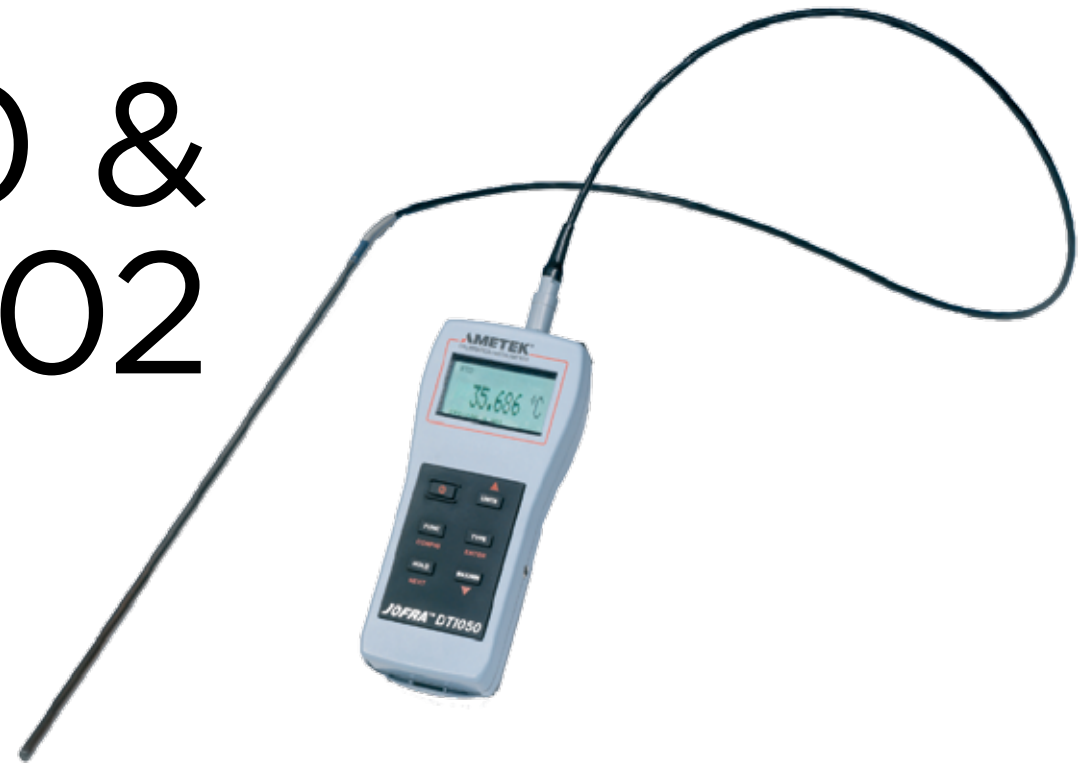


# DT1050 & STS-100/102



Digital Temperature Indicator &  
STS Reference Sensor

# What to expect with the DTI050

## Improve your Accuracy



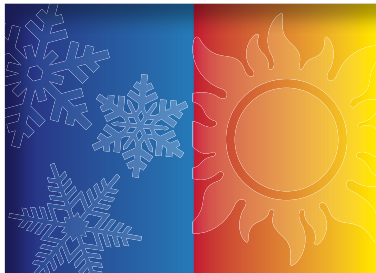
The DTI050 handheld digital temperature indicator, offers a measurement accuracy to  $\pm 0.012^{\circ}\text{C}$  and with a STS reference sensor the accuracy is  $\pm 0.04^{\circ}\text{C}$

## Fast Response Time



This simple to use instrument offers great flexibility, being able to work with both 'smart' and standard temperature sensors. A fast response time ensures precise monitoring of temperature stability and low drift reduces uncertainty of measurement between calibration intervals.

## Wide Temperature Range



Use the DTI050 and the STS sensors as the working temperature reference in any calibration application or use the set-up directly for critical measurements in the process.

DTI050:  $-200$  to  $850^{\circ}\text{C}$   
STS-100:  $-150$  to  $650^{\circ}\text{C}$   
STS-102:  $-45$  to  $155^{\circ}\text{C}$

## Wide Sensor Selection

Combined with an accurate STS reference sensor, the DTI050 temperature reference indicator is the perfect reference thermometer.

Choose between straight sensors or cable sensors, offering flexibility in test methods depending on the sensor-under-test.



## Specified Low Drift



The superior specifications, combined with a long history of reliability and low drift, makes the DTI050 and the STS sensors the perfect choice. Maintains a minimum uncertainty budget throughout the period between re-calibration intervals.

## Documentation made easy



RS232 communication and JofraCal calibration software are included in the standard delivery.

# Intuitive and fast navigation

## Graphical Display

Large digits display the temperature, info lines show current status and mode, and the small digits show the details of the sensor.

## Indicator for low battery

Running low on battery an icon in the display clearly shows this.

## On / Off

Auto shut-off to extend battery life (user-programmable).

## Resolution

1°C - 0.001°C. Maximum resolution depends on the selected sensor type.

## Hold

Makes it possible to “freeze” the results when doing measurement. The results are saved in the EEPROM, when it is switched off.



## Intelligent sensor reading

Capable of reading calibration data and other information from the memory of the sensor.

## Input

1 input channel with 6-pin REDEL connector.

## Type

Select type of sensor. When using STS reference sensor with intelligence, the indicator automatically finds the sensor and the data.

## Serial Interface

RS232 serial interface to communicate with JofraCal calibration software. Also used if adjustment of the unit is necessary.

## MAX / MIN

Reads the highest and lowest value from last reset. Monitor a safety alarm or look for temperature spikes in the process, Min and Max are saved in the EEPROM, when it is switched off.

## External power supply

It is possible to connect the DT1050 to external 9V power supply.

# Specifications DTI050

## Environmental

Operating Temperature  
-10 to 50°C / 14 to 122°F

Storage Temperature  
-20 to 60°C / -4 to 140°F

Humidity  
0 to 90% Rh, non-condensing

All specs specified at ambient temperature  
23°C ± 5°C / 73°F ± 9°F

Outside ambient 23°C ± 5°C / 73°F ± 9°F  
±0.001% rdg/°C / ±0.0028% rdg/°F

CJ compensation 18 to 28°C / 64 to 83°F  
0.2°C / 0.36°F

CJC outside above  
0.05°C/°C / 0.05°F/°F

## Power Supply

Mains Adapter  
9VDC / 200 mA

Battery  
1 x 9VDE Alkaline

Battery Life  
Minimum 10 hours

Low Battery Indicator  
at 6 VDC

Auto off  
user selectable, 1-30 minutes

## Display

LCD  
Graphical display

Display Resolution  
1°C - 0.001°C\*

Display Update  
Twice per second

*\*Maximum resolution depends on the selected sensor type*

## RS232 communication interface

Connector  
3-pin JACK

Communication rate  
9600 baud, ASCII

## Physical Specifications

Dimension L x W x H ..... 188x84x52 mm / 7.4x3.3x2.1 in

Weight including battery  
DTI050 ..... 0.4 kg / 14.1 oz

Shipping Dimension  
DTI050 ..... 250x160x100 mm / 9.8x6.3x3.9 in

Shipping weight including battery  
DTI050 ..... 1.1 kg / 2.4 lb

4-wire RTD Type	Temperature range				12 month accuracy	
	°C		°F		°C	°F
	From	To	From	To		
PT385, 100 ohm	-200	-80	-328	-112	0.012	0.021
	-80	100	-112	212	0.020	0.036
	100	300	212	572	0.030	0.054
	300	400	572	752	0.035	0.063
	400	630	752	1166	0.047	0.084
	630	800	1166	1472	0.057	0.102

Ohm	Range		Accuracy 12 months
	Min.	Max.	
Ohm read (low)	0.000	400.000	0.004% rdg + 0.002 ohm

# STS Reference Sensors

## System accuracy for DTI050 & STS

### STS-100 sensor

-50 to 250°C / -58 to 482°F	±0.040°C / 0.072°F <sup>1,2</sup>
.....	±0.055°C / 0.099°F <sup>1,3</sup>
-50 to 320°C / -58 to 608°F	±0.050°C / 0.090°F <sup>1,2</sup>
.....	±0.060°C / 0.108°F <sup>1,3</sup>
-50 to 400°C / -58 to 752°F	±0.065°C / 0.117°F <sup>1,2</sup>
.....	±0.080°C / 0.144°F <sup>1,3</sup>
-50 to 650°C / -58 to 1202°F	±0.090°C / 0.162°F <sup>1,2</sup>
.....	±0.100°C / 0.180°F <sup>1,3</sup>

### STS-102 cable sensor

-45 to 155°C / -49 to 311°F	±0.040°C / 0.072°F <sup>1,2</sup>
.....	±0.070°C / 0.126°F <sup>1,3</sup>

All sensors are as standard supplied with an accredited certificate stating the sensor coefficients.

<sup>1</sup>Specified at 95% confidence interval k=2 over full range, including calibration uncertainty, excluding 1 LSD (last significant digit)

<sup>2</sup> Excluding sensor drift

<sup>3</sup> Including sensor drift after 100 hours at max. temperature



STS-100  
Delivered in aluminium protection case



STS-102  
Delivered in a plastic protection case

## STS Superior Temperature Reference Sensors

Jofra STS Sensors are based on more than 50 years of industrial temperature sensor manufacturing experience. The main requirement of a reference sensor is stability: The less the sensor drifts, the lower the measurement uncertainty. All Superior Temperature Standard sensors are economical and offer fast response times, low immersion depths, compact physical sizes, and specified low drift rates: even at high temperatures. These are all important considerations when selecting a reference sensor.

All sensors are supplied with an accredited certificate stating the sensor coefficients.

# Ordering Information

## DTI050 indicator

Base Model Number	
DTI050	DTI050 Temperature Indicator
Calibration Certificate	
G	Traceable Certificate to international standards (Standard)
H	Accredited Certificate - ISO17025
Options	
C	Carrying Case (max 350 mm straight sensor)
X	No option used

DTI050 G X

DTI050 temperature indicator with standard traceable calibration certificate

## DTI050 and STS reference sensor

Base Model Number	
DTI050	DTI050 Temperature Indicator
Calibration Certificate DTI050	
G	Traceable Certificate to international standards (Standard)
H	Accredited Certificate - ISO17025
STS reference sensor	
100	Pt100 reference sensor, solid, -150 to 650°C (-238 to 1207°F)
102	Pt100 reference sensor, cable, -50 to 155°C (-58 to 311°F)
Diameter of the sensor	
A	Overall diameter 4 mm (0.16 in)
B	Overall diameter 6.35 mm (0.25 in) - only STS-100
Shape and length	
250	Straight sensor, 250 mm (9.8 in) in alu case - only STS-100
350	Straight sensor, 350 mm (13.8 in) in alu case - only STS-100
500	Straight sensor, 500 mm (19.7 in) in alu case - only STS-100
030	Short sensor, 30 mm (1.18 in) in plastic case - only STS-102
Calibration Certificate	
H	Accredited Certificate - ISO17025 Standard -45 to 650°C (STS-100) or -45 to 155°C (STS-102)
HS	System calibration - Accredited Certificate - ISO17025 Standard -45 to 650°C (STS-100) or -45 to 155°C (STS-102)
Options	
C	System Carrying Case (max 350 mm sensor)

DTI050 G 102 A 030 H C

DTI050 with traceable certificate and 4 mm STS-102, short 30 mm reference sensor with accredited certificate, carrying case and cable with LEMO/Redel

## Standard Delivery DTI050

- DTI050 Indicator
- Traceable certificate - ohm and mV
- Softcase and shoulder strap
- 9V battery
- RS232 cable
- JofraCal calibration software
- Con50 configuration software
- User manual



## Accessories

### DTI050 power supply accessories

124720... Mains adapter 9VDC/200mA - 230VAC/115 VAC

124717... 1 x 9 Volt rechargeable battery

124718... Charger for rechargeable batteries - 115/230VAC

125002... Edge port Converter with 4 pcs of RS232 ports

### DTI050 connectors and cables

125702... Connector for RTD sensors without intelligence

125703... Connector for RTD sensors with intelligence

125759... Connector for TC sensors without intelligence

125704... Connector for TC sensors with intelligence

125522... Cable 2 m with LEMO/Redel with intelligence

125523... Cable to mini TC connector with intelligence

125521... LEMO/Banana cable with intelligence

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