# Power PCB Relay PCFN Solar

- **1 pole 26A/31A/33A, 1 form A (NO) contact**
- **Contact gap >1.5mm/1.8mm**
- **200mW hold power [1)]**
- **Ambient temperature up to 85°C**

Typical applications
Photovoltaic Inverter, Power Supply, On board charging

## Approval

VDE Cert. No. 40012548, UL E58304
Technical data of approved types on request.

| Contact Data | H type | F type |
|---|---|---|
| Contact form | 1 form A (NO) | |
| Contact gap | >1.5mm/1.8mm | |
| Rated voltage | 277VAC | 277VAC |
| Rated current | 26A | 31A/33A |
| Breaking capacity max. | 7200VA | 9141VA |
| Contact material | $AgSnO_2$ | |
| Initial contact resistance | 100mΩ max. at 1A, 6VDC | |
| Frequency of operation with/without load | with load = 360/h<br>without load = 1800/h | |
| Operate/release time max. | 20/10ms | |
| Bounce time max., form A | 3ms | |

**Contact ratings**

| Type | Load | Cycles |
|---|---|---|
| **IEC 61810** | | |
| H type (PCFN-1xxH) | | |
| NO | 26A, 277VAC, resistive, 75°C | $30x10^3$ |
| NO | 22A, 250VAC, resistive, 85°C | $30x10^3$ |
| NO | 14A, 250VAC, resistive, 85°C | $100x10^3$ |
| F type (PCFN-1xxFxxx,00000) | | |
| NO | 31A, 277VAC, resistive, 85°C | $10x10^3$ |
| NO | Make 0.1A, carry 31A, break 0.1A, 450VDC | $10x10^3$ |
| NO | Make 0.5A, carry 31A, break 0.5A, 100VDC | $10x10^3$ |
| **UL 508** | | |
| H type (PCFN-1xxH) | | |
| NO | 26A, 277VAC, resistive, 75°C | $30x10^3$ |
| NO | 22A, 277VAC, resistive, 85°C | $30x10^3$ |
| F type (PCFN-1xxF) | | |
| NO | 31A, 277VAC, resistive, 85°C | $6x10^3$ |
| NO | 31A, 277VAC, resistive | $10x10^3$ |
| **Internal Test** | | |
| F type (PCFN-1xxFxxx,02300) | | |
| NO | 33A, 277VAC, resistive, 85°C | $10x10^3$ |
| Mechanical endurance, DC coil | | $1x10^6$ |

## Coil Data

| | |
|---|---|
| Rated coil voltage | 12-24VDC |
| Coil insulation system according UL | Class F |

**Coil versions, DC coil (H type)**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|
| 12 | 12[1)] | 7.8 | 1.2 | 96 | 1.5 |
| 24 | 24[1)] | 15.6 | 2.4 | 384 | 1.5 |

**Coil versions, DC coil (F type)**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|
| 12 | 12[1)] | 7.8 | 1.2 | 112 | 1.3 / Min. 4.7V hold |

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 | $2500V_{rms}$ |
| between contact and coil | $4000V_{rms}$ |
| Clearance/creepage | |
| between open contacts | ≥ 1.5/3.0mm |
| between contact and coil | ≥ 6.1/6.1mm |
| Initial Insulation Resistance @ 500Vdc | $>1X10^9Ω$ |
| Material group of insulation parts | III |
| Tracking index of relay base | PTI 175 |

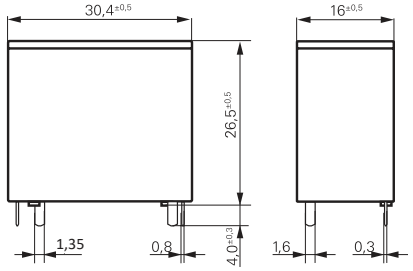
## Other Data

| | |
|---|---|
| Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter | |
| Ambient temperature | -40~85°C[1)] |
| Category of environmental protection | |
| IEC 61810 | RTII - flux proof |
| Vibration resistance (functional) | 10G |
| Vibration resistance (destructive) | 10G |
| Shock resistance (destructive) | 100G |
| Terminal type | PCB-THT |
| Mounting distance | ≥10mm |
| Weight | 28g |
| Resistance to soldering heat THT | |
| IEC 60068-2-20 | 260°C/10s |
| Packaging unit | tube/20 pcs., box/500 pcs. |

1) After the energization time of 100ms with the rated coil voltage, the coil requires a reduction to 40%...50% of the rated coil voltage.
2) The relay connections and wiring have to be designed with an adequate cross sections to ensure the current flow and heat dissipation.

## Power PCB Relay PCFN Solar (Continued)

**Dimensions**

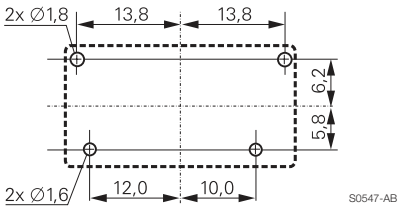


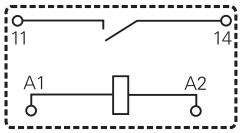

| DIAGRAM DIMENSION | TOLERANCE |
|---|---|
| 0.99mm MAX. | ±0.1mm |
| 1-2.99mm | ±0.2mm |
| 3mm MIN. | ±0.3mm |

Note. For the Tin-plating of the pins:
±0.1mm for width, thickness and diameter.
±0.5mm for length.

**PCB layout / terminal assignment**

Bottom view on solder pins




NOTE: it is recommended to connect the grid (phase or neutral line) to pin 11 of the PCFN Solar.

| **Product code structure** Typical product code | **PCFN** | **-1** | **12** | **H** | **2** | **M** | **G** | **,00000** |
|---|---|---|---|---|---|---|---|---|

**Type**
**PCFN** Without fasten terminal

**Contact arrangement**
**-1** Single Pole

**Coil Voltage**
**12** 12VDC
**24** 24VDC

**Coil Sensitivity**
**H** Low Sensitivity
**F** Speical Sensitivity

**Contact Material**
**2** $AgSnO_2$

**Contact Configuration**
**M** 1 Form A (SPST-NO)

**Contact Gap**
**none** standard
**G** 1.5mm
**S** 1.8mm

**Suffix**
**,00000** Standard version
**,x2xxx** Contact gap 1.8mm version
**,xxxxx** Customized version, e.g.“02300“ stands for 33A marked version

| Product code | Version | Contact arrangement | Contact material | Coil | Part number |
|---|---|---|---|---|---|
| PCFN-112H2MS,02000 | PCB, flux proof | 1 form A (NO) contact | $AgSnO_2$ | 12VDC | 2071169-1 |
| PCFN-124H2MS,02000 | PCB, flux proof | 1 form A (NO) contact | $AgSnO_2$ | 24VDC | 2071169-2 |
| PCFN-112F2MG,00000 | PCB, flux proof | 1 form A (NO) contact | $AgSnO_2$ | 12VDC | 2071504-1 |
| PCFN-112F2MS,02300 | PCB, flux proof | 1 form A (NO) contact | $AgSnO_2$ | 12VDC | 2071504-3 |