

LAND

APPLICATION DEDICATED PRODUCT

Fiberoptic Model FG

RADIATION THERMOMETERS FOR THE GLASS INDUSTRY

- Minimal services - no water cooling required.
- Simple 2-wire 4 to 20mA current loop installation.
- Accurate, stable and reliable measurement up to 1650°C/3000°F.
- Built-in test facility.
- No on-line calibration required.
- Continuous measurement - rapid interchangeability of system.
- Calibration traceable to National Standards, backed by ISO 9001 Quality Management System approval.

The Land Fibroptic Model FG radiation thermometer is a fibre optics based 2-wire temperature sensor which has been specifically designed to solve measurement problems and improve control of process temperatures in the glass industry.

Model FG is intended for monitoring and controlling glass or refractory temperatures principally in the forehearth, but also in the regenerator, tank and refiner.

It can be used to monitor and safeguard vulnerable refractory materials such as the crown, detect possible firing imbalance at the port arch, for example, and to give improved control of bulk glass temperatures.

Model FG fulfils the industry's need for a simple, cost effective alternative to other types of radiation thermometers which normally require water cooling. It also readily permits upgrade from existing thermocouple installations.

A versatile adjustable mounting assembly, complete with quick release adapter and air purge, facilitates ease of installation and removal for inspection purposes.

The signal processor unit is located remotely from the high ambient temperatures encountered at the optic head, linked by a sealed 6.1m/20ft long fibre optics light guide eliminating the need for water cooling.

The processor provides high accuracy linearization of the detector signal, a self test function and a low drift 4 to 20mA output suitable for use with process computers and distributed control systems.

Several models are available with measurement spans to suit the particular application.

Model	Range
Fibroptic FG 9.8/13C and 18/24F	980 to 1300°C and 1800 to 2400°F
Fibroptic FG 10/14C	1000 to 1400°C
Fibroptic FG 12/16.5C and 22/30F	1200 to 1650°C and 2200 to 3000°F

LAND

instruments international

Infrared Temperature Measurement

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SPECIFICATION

Measurement ranges

FG 9.8/13C	980 to 1300°C
FG 18/24F	1800 to 2400°F
FG 10/14C	1000 to 1400°C
FG 12/16.5C	1200 to 1650°C
FG 22/30F	2200 to 3000°F

Accuracy

Interchangeability	±2°C
Resolution	0.1°C
Linearization conformity	<0.5°C
Temp. coefficient	<0.04°C/°C - mid span <0.07°C/°C - span extremities

Absolute

5°C

Output 4 to 20mA (Linear)

Response time 0.5s (to 98%)

Spectral response 0.7 to 1.0µm

System test output 1275°C/2325°F indicated

Emissivity 1.00 (Fixed)

Ambient temp. limits

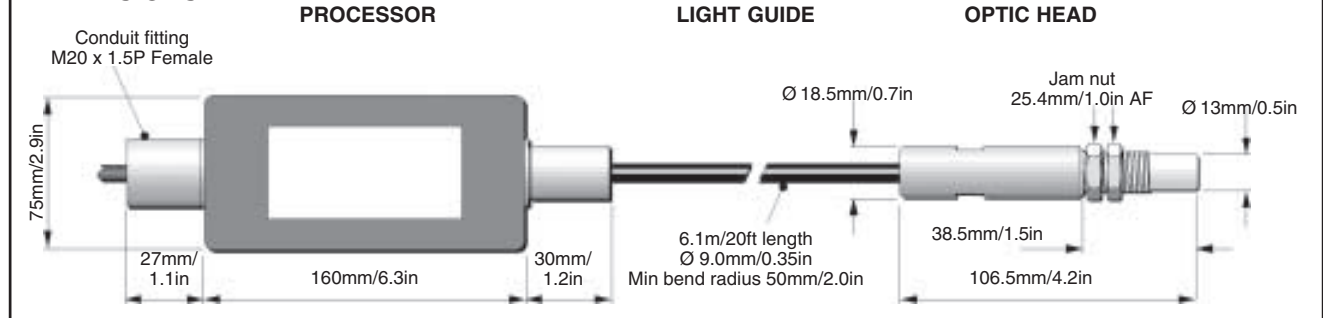
Optic head	200°C/400°F
Light guide	175°C/350°F
Processor	10 to 60°C/50 to 140°F

Power requirement 24V d.c. (nominal)

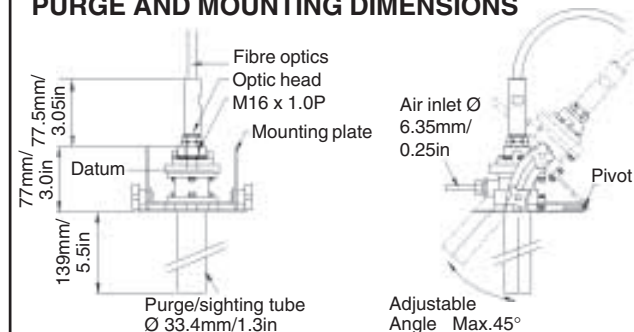
18 to 40V d.c.

Over voltage protection 250V a.c.

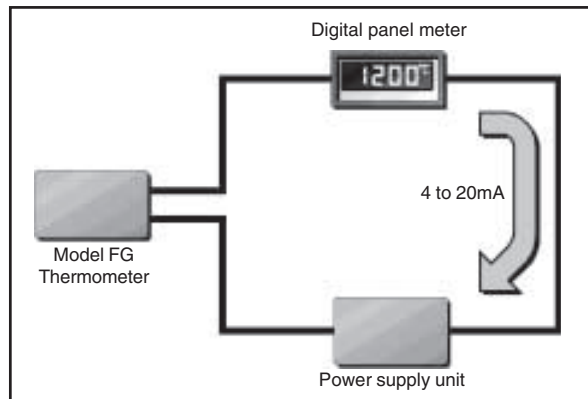
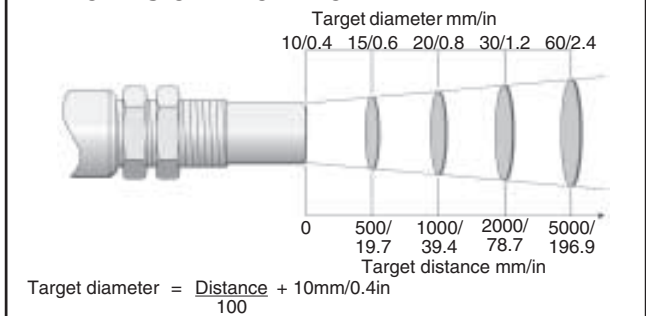
DIMENSIONS



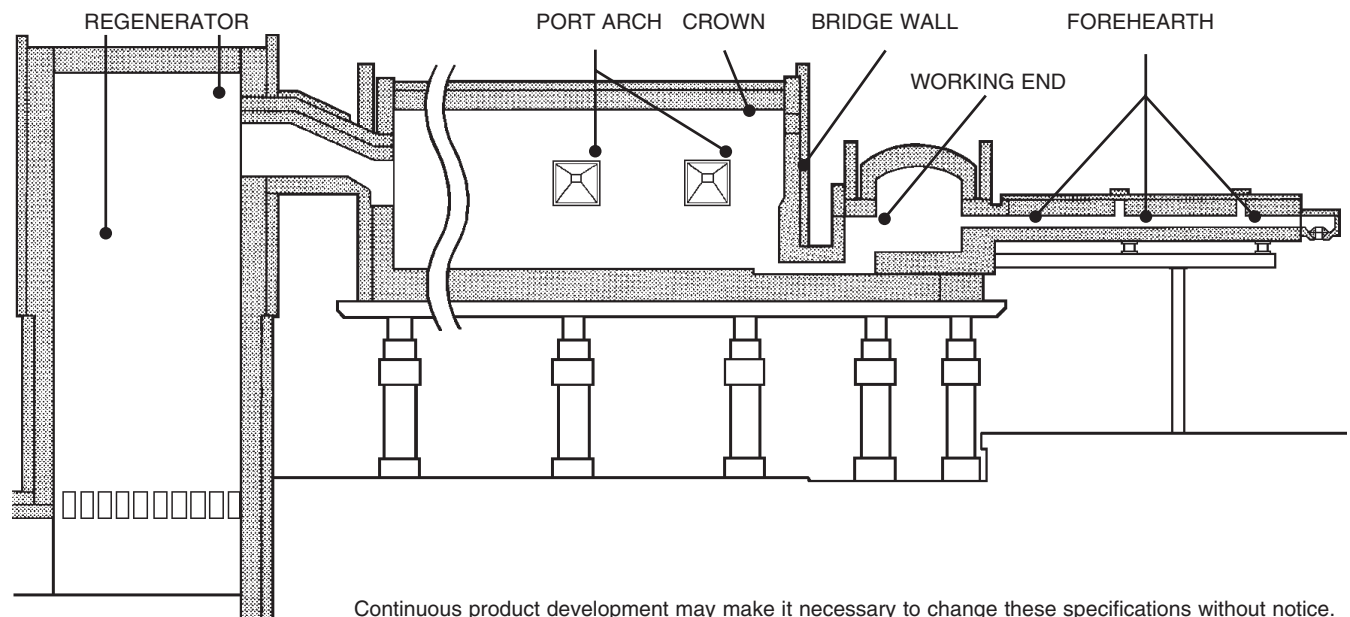
PURGE AND MOUNTING DIMENSIONS



TARGET SIGHTING DIAGRAM



TYPICAL MEASURING POINTS FOR LAND FIBROPTIC MODEL FG THERMOMETERS



Continuous product development may make it necessary to change these specifications without notice.

CE Model FG complies with the current European directives relating to electromagnetic compatibility and safety (EMC directive 89/336/EEC; Low voltage directive 73/23/EEC).

