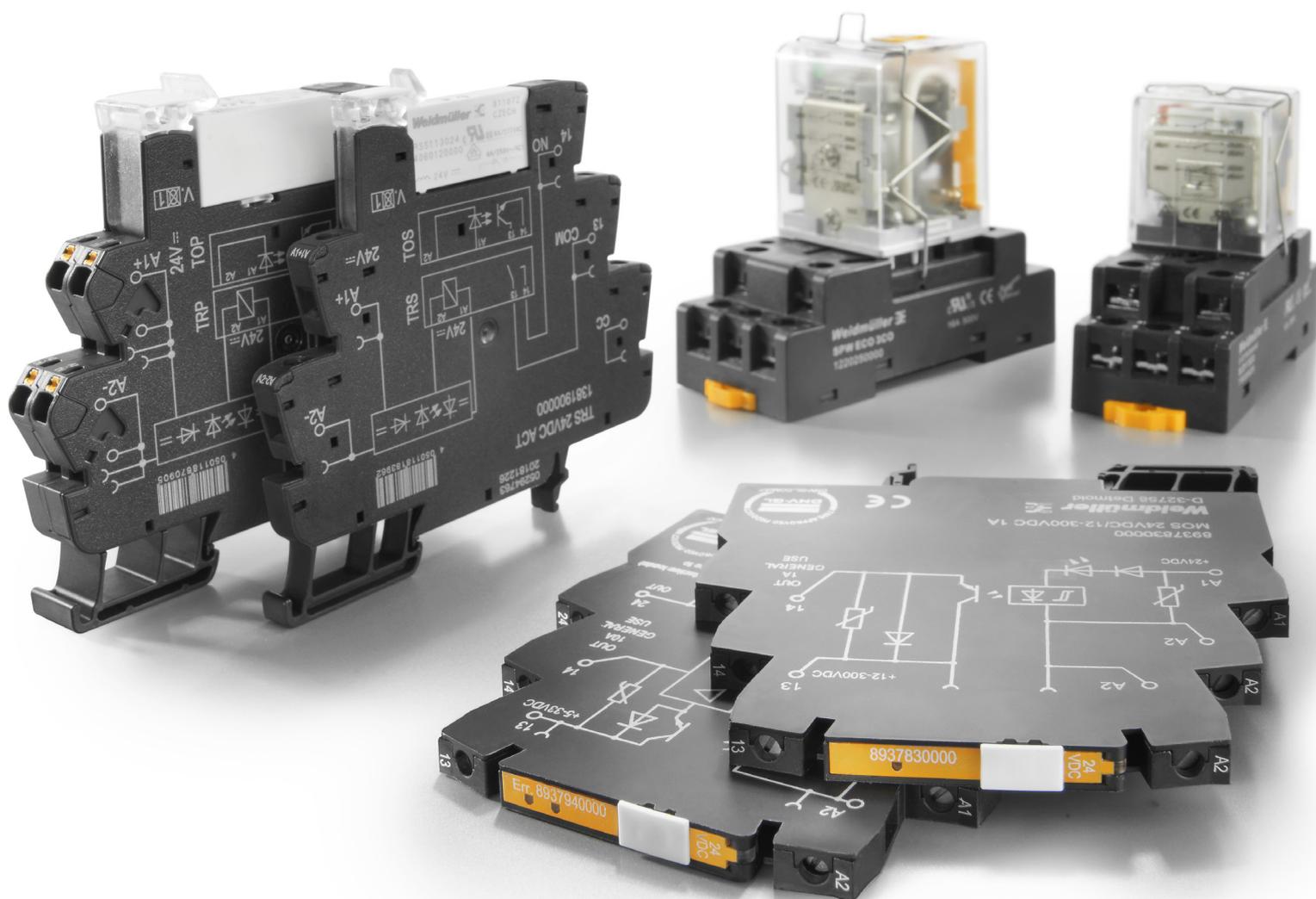


Klippon® Relay

Relays for safe and reliable switching

Application range for special loads



Implementing individual requirements economically

Tailor-made solutions for special loads

If special loads such as inductivities or high inrush currents are to be switched or monitored safely and reliably, you need individually tailored relay modules and solid-state relays. These customised solutions extend the service life of the switching element and, they can be installed in a space-saving cabinet thanks to optimised connection options.

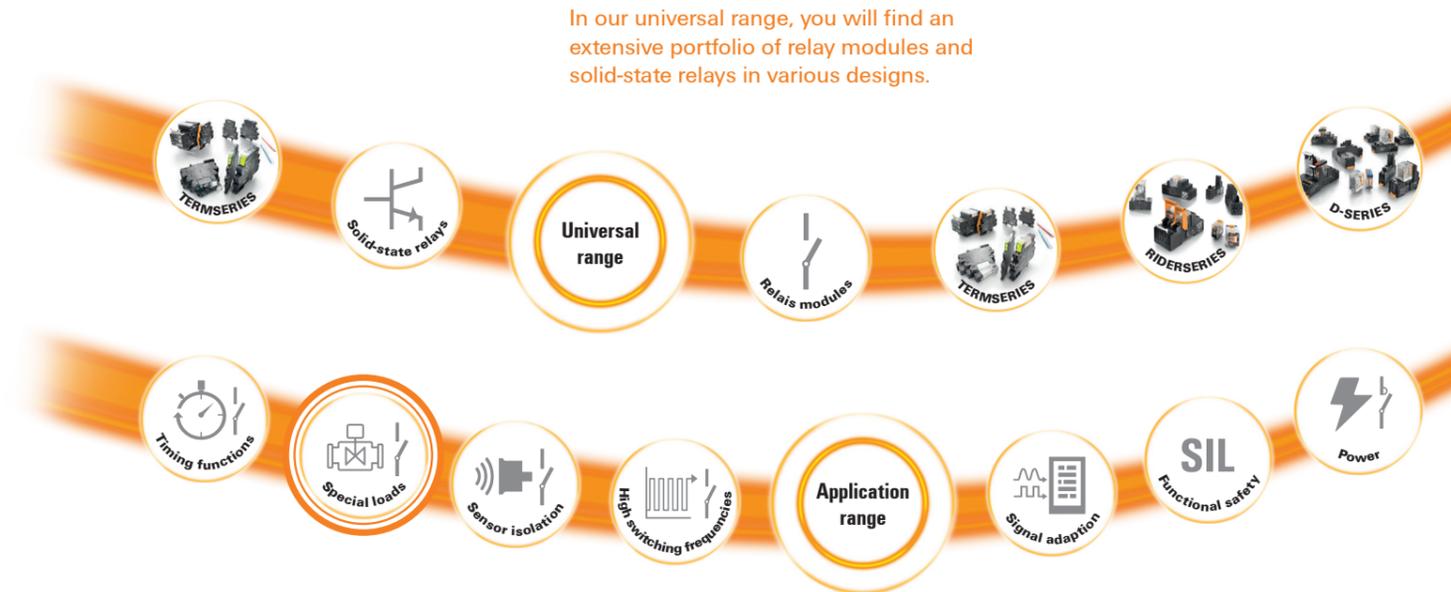
Relays for safe and reliable switching	Application range	04
	Switching capacitive loads	06
	TERMSERIES for capacitive loads	08
	MICROOPTO ACTOR solid-state relays	10
	Switching inductive loads	12
	D-SERIES DRL miniature power relays	14
	D-SERIES DRW power relays	16
	MICROOPTO power solid-state relays	18
	Switching high DC voltages	20
	D-SERIES DRH power relays with blowout magnet	22
	MICROOPTO power solid-state relays for high DC voltages	24
	Wiring optimised variants	26
	TERMSERIES interface adapters	28
	TERMSERIES actuator variants	30
	TERMOPTO solid-state relays	32
	The perfect duo in engineering	34

Solutions for more productivity

Highly flexible design processes – with Klippon® Relay

For more than 40 years, we have specialised in the optimisation of cabinet infrastructures. Our wide range of relay modules, solid-state relays and additional value-added services combine the highest standards with ultimate quality. Less wiring effort, housing optimisation through space saving, optimal marking and cost reductions – our customers challenges are our motivation. Our assortment impresses through reliability, longevity and safety.

Supplemented by our digital data support, switching load consulting and online selection guides, we support our customers throughout the entire work process – from the plan-ning phase to installation and operation.



Visit our website for more information
www.weidmueller.com/klipponrelay

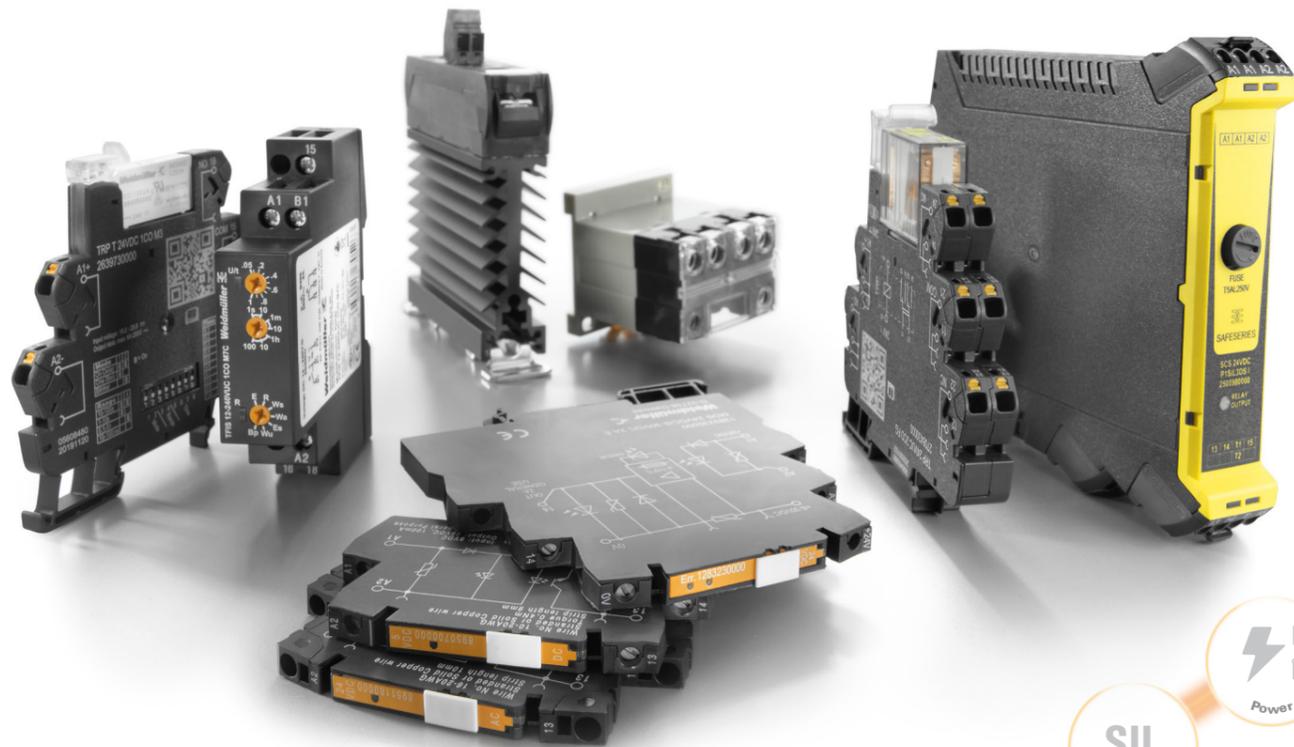
Application range

Relay modules and solid-state relays for specific applications

In many industrial applications today, individual, customised solutions and components are used to increase system efficiency and system productivity. These include, for example, protective circuits for greater fail-safe performance, timing relays for adjusting signals, relays for functional safety and space-saving components for use in limited installation spaces.

With our application range we provide you with a customised portfolio to increase your productivity, efficiency and safety in the most diverse fields of application. What's more, we work with you to develop customised solutions, combining the advantages and features of our portfolio with our expertise and consulting services.

We have a wide range of products that combine application-specific designs, the latest technologies and well-proven components to meet all your requirements.



Sensor isolation
Space-saving and fast switching coupling elements to decouple sensors from the field.



Power
Power solid-state contactor up to 75 A and miniature contactors up to 30 A.



High switching frequencies
Specially designed solid-state relays for reliable and fast decoupling of signals up to 550 kHz.



Timing functions
Timing relays are used in automation technology to compensate for errors due to short cycle times.



Signal adaption
Adaptation of signals and their transmission from other systems to the control cabinet level.



Special loads
Relays to switch and monitor special loads, such as inductors and high inrush currents, safely and reliably.



Functional safety
Specific safety relays required for signals in process safety-related systems



The following pages will support you to find the right relay for safe and reliable and reliable switching of special loads.



Switching capacitive loads

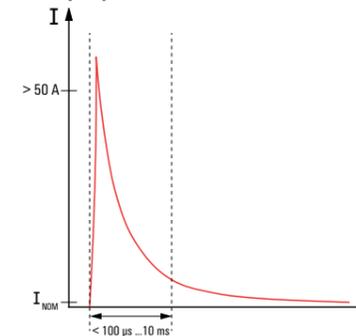
Reliably mastering destructive inrush currents

Loads with a capacitive load share always place extreme demands on the switching contacts – regardless of the voltage type. This applies in particular for LED lamps. When switched on, they cause high-energy current peaks that can quickly reach more than 100 A and weld the contact.

But loads with capacitive components are not immediately recognisable everywhere. They can also be hidden in components that are typically assigned to inductive loads - e.g. solenoid valves and contactors with a pre-circuitry to extend the input voltage range. In these pre-circuits capacitors can generate current peaks of up to 150 A when they are switched on. This can also lead to welding of the contacts or destruction of the output.

For loads with pre-circuits, the inductive load share is usually unproblematic, as it is eliminated by a suitable protective circuit within the wide-range input. On the following pages, we will show you custom-fit products for switching loads with capacitive load share.

Exemplary inrush current curve



This graph shows an exemplary inrush current of a capacitive load like from an LED lamp or a valve with pre-circuit. The inrush current rises very fast to over 50 A and then falls down to its nominal current (I_{NOM}). The nominal current is often just a little less than 1 A. These inrush current peaks have a typical duration of 100 μs up to 10 ms and can be traced back to capacitors inside the internal circuits of the loads.

TERMSERIES for capacitive loads

Electromechanical relays with robust contacts for high inrush currents

Hidden capacitive load shares exist in more and more applications. They increase the risk of welded relay contacts. TERMSERIES electromechanical relays have particularly durable contact materials and can easily withstand inrush currents of up to 800 A for 200 µs. In addition to the robust AgSnO contacts, we have equipped some of the products with a particularly weld-resistant tungsten contact. It closes in advance of the AgSnO contact and passes on the inrush current. Afterwards, the AgSnO contact closes to bridge the tungsten contact. This compensates the power loss that would occur if the less conductive tungsten contact were used.

TERMSERIES for capacitive loads

TERMSERIES HCP complete modules are only 12.8 mm wide and have a unique multi-voltage input. The specially designed contact material for capacitive loads and can withstand high inrush currents of up to 800 A for 200 µs.

Markable ejection lever and LED status display

The markable ejection lever makes it easy to replacement the plugged-in relays. It is illuminated over a large area by an LED, which also serves as a clear status indicator.

Extensive accessories

We offer you partition plates for optical separation and insulation reinforcement, TERMSERIES interface adapters to speed up wiring as well as cross-connection channels for more flexibility at every level.



Visit our online catalogue for more information



Contact materials

Silver-Tin-Oxide (AgSnO)



Characteristics

- Lower welding tendency than AgNi und AgCdO
- High resistance to burn-off
- Average contact resistance
- Lower material migration than AgNi and AgCdO
- Very low resistance to harmful gas atmospheres

Recommended applications

- Suitable for medium to high resistive DC-loads and low up to medium inductive DC loads due to low material migration. Thanks to the low tendency to weld, it is also well suited for loads with higher inrush currents such as lamp loads, light capacitive loads, fluorescent tubes, etc.
- Suitable for loads > 12 V/100 mA

Tungsten (W)



Characteristics

- Lowest welding tendency
- Very high resistance to burn-off
- Highest contact resistance
- Low material migration

Recommended applications

- Suitable for loads with very high inrush currents of up to 165 A/20 ms or 800 A/200 µs (e.g. lamp loads, capacitive loads, fluorescent tubes, switched-mode power supplies etc.)
- Often used as a pre-making contact in parallel to AgSnO contacts

1 NO contact

Type	Rated control voltage	Rated switching voltage	Continuous current	Switchable inrush current	Contact material	Connection technology	Qts	Order No.
TRP 24VDC 1NO HC	24 V DC ±20 %	250 V AC	16 A	80 A / 20 ms	AgSnO	PUSH IN	10	2618090000
TRP 24-230VUC 1NO HC ED2	24-230 V UC ±10 %	250 V AC	16 A	80 A / 20 ms	AgSnO	PUSH IN	10	2663130000
TRP 24VDC 1NO HCP	24 V DC ±20 %	250 V AC	16 A	165 A / 20 ms	AgSnO + W	PUSH IN	10	2617930000
TRP 24-230VUC 1NO HCP ED2	24-230 V UC ±10 %	250 V AC	16 A	165 A / 20 ms	AgSnO + W	PUSH IN	10	2663140000
TRS 24VDC 1NO HC	24 V DC ±20 %	250 V AC	16 A	80 A / 20 ms	AgSnO	Screw	10	1479780000
TRS 24-230VUC 1NO HC ED2	24-230 V UC ±10 %	250 V AC	16 A	80 A / 20 ms	AgSnO	Screw	10	2662970000
TRS 24VDC 1NO HCP	24 V DC ±20 %	250 V AC	16 A	165 A / 20 ms	AgSnO + W	Screw	10	1479810000
TRS 24-230VUC 1NO HCP ED2	24-230 V UC ±10 %	250 V AC	16 A	165 A / 20 ms	AgSnO + W	Screw	10	2662980000
TRZ 24VDC 1NO HC	24 V DC ±20 %	250 V AC	16 A	80 A / 20 ms	AgSnO	Tension clamp	10	1479940000
TRZ 24-230VUC 1NO HC	24-230 V UC ±10 %	250 V AC	16 A	80 A / 20 ms	AgSnO	Tension clamp	10	1479950000
TRZ 24VDC 1NO HCP	24 V DC ±20 %	250 V AC	16 A	165 A / 20 ms	AgSnO + W	Tension clamp	10	1479970000
TRZ 24-230VUC 1NO HCP	24-230 V UC ±10 %	250 V AC	16 A	165 A / 20 ms	AgSnO + W	Tension clamp	10	1479980000

MICROOPTO ACTOR power solid-state relays

Maximum durability even at high inrush currents

High availability, long lifetime and permanently reliability are essential factors in relay selection. MICROOPTO ACTOR power solid-state relays are extremely robust and withstand short and high inrush current peaks below 10 ms. Because they are designed without mechanical components, their outputs cannot weld. This makes them ideal for use, for example, in switching LED lamps or devices with wide-range inputs. Their high reliability is further enhanced by an integrated suppressor circuit for inputs and outputs.

MICROOPTO ACTOR with status and error LED

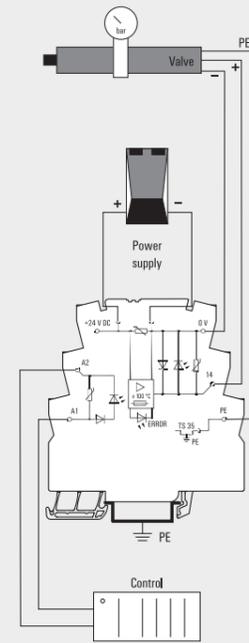
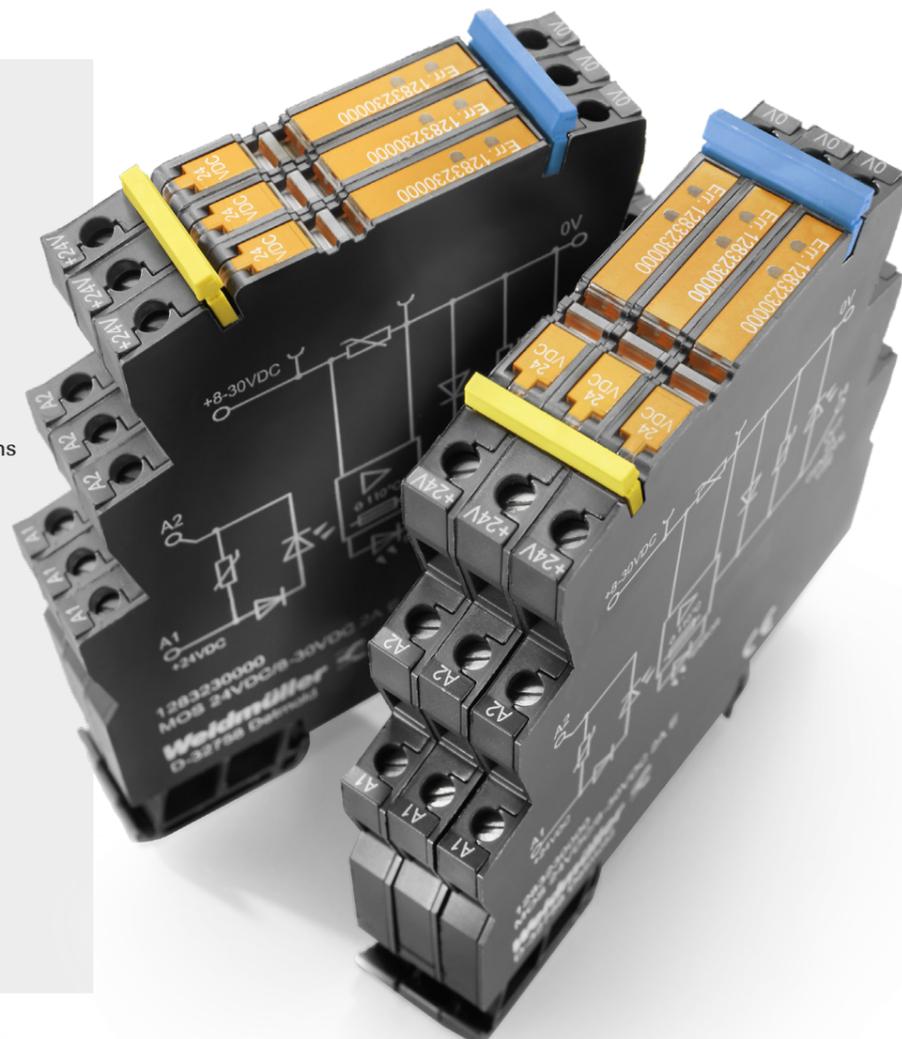
Our powerful solid-state relays are only 6.1 mm wide and are designed to serve as reliable amplifiers for actuators up to 30 V DC and 4 A. Due to their integrated short-circuit protection in the output, they are also suitable for switching loads with capacitive inrush current peaks.

Extensive accessories

The wide range of accessories extends from pluggable cross-connections to marking solutions and makes our relays of the type MICROOPTO ACTOR particularly versatile.



Visit our online catalogue for more information



MOS 24VDC/8-30VDC 2A

The compact solid-state relay is used as a switching amplifier for actuators up to 24 V DC and 4 A with inductive loads - e.g. solenoid valves and contactors. Actuators with a 2- or 3-wire connection can be connected directly. A protective circuit avoids damage due to power-related transients and voltage peaks.

Type	Rated control voltage	Rated switching voltage	Continuous current	Version	Qts	Order No.
MOS 24VDC/8-30VDC 2A E	24 V DC ±20 %	8...30 V DC	2 A	-	1	1283230000
MOS 24VDC/8-30VDC 2A	24 V DC ±20 %	8...30 V DC	4 A	Functional ground connection	1	8937970000



Switching inductive loads

Reliably break off arcs that cause wear

When switching solenoid valves and other inductive loads, arcs with voltage peaks of up to several thousand volts can occur. They are caused during the switching process by the energy stored in the coil and can destroy the contact by material vaporization and material migration.

Intense arcing occurs when switching inductive DC loads. As a result, relay contacts are subjected to high stress and wear quickly. The use of power relays can reliably suppress the occurrence of such arcs. In addition, an external suppressor circuit is recommended. Arcing also occurs when switching inductive AC loads, but they usually extinguish themselves at the next zero crossing of the load current.

The larger the switched inductive loads, the stronger the arcs that occur. In applications with inductive loads above 2 A, power relays should therefore be used instead of conventional signal relays. Otherwise a significantly reduced service life of the contacts must be expected. On the following pages you will find special products for switching inductive loads above 2 A.

D-SERIES DRL miniature power relays

The compact solution for switching inductive loads

Powerful relay modules are required for switching inductive loads. The miniature power relays of the D-SERIES DRL are particularly compact and have up to 4 changeover contacts. Thanks to their durability they are a permanently reliable solution for the switching of inductive AC loads up to 5.5 A when using the 1 CO contact variants*.



Flexible, powerful and robust – from 24 mm width

- Available in 1 CO (16 A) as well as in 2, 3 and 4 CO variants (10 A)
- With integrated status LED indicator – Red for AC coils, Green for DC coils
- Designed with robust industrial flat plug contacts
- Especially durable due to wear-resistant AgSnO contact material
- With enlarged contact opening for faster breaking of the arc when switching inductive loads



Visit our online catalogue for more information

1 CO contact

Type	Rated switching voltage	Rated control voltage	Continuous current	Max. load recommendation 250 V AC*	Max. load recommendation 24 V DC*	Qts	Order No.
DRL170012L	12 V DC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765100000
DRL170024L	24 V DC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765110000
DRL170048L	48 V DC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765120000
DRL170110L	110 V DC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765130000
DRL170220L	220 V DC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765140000
DRL170524L	24 V AC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765370000
DRL170615L	115 V AC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765380000
DRL170730L	230 V AC	250 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	20	2765390000

2 CO contact

Type	Rated switching voltage	Rated control voltage	Continuous current	Max. load recommendation 250 V AC*	Max. load recommendation 24 V DC*	Qts	Order No.
DRL273012L	12 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765150000
DRL273024L	24 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765160000
DRL273048L	48 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765170000
DRL273110L	110 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765180000
DRL273220L	220 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765190000
DRL273524L	24 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765400000
DRL273615L	115 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765410000
DRL273730L	230 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765420000

3 CO contact

Type	Rated switching voltage	Rated control voltage	Continuous current	Max. load recommendation 250 V AC*	Max. load recommendation 24 V DC*	Qts	Order No.
DRL373012L	12 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765210000
DRL373024L	24 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765220000
DRL373048L	48 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765230000
DRL373110L	110 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765240000
DRL373220L	220 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765250000
DRL373524L	24 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765430000
DRL373615L	115 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765440000
DRL373730L	230 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765450000

4 CO contact

Type	Rated switching voltage	Rated control voltage	Continuous current	Max. load recommendation 250 V AC*	Max. load recommendation 24 V DC*	Qts	Order No.
DRL573012L	12 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765260000
DRL573024L	24 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765270000
DRL573048L	48 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765280000
DRL573110L	110 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765290000
DRL573220L	220 V DC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765300000
DRL573524L	24 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765460000
DRL573615L	115 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765470000
DRL573730L	230 V AC	250 V AC	10 A	AC15: 4,5 A	DC13: 3,5 A	20	2765480000



Extensive accessories

We offer a wide range of accessories such as LED indicators, protective circuits, screw sockets, metal retaining clips and much more. Visit our online catalogue.

*Reference from the selection guide (order no. 2699040000). Unless otherwise specified, the values apply to the normally open contact. These indicated currents are without guarantee because each load and application stresses the switching contact differently. Therefore, they serve as a guide for dimensioning.

D-SERIES DRW power relays

Switching large inductive loads reliably and permanently

Even more powerful than our DRL relays are the industrial miniature relays D-SERIES DRW. They are particularly reliable and robust. This is achieved by using wear-resistant contact materials and an enlarged contact opening that allows the arc to break off more quickly during switching. DRW power relays are ideally suited as a permanently reliable solution for switching inductive AC loads up to 5.5 A (with 2 CO contacts*) or up to 5 A (with 3 CO contacts*).

Strong performance – from 25 mm width

- Powerful DRW power relays with coil voltages up to 400 V AC
- Available in 2 and 3 CO variants (16 A)
- Designed with robust industrial flat plug-in contacts
- With test button and integrated LED status indicator – Red for AC coils, green for DC coils
- Particularly durable due to wear-resistant AgSnO contact material
- With enlarged contact opening for faster breaking of the arc when switching inductive loads



Visit our online catalogue for more information



2 CO contact

Type	Rated switching voltage	Rated control voltage	Continuous current	Max. load recommendation 250 V AC*	Max. load recommendation 24 V DC*	Qts	Order No.
DRW273012LT	12 V DC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765590000
DRW273024LT	24 V DC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765600000
DRW273048LT	48 V DC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765610000
DRW273110LT	110 V DC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765620000
DRW273220LT	220 V DC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765630000
DRW273524LT	24 V AC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765490000
DRW273548LT	48 V AC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765500000
DRW273615LT	115 V AC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765510000
DRW273730LT	230 V AC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765520000
DRW273900LT	400 V AC	400 V AC	16 A	AC15: 5,5 A	DC13: 4,0 A	10	2765530000

3 CO contact

Type	Rated switching voltage	Rated control voltage	Continuous current	Max. load recommendation 250 V AC*	Max. load recommendation 24 V DC*	Qts	Order No.
DRW373012LT	12 V DC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765640000
DRW373024LT	24 V DC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765650000
DRW373048LT	48 V DC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765660000
DRW373110LT	110 V DC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765670000
DRW373220LT	220 V DC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765680000
DRW373524LT	24 V AC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765540000
DRW373548LT	48 V AC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765550000
DRW373615LT	115 V AC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765560000
DRW373730LT	230 V AC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765570000
DRW373900LT	400 V AC	400 V AC	16 A	AC15: 5,0 A	DC13: 3,5 A	10	2765580000



Extensive accessories

We offer a wide range of accessories such as LED indicators, protective circuits, screw sockets, metal retaining clips and much more. Visit our online catalogue.

*Reference from the selection guide (order no. 2699040000). Unless otherwise specified, the values apply to the normally open contact. These indicated currents are without guarantee because each load and application stresses the switching contact differently. Therefore, they serve as a guide for dimensioning.

MICROOPTO power solid-state relays

The space-saving solution for fast switching operations

MICROOPTO solid-state relays in terminal block format offer a lot of power in a width of only 6.1 mm. They can be used as reliable switching amplifiers for actuators up to 300 V DC and 10 A, which also include solenoid valves and contactors. Thanks to their protective circuitry in the output, MICROOPTO solid-state relays are capable of reducing even large voltage peaks, such as those occur when switching inductive loads.

MICROOPTO up to 10 A

This powerful solid-state relay have a particularly short-circuit-proof output. It include a fault LED in the output as well as an auxiliary contact to give a feedback about short circuits.

MICROOPTO ACTOR up to 4 A

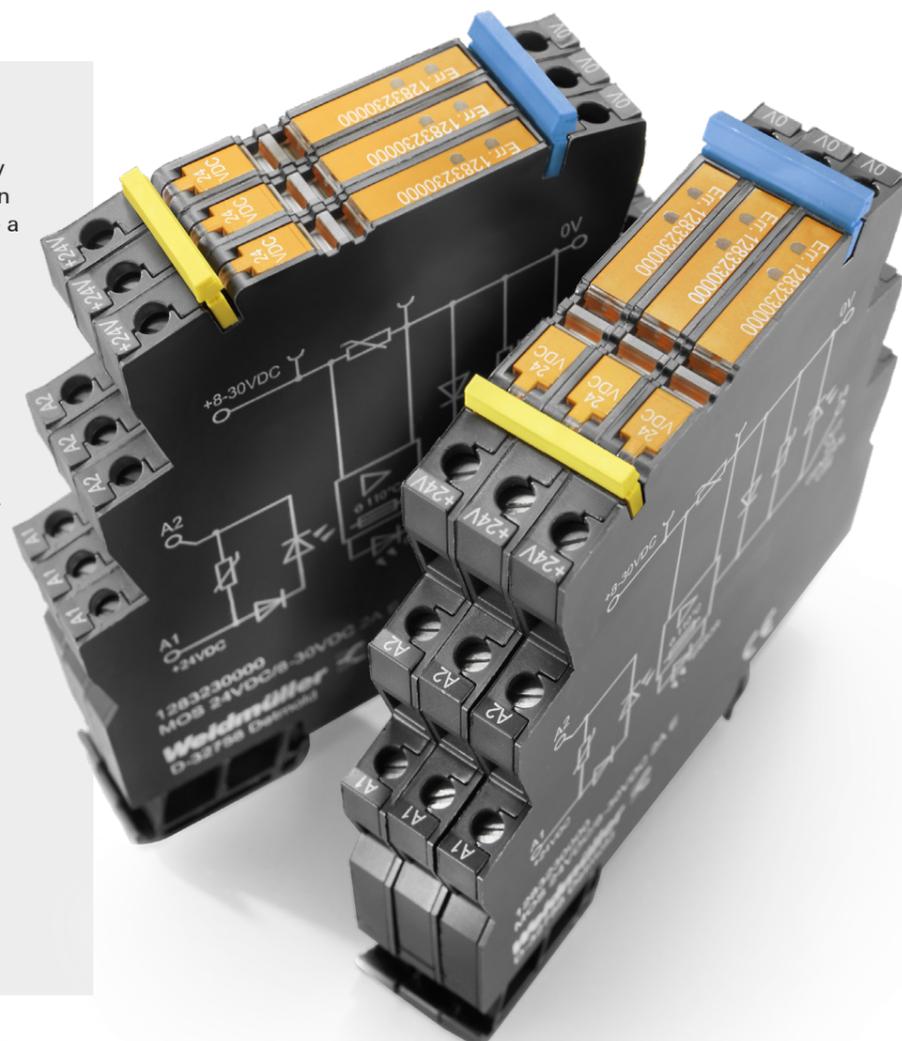
Powerful solid-state relay with particularly short-circuit-proof output, which has a status LED and a fault LED.

MICROOPTO for up to 300 V DC

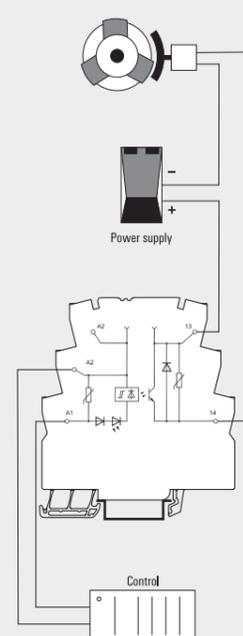
The special solid-state relay for DC voltages up to 300 V and 1 A have an integrated suppressor circuit that reliably enables switching of inductive loads with high voltages.

Wide range of accessories

The range of accessories extends from pluggable cross-connectors to integrated marking solutions and makes MICROOPTO power solid-state relays particularly versatile.

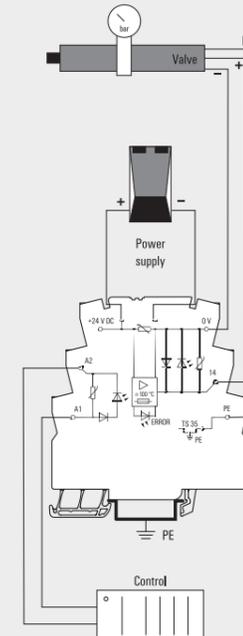


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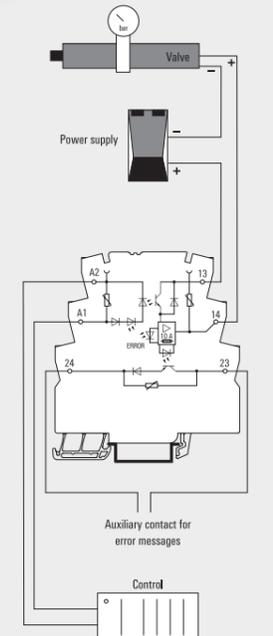
MOS 24VDC/12-300VDC 1A

The switching amplifier for high inductive loads up to 300 V DC and 1 A - e.g. motor brakes and contactors. A "power boost" in the load circuit compensates for short-term power peaks as they can occur when switching on or off.



MOS 24VDC/8-30VDC 2A

The compact solid-state relay is used as a switching amplifier for actuators up to 24 V DC and 4 A with inductive loads - e.g. solenoid valves and contactors. Actuators with a 2- or 3-wire connection can be connected directly. A protective circuit avoids damage due to power-related transients and voltage peaks.



MOS 24VDC/5-33VDC 10A

The switching amplifier for actuators up to 24 V DC and 10 A with inductive loads - e.g. solenoid valves and contactors. The device has a potential-free signal contact that transmits errors such as short circuits to the control system.

Type	Rated control voltage	Rated switching voltage	Continuous current	Version	Qty	Order No.
MOS 24VDC/8-30VDC 2A E	24 V DC ±20 %	8...30 V DC	2 A	-	1	1283230000
MOS 24VDC/8-30VDC 2A	24 V DC ±20 %	8...30 V DC	4 A	Functional ground connection	1	8937970000
MOS 24VDC/5-33VDC 10A	24 V DC ±20 %	5...33 V DC	10 A	-	1	8937940000
MOS 24VDC/12-300VDC 1A	24 V DC ±20 %	12...300 V DC	1 A	-	1	8937930000

Switching high DC voltages

Optimal relay solutions for loads above 24 V DC



Switching relays can switch off only relatively small DC voltages and currents because the zero crossing for extinguishing the arc is missing here. The maximum DC current value is also dependent on the switching voltage and on design conditions such as contact spacing and contact opening speed.

In the case of undamped inductive DC loads, the energy stored in the inductive load can ignite a standing arc that passes the current through the open contacts. This causes extremely high contact wear, resulting in premature failures. Such high loads can be switched reliably if relay modules and solid-state relays specially designed for this application are used. These have, for example, built-in blow-out magnets or large contact openings, which significantly minimizes contact wear. In the following you will find special relay solutions for switching high DC voltages and currents.

D-SERIES DRH power relays with blow-out magnet

Switching high DC voltages with low contact wear

Industrial applications often have high requirements. D-SERIES DRH relays are designed for reliable switching of high inductive DC loads and provide higher wear resistance and longer life in demanding applications. This is achieved by an integrated blow-out magnet as well as an optional contact series connection. The blow-out magnet ensures that the arc generated during switch-off is quickly extinguished. Combined with the clever contact series connection and the larger contact opening, contact wear is significantly reduced. This means that inductive loads and high DC currents up to 220 V DC/10 A can be switched reliably.

Reliable in demanding applications

- Power relay with integrated blow-out magnet to extinguish the arc
- With enlarged contact opening for faster extinguishing the arc when switching inductive loads
- Designed with robust industrial flat plug connectors
- With test button and integrated LED status indicator – Red for AC coils, green for DC coils
- Particularly durable due to wear-resistant AgSnO contact material
- Available in variants with 1 NO contact or 1 NC contact with contact series connection (10 A DC at 220 V DC), with 2 NO contacts as well as with 1 NC contact and 1 NO contact (3 A at 220 V DC)



Visit our online catalogue for more information



1 NO contact

Type	Rated control voltage	Rated switching voltage	Continuous current	Max. load recommendation 220 V DC*	Max. load recommendation 125 V DC*	Qts	Order No.
DRH173012LT	12 V DC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219840000
DRH173024LT	24 V DC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219850000
DRH173048LT	48 V DC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219860000
DRH173110LT	110 V DC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219870000
DRH173220LT	220 V DC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219880000
DRH173524LT	24 V AC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219890000
DRH173548LT	48 V AC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219910000
DRH173615LT	115 V AC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219920000
DRH173730LT	230 V AC	500 V AC	16 A	DC13: 3,0 A	DC13: 5,0 A	10	1219930000

1 NC contact

Type	Rated control voltage	Rated switching voltage	Continuous current	Max. load recommendation 220 V DC*	Max. load recommendation 125 V DC*	Qts	Order No.
DRH174012LT	12 V DC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1219940000
DRH174024LT	24 V DC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1219950000
DRH174048LT	48 V DC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1219960000
DRH174110LT	110 V DC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1219970000
DRH174220LT	220 V DC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1219980000
DRH174524LT	24 V AC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1219990000
DRH174548LT	48 V AC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1220010000
DRH174615LT	115 V AC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1220020000
DRH174730LT	230 V AC	500 V AC	16 A	DC13: 1,0 A	DC13: 1,5 A	10	1220030000

2 NO contact

Type	Rated control voltage	Rated switching voltage	Continuous current	Max. load recommendation 220 V DC*	Max. load recommendation 125 V DC*	Qts	Order No.
DRH276012LT	12 V DC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220140000
DRH276024LT	24 V DC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220150000
DRH276048LT	48 V DC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220170000
DRH276110LT	110 V DC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220180000
DRH276220LT	220 V DC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220190000
DRH276524LT	24 V AC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220200000
DRH276548LT	48 V AC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220210000
DRH276615LT	115 V AC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220220000
DRH276730LT	230 V AC	250 V AC	16 A	DC13: 1,0 A	DC13: 2,0 A	10	1220230000

1 NO and 1 NC contact

Type	Rated control voltage	Rated switching voltage	Continuous current	Max. load recommendation 220 V DC*	Max. load recommendation 125 V DC*	Qts	Order No.
DRH275012LT	12 V DC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220040000
DRH275024LT	24 V DC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220050000
DRH275048LT	48 V DC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220060000
DRH275110LT	110 V DC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220070000
DRH275220LT	220 V DC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220080000
DRH275524LT	24 V AC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220090000
DRH275548LT	48 V AC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220110000
DRH275615LT	115 V AC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220120000
DRH275730LT	230 V AC	250 V AC	16 A	DC13: NO: 1,0 A; NC: 0,3 A	DC13: NO: 2,0 A; NC: 0,6 A	10	1220130000



Extensive accessories

We offer a wide range of accessories such as LED indicators, protective circuits, screw sockets, metal retaining clips, test button cover and much more. Visit our online catalogue.

*Reference from the selection guide (order no. 2699040000). Unless otherwise specified, the values apply to the normally open contact. These indicated currents are without guarantee because each load and application stresses the switching contact differently. Therefore, they serve as a guide for dimensioning.

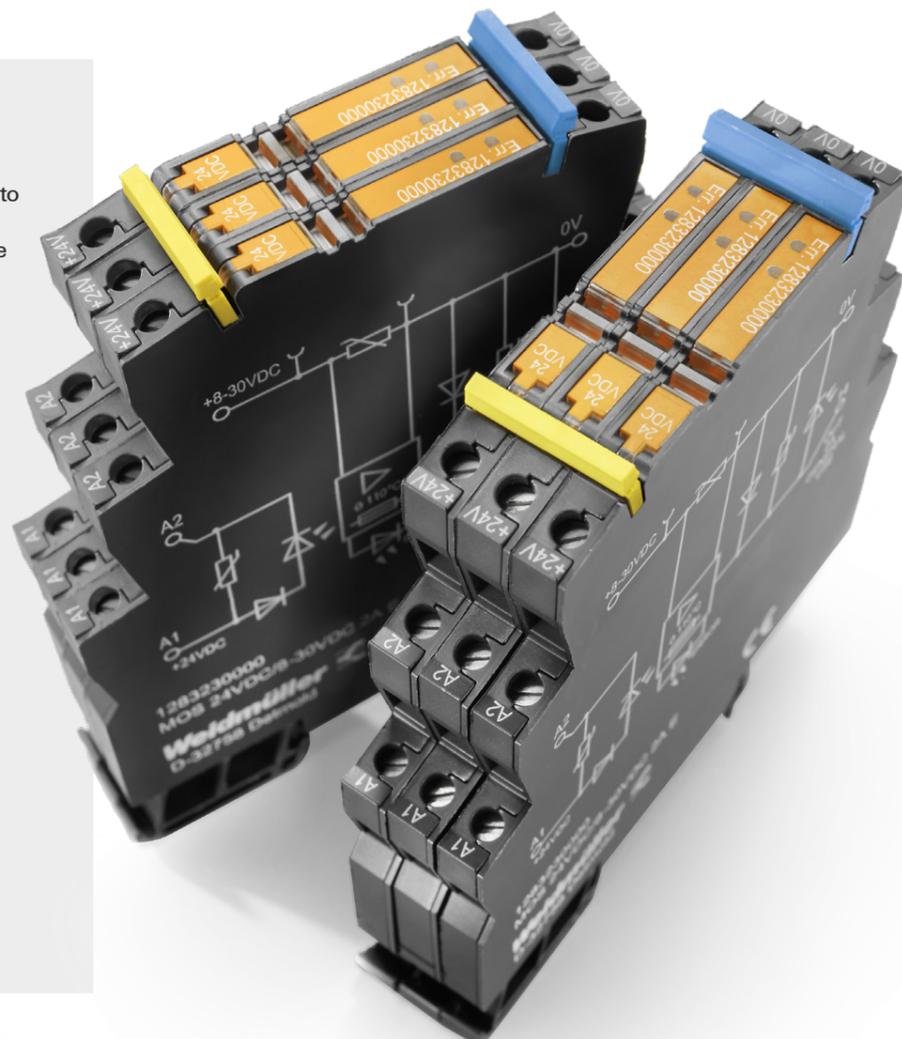
MICROOPTO power solid-state relays for high DC voltages

Wear-free switching up to 300 V DC

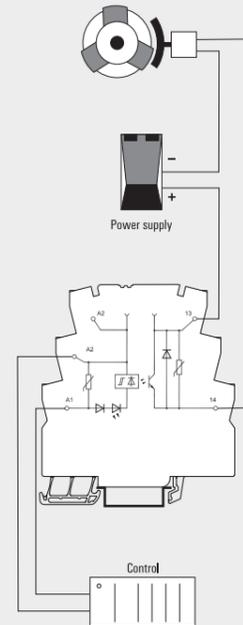
In the industrial segment, large voltage peaks can lead to rapid contact wear. The compact and powerful MICROOPTO power solid-state relays in terminal block format serve as reliable switching amplifiers for loads up to 300 V DC and 1 A - e.g. solenoid valves and contactors. Despite their small width of only 6.1 mm, they can also reduce larger voltage peaks, such as those that occur when switching off inductive loads, thanks to a protective circuit in the output.

MICROOPTO for 300 V DC

Solid-state relay in terminal block format with integrated suppressor circuit for DC voltages up to 300 V DC and 1 A. Particularly versatile thanks to the wide range of accessories, from pluggable cross-connections to marking solutions.



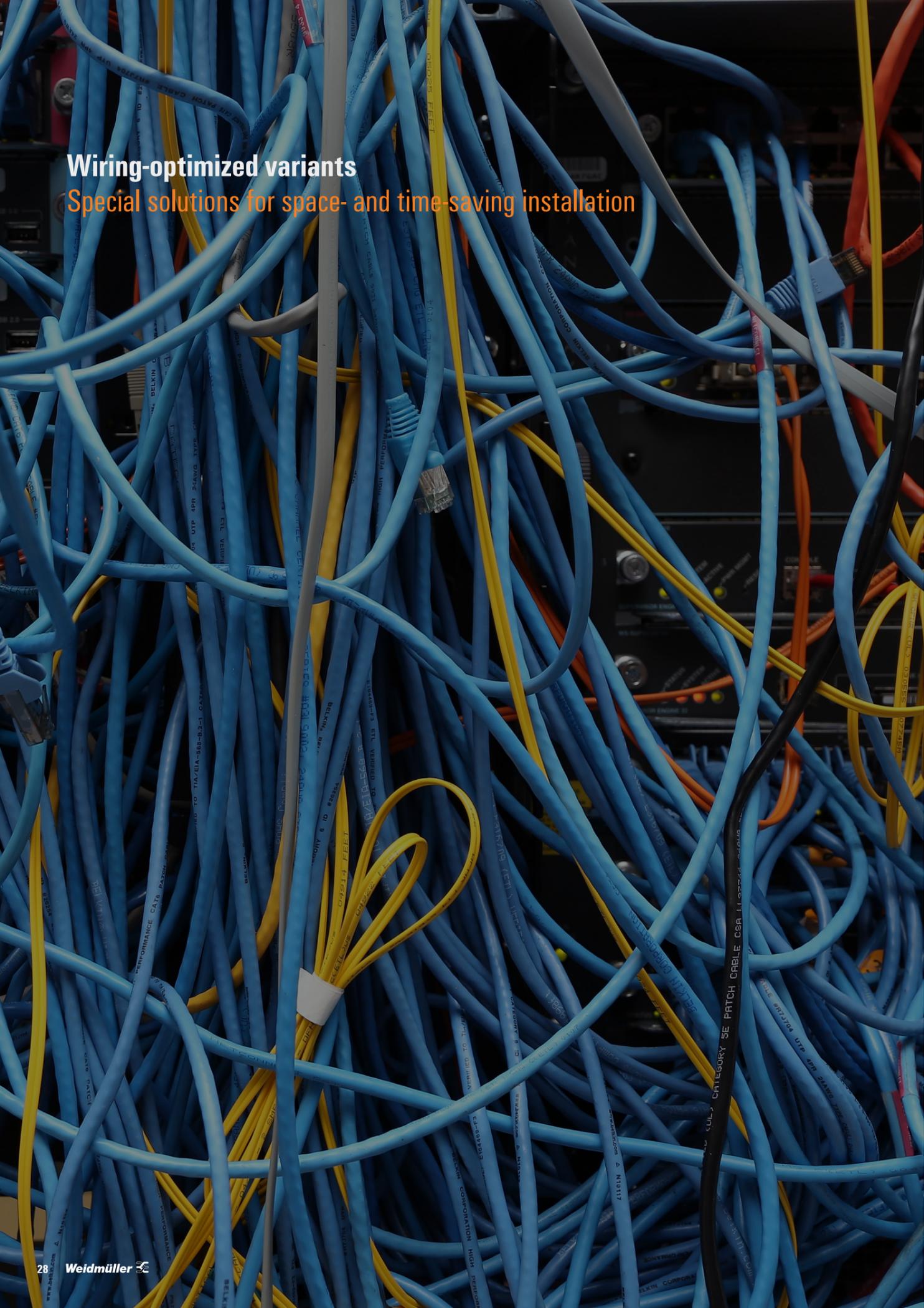
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MOS 24VDC/12-300VDC 1A

The switching amplifier for high inductive loads up to 300 V DC and 1 A - e.g. motor brakes and contactors. A "power boost" in the load circuit compensates for short-term power peaks as they can occur when switching on or off.

Type	Rated control voltage	Rated switching voltage	Continuous current	Qts	Order No.
MOS 24VDC/12-300VDC 1A	24 V DC $\pm 20\%$	12...300 V DC	1 A	1	8937930000



Wiring-optimized variants

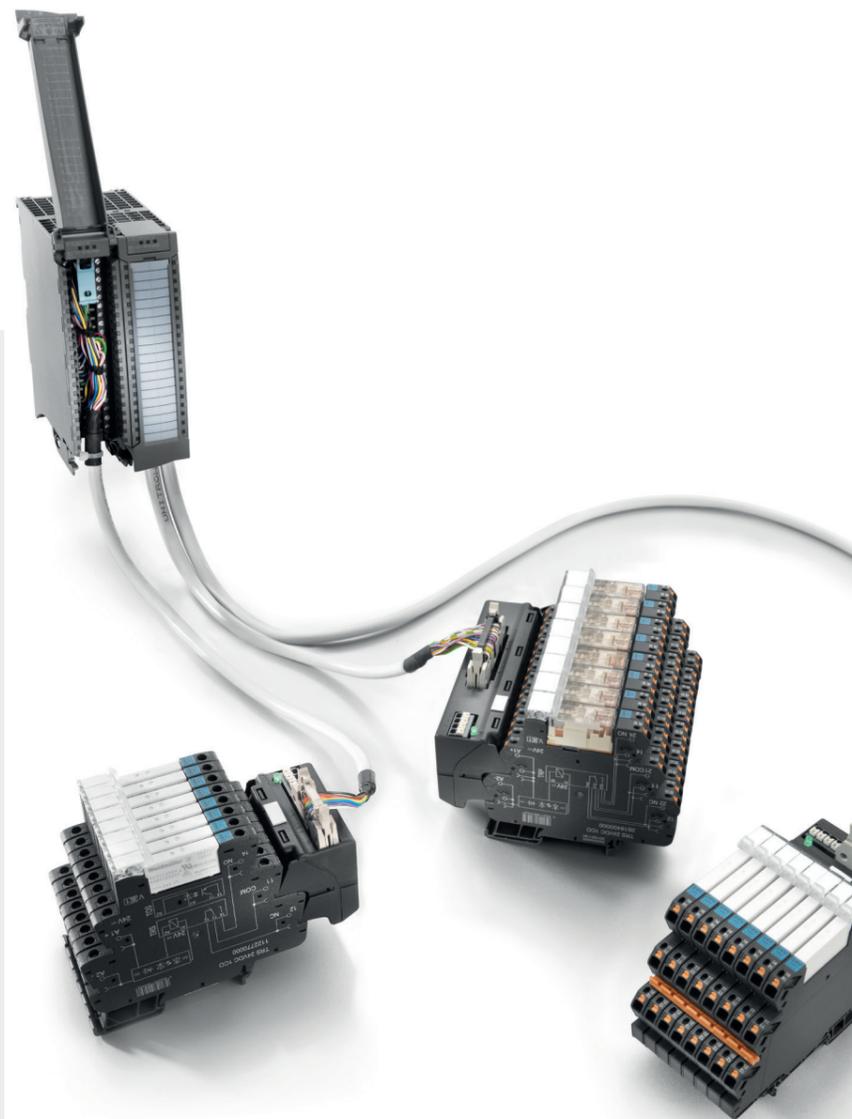
Special solutions for space- and time-saving installation

Optimizing wiring time and space requirements is becoming more and more important. Our variants with latching PE foot enable fast wiring of actuators where a PE contact is required. This eliminates the need for an additional PE terminal in the control cabinet. Our 1 NO ACT variants allow the use of a terminal on the relay socket for wiring the negative or neutral potential. In this way, the negative potential is bridged through to the connection provided for this purpose with the aid of a supply terminal in order to wire the actuators directly - without an additional terminal for the negative potential. On the following pages, we will introduce you to clever relay solutions that can save you a lot of space and time when wiring.

TERMSERIES interface adapter

Faster signal wiring with less space

To reduce wiring times, pre-assembled cables are used between the control system and the interface level and are simply connected to the TERMSERIES adapter. This enables throughput times in electrical cabinet building to be significantly reduced. The adapter has a universal fit and offers a genuine space advantage in interaction with the TERMSERIES products with identical contours.



Connection to a variety of controllers

The standardized flat cable plug-in connections enables connection of all interface systems pre-assembled cable types.

Both types of logic with one device

The potential switch for the lower level allows to use the adapter for plus and minus switching logic.

Reliable and unambiguous wiring

Installation is unambiguous and safe thanks to practical marking of the connections, assignment of the contacts and the option of individual marking using MultiCard.

Fast supply and bridging of the auxiliary voltage

Quick and safe supply of the auxiliary voltage as a result of the TOP connection with „PUSH IN“ technology. Simple bridging is also possible thanks to duplication of the connections.



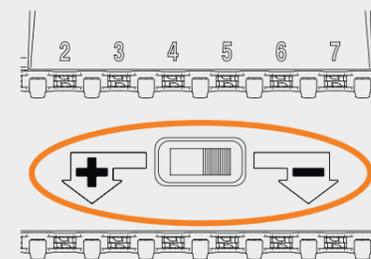
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Combination of two logics

The potential switch makes the adapter suitable for plus and minus switching logic. It is used to connect the lower row of the adapter to the plus or minus potential. This allows a PLC with plus or minus switching logic to control the TERMSERIES relay modules.

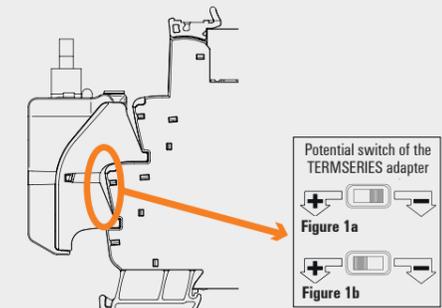
Potential change-over switch

The potential change-over switch is located between contact rows of the TERMSERIES adaptor. It is used to switch the potential of the lower contact row to “+” or “-” potential of the supply voltage.



Mounting on the control side

Figure 1a: Positive-switching logic: Potential change-over switch to “-”, installation on 24 V DC input (A1/A2).
Figure 1b: Negative-switching logic: Potential change-over switch to “+”, installation on 24 V UC input (A1/A2).



Type	Rated voltage	Plug type	Signals / Width of sockets	Qts	Order No.
TIA F10	24 V DC	10-pole flat cable	8 / 6.4 mm	1	1463520000
TIA SUBD 15S	24 V DC	15-pole SUB-D	8 / 6.4 mm	1	1463530000
TIAL F10	24 V DC	10-pole flat cable	8 / 12.8 mm	1	1463540000
TIAL F20	24 V DC	20-pole flat cable	16 / 6.4 mm	1	1463550000

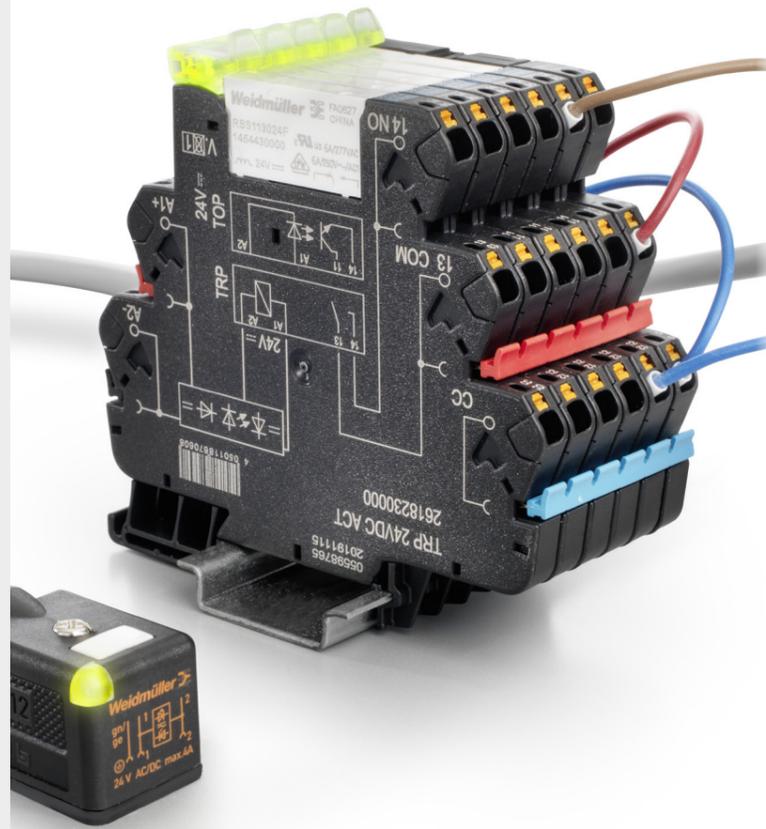
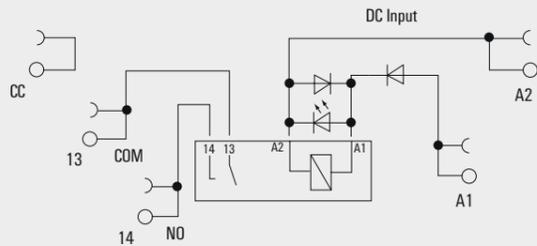
TERMSERIES actuator variants

Connecting actuators without additional terminal blocks

The lower the wiring effort, the higher the cost-effectiveness. With TERMSERIES actuator variants, supply and return wire for the load can be connected directly to the relay module. This eliminates the need for additional terminal blocks and significantly reduces wiring time. In addition, TERMSERIES interface adapters and cross-connectors ensure efficient wiring by eliminating the need for time-consuming and costly single-wire wiring.

Efficiency advantages of TERMSERIES Actuator Variants

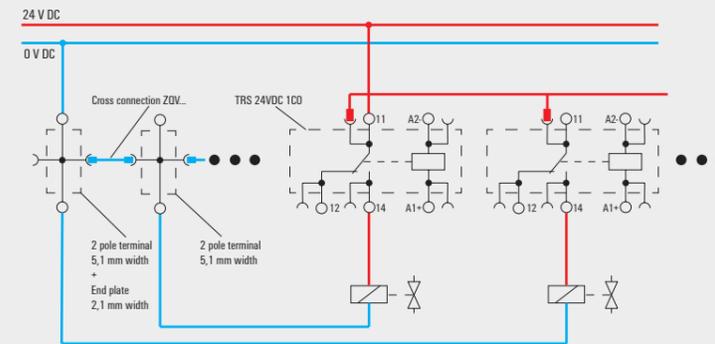
Connecting the actuators with the relay modules allows for better overview and maintainability. Eliminating terminal blocks for wiring the minus connection from the actuator reduces costs and allows space savings of up to 38% for an 8-channel solution. The use of cross-connectors or TERMSERIES interface adapters on the input side reduces wiring time additionally.



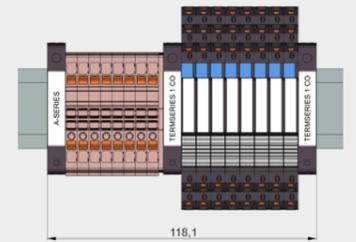
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Space requirement for an 8-channel system with a standard TERMSERIES 1CO relay

Example of output wiring to show the difference in eight loads to be wired: Result width = 8 x 5.1 mm (2-pole terminal block) + 1 x 2.1 mm (end plate) + 8 x 6.4 mm (TRP 24VDC 1CO) + 3 x 8.0 mm (end bracket) = 118.1 mm

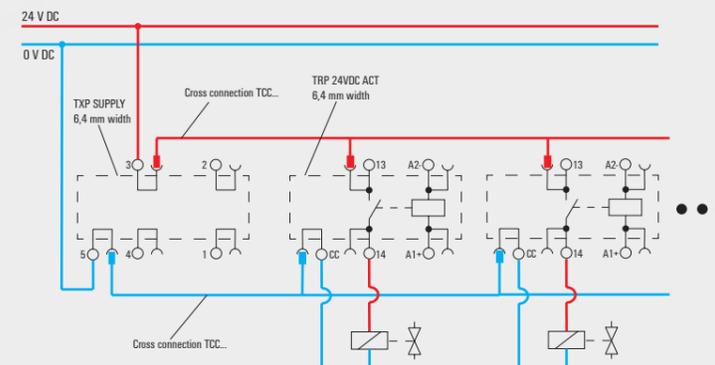


Space requirement top view*

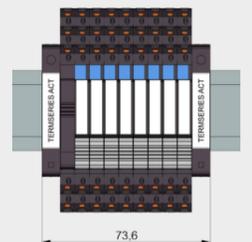


Space requirement for an 8-channel system with TERMSERIES ACT version relays and power supply terminals

Example of wiring the outputs to illustrate the difference in eight loads to be wired: Result width = 1 x 6.4 mm (TRP SUPPLY) + 8 x 6.4 mm (TRP 24VDC ACT) + 2 x 8.0 mm (end bracket) = 73.6 mm



Space requirement top view*



*Image created with the Weidmüller Configurator programme

1 NO contact

Type	Version	Rated control voltage	Rated switching voltage	Continuous current	Connection technology	Qts	Order No.
TRP 24VDC ACT	Relay	24 V DC +/-20%	250 V AC	6 A	PUSH IN	10	2618230000
TRS 24VDC ACT	Relay	24 V DC +/-20%	250 V AC	6 A	Screw	10	1381900000
TRZ 24VDC ACT	Relay	24 V DC +/-20%	250 V AC	6 A	Tension clamp	10	1391670000
TOP 24VDC ACT	Solid-state relay	24 V DC +/-20%	3...33 V DC	2 A	PUSH IN	10	2618750000
TOS 24VDC ACT	Solid-state relay	24 V DC +/-20%	3...33 V DC	2 A	Screw	10	1391680000
TOZ 24VDC ACT	Solid-state relay	24 V DC +/-20%	3...33 V DC	2 A	Tension clamp	10	1391690000

TERMOPTO solid-state relays

Wear-free potential separation in the smallest installation space

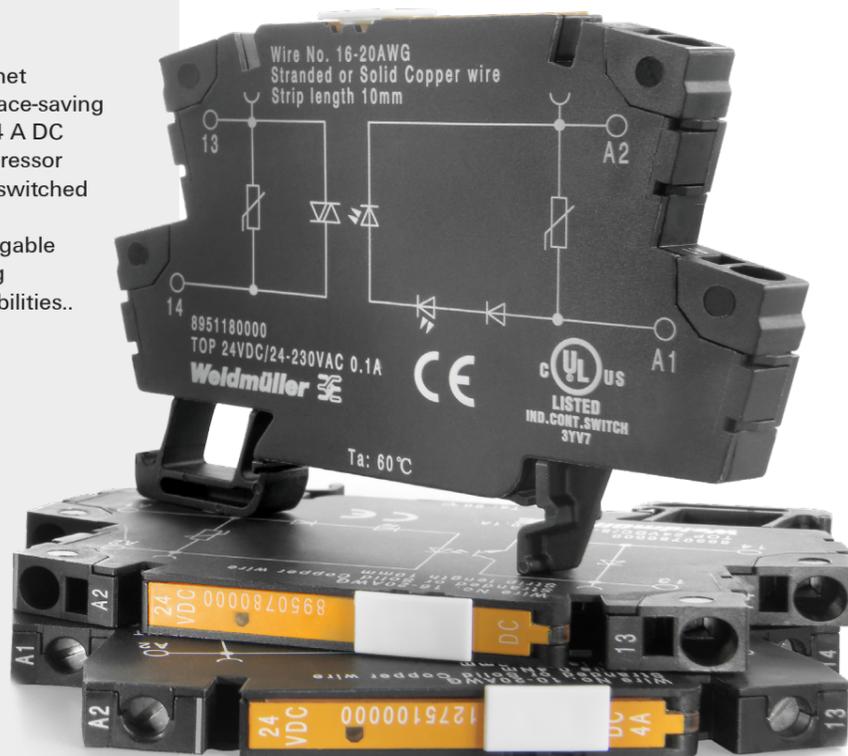
In many applications, relays for potential isolation and signal adaptation must work reliably over the long term. For this reason, electromechanical solutions that are susceptible to wear are now increasingly being replaced by maintenance-free relays with integrated potential isolation.

TERMOPTO solid-state relays in terminal block format are the perfect solution for simple and reliable decoupling of digital signals. In addition to their compact design, they are characterised by modern PUSH IN connection technology, pluggable cross-connections and an optimal price/performance ratio. TERMOPTO solid-state relays save space in the control cabinet, reduce service effort and sustainably increase system availability. They also reduce the complexity of the accessories required because components from cross-connectors to markers from the Weidmüller portfolio can be used.

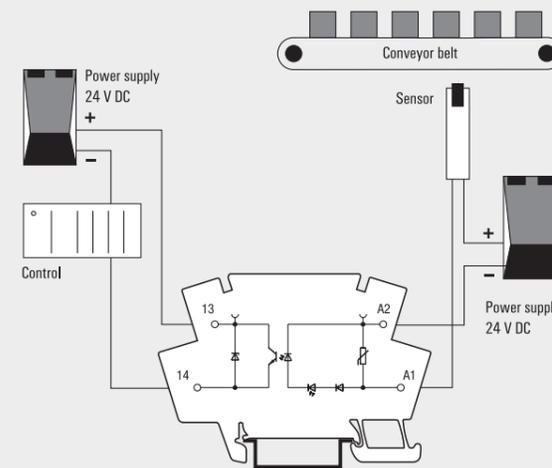
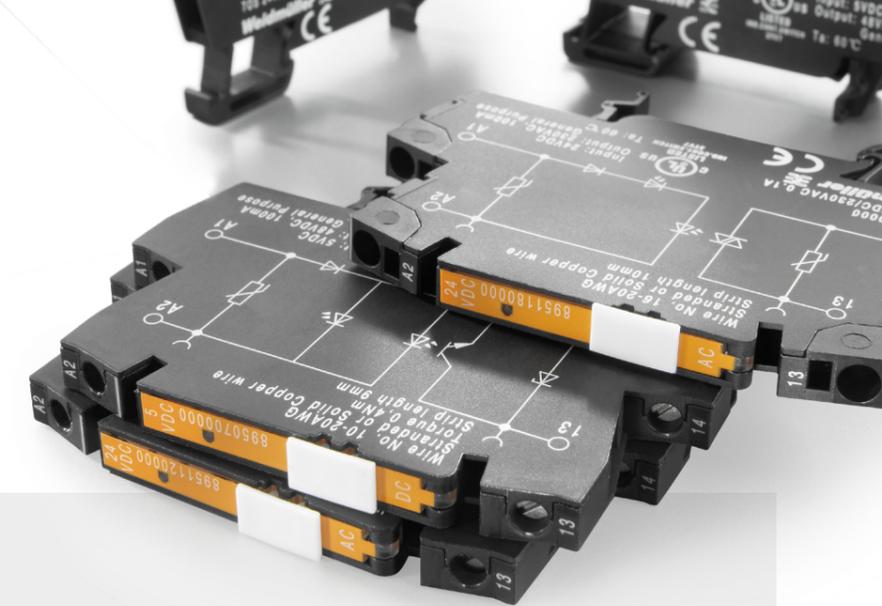
TERMOPTO for 4 A

The compact all-rounder for control cabinet wiring convinces with an enormously space-saving design and a switching current of up to 4 A DC at the output. Due to the integrated suppressor circuit, signals and smaller loads can be switched quickly and reliably.

The wide range of accessories from pluggable cross-connections to continuous marking solutions increases the application possibilities..



Visit our online catalogue for more information



TERMOPTO 4A was developed as a space-saving switching amplifier and signal isolator for high currents up to 4 A. Due to the integrated suppressor circuit, signals and smaller loads can be switched quickly and reliably.

Type	Rated control voltage	Rated switching voltage	Continuous current	Version	Qts	Order No.
TOP 24VDC/24VDC 4A	24 V DC ±20 %	3...33 V DC	4 A	PUSH IN	10	1254880000
TOS 24VDC/24VDC 4A	24 V DC ±20 %	3...33 V DC	4 A	Screw	10	1275100000

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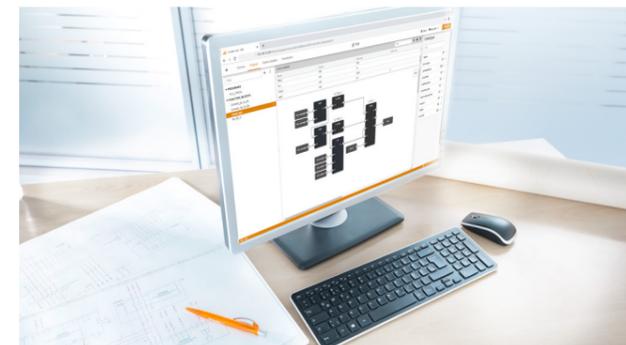


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Weidmüller provides you with all of the data, software tools and interfaces that you need throughout your processes - from electrical and mechanical planning, ordering and production of configured products up to single products. No matter whether for cabinet building, automation, building planning or printed circuit board design: we offer you the solutions that accelerate your processes, tailored to your requirements.



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Selection guide for electromechanical relay modules

Our selection guide in digital and printed form support you in finding the right relay for safe and reliable switching of special loads:

www.weidmueller.com/relaisselektor



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