

TWR TEMPERATURE SWITCH FOR LIQUIDS



Flow
Pressure
Level
Temperature
measurement
monitoring
control

T1



- Simple Installation
- Position Independent
- Brass or SS Construction
- Optional Signal Light
- Maximum Temperature: 250°F



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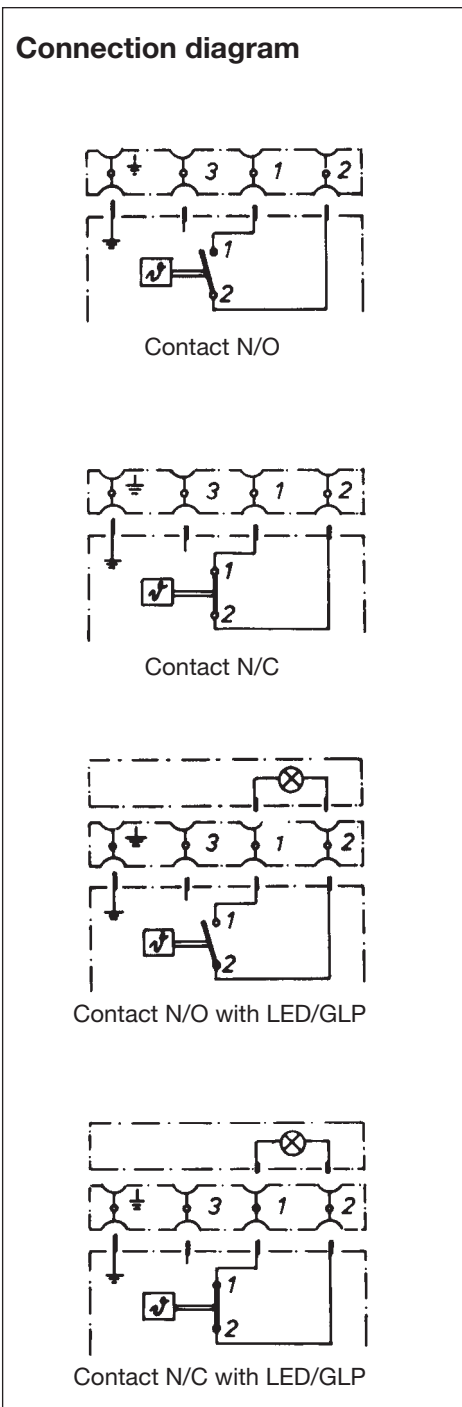
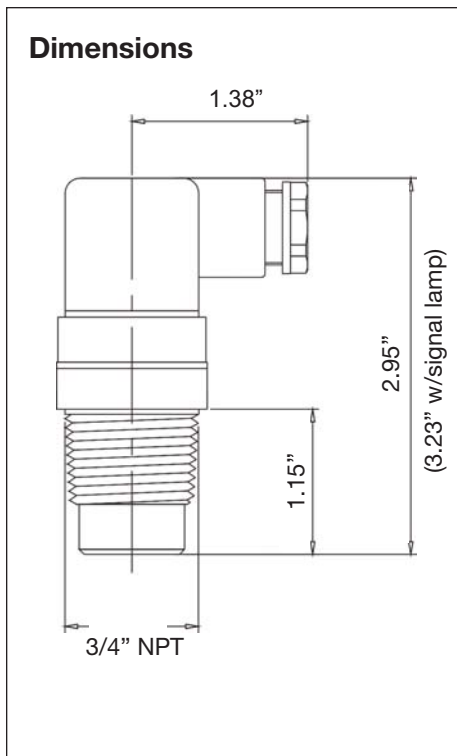


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Model:
TWR



Special Features

- Simple Installation
- Position Independent
- Brass or SS Construction
- N/C or N/O SPST Contacts
- Optional Signal Light
- Maximum Temperature: 250°F

Specifications

Switchpoint Accuracy: ±9°F (5°C)
Hysteresis: 15-20°C (27-37°F)

Max. Temp: 120°C (250°F)

Max. Pressure: 230 PSIG

Housing: Brass or 304 SS

Fittings: 3/4" NPT

Contacts:
 Function: N/C or N/O
 Rating: 220 VAC, 2 A, 12 VA

Switch Point Options in °C (°F)
 Select when ordering:
 30 (86), 35 (95)
 40 (104), 45 (113)
 50 (122), 60 (140)
 70 (158), 80 (176)
 90 (194), 100 (212)
 110 (230), 120 (248)

Protection: NEMA 4X/IP65

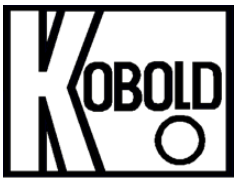
Kobold's TWR temperature switch is used to provide thermally triggered switching functions for liquids in pipe systems and containers. Individually it can provide temperature alarm features to, for example, insure process compliance with maximum or minimum limits. Pairs of TWR's can be chosen to provide wide hysteresis (deadband) thermostatic control function to control heating and cooling equipment.

The TWR is available in brass or stainless steel and has 3/4" NPT fittings for direct installation into pipes or reservoirs.

The contact operates at a preset switchpoint. The switchpoint is factory set, but selectable in 5°C increments between 30°C and 50°C and 10°C increments between 50°C and 120°C. The contacts are available in normally open (N/O) and normally closed (N/C) configurations.

Electrical connection to the TWR is achieved via a NEMA 4 plug. The plug is optionally available with an integrated LED signal light. this gives visual indication of switch condition.

Order Numbers			
Contact	Part Number		Options Add to Part Number
	Brass	SS	
N/O	TWR-5101	TWR-5201	Signal Light -LED (24 VDC) -GLP (110 VAC)
N/C	TWR-5102	TWR-5202	



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**Series TWR
 Temperature Switch**

Precautions

- **User's Responsibility for Safety:** KOBOLD manufactures a wide range of process sensors and technologies. While each of these technologies are designed to operate in a wide variety of applications, it is the user's responsibility to select a technology that is appropriate for the application, to install it properly, to perform tests of the installed system, and to maintain all components. The failure to do so could result in property damage or serious injury.
- **Proper Installation and Handling:** Use a proper thread sealant with all installations. Never overtighten the sensor within its fitting. Always check for leaks prior to system start-up.
- **Wiring and Electrical:** Because this is an electrically operated device, only properly trained personnel should install and maintain this product. Review the specifications for maximum electrical switch ratings. Do not exceed these ratings. Electrical wiring of the sensor should be performed in accordance with all applicable national, state and local codes.
- **Temperature and Pressure:** The TWR is designed for use in process temperatures from -10°F to 250°F. Operation outside these limitations will cause damage to the unit.
- **Material Compatibility:** The TWR's process wetted parts are nickel plated brass or stainless steel depending on the model. Make sure that the TWR is chemically compatible with the application liquids. While the sensor's outer housing is liquid resistant when installed properly, it is not designed to be immersed. It should be mounted in such a way that it does not normally come into contact with fluid.
- **Flammable, Explosive and Hazardous Applications:** The TWR is considered a simple apparatus per the U.S. National Electric Code. It can be made intrinsically safe if properly installed with an intrinsic safety barrier per the requirements of the National Code.
- **Make a Fail-Safe System:** Design a fail-safe system that accommodates the possibility of sensor or power failure. In critical applications, KOBOLD recommends the use of redundant backup systems and alarms in addition to the primary system.

Specifications

Accuracy: ±5°C
Hysteresis: 15-20°C (27-37°F)
Wetted Parts: Nickel plated brass or 304 stainless steel depending on model ordered
Fitting: 3/4" NPT
Max. Pressure: 230 PSIG
Temperature Range: -10°F to +250°F

Electrical Specifications:

Switch Type: SPST normally open (N/O) or normally closed (N/C) based on model ordered

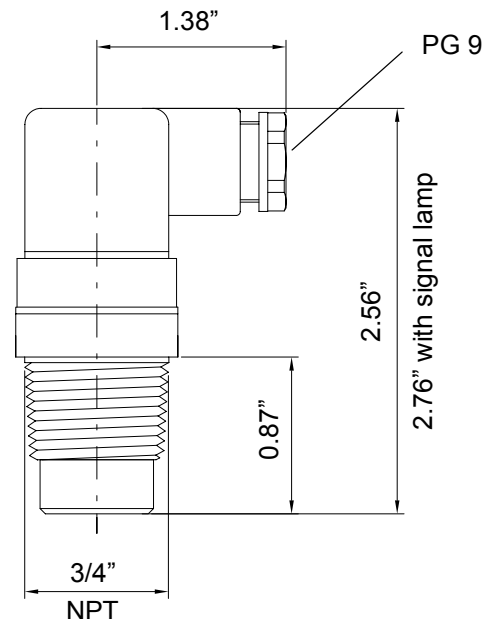
Switch Rating

Standard: Max. 220 VAC, 2 amp, 12 VA
 Option LED: 24 VDC, 0.25 amp
 Option GLP: 110 VAC, 2 amp, 12 VA

Electrical Connection: Plug DIN 43650

Electrical Protection: NEMA 4X/IP 65

Dimensions



All dimensions in inches unless otherwise noted

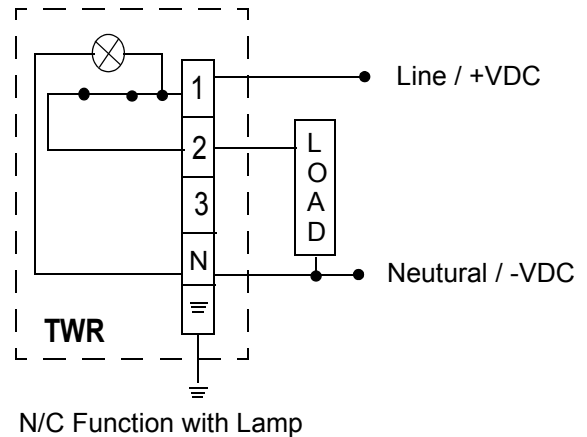
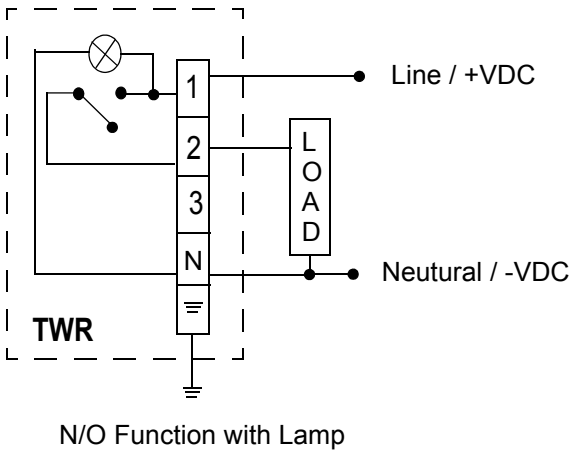
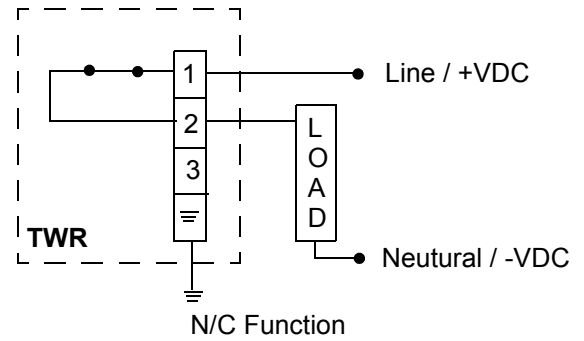
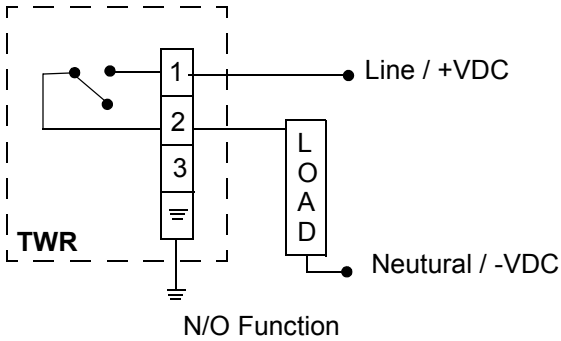
Order Codes

Contact Type	Part Number		Options (add to part number)
	Brass	Stainless	
N/O	TWR-5101	TWR-5201	Switch status signal lamp -LED = 24 VDC Lamp -GLP = 110 VAC Lamp
N/C	TWR-5102	TWR-5202	

Switch Point Options in °C (°F)
switchpoint is stamped on TWR body

30(86), 35(95)
40(104), 45(113)
50(122), 60(140)
70(158), 80(176)
90(194), 100(212)
110(230), 120(248)

Electrical Connections



Note: for versions with signal lamp, the lamp is lit when switch is **open**

Mechanical Installation

1. Use a proper thread sealant to install the switch in it's fitting
2. Ensure that the sensing bulb is immersed in the liquid to be monitored. If the switch is installed in an air pocket slow response or malfunction of the switch will occur.
3. If installing into a pipe, do not install in the top (12 O'clock) position on the pipe. Air bubbles which form in the top of the pipe will insulate the switch sensing bulb and result in slow operation or switch malfunction.
4. If installing in a pipe, do not install in the bottom (6 O'clock) position. Sediments may deposit on the sensing bulb causing slow response or switch malfunction.
5. Ensure that the coupling used to install the TWR is short enough to allow the sensing bulb to extend past the pipe or tank wall and into the liquid to be monitored. If the switch sensing bulb is recessed into the coupling a stagnant liquid pocket will form around the sensing bulb. The liquid temperature in this stagnant area may not be representative of the bulk liquid temperature, resulting in errors or false switching.