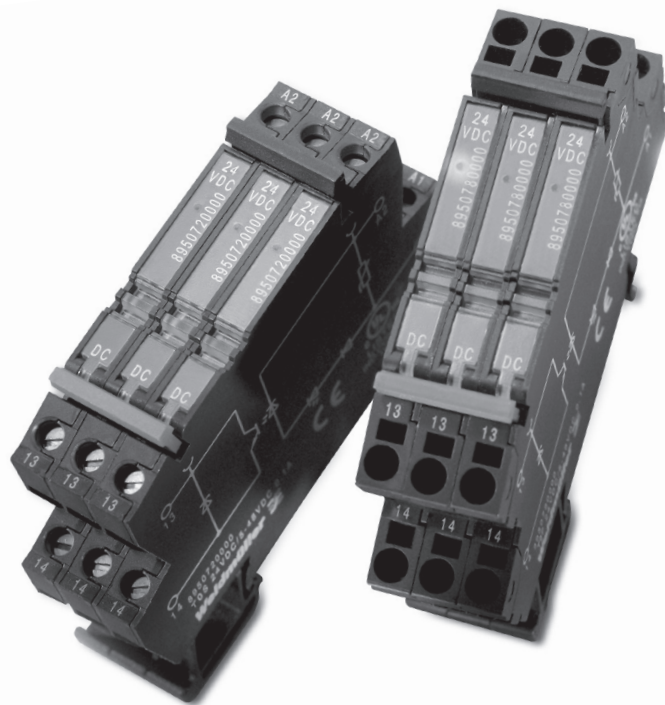


TERMOPTO Solid-State Relays



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

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.

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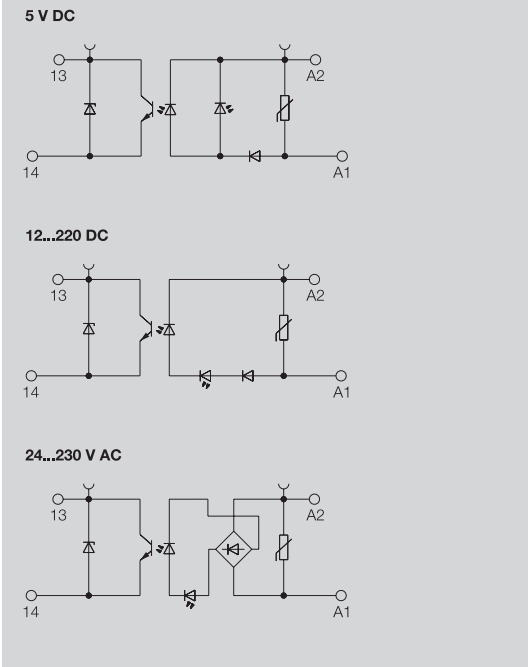
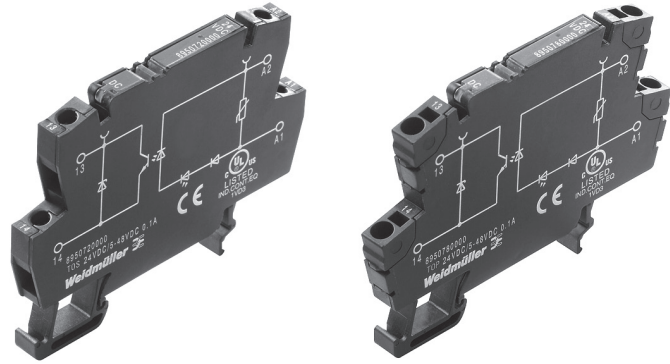
Weidmüller, Mexico

Bvd. Hermanos Serdán 698,
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Weidmüller, United States

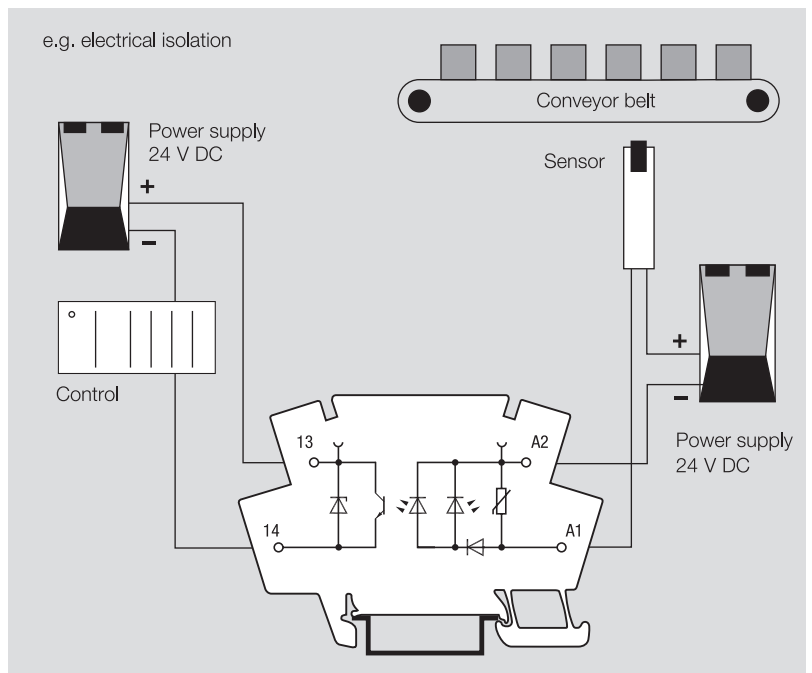
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TERMOPTO output versions DC 100 mA



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 _U = 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 ² 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.	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
	Part No.	8950760000	8950770000	8950780000	8950790000	8950800000

Note					
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Technical data

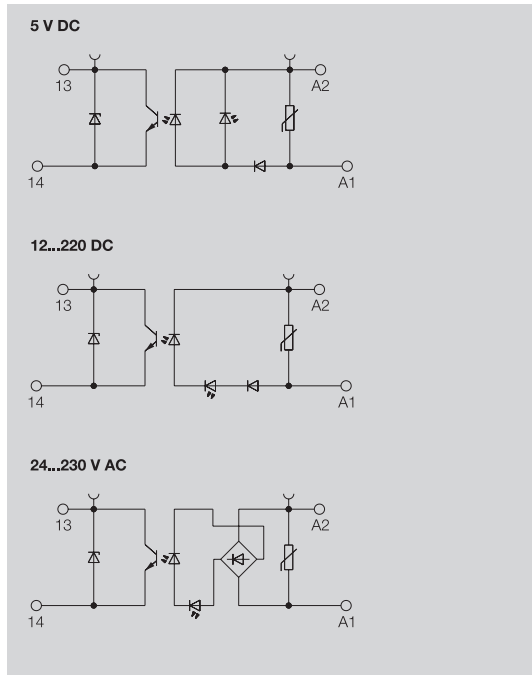
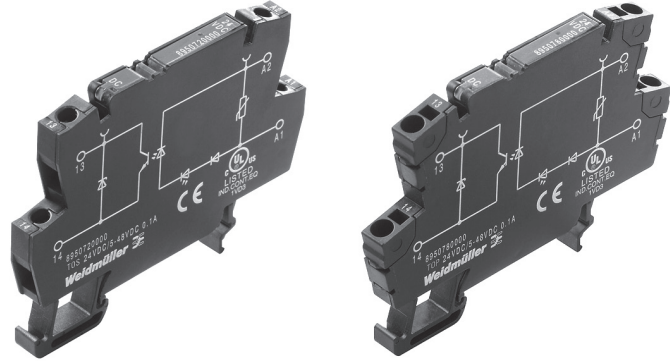
Control side	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Rated control voltage	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 0.2 VA	≤ 0.3 VA	≤ 0.4 VA
making voltage	≥ 187 V DC	≥ 21.6 V AC	≥ 38.4 V AC	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 93.5 V DC	≤ 9.6 V AC	≤ 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.	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
	Part No.	8950810000	8950860000	8950870000	8950880000	8950890000

Note					
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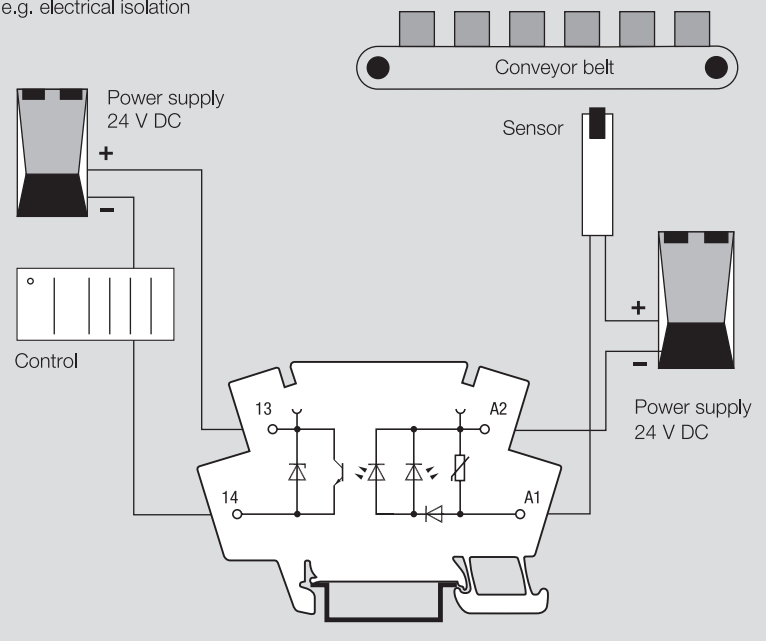
TERMOPTO output versions DC 500 mA



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 _U = 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 ² 2.5 / 0.5 / 4
Length x width x height	mm 74.5 / 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
Control side					
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.	8950900000	8950910000	8950920000	8950930000	8950940000
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.	8950960000	8950970000	8950980000	8950990000	8951000000

Note

Technical data

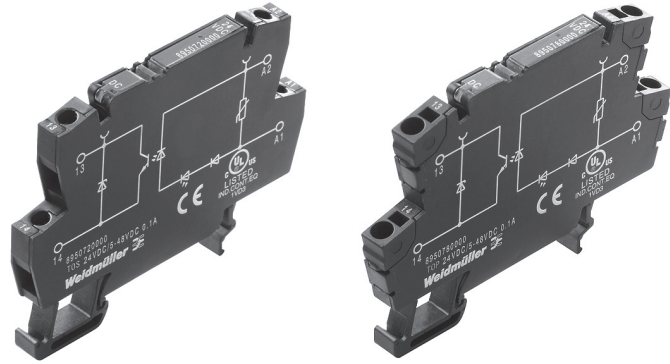
	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Control side					
Rated control voltage	220 V DC	24 V AC	48...60 V AC	120 V AC	230 V AC
Power rating	≤ 360 mW	< 0.18 VA	≤ 0.2 VA	≤ 0.3 VA	≤ 0.4 VA
making voltage	≥ 187 V DC	≥ 21.6 V AC	≥ 38.4 V AC	≥ 102 V AC	≥ 207 V AC
Dropout voltage	≤ 93.5 V DC	≤ 9.6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

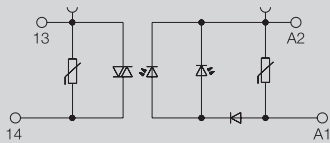
Screw connection	Type	TOS 220VDC/48VDC 0.5A	TOS 24VAC/48VDC 0.5A	TOS 48-60VAC/48VDC 0.5A	TOS 120VAC/48VDC 0.5A	TOS 230VAC/48VDC 0.5A
	Part No.	8950950000	8951020000	8951030000	8951040000	8951050000
PUSH IN connection	Type	TOP 220VDC/48VDC 0.5A	TOP 24VAC/48VDC 0.5A	TOP 48-60VAC/48VDC 0.5A	TOP 120VAC/48VDC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

Note

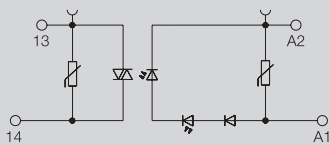
TERMOPTO output versions AC 100 mA



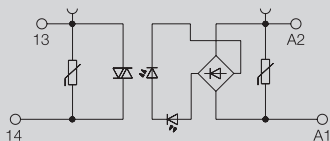
5 V DC



12...220 DC



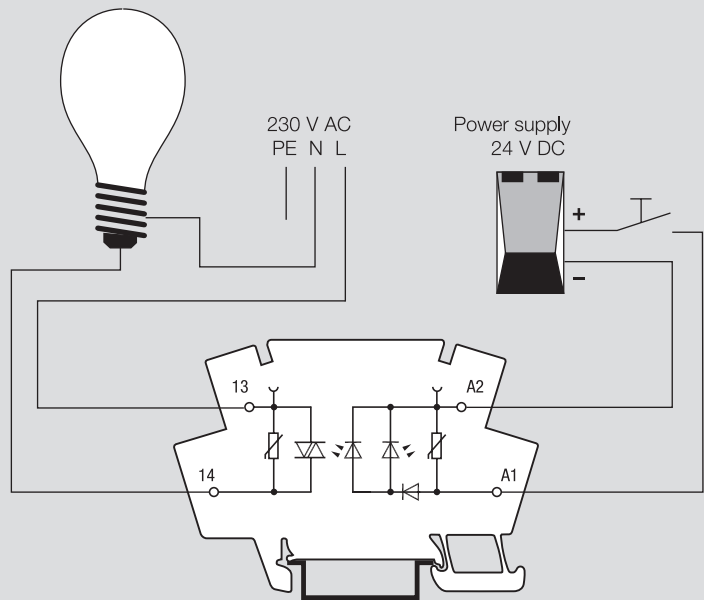
24...230 V AC



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 _U = 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 ² 2.5 / 0.5 / 4
Length x width x height	mm 74.5 / 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

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	< 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.	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
	Part No.	8951160000	8951170000	8951180000	8951190000	8951200000

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	≤ 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.	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
	Part No.	8951210000	8951260000	8951270000	8951280000	8951290000

Note

Accessories



Plug-in cross-connection

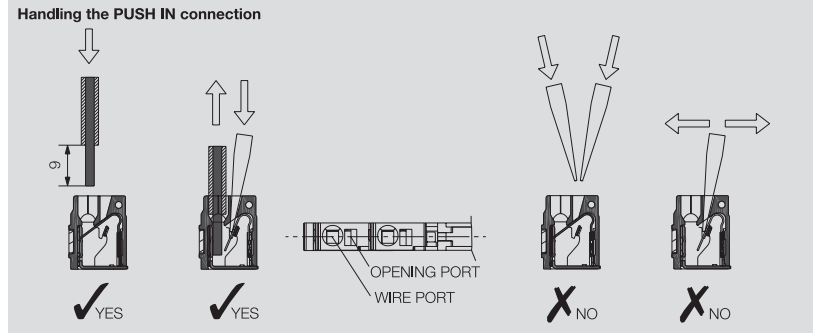
Type	No. of poles	Qty.	Part No.
yellow			
ZQV 4N / 2 GE	2	60	1758250000
ZQV 4N / 3 GE	3	60	1762630000
ZQV 4N / 4 GE	4	60	1762620000
ZQV 4N / 10 GE	10	20	1758260000
ZQV 4N / 20 GE	20	20	1909020000
red			
ZQV 4N / 2 RT	2	60	1793950000
ZQV 4N / 3 RT	3	60	1793980000
ZQV 4N / 4 RT	4	60	1794010000
ZQV 4N / 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.	Part No.
Markers		
WS 12/6	12 x 6 mm	600
Labels, Lasermark		
LM MT 300 15/6 ge	484 labels/sheet	10
Screwdriver		
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 ² / AWG	0.5...1.5 / 20...16	0.5...2.5 / 20...14
Stranded H07V-K	mm ² / AWG	0.5...1.5 / 20...16	0.5...2.5 / 20...14
*F with wire end ferrules to DIN 46228-1	mm ² / AWG	0.5...1.5 / 20...16	0.5...1.5 / 20...16
*F with wire end ferrules with plastic collar	mm ² / AWG	0.5...1.5 / 20...16	0.5...1.5 / 20...16
Max. clamping range	mm ² / AWG	0.13...1.5 / 26...16	0.13...2.5 / 26...14
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
UL 94 flammability rating		V-0	V-0
Nominal current	A	6	6
Nominal voltage	V	250	250

Dimensions

