

TEMPERATURE TO VOLTAGE CONVERTERS STU (0–10 V)



DESCRIPTION AND APPLICATION

The converters of the type STU are intended for converting the signal of the Ni 1000/6180, Pt 100/3850 or Pt 1000/3850 resistance-type temperature sensing elements to a unified signal 0 to 10 V. These converters can be applied in any control system compatible with 0–10 V voltage output. The case is provided by the console for wall-mounting or a bracket for DIN rail mounting. The standard measuring ranges are listed in the specifications table. The operating temperature range is -30 to 80 °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.



DECLARATION, CERTIFICATES, CALIBRATION

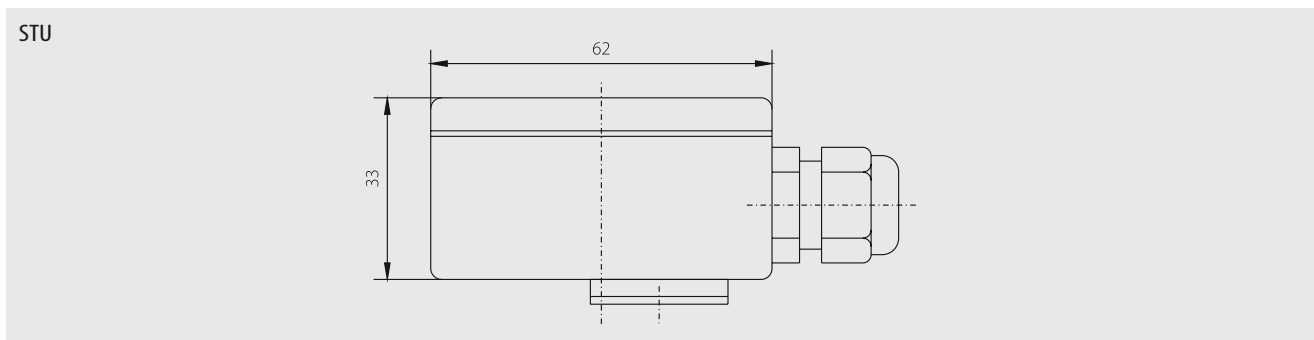
EC Declaration of Conformity – in accordance with Act No. 22/1997 Coll. as amended for converters with an output of 0 to 10 V.

Calibration – we perform standard calibration of resistance temperature sensors in accordance with EN ISO/IEC 17025 standard in the temperature range of the stated type of sensor.

SPECIFICATIONS

Converter type	STU Ni	STU Pt 100	STU Pt 1000
Input signal	Ni 1000/6180	Pt 100/3850	Pt 1000/3850
Output signal	0 to 10 V		
Power supply (Vcc)	15 to 30 V DC (Recommended value 24 V DC)		
Measuring ranges	-30 to 60 °C	-30 to 60 °C	-30 to 60 °C
	0 to 35 °C	0 to 35 °C	0 to 35 °C
	0 to 100 °C	0 to 100 °C	0 to 100 °C
	0 to 150 °C	0 to 150 °C	0 to 150 °C
	0 to 200 °C	0 to 200 °C	0 to 200 °C
	0 to 250 °C	0 to 250 °C	0 to 250 °C
Terminal board ingress protection	IP 65 according to EN 60 529		
Ambient temperature	-30 to 80 °C		
Measurement error	< 0.6 % of the measuring range, minimum 0.5 °C		
Load resistance	50 kΩ		
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	0.35 to 1.5 mm ²		
Material of the case	LEXAN 503RS		
Weight	0.15 kg		

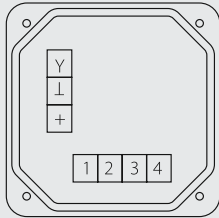
DIMENSIONAL DRAFT



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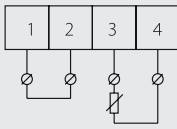
WIRING DIAGRAM

STU Ni, STU Pt



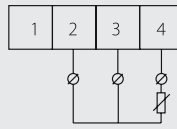
- Y output
- ⊥ minus pole of power supply
- + plus pole of power supply
- 1, 2 terminals for compensation wiring connection (only for Pt 100)
- 3, 4 terminals for sensor connection

2-wire connection



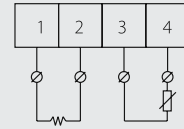
Ni 1000, Pt 100, Pt 1000

3-wire connection



Pt 100, Pt 1000

Wiring with compensation loop



Pt 100, Pt 1000

SENSOR INSTALLATION AND SERVICING

Prior to connecting the lead-in cables of the resistance-type sensing element it is necessary to attach the converter to a wall or a DIN bar and to unscrew the enclosure lid. The lead-in cables of a resistance-type sensing element are then connected to the corresponding terminals according to the wiring diagram. Recommended wire cross-section is determined by terminal board type and can be found in the specifications table. In case the lead-in cable is laid in the vicinity of high voltage conductors or those supplying equipment creating disturbing electromagnetic field (e.g. inductive load equipment), a shielded cable should be used. To ensure the ingress protection value of IP 65 the grommet has to be tightened and the lid has to be screwed on. After installing and connecting the sensor to the appropriate evaluating electrical equipment the converter is ready to use. The sensor does not require any special servicing or maintenance. The device can be operated in any working position, but the grommet must not be directed upwards.