

**TOS 5VDC/48VDC 0,5A****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

Similar to illustration

- 1 NO contact (Transistor)
- 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: 5 V DC $\pm 20\%$ , Rated switching voltage: 5...48 V DC, Continuous current: 500 mA, Screw connection |
| Order No.  | <a href="#">8950900000</a>   |
| Type       | TOS 5VDC/48VDC 0,5A  |
| GTIN (EAN) | 4032248742271  |
| Qty.       | 10 pc(s).  |

## TOS 5VDC/48VDC 0,5A

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 55 mm   | Depth (inches)  | 2.165 inch |
| Height     | 74.4 mm | Height (inches) | 2.929 inch |
| Width      | 6.1 mm  | Width (inches)  | 0.24 inch  |
| Net weight | 20.1 g  |                 |            |

## Temperatures

|                     |   |                       |                |
|---------------------|---|-----------------------|----------------|
| Storage temperature | -40 °C...80 °C  | Operating temperature | -20 °C...60 °C |
| Humidity            | 5-95% relative humidity, T <sub>u</sub><br>= 40°C, without condensation |                       |                |

## Probability of failure

|      |         |
|------|---------|
| MTTF | 2,500 a |
|------|---------|

## Control side

|                       |                                       |                         |           |
|-----------------------|---------------------------------------|-------------------------|-----------|
| Rated control voltage | 5 V DC $\pm$ 20 %                     | Nominal control current | 7.7 mA DC |
| Power rating          | <40 mW                                | Status indicator        | Green LED |
| Protective circuit    | Varistor, Reverse polarity protection | Input frequency         | 200 Hz    |

## Load side

|   |                     |                           |                           |
|---|---------------------|---------------------------|---------------------------|
| Rated switching voltage                       | 5...48 V DC         | Continuous current        | 0.5 A (DC1)               |
| Rated switching current                       | 500 mA              | Load category             | DC1                       |
| Max. switching voltage, DC                    | 48 V                | Switch-on delay           | <20 $\mu$ s               |
| Switch-off delay                              | <200 $\mu$ s        | Voltage drop at max. load | <1 V                      |
| Leakage current                               | <10 $\mu$ A         | Short-circuit-proof       | No                        |
| Protective circuit, load side                 | Free-wheeling diode | Contact type              | 1 NO contact (Transistor) |
| max. switching frequency (DC control voltage) | 200 Hz              |                           |                           |

## General data

|                                    |                          |         |
|------------------------------------|--------------------------|---------|
| Rail                               | TS 35                    |         |
| 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 kV <sub>eff</sub> / 1 min. | Impulse withstand voltage                                     | 4 kV (1.2/50 $\mu$ s) |
| Protection degree                                | IP20                           |   |                       |

## Further details of approvals / standards

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

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## 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 <sup>2</sup> | Clamping range, min.  | 0.5 mm <sup>2</sup> |
| Clamping range, max.  | 4 mm <sup>2</sup>   | Wire connection cross section AWG, min.   | AWG 20              |
| Wire connection cross section AWG, max.   | AWG 12              | Wire cross-section, solid, min.   | 0.5 mm <sup>2</sup> |
| Wire cross-section, solid, max.   | 4 mm <sup>2</sup>   | Wire connection cross section, finely stranded, min.                                    | 0.5 mm <sup>2</sup> |
| Wire connection cross section, finely stranded, max.                                    | 2.5 mm <sup>2</sup> | 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 <sup>2</sup> |
| Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max. | 1.5 mm <sup>2</sup> | Conductor cross-section, flexible, AEH (DIN 46228-1), min.                              | 0.5 mm <sup>2</sup> |
| Conductor cross-section, flexible, AEH (DIN 46228-1), max.                              | 1.5 mm <sup>2</sup> | Blade size  | 0.6 x 3.5 mm        |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC001504    | ETIM 7.0    | EC001504    |
| ETIM 8.0    | EC001504    | ETIM 9.0    | EC001504    |
| ECLASS 9.0  | 27-37-16-04 | ECLASS 9.1  | 27-37-16-04 |
| ECLASS 10.0 | 27-37-16-04 | ECLASS 11.0 | 27-37-16-04 |
| ECLASS 12.0 | 27-37-16-04 | ECLASS 13.0 | 27-37-16-04 |

## Environmental Product Compliance

|            |                                      |
|------------|--------------------------------------|
| REACH SVHC | Lead 7439-92-1                       |
| SCIP       | 9e2cbc49-76d9-4611-b8ec-5b4f549a0aa9 |

## Approvals

Approvals



|                         |            |
|-------------------------|------------|
| ROHS                    | Conform    |
| UL File Number Search   | UL Website |
| Certificate no. (cULus) | E223474    |

## Downloads

|   |   |
|---|---|
| Approval/Certificate/Document of Conformity | <a href="#">EU Konformitätserklärung / EU Declaration of Conformity</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>   |
| User Documentation                          | <a href="#">Beipackzettel / Package Insert – multilingual</a>           |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>                                |
| Brochures                                   |   |

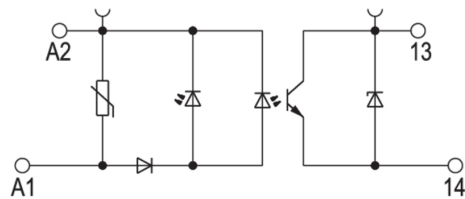
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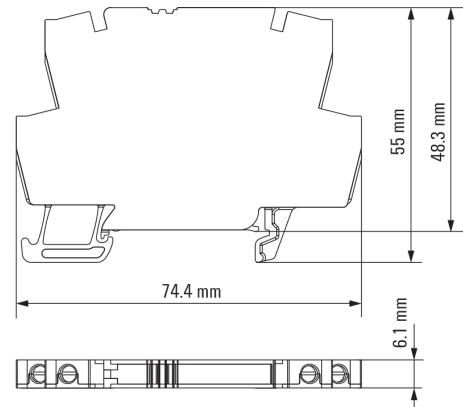
## Drawings

### Wiring diagram



Schaltsymbol

### Dimensional drawing



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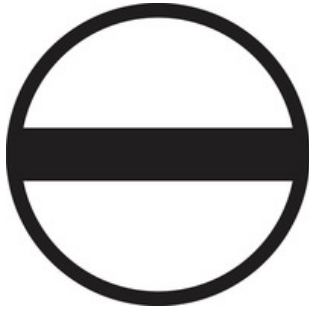
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## Accessories

## Slotted screwdriver



VDE insulated screwdriver sets, for working on live parts up to 1000 V AC and 1500 V DC, DIN EN 60900. IEC 900. Each piece is "GS" safety tested. Blade made from fully hardened, high-alloy chromium-vanadium-molybdenum steel, gun-metal finish.

## General ordering data

|            |                            |   |
|------------|----------------------------|---|
| Type       | SDIS SLIM 0.6X3.5X100      | Version   |
| Order No.  | <a href="#">2749610000</a> | Mounting tool, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade |
| GTIN (EAN) | 4050118896350              | thickness (A): 0.6 mm   |
| Qty.       | 1 pc(s).                   |   |

## 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.  | <a href="#">1609900000</a> | WS, Terminal marker, 12 x 6 mm, Pitch in mm (P): 6.00 Weidmueller, |
| GTIN (EAN) | 4008190203467              | Allen-Bradley, white   |
| Qty.       | 600 pc(s).                 |  |

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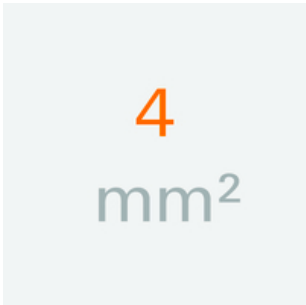
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## Accessories

4 mm<sup>2</sup>


4  
mm<sup>2</sup>

The plug-in cross-connections feature easy handling and quick installation. This saves a great deal of time during installation in comparison with screwed solutions.

## General ordering data

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

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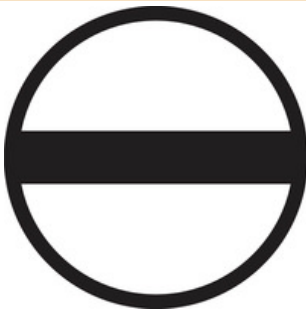
Germany

[www.weidmueller.com](http://www.weidmueller.com)**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.  | <a href="#">2749340000</a> | Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade |
| GTIN (EAN) | 4050118895568              | thickness (A): 0.6 mm   |
| Qty.       | 1 pc(s).                   |   |

**Slotted screwdriver**

VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

**General ordering data**

|            |                            |   |
|------------|----------------------------|---|
| Type       | SDIS 0.6X3.5X100           | Version   |
| Order No.  | <a href="#">2749810000</a> | Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade |
| GTIN (EAN) | 4050118897012              | thickness (A): 0.6 mm   |
| Qty.       | 1 pc(s).                   |   |

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## Accessories

4 mm<sup>2</sup>


4  
mm<sup>2</sup>

The plug-in cross-connections feature easy handling and quick installation. This saves a great deal of time during installation in comparison with screwed solutions.

## General ordering data

|            |                            |   |
|------------|----------------------------|---|
| Type       | ZQV 4N/4 BL                | Version   |
| Order No.  | <a href="#">1528120000</a> | Cross-connector (terminal), Plugged, Number of poles: 4, Pitch in mm  |
| GTIN (EAN) | 4050118332872              | (P): 6.10, Insulated: Yes, 32 A, blue                                 |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/2                   | Version   |
| Order No.  | <a href="#">1527930000</a> | Cross-connector (terminal), Plugged, Number of poles: 2, Pitch in mm  |
| GTIN (EAN) | 4050118332766              | (P): 6.10, Insulated: Yes, 32 A, orange                               |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/3                   | Version   |
| Order No.  | <a href="#">1527940000</a> | Cross-connector (terminal), Plugged, Number of poles: 3, Pitch in mm  |
| GTIN (EAN) | 4050118332865              | (P): 6.10, Insulated: Yes, 32 A, orange                               |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/3 RD                | Version   |
| Order No.  | <a href="#">2460810000</a> | Cross-connector (terminal), Plugged, Number of poles: 3, Pitch in mm  |
| GTIN (EAN) | 4050118476231              | (P): 6.10, 32 A, red  |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/4 RD                | Version   |
| Order No.  | <a href="#">2460800000</a> | Cross-connector (terminal), Plugged, Number of poles: 4, Pitch in mm  |
| GTIN (EAN) | 4050118476224              | (P): 6.10, Insulated: Yes, 32 A, red                                  |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/2 BL                | Version   |
| Order No.  | <a href="#">1528040000</a> | Cross-connector (terminal), Plugged, Number of poles: 2, Pitch in mm  |
| GTIN (EAN) | 4050118332773              | (P): 6.10, Insulated: Yes, 32 A, blue                                 |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/4                   | Version   |
| Order No.  | <a href="#">1527970000</a> | Cross-connector (terminal), Plugged, Number of poles: 4, Pitch in mm  |
| GTIN (EAN) | 4050118332889              | (P): 6.10, Insulated: Yes, 32 A, orange                               |
| Qty.       | 60 pc(s).                  |   |
| Type       | ZQV 4N/10 RD               | Version   |
| Order No.  | <a href="#">2460740000</a> | Cross-connector (terminal), Plugged, Number of poles: 10, Pitch in mm |
| GTIN (EAN) | 4050118476163              | (P): 6.10, 32 A, red  |
| Qty.       | 20 pc(s).                  |   |
| Type       | ZQV 4N/10                  | Version   |
| Order No.  | <a href="#">1528090000</a> | Cross-connector (terminal), Plugged, Number of poles: 10, Pitch in mm |
| GTIN (EAN) | 4050118332896              | (P): 6.10, Insulated: Yes, 32 A, orange                               |
| Qty.       | 20 pc(s).                  |   |
| Type       | ZQV 4N/2 RD                | Version   |
| Order No.  | <a href="#">2460450000</a> | Cross-connector (terminal), Plugged, Number of poles: 2, Pitch in mm  |
| GTIN (EAN) | 4050118476149              | (P): 6.10, 32 A, red  |
| Qty.       | 60 pc(s).                  |   |



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|            |                            |  |
|------------|----------------------------|--|
| Type       | ZQV 4N/3 BL                | Version  |
| Order No.  | <a href="#">1528080000</a> | Cross-connector (terminal), Plugged, Number of poles: 3, Pitch in mm |
| GTIN (EAN) | 4050118333008              | (P): 6.10, Insulated: Yes, 32 A, blue                                |
| Qty.       | 60 pc(s).                  |  |

|            |                            |   |
|------------|----------------------------|---|
| Type       | ZQV 4N/10 BL               | Version   |
| Order No.  | <a href="#">1528230000</a> | Cross-connector (terminal), Plugged, Number of poles: 10, Pitch in mm |
| GTIN (EAN) | 4050118333138              | (P): 6.10, Insulated: Yes, 32 A, blue                                 |
| Qty.       | 20 pc(s).                  |   |

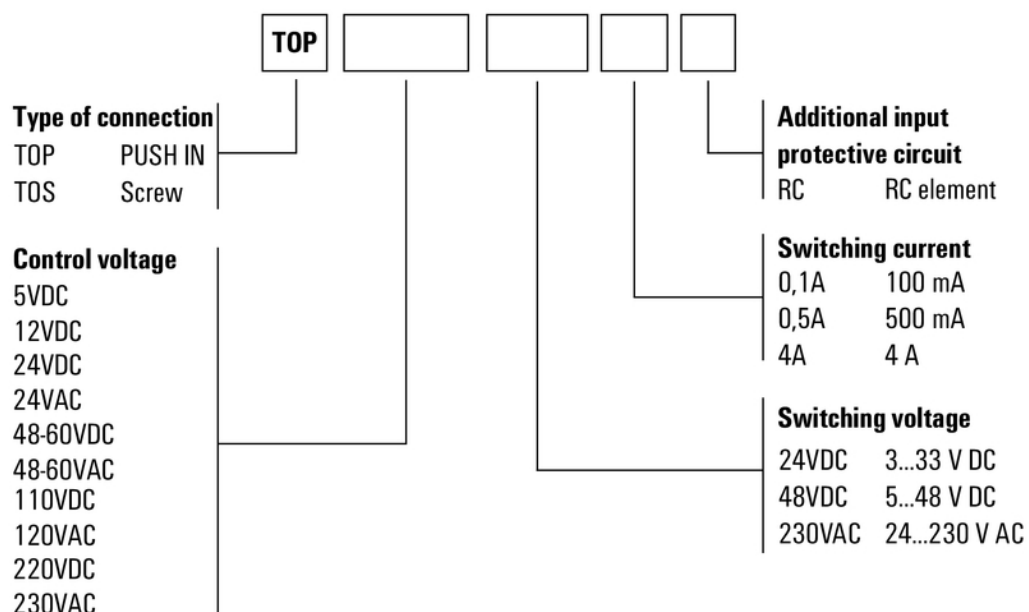
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# Drawings

## Miscellaneous



Type codes