

User manual
JOFRA STS-100 A/B
Probes 250/350/500/901

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1.0 General information

This manual is only effective for the following products:

JOFRA STS-100 A/B - 250 mm

JOFRA STS-100 A/B - 350 mm

JOFRA STS-100 A/B - 500 mm

JOFRA STS-100 A/B - 901 (90°)

The products are manufactured by:

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2.0 Introduction

The JOFRA STS-100 A/B probes are designed for fast and traceable calibration and temperature measuring with AMETEK DTI- and ATC-systems, and are 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 -150°C to 650°C (-238°F to 1202°F).

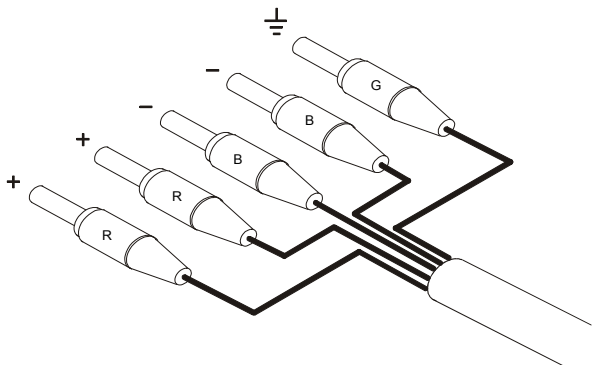
Sensors may be supplied with certificates for a limited temperature range.

The resistance of the JOFRA STS-100 A/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

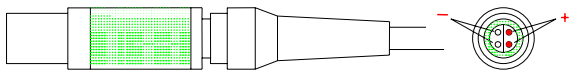
The sensor is delivered with a connecting cable and with the following options:

Model with banana plugs:
2 meter cable



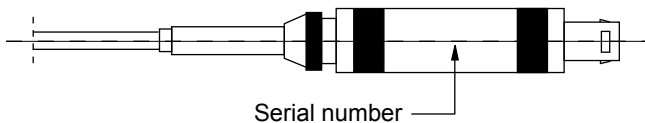
Use the ground terminal in order to reduce noise.

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

All the sensors are 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	:	250 mm 350 mm 500 mm 165 mm (90° Angle)
Temperature range	:	-150°C to 650°C (-238°F to 1202°F)
Accuracy		
Repeatability	:	0.002°C
Hysteresis ¹⁾	:	0.01°C @ 0°C
Stability ²⁾	:	typ. 0.014°C @ 0°C
Self heating effect	:	0.06°C/mW
Diameter	:	A: OD4 mm B: OD1/4"
Immersion depth	:	A: 100 mm B: 110 mm
Media compatibility	:	INCONEL 600

1)When used in the range -80°C to 650°C (-122°F to 1202°F)

2)Stability when exposed to 650°C (1205°F) for 100 hours.

Stability will depend on actual use of the sensor.

Response time : A: $\tau(50\%) = 8 \text{ sec.}$
 $\tau(90\%) = 26 \text{ sec.}$
B: $\tau(50\%) = 18 \text{ sec.}$
 $\tau(90\%) = 44 \text{ sec.}$

Recommended
meas. current : 1 mA

Connections : Lemo plugs are standard

Certificate:

All sensors are supplied with an accredited certificate according to the ITS 90 temperature scale. The sensors are as standard calibrated in the range -45°C to 650°C (-49°F to 1202°F).

Calibration is carried out at:

- $-45^{\circ}\text{C}/-49^{\circ}\text{F}$
- $-20^{\circ}\text{C}/-4^{\circ}\text{F}$
- $0^{\circ}\text{C}/32^{\circ}\text{F}$
- $50^{\circ}\text{C}/122^{\circ}\text{F}$
- $100^{\circ}\text{C}/212^{\circ}\text{F}$
- $200^{\circ}\text{C}/392^{\circ}\text{F}$
- $320^{\circ}\text{C}/608^{\circ}\text{F}$
- $450^{\circ}\text{C}/842^{\circ}\text{F}$
- $650^{\circ}\text{C}/1202^{\circ}\text{F}$