

**Miniature Power PCB Relay MSR**

- 1 pole 8/10A, 1form C (CO) or 1 form A (NO) contact
- High inrush currents with AgSnO<sub>2</sub> contacts (TV4 0 65A)
- 4kV/8mm coil-contact
- Reinforced insulation (protection class II)
- Ambient temperature up to 85°C at 8A
- Plastic materials according to IEC 60335-1 (domestic appliances)



F0143-E



**Typical applications**

HVAC, interface technology. PLC's, power supplies, TV-/monitor control, domestic appliances, Hi-Fi products, timers

**Approvals**

VDE REG.-Nr 3919, UL E214024  
Technical data of approved types on request

**Contact Data**

|   |                                |
|---|--------------------------------|
| Contact arrangement                       | 1 form C (CO) or 1 form A (NO) |
| Rated voltage                             | 250VAC                         |
| Max. switching voltage                    | 400VAC                         |
| Rated current                             |                                |
| versions A,B                              | 8A                             |
| versions C, D                             | 10A                            |
| Limiting making current, max 4s, df 10%   | 15A                            |
| version A302, max 20ms                    | 65A                            |
| Breaking capacity max.                    | 2000VA                         |
| Contact material                          | AgSnO <sub>2</sub> , AgNi90/10 |
| Frequency of operation, with/without load | 6/1200min-1                    |
| Operate/release time max.                 | 10/5ms                         |
| Bounce time max., form A/form B           | 3/10ms                         |

**Contact ratings**

| Type              | Contact | Load                               | Cycles              |
|-------------------|---------|------------------------------------|---------------------|
| <b>IEC 61810</b>  |         |                                    |                     |
| V23061-A1***-A302 | A (NO)  | 8A, 250VAC, cosφ=1, 85°C           | 100x10 <sup>3</sup> |
| V23061-C2***-A802 | A (NO)  | 10A, 250VAC, cosφ=1, 85°C          | 100x10 <sup>3</sup> |
| V23061-C2***-A802 | A (NO)  | 5A, 250VAC, cosφ=1, 105°C          | 100x10 <sup>3</sup> |
| <b>UL 508</b>     |         |                                    |                     |
| V23061-A1***-A302 | A (NO)  | TV4, Tungsten, 120VAC, 40°C        | 25x10 <sup>3</sup>  |
| V23061-A1***-A302 | A (NO)  | Pilot duty, A300, 40°C             | 6x10 <sup>3</sup>   |
| V23061-C2***-A802 | A (NO)  | 10A, 240VAC, general purpose, 40°C | 30x10 <sup>3</sup>  |
| <b>EN60730-1</b>  |         |                                    |                     |
| V23061-A1***-A302 | A (NO)  | 2(2)A, 250VAC, 85°C                | 100x10 <sup>3</sup> |
| V23061-C2***-A802 | A (NO)  | 4(4)A, 250VAC, 85°C                | 100x10 <sup>3</sup> |

Mechanical endurance, DC coil 10x10<sup>6</sup> operations



**Coil Data**

|                                     |                  |
|-------------------------------------|------------------|
| Coil voltage range                  | 3 to 60VDC       |
| Operative range, IEC 61810          | 2                |
| Coil insulation system according UL | classA or classF |

**Coil versions, DC coil**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% <sup>1)</sup> | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-------------------------------------|---------------------|
| 001       | 3                 | 2.1                 | 0.3                 | 40                                  | 225                 |
| 002       | 5                 | 3.4                 | 0.5                 | 118                                 | 212                 |
| 003       | 6                 | 4.1                 | 0.6                 | 165                                 | 218                 |
| 004       | 9                 | 6.1                 | 0.9                 | 364                                 | 223                 |
| 005       | 12                | 8.2                 | 1.2                 | 652                                 | 221                 |
| 007       | 24                | 16.3                | 2.4                 | 2270                                | 254                 |
| 009       | 48                | 32.6                | 4.8                 | 8790                                | 262                 |
| 010       | 60                | 40.8                | 6.0                 | 15265 <sup>1)</sup>                 | 236                 |

1) Coil resistance ±15%  
All figures are given for coil without pre-energization, at ambient temperature +23°C  
Other coil voltages on request



**Insulation Data**

|                                    |                      |
|------------------------------------|----------------------|
| Initial dielectric strength        |                      |
| between open contacts              | 1000V <sub>rms</sub> |
| between contact and coil           | 4000V <sub>rms</sub> |
| Clearance/creepage                 |                      |
| between contact and coil           | ≥8/8mm               |
| Material group of insulation parts | IIIa                 |

**Miniature Power PCB Relay MSR (Continued)**

**Other Data**

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customersupport/rohssupportcenter](http://www.te.com/customersupport/rohssupportcenter)

|                                      |                             |  |
|--------------------------------------|-----------------------------|--|
| Ambient temperature                  | - 40 to +85°C               |  |
| Category of environmental protection | IEC 61810                   |  |
|                                      | RTII - flux proof,          |  |
|                                      | RTIII - wash tight          |  |
| Vibration resistance (functional)    | 10/4g                       |  |
| form A (NO) / form B (NC)            |                             |  |
| Vibration resistance (destructive)   | 20/5g                       |  |
| form A (NO) / form B (NC)            |                             |  |
| Shock resistance (destructive)       | 100g                        |  |
| Terminal type                        | PCB-THT                     |  |
| Weight                               | 11g                         |  |
| Resistance to soldering heat THT     | IEC 60068-2-20              |  |
|                                      | RTII: 270°C/10s             |  |
|                                      | RTIII: 260°C/5s             |  |
| Packaging/unit                       | tube/20 pcs., box/1000 pcs. |  |

**PCB layout / terminal assignment**

Bottom view on solder pins

1 form C, 1 CO contact, 3.2mm

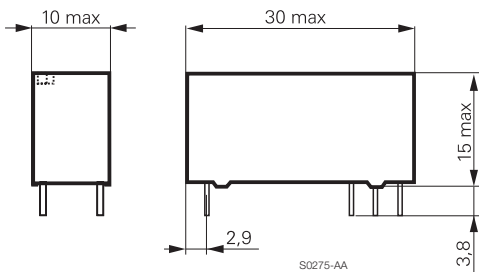


1 form A, 1 NO contact, 5mm



**Dimensions**

1 form C, 1 CO contact, 3.2mm



1 form A, 1 NO contact, 5mm



**Miniature Power PCB Relay MSR** (Continued)

|                               |  |  |  |                     |                     |                                 |            |           |          |           |
|-------------------------------|--|--|--|---------------------|---------------------|---------------------------------|------------|-----------|----------|-----------|
| <b>Product code structure</b> |  | Typical product code   |  | <b>V23061</b>       | <b>-A</b>           | <b>1</b>                        | <b>007</b> | <b>-A</b> | <b>3</b> | <b>02</b> |
| <b>Type</b>                   |  | V23061 Miniature Power PCB Relay MSR   |  |                     |                     |                                 |            |           |          |           |
| <b>Version</b>                |  | <b>A</b> 1 form A contact (1 NO), UL-class A<br><b>B</b> 1 form C contact (1 CO), UL-class A<br><b>C</b> 1 form A contact (1 NO), UL-class F<br><b>D</b> 1 form C contact (1 CO), UL-class F |  |                     |                     |                                 |            |           |          |           |
| <b>Version</b>                |  | <b>1</b> Wash tight  |  | <b>2</b> Flux proof |                     |                                 |            |           |          |           |
| <b>Coil</b>                   |  | Coil code: please refer to coil versions table   |  |                     |                     |                                 |            |           |          |           |
| <b>Contact system</b>         |  | <b>A</b> Standard  |  |                     |                     |                                 |            |           |          |           |
| <b>Contact material</b>       |  | <b>3</b> AgSnO <sub>2</sub>  |  |                     | <b>8</b> AgNi 90/10 |                                 |            |           |          |           |
| <b>Contact configuration</b>  |  | <b>01</b> 1 form C (CO) contact  |  |                     |                     | <b>02</b> 1 form A (NO) contact |            |           |          |           |

Other types on request

| Product code      | Version    | Contacts     | Contact material   | Coil  | Part number |
|-------------------|------------|--------------|--------------------|-------|-------------|
| V23061-A1002-A302 | Wash tight | 1 form A     | AgSnO <sub>2</sub> | 5VDC  | 1393222-4   |
| V23061-A1003-A302 |            | 1 NO contact |                    | 6VDC  | 1393222-9   |
| V23061-A1005-A302 |            |              |                    | 12VDC | 2-1393222-0 |
| V23061-A1007-A302 |            |              |                    | 24VDC | 3-1393222-9 |
| V23061-B1002-A301 | Flux proof | 1 form C     | AgNi90/10          | 5VDC  | 7-1393222-2 |
| V23061-B1005-A301 |            | 1 CO contact |                    | 12VDC | 9-1393222-1 |
| V23061-B1007-A301 |            |              |                    | 24VDC | 1-1393223-7 |
| V23061-B1009-A301 |            |              |                    | 48VDC | 3-1393223-7 |
| V23061-C2001-A802 |            | 1 form A     |                    | 3VDC  | 5-1416200-3 |
| V23061-C2002-A802 |            | 1 NO contact |                    | 5VDC  | 5-1416200-4 |
| V23061-C2003-A802 |            | 6VDC         | 5-1416200-5        |       |             |
| V23061-C2004-A802 |            | 9VDC         | 5-1416200-6        |       |             |
| V23061-C2005-A802 |            | 12VDC        | 5-1416200-7        |       |             |
| V23061-C2007-A802 |            | 24VDC        | 5-1416200-8        |       |             |
| V23061-C2009-A802 |            | 48VDC        | 6-1416200-0        |       |             |
| V23061-C2010-A802 |            | 60VDC        | 6-1416200-1        |       |             |
| V23061-D2001-A801 | Flux proof | 1 form C     | AgNi90/10          | 3VDC  | 6-1416200-2 |
| V23061-D2002-A801 |            | 1 CO contact |                    | 5VDC  | 6-1416200-3 |
| V23061-D2003-A801 |            |              |                    | 6VDC  | 6-1416200-4 |
| V23061-D2004-A801 |            |              |                    | 9VDC  | 6-1416200-5 |
| V23061-D2005-A801 |            |              |                    | 12VDC | 6-1416200-6 |
| V23061-D2007-A801 |            |              |                    | 24VDC | 6-1416200-7 |
| V23061-D2009-A801 |            |              |                    | 48VDC | 6-1416200-9 |
| V23061-D2010-A801 |            |              |                    | 60VDC | 7-1416200-0 |