TEMPERATURE TO VOLTAGE CONVERTERS STU (0 to 10 V)

021.14en

DESCRIPTION AND APPLICATION

Converters STU and STUD are intended for converting the signal of the Pt 100/3850 or Pt 1000/3850 resistance-type temperature sensing elements to a unified signal 0 to 10 V. These converters can be utilised in any control system compatible with 0 to10 V voltage output. The case is provided by the console for wall-mounting or a bracket for mounting to the DIN rail. Their standard measuring ranges are listed in the specifications table, Their operating temperature range is -30 to 70 °C. These limits must not be exceeded even for a short time. The sensors are designed to be operated in a chemically non-aggressive environment. Two variants exist regarding to the design of the converter case:

1. STU Pt: the plastic case is made of POLYAMIDE material, and is identical to, for example, the connection head of S 120 sensors. It is provided with a wall bracket or with a clip for attaching to a DIN rail. The terminal board casing meets the IP 65 ingress protection in accordance with EN 60529 standard, as amended.

2. STUD Pt: the plastic box is made of TARFLON - IRY 2200, which meets requirements of UL 94 V-0 standard, as amended. It is intended for installation to a switch board on a DIN rail.

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.

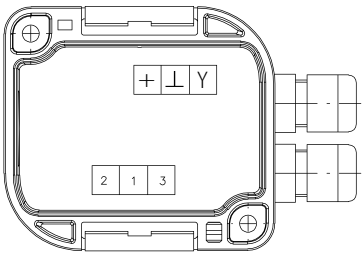
SPECIFICATIONS

Converter type	STU Pt 100 STUD Pt 100	STU Pt 1000 STUD Pt 1000
Input signal	Pt 100/3850	Pt 1000/3850
Power supply (U)	15 to 30 V DC (recommended value 24 V DC)	
Measuring ranges*)	-30 to 60 °C 0 to 35 °C 0 to 100 °C 0 to 150 °C 0 to 200 °C 0 to 250 °C 0 to 400 °C	-30 to 60 °C 0 to 35 °C 0 to 100 °C 0 to 150 °C 0 to 200 °C 0 to 250 °C
STU and STUD ingress protection	STU: IP 65 in accordance with EN 60529, as amended STUD: IP 20 (plastic case) / IP 00 (terminal board) in accordance with EN 60529, as amended	
Ambient temperature	-30 to 70 °C	
Measurement error	< 0.6 % of the measuring range, minimum 0.5 °C	
Load resistance min	10 k Ω	
Current consumption	< 8 mA	
Sensing element break	> 14 V	
Sensing element short	~ 0 V	
Sensor connection	according to the wiring diagram	
Recommended wire cross section	STU: 0.35 to 1.5 mm^2 STUD: 0.35 to 2.5 mm^2	
Material of the case	STU: POLYAMIDE STUD: TARFLON - IRY 2200 - meets requirements of UL 94 V-0, as amended	
Weight	0.15 kg	

**) According to the customer's requirement, it is possible to provide a customized measuring range from -40 to 150 °C; the minimum span of the range must be 35 °C (e.g. -20 to 15 °C; -30 to 80 °C)*

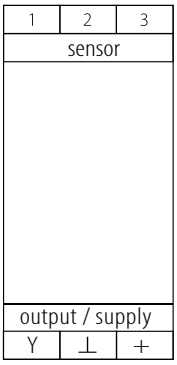
WIRING DIAGRAM

STU Pt 100, STU Pt 1000



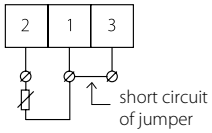
Y - output 0 to 10 V
⊥ - negative pole of power supply
+ - positive pole of power supply
1, 2, 3 - sensor connection terminals

STUD Pt 100, STUD Pt 1000



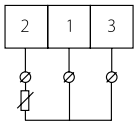
Y - output 0 to 10 V
⊥ - negative pole of power supply
+ - positive pole of power supply
1, 2, 3 - sensor connection terminals

STU - 2-wire connection



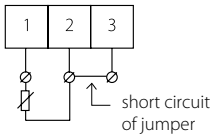
Pt 100, Pt 1000

STU - 3-wire connection



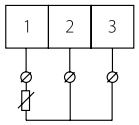
Pt 100, Pt 1000

STUD - 2-wire connection



Pt 100, Pt 1000

STUD - 3-wire connection



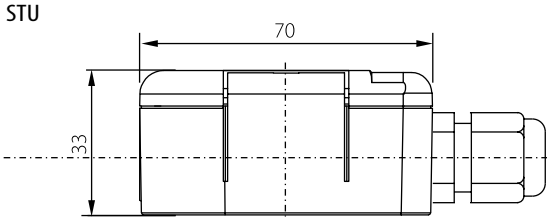
Pt 100, Pt 1000

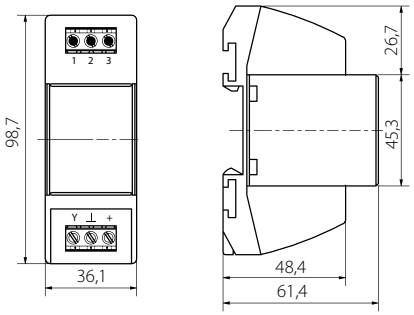
Note: for 2-wire connection must be short circuit of jumper between terminals 1 and 3 plugged in.

Note: for 2-wire connection must be short circuit of jumper between terminals 2 and 3 plugged in.

DIMENSIONAL DRAFT

STU





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