

**TERMSERIES**  
**TOS 24VDC 24VDC5A**

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
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Germany  
Fon: +49 5231 14-0  
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**Product image**

Similar to illustration

TERMSERIES solid-state relay modules consisting of a solid-state relay and a base with AC/DC/UC input; available in different versions:

- With screw and tension-clamp connection
- With AC and DC outputs
- In 6.4 mm and 12.8 mm width
- Optionally with multiple-voltage input: 24 to 230 V UC
- With various protective circuits in the input (free-wheel diode, RC element)
- Illuminated ejection lever

**General ordering data**

|            |                                                                                                                                                                                     |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type       | TOS 24VDC 24VDC5A                                                                                                                                                                   |
| Order No.  | <a href="#">1990960000</a>                                                                                                                                                          |
| Version    | TERMSERIES, solid-state relays, 1 NO contact (MOS-FET), Rated control voltage: 24 V DC $\pm 20\%$ , Rated switching voltage: 3...33 V DC, Continuous current: 5 A, Screw connection |
| GTIN (EAN) | 4050118379280                                                                                                                                                                       |
| Qty.       | 10 pc(s).                                                                                                                                                                           |

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**Technical data**
**Dimensions and weights**

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Width      | 12.8 mm | Width (inches)  | 0.504 inch |
| Height     | 89.6 mm | Height (inches) | 3.528 inch |
| Depth      | 87.8 mm | Depth (inches)  | 3.457 inch |
| Net weight | 56 g    |                 |            |

**Temperatures**

|                             |                                                                                |                             |                |
|-----------------------------|--------------------------------------------------------------------------------|-----------------------------|----------------|
| Humidity                    | 5-95% relative humidity,<br>$T_u = 40^\circ\text{C}$ , without<br>condensation | Operating temperature, max. | 60 °C          |
| Operating temperature, min. | -20 °C                                                                         | Storage temperature, max.   | 70 °C          |
| Storage temperature, min.   | -40 °C                                                                         | Operating temperature       | -20 °C...60 °C |
| Storage temperature         | -40 °C...70 °C                                                                 |                             |                |

**Probability of failure**

|      |             |
|------|-------------|
| MTTF | 1,061 Years |
|------|-------------|

**Environmental Product Compliance**

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

**Rated data UL**

|                                         |                                                      |                                    |                          |
|-----------------------------------------|------------------------------------------------------|------------------------------------|--------------------------|
| Ambient temperature (operational), max. | 55 °C                                                | Output current derating (ohmic)    | 5 A @ 50 °C, 4 A @ 55 °C |
| Connection cross-section AWG, min.      | AWG 26                                               | Connection cross-section AWG, max. | AWG 14                   |
| Type of conductor                       | rigid copper conductor,<br>flexible copper conductor | Tightening torque, max.            | 0.4 Nm                   |
| Pollution severity level                | 2                                                    |                                    |                          |

**Control side**

|                                       |                                                     |                                                                                   |                           |
|---------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|
| Rated control voltage                 | 24 V DC $\pm 20\%$                                  | Nominal control current                                                           | 10.8 mA DC ( $\pm 10\%$ ) |
| Power rating                          | 260 mW                                              | Cut-in / dropout voltage                                                          | 4.5 V / 3 V DC            |
| Cut-in / dropout current              | 0.9 mA / 0.3 mA DC                                  | Status indicator                                                                  | Green LED                 |
| Protective circuit                    | Free-wheeling diode,<br>Reverse polarity protection | Coil voltage of the replacement relay<br>deviating from the rated control voltage | No                        |
| Coil voltage of the replacement relay | 24 V DC                                             |                                                                                   |                           |

**Load side**

|                                                  |                     |                               |                     |
|--------------------------------------------------|---------------------|-------------------------------|---------------------|
| Rated switching voltage                          | 3...33 V DC         | Continuous current            | 5 A                 |
| Rated switching current                          | 5 A                 | Switch-on delay               | < 55 $\mu\text{s}$  |
| Switch-off delay                                 | < 600 $\mu\text{s}$ | Voltage drop at max. load     | $\leq 0.3\text{ V}$ |
| Leakage current                                  | < 10 $\mu\text{A}$  | Min. switching current        | 1 mA                |
| Short-circuit-proof                              | No                  | Protective circuit, load side | Free-wheeling diode |
| max. switching frequency (DC control<br>voltage) | 300 Hz              |                               |                     |

**Contact data**

|              |                        |
|--------------|------------------------|
| Contact type | 1 NO contact (MOS-FET) |
|--------------|------------------------|

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**Technical data**
**General data**

|                           |       |        |       |
|---------------------------|-------|--------|-------|
| Rail                      | TS 35 | Colour | Black |
| UL 94 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 | ≥ 5.5 mm                     |
| Dielectric strength for control side - load side | 2.5 kV <sub>eff</sub> | Dielectric strength to mounting rail                          | 4 kV <sub>eff</sub> / 1 Min. |
| Impulse withstand voltage                        | 6 kV (1.2/50 µs)      | Protection degree                                             | IP20                         |

**Further details of approvals / standards**

|           |              |                         |         |
|-----------|--------------|-------------------------|---------|
| Standards | DIN EN 50178 | Certificate no. (cULus) | E141197 |
|-----------|--------------|-------------------------|---------|

**Connection data**

|                                                                                         |                      |                                                                                         |                     |
|-----------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------|---------------------|
| Wire connection method                                                                  | Screw connection     | Stripping length, rated connection                                                      | 8 mm                |
| Tightening torque, max.                                                                 | 0.4 Nm               | Clamping range, rated connection                                                        | 1.5 mm <sup>2</sup> |
| Clamping range, min.                                                                    | 0.14 mm <sup>2</sup> | Clamping range, max.                                                                    | 2.5 mm <sup>2</sup> |
| Wire connection cross section AWG, min.                                                 | AWG 26               | Wire connection cross section AWG, max.                                                 | AWG 14              |
| Wire cross-section, solid, min.                                                         | 0.14 mm <sup>2</sup> | Wire cross-section, solid, max.                                                         | 2.5 mm <sup>2</sup> |
| Wire connection cross-section, finely stranded, min.                                    | 0.14 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 26               | Wire cross-section, finely stranded, max. (AWG)                                         | AWG 14              |
| Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min. | 0.25 mm <sup>2</sup> | Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max. | 2.5 mm <sup>2</sup> |
| Conductor cross-section, flexible, AEH (DIN 46228-1), min.                              | 0.25 mm <sup>2</sup> | Conductor cross-section, flexible, AEH (DIN 46228-1), max.                              | 2.5 mm <sup>2</sup> |
| Wire connection cross section, finely stranded, two clampable wires, min.               | 0.5 mm <sup>2</sup>  | Wire cross-section, finely stranded, two clampable wires, max.                          | 1 mm <sup>2</sup>   |
| Twin wire-end ferrules, min.                                                            | 0.5 mm <sup>2</sup>  | Twin wire-end ferrules, max.                                                            | 1 mm <sup>2</sup>   |
| Blade size                                                                              | size PH0             | Gauge to IEC 60947-1                                                                    | A1, B1              |

**Ratings IECEx/ATEX/cUL**

|                         |         |
|-------------------------|---------|
| Certificate no. (cULus) | E141197 |
|-------------------------|---------|

**Classifications**

|             |             |            |             |
|-------------|-------------|------------|-------------|
| ETIM 6.0    | EC001504    | ETIM 7.0   | EC001504    |
| eClass 9.0  | 27-37-16-04 | eClass 9.1 | 27-37-16-04 |
| eClass 10.0 | 27-37-16-04 |            |             |

**Approvals**

Approvals



ROHS Conform

Creation date January 10, 2020 11:40:26 AM CET

Catalogue status 06.12.2019 / We reserve the right to make technical changes.

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## Technical data

### Downloads

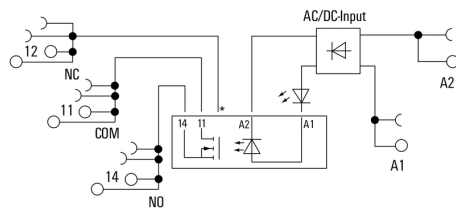
|                                             |                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">EU Konformitätserklärung / EU Declaration of Conformity</a> |
| Brochure/Catalogue                          | <a href="#">CAT 4.2 ELECTR 18/19 EN</a>                                 |
| Engineering Data                            | <a href="#">EPLAN, WSCAD, Zuken E3.S</a>                                |
| Engineering Data                            | <a href="#">STEP</a>                                                    |
| User Documentation                          | <a href="#">Beipackzettel / Package Insert - multilingual</a>           |

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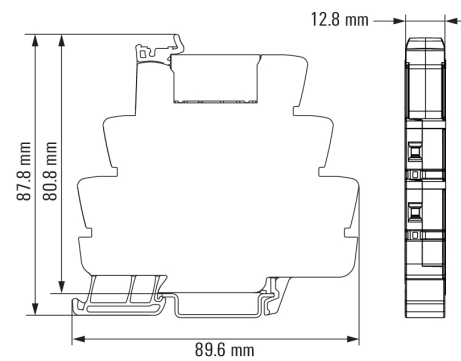
## Drawings

### Wiring diagram



\*Contact is assembled in socket but not used with solid-state relays

### Dimensional drawing



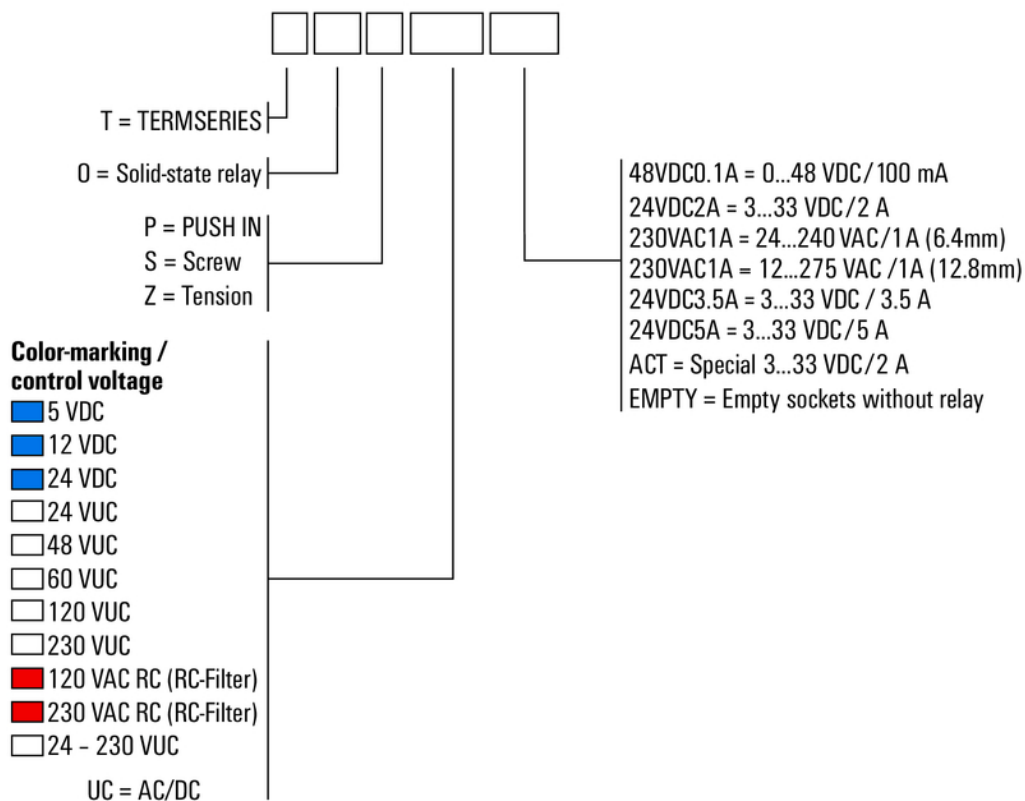
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## Drawings

### Miscellaneous

### Type code TERMSERIES solid-state relay versions



Type codes