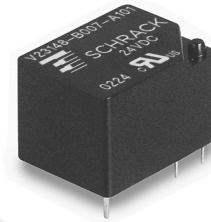


**Power PCB Relay U/UB (V23148)**

- 1 pole 7A, mono or bistable
- 1 form C (CO) or 1 form A (NO) or 1 form B (NC contact)
- Bistable and DC version
- Wash tight version
- Version for 10A on request



Typical applications  
Heating control, installation, battery powered equipment



**Approvals**

UL E214024  
Technical data of approved types on request

| Contact Data   | Standard   | Bistable  | Sensitive  |
|--|------------|---|------------|
| Contact arrangement                                  |            | 1 form C (CO) or<br>1 form A (NO) or<br>1 form B (NC) |            |
| Rated voltage  |            | 250VAC  |            |
| Max. switching voltage                               |            | 400VAC  |            |
| Rated current  | 7A         | 7A  | 5A         |
| Limiting making current,<br>max 4 s, duty factor 10% | 12A        | 12A   | 12A        |
| Breaking capacity max.                               | 1750VA     | 1750VA  | 1250VA     |
| Contact material                                     | AgNI 90/10 | AgNI 90/10  | AgNI 90/10 |
| Frequency of operation,<br>with/without load         |            | 600/18000h <sup>-1</sup>                              |            |
| Operate/release time typ.                            | 5/3ms      | -   | 7/3 ms     |
| Set/reset time typ.                                  | -          | 5/3 ms  | -          |
| Bounce time typ., form A/form B                      | 2/10 ms    | 2/10 ms   | 2/10 ms    |
| Mechanical endurance                                 |            | >20x10 <sup>6</sup> operations                        |            |

**Contact ratings**

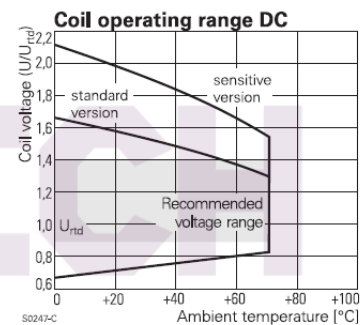
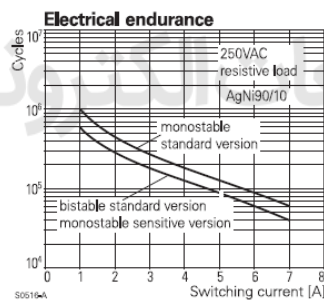
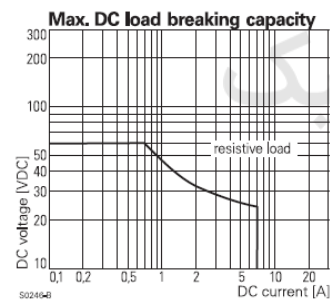
| Type         | Contact                                      | Load | Cycles |
|--------------|--|------|--------|
| <b>UL508</b> |  |      |        |
| U/UB C/A/B   | (CO/NO/NC) 7A, 250VAC, general purpose, 40°C |      | 6.000  |

| Coil Data                                      | Standard    | Bistable           | Sensitive   |
|--|-------------|--------------------|-------------|
| Coil voltage range                             | 5 to 48 VDC | 3 to 48 VDC        | 5 to 48 VDC |
| Operative range IEC 61810                      | 2           | 2                  | 2           |
| Reset voltage min.,<br>% of rated coil voltage | -           | 25%                | -           |
| Reset voltage max.,<br>% of rated coil voltage | -           | 45%                | -           |
| Rated operate power                            | -           | 900 to 1300mW/20ms | -           |

**Coil versions, DC coil**

| Coil code             | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-----------------------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| <b>Standard coil</b>  |                   |                     |                     |                       |                     |
| 002                   | 5                 | 3.5                 | 0.5                 | 56                    | 446                 |
| 003                   | 6                 | 4.2                 | 0.6                 | 80                    | 450                 |
| 005                   | 12                | 8.4                 | 1.2                 | 320                   | 450                 |
| 007                   | 24                | 16.8                | 2.4                 | 1280                  | 450                 |
| 008                   | 48                | 33.6                | 4.8                 | 3800                  | 606                 |
| <b>Sensitive coil</b> |                   |                     |                     |                       |                     |
| 102                   | 5                 | 3.7                 | 0.5                 | 80                    | 313                 |
| 103                   | 6                 | 4.4                 | 0.6                 | 110                   | 327                 |
| 105                   | 12                | 8.8                 | 1.2                 | 440                   | 327                 |
| 107                   | 24                | 17.5                | 2.4                 | 1780                  | 324                 |
| 108                   | 48                | 35.0                | 4.8                 | 4000                  | 576                 |

All figures are given for coil without pre-energization, at ambient temperature +23°C. Other coil voltages on request.



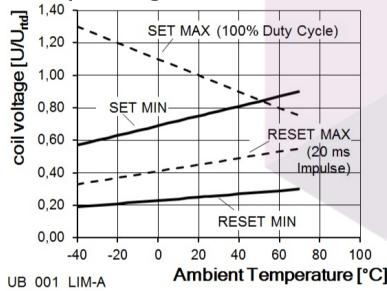
**Power PCB Relay U/UB (V23148) (Continued)**

**Coil versions, bistable 1 coil**

| Coil code | Rated voltage VDC | Set voltage VDC | Reset voltage VDC | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-----------|-------------------|-----------------|-------------------|-----------------------------------|---------------------|
| 001       | 3                 | 2.3             | 0.75              | 8                                 | 1125                |
| 002       | 5                 | 3.9             | 1.25              | 22                                | 1136                |
| 003       | 6                 | 4.7             | 1.5               | 33                                | 1091                |
| 005       | 12                | 9.4             | 3.0               | 119                               | 1210                |
| 007       | 24                | 18.7            | 6.0               | 475                               | 1213                |
| 008       | 48                | 37.4            | 12.0              | 1750                              | 1317                |

All figures are given for coil without pre-energization, at ambient temperature +23°C.  
Other coil voltages on request.

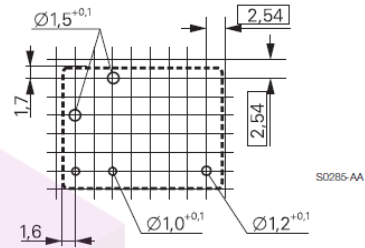
**Coil operating bistable**



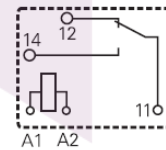
**PCB layout / terminal assignment**

Bottom view on solder pins

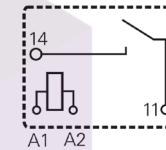
Monostable and bistable 1 coil



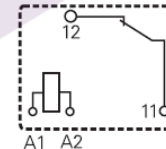
Form C contact (CO)



Form A contact (NO)



Form B contact (NC)



**Insulation Data**

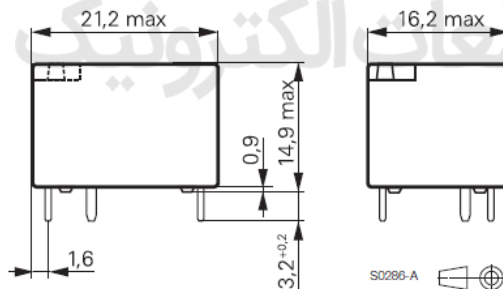
|                                    | 2kV <sub>rms</sub><br>Version<br>V23148-0*** | 4kV <sub>rms</sub><br>Version<br>V23148-1*** |
|------------------------------------|--|--|
| Initial dielectric strength        |  |  |
| between open contacts              | 1000V <sub>rms</sub>                         | 1000V <sub>rms</sub>                         |
| between contact and coil           | 2000V <sub>rms</sub>                         | 4000V <sub>rms</sub>                         |
| Clearance/creepage                 |  |  |
| between contact and coil           | ≥2.5/2.5mm                                   | ≥3.5/3.5mm                                   |
| Material group of insulation parts | ≥IIa   | ≥IIa   |

**Other Data**

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

|  |                    |
|--|--------------------|
| Ambient temperature                              | -25 to +70°C       |
| Category of environmental protection             | RTIII - wash tight |
| IEC 61810  |                    |
| Terminal type                                    | PCB-THT            |
| Weight   | 8.7g               |
| Vibration resistance (functional), form A/form B | 10/10g             |
| Shock resistance (functional), form A/form B     | 10/10g             |
| Resistance to soldering heat THT                 |                    |
| IEC 60068-2-20                                   | 260°C/5s           |
| Packaging/unit                                   | 25 pcs.            |

**Dimensions**



**Power PCB Relay U/UB (V23148)** (Continued)

|  |                      |               |           |          |          |           |           |            |
|--|----------------------|---------------|-----------|----------|----------|-----------|-----------|------------|
| <b>Product code structure</b>                            | Typical product code | <b>V23148</b> | <b>-A</b> | <b>0</b> | <b>0</b> | <b>07</b> | <b>-A</b> | <b>101</b> |
| <b>Type</b>  |                      |               |           |          |          |           |           |            |
| V23148 Power PCB Relay U/UB                              |                      |               |           |          |          |           |           |            |
| <b>Version</b>   |                      |               |           |          |          |           |           |            |
| A Monostable (Miniature power relay U)                   |                      |               |           |          |          |           |           |            |
| B Bistable (Miniature power relay UB, remanence version) |                      |               |           |          |          |           |           |            |
| <b>Dielectric strength coil-contact</b>                  |                      |               |           |          |          |           |           |            |
| 0 2kV <sub>rms</sub> 1 4kV <sub>rms</sub>                |                      |               |           |          |          |           |           |            |
| <b>Version</b>   |                      |               |           |          |          |           |           |            |
| 0 Monostable Standard 0 Bistable Standard                |                      |               |           |          |          |           |           |            |
| 1 Monostable Sensitive                                   |                      |               |           |          |          |           |           |            |
| <b>Coil</b>  |                      |               |           |          |          |           |           |            |
| Coil code: please refer to coil versions table           |                      |               |           |          |          |           |           |            |
| <b>Contact configuration</b>                             |                      |               |           |          |          |           |           |            |
| A 1 form C contact (1 CO) C 1 form B contact (1NC)       |                      |               |           |          |          |           |           |            |
| B 1 form A contact (1 NO)                                |                      |               |           |          |          |           |           |            |
| <b>Contact configuration</b>                             |                      |               |           |          |          |           |           |            |
| 101 AGNI10   |                      |               |           |          |          |           |           |            |

Other types on request

| Product code      | Version             | Dielectric             | Version   | Arrangement   | Part Number |
|-------------------|---------------------|------------------------|-----------|---------------|-------------|
| V23148-A0005-C101 | Monostable relay ,U | 2000 Vrms contact-coil | Standard  | 1 form B (NC) | 1-1393203-0 |
| V23148-A0007-A101 |                     |                        |           | 1 form C (CO) | 1-1393203-1 |
| V23148-A0007-B101 |                     |                        |           | 1 form A (NO) | 1-1393203-2 |
| V23148-A0007-C101 |                     |                        |           | 1 form B (NC) | 1-1393203-3 |
| V23148-A0008-A101 |                     |                        |           | 1 form C (CO) | 1-1393203-4 |
| V23148-A0002-A101 |                     |                        |           | 1 form C (CO) | 1393203-1   |
| V23148-A0002-B101 |                     |                        |           | 1 form A (NO) | 1393203-2   |
| V23148-A0002-C101 |                     |                        |           | 1 form B (NC) | 1393203-3   |
| V23148-A0003-A101 |                     |                        |           | 1 form C (CO) | 1393203-4   |
| V23148-A0003-B101 |                     |                        |           | 1 form A (NO) | 1393203-5   |
| V23148-A0004-A101 | 1 form C (CO)       | 1393203-7              |           |               |             |
| V23148-A0005-A101 | 1 form C (CO)       | 1393203-8              |           |               |             |
| V23148-A0005-B101 | 1 form A (NO)       | 1393203-9              |           |               |             |
| V23148-A0102-A101 | Bistable relay ,UB  | 2000 Vrms contact-coil | Sensitive | 1 form C (CO) | 1-1393203-5 |
| V23148-A0102-B101 |                     |                        |           | 1 form A (NO) | 1-1393203-6 |
| V23148-A0102-C101 |                     |                        |           | 1 form B (NC) | 1-1393203-7 |
| V23148-A0103-A101 |                     |                        |           | 1 form C (CO) | 1-1393203-8 |
| V23148-A0103-B101 |                     |                        |           | 1 form A (NO) | 1-1393203-9 |
| V23148-A0103-C101 |                     |                        |           | 1 form B (NC) | 2-1393203-0 |
| V23148-A0105-A101 | Bistable relay ,UB  | 4000 Vrms contact-coil | Standard  | 1 form C (CO) | 2-1393203-1 |
| V23148-A0105-B101 |                     |                        |           | 1 form A (NO) | 2-1393203-2 |
| V23148-A0105-C101 |                     |                        |           | 1 form B (NC) | 2-1393203-3 |
| V23148-A0107-A101 |                     |                        |           | 1 form C (CO) | 2-1393203-4 |
| V23148-A0107-B101 |                     |                        |           | 1 form A (NO) | 2-1393203-5 |
| V23148-A0107-C101 |                     |                        |           | 1 form B (NC) | 2-1393203-6 |
| V23148-A1005-A101 |                     |                        |           | 1 form C (CO) | 2-1393203-7 |
| V23148-A1007-A101 |                     |                        |           | 1 form C (CO) | 2-1393203-8 |
| V23148-A1105-A101 |                     |                        |           | 1 form C (CO) | 2-1393203-9 |
| V23148-A1105-B101 |                     |                        |           | 1 form A (NO) | 3-1393203-0 |
| V23148-A1107-A101 | 1 form C (CO)       | 3-1393203-1            |           |               |             |
| V23148-B0007-A101 | Bistable relay ,UB  | 2000 Vrms contact-coil | Standard  | 1 form C (CO) | 1-1393204-0 |
| V23148-B0007-B101 |                     |                        |           | 1 form A (NO) | 1-1393204-1 |
| V23148-B0007-C101 |                     |                        |           | 1 form B (NC) | 1-1393204-2 |
| V23148-B0008-A101 |                     |                        |           | 1 form C (CO) | 1-1393204-3 |
| V23148-B1001-A101 |                     |                        |           | 1 form C (CO) | 1-1393204-5 |
| V23148-B0001-A101 |                     |                        |           | 1 form C (CO) | 1393204-1   |
| V23148-B0002-A101 |                     |                        |           | 1 form C (CO) | 1393204-2   |
| V23148-B0002-B101 |                     |                        |           | 1 form A (NO) | 1393204-3   |
| V23148-B0003-B101 |                     |                        |           | 1 form A (NO) | 1393204-5   |
| V23148-B0003-C101 |                     |                        |           | 1 form B (NC) | 1393204-6   |
| V23148-B0005-A101 |                     |                        |           | 1 form C (CO) | 1393204-7   |
| V23148-B0005-B101 |                     |                        |           | 1 form A (NO) | 1393204-8   |
| V23148-B0005-C101 |                     |                        |           | 1 form B (NC) | 1393204-9   |

This list represents the most common types and does not show all variants covered by this data sheet.

Other types on request