Model FG

Two-wire Fibroptic thermometer for high temperatures in the glass industry

- Minimal services - no water cooling required
- Simple 2-wire 4-20mA current loop installation
- Accurate and reliable measurement up to 1650°C/3000°F
- Built-in test facility
- Emissivity adjustment
- 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 primarily intended for monitoring and controlling glass or refractory temperatures in the forehearth, but also in the regenerator, tank and refiner. However, it can also be used for cost effective temperature measurement in a range of other applications.

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, adjustable emissivity compensation, a self test function and a low drift 4-20mA output suitable for use with process computers and distributed control systems.

Several models are available with measurement spans to suit the particular application.
**FIBROPTIC MODEL FG 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%
- 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:** 0.10 to 1.00 adjustable (factory set to 1.00)

**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)
- Over voltage protection: 250V a.c.

**TARGET SIGHTING DIAGRAM**

**PURGE AND MOUNTING DIMENSIONS**

**DIMENSIONS**

Continuous product development may make it necessary to change these details without notice. ADS010_FG/1005