SP323 Smart Temperature Clamp Probe

Instruction Manual

Scan to download the TPI View app:

DESCRIPTION

The TPI SP323 Smart Temperature Clamp Probe is used to measure temperature on refrigeration systems. It connects to a smart device using the TPI View App. It sends live measurement data and can be used in conjunction with the SP670 Smart Pressure Probe to calculate Superheat and Subcooling using the App. The SP323 is also capable of logging temperature measurements over time to help identify intermittent problems.

OPERATION

> **WARNING:** The SP323 reads up to 185°F, do not attach the probe to a device with a temperature above this.

1. Install the TPI View App on your smart device.

2. Press and hold the SP323 on/off key for approximately 2 seconds to turn the smart probe on. An orange LED will blink indicating the SP323 is ready to be paired.

3. Open the View app and tap 'Start Scanning for TPI Smart Instruments'. Tap on SP323 to connect it to the app.

4. The live reading will be displayed on the app. Units are selectable by tapping on the live reading. From here a differential measurement can be made using two SP323 or logging can be activated. (See later in the manual)

SUPERHEAT & SUB-COOLING

Connecting two SP670's and two SP323 smart temperature clamps allow superheat and sub-cooling to be calculated.

1. Turn on each SP670 and SP323, open the app and allow the smart probes to connect.

2. Connect the probes to the Suction (low side) and Liquid (high side) lines.

3. Tap on 'Refrigeration' in the app. For the Suction Line tap on 'Pressure Select' to assign the SP670 connected to the suction line from the available devices. Repeat this for the 'Temp Select' to assign the SP323 connected to the suction line. Repeat step 3 for the Liquid Line connected smart probes.

4. Tap on the refrigerant canister to select the refrigerant being used. The Pressure, Temperature and Vapor Saturation, and Liquid Saturation will be displayed on the app.

> **IMPORTANT:** When connecting the SP670 to a test port do not use the body of the instrument to tighten the connection. Only turn the knurled knob of the smart probe. Using the body of the instrument can result in damage to the SP670. Do not overtighten when connecting to the test port or damage to the SP670 and port may result.

LED INDICATOR

The SP323 uses a multi-colored LED to indicate operational status.

Orange blinking LED – SP323 is on and ready to connect to the smart device

Green blinking LED – SP323 is connected to a smart device

Red blinking LED – Batteries need to be replaced

Orange and Green blinking LED – Data logging active and SP323 is not connected to the app.

AUTO POWER OFF

If the SP323 is not connected to a smart device for more than 8 minutes it will auto power off. When connected to a smart device the auto power off is disabled. Auto power off is also disabled during data logging.

DIFFERENTIAL TEMPERATURE MEASUREMENT

Using one or two SP323's a differential temperature measurement can be made. This enables a user to determine the temperature difference between two points.

Using One SP323

1. Select 'DIFF TEMP (1 DEVICE)' in the app. Connect the SP323 to the test point and wait for the temperature to stabilize.

2. Tap on the reading to hold the temperature. Connect the SP323 to the next test point and allow the temperature to stabilize.

3. Tap on the reading to hold temperature 2. The bottom display will read the difference between temperature 1 and temperature 2.

4. A report can be created for email or printing to the optional A740BT printer.

Using Two SP323

1. Select 'DIFF TEMP (2 DEVICES)' in the app. The first SP323 connected will display temperature in the Temperature 1 display area. Connect the SP323 to the test point.

2. Turn on a second SP323 and tap on Temperature 2 to connect it to the app. Connect this SP323 to the second test point.

3. The temperature difference will be displayed in the bottom display. This reading will update in real time.

4. A report can be created for email or printing to the optional A740BT printer.

DATA LOGGING

The SP323 has the ability to log readings with a time and date stamp. The maximum amount of readings that can be logged is 10,000.

1. Connect to the SP323 as outlined earlier.

2. Select 'Logger' in the View App.

3. Set the logging interval in minutes/second and the end time and date.

4. Connect the SP323 to the device under test.

5. Tap on 'Start Logging' and the SP323 will begin logging data.

6. The View app can be disconnected from the SP323 and logging will continue until the end time is reached or the View app is reconnected and logging is stopped. When the SP323 is in logging mode and disconnected from the View app, the SP323 LED will blink green and orange.

7. Once logging has been stopped or ended, logged data can be retrieved using the View app.
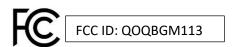

GENERAL MAINTENANCE

Housing: The SP323 can be wiped down with a damp lint free cloth. Do not use any cleaning agents including solvent or soap.

Battery Replacement: When the LED indicator blinks Red the batteries need to be replaced.

1. Turn the SP323 off. Loosen the battery cover screw and open the cover.

2. Remove the three AAA batteries from the battery holder.

3. Install three new AAA alkaline batteries into the holder observing correct polarity. Note: Battery level is displayed in the Smart Probe app.

SPECIFICATIONS

Temperature Range	-40ºF to 185ºF (-40ºC to 85ºC)
Clamp Pipe Size	1/4 inch to 1 1/2 inch (6mm to 38mm)
Resolution	0.1ºF / 0.1ºC
Accuracy	32ºF to 185ºF (0ºC to 85ºC) = +/- 0.9ºF (+/- 0.5ºC) <32ºF (<0ºC) = +/-1.8ºF (+/-1.0ºC)
Data Logging	10,000 readings in 1 sec to 59 min 59 sec intervals
Battery Life	Approximately 170 hours
Battery Type	AAA x 3 alkaline
Operating Temperature	32 °F ~ 122 °F (0 °C ~ 50 °C)
Storage Temperature	-4 °F ~ 140 °F (-20 °C ~ 60 °C)
Humidity	0 ~ 80 %RH
Weight	5.64oz (160g)
Bluetooth	5.0 (350 foot range depending on obstacles)

FCC ID: QOQBGM113

IC (Industry Canada) ID: 5123A-BGM113

CE

UKCA

R 209-J00204

See www.tpieurope.com for CE and UKCA Certificate of Conformity

SP323 STANDARD ACCESSORIES

A.323SP – Soft Pouch for SP323

SP670 OPTIONAL ACCESSORIES

A931 – Carrying case capable of holding (2) SP670 pressure probes, (2) SP323 temperature clamps, and (2) A597 humidity probes

WARRANTY

This product is warranted to the purchaser against defects in material and workmanship for three years from the date of purchase.

Covered by Warranty: Repair parts and labor; or replacement of the product at company's option. Normal transportation charges to the purchaser are also covered.

Not Covered by Warranty: Damages to the product which are the result of abuse, improper use or maintenance are not covered. Any other expense, consequential damages, incidental damages, or incidental expenses including damages to property are not covered. Transportation expenses to the company are not covered.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

To Obtain Warranty Performance: Include with the product: your name, address, phone number, written description of the problem and proof of purchase date. Carefully package and return to:

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Implied Warranties: Any implied warranties including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to three years from date of purchase. To the extent any provision of this warranty is prohibited by federal or state law and cannot be preempted, it shall not be applicable. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

NOTES

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