No-wear isolation of potentials in terminal block design

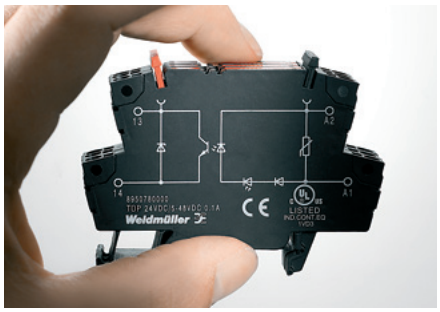
PUSH IN

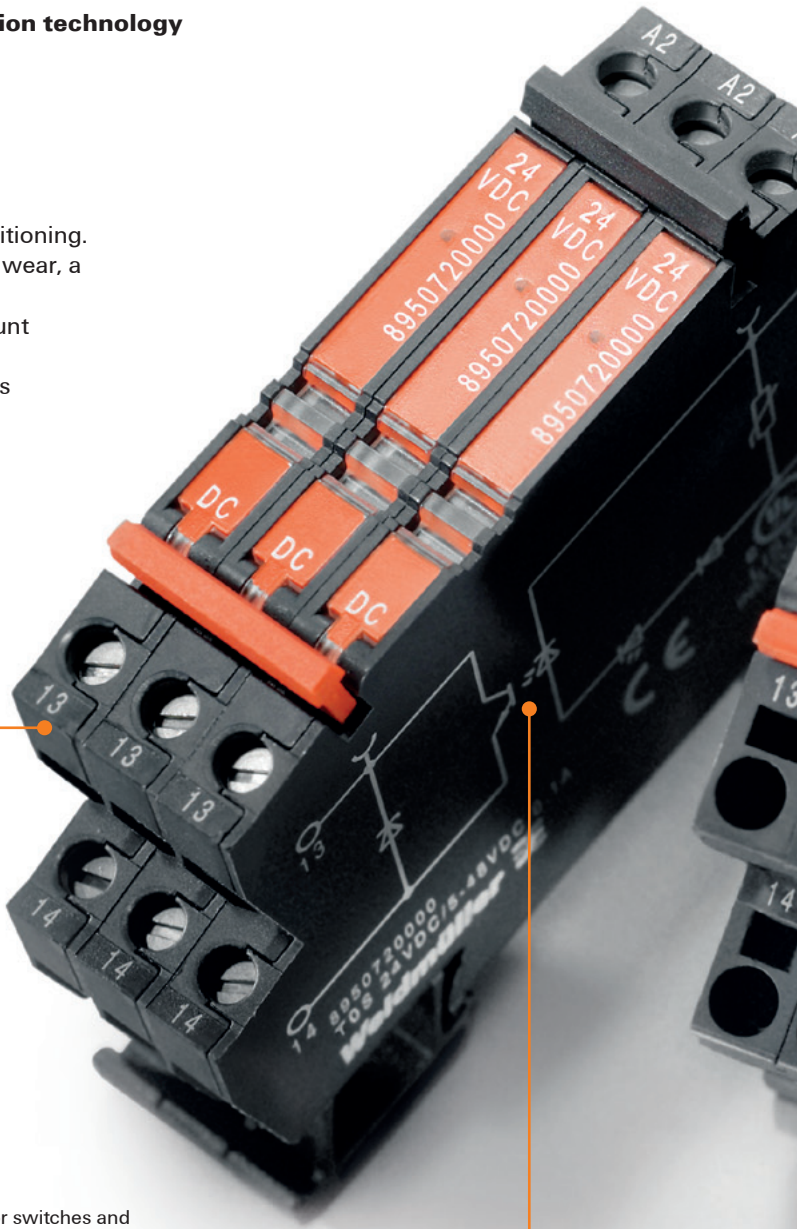
Space saving solid-state relay with "PUSH IN" connection technology

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

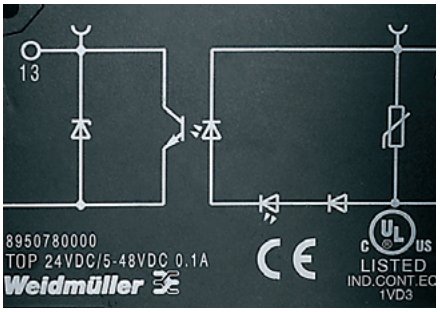
TERMOPTO offers a compact, electronic alternative to the electromechanical relay for electrical isolation and signal conditioning. Instead of an electromechanical solution that is susceptible to wear, a maintenance-free and compact terminal block with integrated electrical isolation is used. This saves 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.

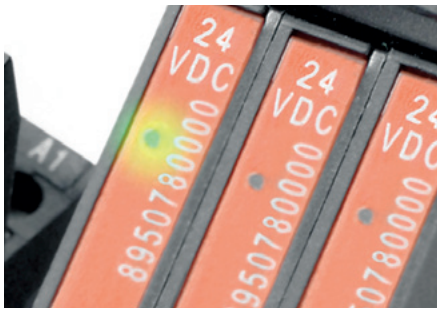


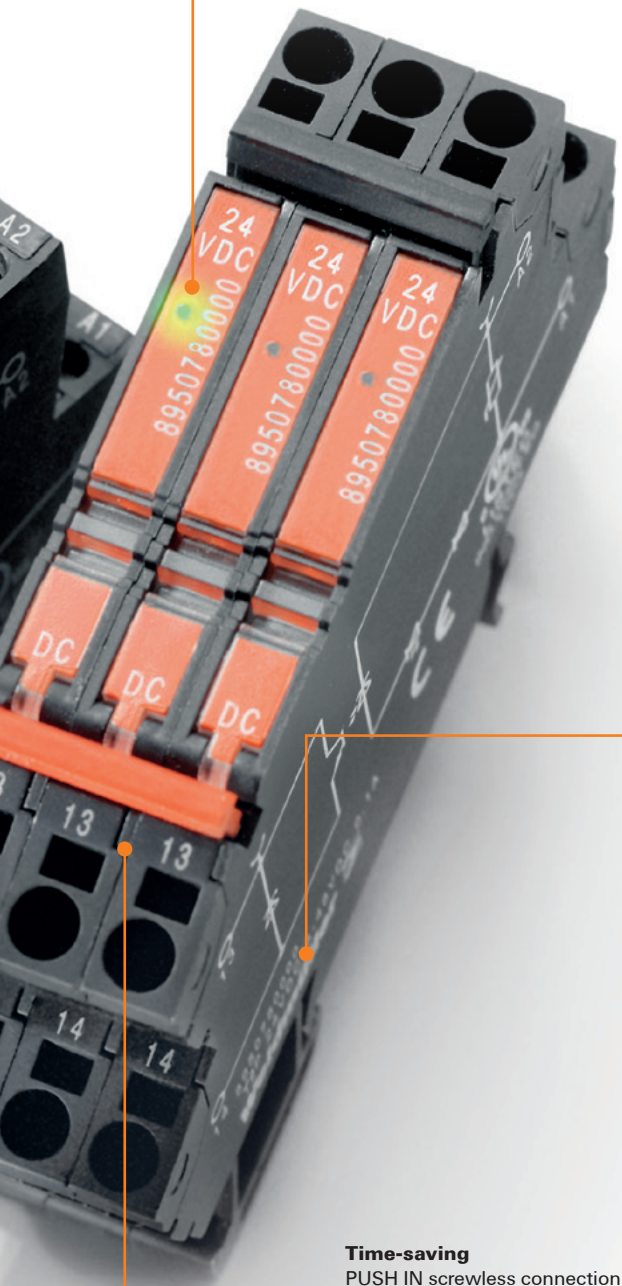


Long lifetime
Wear-free semiconductor switches and extensive protective circuits ensure long service life and reliable switching cycles.

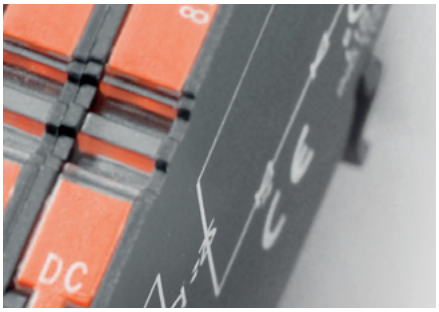


Status indicator
LED status indicator provides information on the switching state.

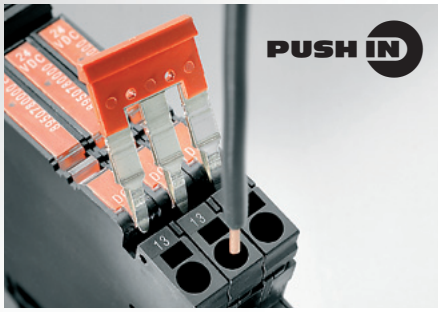




Closed design
Closed design for space-saving, side-by-side arrangement. No end plate necessary; the electronics are mechanically protected.



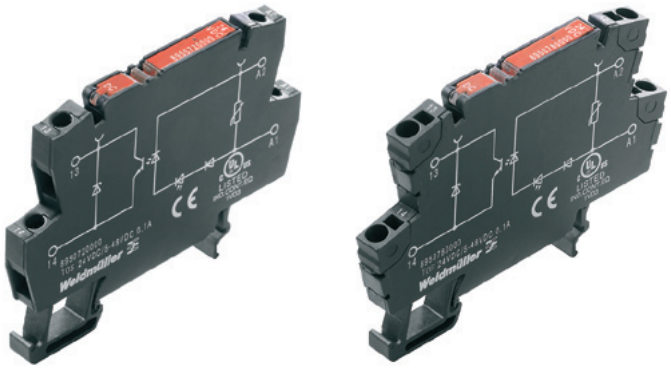
Time-saving
PUSH IN screwless connection system and the pluggable cross-connection reduce wiring time by > 50 %.



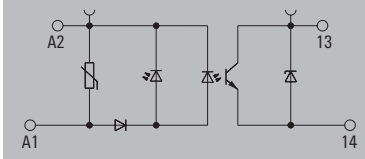
Solid-state relays 5...48 V DC / 100 mA

Output versions

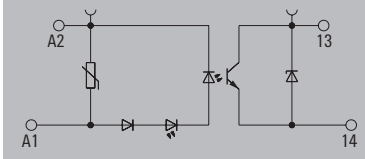
- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design



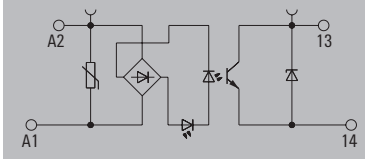
5 V DC



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_u = 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		**Screw connection**	**PUSH IN connection**
Clamping range (nominal / min. / max.)	mm^2	2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
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.	

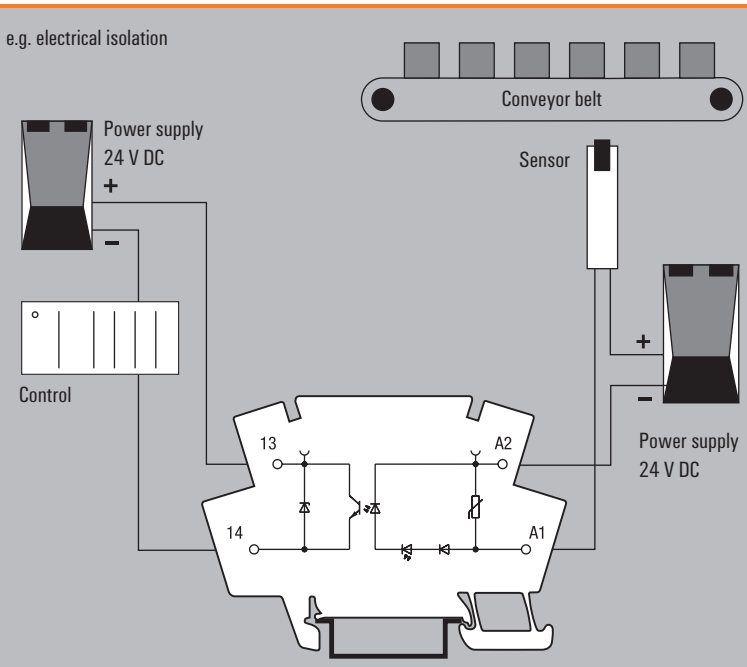
Applications

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.



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						

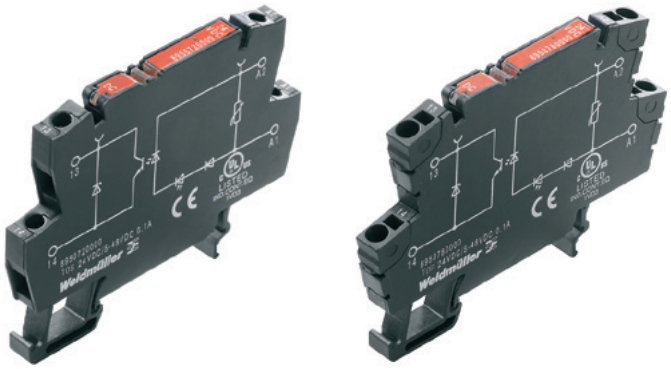
Ordering data	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC +10 % / -15 %	24 V AC ±20%	48...60 V AC ±20 %	120 V AC ±20 %	230 V AC +10 % / -20 %
Nominal control current	1.65 mA DC	7.4 mA AC	4.3 mA AC	2.9 mA AC	1.75 mA AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 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						

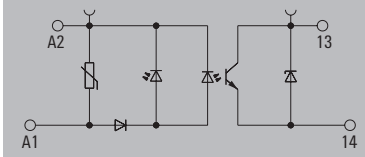
Solid-state relays, 5...48 V DC / 500 mA

Output versions

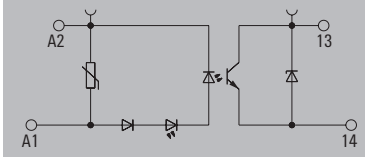
- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design



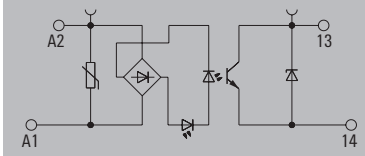
5 V DC



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_u = 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		**Screw connection**	**PUSH IN connection**
Clamping range (nominal / min. / max.)	mm^2	2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
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.	

Applications

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

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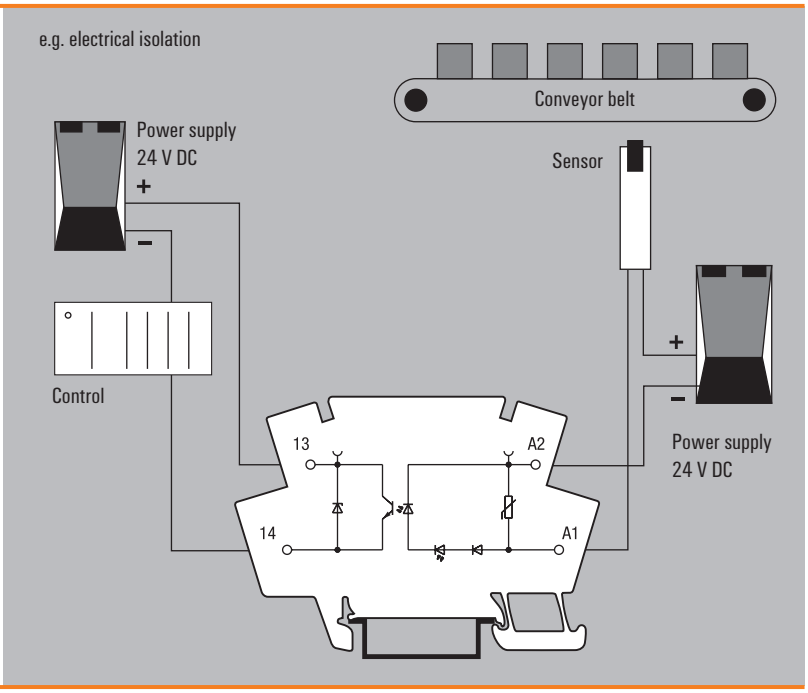
The choice between 10 input voltages and 3 output voltages,as well as screw or PUSH IN connection technology,gives 60 variations for different applications.

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.



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						

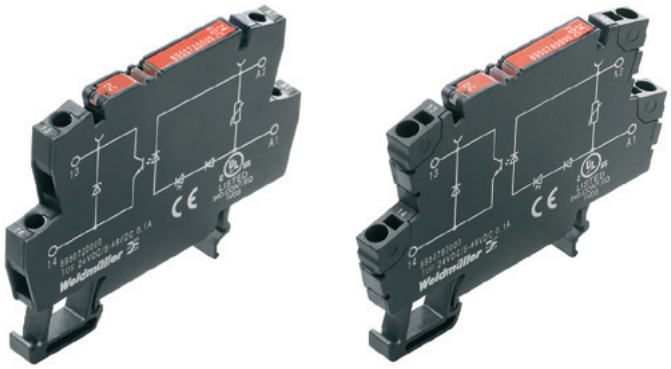
Ordering data	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC +10 % / -15 %	24 V AC ±20%	48...60 V AC ±20 %	120 V AC ±20 %	230 V AC +10 % / -20 %
Nominal control current	1.65 mA DC	7.4 mA AC	4.3 mA AC	2.9 mA AC	1.75 mA AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 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						

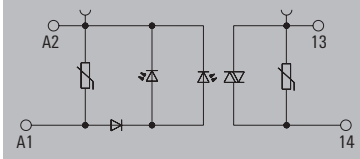
Solid-state relays 24...230 V AC / 100 mA

Output versions

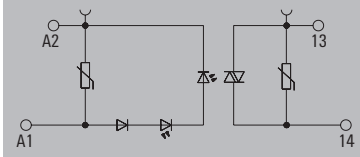
- Space-saving 6.1 mm width
- Plug-in cross-connections
- Screw and PUSH IN wire connection
- Enclosed design



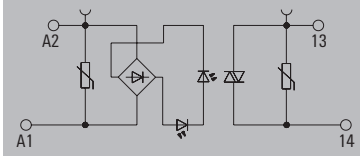
5 V DC



12...220 DC



24...230 V AC



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_u = 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		**Screw connection**	**PUSH IN connection**
Clamping range (nominal / min. / max.)	mm^2	2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
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.	

Applications

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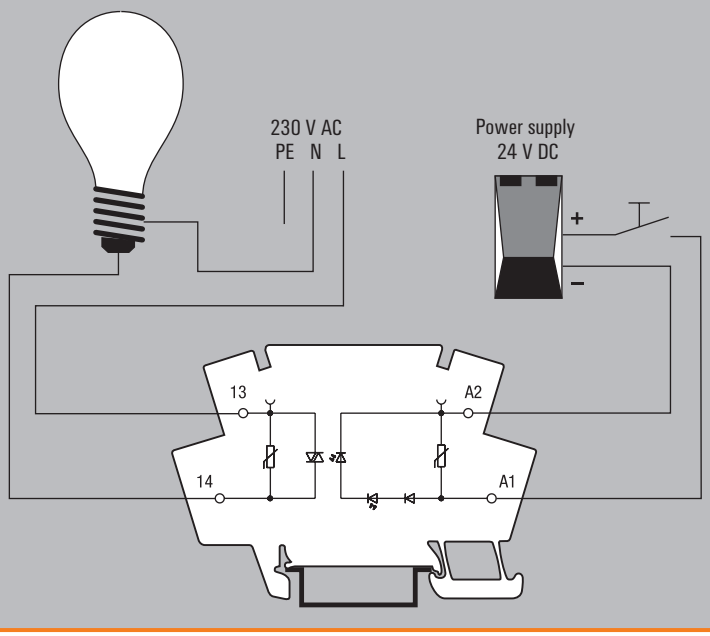
E.g. signal conditioning



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						

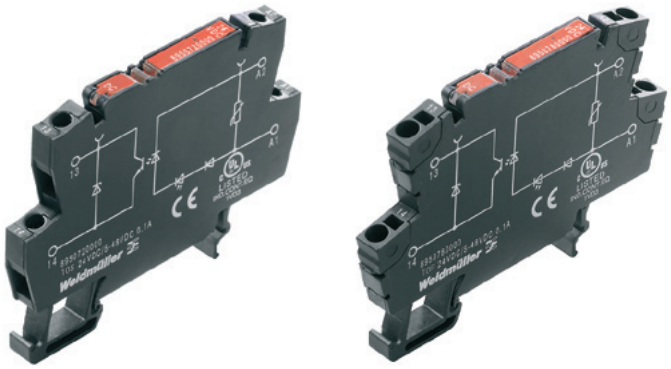
Ordering data	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC +10 % / -15 %	24 V AC ±20%	48...60 V AC ±20 %	120 V AC ±20 %	230 V AC +10 % / -20 %
Nominal control current	2.9 mA DC	8.8 mA AC	6.4 mA AC	8.5 mA AC	7.7 mA AC
Power rating	≤ 640 mW	≤ 0.2 VA	≤ 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						

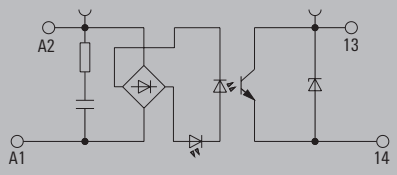
Solid-state relays, 5...48 V DC / 500 mA

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



120 V...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	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_u = 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		**Screw connection**	**PUSH IN connection**
Clamping range (nominal / min. / max.)	mm^2	2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
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.	

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

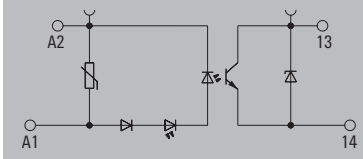
Ordering data			
Screw connection	Type	TOS 120VAC/48VDC 0.5A RC	TOS 230VAC/48VDC 0.5A RC
	Order No.	**1180290000**	**1189270000**
PUSH IN connection	Type	TOP 120VAC/48VDC 0.5A RC	TOP 230VAC/48VDC 0.5A RC
	Order No.	**1188830000**	**1189260000**
Note			

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_u = 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		**Screw connection**	**PUSH IN connection**
Clamping range (nominal / min. / max.)	mm²	2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
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.	

Ordering data

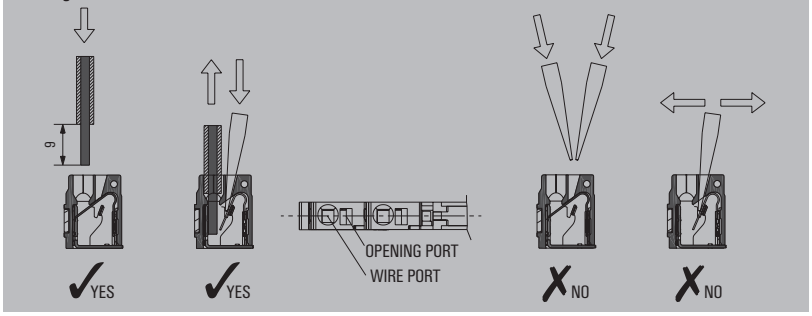
	24 V DC
Control side	
Rated control voltage	24 V DC ±20 %
Nominal control current	7 mA DC
Power rating	≤ 170 mW
Cut-in (switch-on) voltage	≥ 16.8 V DC
Dropout voltage	≤ 9.6 V DC
Input frequency	≤ 10 Hz
Status indicator	Green LED
Protective circuit	Varistor, rev. polarity protection
Load side	
Switch-on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

General data – TERMOPTO

Handling the PUSH IN connection



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**

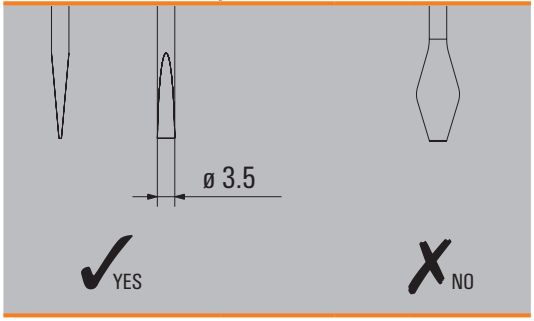
Technical data

Conductor		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

Other accessories

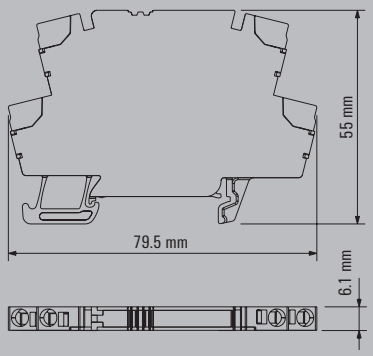
Type		Qty.	Order No.
Markers			
WS 12/6	12 x 6 mm	600	**1609900000**
Labels, Lasermark			
LM MT 300 15/6 ge	484 labels/sheet	10	**1686360000**
Screwdriver			
SD 0.6 x 3.5 x 100		10	**9008330000**

Screwdriver – blade shape



Dimensions

PUSH IN connection



Screw connection