

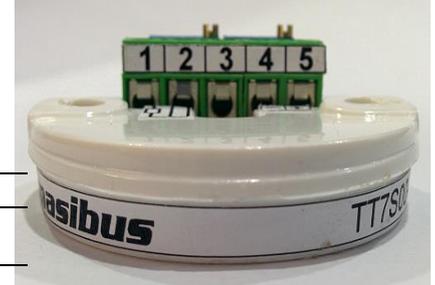
## 2- Wire Head mount Transmitter for Pt100 Input

- TT7S00-HR is a non-isolated two-wire transmitter which converts the measuring signal of a 3-wire Pt100 RTD into a standardized load-independent, 4-20 mA current which is linearly proportional to the measured temperature.
- Multi range design with solder pads and potentiometers.
- Flat design gives easy access to terminals and adjustments.
- Only 6.5 V voltage drop over the transmitter allows for high loads in the 4-20 mA output loop.

### SPECIFICATION

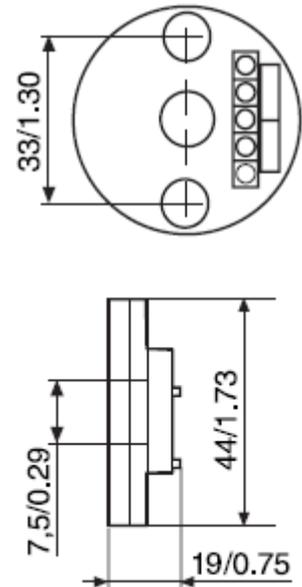
Input	
Pt100 ( $\alpha = 0.00385$ ), 3-wire connection	Adjustable to specific ranges within: -50 to +550 °C
Sensor current	~1.1 mA
Max. sensor wire resistance	15 $\Omega$ / wire
Monitoring	
Sensor break detection, selectable	Upscale ~25 mA, downscale ~3 mA
Adjustments	
Zero	-50 to +50 °C
Span, selectable	50 to 500 °C
Span, fine adjustment	$\pm 10$ %
Output	
Current	4 - 20 mA
Linearity	Temperature linear
Current limitation	~ 25 mA
Permissible load	$R_{Load} = (Supply\ Voltage - 6.5)/0.025\ Ohm$
Temperature	
Ambient, storage	-40 to +100 °C
Ambient, operating	0 to +85 °C
General data	
Response time 10-90%	$\leq 0.2$ s
Humidity (non-condensing)	30 to 95 %RH (Non-Condensing)
Power supply, polarity protected	
Supply voltage	6.5 to 32 VDC
Permissible ripple	4 Vp-p @ 50/60 Hz
Accuracy	
Linearity	$\pm 0.1$ % of span
Calibration	$\pm 0.1$ % of span
Temperature influence	<150 PPM / °C
Sensor wire influence	$\pm 0.005$ °C/ $\Omega$
Supply voltage influence	$\pm 0.02$ % of span/V
Supply ripple influence, 50/60 Hz, 4 Vp-p	$\pm 0.05$ % of span
Long term stability	$\pm 0.1$ % of span/year
Housing	
Material / Flammability(UL)	Poly carbonate
Mounting	DIN B-head or larger
Connection, single/stranded wires	$\leq 2.5$ mm <sup>2</sup> , AWG 14
Weight	40 g
Protection, housing with cover/terminals	IP 20

HEAD MOUNT TRANSMITTER  
TT7S00-HR



- Multi range design for PT 100 input signals
- 2 wire technology, temperature linearized 4 to 20 mA analogue output
- Easy for in head mounting in DIN B.
- Sensor break detection

DIMENSION (MM/IN)



## SAFETY AND WARNING

As all transmitters with potentiometer adjustments, TT7S00-HR transmitter must not be exposed to heavy shocks or vibration which may cause the transmitter to get out of calibration.

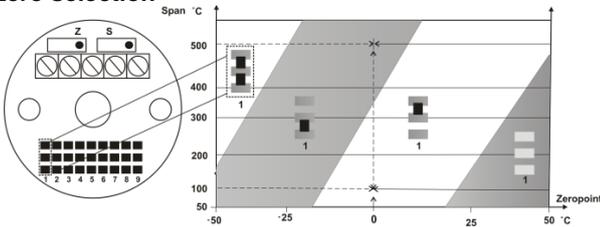
To avoid Electrostatic Discharge (ESD) to the transmitter, which may cause permanent damage, always ground yourself by touching some ground equipment before configuring the transmitter.

Always use the cover when the transmitter is not in the configuration phase. The cover prevents the transmitter from getting dirt on the soldering pads as well as getting ESD by accidental touch of the soldering pads.

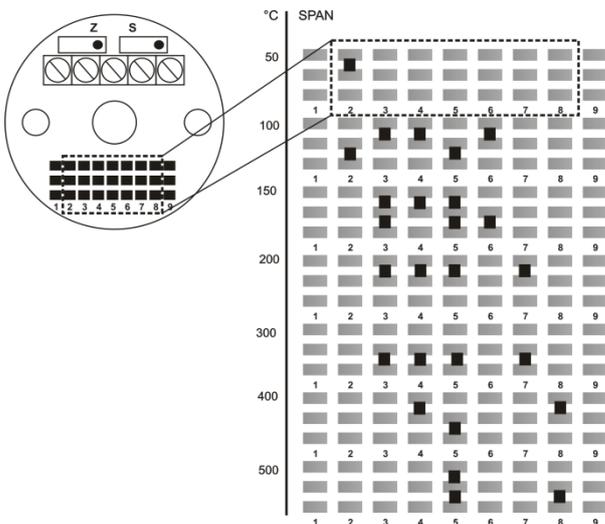
## CONFIGURATION AND CONNECTION

- Configuration of the transmitter should always be carried out by qualified person only.
- To ensure that the device can be operated safely and all functions can be used, check all cables correctly connected according to connection diagram.

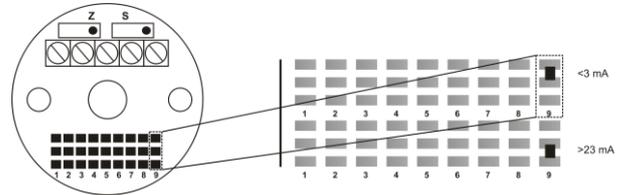
### 1. Zero selection



### 2. Span selection



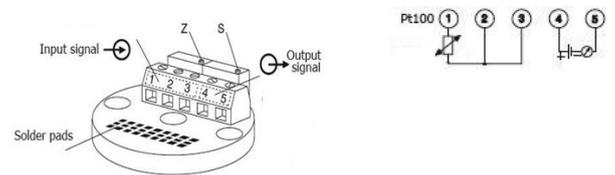
### 3. Burn out detection selection



### 4. Connection

**For Input signal:** Connect terminal no. 1,2 and 3 as per below connection details.

**For Output signal:** Connect terminal no. 4 and 5 as per below connection details.



## INSTALLATION

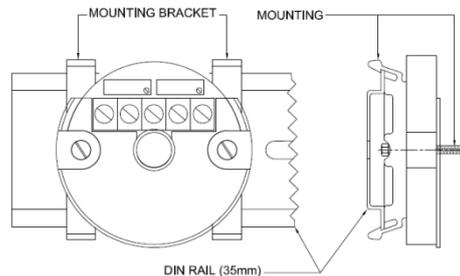
On DIN Rail – 35 mm DIN

### Mounting:

The unit can be snapped onto all DIN rails according to EN60715. The device must be mounted horizontally (Input terminal blocks facing upper wards) The housing is mounted on the DIN rail by swiveling it into place.

### Removal:

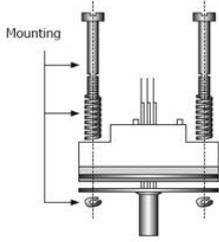
Release the snap-on catch using a screwdriver and then detach the module from the **bottom edge** of the DIN Rail.



### Head Mounting:

### Mounting:

The Unit can be mount with 2 screws given with the sensor head as shown in figure with screw driver.



## CALIBRATION

**Configuration of the transmitter should always be carried out before calibration.**

It is suggested that the calibration is checked at least once a year. When a new calibration is necessary, use calibration instruments with an accuracy of at least 5 times better than wanted accuracy for the calibration.

The transmitter is polarity protected and will not be damaged by connecting the power supply with the wrong polarity, but the output will be 0 mA.

1. Connect input and output signals according to figure In connections. Apply an input signal to give an output of approximate 12 mA.
2. If the output signal has stabilized after 15 minutes, The transmitter is ready for calibration.
3. Apply Temp. input corresponding to desired minimum input signal.
4. Calibrate Zero-potentiometer until  $I_{out} = 4.00$  mA.
5. Apply Temp. input corresponding to desired maximum input signal.
6. Calibrate Span-potentiometer until  $I_{out} = 20.00$  mA.
7. Repeat steps 3 to 6 until readings converge.
8. Secure the potentiometer with lacquer. Calibration is completed.

**Subject to recalibrate if range change**

## ORDERING CODE

Ordering Code		
Model	Range Setting	
TT7S00-HR	X	
	S	Standard without Range Setting & without calibration certificate
	M	Customer Specified Range Setting & Calibration Certificate (Option)

Specify Input Range at the time of Ordering for range setting option

**TT7S00-HR-X-XX-XXX**

Where,  
**Zero:** -50°C  
**Span:** 250°C

**XX:** Zero Indication  
**XXX:** Span Indication

**Example:**  
**For input range of -50 to 200 °C**

## ACCESSORIES

**Mounting Kit**

**Head Mounting:** m-MK-FH-00-1  
**Rail Mounting Kit:** m-MK-RC-00-1

## TROUBLE SHOOTING

### ⚠ Unit Not Turning ON?

**The problem can be bad connection.**

First check, connections as per sticker details

Check Jumper selection if they are proper or not?

### ⚠ Unstable/Vague Reading

Check for loose connections.

The reason can be reverse input connections

### ⚠ Output not matching with the expected value

It is a normal tendency to doubt the instrument performance, when the Output is not matching the expected value. Kindly make sure that the output is really incorrect with respect to input signal, before attempting any re-calibration.

Account for measuring instrument's inaccuracies, lead errors and calibration errors. Care must be taken when measuring Output signal.

Use calibrating instrument of accuracy better than 0.1% for purpose of calibration. If the signal is still found to be out of tolerance, calibration should be required.

**Do not install the unit where it is subjected to continuous vibration.**  
**Do not subject the unit to physical impact.**

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**TT7S00-HR-S(-50)-250**