



## Bimetal Temperature Switch for liquids

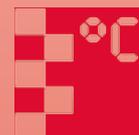


measuring  
•  
monitoring  
•  
analysing

TWR



- Easy to install
- Mounting position independent
- Material: nickel-plated brass or stainless steel
- Connection: G  $\frac{3}{4}$  male
- Switch point fixed: +30 °C... 120 °C



T1

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**Description**

The KOBOLD temperature switches work with a bi-metal switch and serve to monitor temperature of liquids in piping and vessels. The instruments are available in brass or stainless steel and are screwed through a G¾ screw-in thread into a screwed socket that is welded onto the line or vessel. The temperature contacts have a fixed switch point in intervals of 5 °C in the range 30°Cup to 50 °C, and in intervals of 10 °C between 50 °C and 120 °C. They are available as N/C or N/O contacts. Standard electrical connection is made through a plug connector, in which a pilot lamp can be integrated as an additional output state indicator.

**Technical Details**

Contact operation: N/O contact or N/C contact  
 Electrical connection: plug connector according to DIN 43 650  
 optional with pilot lamp  
 Max. Switch capacity: 250 V<sub>AC</sub>, 30 V<sub>DC</sub> (TWR-1...0, TWR-2...0)  
 250 V<sub>AC</sub>, 42 V<sub>DC</sub> (TWR-3...0, TWR-4...0)  
 24 V<sub>DC</sub> (TWR-...L)  
 230 V<sub>AC</sub> (TWR-...G)  
 Switching current: 0.1 ... 4 A (TWR-1 ... 0, TWR-2 ... 0)  
 0.1 ... 1 A (TWR-1 ... L, TWR-2 ... L)  
 0.1 ... 1 A (TWR-1 ... G, TWR-2 ... G)  
 max. 5 ... 200 mA (TWR-3, TWR-4)  
 Housing: brass or stainless steel 1.4301  
 Connection: G¾ male  
 Nominal pressure: PN 64  
 Weight: 0.5 kg  
 Ambient temperature: -30 ... 125 °C  
 Switching hysteresis max.: 20 °C  
 Accuracy:

Switch points	Model	
	TWR-1/2	TWR-3/4
30 ... 90 °C	± 5 K	± 3 K
100 ... 120 °C	± 7 K	± 4 K

Protection: IP 65

**ATEX approvals**

For installation in zones 2 / 22:  
 All Options: II 3G Ex ic IIB/IIC T4 Gc  
 Intrinsically safe II 3D Ex ic IIIC T125 °C Dc  
 max. 45 V<sub>AC/DC</sub>/250 mA/1.3 W

For installation in zones 1 / 21:  
 The TWR fulfils the requirements for simple electrical apparatus according to EN 60079-14 and EN 60079-11. When operated via an intrinsically safe isolating amplifier, it is suitable for installation in Zone 1/21.  
 Ambient temperature range: -20 °C ≤ Ta ≤ +90 °C  
 Process temperature range: -30 °C ≤ Ta ≤ +125 °C



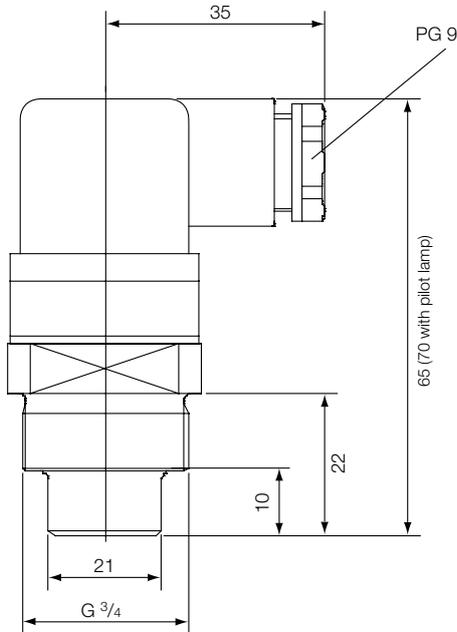
**Order Details** (Example: TWR-11030 L)

Switching function (with rising temperature)	Model		Switching range	Pilot lamp
	Brass	Stainless steel		
N/C contact	TWR-11..	TWR-12..	..030.. = 30 °C ..035.. = 35 °C ..040.. = 40 °C ..045.. = 45 °C ..050.. = 50 °C ..060.. = 60 °C ..070.. = 70 °C ..080.. = 80 °C ..090.. = 90 °C ..100..** = 100 °C ..112.. = 112 °C ..118.. = 118 °C	..0 = without ..L = LED 24 V <sub>DC</sub> ..G = pilot lamp 230 V <sub>AC</sub>
N/O contact	TWR-21..	TWR-22..		
N/C contact* (for SPS; intrinsically safe)	TWR-31..	TWR-32..		..0 = without
N/O contact* (for SPS; intrinsically safe)	TWR-41..	TWR-42..		

\* Intrinsically safe only without LED and pilot lamp

\*\* not available TWR-21100/0/L/G and TWR-22100/0/L/G

**Dimensions** [mm]



**Electrical connection**

TWR-1...  
TWR-3...

TWR-2...  
TWR-4...

