

**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  $-50^{\circ}\text{C}$  to  $400^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$  to  $752^{\circ}\text{F}$ ).

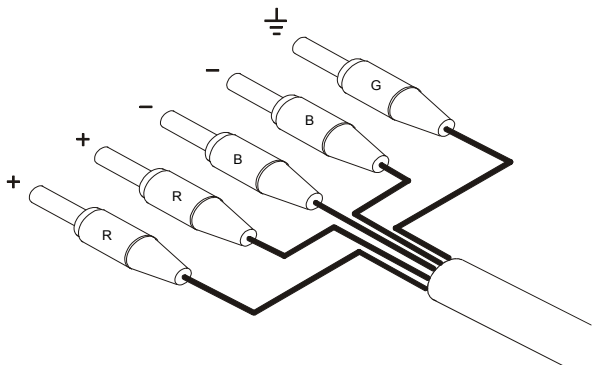
Sensors may be supplied with certificates for a limited temperature range.

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**

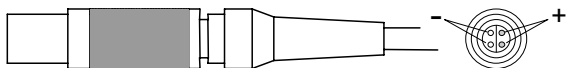
The sensor is delivered with a connecting cable and with the following options:

Model with banana plugs:  
2 meter cable



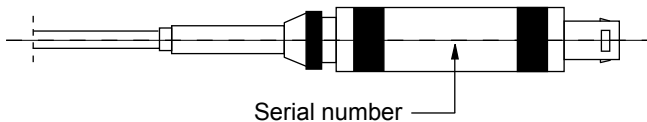
Use the ground terminal in order to reduce noise.

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 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°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: $\tau(50\%) = 5 \text{ sec.}$ $\tau(90\%) = 15 \text{ sec.}$
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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  $-45^{\circ}\text{C}$  to  $400^{\circ}\text{C}$  ( $-49^{\circ}\text{F}$  to  $752^{\circ}\text{F}$ ).

Calibration is carried out at:

- $-45^{\circ}\text{C}/-49^{\circ}\text{F}$
- $-20^{\circ}\text{C}/-4^{\circ}\text{F}$
- $0^{\circ}\text{C}/32^{\circ}\text{F}$
- $50^{\circ}\text{C}/122^{\circ}\text{F}$
- $100^{\circ}\text{C}/212^{\circ}\text{F}$
- $200^{\circ}\text{C}/392^{\circ}\text{F}$
- $320^{\circ}\text{C}/608^{\circ}\text{F}$
- $400^{\circ}\text{C}/752^{\circ}\text{F}$