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## Contact us

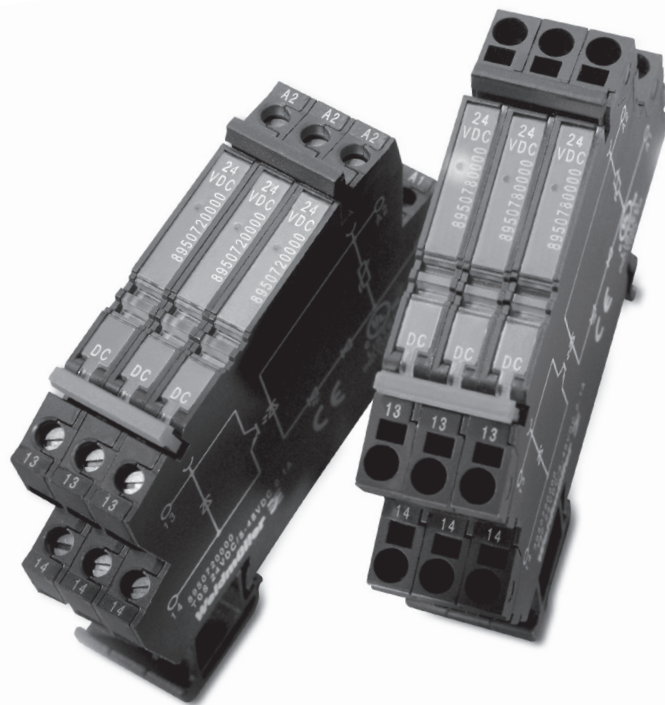
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## TERMOPTO Solid-State Relays

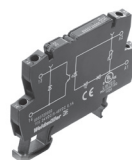


TERMOPTO solid-state relays are characterized by their compact design and pluggable cross connections. Featuring opto coupler technology, the TERMOPTO provides a compact, electronic alternative to electro mechanical relays.

The TERMOPTO compact terminal requires almost no maintenance. They feature integrated isolation of potential voltages, save space in the enclosure, reduce maintenance and optimize machine up time. Pluggable cross connections, available for terminals or Push In connection technology, reduce wiring time in installation and maintenance.

TERMOPTO solid-state relays are available in 10 input voltages and 3 output voltages for standard control voltages from 5 to 230V AC and DC, with either screw or Push In terminals.

### The TERMOPTO product line



#### TERMOPTO

Output version  
5-48 V DC 100 mA



#### TERMOPTO

Output version  
5-48 V DC 500 mA



#### TERMOPTO

Output version  
24-230 V AC 100 mA

#### Weidmüller, Canada

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Markham, Ontario L3R 5H6  
Telephone: (800) 268-4080  
Facsimile: (877) 300-5635  
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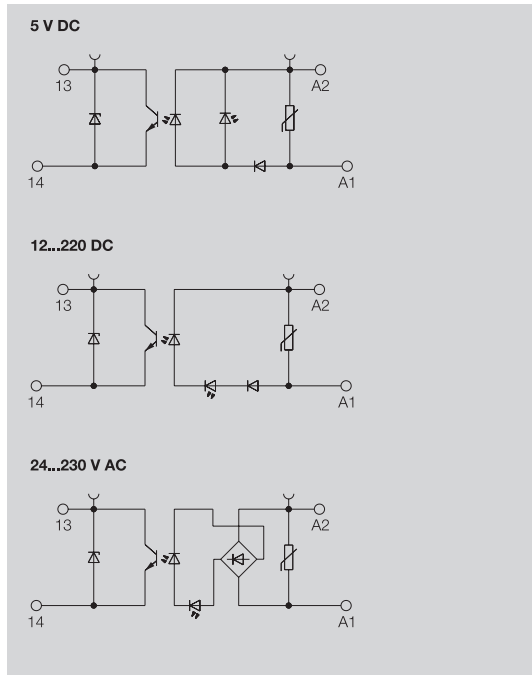
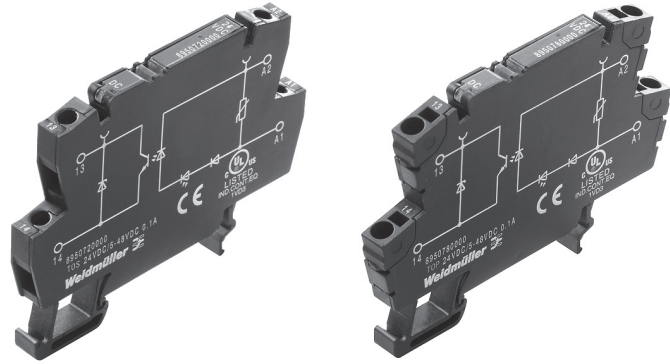
#### Weidmüller, Mexico

Bvd. Hermanos Serdán 698,  
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#### Weidmüller, United States

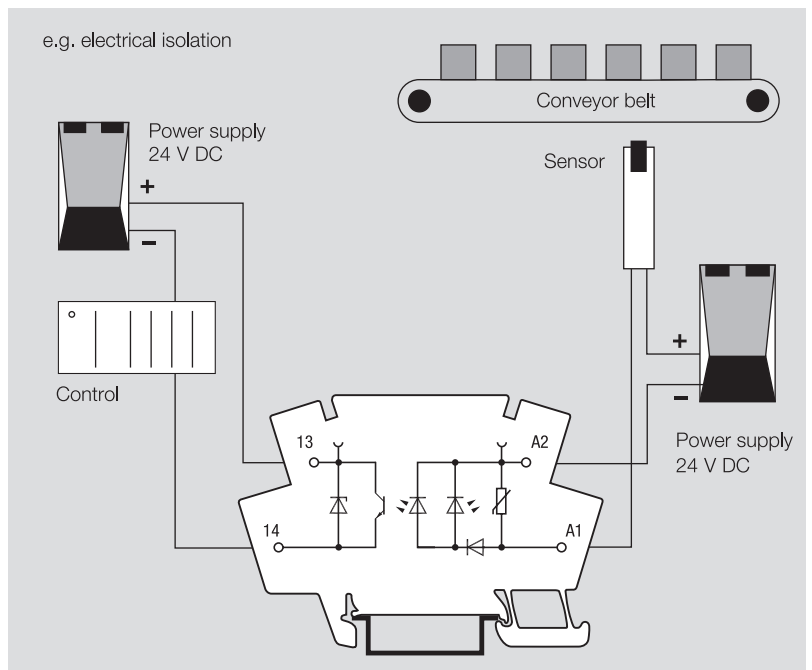
821 Southlake Blvd.  
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TERMOPTO output versions DC 100 mA



Load side	
Solid-state type	Transistor
Nominal switching voltage / current	5...48 V DC / 100 mA
Voltage drop at max. load	< 1 V
Leakage current	< 10 µA
Short-circuit-proof / Protective circuit	No / Diode
Switch-off delay / Switch-on delay	< 42 µs / < 13 ms
Continuous current	100 mA
Load category	DC1
General data	
Ambient temperature (operational)	-20 °C...+60 °C (-4°F...+140°F)
Storage temperature	-40 °C...+80 °C (-40°F...+176°F)
Flammability class UL 94	V-0
Humidity	5...95 % rel. humidity T <sub>U</sub> = 40°C, no condensation
Approvals	cULus; CE
Standards	EN 50178, IEC 62314, UL508, C22.2 No.14-10
Insulation coordination (EN 50 178)	
Rated voltage	300 V
Rated impulse withstand voltage	4 kV
Clearance and creepage distances for control/load side	> 3 mm
Overvoltage category	III
Pollution severity	2
Dimensions	
Clamping range (nominal / min. / max.)	mm <sup>2</sup> 2.5 / 0.5 / 4
Length x width x height	mm 74.5 / 6.1 / 55
Note	

Application



**Note**  
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.

## TERMOPTO output versions DC 100 mA

### Technical data

Control side	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Rated control voltage	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Power rating	< 40 mW	< 95 mW	≤ 170 mW	< 200 mW	< 280 mW
making 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, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection

### 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
	Part No.	<b>8950700000</b>	<b>8950710000</b>	<b>8950720000</b>	<b>8950730000</b>	<b>8950740000</b>
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
	Part No.	<b>8950760000</b>	<b>8950770000</b>	<b>8950780000</b>	<b>8950790000</b>	<b>8950800000</b>

### Note

### Technical data

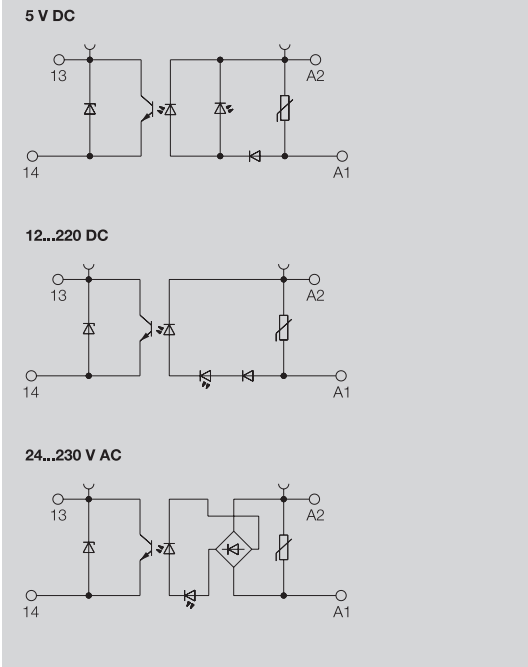
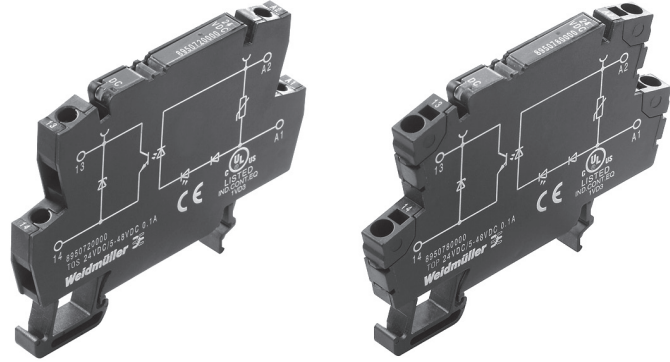
Control side	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Rated control voltage	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 0.2 VA	≤ 0.3 VA	≤ 0.4 VA
making voltage	≥ 187 V DC	≥ 21.6 V AC	≥ 38.4 V AC	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 93.5 V DC	≤ 9.6 V AC	≤ 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, reverse polarity protection	Varistor	Varistor	Varistor	Varistor

### 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
	Part No.	<b>8950750000</b>	<b>8950820000</b>	<b>8950830000</b>	<b>8950840000</b>	<b>8950850000</b>
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
	Part No.	<b>8950810000</b>	<b>8950860000</b>	<b>8950870000</b>	<b>8950880000</b>	<b>8950890000</b>

### Note

TERMOPTO output versions DC 500 mA



Load side	
Solid-state type	Transistor
Nominal switching voltage / current	5...48 V DC / 500 mA
Voltage drop at max. load	< 1 V
Leakage current	< 10 µA
Short-circuit-proof / Protective circuit	No / Diode
Switch-off delay / Switch-on delay	< 200 µs / < 20 µs
Continuous current	500 mA
Load category	DC1

General data	
Ambient temperature (operational)	-20 °C...+60 °C (-4°F...+140°F)
Storage temperature	-40 °C...+80 °C (-40°F...+176°F)
Flammability class UL 94	V-0
Humidity	5...95 % rel. humidity T <sub>U</sub> = 40°C, no condensation
Approvals	cULus; CE
Standards	EN 50178, IEC 62314, UL508, C22.2 No.14-10

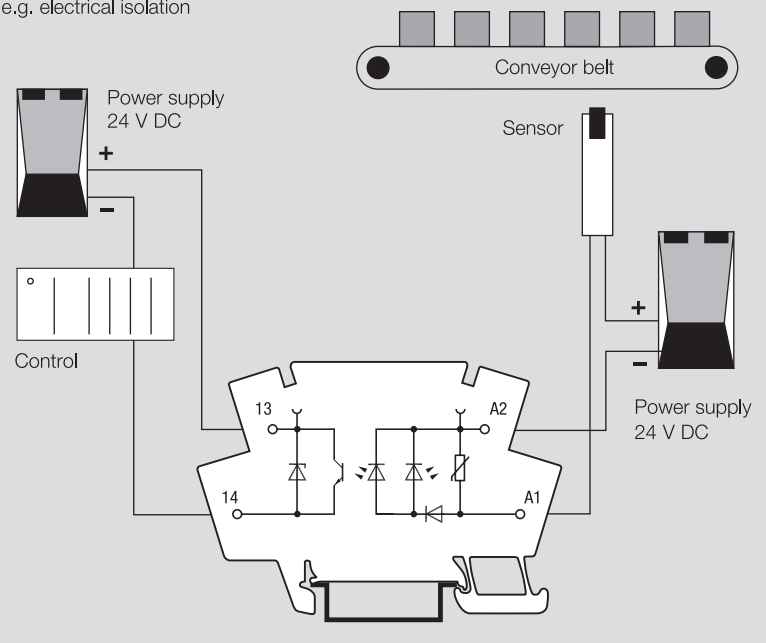
Insulation coordination (EN 50 178)	
Rated voltage	300 V
Rated impulse withstand voltage	4 kV
Clearance and creepage distances for control/load side	> 3 mm
Overvoltage category	III
Pollution severity	2

Dimensions	Screw connection	PUSH IN connection
Clamping range (nominal / min. / max.)	mm <sup>2</sup> 2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
Length x width x height	mm 74.5 / 6.1 / 55	79.5 / 6.1 / 55

**Note**

Application

e.g. electrical isolation



**Note**  
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.

## TERMOPTO output versions DC 500 mA

### Technical data

	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
<b>Control side</b>					
Rated control voltage	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Power rating	< 40 mW	< 95 mW	≤ 170 mW	< 200 mW	< 280 mW
making 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	< 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, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection

### 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
	Part No.	<b>8950900000</b>	<b>8950910000</b>	<b>8950920000</b>	<b>8950930000</b>	<b>8950940000</b>
PUSH IN connection	Type	TOS 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
	Part No.	<b>8950960000</b>	<b>8950970000</b>	<b>8950980000</b>	<b>8950990000</b>	<b>8951000000</b>

### Note

### Technical data

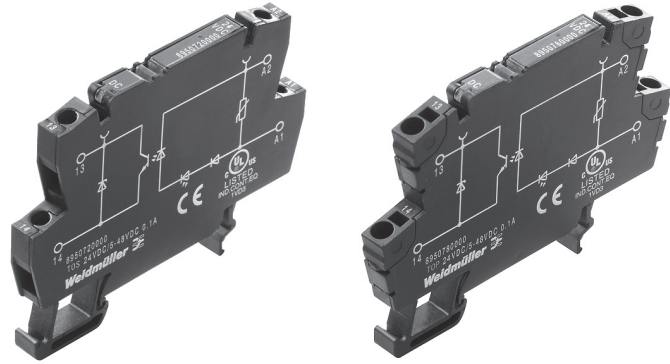
	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
<b>Control side</b>					
Rated control voltage	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 0.2 VA	≤ 0.3 VA	≤ 0.4 VA
making voltage	≥ 187 V DC	≥ 21.6 V AC	≥ 38.4 V AC	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 93.5 V DC	≤ 9.6 V AC	≤ 19.2 V AC	≤ 48 V AC	≤ 69 V AC
Input frequency	< 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, reverse polarity protection	Varistor	Varistor	Varistor	Varistor

### Ordering data

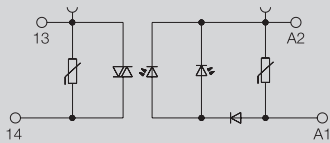
Screw connection	Type	TOS 220VDC/48VDC 0.5A	TOS 24VAC/48VDC 0.5A	TOS 48-60VAC/48VDC 0.5A	TOS 120VAC/48VDC 0.5A	TOS 230VAC/48VDC 0.5A
	Part No.	<b>8950950000</b>	<b>8951020000</b>	<b>8951030000</b>	<b>8951040000</b>	<b>8951050000</b>
PUSH IN connection	Type	TOP 220VDC/48VDC 0.5A	TOP 24VAC/48VDC 0.5A	TOP 48-60VAC/48VDC 0.5A	TOP 120VAC/48VDC 0.5A	TOP 230VAC/48VDC 0.5A
	Part No.	<b>8951010000</b>	<b>8951060000</b>	<b>8951070000</b>	<b>8951080000</b>	<b>8951090000</b>

### Note

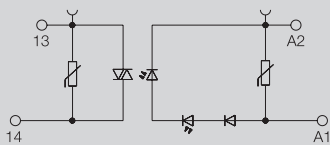
TERMOPTO output versions AC 100 mA



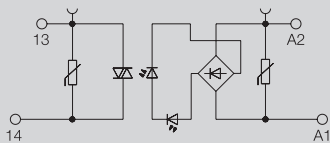
5 V DC



12...220 DC



24...230 V AC



Load side

Solid-state type	Triac
Nominal switching voltage / current	24...230 V AC / 100 mA
Voltage drop at max. load	< 1.8 V
Leakage current	< 10 µA
Short-circuit-proof / Protective circuit	No / Varistor
Switch-off delay / Switch-on delay	
Continuous current	100 mA
Load category	AC1

General data

Ambient temperature (operational)	-20 °C...+60 °C (-4°F...+140°F)
Storage temperature	-40 °C...+80 °C (-40°F...+176°F)
Flammability class UL 94	V-0
Humidity	5...95 % rel. humidity T <sub>U</sub> = 40°C, no condensation
Approvals	cULus; CE
Standards	EN 50178, IEC 62314, UL508, C22.2 No.14-10

Insulation coordination (EN 50 178)

Rated voltage	300 V
Rated impulse withstand voltage	4 kV
Clearance and creepage distances for control/load side	> 3 mm
Overvoltage category	III
Pollution severity	2

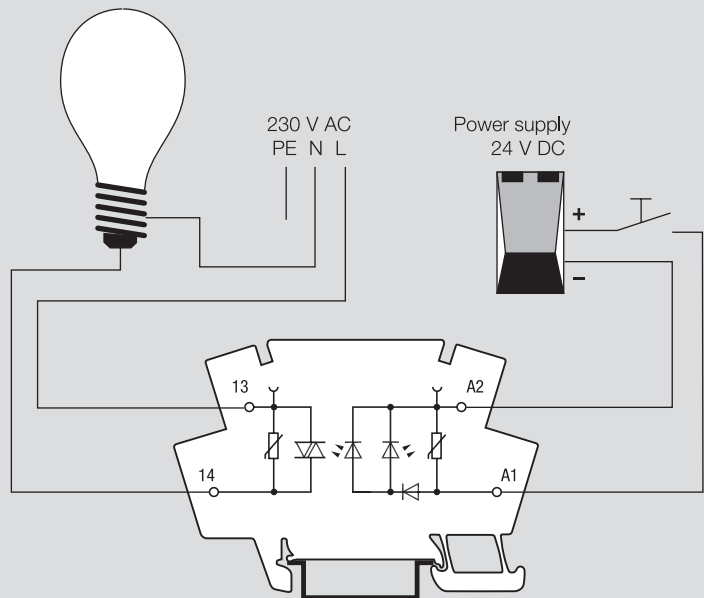
Dimensions

	Screw connection	PUSH IN connection
Clamping range (nominal / min. / max.)	mm <sup>2</sup> 2.5 / 0.5 / 4	1.5 / 0.5 / 2.5
Length x width x height	mm 74.5 / 6.1 / 55	79.5 / 6.1 / 55

Note

Application

E.g. signal conditioning



Note

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.

TERMOPTO output versions AC 100 mA

Technical data

	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
<b>Control side</b>					
Rated control voltage	5 V DC	12 V DC	24 V DC	48...60 V DC	110 V DC
Power rating	< 40 mW	< 45 mW	≤ 80 mW	< 170 mW	< 360 mW
making 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, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection	Varistor, reverse polarity protection

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
	Part No.	<b>8951100000</b>	<b>8951110000</b>	<b>8951120000</b>	<b>8951130000</b>	<b>8951140000</b>
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
	Part No.	<b>8951160000</b>	<b>8951170000</b>	<b>8951180000</b>	<b>8951190000</b>	<b>8951200000</b>

<b>Note</b>					
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Technical data

	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
<b>Control side</b>					
Rated control voltage	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Power rating	≤ 640 mW	< 0.2 VA	≤ 0.3 VA	≤ 0.8 VA	≤ 1.38 VA
making 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	< 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, reverse polarity protection	Varistor	Varistor	Varistor	Varistor

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
	Part No.	<b>8951150000</b>	<b>8951220000</b>	<b>8951230000</b>	<b>8951240000</b>	<b>8951250000</b>
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
	Part No.	<b>8951210000</b>	<b>8951260000</b>	<b>8951270000</b>	<b>8951280000</b>	<b>8951290000</b>

<b>Note</b>					
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Accessories



Plug-in cross-connection

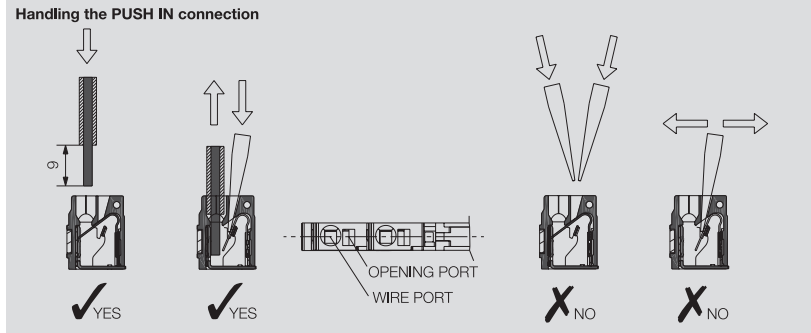
Type	No. of poles	Qty.	Part No.
<b>yellow</b>			
ZQV 4N / 2 GE	2	60	1758250000
ZQV 4N / 3 GE	3	60	1762630000
ZQV 4N / 4 GE	4	60	1762620000
ZQV 4N / 10 GE	10	20	1758260000
ZQV 4N / 20 GE	20	20	1909020000
<b>red</b>			
ZQV 4N / 2 RT	2	60	1793950000
ZQV 4N / 3 RT	3	60	1793980000
ZQV 4N / 4 RT	4	60	1794010000
ZQV 4N / 10 RT	10	20	1794040000
ZQV 4N / 20 RT	20	20	1909150000
<b>blue</b>			
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
<b>black</b>			
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.	Part No.
<b>Markers</b>		
WS 12/6	12 x 6 mm	600
<b>Labels, Lasermark</b>		
LM MT 300 15/6 ge	484 labels/sheet	10
<b>Screwdriver</b>		
SD 0.6 x 3.5 x 100		10

Screwdriver – blade shape

General data – TERMOPTO



Technical data

Conductor		PUSH IN connection	Screw connection
Solid H07V-U	mm <sup>2</sup> / AWG	0.5...1.5 / 20...16	0.5...2.5 / 20...14
Stranded H07V-K	mm <sup>2</sup> / AWG	0.5...1.5 / 20...16	0.5...2.5 / 20...14
"F" with wire end ferrules to DIN 46228-1	mm <sup>2</sup> / AWG	0.5...1.5 / 20...16	0.5...1.5 / 20...16
"F" with wire end ferrules with plastic collar	mm <sup>2</sup> / AWG	0.5...1.5 / 20...16	0.5...1.5 / 20...16
Max. clamping range	mm <sup>2</sup> / AWG	0.13...1.5 / 26...16	0.13...2.5 / 26...14
Plug gauge to IEC 60947-1	size	A 2	A 3
<b>General technical data</b>			
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
UL 94 flammability rating		V-0	V-0
Nominal current	A	6	6
Nominal voltage	V	250	250

Dimensions

