

TOS 48-60VDC/230VAC 0,1A

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany

www.weidmueller.com



Similar to illustration

- 1 NO contact (Triac (zero-cross switch))
- Ensures wear- and maintenance-free potential separation in compact terminal block format
- Suitable accessories from the cross-connection to the marker
- Integrated protective circuit for inputs and outputs

General ordering data

| | |
|------------|--|
| Version | TERMOPTO, Solid-state relay, Rated control voltage: 48...60 V DC $\pm 20\%$, Rated switching voltage: 24...230 V AC, Continuous current: 100 mA, Screw connection |
| Order No. | 8951130000 |
| Type | TOS 48-60VDC/230VAC 0,1A |
| GTIN (EAN) | 4032248741908 |
| Qty. | 10 items |

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Technical data

Approvals

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate no. (cULus) E223474

Dimensions and weights

| | | | |
|------------|---------|-----------------|-------------|
| Depth | 55 mm | Depth (inches) | 2.1654 inch |
| Height | 74.4 mm | Height (inches) | 2.9291 inch |
| Width | 6.1 mm | Width (inches) | 0.2402 inch |
| Net weight | 20.5 g | | |

Temperatures

| | | | |
|-----------------------|----------------|---------------------|--|
| Storage temperature | -40 °C...80 °C | Ambient temperature | -20 °C...60 °C |
| Operating temperature | | Humidity | 5-95% relative humidity, Tu = 40°C, without condensation |

Probability of failure

MTTF 2500 a

Environmental Product Compliance

| | |
|--------------------------------------|--------------------------------------|
| RoHS Compliance Status | Compliant with exemption |
| RoHS Exemption (if applicable/known) | 7a, 7cl |
| REACH SVHC | Lead 7439-92-1 |
| SCIP | 9e2cbc49-76d9-4611-b8ec-5b4f549a0aa9 |

Control side

| | | | |
|-------------------------|--------------------|---------------------------------------|--|
| Rated control voltage | 48...60 V DC ±20 % | Rated control voltage (control input) | 48...60 V DC ±20 % |
| Nominal control current | 3.7 mA DC | Power rating | ≤ 170 mW |
| Status indicator | Green LED | Protective circuit | Varistor, Reverse polarity protection |
| Input frequency | 10 Hz | | |

Load side

| | | | |
|----------------------------|--|---|----------------------|
| Rated switching voltage | 24...230 V AC | Continuous current | 0.1 A (AC1) |
| Rated switching current | 100 mA | Load category | AC1 |
| Max. switching voltage, AC | 230 V | Switch-on delay | ≤ 10 ms |
| Switch-off delay | <12 ms | Voltage drop at max. load | <1.8 V |
| Leakage current | <1 mA | Min. switching current | 2 mA |
| Short-circuit-proof | No | Protective circuit, load side | Varistor, RC element |
| Contact type | 1 NO contact (Triac (zero-cross switch)) | max. switching frequency (DC control voltage) | 10 Hz |

General data

Mounting rail TS 35

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| | | | |
|------------------------------------|--------------------------|---------|--|
| Test button available | No | | |
| Colour | black | | |
| UL94 flammability rating component | Component | Housing | |
| | UL94 flammability rating | V-0 | |

Insulation coordination

| | | | |
|--|--------------------|---|------------------|
| Rated voltage | 300 V | Pollution severity | 2 |
| Surge voltage category | III | Clearance and creepage distances for control side - load side | > 3 mm |
| Dielectric strength for control side - load side | 1.2 kVeff / 1 min. | Impulse withstand voltage | 4 kV (1.2/50 µs) |
| Protection degree | IP20 | | |

Further details of approvals / standards

| | |
|-------------------------|---------|
| Certificate no. (cULus) | E223474 |
|-------------------------|---------|

Connection data

| | | | |
|---|---------------------|---|---------------------|
| Wire connection method | Screw connection | Stripping length, rated connection | 9 mm |
| Tightening torque, min. | 0.4 Nm | Tightening torque, max. | 0.6 Nm |
| Clamping range, rated connection | 2.5 mm ² | Clamping range, min. | 0.5 mm ² |
| Clamping range, max. | 4 mm ² | Wire connection cross section AWG, min. | AWG 20 |
| Wire connection cross section AWG, max. | AWG 12 | Wire cross-section, solid, min. | 0.5 mm ² |
| Wire cross-section, solid, max. | 4 mm ² | Wire connection cross section, finely stranded, min. | 0.5 mm ² |
| Wire connection cross section, finely stranded, max. | 2.5 mm ² | Wire cross-section, finely stranded, min. (AWG) | AWG 20 |
| Wire cross-section, finely stranded, max. (AWG) | AWG 12 | Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min. | 0.5 mm ² |
| Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max. | 1.5 mm ² | Conductor cross-section, flexible, AEH (DIN 46228-1), min. | 0.5 mm ² |
| Conductor cross-section, flexible, AEH (DIN 46228-1), max. | 1.5 mm ² | Blade size | 0.6 x 3.5 mm |

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 8.0 | EC001504 | ETIM 9.0 | EC001504 |
| ETIM 10.0 | EC001504 | ECLASS 14.0 | 27-37-16-04 |
| ECLASS 15.0 | 27-37-16-04 | | |

Drawings

Wiring diagram



Schaltsymbol

Dimensional drawing



Signal characteristics of zero cross switching solid-state relays



Shown at an example with resistive load.
 1. Switches on at first zero cross of mains voltage while control input gets signal.
 2. Switches off at next zero cross of mains current after control input signal was switched off.
 Switching DC voltages is not possible with this solid-state relays.

Miscellaneous



Type codes

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Accessories

Cross-connections



The distribution or multiplication of a potential to adjoining terminal blocks is realized via a cross-connection. Additional wiring effort can be easily avoided. Even if the poles are broken out, contact reliability in the terminal blocks is still ensured. Our portfolio offers pluggable and screwable cross-connection systems for modular terminal blocks.

General ordering data

| | | |
|------------|----------------------------|---------------------------------|
| Type | ZQV 4N/20 GE | Version |
| Order No. | 1909020000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248535644 | |
| Qty. | 20 ST | |
| Type | ZQV 4N/20 RT | Version |
| Order No. | 1909150000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248535934 | |
| Qty. | 20 ST | |
| Type | ZQV 4N/20 BL | Version |
| Order No. | 1909100000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248535774 | |
| Qty. | 20 ST | |
| Type | ZQV 4N/2 SW | Version |
| Order No. | 1793970000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248233762 | |
| Qty. | 60 ST | |
| Type | ZQV 4N/3 SW | Version |
| Order No. | 1794000000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248233793 | |
| Qty. | 60 ST | |
| Type | ZQV 4N/4 SW | Version |
| Order No. | 1794030000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248233915 | |
| Qty. | 60 ST | |
| Type | ZQV 4N/10 SW | Version |
| Order No. | 1794060000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248234059 | |
| Qty. | 20 ST | |
| Type | ZQV 4N/20 SW | Version |
| Order No. | 1909120000 | W-Series, Cross-connector, 32 A |
| GTIN (EAN) | 4032248535804 | |
| Qty. | 20 ST | |

Accessories

Slotted screwdriver



Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1. ChromTop tip, SoftFinish grip

General ordering data

| | | |
|------------|----------------------------|---|
| Type | SDS 0.6X3.5X100 | Version |
| Order No. | 2749340000 | Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm |
| GTIN (EAN) | 4050118895568 | |
| Qty. | 1 ST | |
| Type | SDIS SLIM 0.6X3.5X100 | Version |
| Order No. | 2749610000 | Mounting tool, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm |
| GTIN (EAN) | 4050118896350 | |
| Qty. | 1 ST | |
| Type | SDIS 0.6X3.5X100 | Version |
| Order No. | 2749810000 | Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm |
| GTIN (EAN) | 4050118897012 | |
| Qty. | 1 ST | |

Blank



WS markers are the perfect match for the W-series connectors. Thanks to their system compatibility, the WS tags can also be used with the I-series and the Z-series. The large marking surfaces do not only permit long character strings but also multi-line text. WS markers are ideal for labels with long, customised character strings. Thanks to the proven MultiCard format, printing with PrintJet CONNECT oder/or Plotter is possible.

- Can be fitted in strips or individually
- Markers in proven MultiCard format

For custom printing: Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

General ordering data

| | | |
|------------|----------------------------|---|
| Type | WS 12/6 MC NE WS | Version |
| Order No. | 1609900000 | WS, Terminal marker, 12 x 6 mm, Pitch in mm (P): 6.00 Weidmueller, Allen-Bradley, white |
| GTIN (EAN) | 4008190203467 | |
| Qty. | 600 ST | |

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General ordering data

| | | |
|------------|----------------------------|--|
| Type | ZQV 4N/2 | Version |
| Order No. | 1527930000 | Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: |
| GTIN (EAN) | 4050118332766 | 2, Pitch in mm (P): 6.10, Insulated: Yes, Width: 9.9 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/3 | Version |
| Order No. | 1527940000 | Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: |
| GTIN (EAN) | 4050118332865 | 3, Pitch in mm (P): 6.10, Insulated: Yes, Width: 16 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/4 | Version |
| Order No. | 1527970000 | Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: |
| GTIN (EAN) | 4050118332889 | 4, Pitch in mm (P): 6.10, Insulated: Yes, Width: 22.1 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/10 | Version |
| Order No. | 1528090000 | Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: |
| GTIN (EAN) | 4050118332896 | 10, Pitch in mm (P): 6.10, Insulated: Yes, Width: 58.7 mm |
| Qty. | 20 ST | |
| Type | ZQV 4N/2 RD | Version |
| Order No. | 2460450000 | Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 2, |
| GTIN (EAN) | 4050118476149 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 9.9 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/3 RD | Version |
| Order No. | 2460810000 | Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 3, |
| GTIN (EAN) | 4050118476231 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 16 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/4 RD | Version |
| Order No. | 2460800000 | Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 4, |
| GTIN (EAN) | 4050118476224 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 22.1 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/10 RD | Version |
| Order No. | 2460740000 | Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 10, |
| GTIN (EAN) | 4050118476163 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 58.7 mm |
| Qty. | 20 ST | |
| Type | ZQV 4N/2 BL | Version |
| Order No. | 1528040000 | Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 2, |
| GTIN (EAN) | 4050118332773 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 9.9 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/3 BL | Version |
| Order No. | 1528080000 | Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 3, |
| GTIN (EAN) | 4050118333008 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 16 mm |
| Qty. | 60 ST | |

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|------------|----------------------------|---|
| Type | ZQV 4N/4 BL | Version |
| Order No. | 1528120000 | Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 4, |
| GTIN (EAN) | 4050118332872 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 22.1 mm |
| Qty. | 60 ST | |
| Type | ZQV 4N/10 BL | Version |
| Order No. | 1528230000 | Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 10, |
| GTIN (EAN) | 4050118333138 | Pitch in mm (P): 6.10, Insulated: Yes, Width: 58.7 mm |
| Qty. | 20 ST | |