Infrared Fiber Optic Polymer Bolt Temperature System

DISCONTINUED

Model 4121 Polymelt Temperature System 98 to 463°C (210 to 865°F) In Sub Ranges

Series 4121

MADE IN USA | 1 YEAR WARRANTY | NIST

Standard

- **Response Time 10 Milliseconds**
- **Fiber Optic Cable**
- **Withstands Pressure up to 30,000 psi**
- **FM and CSA Approved Intrinsically Safe Models Available Steel Construction**
- **High Operating Temperature**
- **Hermetically Sealed for Harsh Environments**

4121-G-F-J, infrared detector.

DISCONTINUED

2120-6-2516-T1-7-1-2 polymelt probe.

Both models shown smaller than actual size.

The 4121 Polymelt System offers a unique non-contact method of measuring polymer melt temperatures. Unlike thermocouples, its 10 millisecond response time provides unsurpassed real-time temperature data and tighter process control. Since the probe tip is flush with the barrel's ID, it "looks into" the melt and is completely non-intrusive, producing no error due to polymer shear effects or heat sinking.

This compact and rugged system allows maximum installation flexibility and requires a minimum amount of space for installation. The 4121 polymelt system offers a fast and accurate method to monitor polymer temperature in the extruder nozzle or barrel or in the injection molding cavity.

The polymelt transducer system incorporates a chopper stabilizing detector for drift free operation and is directly interchangeable with thermocouple instrumentation such as meters or controllers with cold junction compensation. The 4121 is manufactured using advanced laser soldering technology and incorporates surface-mount devices for exceptional reliability and compactness.

The 4121 polymelt system consists of a patented polymer probe with a rugged, flexible fiber optic cable assembly. The probe tip contains an abrasion resistant sapphire window which is capable of withstanding 30,000 psi pressure. The standard Hastelloy tip allows use on more abrasive polymer materials. The fiber optic assembly easily connects to the transducer. The 4121 polymelt system output ties directly to dataloggers, process controllers, and recorders. It incorporates a digital emissivity control for precise and repeatable setting of emissivity.

DISCONTINUED

Specifications

Temperature Range: 98 to 463°C (210 to 865°F) (in sub-ranges)
Temperature Accuracy: ±1% of reading
Linearization Accuracy: ±1% of reading or 2°C, 4°F, whichever is greater
Emissivity Control: 0.10 to 0.99 in 0.01 steps
Output: 1 mV/° standard, secondary output either 4 to 20 mA, 0 to 10 Vdc, J thermocouple
Ambient Temperature:
Model 4121: 10 to 50°C (50 to 122°F)
Fiber Optics: 10 to 150°C (50 to 300°F)
Spectral Response: 1.0 to 2.7 microns
Response Time: 10 ms
Power Supply: ±15 Vdc, 100 mA (±0.05% regulation)
Power Consumption: 2 W
Mating Cable Connector: Bendix PT06A-10-65SR
Dimensions:
Model 4121: 62 diameter x 185 mm L (2.43 x 7.3")
Fiber Optic Probe: See dimensional diagrams
Weight:
Series 4121 Detector: 0.9 kg (2 lb)
Fiber Optics: 0.7 kg (1.5 lb)

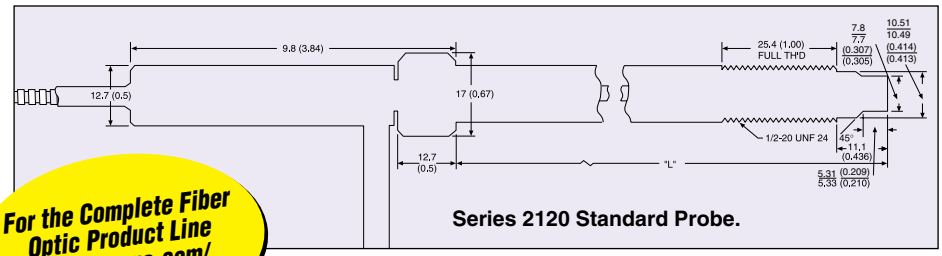
Series 2120

Series 2120 standard polymer probe is available in lengths from 165 to 305 mm (6.5 to 12.00") and is installed as shown below. The fiber optic cable is permanently attached to the bolt assembly. The air purge fitting is at 90° from the probe body.

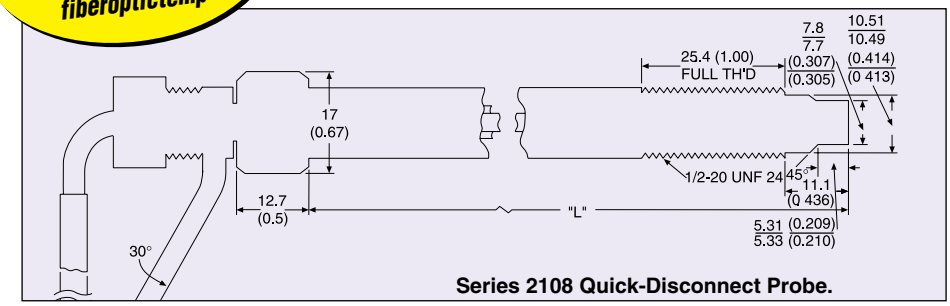
Series 2108

Series 2108 quick-disconnect polymer probe, measuring as small as 76 mm (3") overall, is used where the available mounting space is at a premium. The fiber bundle exits the probe at a right angle and is easily removable from the probe body by a knurled twist nut. Air purge fitting is at 60° from the probe body.

Dimensions: mm (inch)



Series 2120 Standard Probe.



Series 2108 Quick-Disconnect Probe.

For the Complete Fiber Optic Product Line Visit omega.com/fiberoptictemp

OMEGACARE℠ Extended Warranty Program

OMEGACARE℠ extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE℠ covers parts, labor and equivalent loaners.

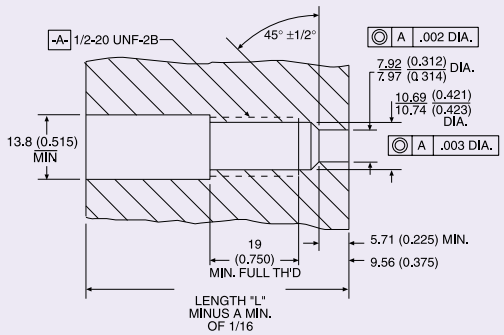
DISCONTINUED

4121 Infrared Detectors†

To Order		
Model No.	**Description**	**Outputs**
4121-G-F-1	Infrared detector	1 mV/° and 0 to 10 Vdc outputs
4121-G-F-4	Infrared detector	1 mV/° and 4 to 20 mA outputs
4121-G-F-J	Infrared detector	1 mV/° and J outputs

† ***Note:*** *A complete system consists of a Series 4121 detector and either the 2120 or 2108 fiber optic probe assembly. You must order at least one detector and one probe from the tables below.*

Required "Well" Machining



Fiber Optic Polymer Bolt Assemblies (Both styles are fitted for air purging)

Model No.	Temperature Range	Cable Length
Fiber Optic Assembly with Standard Polymer Bolt (with fiber optic cable hardwired to bolt)		
2120-(*)-2516-T1-7-1-2	98 to 316°C (210 to 600°F)	0.3 m (1') fiber optic cable
2120-(*)-2516-T1-7-2-2	121 to 371°C (250 to 700°F)	0.6 m (2') fiber optic cable
2120-(*)-2516-T1-7-3-2	135 to 390°C (275 to 735°F)	1 m (3') fiber optic cable
2120-(*)-2516-T1-7-4-2	154 to 415°C (310 to 780°F)	1.2 m (4') fiber optic cable
2120-(*)-2516-T1-7-5-2	163 to 438°C (325 to 820°F)	1.5 m (5') fiber optic cable
2120-(*)-2516-T1-7-6-2	174 to 463°C (345 to 865°F)	1.8 m (6') fiber optic cable
Fiber Optic Assembly with Quick Disconnect Polymer Bolt (with right angle fiber optic cable for disconnecting fiber optic cable from bolt)		
2108-(**)-2008-0001-1	98 to 316°C (210 to 600°F)	0.3 m (1') fiber optic cable
2108-(**)-2008-0001-2	121 to 371°C (250 to 700°F)	0.6 m (2') fiber optic cable
2108-(**)-2008-0001-3	135 to 390°C (275 to 735°F)	1 m (3') fiber optic cable
2108-(**)-2008-0001-4	154 to 415°C (310 to 780°F)	1.2 m (4') fiber optic cable
2108-(**)-2008-0001-5	163 to 438°C (325 to 820°F)	1.5 m (5') fiber optic cable
2108-(**)-2008-0001-6	174 to 463°C (345 to 865°F)	1.8 m (6') fiber optic cable

DISCONTINUED

** Insert 6 to 12" probe length.*
*** Insert 3 to 12" probe length.*

Comes complete with mounting bracket, 3 m (10') of power/output cable, NIST calibration and operator's manual.

Ordering Examples: 4121-G-F-J, *Series 4121 infrared detector with 1 mV/° and Type J thermocouple outputs and* ***2108-3-2008-0001-3,*** *quick-disconnect polymelt probe, 3" long, with a 3' fiber optic cable, and a 135 to 390°C (275 to 735°F) temperature range.*

4121-G-F-4, *Series 4121 infrared detector with 1 mV/° and 4 to 20 mA outputs and* ***2120-7-2516-T1-7-4-2,*** *standard polymelt probe, 7" long, with a 4' fiber optic cable, and a 154 to 415°C (310 to 780°F) temperature range.*

OCW-3, *OMEGACARE℠ extends standard 1-year warranty to a total of 4 years.*