



# HEAD TYPE INDUSTRIAL HIGH TEMPERATURE TRANSMITTER

## AST 40 Series

“-195...+650°C Measuring Range, 25-500 mm Immersion Length, Analog Output”



- Selectable measuring range from -195 to +650 °C (Optional others)
- Resistant up to 200Bar (for higher pressures please ask)
- Immersion length options ranging from 25 mm to 500 mm
- 0-20 mA, 4-20mA, 0-5V, 0-10V, 1-5V analog output options
- G1/4, G1/2, NPT1/4, NPT1/2, M14x1, M20x1,5 etc. process connection options
- Aluminum alloy housing
- Easy installation and use

The AST 40 serie head type temperature transmitter is designed for precise temperature measurement of liquid and gaseous media in the range of -195 to +650 °C.

The detection principle is based on the variation of the electrical resistance of the conductor with temperature. The resistance signal receiving from the RTD element is converted into various analog output signals (4-20 mA, 0-10V etc.) and integrated into automation systems.

It has a wide range of user-selectable specifications such as measuring range, process connection type, immersion length, output signal, connector type etc.

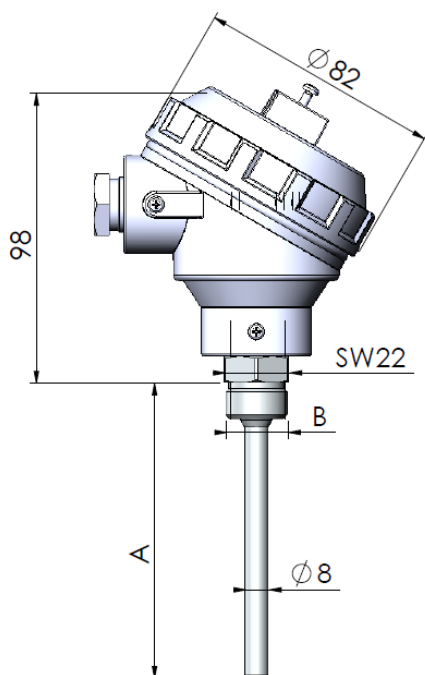
## APPLICATIONS

- Machines
- Tanks
- Boilers
- Gas and liquid fluids
- Surface temp. measurement
- Ambient temp. measurement



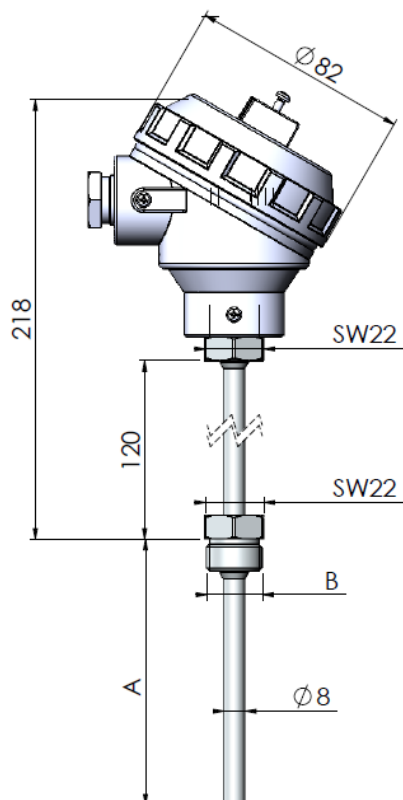
## MECHANICAL DIMENSIONS (mm)

For Low Temperatures ( $\leq +200^{\circ}\text{C}$ )



| STROKE | A   | B                                                                               |
|--------|-----|---------------------------------------------------------------------------------|
| 025    | 25  | G1/2<br>G1/4<br>NPT1/4<br>NPT1/2<br>M14x1<br>M20x1,5<br><br>*Optional<br>others |
| 050    | 50  |                                                                                 |
| 075    | 75  |                                                                                 |
| 100    | 100 |                                                                                 |
| 125    | 125 |                                                                                 |
| 150    | 150 |                                                                                 |
| 175    | 175 |                                                                                 |
| 200    | 200 |                                                                                 |
| 225    | 225 |                                                                                 |
| 250    | 250 |                                                                                 |
| 275    | 275 |                                                                                 |
| 300    | 300 |                                                                                 |
| 325    | 325 |                                                                                 |
| 350    | 350 |                                                                                 |
| 375    | 375 |                                                                                 |
| 400    | 400 |                                                                                 |
| 425    | 425 |                                                                                 |
| 450    | 450 |                                                                                 |
| 475    | 475 |                                                                                 |
| 500    | 500 |                                                                                 |

For High Temperatures ( $> +200^{\circ}\text{C}$ )



| STROKE | A   | B                                                                               |
|--------|-----|---------------------------------------------------------------------------------|
| 025    | 25  | G1/2<br>G1/4<br>NPT1/4<br>NPT1/2<br>M14x1<br>M20x1,5<br><br>*Optional<br>others |
| 050    | 50  |                                                                                 |
| 075    | 75  |                                                                                 |
| 100    | 100 |                                                                                 |
| 125    | 125 |                                                                                 |
| 150    | 150 |                                                                                 |
| 175    | 175 |                                                                                 |
| 200    | 200 |                                                                                 |
| 225    | 225 |                                                                                 |
| 250    | 250 |                                                                                 |
| 275    | 275 |                                                                                 |
| 300    | 300 |                                                                                 |
| 325    | 325 |                                                                                 |
| 350    | 350 |                                                                                 |
| 375    | 375 |                                                                                 |
| 400    | 400 |                                                                                 |
| 425    | 425 |                                                                                 |
| 450    | 450 |                                                                                 |
| 475    | 475 |                                                                                 |
| 500    | 500 |                                                                                 |

## TECHNICAL SPECIFICATIONS

|                                    |                                                              |                |            |          |
|------------------------------------|--------------------------------------------------------------|----------------|------------|----------|
| <b>Sensor</b>                      | PT100 (Class B EN60751)                                      |                |            |          |
| <b>Measuring range</b>             | -195 ... +650 °C / -319 ... +1202 °F (Optional others)       |                |            |          |
| <b>Max. working pressure</b>       | 200 Bar (for higher pressures please ask)                    |                |            |          |
| <b>Response time</b>               | 2 sn                                                         |                |            |          |
| <b>Output</b>                      | 2 wire 4-20mA std.                                           | 3 wire 4-20mA, | 0-5V, 1-5V | 0-10V    |
| <b>Load</b>                        | 250Ω                                                         | 250Ω           | ≥2.5K      | ≥5K      |
| <b>Supply voltage</b>              | 7-32VDC                                                      | 16-30VDC       | 12-30VDC   | 16-30VDC |
| <b>Current consumption</b>         | 2 wire : ≤20 mA @24VDC<br>3 wire : <30 mA @24VDC             |                |            |          |
| <b>Reverse polarity protection</b> | Yes                                                          |                |            |          |
| <b>Short circuit protection</b>    | Yes                                                          |                |            |          |
| <b>Overload protection</b>         | Yes                                                          |                |            |          |
| <b>Electrical connection</b>       | Terminal                                                     |                |            |          |
| <b>Process Connection</b>          | G1/4, G1/2, NPT1/4, NPT1/2, M14x1, M20x1,5 (Optional others) |                |            |          |
| <b>Immersion length</b>            | Optional between 25 mm ... 500 mm                            |                |            |          |
| <b>Immersion Diameter</b>          | 8mm<br>6mm (only for pressures up to 0...200 bar)            |                |            |          |
| <b>Material</b>                    | Head: Aluminum alloy<br>Immersion pipe: 304 Stainless steel  |                |            |          |
| <b>Operating temp. (head)</b>      | -40°C ... +85°C                                              |                |            |          |
| <b>Protection</b>                  | IP65                                                         |                |            |          |

**TEMPERATURE SENSOR TOLERANCE TABLE (Class B EN60751)**

| TEMPERATURE (°C) | ±°C | ±OHM |
|------------------|-----|------|
| -200             | 1.3 | 0.56 |
| -100             | 0.8 | 0.32 |
| 0                | 0.3 | 0.12 |
| 100              | 0.8 | 0.30 |
| 200              | 1.3 | 0.48 |
| 300              | 1.8 | 0.64 |
| 400              | 2.3 | 0.79 |
| 500              | 2.8 | 0.93 |
| 600              | 3.3 | 1.06 |
| 650              | 3.6 | 1.13 |

## ELECTRICAL CONNECTION

**AST-40 TRANSMITTER CONNECTION DIAGRAM**

| Transmitter Type | 2-wire<br>4-20mA        |                         | 3-wire<br>0-5V, 0-10V, 1-5V, 0-20mA, 4-20mA |                         |
|------------------|-------------------------|-------------------------|---------------------------------------------|-------------------------|
| RTD Type         | 2-wire PT100 Connection | 3-wire PT100 Connection | 2-wire PT100 Connection                     | 3-wire PT100 Connection |
| Connection       |                         |                         |                                             |                         |

## ORDER CODE

### 1-Model

AST40

### 2- Temperature Range

Selectable from -195 to +650 °C (Ask for others)

### 3- Immersion Length

|            |            |            |            |
|------------|------------|------------|------------|
| 025: 25mm  | 150: 150mm | 275: 275mm | 400: 400mm |
| 050: 50mm  | 175: 175mm | 300: 300mm | 425: 425mm |
| 075: 75mm  | 200: 200mm | 325: 325mm | 450: 450mm |
| 100: 100mm | 225: 225mm | 350: 350mm | 475: 475mm |
| 125: 125mm | 250: 250mm | 375: 375mm | 500: 500mm |

**\*We do not recommend using small immersion lengths for air or gas temperature measurements**, as the body absorbs heat due to the measurement probe being very close to the sensor body.

### 4- Immersion Pipe Diameter

8: 8mm

6: 6mm (only for pressures up to 0...200 bar)

### 5- Pressure Type

Y: High Pressure (For pressures higher than 200 bar)

D: Low Pressure (For pressures up to 0...200 bar)

### 6- Sensor Type

PT100

### 7- Output Signal

V : 0-10VDC

A: 4-20mA (2-wire)

V1: 0-5VDC

A0: 0-20mA (3-wire)

V5 : 1-5VDC

A7: 4-20mA (3-wire)

### 8- Process Connection

G1/4 : G1/4

NPT1/2 : NPT1/2

G1/2 : G1/2

M14 : M14x1

NPT1/4 : NPT1/4

M20 : M20X1,5

\* Optional others

**Sample Order Code:** AST40 -40...+500 025 8Y PT100 V G1/4

## BY PRODUCTS



### EPA Series Measurement and Control Devices

[48x48mm model EPA 100](#)

[74x74mm model EPA 200](#)

[96x48mm model EPA 300](#)