDC 1CO AU	TRS 24VDC 1CO AU	TRS 24VUC 1CO AU	TRS 48VUC 1CO AU
Order No.	1122980000	1122990000	1123000000	1123010000	1123020000
Tension clamp conn. Type	TRZ 5VDC 1CO AU	TRZ 12VDC 1CO AU	TRZ 24VDC 1CO AU	TRZ 24VUC 1CO AU	TRZ 48VUC 1CO AU
Order No.	1123100000	1123110000	1123120000	1123130000	1123140000
Note					
	Spare relay Type: RSS112005 Orderno.: 1174540000	Spare relay Type: RSS112012 Orderno.: 1220670000	Spare relay Type: RSS112024 Orderno.: 4061590000	Spare relay Type: RSS112024 Orderno.: 4061590000	Spare relay Type: RSS112024 Orderno.: 4061590000

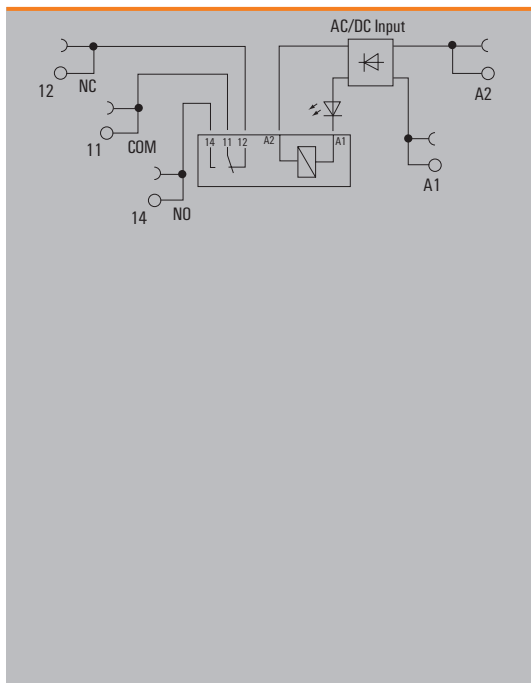
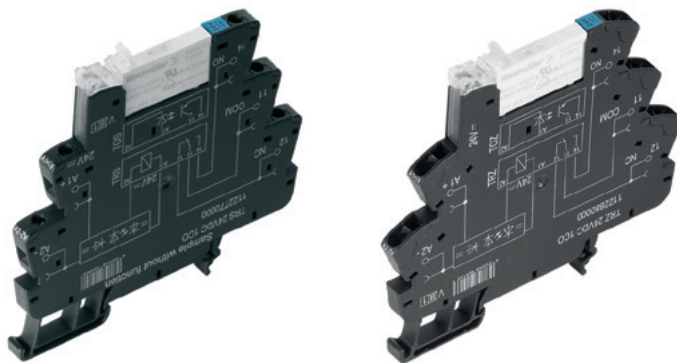
Ordering data

	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Input					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC ±10%	120 V AC ±10 %	230 V AC ±10 %
Rated current AC / DC	6.1 mA / 3,3 mA	4 mA / 3.5 mA	3.5 mA / 2.9 mA	7 mA	10.1 mA
Power rating	360 mW	0.48 VA, 420 mW	0.8 VA, 700 mW	0.84 VA	2.3 VA
AC response/dropout Volt	35 V / 11 V	79 V / 60 V	159 V / 100 V	79 V / 60 V	145 V / 90 V
DC response/dropout Volt	40 V / 10 V		159 V / 99 V		
AC pickup/dropout current		4 mA / 2.5 mA	2,2 mA / 1,3 mA	4 mA / 2.5 mA	9.13 mA / 4.78 mA
DC pickup/dropout current			1.7 mA / 0.7 mA		
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	Rectifier	Rectifier
Output					
Switch-on delay	< 6 ms	< 8 ms	< 22 ms	< 5.3 ms	< 22 ms
Switch-off delay	< 6.5 ms	< 7 ms	< 30 ms	< 4 ms	< 30 ms
Ordering data					
Screw connection Type	TRS 60VUC 1CO AU	TRZ 120VUC 1CO AU	TRS 230VUC 1CO AU	TRS 120VAC RC 1CO AU	TRS 230VAC RC 1CO AU
Order No.	1123030000	1123170000	1123050000	1123070000	1123080000
Tension clamp conn. Type	TRZ 60VUC 1CO AU	TRS 120VUC 1CO AU	TRZ 230VUC 1CO AU	TRZ 120VAC RC 1CO AU	TRZ 230VAC RC 1CO AU
Order No.	1123150000	1123040000	1123180000	1123190000	1123200000
Note					
	Spare relay Type: RSS112060 Orderno.: 4061600000	Spare relay Type: RSS112060 Orderno.: 4061600000	Spare relay Type: RSS112060 Orderno.: 4061600000	Spare relay Type: RSS112060 Orderno.: 4061600000	Spare relay Type: RSS112060 Orderno.: 4061600000

1 CO contact

multi-voltage input

- Space saving, just 6.4 mm modular width
- AgNi contact
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Technical data

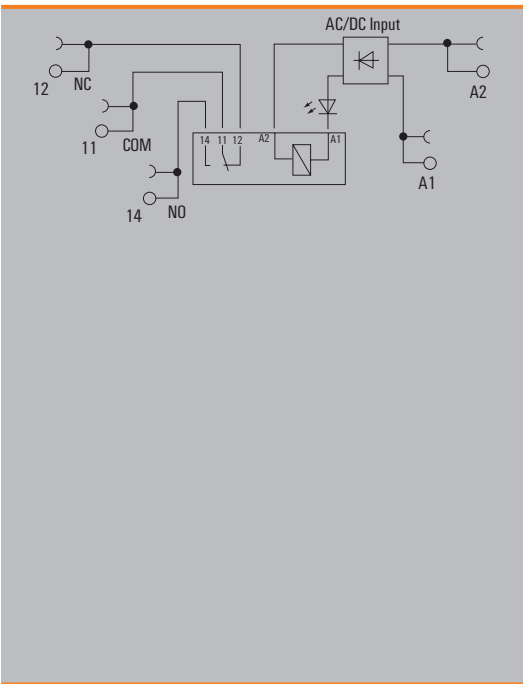
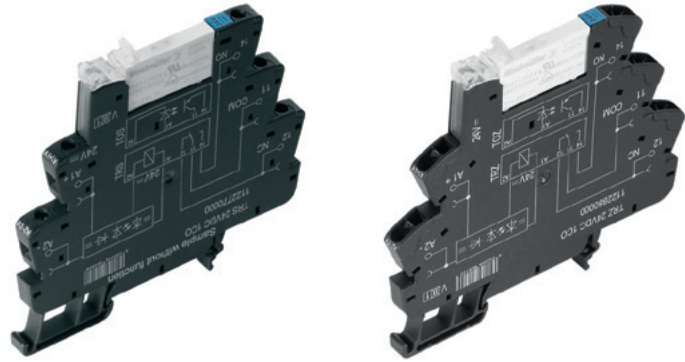
Output			
Rated switching voltage / Continuous current	250 V AC / 6 A		
Max. switching voltage, AC	250 V		
Making current	6 A		
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA		
Max. switching power	1500 VA		
Contact material	AgNi		
Mechanical service life	5 x 10 ⁶ switching cycles		
Max. switching frequency at rated load	0.1 Hz		
Rated data			
Ambient temperature (operational)	-40 °C...+60 °C		
Storage temperature	-40 °C...+85 °C		
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation		
Approvals	CE; cULus; GL		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	6 kV (1.2/50 µs)		
Dielectric strength input - output			
Dielectric strength, contact / contact			
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.		
Creepage and clearance distance input - output	≥ 5.5 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions		Screw connection	Tension clamp connection
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90	88 / 6.4 / 90
Note			
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.			

Ordering data

24 V - 230 V UC	
Input	
Rated control voltage	24...230 V UC ±10 %
Rated current AC / DC	4 mA @ 230 V AC ±10 %, 28 mA @ 24 V AC ±10 % / 22 mA @ 24 V DC ±10 %
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
AC response/dropout Volt	11 V / 6 V
DC response/dropout Volt	11 V / 5 V
AC pickup/dropout current	
DC pickup/dropout current	
Status indicator	Green LED
Protective circuit	Rectifier
Output	
Switch-on delay	< 22 ms
Switch-off delay	< 100 ms
Ordering data	
Screw connection	Type TRS 24-230VUC 1CO
	Order No. 1122850000
Tension clamp conn.	Type TRZ 24-230VUC 1CO
	Order No. 1122970000
Note	
Spare relay Type: RSS113024 Orderno.: 4060120000	

**1 CO contact with hard gold-plated contacts
multi-voltage input**

- Space saving, just 6.4 mm modular width
- AgNi contact with gold plating
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Technical data

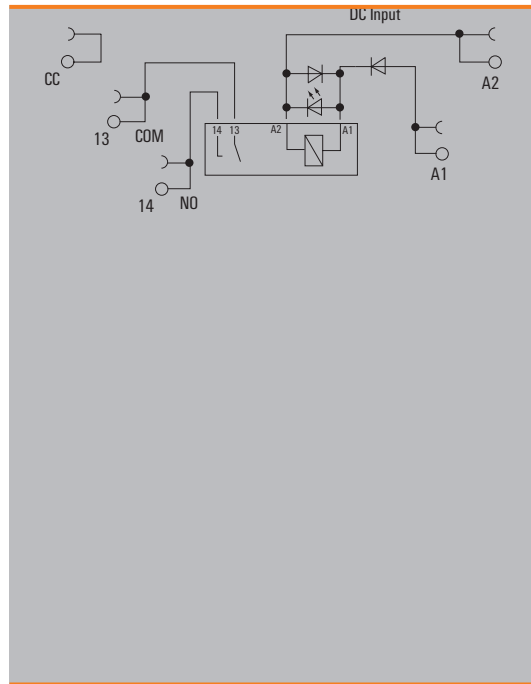
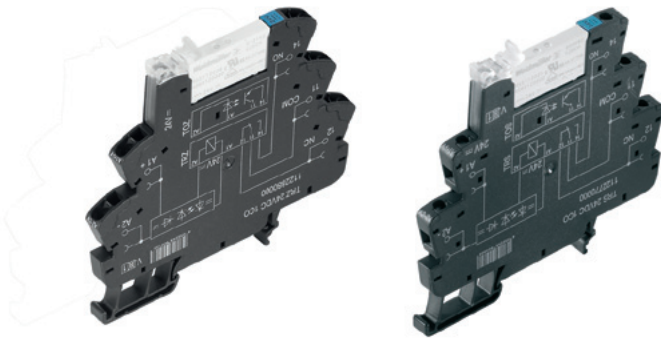
Output	
Rated switching voltage / Continuous current	250 V AC / 6 A
Max. switching voltage, AC	250 V
Making current	6 A
Min. switching power	1 V / 1 mA
Max. switching power	1500 VA
Contact material	AgNi 5µm Au
Mechanical service life	5 x 10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-40 °C...+60 °C
Storage temperature	-40 °C...+85 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus; GL
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength input - output	
Dielectric strength, contact / contact	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Note	
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

Ordering data

Input	
Rated control voltage	24...230 V UC ±10 %
Rated current AC / DC	4 mA @ 230 V AC ±10 %, 28 mA @ 24 V AC ±10 % / 22 mA @ 24 V DC ±10 %
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
AC response/dropout Volt	11 V / 6 V
DC response/dropout Volt	11 V / 5 V
AC pickup/dropout current	
DC pickup/dropout current	
Status indicator	Green LED
Protective circuit	Rectifier
Output	
Switch-on delay	< 22 ms
Switch-off delay	< 100 ms
Ordering data	
Screw connection Type	TRS 24-230VUC 1CO AU
Order No.	1123090000
Tension clamp conn. Type	TRZ 24-230VUC 1CO AU
Order No.	1123210000
Note	
Spare relay Type: RSS112024 Orderno.: 4061590000	

1 NO contact (actuator)

- Space-saving, only 6.4 mm wide
- AgNi contact
- Screw and tension clamp connection
- 24 V DC actuator version:
Bridgeable, potential-free connection in the output (CC)



Technical data

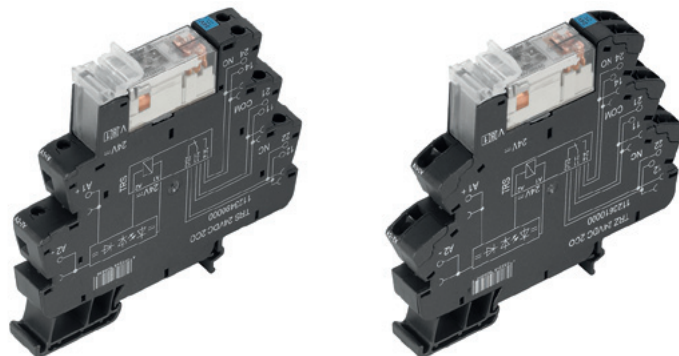
Output			
Rated switching voltage / Continuous current	250 V AC / 6 A		
Max. switching voltage, AC	250 V		
Making current	6 A		
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA		
Max. switching power	1500 VA		
Contact material	AgNi		
Mechanical service life	5 x 10 ⁶ switching cycles		
Max. switching frequency at rated load	0.1 Hz		
Rated data			
Ambient temperature (operational)	-40 °C...+60 °C		
Storage temperature	-40 °C...+85 °C		
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation		
Approvals			
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	6 kV (1.2/50 µs)		
Dielectric strength input - output			
Dielectric strength, contact / contact			
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.		
Creepage and clearance distance input - output	≥ 5.5 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions			
Clamping range (nominal / min. / max.)	mm ²	Screw connection	Tension clamp connection
		1.5 / 0.14 / 1.5	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90	88 / 6.4 / 90
Note			
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.			

Ordering data

Input		24 V DC ACT
Rated control voltage		24 V DC ±20 %
Rated current AC / DC		/ 10 mA
Power rating		240 mW
AC response/dropout Volt		
DC response/dropout Volt		
AC pickup/dropout current		
DC pickup/dropout current		7 mA / 2 mA
Status indicator		Green LED
Protective circuit		Integrated free-wheel diode, Reverse polarity protection
Output		
Switch-on delay		< 6 ms
Switch-off delay		< 7 ms
Ordering data		
Screw connection	Type	TRS 24VDC ACT
	Order No.	1381900000
Tension clamp conn.	Type	TRZ 24VDC ACT
	Order No.	1391670000
Note		

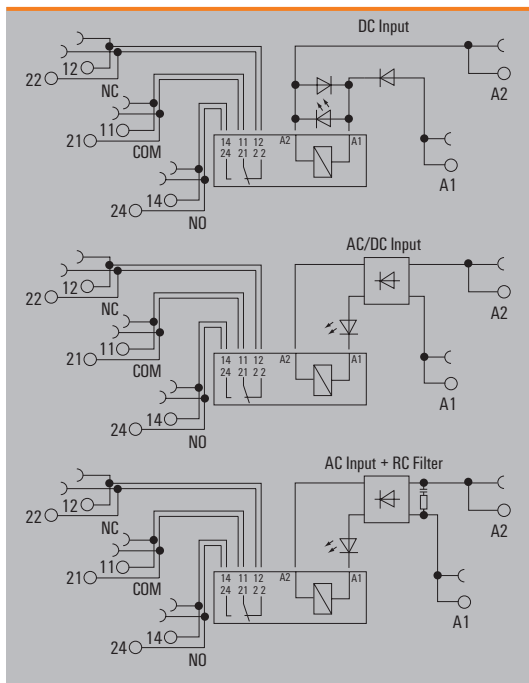
2 CO contacts
AC/DC/UC coil

- Space saving, just 12.8 mm modular width
- AgNi contact
- Screw and tension clamp connection



Relay modules and solid-state relays in 6 mm width

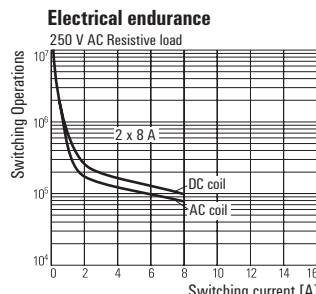
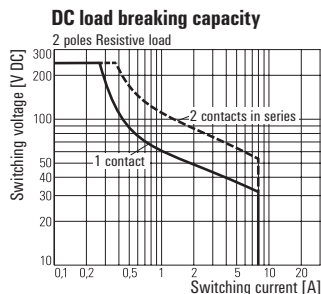
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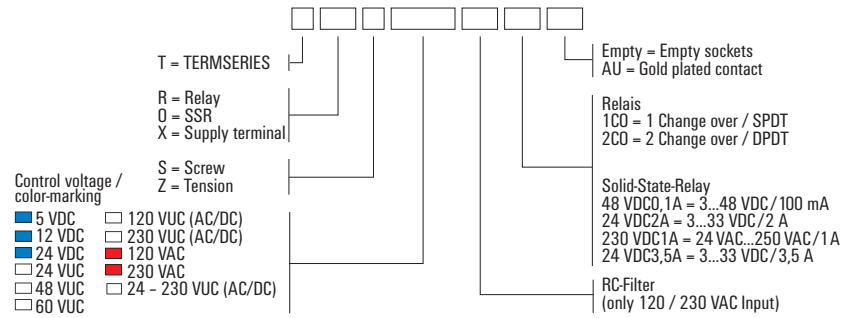
Technical data

Output		
Rated switching voltage / Continuous current	250 V AC / 8 A	
Max. switching voltage, AC	250 V	
Making current	15 A / 4 s	
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA	
Max. switching power	2000 VA	
Contact material	AgNi	
Mechanical service life	30 x 10 ⁶ switching cycles	
Max. switching frequency at rated load	0.1 Hz	
Rated data		
Ambient temperature (operational)	-40 °C...+60 °C	
Storage temperature	-40 °C...+85 °C	
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation	
Approvals	CE; cULus; GL	
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength input - output	1.2 kV _{eff} / 5 s	
Dielectric strength, contact / contact	2.5 kV _{eff}	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.	
Creepage and clearance distance input - output	≥ 5.5 mm	
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5
	mm	88 / 12.8 / 90
Depth x width x height	mm	88 / 12.8 / 90
Note		
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.		

Applications



2 CO contacts
AC/DC/UC coil



Ordering data

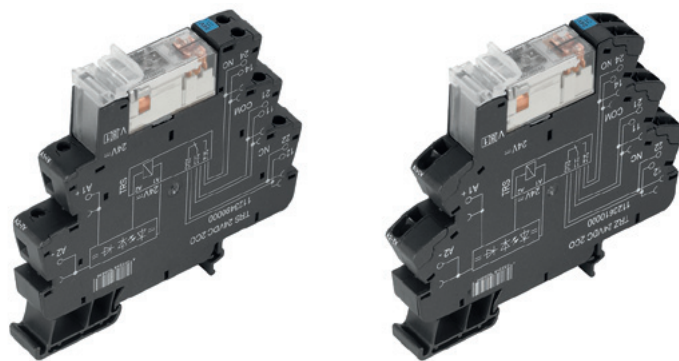
	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Input					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Rated current AC / DC	/ 80 mA	/ 33.3 mA	/ 16 mA	16 mA / 14 mA	9 mA / 7 mA
Power rating	400 mW	420 mW	384 mW	390 mVA / 350 mW	340 mW / 0.4 VA
AC response/dropout Volt				16 V / 9 V	29 V / 11 V
DC response/dropout Volt	3.2 V / 1.6 V	8.5 V / 3 V	16,6 V / 3,5 V	18 V / 8 V	33 V / 12 V
AC pickup/dropout current				11 mA / 4 mA	6.3 mA / 4.3 mA
DC pickup/dropout current	21,6 mA / 8 mA	21 mA / 5 mA	10 mA / 2 mA	10 mA / 2 mA	5 mA / 2 mA
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Rectifier	Rectifier
Output					
Switch-on delay	< 7 ms	< 7 ms	< 8 ms	< 4 ms	< 8 ms
Switch-off delay	< 4 ms	< 8 ms	< 10 ms	< 1.2 ms	< 4 ms
Ordering data					
Screw connection Type	TRS 5VDC 2CO	TRS 12VDC 2CO	TRS 24VDC 2CO	TRS 24VUC 2CO	TRS 48VUC 2CO
Order No.	1123470000	1123480000	1123490000	1123500000	1123510000
Tension clamp conn. Type	TRZ 5VDC 2CO	TRZ 12VDC 2CO	TRZ 24VDC 2CO	TRZ 24VUC 2CO	TRZ 48VUC 2CO
Order No.	1123590000	1123600000	1123610000	1123620000	1123630000
Note					
Spare relay Type: RCL424005 Orderno.: 8693790000		Spare relay Type: RCL424012 Orderno.: 4058560000	Spare relay Type: RCL424024 Orderno.: 4058570000	Spare relay Type: RCL424024 Orderno.: 4058570000	Spare relay Type: RCL424048 Orderno.: 4058750000

Ordering data

	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Input					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC ±5 %	120 V AC ±10 %	230 V AC ±5 %
Rated current AC / DC	8 mA / 6.1 mA	3.5 mA / 3.5 mA	4 mA / 4 mA	6.1 mA	10.1 mA
Power rating	480 mVA / 360 mW	420 mVA / 420 mW	920 mVA / 920 mW	0.73 VA	2.3 VA
AC response/dropout Volt	36 V / 13 V	64 V / 26 V	112 V / 43 V	65 V / 23 V	112 V / 45 V
DC response/dropout Volt	40 V / 14 V	69 V / 22 V	129 V / 36 V		
AC pickup/dropout current	5 mA / 2.5 mA	2 mA / 1 mA	2 mA / 1 mA	3.6 mA / 1.3 mA	5 mA / 2.5 mA
DC pickup/dropout current	4 mA / 1.2 mA	2 mA / 1 mA	2 mA / 1 mA		
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	Rectifier	Rectifier
Output					
Switch-on delay	< 6 ms	< 8 ms	< 14 ms	< 5 ms	< 14 ms
Switch-off delay	< 7 ms	< 7 ms	< 22 ms	< 4 ms	< 12 ms
Ordering data					
Screw connection Type	TRS 60VUC 2CO	TRS 120VUC 2CO	TRS 230VUC 2CO	TRS 120VAC RC 2CO	TRS 230VAC RC 2CO
Order No.	1123520000	1123530000	1123540000	1123550000	1123570000
Tension clamp conn. Type	TRZ 60VUC 2CO	TRZ 120VUC 2CO	TRZ 230VUC 2CO	TRZ 120VAC RC 2CO	TRZ 230VAC RC 2CO
Order No.	1123640000	1123650000	1123670000	1123680000	1123690000
Note					
Spare relay Type: RCL424060 Orderno.: 4058760000		Spare relay Type: RCL424110 Orderno.: 4058590000	Spare relay Type: RCL424110 Orderno.: 4058590000	Spare relay Type: RCL424110 Orderno.: 4058590000	Spare relay Type: RCL424110 Orderno.: 4058590000

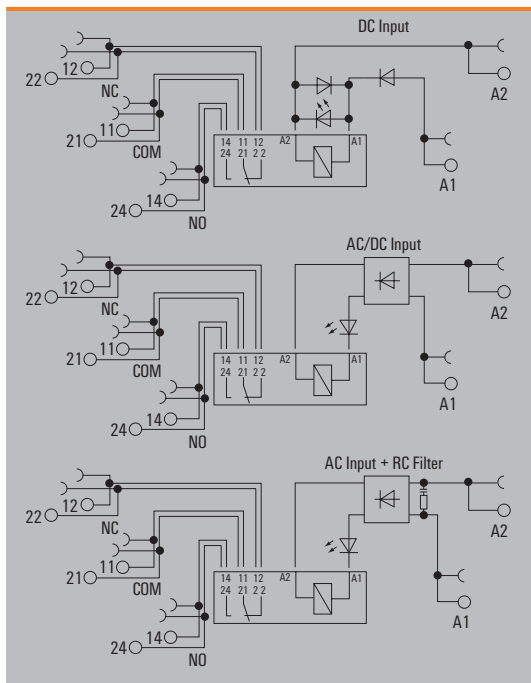
2 CO contact with hard gold-plated contacts
AC/DC/UC coil

- Space saving, just 12.8 mm modular width
- AgNi contact with gold plating
- Screw and tension clamp connection



Relay modules and solid-state relays in 6 mm width

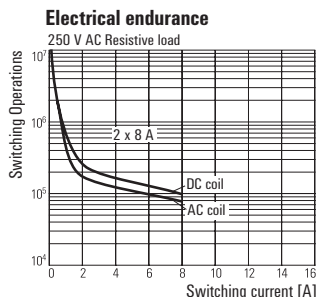
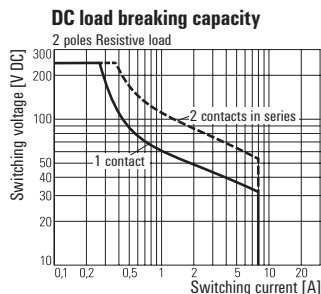
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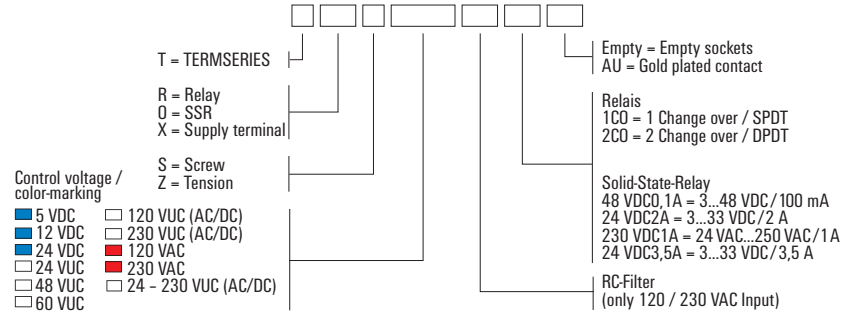
Technical data

Output		
Rated switching voltage / Continuous current	250 V AC / 8 A	
Max. switching voltage, AC	250 V	
Making current	15 A / 4 s	
Min. switching power	1 V / 1 mA	
Max. switching power	2000 VA	
Contact material	AgNi 5µm Au	
Mechanical service life	30 x 10 ⁶ switching cycles	
Max. switching frequency at rated load	0.1 Hz	
Rated data		
Ambient temperature (operational)	-40 °C...+60 °C	
Storage temperature	-40 °C...+85 °C	
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation	
Approvals	CE; cULus; GL	
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength input - output	1.2 kV _{eff} / 5 s	
Dielectric strength, contact / contact	2.5 kV _{eff}	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.	
Creepage and clearance distance input - output	≥ 5.5 mm	
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	Screw connection	Tension clamp connection
	mm ²	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 12.8 / 90
Note		
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.		

Applications



2 CO contact with hard gold-plated contacts
AC/DC/UC coil



Ordering data

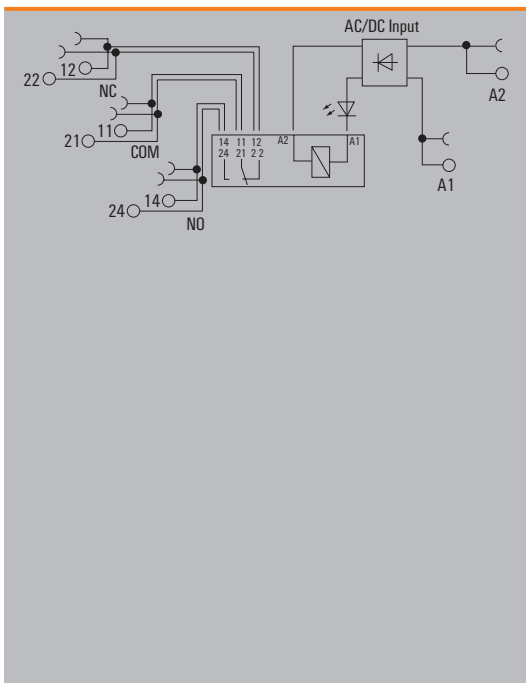
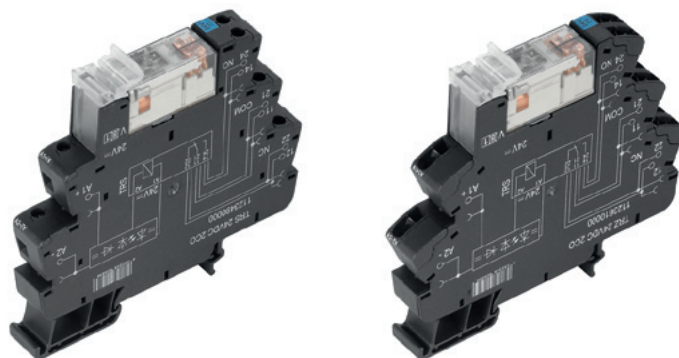
	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Input					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Rated current AC / DC	/ 80 mA	/ 33.3 mA	/ 16 mA	16 mA / 14 mA	9 mA / 7 mA
Power rating	400 mW	420 mW	384 mW	390 mVA / 350 mW	340 mW / 0.4 VA
AC response/dropout Volt				16 V / 9 V	29 V / 11 V
DC response/dropout Volt	3.2 V / 1.6 V	8.5 V / 3 V	16,6 V / 3,5 V	18 V / 8 V	33 V / 12 V
AC pickup/dropout current				11 mA / 4 mA	6.3 mA / 4.3 mA
DC pickup/dropout current	21,6 mA / 8 mA	21 mA / 5 mA	10 mA / 2 mA	10 mA / 2 mA	5 mA / 2 mA
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Rectifier	Rectifier
Output					
Switch-on delay	< 7 ms	< 7 ms	< 8 ms	< 4 ms	< 8 ms
Switch-off delay	< 4 ms	< 8 ms	< 10 ms	< 1.2 ms	< 4 ms
Ordering data					
Screw connection Type	TRS 5VDC 2CO AU	TRS 12VDC 2CO AU	TRS 24VDC 2CO AU	TRS 24VUC 2CO AU	TRS 48VUC 2CO AU
Order No.	1123710000	1123720000	1123730000	1123740000	1123750000
Tension clamp conn. Type	TRZ 5VDC 2CO AU	TRZ 12VDC 2CO AU	TRZ 24VDC 2CO AU	TRZ 24VUC 2CO AU	TRZ 48VUC 2CO AU
Order No.	1123830000	1123840000	1123850000	1123870000	1123880000
Note					
Spare relay Type: RCL4250005	Orderno.: 1174490000	Spare relay Type: RCL4250112	Orderno.: 4074580000	Spare relay Type: RCL425024	Orderno.: 4058580000
Spare relay Type: RCL425024	Orderno.: 4058580000	Spare relay Type: RCL425048	Orderno.: 1201230000		

Ordering data

	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Input					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC ±5 %	120 V AC ±10 %	230 V AC ±5 %
Rated current AC / DC	8 mA / 6.1 mA	3.5 mA / 3.5 mA	4 mA / 4 mA	6.1 mA	10.1 mA
Power rating	480 mVA / 360 mW	420 mVA / 420 mW	920 mVA / 920 mW	0.73 VA	2.3 VA
AC response/dropout Volt	36 V / 13 V	64 V / 26 V	112 V / 43 V	65 V / 23 V	112 V / 45 V
DC response/dropout Volt	40 V / 14 V	69 V / 22 V	129 V / 36 V		
AC pickup/dropout current	5 mA / 2.5 mA	2 mA / 1 mA	2 mA / 1 mA	3.6 mA / 1.3 mA	5 mA / 2.5 mA
DC pickup/dropout current	4 mA / 1.2 mA	2 mA / 1 mA	2 mA / 1 mA		
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	Rectifier	Rectifier
Output					
Switch-on delay	< 6 ms	< 8 ms	< 14 ms	< 5 ms	< 14 ms
Switch-off delay	< 7 ms	< 7 ms	< 22 ms	< 4 ms	< 12 ms
Ordering data					
Screw connection Type	TRS 60VUC 2CO AU	TRS 120VUC 2CO AU	TRS 230VUC 2CO AU	TRS 120VAC RC 2CO AU	TRS 230VAC RC 2CO AU
Order No.	1123770000	1123780000	1123790000	1123800000	1123810000
Tension clamp conn. Type	TRZ 60VUC 2CO AU	TRZ 120VUC 2CO AU	TRZ 230VUC 2CO AU	TRZ 120VAC RC 2CO AU	TRZ 230VAC RC 2CO AU
Order No.	1123890000	1123900000	1123910000	1123920000	1123930000
Note					
Spare relay Type: RCL425060	Orderno.: 1201260000	Spare relay Type: RCL425110	Orderno.: 8828370000	Spare relay Type: RCL425110	Orderno.: 8828370000
Spare relay Type: RCL425110	Orderno.: 8828370000	Spare relay Type: RCL425110	Orderno.: 8828370000		

2 CO contacts
multi-voltage input

- Space saving, just 12.8 mm modular width
- AgNi contact
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Technical data

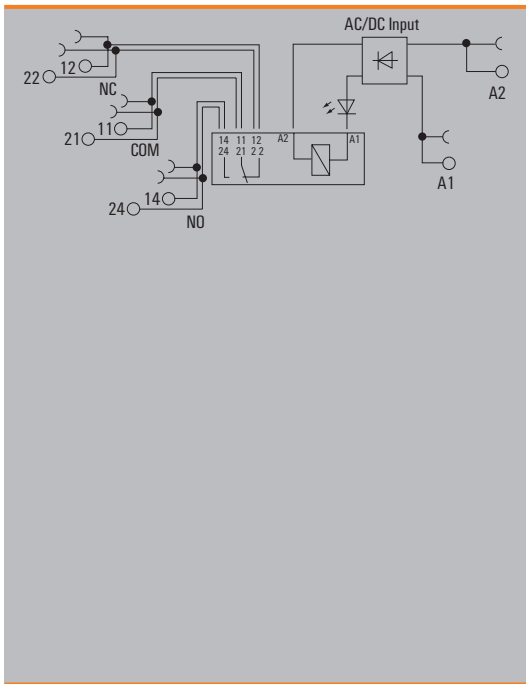
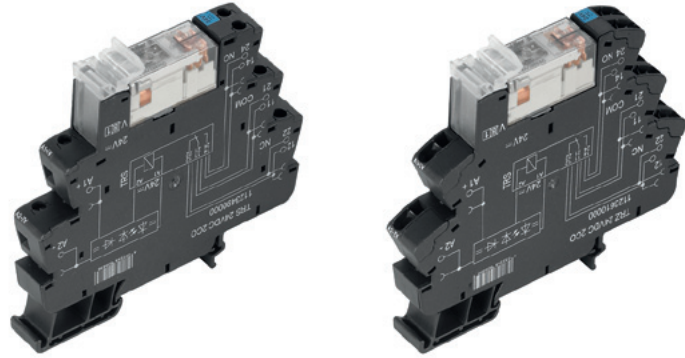
Output		
Rated switching voltage / Continuous current	250 V AC / 8 A	
Max. switching voltage, AC	250 V	
Making current	15 A / 4 s	
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA	
Max. switching power	2000 VA	
Contact material	AgNi	
Mechanical service life	30 x 10 ⁶ switching cycles	
Max. switching frequency at rated load	0.1 Hz	
Rated data		
Ambient temperature (operational)	-40 °C...+60 °C	
Storage temperature	-40 °C...+85 °C	
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation	
Approvals	CE; cULus; GL	
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength input - output	1.2 kV _{eff} / 5 s	
Dielectric strength, contact / contact	2.5 kV _{eff}	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.	
Creepage and clearance distance input - output	≥ 5.5 mm	
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	mm ²	Screw connection 1.5 / 0.14 / 1.5
	mm	Tension clamp connection 1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 12.8 / 90
Note		Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.

Ordering data

Input	
Rated control voltage	24...230 V UC ±10 %
Rated current AC / DC	6 mA @ 230 V AC / 45 mA @ 24 V DC
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
AC response/dropout Volt	16.6 V / 5 V
DC response/dropout Volt	16.6 V / 5 V
AC pickup/dropout current	
DC pickup/dropout current	
Status indicator	Green LED
Protective circuit	Rectifier
Output	
Switch-on delay	< 22 ms
Switch-off delay	< 100 ms
Ordering data	
Screw connection Type	TRS 24-230VUC 2CO
Order No.	1123580000
Tension clamp conn. Type	TRZ 24-230VUC 2CO
Order No.	1123700000
Note	
Spare relay Type: RCL424024 Orderno.: 4058570000	

**2 CO contact with hard gold-plated contacts
multi-voltage input**

- Space saving, just 12.8 mm modular width
- AgNi contact with gold plating
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Technical data

Output		
Rated switching voltage / Continuous current	250 V AC / 8 A	
Max. switching voltage, AC	250 V	
Making current	15 A / 4 s	
Min. switching power	1 V / 1 mA	
Max. switching power	2000 VA	
Contact material	AgNi 5µm Au	
Mechanical service life	30 x 10 ⁶ switching cycles	
Max. switching frequency at rated load	0.1 Hz	
Rated data		
Ambient temperature (operational)	-40 °C...+60 °C	
Storage temperature	-40 °C...+85 °C	
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation	
Approvals	CE; cULus; GL	
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength input - output	1.2 kV _{eff} / 5 s	
Dielectric strength, contact / contact	2.5 kV _{eff}	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.	
Creepage and clearance distance input - output	≥ 5.5 mm	
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5
	mm	88 / 12.8 / 90
Depth x width x height	mm	88 / 12.8 / 90
	mm	88 / 12.8 / 90
Note		
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.		

Ordering data

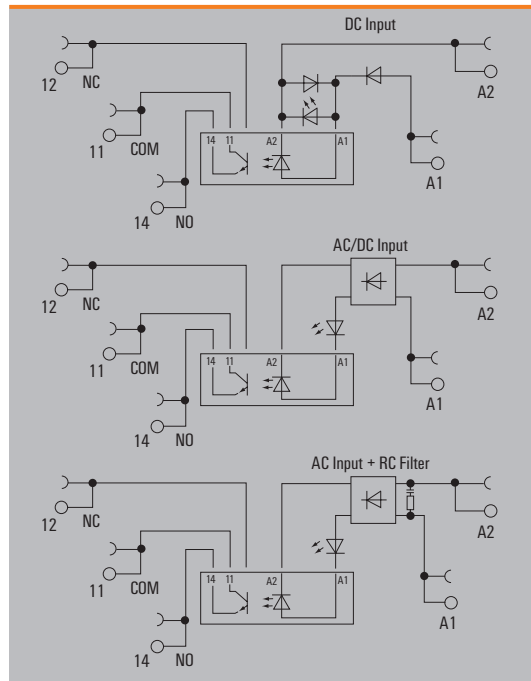
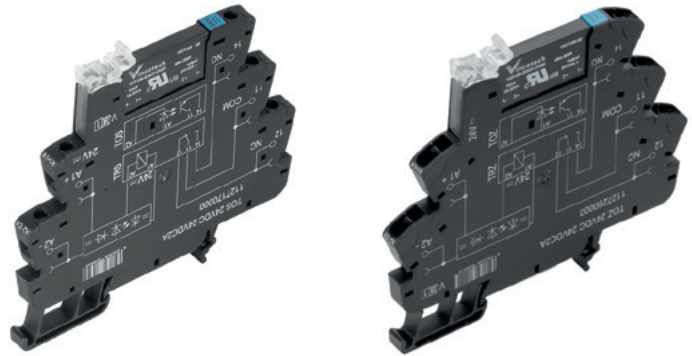
Input	
Rated control voltage	24...230 V UC ±10 %
Rated current AC / DC	6 mA @ 230 V AC / 45 mA @ 24 V DC
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
AC response/dropout Volt	16.6 V / 5 V
DC response/dropout Volt	16.6 V / 5 V
AC pickup/dropout current	
DC pickup/dropout current	
Status indicator	Green LED
Protective circuit	Rectifier
Output	
Switch-on delay	< 22 ms
Switch-off delay	< 100 ms

Ordering data	
Screw connection	TRS 24-230VUC 2CO AU
Order No.	1123820000
Tension clamp conn.	TRZ 24-230VUC 2CO AU
Order No.	1123940000
Note	
Spare relay Type: RCL425024 Orderno.: 4058580000	

Solid-state relay, 3...48 V DC / 100 mA

Output versions

- Space saving, just 6.4 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection



Technical data

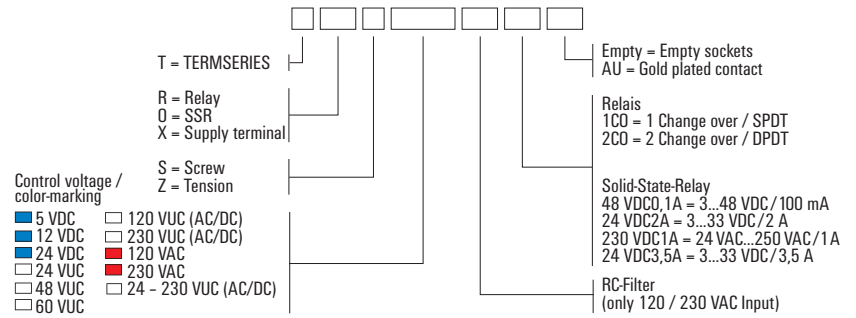
Load side		
Rated switching voltage	3... 48 V DC	
Continuous current	100 mA	
Making current		
Solid-state type	Bipolar transistor	
Voltage drop at max. load	≤ 1 V	
Leakage current	< 10 µA	
Protective circuit, load side	Integrated free-wheel diode	
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode	
General data		
Ambient temperature (operational)	-20 °C...+60 °C	
Storage temperature	-40 °C...+70 °C	
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation	
Approvals	CE; cULus; GL	
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength for control side - load side		
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.	
Clearance and creepage distances for control side - load side		
Surge voltage category	≥ 5.5 mm	
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5
	mm	88 / 6.4 / 90
Depth x width x height	mm	88 / 6.4 / 90
	mm	88 / 6.4 / 90
Note		
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.		

Dimensions	Screw connection	Tension clamp conn.
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90

Note Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.

Solid-state relay, 3...48 V DC / 100 mA

Output versions



Ordering data

	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Control side					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Nominal control current	7 mA DC (±20 %)	9.6 mA DC (±20 %)	10 mA DC ±20 %	10 mA AC ±20 %, 6 mA DC (±20 %)	8 mA AC (±20 %), 7 mA DC (±20 %)
Power rating	35 mW	112 mW	240 mW	154 mW	290 mVA / 192 mW
Cut-in (switch-on) voltage	≥ 3 V DC	≥ 4 V DC	≥ 15 V DC	≥ 14.4 V AC, ≥ 11.2 V DC	≥ 28 V AC, ≥ 28 V DC
Dropout voltage	≤ 1.7 V DC	≤ 6 V DC	≤ 15 V DC	≤ 15.7 V AC, ≤ 15.7 V DC	≤ 24 V AC, ≤ 24 V DC
Input frequency	10 Hz	10 Hz	300 Hz	DC: 100 Hz / AC: 3 Hz	DC: 100 Hz / AC: 3 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Reverse polarity protection, Integrated free-wheel diode	Reverse polarity protection, Integrated free-wheel diode	Reverse polarity protection, Integrated free-wheel diode	Rectifier	Rectifier
Load side					
Switch-on delay	< 6.5 ms	< 6.5 ms	< 35 µs	< 55 µs	< 55 µs
Switch-off delay	< 10 ms	< 10 ms	< 355 µs	< 4 ms	< 4 ms

Ordering data	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Screw connection Type	TOS 5VDC 48VDC0,1A	TOS 12VDC 48VDC0,1A	TOS 24VDC 48VDC0,1A	TOS 24VUC 48VDC0,1A	TOS 48VUC 48VDC0,1A
Order No.	1126920000	1126930000	1126940000	1126950000	1126960000
Tension clamp conn. Type	TOZ 5VDC 48VDC0,1A	TOZ 12VDC 48VDC0,1A	TOZ 24VDC 48VDC0,1A	TOZ 24VUC 48VDC0,1A	TOZ 48VUC 48VDC0,1A
Order No.	1127030000	1127040000	1127050000	1127060000	1127070000
Note	Spare solid-state relay Type: SSS 5 V/24 V 0.1 A DC Orderno.: 4064320000	Spare solid-state relay Type: SSS 5 V/24 V 0.1 A DC Orderno.: 4064320000	Spare solid-state relay Type: SSS 24 V/24 V 0.1 A DC Orderno.: 4061180000	Spare solid-state relay Type: SSS 24 V/24 V 0.1 A DC Orderno.: 4061180000	Spare solid-state relay Type: SSS 24 V/24 V 0.1 A DC Orderno.: 4061180000

Ordering data

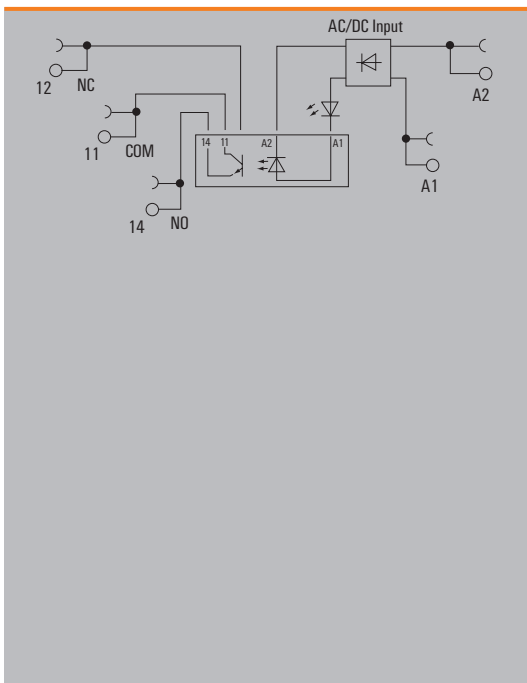
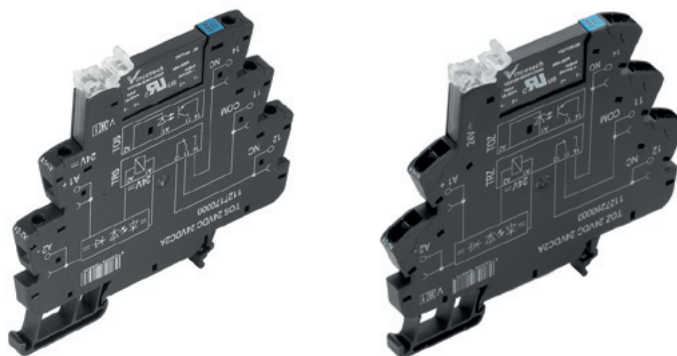
	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Control side					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC ±10 %	120 V AC ±10 %	230 V AC ±10 %
Nominal control current	5 mA AC (±20 %), 3 mA DC (±20 %)	5 mA AC (±30 %), 3 mA DC (±30 %)	3.5 mA AC (±30 %), 3 mA DC (±30 %)	7 mA AC (±20 %)	9 mA AC
Power rating	< 300 mW	0.48 VA	0.8 VA / 660 mW	0.84 VA	2.1 VA
Cut-in (switch-on) voltage	≥ 28 V AC, ≥ 28 V DC	≥ 65 V AC, ≥ 63 V DC	≥ 130 V AC, ≥ 107 V DC	≥ 65 V AC	≥ 103 V AC
Dropout voltage	≤ 24 V AC, ≤ 31.2 V DC	≤ 78 V AC, ≤ 89 V DC	≤ 126 V AC, ≤ 153 V DC	≤ 71.5 V AC	≤ 109 V AC
Input frequency	DC: 10 Hz / AC: 3 Hz	3 Hz	3 Hz	3 Hz	3 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	RC element	RC element
Load side					
Switch-on delay	< 6.5 ms	< 6.5 ms	< 7 ms	< 6.5 ms	< 7 ms
Switch-off delay	< 10 ms	< 10 ms	< 10 ms	< 10 ms	< 10 ms

Ordering data	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Screw connection Type	TOS 60VUC 48VDC0,1A	TOS 120VUC 48VDC0,1A	TOS 230VUC 48VDC0,1A	TOS 120VAC RC 48VDC0,1A	TOS 230VAC RC 48VDC0,1A
Order No.	1126970000	1126980000	1126990000	1127000000	1127010000
Tension clamp conn. Type	TOZ 60VUC 48VDC0,1A	TOZ 120VUC 48VDC0,1A	TOZ 230VUC 48VDC0,1A	TOZ 120VAC RC 48VDC0,1A	TOZ 230VAC RC 48VDC0,1A
Order No.	1127080000	1127090000	1127100000	1127110000	1127120000
Note	Spare solid-state relay Type: SSS 60 V/24 V 0.1 A DC Orderno.: 4061230000	Spare solid-state relay Type: SSS 60 V/24 V 0.1 A DC Orderno.: 4061230000	Spare solid-state relay Type: SSS 60 V/24 V 0.1 A DC Orderno.: 4061230000	Spare solid-state relay Type: SSS 60 V/24 V 0.1 A DC Orderno.: 4061230000	Spare solid-state relay Type: SSS 60 V/24 V 0.1 A DC Orderno.: 4061230000

Solid-state relay, 3...48 V DC / 100 mA

Output versions, multi-voltage input

- Space saving, just 6.4 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Technical data

Load side	
Rated switching voltage	3... 48 V DC
Continuous current	100 mA
Making current	
Solid-state type	Bipolar transistor
Voltage drop at max. load	≤ 1 V
Leakage current	< 10 µA
Protective circuit, load side	Integrated free-wheel diode
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+70 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus; GL
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Screw connection	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Tension clamp conn.	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Note	
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

Ordering data

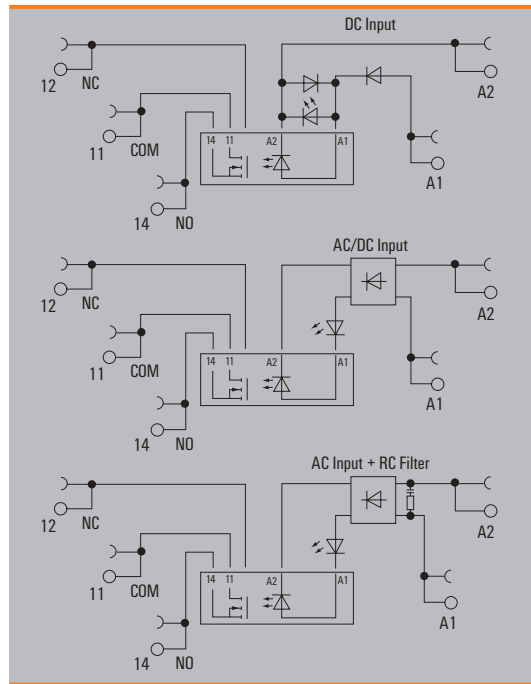
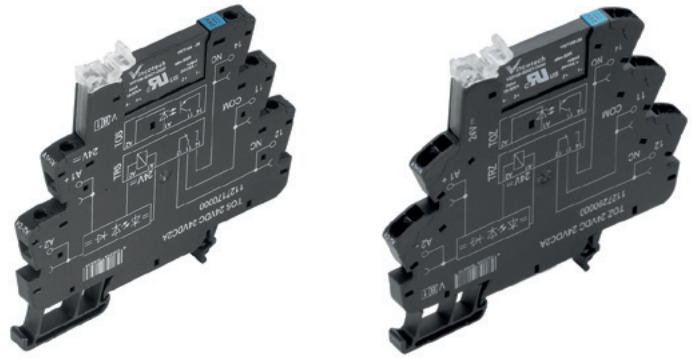
Control side	
Rated control voltage	24...230 V UC ±10 %
Nominal control current	22 mA @ 24 V DC, 4 mA @ 230 V AC
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
Cut-in (switch-on) voltage	≥ 9,6 V AC, ≥ 9.6 V DC
Dropout voltage	≤ 7,5 V AC, ≤ 6 V DC
Input frequency	3 Hz
Status indicator	Green LED
Protective circuit	Rectifier
Load side	
Switch-on delay	< 20 ms
Switch-off delay	< 100 ms

Ordering data	
Screw connection	Type TOZ 24-230VUC 48VDC0,1A
Order No.	1127020000
Tension clamp conn.	Type TOZ 24-230VUC 48VDC0,1A
Order No.	1127130000
Note	
Spare solid-state relay Type: SSS 24 V/24 V 0.1A DC Orderno.: 4061180000	

Solid-state relay, 3...33 V DC / 2 A

Output versions

- Space saving, just 6.4 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection

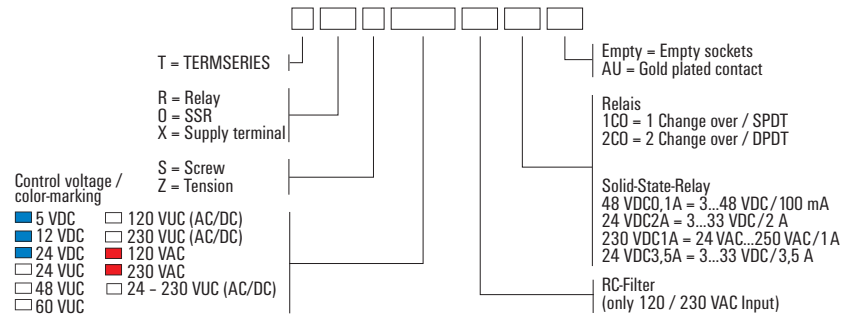


Technical data

Load side			
Rated switching voltage	3...33 V DC		
Continuous current	2 A		
Making current			
Solid-state type	MOS-FET		
Voltage drop at max. load	≤ 120 mV		
Leakage current	< 10 µA		
Protective circuit, load side	Integrated free-wheel diode		
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode		
General data			
Ambient temperature (operational)	-20 °C...+60 °C		
Storage temperature	-40 °C...+70 °C		
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation		
Approvals	CE; cULus; GL		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	6 kV (1.2/50 µs)		
Dielectric strength for control side - load side			
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.		
Clearance and creepage distances for control side - load side	≥ 5.5 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions		Screw connection	Tension clamp conn.
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90	88 / 6.4 / 90
Note		Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

Solid-state relay, 3...33 V DC / 2 A

Output versions



Ordering data

	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Control side					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Nominal control current	10 mA DC ±20 %	9.6 mA DC (±20 %)	10 mA DC ±20 %	10 mA AC ±20 %, 6 mA DC (±20 %)	8 mA AC (±20 %), 7 mA DC (±20 %)
Power rating	50 mW	112 mW	240 mW	154 mW	290 mVA / 192 mW
Cut-in (switch-on) voltage	≥ 3 V DC	≥ 4 V DC	≥ 15 V DC	≥ 14.4 V AC, ≥ 11.2 V DC	≥ 28 V AC, ≥ 28 V DC
Dropout voltage	≤ 1.7 V DC	≤ 6 V DC	≤ 15 V DC	≤ 15.7 V AC, ≤ 15.7 V DC	≤ 24 V AC, ≤ 24 V DC
Input frequency	300 Hz	300 Hz	300 Hz	DC: 10 Hz / AC: 3 Hz	DC: 10 Hz / AC: 3 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Reverse polarity protection, Integrated free-wheel diode	Reverse polarity protection, Integrated free-wheel diode	Reverse polarity protection, Integrated free-wheel diode	Rectifier	Rectifier
Load side					
Switch-on delay	< 55 µs	< 55 µs	< 55 µs	< 6.5 ms	< 6.5 ms
Switch-off delay	< 1 ms	< 1.2 ms	< 1.2 ms	< 10 ms	< 10 ms

Ordering data					
Screw connection	Type: TOS 5VDC 24VDC2A	Type: TOS 12VDC 24VDC2A	Type: TOS 24VDC 24VDC2A	Type: TOS 24VUC 24VDC2A	Type: TOS 48VUC 24VDC2A
Order No.	1127140000	1127150000	1127170000	1127180000	1127190000
Tension clamp conn.	Type: TOZ 5VDC 24VDC2A	Type: TOZ 12VDC 24VDC2A	Type: TOZ 24VDC 24VDC2A	Type: TOZ 24VUC 24VDC2A	Type: TOZ 48VUC 24VDC2A
Order No.	1127270000	1127280000	1127290000	1127300000	1127310000
Note					
	Spare solid-state relay Type: SSS 5 V/24 V 2 A DC Orderno.: 4064310000	Spare solid-state relay Type: SSS 5 V/24 V 2 A DC Order no.: 4064310000	Spare solid-state relay Type: SSS 24 V/24 V 2 A DC Orderno.: 4061190000	Spare solid-state relay Type: SSS 24 V/24 V 2 A DC Orderno.: 4061190000	Spare solid-state relay Type: SSS 24 V/24 V 2 A DC Orderno.: 4061190000

Ordering data

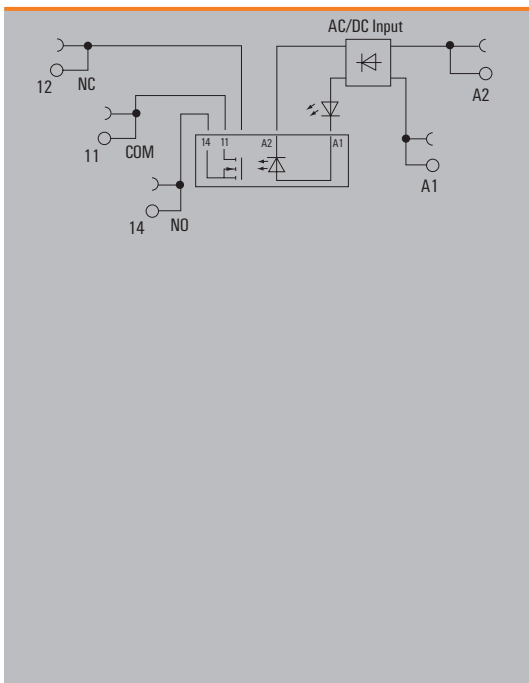
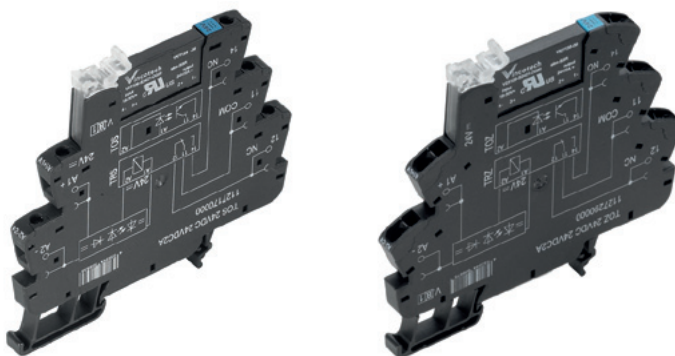
	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Control side					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC ±10%	120 V AC ±10 %	230 V AC ±10 %
Nominal control current	5 mA AC (±20 %), 3 mA DC (±20 %)	5 mA AC (±30 %), 3 mA DC (±30 %)	3.5 mA AC (±30 %), 3 mA DC (±30 %)	7 mA AC (±20 %)	9 mA AC
Power rating	< 300 mW	0.48 VA	0.8 VA / 660 mW	0.84 VA	2.1 VA
Cut-in (switch-on) voltage	≥ 28 V AC, ≥ 28 V DC	≥ 65 V AC, ≥ 63 V DC	≥ 130 V AC, ≥ 107 V DC	≥ 65 V AC	≥ 103 V AC
Dropout voltage	≤ 24 V AC, ≤ 31.2 V DC	≤ 78 V AC, ≤ 89 V DC	≤ 126 V AC, ≤ 153 V DC	≤ 71.5 V AC	≤ 109 V AC
Input frequency	DC: 10 Hz / AC: 3 Hz	3 Hz	3 Hz	3 Hz	3 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	RC element	RC element
Load side					
Switch-on delay	< 6.5 ms	< 6.5 ms	< 7 ms	< 6.5 ms	< 7 ms
Switch-off delay	< 10 ms	< 10 ms	< 10 ms	< 10 ms	< 10 ms

Ordering data					
Screw connection	Type: TOS 60VUC 24VDC2A	Type: TOS 120VUC 24VDC2A	Type: TOS 230VUC 24VDC2A	Type: TOS 120VAC RC 24VDC2A	Type: TOS 230VAC RC 24VDC2A
Order No.	1127200000	1127210000	1127220000	1127230000	1127240000
Tension clamp conn.	Type: TOZ 60VUC 24VDC2A	Type: TOZ 120VUC 24VDC2A	Type: TOZ 230VUC 24VDC2A	Type: TOZ 120VAC RC 24VDC2A	Type: TOZ 230VAC RC 24VDC2A
Order No.	1127320000	1127330000	1127340000	1127350000	1127370000
Note					
	Spare solid-state relay Type: SSS 60 V/24 V 2 A DC Orderno.: 4061200000	Spare solid-state relay Type: SSS 60 V/24 V 2 A DC Orderno.: 4061200000	Spare solid-state relay Type: SSS 60 V/24 V 2 A DC Orderno.: 4061200000	Spare solid-state relay Type: SSS 60 V/24 V 2 A DC Orderno.: 4061200000	Spare solid-state relay Type: SSS 60 V/24 V 2 A DC Orderno.: 4061200000

Solid-state relay, 3...33 V DC / 2 A

Output versions, multi-voltage input

- Space saving, just 6.4 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Technical data

Load side	
Rated switching voltage	3...33 V DC
Continuous current	2 A
Making current	
Solid-state type	MOS-FET
Voltage drop at max. load	≤ 120 mV
Leakage current	< 10 µA
Protective circuit, load side	Integrated free-wheel diode
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+70 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus; GL
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Note	
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

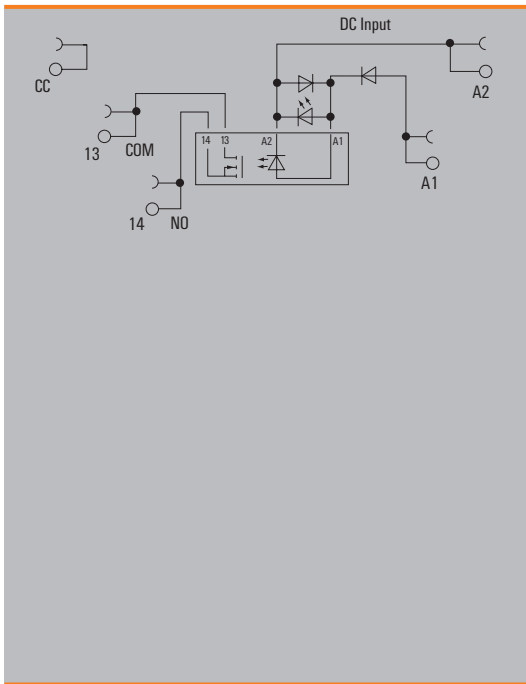
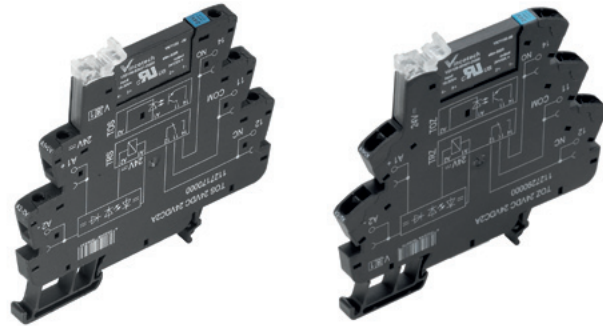
Ordering data

Control side	
Rated control voltage	24...230 V UC ±10 %
Nominal control current	22 mA @ 24 V DC, 4 mA @ 230 V AC
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
Cut-in (switch-on) voltage	≥ 9,6 V AC, ≥ 9.6 V DC
Dropout voltage	≤ 7,5 V AC, ≤ 6 V DC
Input frequency	3 Hz
Status indicator	Green LED
Protective circuit	Rectifier
Load side	
Switch-on delay	< 20 ms
Switch-off delay	< 100 ms

Ordering data	
Screw connection	Type TOS 24-230VUC 24VDC2A
	Order No. 1127250000
Tension clamp conn.	Type TOZ 24-230VUC 24VDC2A
	Order No. 1127380000
Note	
Spare solid-state relay Type: SSS 24 V/24 V 2 A DC Orderno.: 4061190000	

Solid-state relay, 3...33 V DC / 2 A actuator versions

- Space-saving, only 6.4 mm wide
 - AgNi contact
 - Screw and tension clamp connection
 - 24 V DC actuator version:
- Bridgeable, potential-free connection in the output (CC)



Technical data

Load side		
Rated switching voltage	3...33 V DC	
Continuous current	2 A	
Making current		
Solid-state type	MOS-FET	
Voltage drop at max. load	≤ 120 mV	
Leakage current	< 10 µA	
Protective circuit, load side	Integrated free-wheel diode	
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode	
General data		
Ambient temperature (operational)	-20 °C...+60 °C	
Storage temperature	-40 °C...+70 °C	
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation	
Approvals		
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	6 kV (1.2/50 µs)	
Dielectric strength for control side - load side		
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.	
Clearance and creepage distances for control side - load side		
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	mm ²	1.5 / 0.14 / 1.5
	mm	88 / 6.4 / 90
Depth x width x height	mm	88 / 6.4 / 90
	mm	88 / 6.4 / 90
Note		
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.		

Ordering data

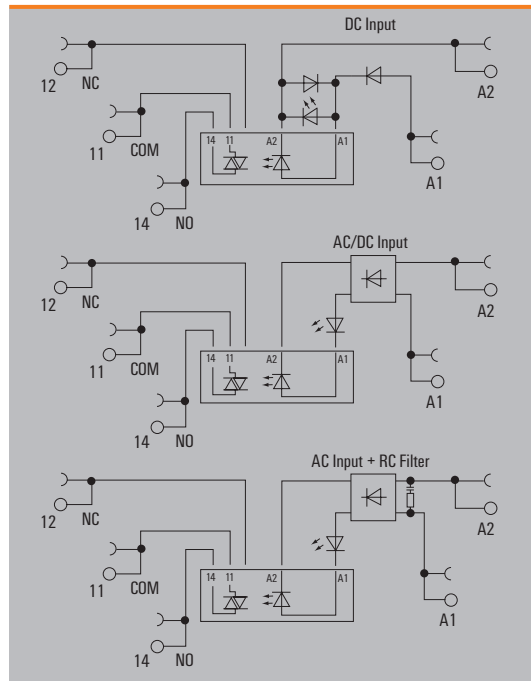
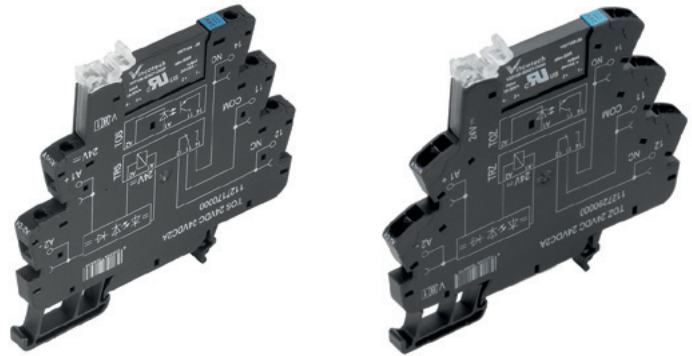
Control side	
Rated control voltage	24 V DC ±20 %
Nominal control current	10 mA DC ±20 %
Power rating	240 mW
Cut-in (switch-on) voltage	
Dropout voltage	≥ 15 V DC
Input frequency	≤ 15 V DC
Status indicator	300 Hz
Protective circuit	Green LED
Reverse polarity protection, Integrated free-wheel diode	
Load side	
Switch-on delay	< 55 µs
Switch-off delay	< 1.2 ms

Ordering data		
Screw connection	Type	TOS 24VDC ACT
Order No.		1391680000
Tension clamp conn.	Type	TOZ 24VDC ACT
Order No.		1391690000
Note		

Solid-state relay, 24...230 V AC / 1 A

Output versions

- Space saving, just 6.4 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection

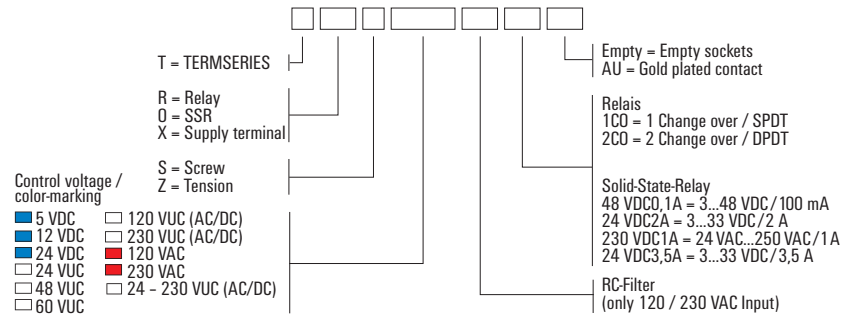


Technical data

Load side			
Rated switching voltage	24 V AC ... 250 V AC		
Continuous current	1 A		
Making current			
Solid-state type	Triac (zero-cross switch)		
Voltage drop at max. load	≤ 1.6 V		
Leakage current	< 10 µA		
Protective circuit, load side	No		
Short-circuit-proof / Protective circuit, load side	No / No		
General data			
Ambient temperature (operational)	-20 °C...+60 °C		
Storage temperature	-40 °C...+70 °C		
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation		
Approvals	CE; cULus; GL		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	6 kV (1.2/50 µs)		
Dielectric strength for control side - load side			
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.		
Clearance and creepage distances for control side - load side	≥ 5.5 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions			
Clamping range (nominal / min. / max.)	mm ²	Screw connection	Tension clamp conn.
		1.5 / 0.14 / 1.5	1.5 / 0.14 / 1.5
Depth x width x height	mm	88 / 6.4 / 90	88 / 6.4 / 90
Note	Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.		

Solid-state relay, 24...230 V AC / 1 A

Output versions



Ordering data

	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Control side					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	48 V UC ±10 %
Nominal control current	15 mA DC (±20 %)	9.6 mA DC (±20 %)	10 mA DC ±20 %	10 mA AC ±20 %, 6 mA DC (±20 %)	6 mA AC (±20 %), 4 mA DC (±20 %)
Power rating	75 mW	112 mW	260 mW	154 mW	290 mVA / 192 mW
Cut-in (switch-on) voltage	≥ 3 V DC	≥ 4 V DC	≥ 15 V DC	≥ 14.4 V AC, ≥ 11.2 V DC	≥ 28 V AC, ≥ 28 V DC
Dropout voltage	≤ 1.7 V DC	≤ 6 V DC	≤ 15 V DC	≤ 15.7 V AC, ≤ 15.7 V DC	≤ 24 V AC, ≤ 24 V DC
Input frequency	3 Hz	3 Hz	3 Hz	3 Hz	3 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Reverse polarity protection, Integrated free-wheel diode	Reverse polarity protection, Integrated free-wheel diode	Reverse polarity protection, Integrated free-wheel diode	Rectifier	Rectifier
Load side					
Switch-on delay	< 12 ms	< 12 ms	< 11 ms	< 11 ms	< 11 ms
Switch-off delay	< 12 ms	< 12 ms	< 11 ms	< 11 ms	< 11 ms

Ordering data	5 V DC	12 V DC	24 V DC	24 V UC	48 V UC
Screw connection Type	TOS 5VDC 230VAC1A	TOS 12VDC 230VAC1A	TOS 24VDC 230VAC1A	TOS 24VUC 230VAC1A	TOS 48VUC 230VAC1A
Order No.	1127390000	1127400000	1127410000	1127420000	1127430000
Tension clamp conn. Type	TOZ 5VDC 230VAC1A	TOZ 12VDC 230VAC1A	TOZ 24VDC 230VAC1A	TOZ 24VUC 230VAC1A	TOZ 48VUC 230VAC1A
Order No.	1127510000	1127520000	1127530000	1127540000	1127550000
Note	Spare solid-state relay Type: SSS 5 V/230 V 1 A AC Orderno.: 1132260000	Spare solid-state relay Type: SSS 5 V/230 V 1 A AC Orderno.: 1132260000	Spare solid-state relay Type: SSS 24 V/230 V 1 A AC Orderno.: 4061210000	Spare solid-state relay Type: SSS 24 V/230 V 1 A AC Orderno.: 4061210000	Spare solid-state relay Type: SSS 24 V/230 V 1 A AC Orderno.: 4061210000

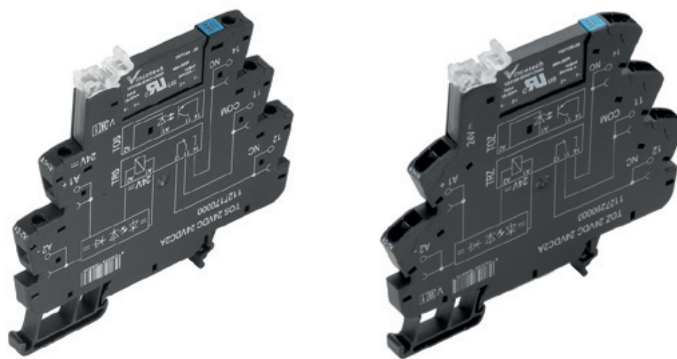
Ordering data

	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Control side					
Rated control voltage	60 V UC ±10 %	120 V UC ±10 %	230 V UC +5 % / -10 %	120 V AC ±10 %	230 V AC +5 % / -10 %
Nominal control current	5 mA AC (±20 %), 3 mA DC (±20 %)	5 mA AC (±30 %), 3 mA DC (±30 %)	3.5 mA AC (±30 %), 3 mA DC (±30 %)	7 mA AC (±20 %)	9 mA AC
Power rating	< 300 mW	0.48 VA	0.8 VA / 660 mW	0.84 VA	2.1 VA
Cut-in (switch-on) voltage	≥ 28 V AC, ≥ 28 V DC	≥ 65 V AC, ≥ 63 V DC	≥ 130 V AC, ≥ 107 V DC	≥ 65 V AC	≥ 103 V AC
Dropout voltage	≤ 22 V AC, ≤ 28.6 V DC	≤ 78 V AC, ≤ 89 V DC	≤ 126 V AC, ≤ 153 V DC	≤ 71.5 V AC	≤ 109 V AC
Input frequency	3 Hz	3 Hz	3 Hz	3 Hz	3 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Rectifier	Rectifier	Rectifier	RC element	RC element
Load side					
Switch-on delay	< 11 ms	< 11 ms	< 20 ms	< 11 ms	< 20 ms
Switch-off delay	< 11 ms	< 11 ms	< 20 ms	< 11 ms	< 20 ms

Ordering data	60 V UC	120 V UC	230 V UC	120 V AC RC	230 V AC RC
Screw connection Type	TOS 60VUC 230VAC1A	TOS 120VUC 230VAC1A	TOS 230VUC 230VAC1A	TOS 120VAC RC 230VAC1A	TOS 230VAC RC 230VAC1A
Order No.	1127440000	1127450000	1127470000	1127480000	1127490000
Tension clamp conn. Type	TOZ 60VUC 230VAC1A	TOZ 120VUC 230VAC1A	TOZ 230VUC 230VAC1A	TOZ 120VAC RC 230VAC1A	TOZ 230VAC RC 230VAC1A
Order No.	1127570000	1127580000	1127590000	1127600000	1127610000
Note	Spare solid-state relay Type: SSS 60 V/230 V 1 A AC Orderno.: 4061220000	Spare solid-state relay Type: SSS 60 V/230 V 1 A AC Orderno.: 4061220000	Spare solid-state relay Type: SSS 60 V/230 V 1 A AC Orderno.: 4061220000	Spare solid-state relay Type: SSS 60 V/230 V 1 A AC Orderno.: 4061220000	Spare solid-state relay Type: SSS 60 V/230 V 1 A AC Orderno.: 4061220000

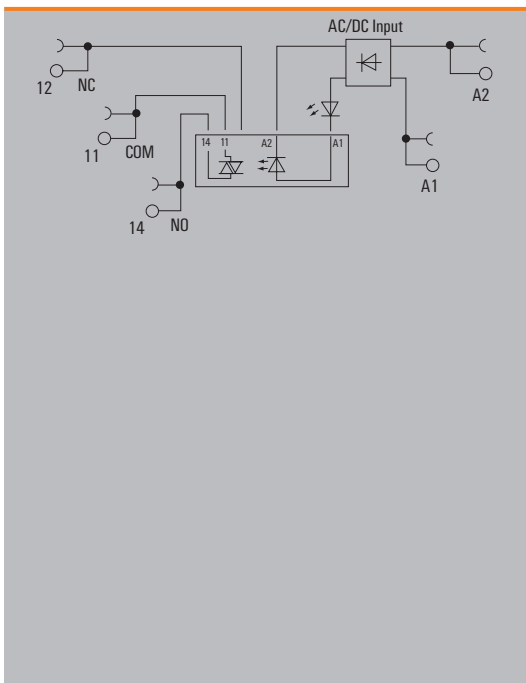
Solid-state relay, 24...230 V AC / 1 A output versions, multi-voltage input

- Space saving, just 6.4 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection
- Multi-voltage input: 24 to 230 V UC in one module



Relay modules and solid-state relays in 6 mm width

A



Technical data

Load side	
Rated switching voltage	24...230 V AC
Continuous current	1 A
Making current	
Solid-state type	Triac (zero-cross switch)
Voltage drop at max. load	≤ 1 V
Leakage current	< 10 µA
Protective circuit, load side	No
Short-circuit-proof / Protective circuit, load side	No / No
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+70 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus; GL
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Screw connection	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Tension clamp conn.	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 6.4 / 90
Note	
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

Ordering data

Control side	
Rated control voltage	24...230 V UC ±10 %
Nominal control current	22 mA @ 24 V DC, 4 mA @ 230 V AC
Power rating	530 mW @ 24 V DC, 930 mVA @ 230 V AC
Cut-in (switch-on) voltage	≥ 9,6 V AC, ≥ 9.6 V DC
Dropout voltage	≤ 7,5 V AC, ≤ 6 V DC
Input frequency	3 Hz
Status indicator	Green LED
Protective circuit	Rectifier

24 V - 230 V UC

Load side	
Switch-on delay	< 20 ms
Switch-off delay	< 100 ms

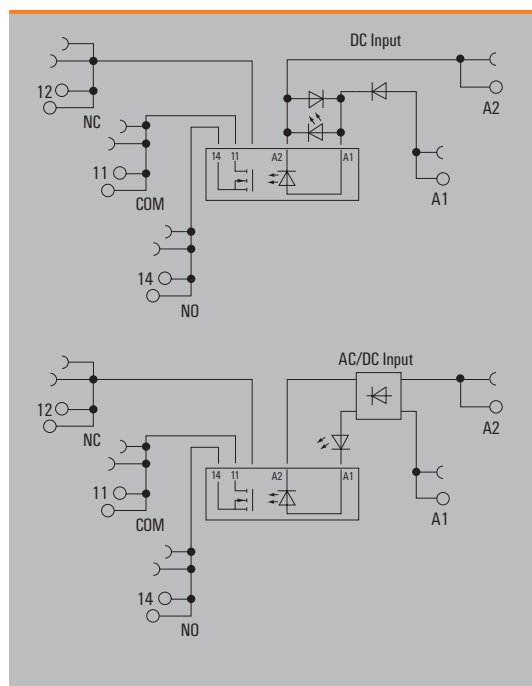
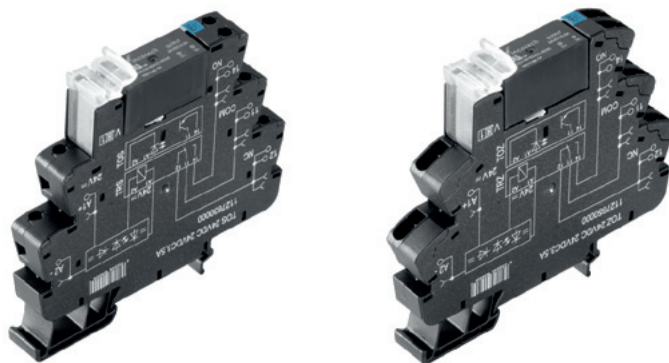
Ordering data	
Screw connection	Type TOZ 24-230VUC 230VAC1A
Order No.	1127500000
Tension clamp conn.	Type TOS 24-230VUC 230VAC1A
Order No.	1127620000

Note	
Spare solid-state relay Type: SSS 24 V/230 V 1 A AC Orderno.: 4061210000	

Solid-state relay, 0...33 V DC / 3.5 A

Output versions

- Space saving, just 12.8 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection



Technical data

Load side	
Rated switching voltage	3...33 V DC
Continuous current	3.5 A
Making current	
Solid-state type	MOS-FET
Voltage drop at max. load	≤ 0.3 V
Leakage current	< 10 µA
Protective circuit, load side	Integrated free-wheel diode
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+85 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus; GL
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 12.8 / 90
Screw connection	
	mm 1.5 / 0.14 / 1.5
	mm 88 / 12.8 / 90
Note	
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

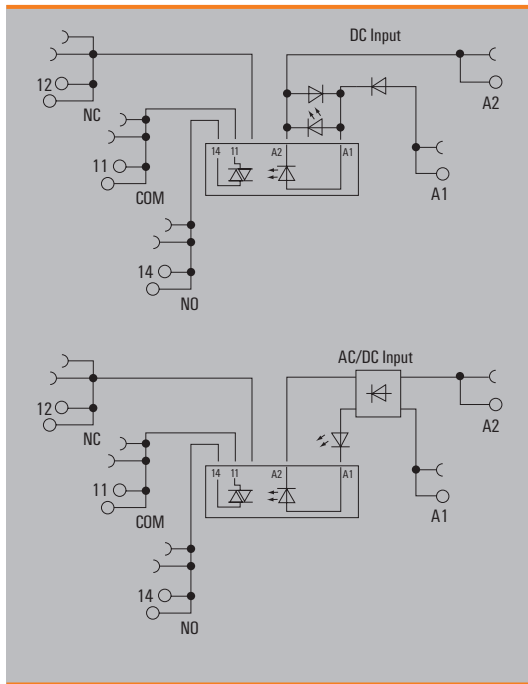
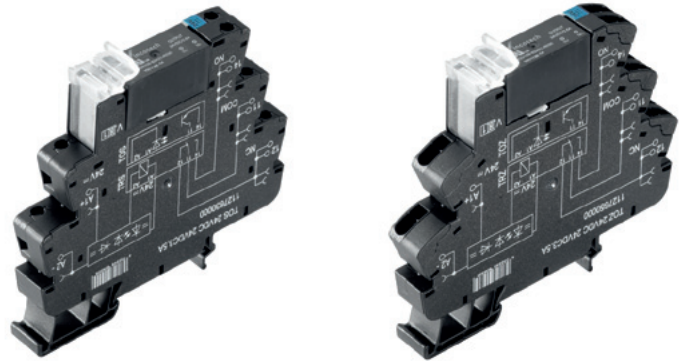
Ordering data

	24 V DC	24 V - 230 V UC
Control side		
Rated control voltage	24 V DC ±20 %	24...230 V UC ±10 %
Nominal control current	8 mA DC (±20 %)	22 mA @ 24 V DC, 4 mA @ 230 V AC
Power rating	≤ 200 mW	530 mW @ 24 V DC, 930 mVA @ 230 V AC
Cut-in (switch-on) voltage	≥ 11.2 V DC	≥ 9.6 V AC, ≥ 9.6 V DC
Dropout voltage	≤ 13 V DC	≤ 7.5 V AC, ≤ 6 V DC
Input frequency	300 Hz	3 Hz
Status indicator	Green LED	Green LED
Protective circuit	Reverse polarity protection, Integrated free-wheel diode	Rectifier
Load side		
Switch-on delay	< 50 µs	< 20 ms
Switch-off delay	< 250 µs	< 100 ms
Ordering data		
Screw connection Type	TOS 24VDC 24VDC3,5A	TOS 24-230VUC 24VDC3,5A
Order No.	1127630000	1127640000
Tension clamp conn. Type	TOZ 24VDC 24VDC3,5A	TOZ 24-230VUC 24VDC3,5A
Order No.	1127650000	1127670000
Note		
	Spare solid-state relay Type: SSR 10-32 V DC/0-35 V DC 5 A Orderno.: 1132310000	Spare solid-state relay Type: SSR 10-32 V DC/0-35 V DC 5 A Orderno.: 1132310000

Solid-state relay, 12...275 V AC / 1 A

Output versions

- Space saving, just 12.8 mm modular width
- 5 cross-connection levels
- Screw and tension clamp connection



Technical data

Load side	
Rated switching voltage	12...275 V AC
Continuous current	1 A
Making current	
Solid-state type	Triac (zero-cross switch)
Voltage drop at max. load	≤ 1.1 V
Leakage current	< 10 µA
Protective circuit, load side	No
Short-circuit-proof / Protective circuit, load side	No / No
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+70 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; GL
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.14 / 1.5
Depth x width x height	mm 88 / 12.8 / 90
Screw connection	
	mm 1.5 / 0.14 / 1.5
	mm 88 / 12.8 / 90
Note	
Accessories and dimensional drawings: refer to the TERMSERIES Accessories page.	

Ordering data

	24 V DC	24 V - 230 V UC
Control side		
Rated control voltage	24 V DC ±20 %	24...230 V UC ±10 %
Nominal control current	8 mA DC (±20 %)	22 mA @ 24 V DC, 4 mA @ 230 V AC
Power rating	≤ 200 mW	530 mW @ 24 V DC, 930 mVA @ 230 V AC
Cut-in (switch-on) voltage	≥ 11.2 V DC	≥ 9.6 V AC, ≥ 9.6 V DC
Dropout voltage	≤ 13 V DC	≤ 7.5 V AC, ≤ 6 V DC
Input frequency	3 Hz	3 Hz
Status indicator	Green LED	Green LED
Protective circuit	Reverse polarity protection, Integrated free-wheel diode	Rectifier
Load side		
Switch-on delay	< 50 µs	< 20 ms
Switch-off delay	< 250 µs	< 100 ms
Ordering data		
Screw connection Type	TOS 24VDC 230VAC1A	TOS 24-230VUC 230VAC1A
Order No.	1127680000	1127690000
Tension clamp conn. Type	TOZ 24VDC 230VAC1A	TOZ 24-230VUC 230VAC1A
Order No.	1127700000	1127710000
Note		
	Spare solid-state relay Type: SSR 10 - 32 VDC/ 12 - 275 VAC 3A Orderno.: 1132290000	Spare solid-state relay Type: SSR 10 - 32 VDC/ 12 - 275 VAC 3A Orderno.: 1132290000

RSS relay module



Technical data
Type of contact / Number of contacts
Contact material
Max. switching voltage / current
Min. switching voltage / current
Min. mechanical lifetime
Min. electrical lifetime
Max. switch-on / switch-off delay
Ambient temperature (operational)
Making / Dropout voltage coil

Note

RSS113...	RSS112...
1 CO contact	1 CO contact
AgNi	AgNi 5uAu ³⁾
250 V / 6 A ¹⁾	250 V / 6 A ¹⁾
5 V / 100 mA ²⁾	1 V / 1 mA
5 x 10 ⁶ ¹⁾	5 x 10 ⁶ ¹⁾
NO: 5 x 10 ⁴ ; NC: 3 x 10 ⁴ ¹⁾	NO: 5 x 10 ⁴ ; NC: 3 x 10 ⁴ ¹⁾
8 / 4 ms	8 / 4 ms
-40 °C ...+85 °C	-40 °C ...+85 °C
typ. 70 % / 5 % U _{NOM}	typ. 70 % / 5 % U _{NOM}

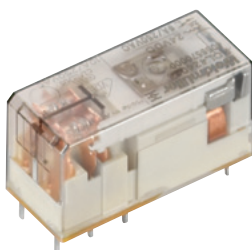
1) At resistive load
2) 10 V / 10 mA; 24 V / 1 mA
3) Au-plate operate up to 0.25 W

Coil data
RSS...005
RSS...012
RSS...024
RSS...060

Nominal voltage / current
5 V DC / 34 mA
12 V DC / 14 mA
24 V DC / 7 mA
60 V DC / 3 mA

Order No.	Order No.
4061580000	1174540000
4061610000	1220670000
4060120000	4061590000
4061630000	4061600000

RCL relay module



Technical data
Type of contact / Number of contacts
Contact material
Max. switching voltage / current
Min. switching voltage / current
Min. mechanical lifetime
Min. electrical lifetime
Max. switch-on / switch-off delay
Ambient temperature (operational)
Making / Dropout voltage coil

Note

RCL424...	RCL425...
2 CO contacts	2 CO contacts
AgNi	AgNi 5uAu ³⁾
250 V / 8 A ¹⁾	250 V / 8 A ¹⁾
5 V / 100 mA ²⁾	1 V / 1 mA
30 x 10 ⁶ ¹⁾	30 x 10 ⁶ ¹⁾
10 x 10 ³ ¹⁾	10 x 10 ³ ¹⁾
8 / 6 ms	8 / 6 ms
-40 °C ...+85 °C	-40 °C ...+85 °C
typ. 70 % / 10 % U _{NOM}	typ. 70 % / 10 % U _{NOM}

1) At resistive load
2) 10 V / 10 mA; 24 V / 1 mA
3) Au-plate operate up to 0.25 W

Coil data
RCL...005
RCL...012
RCL...024
RCL...048
RCL...060
RCL...110

Nominal voltage / current	Nominal current
5 V DC / 80 mA	80 mA
12 V DC / 33 mA	33 mA
24 V DC / 16 mA	16 mA
48 V DC / 8 mA	8 mA
60 V DC / 6 mA	6 mA
110 V DC / 3 mA	3 mA

Order No.	Order No.
8693790000	1174490000
4058560000	4074580000
4058570000	4058580000
4058750000	1201230000
4058760000	1201260000
4058590000	8828370000

Small solid-state relay



Similar to illustration

Technical data	SSS...24 V 0.1 A DC	SSS...24 V 2 A DC	SSS...230 V 1 A AC
Output	Bipolar transistor	MOS-FET	TRIAC, zero cross switch
Switching voltage	0...48 V DC	0...24 V DC	24...240 V AC
Continuous current	100 mA	2 A	1 A
Peak reverse voltage	54 V	33 V	600 V
Forward voltage	< 1 V DC	< 120 mV	< 1 V
Test voltage input /output	2.5 kV	2.5 kV	3.75 kV
Ambient temperature (operational)	-20 °C ...+60 °C	-20 °C ...+60 °C	-20 °C ...+60 °C
Storage temperature	-40 °C ...+70 °C	-40 °C ...+70 °C	-40 °C ...+70 °C
Note			

Input	Nominal voltage / current
SSS 5 V...	2.5...6 V DC / 4 mA
SSS 24 V...	16...30 V DC / 7 mA
SSS 60 V...	52...72 V DC / 3 mA
SSS 5 V...	2.5...6 V DC / 9 mA
SSS 24 V...	18...30 V DC / 7 mA
SSS 60 V...	40...72 V DC / 3 mA
SSS 5 V...	2.5...6 V DC / 15 mA
SSS 24 V...	18...30 V DC / 7 mA
SSS 60 V...	40...72 V DC / 3 mA

Order No.	Order No.	Order No.
4064320000	-	-
4061180000	-	-
4061230000	-	-
-	4064310000	-
-	4061190000	-
-	4061200000	-
-	-	1132260000
-	-	4061210000
-	-	4061220000

Solid-state relay



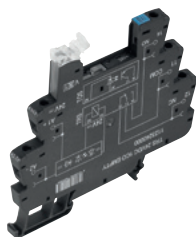
Similar to illustration

Technical data	SSR.../0-35 V DC 3,5 A	SSR.../12-275 V AC 1 A
Output	MOS-FET	TRIAC, zero cross switch
Switching voltage	0...33 V DC	12...275 V AC
Continuous current	1 mA...3.5 A	50 mA...1 A
Peak reverse voltage	35 V	600 V
Forward voltage	< 300 mV	< 1.1 V
Test voltage input /output		2.5 kV
Ambient temperature (operational)		-20 °C ...+80 °C
Storage temperature		-40 °C ...+100 °C
Note		

Coil data	Nominal voltage / current
SSR10...32 V DC/...	10...32 V/3...13 mA

Order No.	Order No.
1132310000	1132290000

Empty socket 6.4 mm



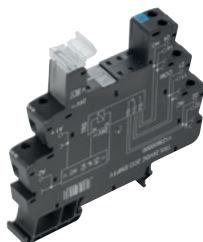
Input voltage	Qty.	Type / 1 CO, Screw connection	Order No.	Type / 1 CO, Tension clamp connection	Order No.
5 V DC ¹⁾	10	TRS 5VDC 1CO empty	1123220000	TRZ 5VDC 1CO empty	1123340000
12 V DC ²⁾	10	TRS 12VDC 1CO empty	1123230000	TRZ 12VDC 1CO empty	1123350000
24 V DC ³⁾	10	TRS 24VDC 1CO empty	1123240000	TRZ 24VDC 1CO empty	1123370000
24 V UC ³⁾	10	TRS 24VUC 1CO empty	1123250000	TRZ 24VUC 1CO empty	1123380000
48 V UC ³⁾	10	TRS 48VUC 1CO empty	1123270000	TRZ 48VUC 1CO empty	1123390000
60 V UC ⁴⁾	10	TRS 60VUC 1CO empty	1123280000	TRZ 60VUC 1CO empty	1123400000
120 V UC ⁴⁾	10	TRS 120VUC 1CO empty	1123290000	TRZ 120VUC 1CO empty	1123410000
230 V UC ⁴⁾	10	TRS 230VUC 1CO empty	1123300000	TRZ 230VUC 1CO empty	1123420000
120 V AC ⁴⁾	10	TRS 120VAC RC 1CO empty	1123310000	TRZ 120VAC RC 1CO empty	1123430000
230 V AC ⁴⁾	10	TRS 230VAC RC 1CO empty	1123320000	TRZ 230VAC RC 1CO empty	1123440000
24...230 V AC / DC ³⁾	10	TRS 24-230VUC 1CO empty	1123330000	TRZ 24-230VUC 1CO empty	1123450000

Useable with ¹⁾RSS...005; SSS 5V...

²⁾RSS...012 ³⁾RSS...024; SSS 24V...

⁴⁾RSS...60V; SSS 60V...

Empty socket 12.8 mm



Input voltage	Qty.	Type / 1 CO, Screw connection	Order No.	Type / 1 CO, Tension clamp connection	Order No.
5 V DC ¹⁾	10	TRS 5VDC 1CO empty	1127720000	TOZ 24VDC empty	1127740000
12 V DC ²⁾	10	TRS 12VDC 1CO empty	1127730000	TOZ 24-230VUC empty	1127750000
Input voltage	Qty.	Type / 2 CO, Screw connection	Order No.	Type / 2 CO, Tension clamp connection	Order No.
5 V DC ²⁾	10	TRS 5VDC 2CO empty	1123950000	TRZ 5VDC 2CO empty	1124080000
12 V DC ³⁾	10	TRS 12VDC 2CO empty	1123970000	TRZ 12VDC 2CO empty	1124090000
24 V DC ⁴⁾	10	TRS 24VDC 2CO empty	1123980000	TRZ 24VDC 2CO empty	1124100000
24 V UC ⁴⁾	10	TRS 24VUC 2CO empty	1123990000	TRZ 24VUC 2CO empty	1124110000
48 V UC ⁵⁾	10	TRS 48VUC 2CO empty	1124000000	TRZ 48VUC 2CO empty	1124120000
60 V UC ⁶⁾	10	TRS 60VUC 2CO empty	1124010000	TRZ 60VUC 2CO empty	1124130000
120 V UC ⁷⁾	10	TRS 120VUC 2CO empty	1124020000	TRZ 120VUC 2CO empty	1124140000
230 V UC ⁷⁾	10	TRS 230VUC 2CO empty	1124030000	TRZ 230VUC 2CO empty	1124150000
120 V AC ⁷⁾	10	TRS 120VAC RC 2CO empty	1124040000	TRZ 120VAC RC 2CO empty	1124170000
230 V AC ⁷⁾	10	TRS 230VAC RC 2CO empty	1124050000	TRZ 230VAC RC 2CO empty	1124180000
24...230 V AC / DC ⁷⁾	10	TRS 24-230VUC 2CO empty	1124070000	TRZ 24-230VUC 2CO empty	1124190000

Useable with ¹⁾RCL31024; SSR 10...32VDC/...

²⁾RCL42005, ³⁾RCL42012

⁴⁾RCL42024

⁵⁾RCL42048, ⁶⁾RCL42060,

⁷⁾RCL42110

Technical data

Conductor	Screw connection	Tension clamp connection
Plug gauge to IEC 60947-1	A1 / B1	A1 / B1
1 conductor		
Solid HO7V-U	0.14...2.5	0.14...1.5
Stranded HO7V-K	0.14...1.5	0.14...1.5
... with wire end ferrule	0.25...1.5	0.14...1.5
... with wire end ferrule with plastic collar	0.25...1.5	0.14...1.5
Clamping range AWG.../1	26...14	26...16
Clamping range AWG.../7	26...16	26...16
Clamping range AWG.../19	26...16	26...16
2 conductor with same size		
Solid HO7V-U	0.5...1.0	
Stranded HO7V-K	0.5...1.0	
... with twin wire end ferrule H...D ZH	0.5...1.0	0.5...1.0
General data		
Nominal torque	Nm	0.4
Stripping length	mm	8
Continuous current ZQV 1.5N/R6.4	A	17.5; UL: 10
No. Contact durability relay / ZQV		10
Note		

Pluggable cross connection



Type	No. of poles / Pitch	Colour	Qty.	Order No.
ZQV 1.5N/R6.4/2 GE	2 / 6.4 mm	yellow	10	1193670000
ZQV 1.5N/R6.4/10 GE	10 / 6.4 mm	yellow	10	1193680000
ZQV 1.5N/R6.4/19 GE	19 / 6.4 mm	yellow	10	1193690000
ZQV 1.5N/R12.8/10 GE	10 / 12.8 mm	yellow	10	1193700000
ZQV 1.5N/R6.4/10 SW	10 / 6.4 mm	black	10	1391630000
ZQV 1.5N/R6.4/19 SW	19 / 6.4 mm	black	10	1391600000
ZQV 1.5N/R6.4/10 RT	10 / 6.4 mm	red	10	1391640000
ZQV 1.5N/R6.4/19 RT	19 / 6.4 mm	red	10	1391610000
ZQV 1.5N/R6.4/10 BL	10 / 6.4 mm	blue	10	1390350000
ZQV 1.5N/R6.4/19 BL	19 / 6.4 mm	blue	10	1391620000

Supply terminal



Type	Connection technology	Qty.	Order No.
TXS SUPPLY	Screw connection	10	1240780000
TXZ SUPPLY	Tension clamp connection	10	1240790000

Other accessories



Isolation plate	Note	Qty.	Order No.
TW TXS/TXZ R3.2	Isolation plate 3.2 mm pitch	10	1240800000

Markers	Note	Qty.	Order No.
WS 10/6 MC Middle	10 * 6 mm	600	1818400000

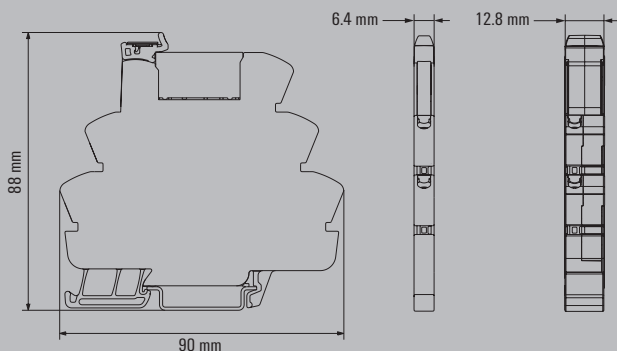


Screwdriver	Note	Qty.	Order No.
SDK PH0	only screw connection	1	9008470000
SD 0.6 x 3.5 x 100		1	9008330000
SD TO 0.6 x 3.0	only tension clamp connection (angled)	1	1323880000

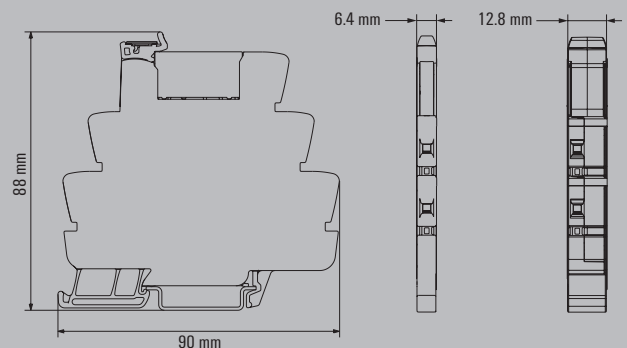
End bracket	Qty.	Order No.
WEW35/2 SW	100	1061210000

Dimensions

Tension clamp connection



Screw connection



No-wear isolation of potentials in terminal block design



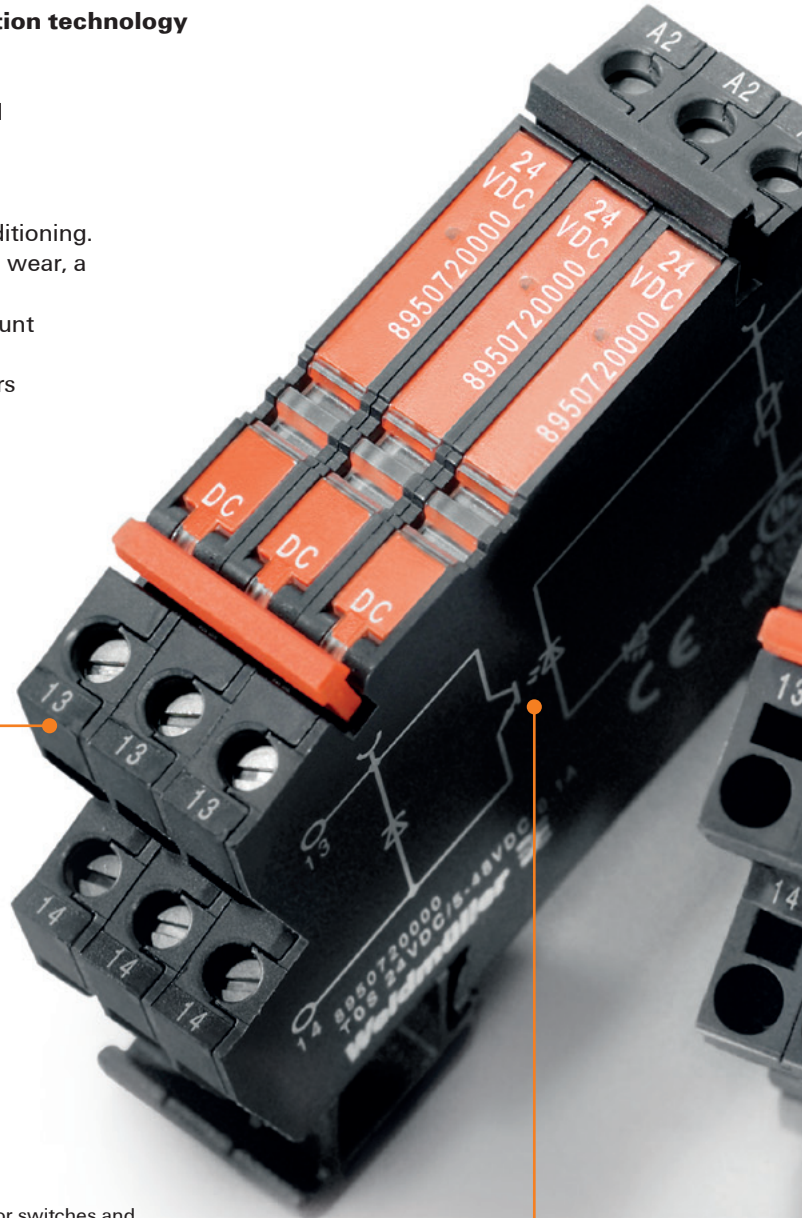
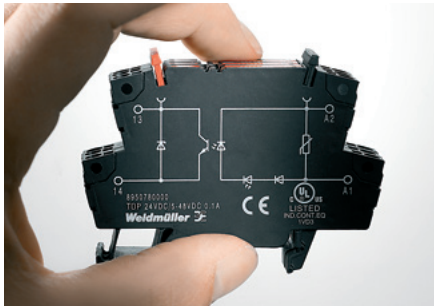
Space saving solid-state relay with "PUSH IN" connection technology

The TERMOPTO opto modules are characterised by a particularly compact design, pluggable cross-connections and an optimal price-performance ratio.

TERMOPTO offers a compact, electronic alternative to the electromechanical relay for electrical isolation and signal conditioning. Instead of an electromechanical solution that is susceptible to wear, a maintenance-free and compact terminal block with integrated electrical isolation is used. This saves space, reduces the amount of servicing and increases system availability. In addition, the overall accessory needs are reduced, because cross-connectors and markers from the terminal portfolio can be used.

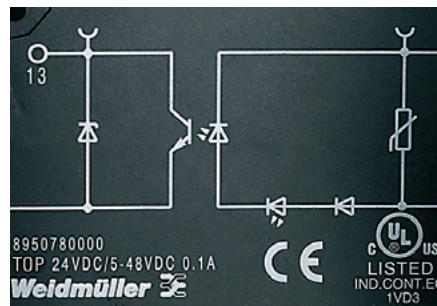
Compact

Compact design reduces space requirements in the switching cabinet by > 80 % compared to conventional relay solutions.



Long lifetime

Wear-free semiconductor switches and extensive protective circuits ensure long service life and reliable switching cycles.



Status indicator

LED status indicator provides information on the switching state.



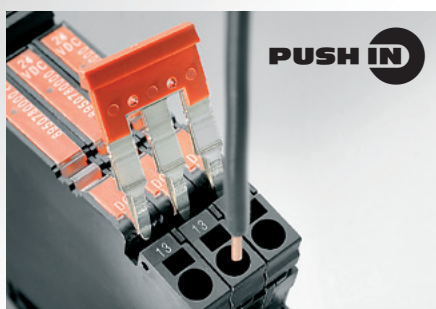
Closed design

Closed design for space-saving, side-by-side arrangement. No end plate necessary; the electronics are mechanically protected.



Time-saving

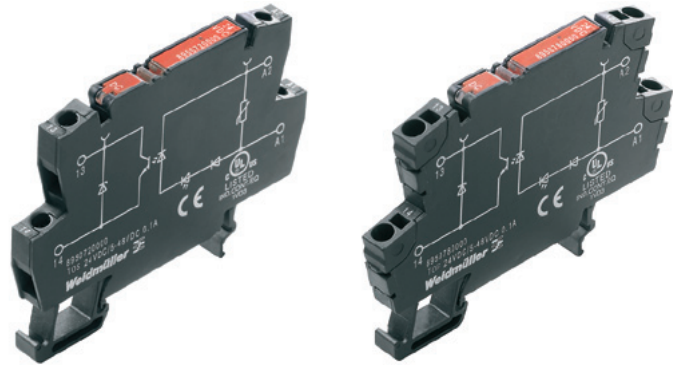
PUSH IN screwless connection system and the pluggable cross-connection reduce wiring time by > 50 %.



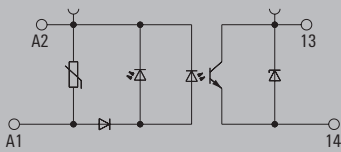
Solid-state relays 5...48 V DC / 100 mA

Output versions

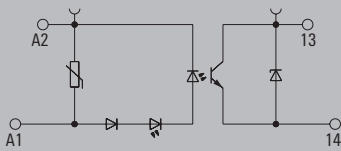
- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design



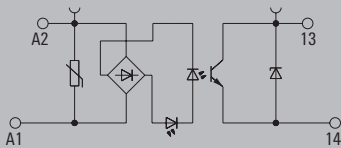
5 V DC



12...220 DC



24...230 V AC



Technical data

Load side		
Rated switching voltage	5...48 V DC	
Continuous current	100 mA	
Making current		
Solid-state type	Transistor	
Voltage drop at max. load	< 1 V	
Leakage current	< 10 µA	
Protective circuit, load side	Integrated free-wheel diode	
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode	
General data		
Ambient temperature (operational)	-20 °C...+60 °C	
Storage temperature	-40 °C...+80 °C	
Humidity	5-95% rel. humidity, T _a = 40°C, no condensation	
Approvals	CE; cULus; GOSTME25	
Insulation coordination (EN 50178)		
Rated voltage	300 V	
Impulse withstand voltage	4 kV (1.2/50 µs)	
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.	
Dielectric strength to mounting rail		
Clearance and creepage distances for control side - load side	> 3 mm	
Surge voltage category	III	
Pollution severity	2	
Dimensions		
Clamping range (nominal / min. / max.)	Screw connection	2.5 / 0.5 / 4
	PUSH IN connection	1.5 / 0.5 / 2.5
Depth x width x height	Screw connection	55 / 6.1 / 74.5
	PUSH IN connection	55 / 6.1 / 79.5
Note	Accessories and dimensioned drawings: refer to the TERMOPTO Accessories page.	

Applications

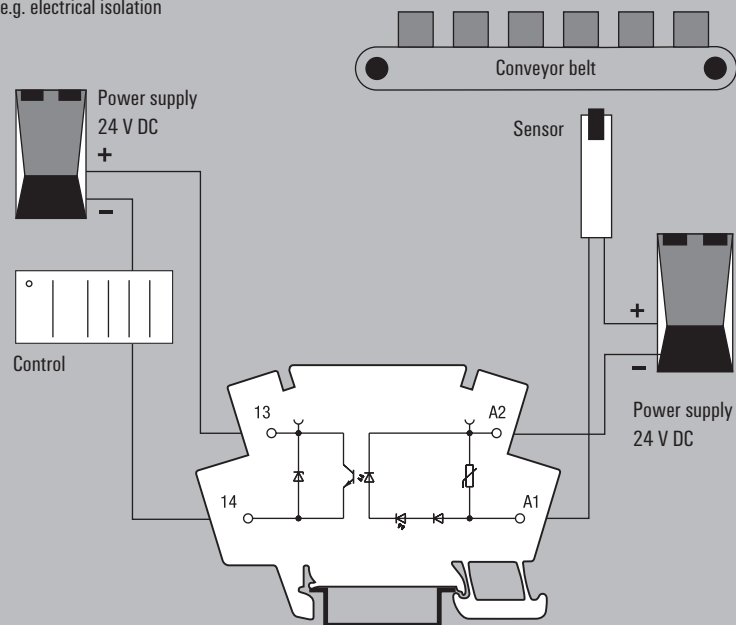
The TERMOPTO opto module is used in industrial applications in which electrical isolation and signal conditioning without switching amplification is sufficient.

The compact design in terminal-block format saves space on the rail and offers the option of a pluggable cross connection.

The choice between 10 input voltages and 3 output voltages, as well as screw or PUSH IN connection technology, gives 60 variations for different applications.

The integrated protective circuit ensures sufficient protection in applications with resistive, as well as slightly inductive and capacitive loads. For purely inductive, capacitive or comparable loads with high switch-on and switch-off peaks, such as solenoid valves or filament lamps, ensure that the module is dimensioned appropriately or an additional safeguard is used.

e.g. electrical isolation



Solid-state relays 5...48 V DC / 100 mA

Output versions

Ordering data	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Control side					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	48...60 V DC ±20 %	110 V DC ±20 %
Nominal control current	7.7 mA DC	7.8 mA DC	7 mA DC	4.3 mA DC	2.6 mA DC
Power rating	≤ 170 mW	< 95 mW	≤ 170 mW	< 200 mW	< 280 mW
Cut-in (switch-on) voltage	≥ 4 V DC	≥ 9.6 V DC	≥ 19.2 V DC	≥ 38.4 V AC	≥ 88 V DC
Dropout voltage	≤ 2 V DC	≤ 4.8 V DC	≤ 9.6 V DC	≤ 19.2 V DC	≤ 44 V DC
Input frequency	< 3000 Hz	< 3000 Hz	< 3000 Hz	< 500 Hz	< 500 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection
Load side					
Switch-on delay	< 13 µs	< 13 µs	< 13 µs	< 170 µs	< 170 µs
Switch-off delay	< 42 µs	< 42 µs	< 42 µs	< 310 µs	< 310 µs

Ordering data						
Screw connection	Type	TOS 5VDC/48VDC 0,1A	TOS 12VDC/48VDC 0,1A	TOS 24VDC/48VDC 0,1A	TOS 48-60VDC/48VDC 0,1A	TOS 110VDC/48VDC 0,1A
	Order No.	8950700000	8950710000	8950720000	8950730000	8950740000
PUSH IN connection	Type	TOP 5VDC/48VDC 0,1A	TOP 12VDC/48VDC 0,1A	TOP 24VDC/48VDC 0,1A	TOP 48-60VDC/48VDC 0,1A	TOP 110VDC/48VDC 0,1A
	Order No.	8950760000	8950770000	8950780000	8950790000	8950800000
Note						

Ordering data	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC +10 % / -15 %	24 V AC ±20%	48...60 V AC ±20 %	120 V AC ±20 %	230 V AC +10 % / -20 %
Nominal control current	1.65 mA DC	7.4 mA AC	4.3 mA AC	2.9 mA AC	1.75 mA AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 0.2 VA	≤ 0.3 VA	≤ 0.4 VA
Cut-in (switch-on) voltage	≥ 187 V DC	≥ 21.6 V AC	≥ 38.4 V AC	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 93.5 V DC	≤ 9.6 V AC	≤ 19.2 V AC	≤ 48 V AC	≤ 69 V AC
Input frequency	< 500 Hz	< 10 Hz	< 10 Hz	< 10 Hz	< 10 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Varistor, rev. polarity protection	Varistor	Varistor	Varistor	Varistor
Load side					
Switch-on delay	< 170 µs	< 12 ms	< 12 ms	< 12 ms	< 12 ms
Switch-off delay	< 310 µs	< 14 ms	< 14 ms	< 14 ms	< 14 ms

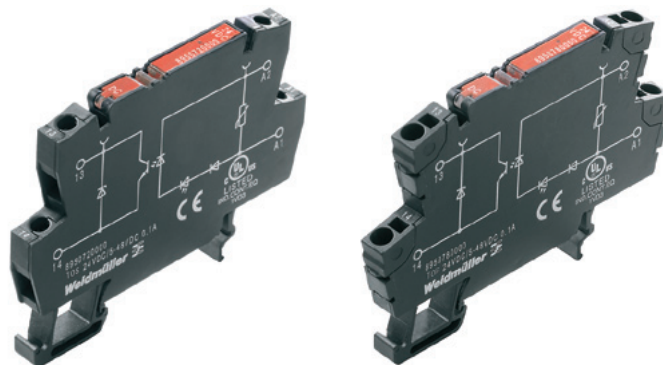
Ordering data						
Screw connection	Type	TOS 220VDC/48VDC 0,1A	TOS 24VAC/48VDC 0,1A	TOS 48-60VAC/48VDC 0,1A	TOS 120VAC/48VDC 0,1A	TOS 230VAC/48VDC 0,1A
	Order No.	8950750000	8950820000	8950830000	8950840000	8950850000
PUSH IN connection	Type	TOP 220VDC/48VDC 0,1A	TOP 24VAC/48VDC 0,1A	TOP 48-60VAC/48VDC 0,1A	TOP 120VAC/48VDC 0,1A	TOP 230VAC/48VDC 0,1A
	Order No.	8950810000	8950860000	8950870000	8950880000	8950890000
Note						

TERMOPTO – solid-state relays

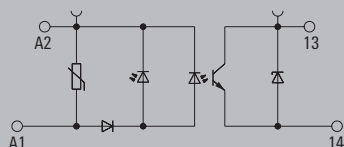
Solid-state relays, 5...48 V DC / 500 mA

Output versions

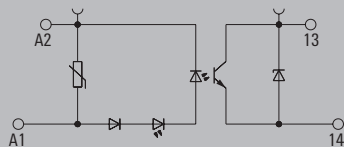
- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design



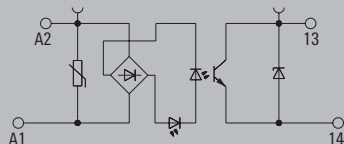
5 V DC



12...220 DC



24...230 V AC



Technical data

Load side			
Rated switching voltage	5...48 V DC		
Continuous current	500 mA		
Making current			
Solid-state type	Transistor		
Voltage drop at max. load	< 1 V		
Leakage current	< 10 µA		
Protective circuit, load side	Integrated free-wheel diode		
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode		
General data			
Ambient temperature (operational)	-20 °C...+60 °C		
Storage temperature	-40 °C...+80 °C		
Humidity	5-95% rel. humidity, T _a = 40°C, no condensation		
Approvals	CE; cULus; GOSTME25		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	4 kV (1.2/50 µs)		
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.		
Dielectric strength to mounting rail			
Clearance and creepage distances for control side - load side	> 3 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions			
Clamping range (nominal / min. / max.)	mm ²	2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
	mm	55 / 6.1 / 74.5	55 / 6.1 / 79.5
Depth x width x height	mm		
Note			
Accessories and dimensioned drawings: refer to the TERMOPTO Accessories page.			

Applications

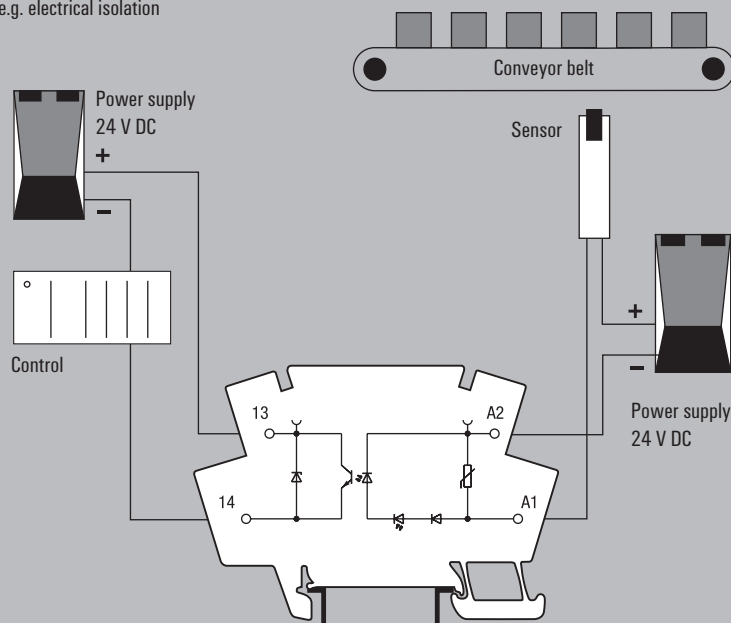
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e.g. electrical isolation



Solid-state relays, 5...48 V DC / 500 mA

Output versions

Ordering data	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Control side					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	48...60 V DC ±20 %	110 V DC ±20 %
Nominal control current	7.7 mA DC	7.8 mA DC	7 mA DC	4.3 mA DC	2.6 mA DC
Power rating	< 40 mW	< 95 mW	≤ 170 mW	≤ 200 mW	≤ 280 mW
Cut-in (switch-on) voltage	≥ 4 V DC	≥ 9.6 V DC	≥ 19.2 V DC	≥ 38.4 V DC	≥ 88 V DC
Dropout voltage	≤ 2 V DC	≤ 4.8 V DC	≤ 9.6 V DC	≤ 19.2 V DC	≤ 44 V DC
Input frequency	< 200 Hz	< 200 Hz	< 200 Hz	< 200 Hz	< 200 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection
Load side					
Switch-on delay	< 5 µs	< 20 µs	< 20 µs	< 18 µs	< 18 µs
Switch-off delay	< 26 µs	< 200 µs	< 200 µs	< 340 µs	< 340 µs

Ordering data						
Screw connection	Type	TOS 5VDC/48VDC 0,5A	TOS 12VDC/48VDC 0,5A	TOS 24VDC/48VDC 0,5A	TOS 48-60VDC/48VDC 0,5A	TOS 110VDC/48VDC 0,5A
	Order No.	8950900000	8950910000	8950920000	8950930000	8950940000
PUSH IN connection	Type	TOP 5VDC/48VDC 0,5A	TOP 12VDC/48VDC 0,5A	TOP 24VDC/48VDC 0,5A	TOP 48-60VDC/48VDC 0,5A	TOP 110VDC/48VDC 0,5A
	Order No.	8950960000	8950970000	8950980000	8950990000	8951000000
Note						

Ordering data	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC +10 % / -15 %	24 V AC ±20%	48...60 V AC ±20 %	120 V AC ±20 %	230 V AC +10 % / -20 %
Nominal control current	1.65 mA DC	7.4 mA AC	4.3 mA AC	2.9 mA AC	1.75 mA AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 0.2 VA	≤ 0.3 VA	≤ 0.4 VA
Cut-in (switch-on) voltage	≥ 187 V DC	≥ 21.6 V AC	≥ 38.4 V AC	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 88 V DC	≤ 9.6 V AC	≤ 19.2 V AC	≤ 48 V AC	≤ 69 V AC
Input frequency	< 200 Hz	< 10 Hz	< 10 Hz	< 10 Hz	< 10 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Varistor, rev. polarity protection	Varistor	Varistor	Varistor	Varistor
Load side					
Switch-on delay	< 18 µs	< 12 ms	< 12 ms	< 12 ms	< 12 ms
Switch-off delay	< 340 µs	< 14 ms	< 14 ms	< 14 ms	< 14 ms

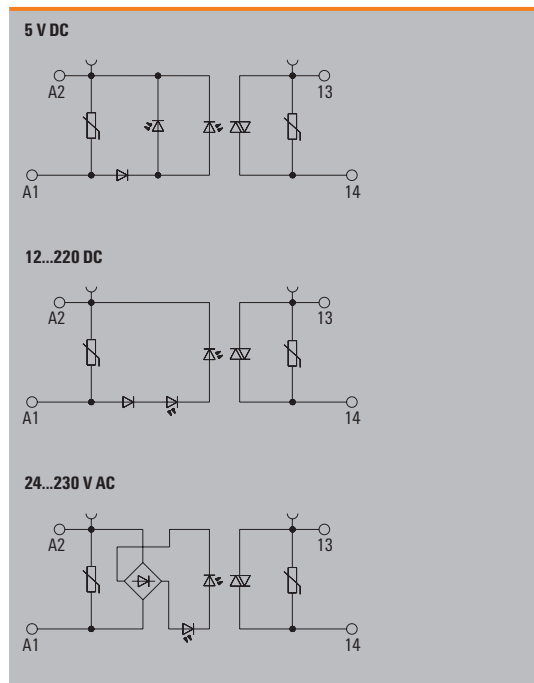
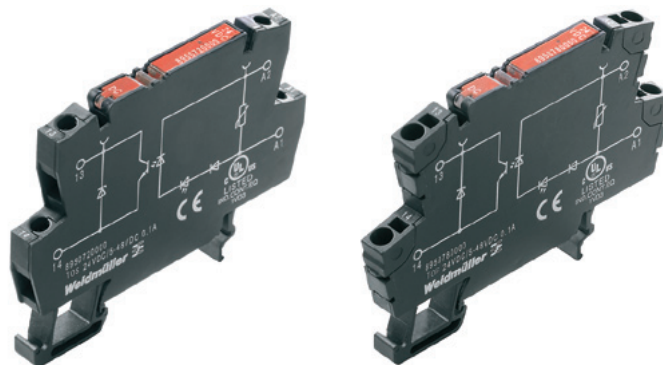
Ordering data						
Screw connection	Type	TOS 220VDC/48VDC 0,5A	TOS 24VAC/48VDC 0,5A	TOS 48-60VAC/48VDC 0,5A	TOS 120VAC/48VDC 0,5A	TOS 230VAC/48VDC 0,5A
	Order No.	8950950000	8951020000	8951030000	8951040000	8951050000
PUSH IN connection	Type	TOP 220VDC/48VDC 0,5A	TOP 24VAC/48VDC 0,5A	TOP 48-60VAC/48VDC 0,5A	TOP 120VAC/48VDC 0,5A	TOP 230VAC/48VDC 0,5A
	Order No.	8951010000	8951060000	8951070000	8951080000	8951090000
Note						

TERMOPTO – solid-state relays

Solid-state relays 24...230 V AC / 100 mA

Output versions

- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design



Technical data

Load side			
Rated switching voltage	24...230 V AC		
Continuous current	100 mA		
Making current			
Solid-state type	Triac (zero-cross switch)		
Voltage drop at max. load	< 1.8 V		
Leakage current	< 10 µA		
Protective circuit, load side	Varistor		
Short-circuit-proof / Protective circuit, load side	No / Varistor		
General data			
Ambient temperature (operational)	-20 °C...+60 °C		
Storage temperature	-40 °C...+80 °C		
Humidity	5-95% rel. humidity, T _a = 40°C, no condensation		
Approvals	CE; cULus; GOSTME25		
Insulation coordination (EN 50178)			
Rated voltage	300 V		
Impulse withstand voltage	4 kV (1.2/50 µs)		
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.		
Dielectric strength to mounting rail			
Clearance and creepage distances for control side - load side	> 3 mm		
Surge voltage category	III		
Pollution severity	2		
Dimensions			
Clamping range (nominal / min. / max.)	mm ²	Screw connection 2.5 / 0.5 / 4	PUSH IN connection 1.5 / 0.5 / 2.5
	mm	55 / 6.1 / 74.5	55 / 6.1 / 79.5
Depth x width x height	mm	55 / 6.1 / 79.5	
Note			
Accessories and dimensioned drawings: refer to the TERMOPTO Accessories page.			

Applications

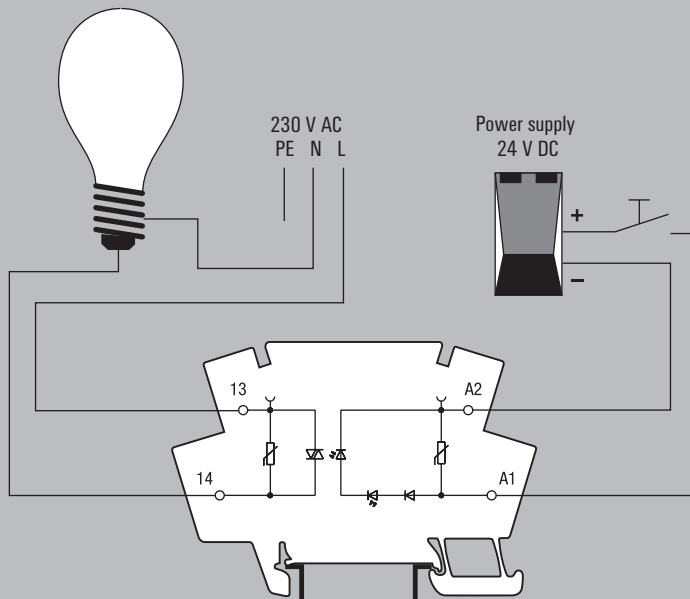
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E.g. signal conditioning



Solid-state relays 24...230 V AC / 100 mA

Output versions

Ordering data	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Control side					
Rated control voltage	5 V DC ±20 %	12 V DC ±20 %	24 V DC ±20 %	48...60 V DC ±20 %	110 V DC ±20 %
Nominal control current	7.8 mA DC	3.6 mA DC	3.6 mA DC	3.7 mA DC	3.6 mA DC
Power rating	< 40 mW	< 45 mW	≤ 80 mW	≤ 170 mW	≤ 360 mW
Cut-in (switch-on) voltage	≥ 4 V DC	≥ 9.6 V DC	≥ 19.2 V DC	≥ 38.4 V DC	≥ 88 V DC
Dropout voltage	≤ 2 V DC	≤ 4.8 V DC	≤ 9.6 V DC	≤ 19.2 V DC	≤ 44 V DC
Input frequency	< 10 Hz	< 10 Hz	< 10 Hz	< 10 Hz	< 10 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection	Varistor, rev. polarity protection
Load side					
Switch-on delay	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
Switch-off delay	< 12 ms	< 12 ms	< 12 ms	< 12 ms	< 12 ms

Ordering data						
Screw connection	Type	TOS 5VDC/230VAC 0,1A	TOS 12VDC/230VAC 0,1A	TOS 24VDC/230VAC 0,1A	TOS 48-60VDC/230VAC 0,1A	TOS 110VDC/230VAC 0,1A
	Order No.	8951100000	8951110000	8951120000	8951130000	8951140000
PUSH IN connection	Type	TOP 5VDC/230VAC 0,1A	TOP 12VDC/230VAC 0,1A	TOP 24VDC/230VAC 0,1A	TOP 48-60VDC/230VAC 0,1A	TOP 110VDC/230VAC 0,1A
	Order No.	8951160000	8951170000	8951180000	8951190000	8951200000
Note						

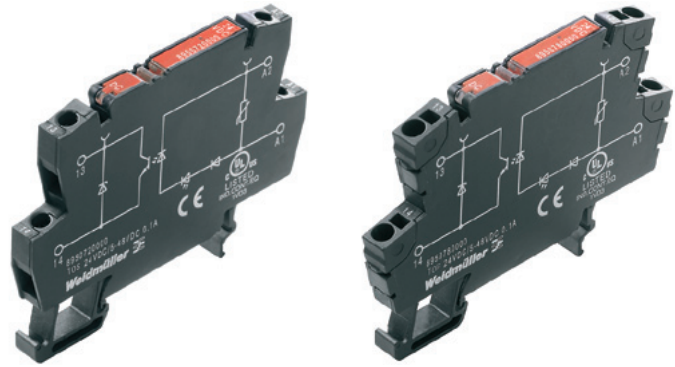
Ordering data	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC +10 % / -15 %	24 V AC ±20%	48...60 V AC ±20 %	120 V AC ±20 %	230 V AC +10 % / -20 %
Nominal control current	2.9 mA DC	8.8 mA AC	6.4 mA AC	8.5 mA AC	7.7 mA AC
Power rating	≤ 640 mW	≤ 0.2 VA	≤ 0.3 VA	≤ 1 VA	≤ 1.7 VA
Cut-in (switch-on) voltage	≥ 187 V DC	≥ 19.2 V AC	≥ 38.4 V AC	≥ 96 V AC	≥ 184 V AC
Dropout voltage	≤ 88 V DC	≤ 9.6 V AC	≤ 19.2 V AC	≤ 48 V AC	≤ 92 V AC
Input frequency	< 10 Hz	< 10 Hz	< 10 Hz	< 10 Hz	< 10 Hz
Status indicator	Green LED	Green LED	Green LED	Green LED	Green LED
Protective circuit	Varistor, rev. polarity protection	Varistor	Varistor	Varistor	Varistor
Load side					
Switch-on delay	≤ 10 ms	< 14 ms	< 14 ms	< 22 ms	< 22 ms
Switch-off delay	< 12 ms	< 16 ms	< 16 ms	< 18 ms	< 18 ms

Ordering data						
Screw connection	Type	TOS 220VDC/230VAC 0,1A	TOS 24VAC/230VAC 0,1A	TOS 48-60VAC/230VAC 0,1A	TOS 120VAC/230VAC 0,1A	TOS 230VAC/230VAC 0,1A
	Order No.	8951150000	8951220000	8951230000	8951240000	8951250000
PUSH IN connection	Type	TOP 220VDC/230VAC 0,1A	TOP 24VAC/230VAC 0,1A	TOP 48-60VAC/230VAC 0,1A	TOP 120VAC/230VAC 0,1A	TOP 230VAC/230VAC 0,1A
	Order No.	8951210000	8951260000	8951270000	8951280000	8951290000
Note						

Solid-state relays, 5...48 V DC / 500 mA

Output versions with RC element

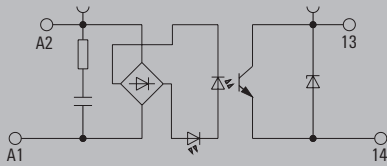
- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design
- RC input circuitry for improved interference immunity



Technical data

Load side	
Rated switching voltage	5...48 V DC
Continuous current	500 mA
Making current	
Solid-state type	Transistor
Voltage drop at max. load	< 1 V
Leakage current	< 10 µA
Protective circuit, load side	Diode
Short-circuit-proof / Protective circuit, load side	No / Diode
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+80 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.
Dielectric strength to mounting rail	
Clearance and creepage distances for control side - load side	> 3 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 0.5 / 4
Depth x width x height	mm 55 / 6.1 / 74.5
	55 / 6.1 / 79.5
Note	
Accessories and dimensioned drawings: refer to the TERMOPTO Accessories page.	

120 V...230 V AC



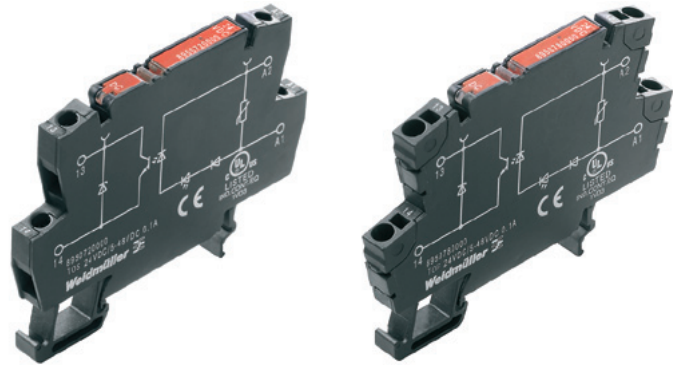
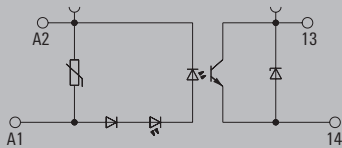
Ordering data

	120 V AC	230 V AC
Control side		
Rated control voltage	120 V AC ±20 %	230 V AC +10 %/-15 %
Nominal control current	6.4 mA AC	6.4 mA AC
Power rating	≤ 0.61 VA	≤ 1.5 VA
Cut-in (switch-on) voltage	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 48 V AC	≤ 69 V AC
Input frequency	< 10 Hz	< 10 Hz
Status indicator	Green LED	Green LED
Protective circuit	RC element	RC element
Load side		
Switch-on delay	< 12.6 ms	< 12 ms
Switch-off delay	< 20.8 ms	< 14 ms

Ordering data			
Screw connection	Type	TOS 120VAC/48VDC 0.5A RC	TOS 230VAC/48VDC 0.5A RC
	Order No.	1180290000	1189270000
PUSH IN connection	Type	TOP 120VAC/48VDC 0.5A RC	TOP 230VAC/48VDC 0.5A RC
	Order No.	1188830000	1189260000
Note			

Solid-state relay, 3...33 V DC / 4 A**Output versions**

- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design

**24 V DC****Technical data**

Load side	
Rated switching voltage	3...33 V DC
Continuous current	4 A
Making current	
Solid-state type	Transistor
Voltage drop at max. load	90 mV
Leakage current	< 10 µA
Protective circuit, load side	Integrated free-wheel diode
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode
General data	
Ambient temperature (operational)	-20 °C...+60 °C
Storage temperature	-40 °C...+80 °C
Humidity	5-95% rel. humidity, T ₀ = 40°C, no condensation
Approvals	CE; cULus
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.
Dielectric strength to mounting rail	
Clearance and creepage distances for control side - load side	> 3 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 2.5 / 0.5 / 4
Depth x width x height	mm 55 / 6.1 / 74.5
	mm 55 / 6.1 / 79.5
Note	
Accessories and dimensioned drawings: refer to the TERMOPTO Accessories page.	

Ordering data

Control side	
Rated control voltage	24 V DC ±20 %
Nominal control current	7 mA DC
Power rating	≤ 170 mW
Cut-in (switch-on) voltage	≥ 16.8 V DC
Dropout voltage	≤ 9.6 V DC
Input frequency	≤ 10 Hz
Status indicator	Green LED
Protective circuit	Varistor, rev. polarity protection
Load side	
Switch-on delay	< 13 µs
Switch-off delay	< 200 µs

Ordering data	
Screw connection	Type TOS 24VDC/24VDC 4A
	Order No. 1275100000
PUSH IN connection	Type TOP 24VDC/24VDC 4A
	Order No. 1254880000
Note	

Accessories



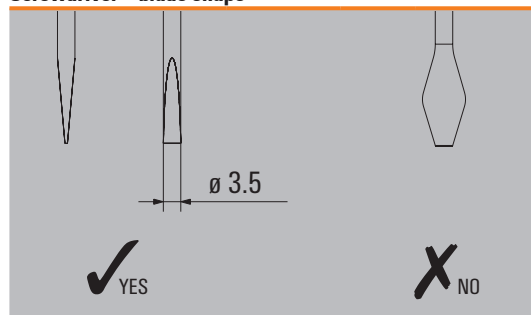
Plug-in cross-connection

Type	No. of poles	Qty.	Order No.
yellow			
ZQV 4N / 2 GE	2	60	1758250000
ZQV 4N / 3 GE	3	60	1762630000
ZQV 4N / 4 GE	4	60	1762620000
ZQV 4N / 10 GE	10	20	1758260000
ZQV 4N / 20 GE	20	20	1909020000
red			
ZQV 4N / 2 RT	2	60	1793950000
ZQV 4N / 3 RT	3	60	1793980000
ZQV 4N / 4 RT	4	60	1794010000
ZQV 4N / 10 RT	10	20	1794040000
ZQV 4N / 20 RT	20	20	1909150000
blue			
ZQV 4N / 2 BL	2	60	1793960000
ZQV 4N / 3 BL	3	60	1793990000
ZQV 4N / 4 BL	4	60	1794020000
ZQV 4N / 10 BL	10	20	1794050000
ZQV 4N / 20 BL	20	20	1909100000
black			
ZQV 4N / 2 SW	2	60	1793970000
ZQV 4N / 3 SW	3	60	1794000000
ZQV 4N / 4 SW	4	60	1794030000
ZQV 4N / 10 SW	10	20	1794060000
ZQV 4N / 20 SW	20	20	1909120000

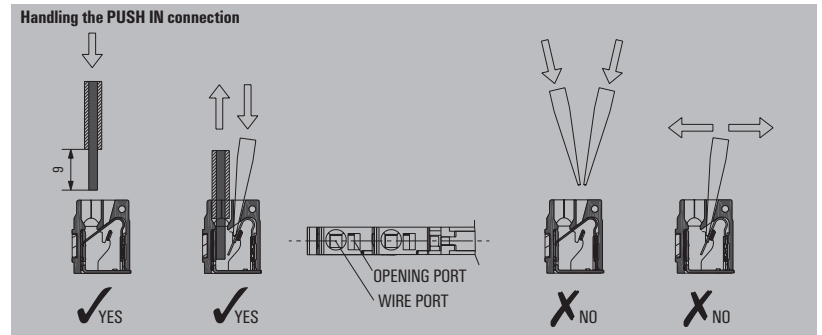
Other accessories

Type	Qty.	Order No.	
Markers			
WS 12/6	12 x 6 mm	600	1609900000
Labels, Lasermark			
LM MT 300 15/6 ge	484 labels/sheet	10	1686360000
Screwdriver			
SD 0.6 x 3.5 x 100		10	9008330000

Screwdriver - blade shape



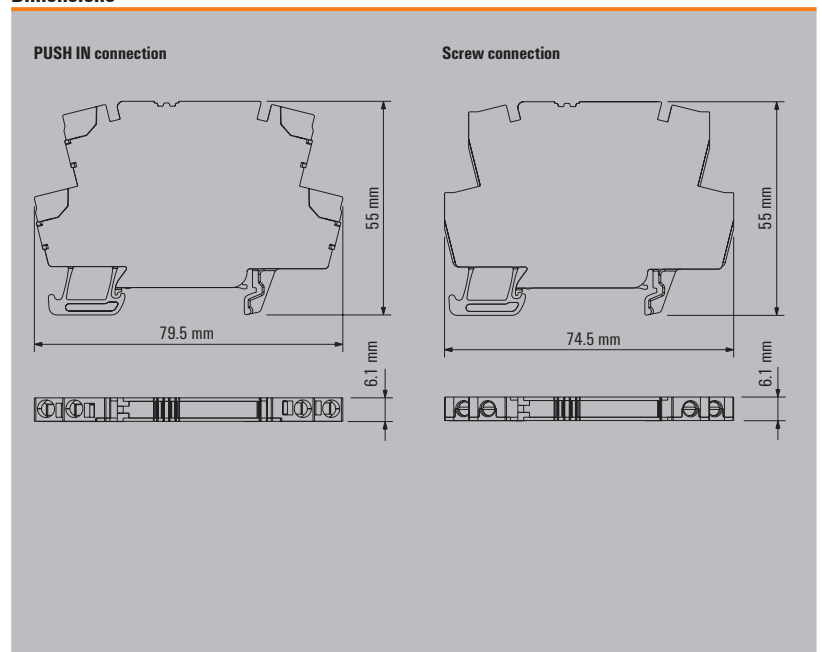
General data - TERMOPTO



Technical data

Conductor		PUSH IN connection	Screw-connection
Solid H07V-U	mm ²	0.5...1.5	0.5...2.5
Stranded H07V-K	mm ²	0.5...1.5	0.5...2.5
"f" with wire end ferrules to DIN 46228-1	mm ²	0.5...1.5	0.5...1.5
"f" with wire end ferrules with plastic collar	mm ²	0.5...1.5	0.5...1.5
Max. clamping range	mm ²	0.13...1.5	0.13...2.5
Plug gauge to IEC 60947-1	Size	A 2	A 3
General technical data			
Nominal torque	Nm	-	0.6
Continuous current for 2-pole cross-connection	A	10	10
Continuous current for multi-pole cross-connection	A	10	10
Stripping length	mm	10	9
Ingress protection class		IP 20	IP 20
Housing material		Wemid	Wemid
UL94 flammability rating		V-0	V-0
Nominal current	A	6	6
Nominal voltage	V	250	250

Dimensions



Short-circuit-proof switching amplifier for inductive loads up to 10 A

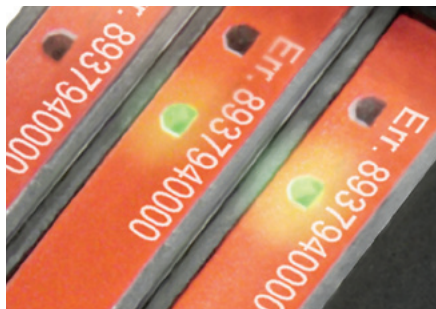
Powerful, compact solid-state relay with error signalling contact

The MICROOPTO family offers the customer high-quality optos and solid-state relays for application-oriented problem solutions. All products are designed in the space-saving 6 mm terminal size. The new solid-state relay can be connected in the output circuits of control systems and feedback control modules for selective activation of inductive loads up to 24 V DC / 10 A, such as solenoid valves, contactors etc. The error controlled output monitors short-circuits and, if necessary, switched off; a potential-free signalling contact provides feedback to the control system – the system can be shut down in a controlled manner for error rectification.

The powerful output of the MICROOPTO SOLENOID switches 10 A at 55 °C. The product can be used worldwide thanks to international approvals: CE, cULus and GL.

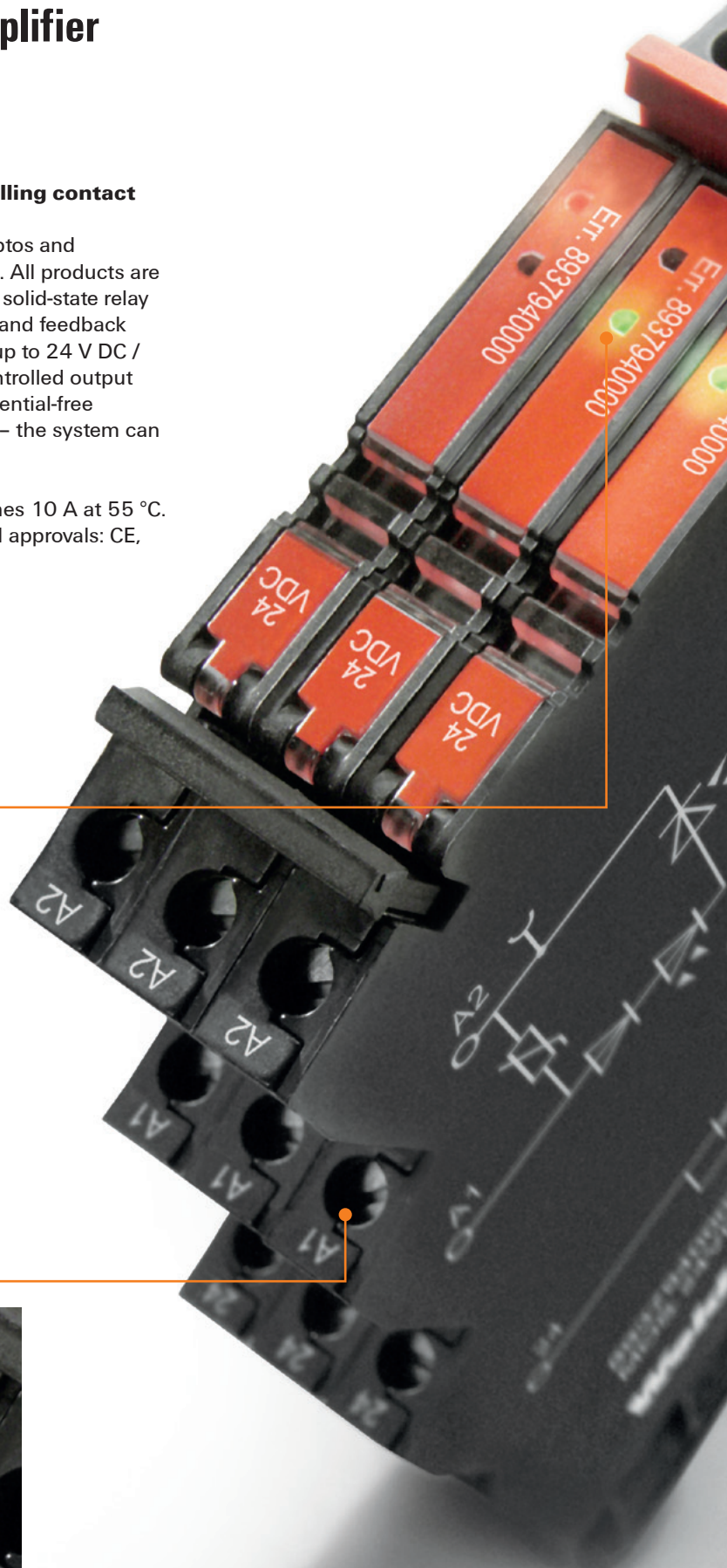
Alarm function

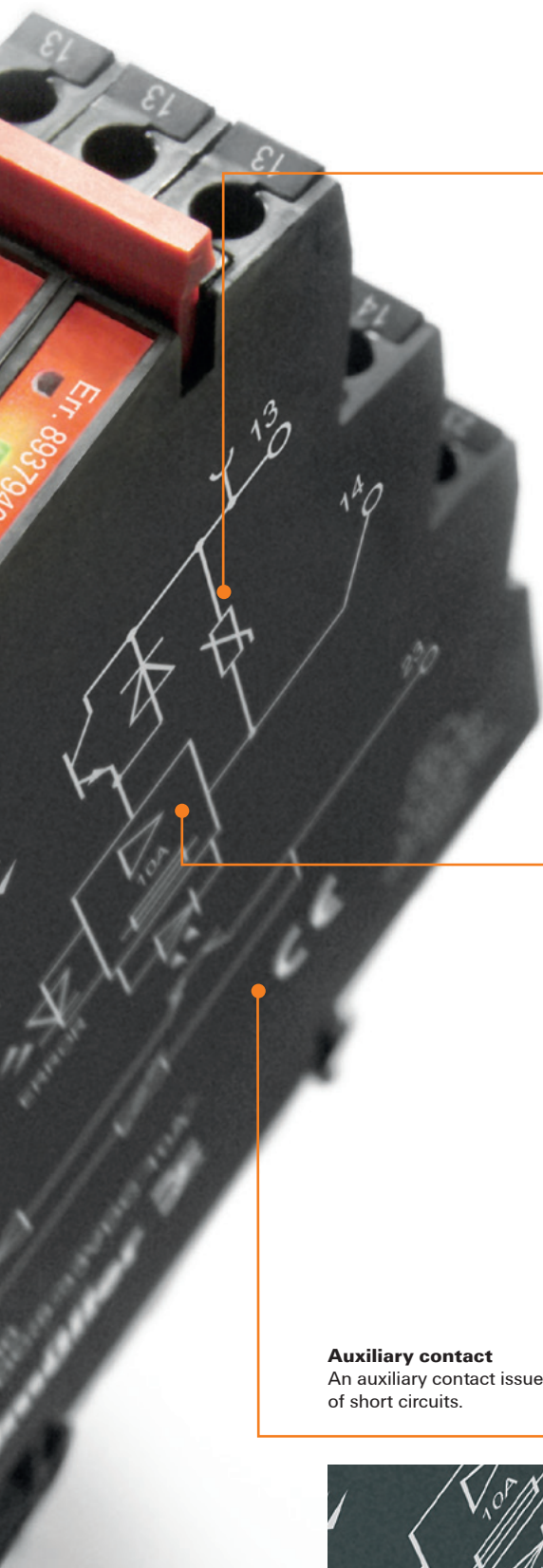
Clear condition display through status and error LEDs in the output.



Space-saving

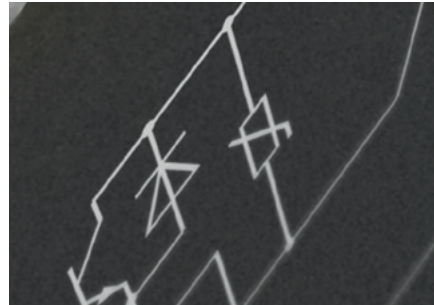
Space-saving 6 mm modular width.





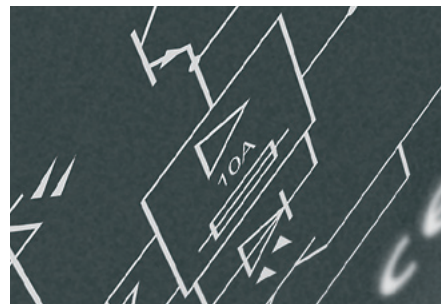
Not sensitive

Protected by suppressor circuit on input and output circuits.



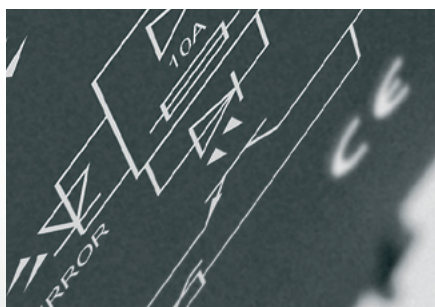
Tough and sturdy

With a short-circuit-proof output.



Auxiliary contact

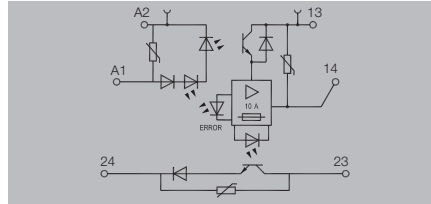
An auxiliary contact issues alerts in event of short circuits.



**For switching valves up to
24 V DC 10 A**

- Width only 6 mm
- Plug-in cross-connector
- For mounting on TS 35
- Status display and error signaling contact with an error in the output

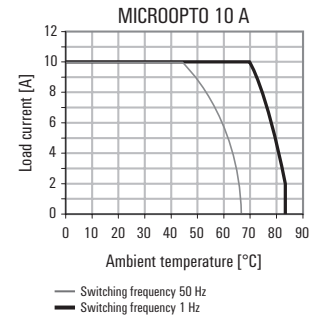
24 V DC / 5-33 V DC 10 A



The **MICROOPTO SOLENOID** solid-state relay is used specifically as a switching amplifier for actuators up to 24 V DC and 10 A with inductive loads such as solenoid valves and contactors.

A potential-free signalling contact transmits errors, such as short circuits, to the controller.

The **MICROOPTO SOLENOID** solid-state relay is short-circuit-proof and protected against power-related transients and voltage peaks by extensive protective circuits. The closed housing also offers a high level of protection against contact.



Technical data

Control side	
Rated control voltage	24 V DC ±20 %
Power rating	400 mW
Cut-in (switch-on) voltage	> 18 V
Dropout voltage	< 13 V
Input frequency	50 Hz
Status indicator	Error LED red; Status LED green
Protective circuit	Varistor, rev. polarity protection
Load side	
Solid-state type	POWER MOS-FET
Rated switching voltage	5...33 V DC
Continuous current	10 A
Voltage drop at max. load	approx. 100 mV
Leakage current	< 1 mA
Short-circuit-proof / Protective circuit, load side	Resistance / Current sensor, Varistor, integrated free-wheel diode
Switch-on delay / Switch-off delay	typical. 250 µs / typical. 700 µs
Pulse load, max. current	LC A
Load category	LC A
General data	
Alarm contact	5...48 V DC / 0.1 A
Ambient temperature (operational)	-25 °C...+60 °C
Storage temperature	-40 °C...+60 °C
UL 94 flammability rating	V-0
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; cULus; GL; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.
Dielectric strength to mounting rail	1.2 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	> 3 mm
Surge voltage category	III
Pollution severity	2

Screw connection		
Type	Qty.	Order No.
MOS 24VDC/5-33VDC 10A	1	8937940000

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

Ordering data

Screw connection

Note

Accessories

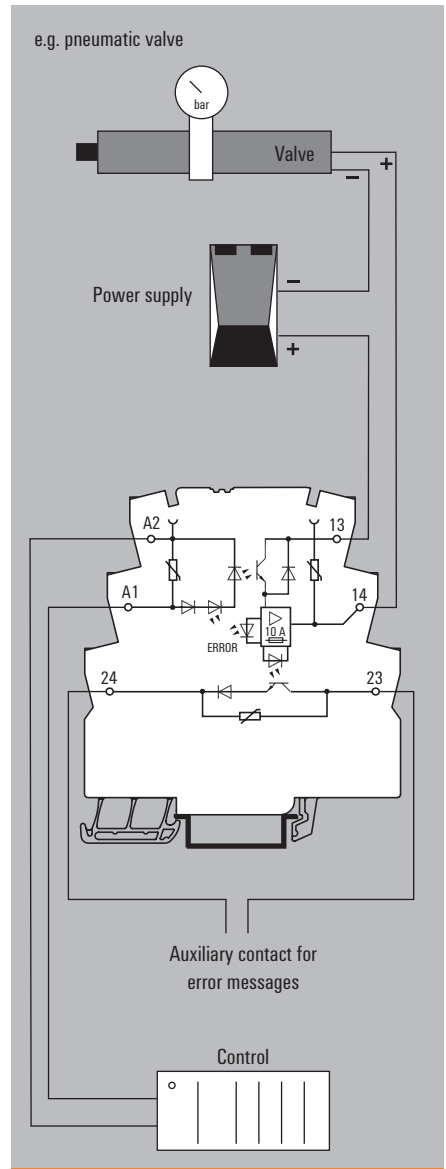
Note

Screw connection		
Type	Qty.	Order No.
MOS 24VDC/5-33VDC 10A	1	8937940000

Screw connection

Note

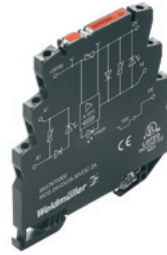
Note



For DC loads up to 300 V DC and 1A

- Only 6 mm modular width
- Plug-in cross-connection
- Power Boost: 20 A / 20 ms, 5 A / 1 sec

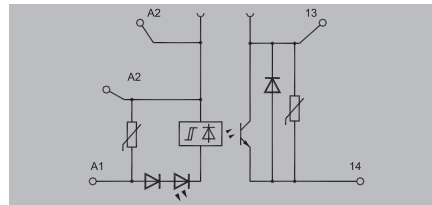
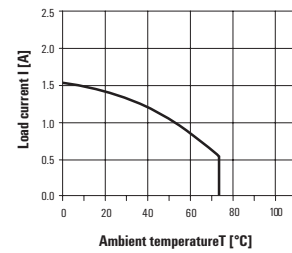
12...300 V DC 1 A



The solid-state relay **MICROOPTO 300 V DC** has been developed as a switching amplifier for high inductive loads up to 300 V DC and 1 A in motor brakes and contactors.

A power boost in the load circuit compensates transient overloads (20 A for 20 ms / 5 A for 1 s) such as making or breaking spikes. Additional protective circuits counter higher overloads.

derating curve



Technical data

Control side	
Rated control voltage	24 V DC ±20 %
Power rating	0.36 W
Cut-in (switch-on) voltage	> 18.8 V
Dropout voltage	< 14.7 V
Input frequency	50..60 Hz
Status indicator	Green LED
Protective circuit	Varistor, rev. polarity protection
Load side	
Solid-state type	POWER MOS-FET
Rated switching voltage	12...300 V DC
Continuous current	1 A
Voltage drop at max. load	≤ 0.4 V
Leakage current	< 1 µA
Short-circuit-proof / Protective circuit, load side	No / Varistor, integrated free-wheel diode
Switch-on delay / Switch-off delay	< 18 µs / < 1 ms
Pulse load, max. current	27 A (10 ms)
Load category	LC A
General data	
Alarm contact	
Ambient temperature (operational)	-20 °C... °C
Storage temperature	-40 °C...+80 °C
UL 94 flammability rating	V-0
Humidity	5-95% rel. humidity, T _v = 55°C, no condensation
Approvals	CE; cULus; GL; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	2.5 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.
Dielectric strength to mounting rail	1.2 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	> 3 mm
Surge voltage category	II
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

Screw connection		
2.5 / 0.5 / 4		
98 / 6.1 / 88		
Type		
Type	Qty.	Order No.
MOS 24VDC/12-300VDC 1A	1	8937830000
Note		
Accessories and dimensioned drawings: refer to the MICROOPTO Accessories page.		

Ordering data

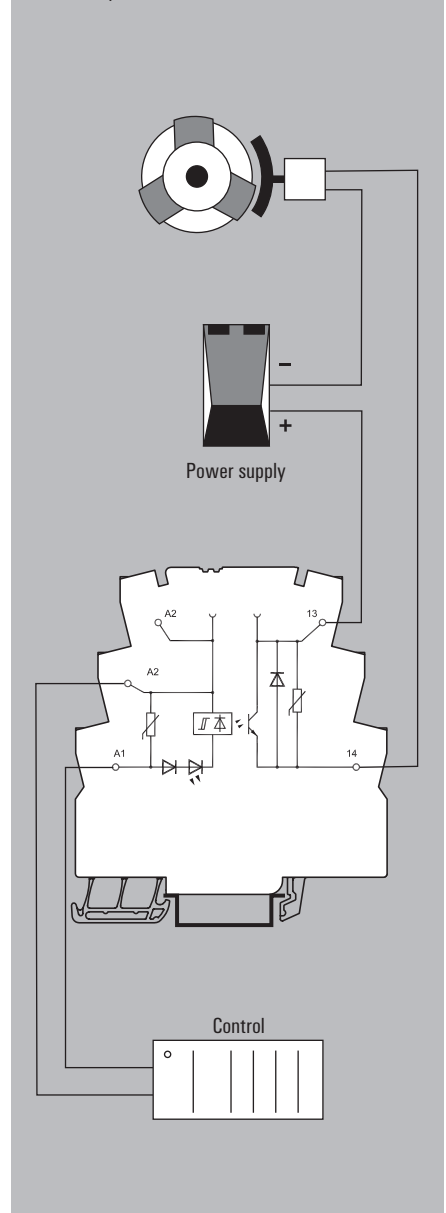
Screw connection

Note

Accessories

Note

z. B. Example: motor brake

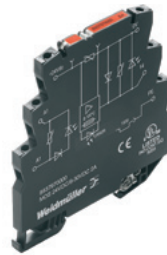


For direct connection of actuators

up to 24 V DC, 2 A

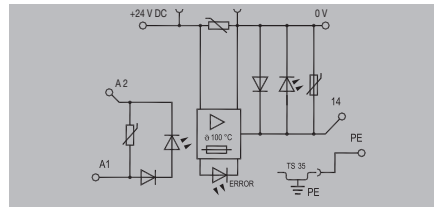
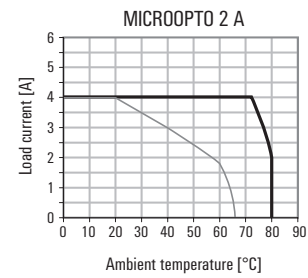
- Only 6 mm modular width
- Plug-in cross-connection
- PE connection direct to mounting rail
- Status display when error in output

8...30 V DC 2 A



The solid-state relay **MICROOPTO ACTOR** has been specifically designed as a switching amplifier for actuators up to 24 V DC and 2 A with inductive loads such as solenoid valves and contactors. 3-wire actuators can be connected directly to the module.

This is short-circuit proof and protected against application-related transients and spikes by extensive protective circuitry.



Technical data

Control side	
Rated control voltage	24 V DC ±20 %
Power rating	≤ 170 mW
Cut-in (switch-on) voltage	> 13.8 V
Dropout voltage	< 13.6 V
Input frequency	125 Hz
Status indicator	Error indication LED red; status LED green
Protective circuit	Varistor, rev. polarity protection
Load side	
Solid-state type	Intelligent POWER MOS-FET
Rated switching voltage	8...30 V DC
Continuous current	2 A
Voltage drop at max. load	≤ 50 mV
Leakage current	< 10 µA
Short-circuit-proof / Protective circuit, load side	Yes (thermal cut-out) / Varistor, integrated free-wheel diode
Switch-on delay / Switch-off delay	0.1 ms / < 0.5 ms
Pulse load, max. current	LC A
Load category	LC A

Rated control voltage	24 V DC ±20 %
Power rating	≤ 170 mW
Cut-in (switch-on) voltage	> 13.8 V
Dropout voltage	< 13.6 V
Input frequency	125 Hz
Status indicator	Error indication LED red; status LED green
Protective circuit	Varistor, rev. polarity protection
Load side	
Solid-state type	Intelligent POWER MOS-FET
Rated switching voltage	8...30 V DC
Continuous current	2 A
Voltage drop at max. load	≤ 50 mV
Leakage current	< 10 µA
Short-circuit-proof / Protective circuit, load side	Yes (thermal cut-out) / Varistor, integrated free-wheel diode
Switch-on delay / Switch-off delay	0.1 ms / < 0.5 ms
Pulse load, max. current	LC A
Load category	LC A

General data	
Alarm contact	
Ambient temperature (operational)	-20 °C... °C
Storage temperature	-40 °C...+80 °C
UL 94 flammability rating	V-0
Humidity	5-95% rel. humidity, T _v = 55°C, no condensation
Approvals	CE; cULus; GL; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	30 V
Impulse withstand voltage	500 V (1,2/50 µ)
Dielectric strength for control side - load side	350 V _{eff} / 1 min.
Dielectric strength to mounting rail	350 V _{eff} / 1 min.
Clearance and creepage distances for control side - load side	
Surge voltage category	II
Pollution severity	2

Ambient temperature (operational)	-20 °C... °C
Storage temperature	-40 °C...+80 °C
UL 94 flammability rating	V-0
Humidity	5-95% rel. humidity, T _v = 55°C, no condensation
Approvals	CE; cULus; GL; GOSTME25
Rated voltage	30 V
Impulse withstand voltage	500 V (1,2/50 µ)
Dielectric strength for control side - load side	350 V _{eff} / 1 min.
Dielectric strength to mounting rail	350 V _{eff} / 1 min.
Clearance and creepage distances for control side - load side	
Surge voltage category	II
Pollution severity	2

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

Screw connection	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	

Ordering data

Type	Qty.	Order No.
MOS 24VDC/8-30VDC 2A	1	8937970000

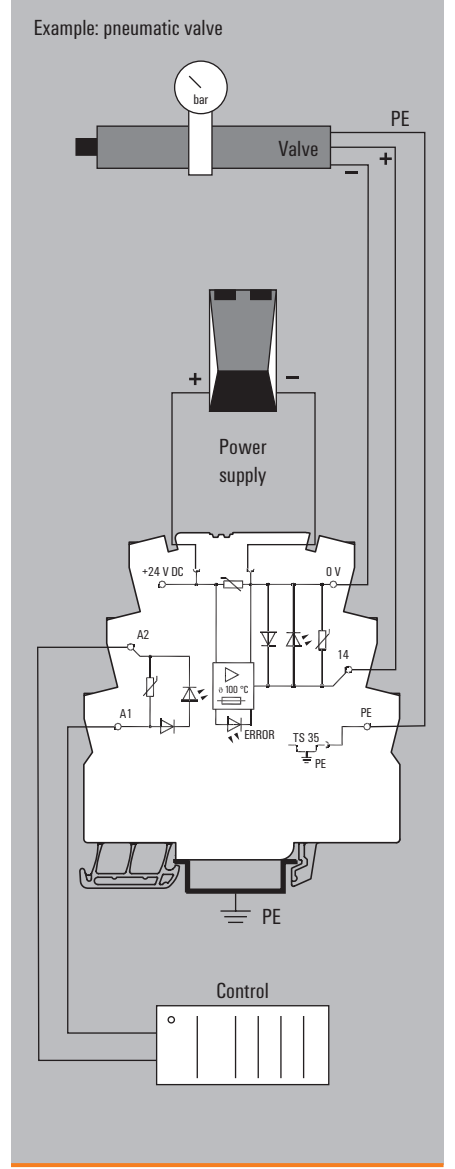
Type	Qty.	Order No.
MOS 24VDC/8-30VDC 2A	1	8937970000

Note

Accessories
Note

Note

Accessories and dimensioned drawings: refer to the MICROOPTO Accessories page.
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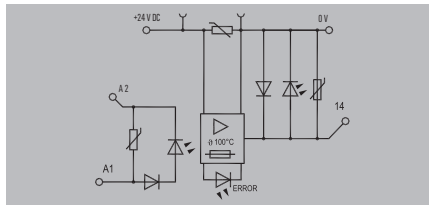
**For direct connection
of actuators up to 24 V DC 2 A**

- Width only 6 mm
- Plug-in cross-connector
- Status display when error in output

24 V DC / 8-30 V DC 2 A E



The solid-state relay **MICROOPTO ACTOR** has been specifically designed as a switching amplifier for actuators up to 24 V DC and 2 A with inductive loads such as solenoid valves and contactors. 3-wire actuators can be connected directly to the module. This is short-circuit proof and protected against application-related transients and spikes by extensive protective circuitry.



Technical data

Control side

- Rated control voltage
- Power rating
- Cut-in (switch-on) voltage
- Dropout voltage
- Input frequency
- Status indicator
- Protective circuit

- 24 V DC ±20 %
- ≤ 170 mW
- > 13.8 V
- < 13.6 V
- < 10 Hz
- Error indication LED red; status LED green
- Varistor, rev. polarity protection

Load side

- Solid-state type
- Rated switching voltage
- Continuous current
- Voltage drop at max. load
- Leakage current
- Short-circuit-proof / Protective circuit, load side

- Intelligent POWER MOS-FET
- 8...30 V DC
- 2 A
- ≤ 50 mV
- < 10 µA
- Yes (thermal cut-out) / Varistor, integrated free-wheel diode

- Switch-on delay / Switch-off delay
- Pulse load, max. current
- Load category

- 0.1 ms / < 0.5 ms
- LC A

General data

- Alarm contact
- Ambient temperature (operational)
- Storage temperature
- UL 94 flammability rating
- Humidity
- Approvals

- 20 °C...+60 °C
- 40 °C...+80 °C
- V-0
- 5-95% rel. humidity, T_v = 55°C, no condensation

Insulation coordination (EN 50178)

- Rated voltage
- Impulse withstand voltage
- Dielectric strength for control side - load side
- Dielectric strength to mounting rail
- Clearance and creepage distances for control side - load side
- Surge voltage category
- Pollution severity

- 30 V
- 500 V (1,2/50 µ)
- 350 V_{eff} / 1 min.
- 350 V_{eff} / 1 min.
- II
- 2

Dimensions

- Clamping range (nominal / min. / max.) mm²
- Depth x width x height mm

Screw connection

- 2.5 / 0.5 / 4
- 98 / 6.1 / 88

Ordering data

Screw connection

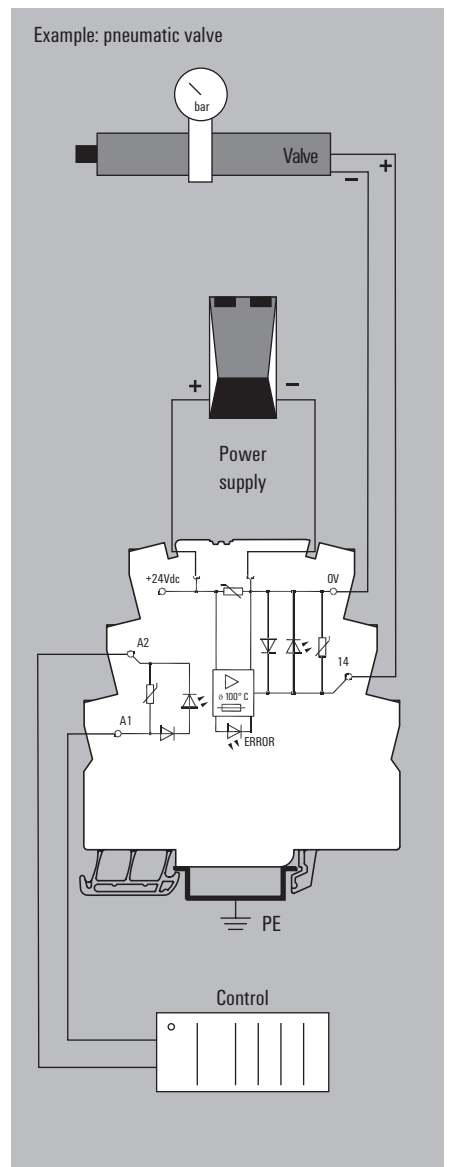
Type	Qty.	Order No.
MOS 24VDC/8-30VDC 2A E	10	1283230000

Note

Accessories

Note

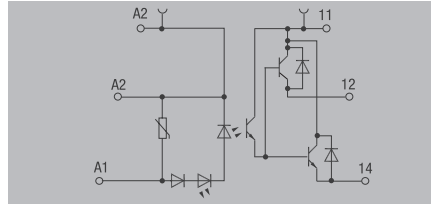
Accessories and dimensional drawings: refer to the MICROOPTO Accessories page



MICROOPTO – solid-state relays

**For electronically switching
or inverting signals**

24 V DC / 5-48 V DC 0.5 A



Electronic CO contacts are used anywhere output signals need to be changed over.

For this purpose, the input signal is directly switched through to the output side and inverted; as a result, the opto module can also be used as a pure inverter.

The advantage over electromechanical relays lies in the wear-free switching and the possibility of realising high switching frequencies.

Technical data

Control side	
Rated control voltage	24 V DC ±20 %
Power rating	160 mW
Cut-in (switch-on) voltage	> 18.8 V
Dropout voltage	
Input frequency	1 kHz
Status indicator	Green status LED
Protective circuit	Varistor, rev. polarity protection
Load side	
Solid-state type	Transistor
Rated switching voltage	5...48 V DC
Continuous current	500 mA
Voltage drop at max. load	Max. 1 V
Leakage current	< 1.5 mA
Short-circuit-proof / Protective circuit, load side	No / Integrated free-wheel diode
Switch-on delay / Switch-off delay	< 30 µs / < 50 µs
Pulse load, max. current	
Load category	LC A
General data	
Alarm contact	
Ambient temperature (operational)	-25 °C...+60 °C
Storage temperature	-40 °C...+60 °C
UL 94 flammability rating	V-0
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; cULus; GL; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.
Dielectric strength to mounting rail	1.2 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	> 3 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

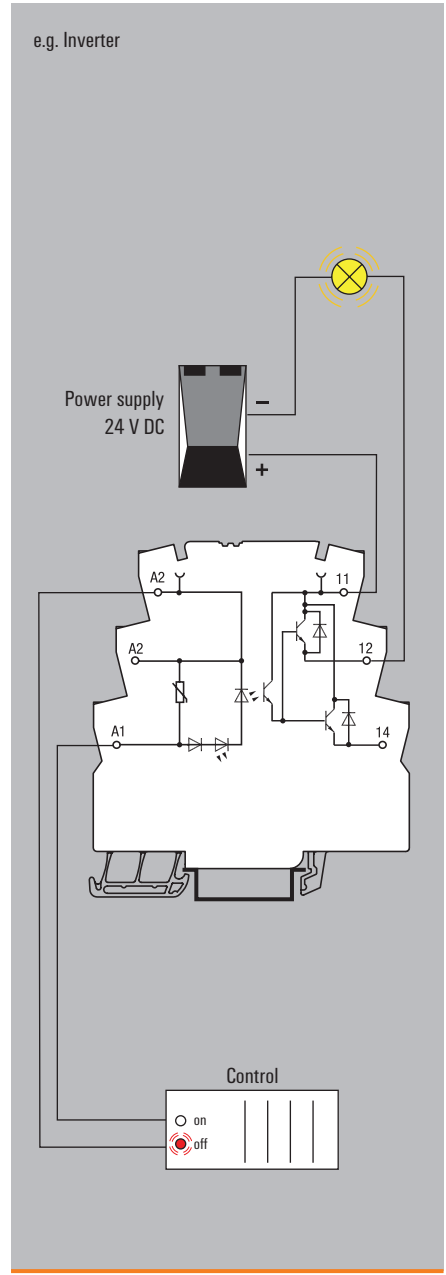
Screw connection		
Type	Qty.	Order No.
MOS 24VDC/5-48VDC 0,5A	1	8937980000

Ordering data

Screw connection	
Note	

Accessories

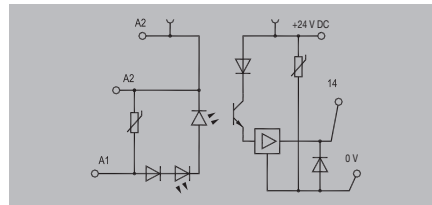
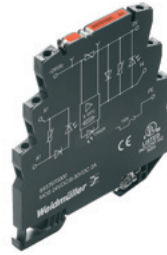
Note	
Accessories and dimensioned drawings: refer to the MICROOPTO Accessories page.	



**For high switching frequency
up to 100kHz**

- Width only 6 mm
- Plug-in cross-connector
- For mounting on TS 35

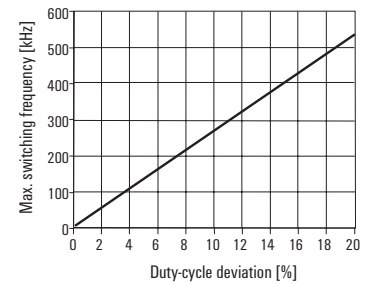
12...28 V DC 100 kHz



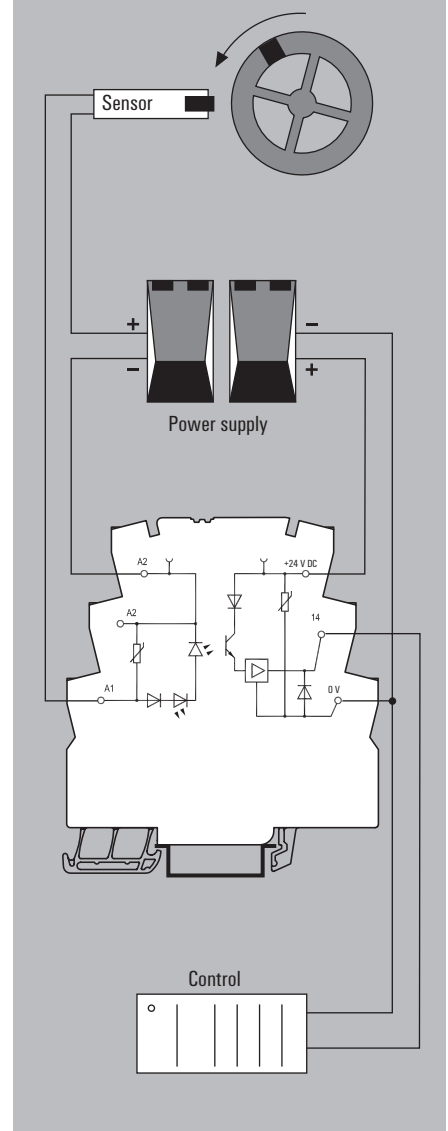
A special interior circuit in the opto module **MICROOPTO 100 kHz** ensures that rapidly transmitted signals are isolated from one another and that they can be transferred practically without delay. This allows switching frequencies up to 100 kHz to be achieved. Comprehensive suppressor circuits safeguard the module against conducted transients and voltage spikes.

**Max. switching frequency is dependent
on the duty cycle deviation**

MOS 12-28 V DC 100 kHz (switching current 50 mA, ohmic load)



For example rotational speed measurement



Technical data

Control side

- Rated control voltage
- Power rating
- Cut-in (switch-on) voltage
- Dropout voltage
- Input frequency
- Status indicator
- Protective circuit

Load side

- Solid-state type
- Rated switching voltage
- Continuous current
- Voltage drop at max. load
- Leakage current
- Short-circuit-proof / Protective circuit, load side

- Switch-on delay / Switch-off delay
- Pulse load, max. current
- Load category

General data

- Alarm contact
- Ambient temperature (operational)
- Storage temperature
- UL 94 flammability rating
- Humidity
- Approvals

Insulation coordination (EN 50178)

- Rated voltage
- Impulse withstand voltage
- Dielectric strength for control side - load side
- Dielectric strength to mounting rail
- Clearance and creepage distances for control side - load side
- Surge voltage category
- Pollution severity

Dimensions

- Clamping range (nominal / min. / max.) mm²
- Depth x width x height mm

Note

Ordering data

Screw connection

Note

Accessories

Note

12 V DC...28 V DC
≤ 280 mW
> 5.6 V
≤ 15 V DC
100 kHz
Green LED
Varistor, rev. polarity protection
Transistor
19.6...28.8 V
max. 50 mA
≤ 2 V
< 1 μA
No / Varistor, rev. polarity protection

< 200 ns / < 400 ns
0.6 A (20 ms)
LC A

-20 °C...+60 °C
-40 °C...+80 °C
V-0
5-95% rel. humidity, T _v = 55°C, no condensation
CE; cULus; GL; GOSTME25

30 V
500 V (1,2/50 μ)
350 V _{eff} / 1 min.
350 V _{eff} / 1 min.
II
2

Screw connection

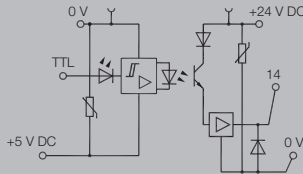
2.5 / 0.5 / 4
98 / 6.1 / 88

Type	Qty.	Order No.
MOS 12-28VDC 100kHz	1	8937990000

Accessories and dimensioned drawings: refer to the MICROOPTO Accessories page.

For adjusting TTL signals

5 V TTL / 24 V DC 0.1 A



To adjust sensitive TTL signals to the typical voltage level of 24 V DC used in industrial automation applications, the **MICROOPTO TTL** modules are used.

For the protection of the electronics, the sensitive TTL signals require electrical isolation from the 24 V world.

To control the optical coupler circuit via the 5 V TTL signal, an additional auxiliary voltage is fed in.

Technical data

Control side

- Rated control voltage
- Power rating
- Cut-in (switch-on) voltage
- Dropout voltage
- Input frequency
- Status indicator
- Protective circuit

Load side

- Solid-state type
- Rated switching voltage
- Continuous current
- Voltage drop at max. load
- Leakage current
- Short-circuit-proof / Protective circuit, load side

- Switch-on delay / Switch-off delay
- Pulse load, max. current
- Load category

General data

- Alarm contact
- Ambient temperature (operational)
- Storage temperature
- UL 94 flammability rating
- Humidity
- Approvals

Insulation coordination (EN 50178)

- Rated voltage
- Impulse withstand voltage
- Dielectric strength for control side - load side
- Dielectric strength to mounting rail
- Clearance and creepage distances for control side - load side
- Surge voltage category
- Pollution severity

Dimensions

- Clamping range (nominal / min. / max.) mm²
- Depth x width x height mm

Note

Ordering data

Screw connection

Note

Accessories

Note

- 5 V TTL
- < 0.5 mW
- approx. 2 V
- ca. 1 V
- 100 kHz
- Green status LED
- Varistor, rev. polarity protection

- TTL
- 24 VDC ±20%
- 100 mA
- < 1 V
- < 20 µA
- No / Integrated free-wheel diode

- < 1.3 µs / < 1 µs

LC A

- 25 °C...+60 °C
- 40 °C...+60 °C
- V-0
- 40 °C / 93 % rel. humidity, no condensation
- CE: cULus; GOSTME25

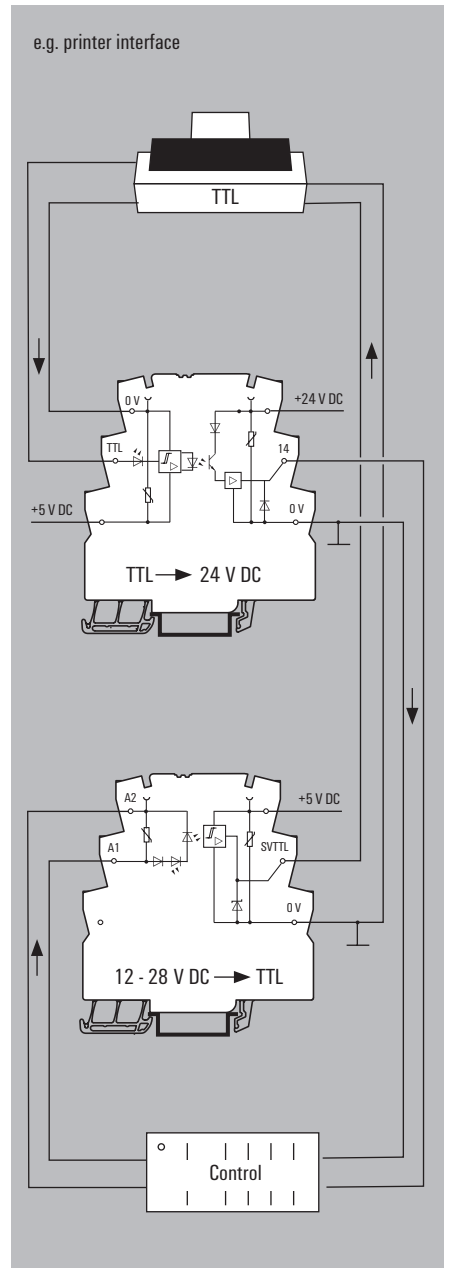
- 300 V
- 4 kV (1.2/50 µs)
- 1.2 kV_{eff} / 1 min.
- 1.2 kV_{eff} / 1 min.
- > 3 mm
- III
- 2

Screw connection

- 2.5 / 0.5 / 4
- 98 / 6.1 / 88

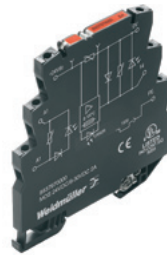
Type	Qty.	Order No.
MOS 5VTTL/24VDC 0,1A	1	8937920000

Accessories and dimensioned drawings: refer to the MICROOPTO Accessories page.



For adjusting TTL signals

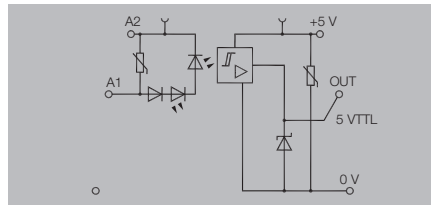
12-28 V DC / 5 V TTL



To adjust sensitive TTL signals to the typical voltage level of 24 V DC used in industrial automation applications, the **MICROOPTO TTL** modules are used.

For the protection of the electronics, the sensitive TTL signals require electrical isolation from the 24 V world.

To control the optical coupler circuit via the 5 V TTL signal, an additional auxiliary voltage is fed in.



Technical data

Control side	
Rated control voltage	12 V DC...28 V DC
Power rating	150 mW
Cut-in (switch-on) voltage	> 10.7 V
Dropout voltage	< 10.6 V
Input frequency	100 kHz
Status indicator	Green status LED
Protective circuit	Varistor, rev. polarity protection
Load side	
Solid-state type	TTL
Rated switching voltage	5 V TTL
Continuous current	max. 50 mA
Voltage drop at max. load	90 mV
Leakage current	< 1 µA
Short-circuit-proof / Protective circuit, load side	No / Varistor
Switch-on delay / Switch-off delay	typical. < 1 µs / typical. < 4 µs
Pulse load, max. current	
Load category	LC A
General data	
Alarm contact	
Ambient temperature (operational)	-25 °C...+60 °C
Storage temperature	-40 °C...+60 °C
UL 94 flammability rating	V-0
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; cULus; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 1 min.
Dielectric strength to mounting rail	1.2 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	> 3 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Depth x width x height	mm
Note	

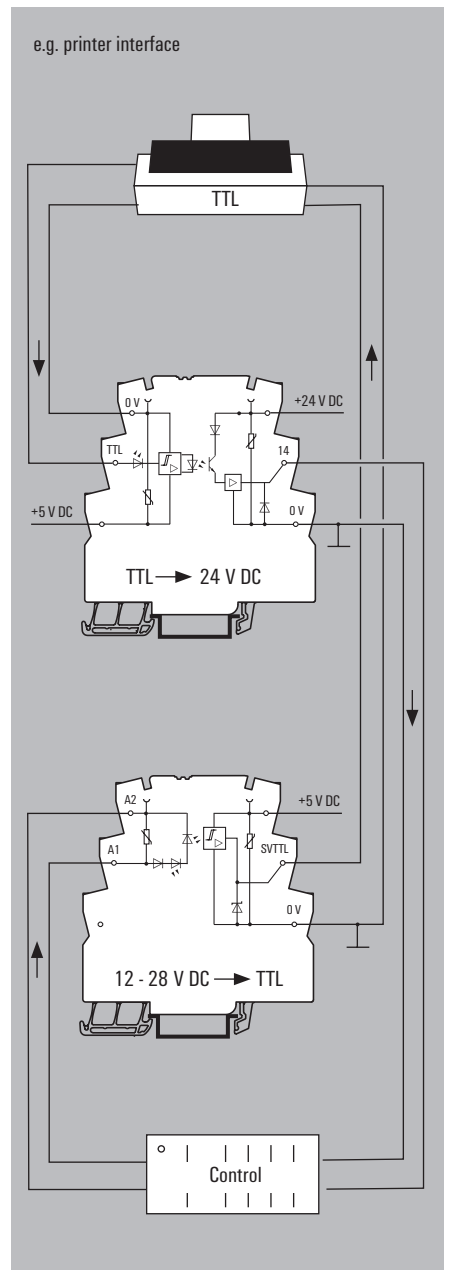
Screw connection		
Type	Qty.	Order No.
MOS 12-28VDC/5VTTL	1	8937930000

Ordering data

Screw connection	
Note	

Accessories

Note	
Accessories and dimensioned drawings: refer to the MICROOPTO Accessories page.	

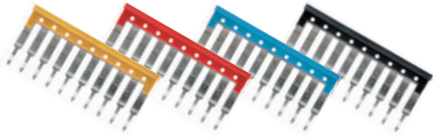


Accessories

General data – MICROOPTO

Relay modules and solid-state relays
in 6 mm width

A



Plug-in cross-connection

Type	No. of poles	Qty.	Order No.
yellow			
ZQV 4N / 2 GE	2	60	1758250000
ZQV 4N / 3 GE	3	60	1762630000
ZQV 4N / 4 GE	4	60	1762620000
ZQV 4N / 10 GE	10	20	1758260000
ZQV 4N / 20 GE	20	20	1909020000
red			
ZQV 4N / 2 RT	2	60	1793950000
ZQV 4N / 3 RT	3	60	1793980000
ZQV 4N / 4 RT	4	60	1794010000
ZQV 4N / 10 RT	10	20	1794040000
ZQV 4N / 20 RT	20	20	1909150000
blue			
ZQV 4N / 2 BL	2	60	1793960000
ZQV 4N / 3 BL	3	60	1793990000
ZQV 4N / 4 BL	4	60	1794020000
ZQV 4N / 10 BL	10	20	1794050000
ZQV 4N / 20 BL	20	20	1909100000
black			
ZQV 4N / 2 SW	2	60	1793970000
ZQV 4N / 3 SW	3	60	1794000000
ZQV 4N / 4 SW	4	60	1794030000
ZQV 4N / 10 SW	10	20	1794060000
ZQV 4N / 20 SW	20	20	1909120000

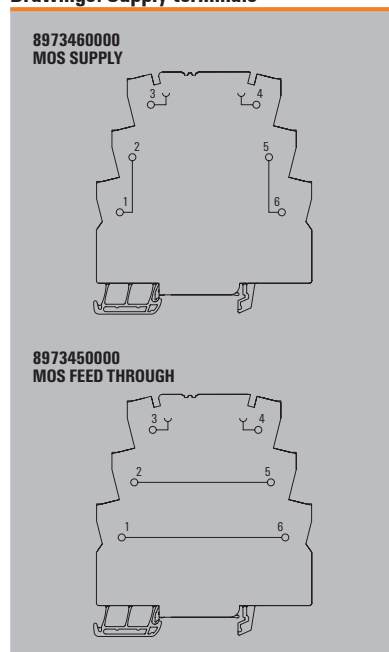
Technical data

Conductor		Screw-connection
Solid H07V-U	mm ²	0.5 ... 4.0
Stranded H07V-K	mm ²	0.5 ... 2.5
"f" with wire end ferrules to DIN 46228-1	mm ²	0.5 ... 1.5
"f" with wire end ferrules with plastic collar	mm ²	0.5 ... 1.5
Max. clamping range	mm ²	0.13 ... 4.0
Plug gauge to IEC 60947-1	Size	A 3
General technical data		
Nominal torque	Nm	0.6
Continuous current for 2-pole cross-connection	A	10
Continuous current for multi-pole cross-connection	A	10
Stripping length	mm	7
Ingress protection class		IP 20
Housing material		Wemid
UL 94 flammability rating		V-0
Nominal current	A	6
Nominal voltage	V	250

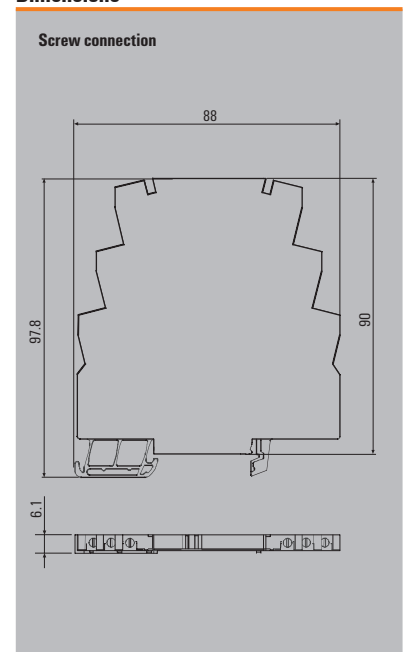
Other accessories

Type		Qty.	Order No.
Supply terminals			
MOS SUPPLY		1	8973460000
MOS FEED THROUGH		1	8973450000
Markers			
WS 12/6	12 x 6 mm	600	1609900000
Labels, Lasermark			
LM MT 300 15/6 ge	484 labels / sheet	10	1686360000
Screwdriver			
SD 0.6 x 3.5 x 100		10	9008330000
Cross-connector for plugging into the clamping point			
QB 75/6.2/15		10	0535200000
Coloured insulating profile for QB			
ISPF QB75 black		10	0526700000
ISPF QB75 blue		10	0526780000
ISPF QB75 red		10	0526760000
End bracket			
WEW 35/2		100	1061210000

Drawings: Supply terminals



Dimensions

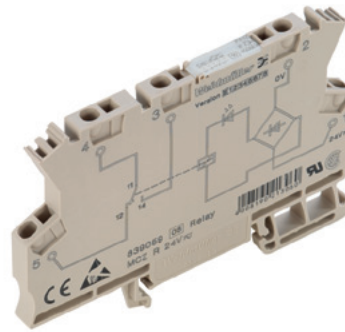


MiniConditioner MCZ R

1 CO contact AC/DC/UC coil

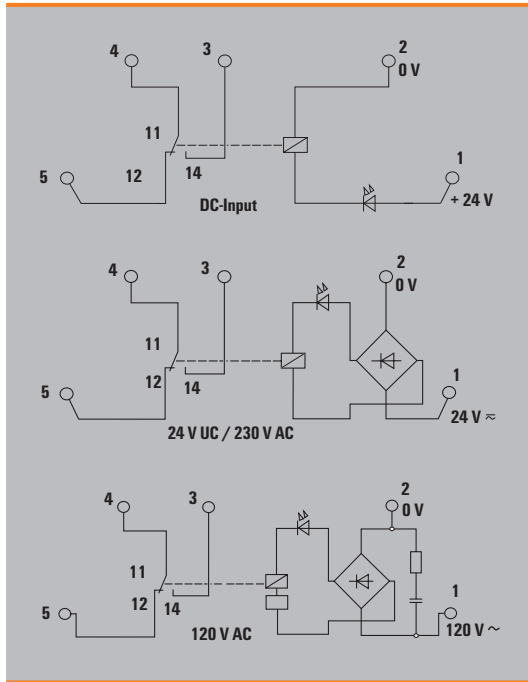
The module can be used as a universal interface between the controller and the actuator to switch small and medium-sized loads

- Reduced installation and commissioning costs, thanks to the use of the proven tension-spring connection system
- Pluggable cross-connection at input and output minimises the wiring workload.
- Width 6 mm
- For mounting on TS 35



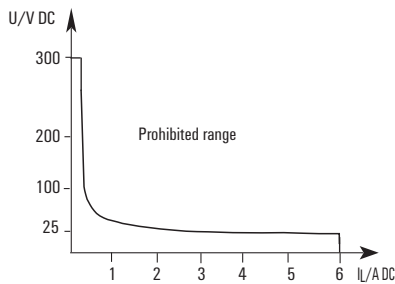
Technical data

Output	
Rated switching voltage/Continuous current	250 V AC 6 A
Max. switching voltage, AC	250 V
Making current	6 A
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA
Max. switching power	1500 VA
Contact material	AgSnO2
Mechanical service life	20 x 10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-25 °C...+50 °C
Storage temperature	-40 °C...+60 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; CSA; cURus; GL; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength input - output	4 kV _{eff} / 1 s
Dielectric strength, contact / contact	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 2.5
Depth x width x height	mm 63.2 / 6 / 91
Tension clamp connection	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 2.5
Depth x width x height	mm 63.2 / 6 / 91
Note	
End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.	



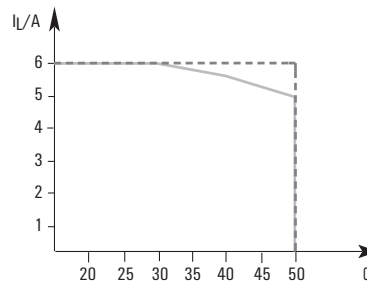
Applications

Limit curve



Derating curve

- in a row without spacing on terminal rail
- - - in a row with 20 mm spacing on terminal rail



MiniConditioner MCZ R
1 CO contact AC/DC/UC coil

Ordering data

	24 V DC 1 CO	24 V DC 1 CO Au	24 V UC 1 CO	110 V DC 1 CO
Input				
Rated control voltage	24 V DC ±20 %	24 V DC ±20 %	24 V UC ±10 %	110 V DC ±10 %
Rated current AC / DC	/ 6.3 mA	/ 6.3 mA	11 mA / 6.4 mA	/ 2.85 mA
Power rating	156 mW	156 mW	160 mVA / 150 mW	340 mW
AC response/dropout Volt			19.5 V / 3 V	
DC response/dropout Volt	19 V / 4 V	19 V / 4 V	19.5 V / 3 V	approx. 68 V / approx. 19 V
AC pickup/dropout current				
DC pickup/dropout current				1,6 mA / 0,4 mA
Status indicator	Green LED	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Rectifier	Rectifier
Load side				
Switch-on delay	< 5 ms	< 5 ms	< 6 ms	< 6 ms
Switch-off delay	< 15 ms	< 15 ms	< 35 ms	< 15 ms

Ordering data

Complete module					
CO contact	Type	MCZ R 24VDC	MCZ R 24VDC 5uAu	MCZ R 24VUC	MCZ R 110VDC
	Order No.	8365980000	8442960000	8390590000	8467470000
	Type				
	Order No.				

Note		Can safely switch a load of: 1...60 V AC/DC, 1...300 mA. If higher loads are switched this can damage the gold plating.		

Ordering data

	120 V AC 1 CO	230 V AC 1 CO
Input		
Rated control voltage	120 V AC -15 % / +10 %	230 V AC ±10 %
Rated current AC / DC	7 mA /	9.5 mA /
Power rating	0.85 VA	2.1 VA
AC response/dropout Volt	85 V / 17 V	150 V / 60 V
DC response/dropout Volt		
AC pickup/dropout current	4 mA / 1.3 mA	5 mA / 2.5 mA
DC pickup/dropout current		
Status indicator	Green LED	Green LED
Protective circuit	Rectifier	Rectifier
Load side		
Switch-on delay	< 17 ms	< 11 ms
Switch-off delay	< 35 ms	< 35 ms

Ordering data

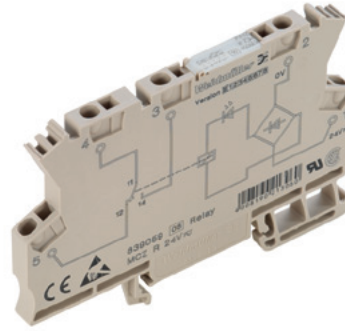
Complete module			
CO contact	Type	MCZ R 120VAC	MCZ R 230VAC
	Order No.	8420880000	8237710000
	Type		
	Order No.		

Note		

MCZ R TRAK

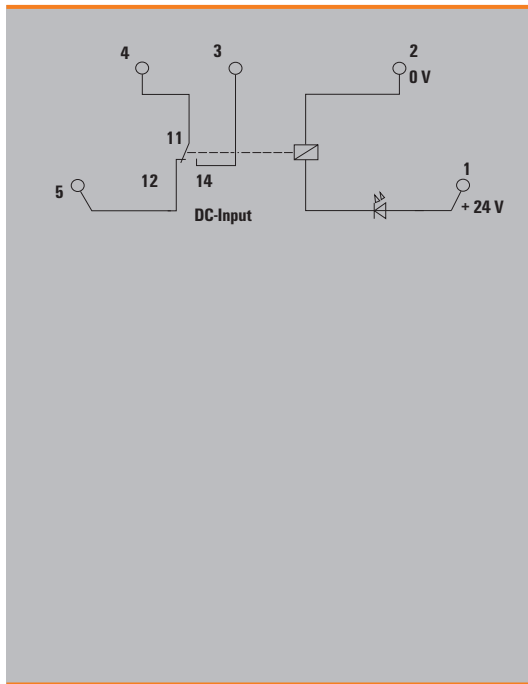
1 CO contact or 1 NO contact DC coil

- 1 CO contact
- Component for rail industry applications
- Vibration requirements according to EN 61373, requirements category 1 class B
- Voltage fluctuations -30 %/+25 % and ±40 % for 0.1 sec
- Voltage interruptions at input up to 10 ms
- Condensation permissible



Relay modules and solid-state relays in 6 mm width

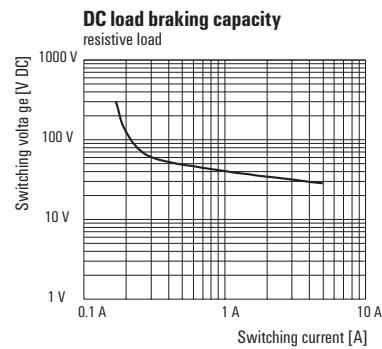
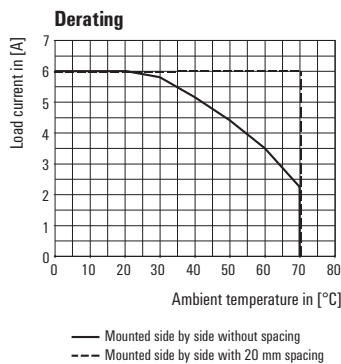
A



Technical data

Output	
Rated switching voltage / Continuous current	250 V AC / 6 A
Max. switching voltage, AC	250 V
Making current	6 A
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA
Max. switching power	1500 VA
Contact material	AgSnO
Mechanical service life	20 x 10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-25 °C...+70 °C
Storage temperature	-40 °C...+85 °C
Humidity	95 % for 30 days, minimal condensation to EN 50155
Approvals	CE; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength input - output	4 kV _{eff} / 1 s
Dielectric strength, contact / contact	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 2.5
Depth x width x height	mm 63.2 / 6 / 91
Tension clamp connection	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 2.5
Depth x width x height	mm 63.2 / 6 / 91
Note	
End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.	

Applications



MCZ R TRAK

1 CO contact or 1 NO contact DC coil

Ordering data

	24 V DC TRAK	36 V DC TRAK	48...110 V DC TRAK
Input			
Rated control voltage	24 V DC +25 % / -30 %	36 V DC +25 % / -30 %	48 V...110 V DC +25 % / -30 %
Rated current AC / DC	/ 11.5...16.5 mA	/ 8...12 mA	/ < 3 mA
Power rating	195...500 mW	200...540 mW	< 300 mW
AC response/dropout Volt			
DC response/dropout Volt	14 V / 3 V	18 V / 4,5 V	> 25 V / < 6 V
AC pickup/dropout current			
DC pickup/dropout current			
Status indicator	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection
Load side			
Switch-on delay	< 11 ms	< 6 ms	< 4 ms
Switch-off delay	< 50 ms	< 70 ms	< 100 ms

Ordering data

Complete module				
CO contact	Type	MCZ R 24Vdc 1CO TRAK	MCZ R 36Vdc 1CO TRAK	MCZ R 48...110Vdc 1CO TRAK
	Order No.	8713890000	8713900000	8713910000
NO contact	Type	MCZ R 24Vdc 1NO TRAK		MCZ R 48...110Vdc 1NO TRAK
	Order No.	8499550000		8574070000

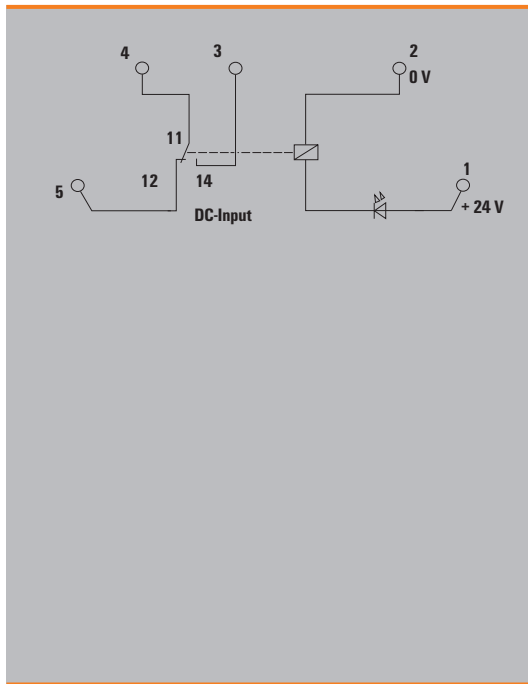
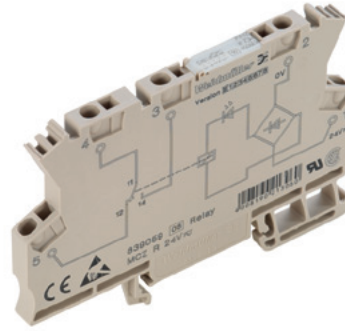
Note

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MCZ R TRAK Au

1 CO contact or 1 NO contact DC coil

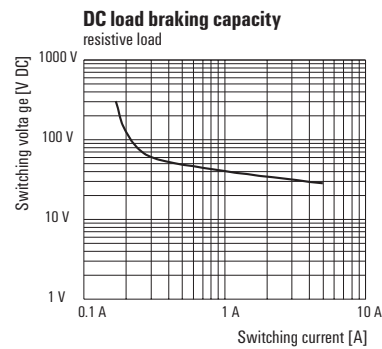
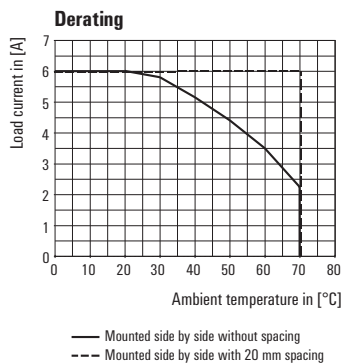
- 1 CO with hard gold-plated contacts
- Component for rail industry applications
- Vibration requirements according to EN 61373, requirements category 1 class B
- Voltage fluctuations -30 %/+25 % and ±40 % for 0.1 sec
- Voltage interruptions at input up to 10 ms
- Condensation permissible



Technical data

Output	
Rated switching voltage / Continuous current	250 V AC / 6 A
Max. switching voltage, AC	250 V
Making current	6 A
Min. switching power	1 V / 1 mA
Max. switching power	1500 VA
Contact material	AgSnO 5µm Au
Mechanical service life	20 x 10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Rated data	
Ambient temperature (operational)	-25 °C...+70 °C
Storage temperature	-40 °C...+85 °C
Humidity	95 % for 30 days, minimal condensation to EN 50155
Approvals	CE; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	4 kV (1.2/50 µs)
Dielectric strength input - output	4 kV _{eff} / 1 s
Dielectric strength, contact / contact	
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Creepage and clearance distance input - output	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 2.5
Depth x width x height	mm 63.2 / 6 / 91
Tension clamp connection	
Clamping range (nominal / min. / max.)	mm ² 1.5 / 0.5 / 2.5
Depth x width x height	mm 63.2 / 6 / 91
Note	
End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.	

Applications



MCZ R TRAK Au
1 CO contact or 1 NO contact DC coil

Ordering data

	24 V DC TRAK Au	36 V DC TRAK Au	48...110 V DC TRAK Au
Input			
Rated control voltage	24 V DC +25 % / -30 %	36 V DC +25 % / -30 %	48 V...110 V DC +25 % / -30 %
Rated current AC / DC	/ 11.5...16.5 mA	/ 8...12 mA	/ < 3 mA
Power rating	195...500 mW	200...540 mW	< 300 mW
AC response/dropout Volt			
DC response/dropout Volt	14 V / 3 V	18 V / 4,5 V	> 25 V / < 6 V
AC pickup/dropout current			
DC pickup/dropout current			
Status indicator	Green LED	Green LED	Green LED
Protective circuit	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection	Integrated free-wheel diode, Reverse polarity protection
Load side			
Switch-on delay	< 11 ms	< 6 ms	< 4 ms
Switch-off delay	< 50 ms	< 70 ms	< 100 ms

Ordering data				
CO contact	Type	MCZ R 24VDC 1CO AU TRAK	MCZ R 36VDC 1CO AU TRAK	MCZ R 48...110VDC 1CO AU TRAK
	Order No.	8790520000	8790510000	8790500000
	Type			
	Order No.			

Note			
	Can safely switch a load of: 1...60 V AC/DC, 1...300 mA. If higher loads are switched this can damage the gold plating.	Can safely switch a load of: 1...60 V AC/DC, 1...300 mA. If higher loads are switched this can damage the gold plating.	Can safely switch a load of: 1...60 V AC/DC, 1...300 mA. If higher loads are switched this can damage the gold plating.

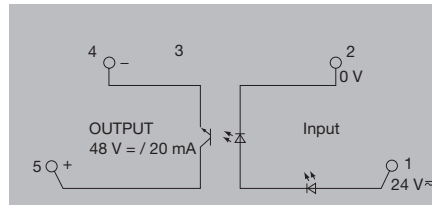
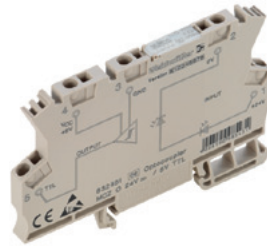
MCZ-SERIES – solid-state relays

MiniConditioner MCZ 0

- Universal interface between controller and sensor/ actuator
- Tension-clamp connection system
- Plug-in cross-connection
- 6 mm modular wide

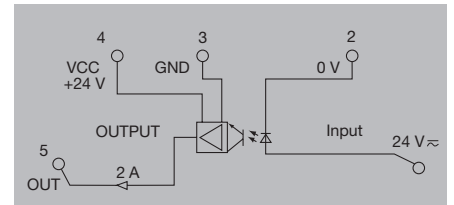
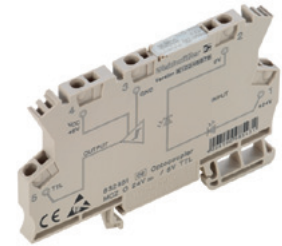
24 V UC

Connection system



24 V UC / 24 V 2 A

Connection system



Technical data

Control side	
Rated control voltage	24 V UC ±20 %
Nominal control current	10 mA DC ±20 %, 10 mA AC ±20 %
Cut-in (switch-on) voltage	≥ 16.8 V DC, ≥ 14.4 V AC
Drop-out voltage	≤ 15.7 V DC, ≤ 13 V AC
Input frequency	AC: 5 Hz / DC: 10 Hz
Power rating	230 mW / 280 mVA
Status indicator	Green LED
Protective circuit	
Load side	
Rated switching voltage	5...48 V DC
Continuous current	20 mA
Making current	
Solid-state type	Transistor
Voltage drop at max. load	≤ 1 V
Leakage current	
Protective circuit, load side	Integrated free-wheel diode
Short-circuit-proof	No
Switch-on delay	AC: 10 ms / DC: 20 ms
Switch-off delay	AC: 45 ms / DC: 40 ms
General 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; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	4 kV _{eff} / 1 min.
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

Rated control voltage	24 V UC ±20 %
Nominal control current	10 mA DC ±20 %, 10 mA AC ±20 %
Cut-in (switch-on) voltage	≥ 16.8 V DC, ≥ 14.4 V AC
Drop-out voltage	≤ 15.7 V DC, ≤ 13 V AC
Input frequency	AC: 5 Hz / DC: 10 Hz
Power rating	230 mW / 280 mVA
Status indicator	Green LED
Protective circuit	
Rated switching voltage	5...48 V DC
Continuous current	20 mA
Making current	
Solid-state type	Transistor
Voltage drop at max. load	≤ 1 V
Leakage current	
Protective circuit, load side	Integrated free-wheel diode
Short-circuit-proof	No
Switch-on delay	AC: 10 ms / DC: 20 ms
Switch-off delay	AC: 45 ms / DC: 40 ms
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; GOSTME25
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	4 kV _{eff} / 1 min.
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

Rated control voltage	24 V UC ±20 %
Nominal control current	10 mA DC ±20 %, 10 mA AC ±20 %
Cut-in (switch-on) voltage	≥ 14.4 V AC, ≥ 15 V DC
Drop-out voltage	≤ 13 V AC, ≤ 15 V DC
Input frequency	AC: 10 Hz / DC: 30 Hz
Power rating	195 mW / 220 mVA
Status indicator	LED
Protective circuit	
Rated switching voltage	24 VDC ±20%
Continuous current	2 A
Making current	
Solid-state type	Transistor
Voltage drop at max. load	≤ 1.8 V
Leakage current	
Protective circuit, load side	Varistor
Short-circuit-proof	Yes
Switch-on delay	≤ 10 ms
Switch-off delay	≤ 10 ms
Ambient temperature (operational)	-25 °C...+40 °C
Storage temperature	-40 °C...+60 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; CSA; cURus; GOSTME25
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 5 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

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

Tension clamp connection	
1.5 / 0.5 / 1.5	
63.2 / 6 / 91	
Note	

Tension clamp connection	
1.5 / 0.5 / 1.5	
63.2 / 6 / 91	
* Status indicator: green = OK, yellow = partial short circuit, blinking red = short circuit	
Note	

Ordering data

Type	Qty.	Order No.
Tension-clamp connection		

Type	Qty.	Order No.
MCZ 0 24VUC	10	8365940000

Type	Qty.	Order No.
MCZ 0 24VUC	10	8287730000

Note

Note

Note

Accessories

Note

End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.
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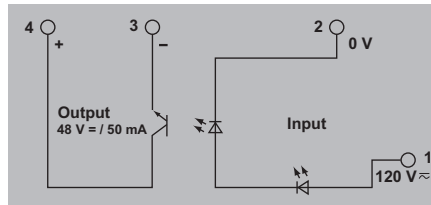
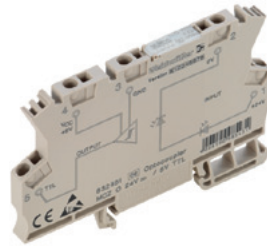
End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.
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MiniConditioner MCZ O

- Universal interface between controller and sensor/ actuator
- Tension-clamp connection system
- Plug-in cross-connection
- 6 mm modular wide

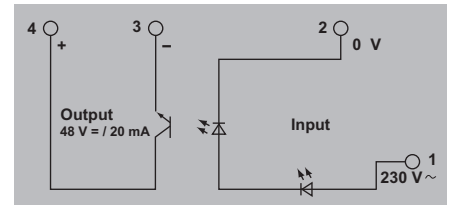
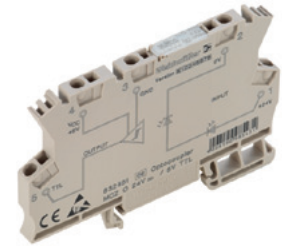
120 V UC

Connection system



230 V AC

Connection system



Technical data

Control side	
Rated control voltage	
Nominal control current	
Cut-in (switch-on) voltage	
Dropout voltage	
Input frequency	
Power rating	
Status indicator	
Protective circuit	
Load side	
Rated switching voltage	
Continuous current	
Making current	
Solid-state type	
Voltage drop at max. load	
Leakage current	
Protective circuit, load side	
Short-circuit-proof	
Switch-on delay	
Switch-off delay	
General data	
Ambient temperature (operational)	
Storage temperature	
Humidity	
Approvals	
Insulation coordination (EN 50178)	
Rated voltage	
Impulse withstand voltage	
Dielectric strength for control side - load side	
Dielectric strength to mounting rail	
Clearance and creepage distances for control side - load side	
Surge voltage category	
Pollution severity	

120 V UC +5 / -15 %
3 mA DC (±10 %), 3 mA AC (±10 %)
≥ 65 V AC, ≥ 70 V DC
≤ 64 V AC, ≤ 64 V DC
AC: 5 Hz duty factor 1:2, DC: 20 Hz duty factor 1:2
350 mW / 400 mVA
Green LED
5...48 V DC
50 mA
Transistor
1.6 V
≤ 1 mA
Integrated free-wheel diode
No
≤ 30 ms
≤ 40 ms
-25 °C...+40 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity, no condensation
CE; CSA; cURus; GOSTME25
300 V
6 kV (1.2/50 µs)
1.2 kV _{eff} / 5 s
4 kV _{eff} / 1 min.
≥ 5.5 mm
III
2

230 V AC +5 % / -15 %
10 mA AC ±20 %
≥ 175 V AC
≤ 125 V AC
AC: 5 Hz duty factor 1:2
2.3 VA
Green LED
5...48 V DC
20 mA
Transistor
1.6 V
≤ 1 mA
Integrated free-wheel diode
No
≤ 30 ms
≤ 40 ms
-25 °C...+40 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity, no condensation
CE; CSA; cURus; GOSTME25
300 V
6 kV (1.2/50 µs)
1.2 kV _{eff} / 5 s
4 kV _{eff} / 1 min.
≥ 5.5 mm
III
2

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

Tension clamp connection	
1.5 / 0.5 / 1.5	
63.2 / 6 / 91	
Note	

Tension clamp connection	
1.5 / 0.5 / 1.5	
63.2 / 6 / 91	
Note	

Ordering data

Tension-clamp connection

Type	Qty.	Order No.
MCZ O 120VUC	10	8421060000

Type	Qty.	Order No.
MCZ O 230VAC	10	8421380000

Note

Note

Note

Accessories

Note

End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.
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End plate AP MCZ 1.5: 8389030000 Accessories and dimensional drawings: refer to the MCZ Accessories page.
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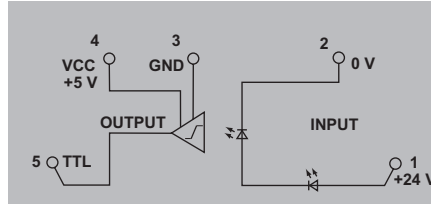
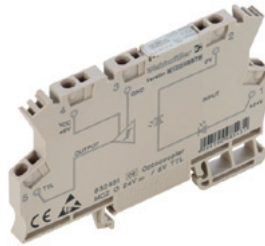
MCZ-SERIES – solid-state relays

MiniConditioner MCZ 0

- Universal interface between controller and sensor/ actuator
- Tension-clamp connection system
- Plug-in cross-connection
- 6 mm modular wide

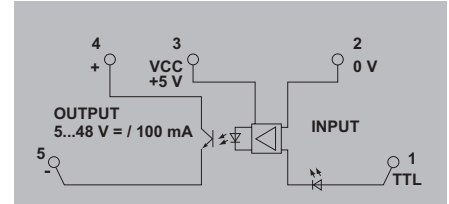
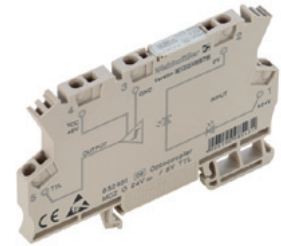
24 V DC / 5 V TTL

Connection system



5 V TTL / 5...48 V DC

Connection system



Technical data

Control side	
Rated control voltage	24 V DC ±16 %
Nominal control current	5 mA DC (±20 %)
Cut-in (switch-on) voltage	≥ 16.8 V DC
Dropout voltage	≤ 16.5 V DC
Input frequency	100 kHz duty factor 1:2, 50 kHz duty factor 1:10
Power rating	112 mW
Status indicator	Green LED
Protective circuit	
Load side	
Rated switching voltage	5 V TTL
Continuous current	8 ma, Fan out = 20 LS-TTL
Making current	
Solid-state type	TTL
Voltage drop at max. load	
Leakage current	
Protective circuit, load side	
Short-circuit-proof	Diode
Switch-on delay	No
Switch-off delay	1 µs (at 20 V DC) 2.5 µs (at 28 V DC)
General data	
Ambient temperature (operational)	-25 °C...+40 °C
Storage temperature	-40 °C...+60 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; CSA; cURus; GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 5 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

Rated control voltage	24 V DC ±16 %
Nominal control current	5 mA DC (±20 %)
Cut-in (switch-on) voltage	≥ 16.8 V DC
Dropout voltage	≤ 16.5 V DC
Input frequency	100 kHz duty factor 1:2, 50 kHz duty factor 1:10
Power rating	112 mW
Status indicator	Green LED
Protective circuit	
Rated switching voltage	5 V TTL
Continuous current	8 ma, Fan out = 20 LS-TTL
Making current	
Solid-state type	TTL
Voltage drop at max. load	
Leakage current	
Protective circuit, load side	
Short-circuit-proof	Diode
Switch-on delay	No
Switch-off delay	1 µs (at 20 V DC) 2.5 µs (at 28 V DC)
Ambient temperature (operational)	-25 °C...+40 °C
Storage temperature	-40 °C...+60 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; CSA; cURus; GOSTME25
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 5 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

Rated control voltage	5 V TTL
Nominal control current	1.65 mA DC
Cut-in (switch-on) voltage	
Dropout voltage	
Input frequency	2.4 kHz
Power rating	10 mW
Status indicator	Green LED
Protective circuit	
Rated switching voltage	5...48 V DC
Continuous current	100 mA
Making current	
Solid-state type	TTL
Voltage drop at max. load	≤ 1.8 V
Leakage current	
Protective circuit, load side	
Short-circuit-proof	Diode
Switch-on delay	No
Switch-off delay	< 17 µs < 250 µs
Ambient temperature (operational)	-25 °C...+40 °C
Storage temperature	-40 °C...+60 °C
Humidity	40 °C / 93 % rel. humidity, no condensation
Approvals	CE; CSA; cURus; GOSTME25
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 5 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

Dimensions

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

Note

Tension clamp connection

1.5 / 0.5 / 1.5
63.2 / 6 / 91

Tension clamp connection

1.5 / 0.5 / 1.5
63.2 / 6 / 91

Ordering data

Tension-clamp connection

Type	Qty.	Order No.
MCZ 0 24VDC	10	8324610000

Type	Qty.	Order No.
MCZ 0 5VTTL	10	8398940000

Note

Accessories

Note

End plate AP MCZ 1.5: 8389030000
Accessories and dimensional drawings: refer to the MCZ Accessories page.

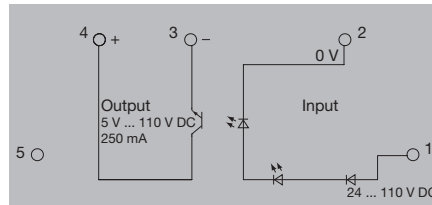
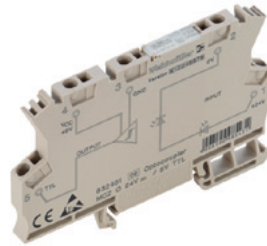
End plate AP MCZ 1.5: 8389030000
Accessories and dimensional drawings: refer to the MCZ Accessories page.

MCZ O TRAK

- Component for rail industry applications
- Fulfills requirements acc. to EN 50155
- Voltage fluctuations -30 % / +25 %
- Operating temperature -25...+70 °C (85 °C / 10 min.) acc. to EN 50155
- Condensation permissible

24 V DC TRAK

Connection system



Technical data

Control side	
Rated control voltage	24...110 V DC -30 / +25 %
Nominal control current	2.8 mA DC
Cut-in (switch-on) voltage	≥ 9.6 V DC
Dropout voltage	≤ 9 V DC
Input frequency	max. 10 Hz
Power rating	
Status indicator	Green LED
Protective circuit	
Load side	
Rated switching voltage	5...137.5 V DC
Continuous current	180 mA
Making current	
Solid-state type	Transistor
Voltage drop at max. load	≤ 1.7 V
Leakage current	
Protective circuit, load side	Varistor, integrated free-wheel diode
Short-circuit-proof	No
Switch-on delay	≤ 10 ms
Switch-off delay	≤ 40 ms
General data	
Ambient temperature (operational)	-25 °C...+70 °C
Storage temperature	-40 °C...+85 °C
Humidity	95 % for 30 days, minimal condensation to EN 50155
Approvals	CE, GOSTME25
Insulation coordination (EN 50178)	
Rated voltage	300 V
Impulse withstand voltage	6 kV (1.2/50 µs)
Dielectric strength for control side - load side	1.2 kV _{eff} / 5 s
Dielectric strength to mounting rail	4 kV _{eff} / 1 min.
Clearance and creepage distances for control side - load side	≥ 5.5 mm
Surge voltage category	III
Pollution severity	2

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

Tension clamp connection	
1.5 / 0.5 / 1.5	
63.2 / 6 / 91	
Note	

Ordering data

Tension-clamp connection

Type	Qty.	Order No.
MCZ O TRAK 24.110VDC	10	8820710000

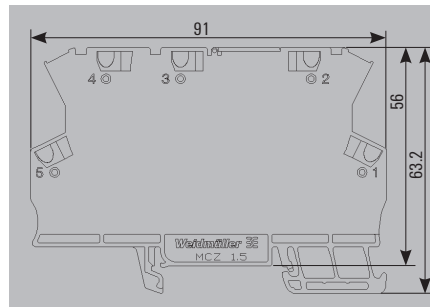
Note

Accessories

Note

End plate AP MCZ 1.5: 8389030000
Accessories and dimensional drawings: refer to the MCZ Accessories page.

MCZ accessories



Ordering data

End plate

Type	Qty.	Order No.
AP MCZ 1.5	50	8389030000



Ordering data

	No. of poles
Plug-in cross-connection, yellow	2
Plug-in cross-connection, yellow	3
Plug-in cross-connection, yellow	4
Plug-in cross-connection, yellow	10
Plug-in cross-connection, yellow	20
Plug-in cross-connection, red	2
Plug-in cross-connection, red	3
Plug-in cross-connection, red	4
Plug-in cross-connection, red	10
Plug-in cross-connection, red	20
Plug-in cross-connection, blue	2
Plug-in cross-connection, blue	3
Plug-in cross-connection, blue	4
Plug-in cross-connection, blue	10
Plug-in cross-connection, blue	20
Plug-in cross-connection, black	2
Plug-in cross-connection, black	3
Plug-in cross-connection, black	4
Plug-in cross-connection, black	10
Plug-in cross-connection, black	20

Type	Qty.	Order No.
ZQV 4N / 2 GE	60	1758250000
ZQV 4N / 3 GE	60	1762630000
ZQV 4N / 4 GE	60	1762620000
ZQV 4N / 10 GE	20	1758260000
ZQV 4N / 20 GE	20	1909020000
red		
ZQV 4N / 2 RT	60	1793950000
ZQV 4N / 3 RT	60	1793980000
ZQV 4N / 4 RT	60	1794010000
ZQV 4N / 10 RT	20	1794040000
ZQV 4N / 20 RT	20	1909150000
blue		
ZQV 4N / 2 BL	60	1793960000
ZQV 4N / 3 BL	60	1793990000
ZQV 4N / 4 BL	60	1794020000
ZQV 4N / 10 BL	20	1794050000
ZQV 4N / 20 BL	20	1909100000
black		
ZQV 4N / 2 SW	60	1793970000
ZQV 4N / 3 SW	60	1794000000
ZQV 4N / 4 SW	60	1794030000
ZQV 4N / 10 SW	20	1794060000
ZQV 4N / 20 SW	20	1909120000



Ordering data

Terminal markers
Screwdriver
End bracket

Type	Qty.	Order No.
WS 10/6 MC NEUTRAL	600	1828450000
SD 0.6x3.5x100	1	9008330000
WEW 35/2	100	1061200000