User manual JOFRA STS-103 B

Probe 150

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1.0 General information

This manual is only effective for the following product:

JOFRA STS-103 B - 150 mm

The product is manufactured by:

AMETEK Denmark A/S GYDEVANG 32-34 DK-3450 ALLERØD DENMARK

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2.0 Introduction

The JOFRA STS-103 B probe is designed for fast and traceable calibration and temperature measurement with AMETEK DTI- and ATC-systems, and is ready for use.

Please read this manual carefully before use, to obtain maximum value of your calibration system.



Warning

- Read this manual before use.
- Do not use in hazardous area.
- Handle carefully.
- Never exceed temperature range

3.0 Functionality

3.1 Functional description

The sensor can be used for measuring temperature in the range -50°C to 400°C (-58°F to 752°F).

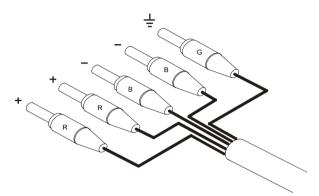
Sensors may be supplied with certificates for a limited temperature range.

The resistance of the JOFRA STS-103 B sensor is converted to temperature according to IEC-751 (ITS-90) (calculated coefficients specific for the sensor are stated on the certificate).

3.2 Connections

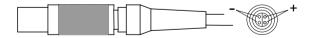
The sensor is delivered with a connecting cable and with the following options:

Model with banana plugs: 2 meter cable



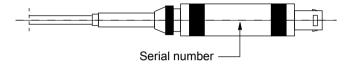
Use the ground terminal in order to reduce noise.

Model with LEMO connection: 2 meter or 0.5 meter cable



3.3 Serial number

The serial number is placed on the sensor as shown on the figure below:



4.0 Operation

4.1 Operation area

The sensor is intended for use in areas, which meet the following:

Ambient temperature

range : -20°C to 70°C (-4°F to 158°F)

Humidity : 0% to 90%

Protection class: IP 50



Warning

Do not use in hazardous areas.

5.0 Maintenance

The sensor does not require specific maintenance before or after use. The user may carry out the following procedure himself:

Cleaning sensor : Use alcohol or water and





Caution...

- The sensor must always be protected against any mechanical damage.
- The sensor must never be exposed to mechanical shock effects.
- Avoid thermal shock
- Any bending of the sensor may cause permanent damage

6.0 Technical specifications

Sensor specifications:

Sensor type : Platinum sensor Pt100.

 α = 0.00385

Sensor length : 150 mm

Temperature range: -50°C to 400°C (-58°F to

752°F)

Accuracy:

Repeatability : 0.005°C

Hysteresis¹⁾ : 0.01°C @ 0°C

Stability²⁾ : typ. 0.014°C @ 0°C

Self heating effect : 0.06°C/mW

Diameter : OD3 mm

Immersion depth : 40 mm

Media compatibility: INCONEL 600

1)When used in the range -45° C to 400° C (-49° F to 752° F) 2)Stability when exposed to 400° C (752° F) for 100 hours. Stability will depend on actual use of the sensor.

Response time : A: $\tau(50\%) = 5$ sec.

 $\tau(90\%) = 15 \text{ sec.}$

Recommended

meas. current : 1 mA

Connections : LEMO plugs are standard

Certificate:

The sensor is supplied with an accredited certificate according to the ITS 90 temperature scale. The sensor is as standard calibrated in the range –45°C to 400°C (-49°F to 752°F).

Calibration is carried out at:

-45°C/-49°F

-20°C/-4°F

0°C/32°F

• 50°C/122°F

• 100°C/212°F

• 100 C/212 F • 200°C/392°F

00000/0000

• 320°C/608°F

400°C/752°F