

# TEMPERATURE SWITCHES TSDD



## DESCRIPTION AND APPLICATION

TSDD switches are built as two-state regulators (ON/OFF regulation), which compare the set and immediate temperature and enable switching galvanically isolated relay contacts when the set temperature value is reached. The sensors consists of a plastic connection head with the transparent lid. In the connection head is located electronic equipment with LED display. The switches meet the IP 65 ingress protection requirements according to the EN 60529 standard, as amended. Easy mounting of the switches is ensured by the unique "S head" design invented by SENSIT s.r.o.

Regarding sensing element location and switch application the following versions are available:

**TSDD A** – temperature switch for sensing temperature in the switch ambient. The sensing element is placed in the metal stem. **TSDD P** – contact version switch for fixing on pipeline surfaces for surface temperature measurements. The sensing element is housed in a measuring case made of metal. It is delivered with the fastening tape of the length 40 cm and with closure device.

**TSDD K** – the sensing element is placed in the metal stem for use in air condition

equipment or in tubings. This temperature switch version is available with a plastic mounting clip. Stainless steel thermowell or metal holder can be delivered as an accessory.

**TSDD C** – the sensing element is protected by the TG 8 case, 40 mm long, and provided with a cable 1 m long. Another case type or another cable length should be specified in the order.

Standard temperature ranges, in which the temperature set point can be adjusted, are given in the specifications table. For the TSDD A the maximum allowable operation temperature is 70 °C, for the TSDD P this temperature limit is 110 °C. For applications above 140 °C the TSDD K may be used. However, in this case the switch version with the stem elongated by 60 mm and the metal centric fixing clip must be used. These switches are designed to be used in a chemically non-aggressive environment.

## ACCESSORIES

- stainless steel thermowell JS 130
- metal central holder K 120
- plastic holder
- lead-in connector 43000-92 - for all types
- connecting cables with direct connector RKT or rectangular connector RKWT
- thermal copnductive paste up to 200 °C, 5 g for TSDD P type
- screw nwith collet or cutting rings - if different lengths of stem immersion of the temperature sensor are set

## DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

**Calibration** – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o.'s laboratory (according to requirements of the EN ISO/IEC 17025 standard) or in an Accredited laboratory.

## SPECIFICATIONS

Output	1 switch relay
Type of sensing element	Pt 1000/3850
Power supply (U)	12 or 24 V DC
Maximum switched voltage / current	30 V DC / 5 A
Maximum temperature range	-50 to 300 °C
Hysteresi	1 to 15 °C
Electronics equipment error	± (0.2 % of values + 1 dig.)

## OTHER PARAMETERS

Output	1 switch relay
Accuracy class of Pt sensor	class B according to EN 60751, $t = \pm (0,3 + 0,005 t )$ in °C
Connection head dimension	70 x 63 x 34 mm
Material of the connection head	POLYAMIDE
Ingress protection	IP 65 in accordance with EN 60529, as amended
Ambient temperature around the connection head	-30 to 70 °C
Recommended wire cross section	0.2 to 1 mm <sup>2</sup>
Insulation resistance	> 200 MΩ at 500 V DC, 25°C ± 3 °C

## ADDITIONAL DATA FOR INDIVIDUAL SENSOR TYPES

TSDD A	
Standard length of the stem L1	50 mm
Diameter of the stem	6 + 0.2 mm
Material of the stem	stainless steel DIN 1.4301
Maximum temperature range	-25 to 70 °C

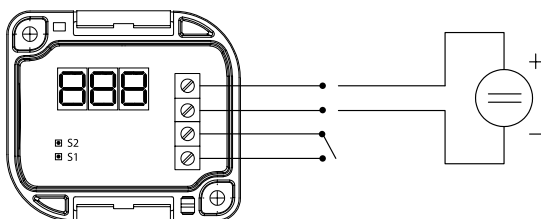
TSDD K	
Standard length of the stem L1	70, 120, 180, 240 mm
Diameter of the stem	6 + 0.2 mm
Material of the stem	stainless steel DIN 1.4301
Switch installation	by means of a plastic or stainless steel holder or a stainless steel thermowell
Maximum temperature range	-50 to 200 °C (using an elongated stem above 140 °C)

TSDD P	
Material of the measuring case	brass
Material of protection case	SILICONE and SILAMID
Maximum temperature range	-30 to 130 °C
Ambient temperature around the connection head	-30 to 80 °C
Switch installation	by means of fastening tape with closure
Standard length of the tape	40 cm
Minimum diameter of tubing	20 mm

TSDD C	
Standard type of sensor	TG 8 – 40, cable 1 m
Diameter of the case	5.7 ± 0.1 mm
Material of the case	stainless steel DIN 1.4301
Lead-in cable	shielded silicone 2 x 0.34 mm <sup>2</sup>
Sensor ingress protection	IP 67 in accordance with EN 60529, as amended
Maximum temperature range	-50 to 200 °C

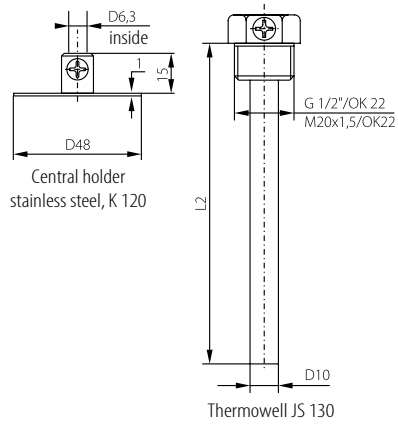
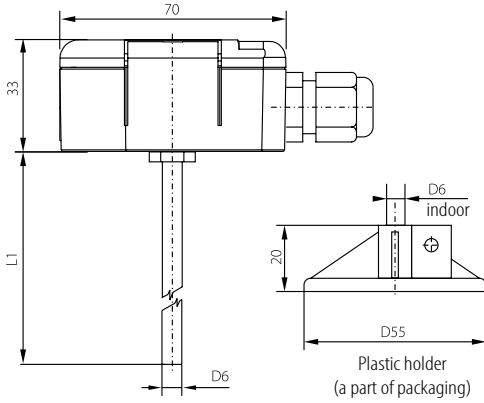
## WIRING DIAGRAM

2-wire connection

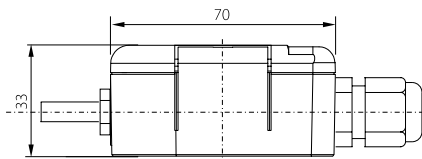


# DIMENSIONAL DRAFT

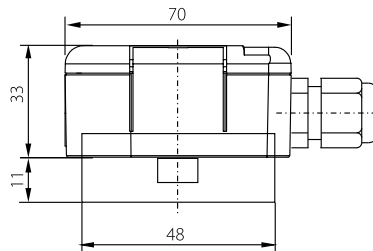
## Accessories



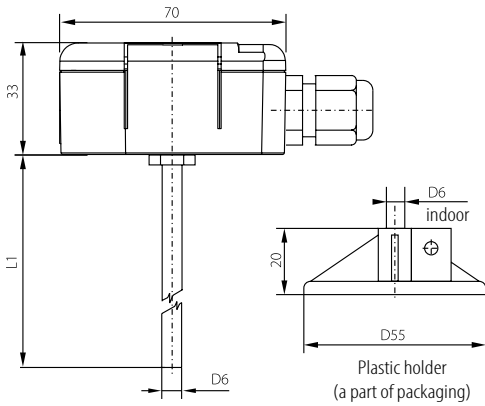
## TSDD A



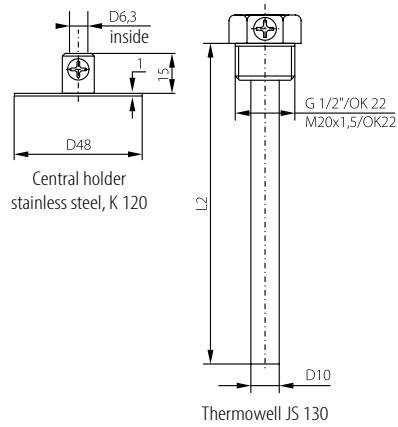
## TSDD P



## TSDD K



## Accessories



## TSDD C

