

Temperature Monitoring Camera/Sensor User Guide

for use with P/N 22293285

Overview

This temperature monitoring camera accurately measures the temperature of a substrate in the work area of the dispense system to confirm the substrate is at operating temperature prior to running a process.

The dispense system I/O system acts as the interface between the camera and the dispense system control software.

When a camera alarm is triggered, the camera sends an input signal to the dispense system:

- When a particular area exceeds a defined temperature, the camera triggers an alarm/ sends a signal to the dispense system.
- The camera I/O transitions “high” for configured time.
- FLOWare® software reads the I/O, determining if the process is ‘ready to go’.

The camera utilizes standard Ethernet hardware and software protocols.

Scope of Supply

- Camera
- Laptop
- Power cable
- Network cable

Safety Notes

Refer to *Safety Information* in the *FLIR User’s Manual*.

Maintenance

Refer to *Cleaning the Camera* in the *FLIR User’s Manual*.

Operating camera

Power On/Off

- Manually turn on/off laptop power.
- Camera power turns on/off automatically with dispense system power.

How to use camera

Aside from the guidelines in this document, refer to *Camera web server interface* in the *FLIR User’s Manual*.

Programming with camera

Factory Settings

A single rectangle with a maximum temperature value is factory set. When the maximum temperature exceeds 80° C, the camera sends an alarm signal.

Several sample shapes, subtypes, and a fixed location have been provided to help you get started controlling the camera with the FLOWare® software. The names of the shape/subtype/fixed location used below are factory set but may be changed by the customer.

Shapes

- TEMP READY – resets camera alarm, then parks the gantry and waits for temperature ready trigger. Insert this shape into a program at a point before heat is required by the process.
- TEMP RESET – use the Fixed Location named TEMP RESET with this shape.

Shapes Theory of Operation

1. The TEMP READY shape clears the camera alarm and ensures a signal from the camera is at temperature.
2. The TEMP RESET shape moves the gantry to the TEMP RESET fixed location.
3. The system delays until the camera alarm is off.
4. The gantry moves to the PARK fixed location where the camera can view the substrate. The system delays until the camera alarm signal turns on.

Subtypes

- TEMP READY – on when camera alarm is on.
- TEMP LOW – looks for camera alarm off.

Fixed Location

TEMP RESET - use this fixed location with the TEMP RESET shape.

Programming Guidelines

Temperature Parameters

Achieving optimal thermal results may require adjusting the following items:

- Alarm (ready signal) value – signal sent by camera when temperature parameter realized
- Temperature controller set point – controller heats the fixture/lifter device. The “Forced Air” temperature controller is typically accessed through the dispense system rear panel.
- Air pressure setting – forced air heats the substrate positioned above the fixture/lifter device. Hint: Start with 40 psi and adjust as needed up to 60 psi. The “Forced Air” air pressure regulator is typically accessed through the dispense system front panel.

Single Set Point

Suggested sequence:

1. Set a set point value.
2. Do not set a maximum temperature limit.
3. Set a minimum temperature limit. The camera sends alarm if temperature reaches set point or above. Conversely, camera turns off if temperature is at set point or below.
4. Leave the upper temperature limit blank.

Rectangular Area

The first parameter to reach set point triggers an alarm:

- Maximum = sends alarm when the maximum temperature or above is sensed within the rectangle.
- Minimum = sends alarm when the minimum temperature or above is sensed within the rectangle.
- Average = mean temperature of entire rectangle.

Warranty

General Warranty. Subject to the remedy limitation and procedures set forth in the Section "Warranty Procedures and Remedy Limitations," GPD Global warrants that the system will conform to the written description and specifications furnished to Buyer in GPD Global's proposal and specified in the Buyer's purchase order, and that it will be free from defects in materials and workmanship for a period of one (1) year. GPD Global will repair, or, at its option, replace any part which proves defective in the sole judgment of GPD Global within one (1) year of date of shipment/invoice. Separate manufacturers' warranties may apply to components or subassemblies purchased from others and incorporated into the system. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Limitations. GPD Global reserves the right to refuse warranty replacement, where, in the sole opinion of GPD Global the defect is due to the use of incompatible materials or other damages from the result of improper use or neglect.

This warranty does not apply if the GPD Global product has been damaged by accident, abuse, or has been modified without the written permission of GPD Global.

Items considered replaceable or rendered unusable under normal wear and tear are not covered under the terms of this warranty. Such items include fuses, lights, filters, belts, etc.

Warranty Procedures and Remedy Limitations. The sole and exclusive remedy of the buyer in the event that the system or any components of the system do not conform to the express warranties stated in the Section "Warranties" shall be the replacement of the component or part. If on-site labor of GPD Global personnel is required to replace the non-warranted defective component, GPD Global reserves the right to invoice the Buyer for component cost, personnel compensation, travel expenses and all subsistence costs. GPD Global's liability for a software error will be limited to the cost of correcting the software error and the replacement of any system components damaged as a result of the software error. In no event and under no circumstances shall GPD Global be liable for any incidental or consequential damages; its liability is limited to the cost of the defective part or parts, regardless of the legal theory of any such claim. As to any part claimed to be defective within one (1) year of date of shipment/invoice, Buyer will order a replacement part which will be invoiced in ordinary fashion. If the replaced part is returned to GPD Global by Buyer and found by GPD Global in its sole judgment to be defective, GPD Global will issue to Buyer a credit in the amount of the price of the replacement part. GPD Global's acceptance of any parts so shipped to it shall not be deemed an admission that such parts are defective.

Specifications, descriptions, and all information contained in this manual are subject to change and/or correction without notice.

Although reasonable care has been exercised in the preparation of this manual to make it complete and accurate, this manual does not purport to cover all conceivable problems or applications pertaining to this machine.