

# User Manual

## JOFRA STS-050 A

### Probes 250/350



**User manual**  
**JOFRA STS-050 A**  
**Probes 250/350**

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## 1.0 General information

This manual is only effective for the following products:

JOFRA STS-050 A - 250 mm

JOFRA STS-050 A - 350 mm

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...

- 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 force or tools to place the probe.

## 3.0 Introduction

The JOFRA STS-050 A probes are designed for fast and traceable calibration and temperature measuring with AMETEK DTI050, 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 probe can be used for measuring temperature in the range -50°C to 400°C (-58°F to 752°F).

The JOFRA STS-050 A probes may be supplied with certificates for a limited temperature range.

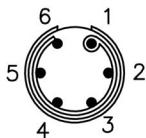
The resistance of the JOFRA STS-050 A probe is converted to temperature according to IEC-751 (ITS-90) (calculated coefficients specific for the probe is stated on the certificate).

### **4.2 Connections**

The probe is delivered with a connecting cable. The figures on the next page are shown from the connector side of the probe connector :

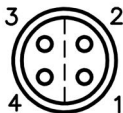
The pin-layout is as follows:

### Cable 128977 & 129090



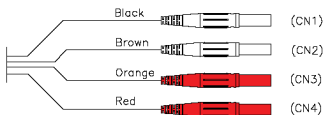
- Pin 1 : RTD I-
- Pin 2 : RTD S-
- Pin 3 : RTD S+
- Pin 4 : RTD I+
- Pin 5 : Memory GND
- Pin 6 : Memory I/O

### Cable 128976



- Pin 1 : RTD I+
- Pin 2 : RTD S+
- Pin 3 : RTD S-
- Pin 4 : RTD I-

### Cable 128975

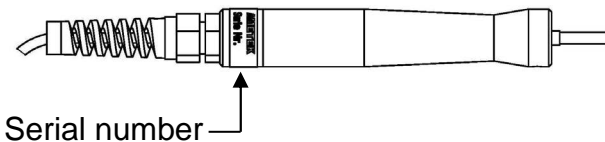


- Pin 1 : RTD I-
- Pin 2 : RTD S-
- Pin 3 : RTD S+
- Pin 4 : RTD I+



### 4.3 Serial number

The serial number is placed on the handle 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:

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.

## 6.0 Maintenance

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

- Cleaning the probe : 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

### Probe specifications:

Sensor type	:	Platinum sensor Pt100. $\alpha = 0.00385$
Probe length	:	250 mm (9.8 in) 350 mm (13.8 in)
Temperature range	:	-50°C to 400°C (-58°F to 752°F)
Accuracy		
Repeatability	:	0.005°C (0.009°F)
Hysteresis <sup>1)</sup>	:	0.01°C @ 0°C (0.02°F @ 32°C)
Stability <sup>2)</sup>	:	typ. 0.014°C @ 0°C (0.025°F @ 32°F)
Self heating effect	:	0.06°C/mW / 0.108°F/mW
Diameter	:	OD4 mm
Immersion depth	:	100 mm (3.94 in)
Media compatibility	:	INCONEL 600

1)When used in the range -50°C to 400°C (-58°F to 752°F)

2)Stability when exposed to 400°C (752°F) for 100 hours.

Stability will depend on actual use of the probe.

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

Recommended  
meas. current : 1 mA

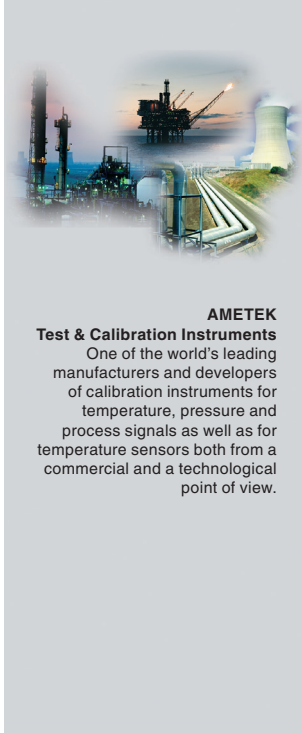
Connection : Redel plug with build in  
memory is standard

### Certificate:

All probes are supplied with a traceable certificate according to the ITS 90 temperature scale. The probes are 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
- 100°C/212°F
- 250°C/482°F
- 400°C/752°F



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