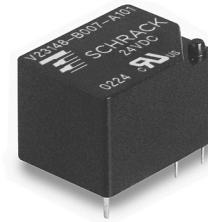


Power PCB Relay U/UB (V23148)

- 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 1 form A (NO) or 1 form B (NC) | |
| Rated voltage | | 250VAC | |
| Max. switching voltage | | 400VAC | |
| Rated current | 7A | 7A | 5A |
| Limiting making current, 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, with/without load | | 600/18000h ⁻¹ | |
| 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 ⁶ operations | |

Contact ratings

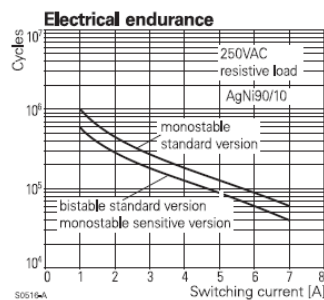
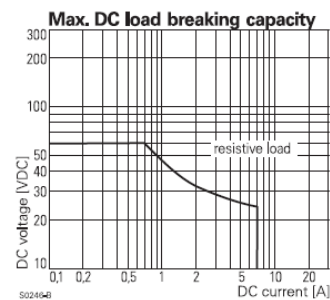
| Type | Contact | Load | Cycles |
|--------------|--|------|--------|
| UL508 | | | |
| U/UB C/A/B | (CO/NO/NC) 7A, 250VAC, general purpose, 40°C | | 6.000 |

| 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., % of rated coil voltage | - | 25% | - |
| Reset voltage max., % 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 |
|-----------------------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| Standard coil | | | | | |
| 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 |
| Sensitive coil | | | | | |
| 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.



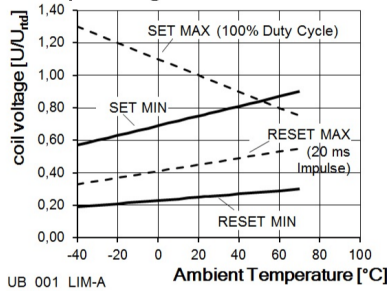
Power PCB Relay U/UB (V23148) (Continued)

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.

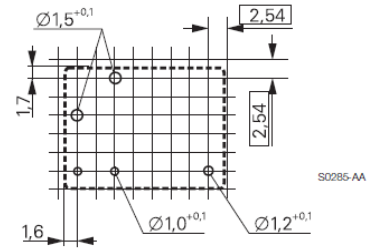
Coil operating bistable



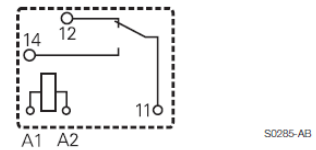
PCB layout / terminal assignment

Bottom view on solder pins

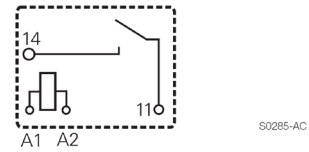
Monostable and bistable 1 coil



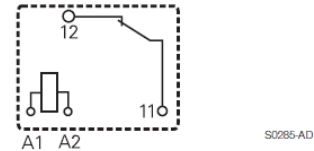
Form C contact (CO)



Form A contact (NO)



Form B contact (NC)



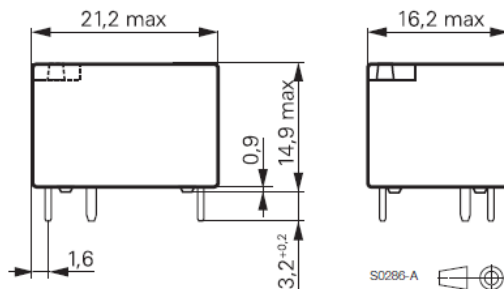
| Insulation Data | 2kV _{rms} | 4kV _{rms} |
|------------------------------------|----------------------|----------------------|
| | Version V23148-*0*** | Version V23148-*1*** |
| Initial dielectric strength | | |
| between open contacts | 1000V _{rms} | 1000V _{rms} |
| between contact and coil | 2000V _{rms} | 4000V _{rms} |
| Clearance/creepage | | |
| between contact and coil | ≥2.5/2.5mm | ≥3.5/3.5mm |
| Material group of insulation parts | ≥IIIa | ≥IIIa |

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

| | |
|--|--------------------|
| Ambient temperature | -25 to +70°C |
| Category of environmental protection | |
| IEC 61810 | RTIII - wash tight |
| 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)

| | | | | | | | | |
|---|----------------------|--|-----------|----------|----------|-----------|-----------|------------|
| Product code structure | Typical product code | V23148 | -A | 0 | 0 | 07 | -A | 101 |
| Type | | Power PCB Relay U/UB | | | | | | |
| Version | | A Monostable (Miniature power relay U) B Bistable (Miniature power relay UB, remanence version) | | | | | | |
| Dielectric strength coil-contact | | 0 2kV _{rms} 1 4kV _{rms} | | | | | | |
| Version | | 0 Monostable Standard 0 Bistable Standard 1 Sensitive | | | | | | |
| Coil | | Coil code: please refer to coil versions table | | | | | | |
| Contact configuration | | A 1 form C contact (1 CO) C 1 form B contact (1NC) B 1 form A contact (1 NO) | | | | | | |
| Contact configuration | | 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 | | | 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 | | | | 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 | | 4000 Vrms contact-coil | Standard | 1 form C (CO) | 2-1393203-7 |
| V23148-A1007-A101 | | | | | |
| 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 | | 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