

User Manual

JOFRA STS-100 A/B

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*...because calibration is
a matter of confidence*



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:



AMETEK Denmark A/S
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2.0 Safety instructions



Read this manual carefully before using the sensor!

In order to avoid any personal injuries and/or damage to the sensor all safety instructions and warnings must be observed.



Warning

- Do not use in hazardous area.
- Handle carefully.
- Never exceed temperature range



Caution...

- When measuring temperature in fluids (e.g. at re-calibration) the enclosed protection tube must be used.
- The probe must **always** be protected against any mechanical damage.
- The probe must **never** be exposed to mechanical shock effects.

- Avoid thermal shock
- Any bending of the probe may cause permanent damage
- **Never** use power or tools to place the probe.

3.0 Introduction

The JOFRA STS-100 A/B probes are specially designed for fast and traceable calibration and temperature measuring with your JOFRA equipment, 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

4.0 Functionality

4.1 Functional description

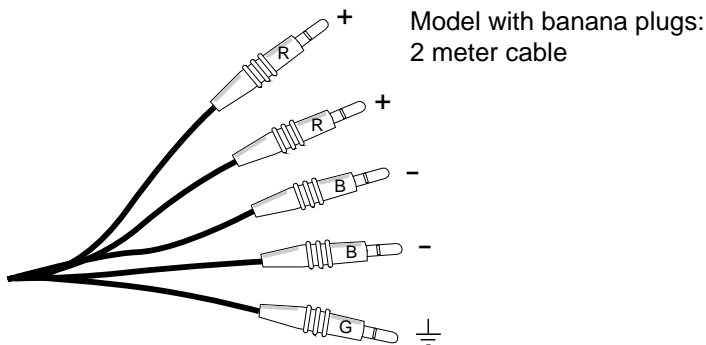
The sensor can be used for measuring temperature in the range -150°C to 650°C (-238°F to 1202°F).

The STS-100 A/B probes may be supplied with certificates for a limited temperature range.

The resistance of the JOFRA STS-100 A/B probe is converted to temperature according to IEC-751 (ITS-90) (calculated coefficients for the probe specific are stated on the certificate).

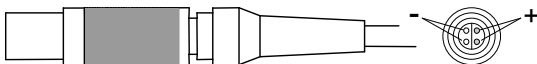
4.2 Connections

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

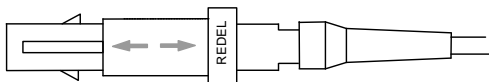


Use the ground terminal in order to reduce noise.

Model with Lemo connection:
2 meter or 0.5 meter cable

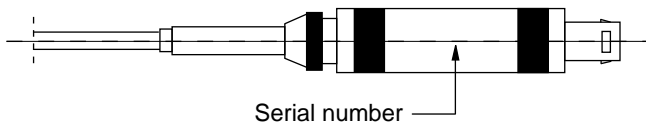


Model with Redel/Lemo connection:
2 meter cable



4.3 Serial number

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



5.0 Operation

5.1 Operation area

All the probes are intended for use in areas, which meet the following operating conditions:

Probe connector and cable	:	-20°C to 70°C (-4°F to 158°F)
Storage temp.	:	-20°C to 70°C (-4°F to 158°F)
Humidity	:	0% to 90% RH
Protection class	:	IP 50



Warning

Do not use in hazardous areas.

6.0 Maintenance

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

7.0 Technical specifications

Sensor type	:	Platinum sensor Pt100. $\alpha = 0.00385$
Probe 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 -90°C to 650°C (-130°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:

If the STS-100 A/B reference probe is supplied with a certificate, the calibration is carried out as recommended below according to the ITS 90 temperature scale.

The STS-100 A/B type H/F probe is as standard calibrated in the range :

-45°C to 650°C (-49°F to 1202°F)

The STS-100 A/B type HL/FL probe is as standard calibrated in the range :

-90°C to 125°C (-130°F to 257°F).

It is recommended to calibrate in minimum 3 – 6 calibration points (depending on the temperature range) above 0°C and in minimum 2 calibration points beneath 0°C .



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