# 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 TEL: +45 48 16 80 00 FAX: +45 48 16 80 80

# 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 temperaturerange: -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 a soft cloth.



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. $\alpha = 0.00385$		
Sensor length		150 mm		
Temperature range		-50°C to 400°C (-58°F to 752°F)		
Accuracy :				
Repeatability	:	0.005°C		
Hysteresis <sup>1)</sup>	:	0.01°C @ 0°C		
Stability <sup>2)</sup>	:	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  $-45^{\circ}$ C to  $400^{\circ}$ C ( $-49^{\circ}$ F to  $752^{\circ}$ F) 2)Stability when exposed to  $400^{\circ}$ C ( $752^{\circ}$ F) for 100 hours. Stability will depend on actual use of the sensor.

Response time : A: $\tau(50\%) = 5$  sec.  $\tau(90\%) = 15$  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  $-45^{\circ}$ C to  $400^{\circ}$ 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
- 200°C/392°F
- 320°C/608°F
- 400°C/752°F