TWO-WIRE PROGRAMMABLE TEMPERATURE TRANSMITTER BTT784

- **Compact High Performance**
- **Fits Standard Small Heads**
- **0.1% Accuracy error**
- **Fully Programmable**
- **Any Temperature Range within Limits**
- **Output Linear with Temperature (RTD)**
- **Loop-powered**
- **Adaptor for DIN Rail Mounting (type B)**
- **Accessories and Sensors Available**

FUNCTION

The BASI temperature transmitter series BTT784 is a compromising solution between the analog transmitters with fixed range and programmable transmitters. BTT784 transmitters allow on-site selecting input range and sensor type (for thermocouples) as well as transmitter reaction to sensor break by means of a group of soldering bridges (jumpers). The exact range can be adjusted by 'zero' and 'span' potentiometers. These transmitters have a special plastic cover to protect solder jumpers from the environment. Various mounting options are available: in sensor protection head type "B", in a box with high protection class, or on a DIN rail. This series of transmitters is also applicable in Ex zones using external Zener barrier. Due to their flexibility, excellent resistance against electromagnetic disturbances, and low price, the BTT784 transmitters are easy-to-use and very widely applicable.

SPECIFICATIONS GENERAL

INPUT

Pt100 (w=1.385), 3-wire :	-50 -+ 600 deg C
Thermocouple "E" :	0- +600 deg C
Thermocouple "J":	0- +800 deg C
Thermocouple "K":	0- +1200 deg C
Thermocouple "L":	0- +700 deg C
Thermocouple "L-GOST":	0- +600 deg C
Thermocouple "N":	0- +600 deg C
Thermocouple "T":	0- +1200 deg C
Range selection:	Jumpers
Thermocouple selection:	Jumpers
Zero adjustment:	+/- 50 %
Range adjustment:	+/-10%

OUTPUT

Signal type:	4 to 20 mA
RTD output proportional to:	Temperature
TC output proportional to:	Input voltage
Current limit:	Low=3mA, High=28mA
Current limit selection :	Jumpers
Sensor break RTD:	Low or High depends on terminnal
Sensor break TC:	High=28mA

ACCURACY

Measurement error:	+/-0,15 % from span
Nonlinearity:	+/-0,1 % from span
Temperature drift:	0.02 % from span for 1 °C
Cold junction compensation:	Automatic hardware ± 1 °

POWER SUPPLY

For standard type:	8 to 30VDC
Admissible variations:	4 Vp-p@24V/20mA
Max. line load:	Max. 620. @ 24V/20mA

OPERATING CONDITIONS

Operating temperature:	-30 to 80 °C
Operating humidity:	0 to 95%RH, non-condensing
EMC:	EN50081-1, EN50082-2 89/336/EEC
UL:	E252086

DESIGN AND MATERIALS

Case material:	Plastic
Wiring:	Screw terminals
Central opening(in-head):	Diam 5mm
Mounting in head:	Diam.44 x19mm (type B) IP20
Mounting on rail:	18 x90x58mm (type C) IP20 80x80x60mm (type D) IP65

ORDERING CODE
BTT784

TEMP.TYPE	**MOUNTING**
B Pt-100	B Head type
C Thermocouple	C DIN-rail
	D IP65

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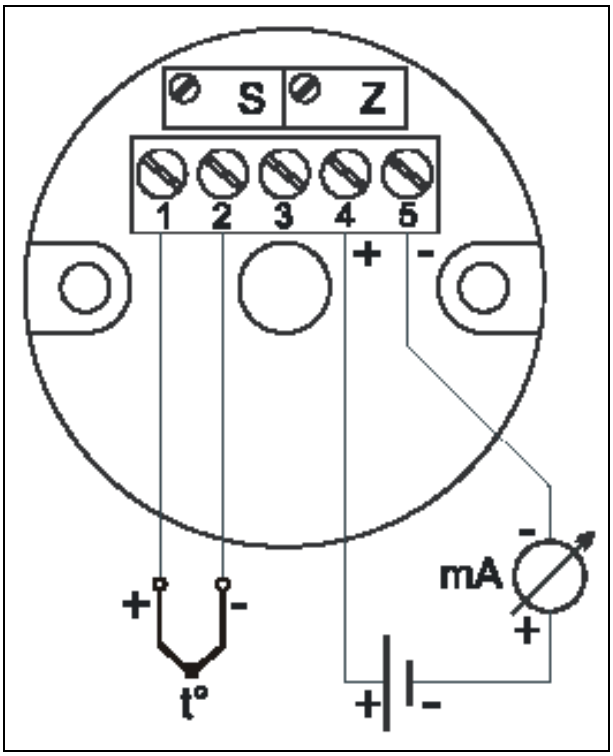
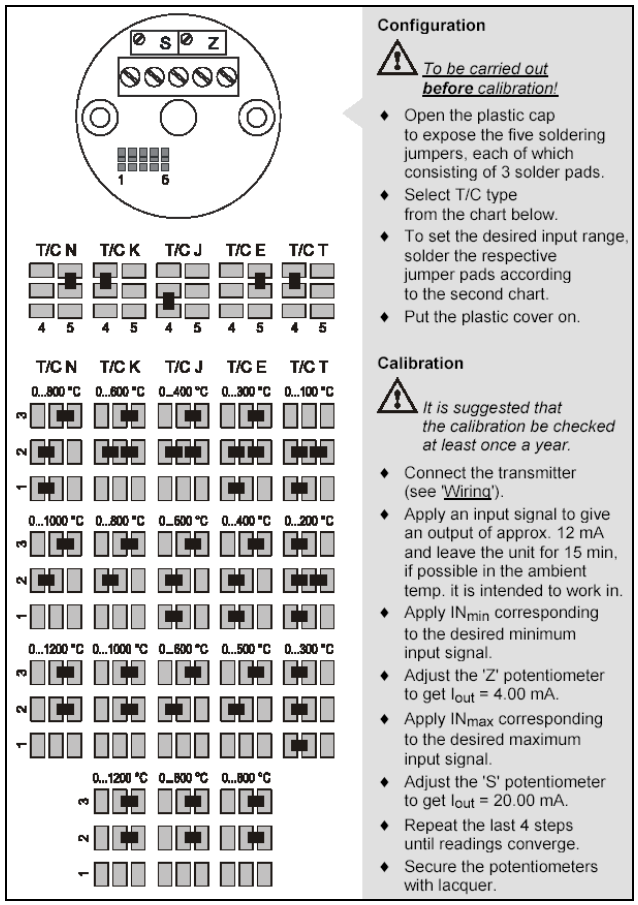
CALIBRATION CONFIGURATION THERMOCOUPLE





Configuration

⚠ *To be carried out* ***before*** *calibration!*

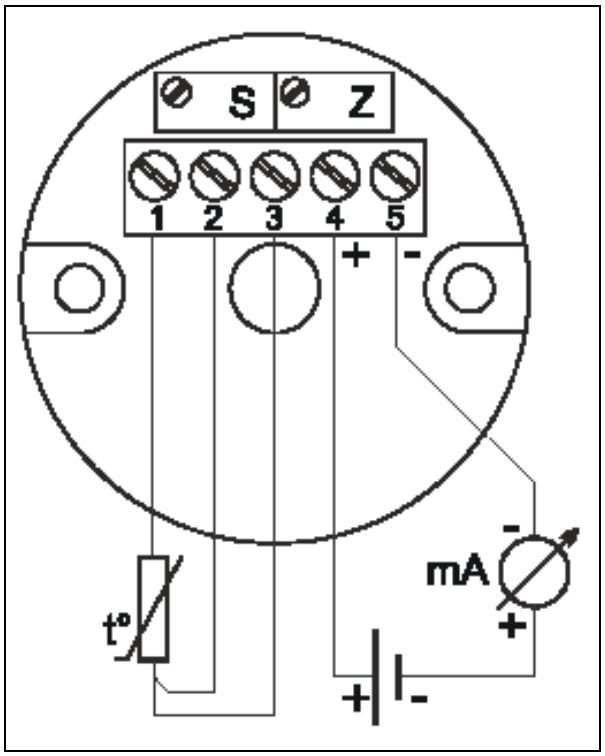
- Open the plastic cap to expose the five soldering jumpers, each of which consisting of 3 solder pads.
- Select T/C type from the chart below.
- To set the desired input range, solder the respective jumper pads according to the second chart.
- Put the plastic cover on.

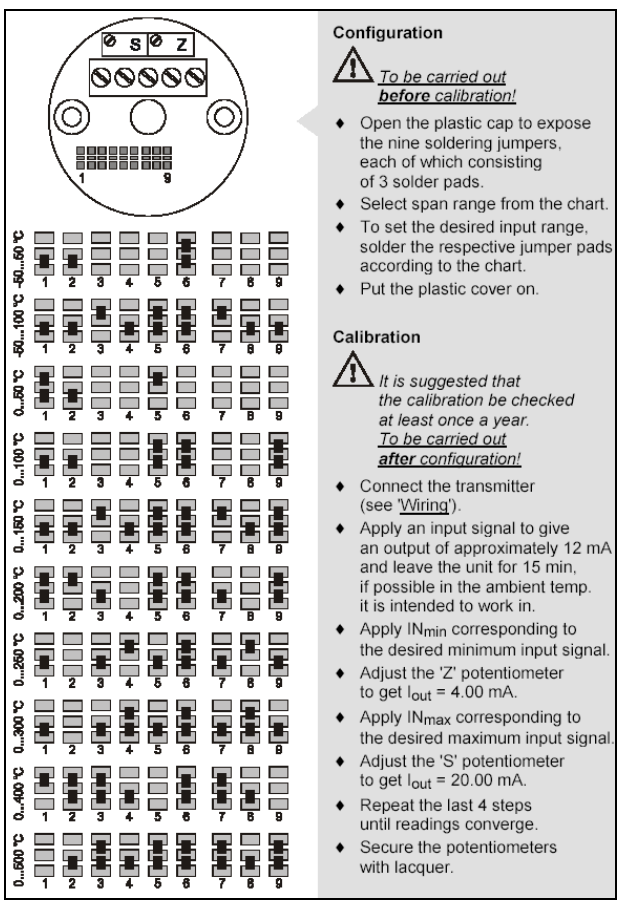
Calibration

⚠ *It is suggested that the calibration be checked at least once a year.*

- Connect the transmitter (see 'Wiring').
- Apply an input signal to give an output of approx. 12 mA and leave the unit for 15 min, if possible in the ambient temp. it is intended to work in.
- Apply IN_{min} corresponding to the desired minimum input signal.
- Adjust the 'Z' potentiometer to get I_{out} = 4.00 mA.
- Apply IN_{max} corresponding to the desired maximum input signal.
- Adjust the 'S' potentiometer to get I_{out} = 20.00 mA.
- Repeat the last 4 steps until readings converge.
- Secure the potentiometers with lacquer.

CALIBRATION CONFIGURATION RTD`s





Configuration

⚠ *To be carried out* ***before*** *calibration!*

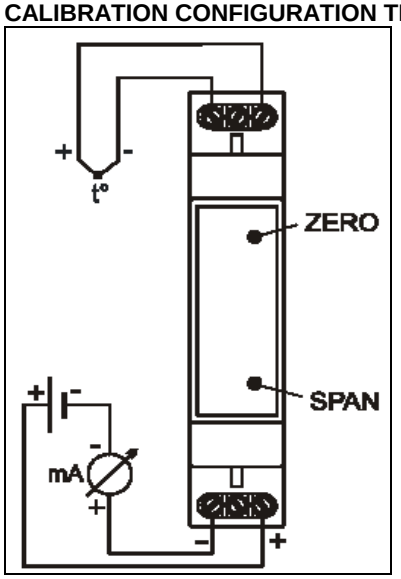
- Open the plastic cap to expose the nine soldering jumpers, each of which consisting of 3 solder pads.
- Select span range from the chart.
- To set the desired input range, solder the respective jumper pads according to the chart.
- Put the plastic cover on.

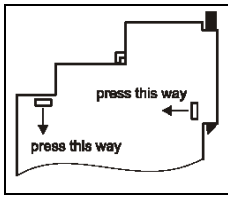
Calibration

⚠ *It is suggested that the calibration be checked at least once a year.* *To be carried out* ***after*** *configuration!*

- Connect the transmitter (see 'Wiring').
- Apply an input signal to give an output of approximately 12 mA and leave the unit for 15 min, if possible in the ambient temp. it is intended to work in.
- Apply IN_{min} corresponding to the desired minimum input signal.
- Adjust the 'Z' potentiometer to get I_{out} = 4.00 mA.
- Apply IN_{max} corresponding to the desired maximum input signal.
- Adjust the 'S' potentiometer to get I_{out} = 20.00 mA.
- Repeat the last 4 steps until readings converge.
- Secure the potentiometers with lacquer.

CALIBRATION CONFIGURATION THERMOCOUPLE

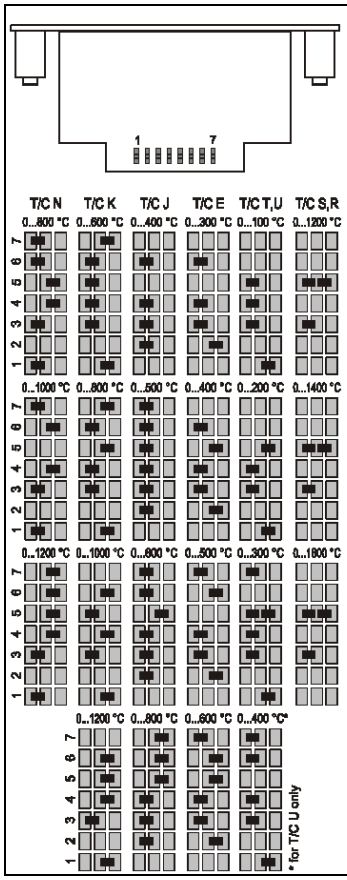




Case Opening

- Insert the tip of appropriate screw-driver into rectangular openings and press as shown.
- Repeat the above operation from the opposite site of the case.

⚠ *After closing the case, do not forget to insert the two black spring-type brackets.*



Configuration

⚠ *To be carried out **before** calibration!*

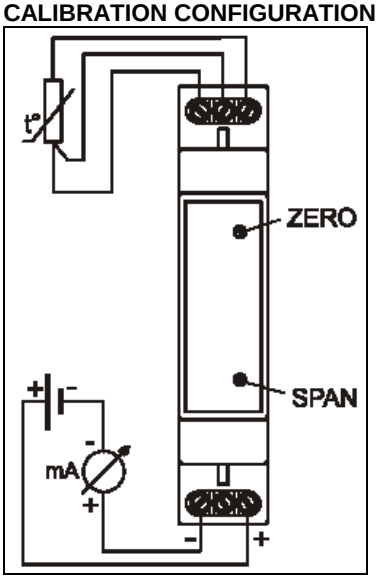
- Open transmitter case and access the printed circuit board as described before.
- There are seven soldering jumpers on the PCB, each of which consisting of 3 pads.
- To set the desired T/C type and input range, solder the respective jumper pads according to the chart.
- Close the plastic case.

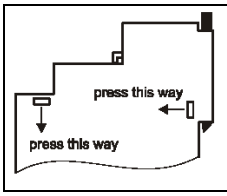
Calibration

⚠ *It is suggested that the calibration be checked at least once a year.*

- Connect the transmitter (see 'Wiring').
- Apply an input signal to give an output of approx. 12 mA and leave the unit for 15 min, if possible, at the ambient temperature it is intended to work at.
- Apply IN_{min} corresponding to the desired minimum input signal.
- Adjust ZERO potentiometer to get I_{out} = 4.00 mA.
- Apply IN_{max} corresponding to the desired maximum input signal.
- Adjust SPAN potentiometer to get I_{out} = 20.00 mA.
- Repeat the last 4 steps until readings converge.
- Secure the potentiometers with lacquer.

CALIBRATION CONFIGURATION RTD`s

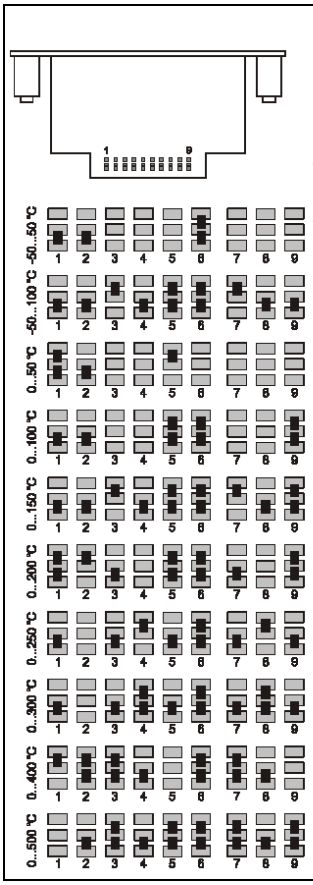




Case Opening

- Insert the tip of appropriate screw-driver into rectangular openings and press as shown.
- Repeat the above operation from the opposite site of the case.

⚠ *After closing the case, do not forget to insert the two black spring-type brackets.*



Configuration

⚠ *To be carried out **before** calibration!*

- Open transmitter case and access the printed circuit board as described before.
- There are nine soldering jumpers on the PCB, each of which consisting of 3 pads.
- Select span range from the chart.
- To set the desired input range, solder the respective jumper pads according to the chart.
- Close the plastic case.

Calibration

⚠ *It is suggested that the calibration be checked at least once a year.*

- Connect the transmitter (see 'Wiring').
- Apply an input signal to give an output of approx. 12 mA and leave the unit for 15 min, if possible in the ambient temp. it is intended to work in.
- Apply IN_{min} corresponding to the desired minimum input signal.
- Adjust ZERO potentiometer to get I_{out} = 4.00 mA.
- Apply IN_{max} corresponding to the desired maximum input signal.
- Adjust SPAN potentiometer to get I_{out} = 20.00 mA.
- Repeat the last 4 steps until readings converge.
- Secure the potentiometers with lacquer.