

# FA

## Datasheet



### Highlights

- Low temperature limits: FA1: 475°C, FA2: 250°C
- High accuracy
- High optical resolution up to 100:1
- Focus distances down to 100 mm
- Fast response time down to 10 ms
- Fiber optic assembly withstands 200°C, IP65 rated, optional up to 315°C
- 0/4 - 20 mA analog output
- RS485 serial output; networkable (up to 32 sensors)
- Advanced signal processing
- Background radiation compensation
- Programmable relay output: dual temperature setpoints and failsafe alarm
- Marathon DataTemp® software for remote configuration and monitoring

### Electrical Specifications

<b>Outputs</b>	0/4-20 mA; RS-485, 2-wire or 4-wire, networkable to 32 sensors Relay, 48 V, 300 mA, response time < 2 ms
<b>Power Supply</b>	24 VDC ±20%, 500 mA

### General Specifications

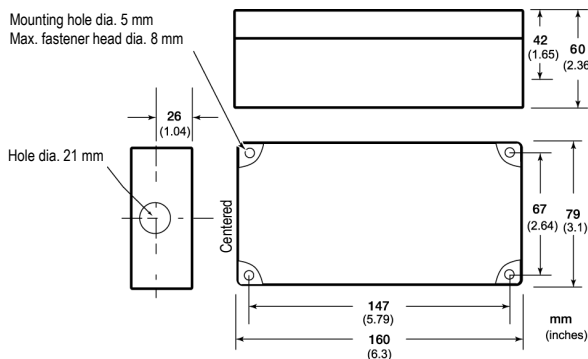
<b>Environmental Rating</b>	IP65 (IEC529)
<b>Ambient Temperature</b>	
Optical head	0 to 315°C
Fiber cable	0 to 200°C, optional up to 315°C
Electronics housing	0 to 60°C, with cooling platform up to 150°C
<b>Storage Temperature</b>	
Electronics housing	-20 to 70°C
<b>Relative Humidity</b>	10 to 95%, non-condensing
<b>Shock</b>	
Electronics housing	IEC 68-2-27
<b>Vibration</b>	
Electronics housing	IEC 68-2-6
<b>Weight</b>	
Optical head	100 g
Electronics housing	710 g
<b>Fiber Cable Protection</b>	rated to 200°C (optional up to 315°C), stainless steel armour, Viton coated, IP65, provision for conduit to protect fiber cable

### Measurement Specifications

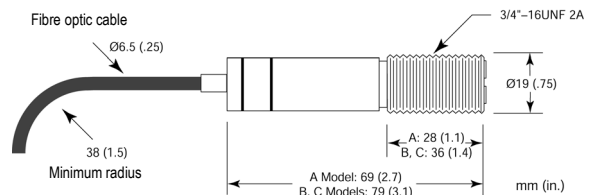
<b>Temperature Range</b>	
FA1A	475 to 900°C
FA1B	800 to 1900°C
FA1C	1200 to 3000°C
FA2A	250 to 800°C
FA2B	400 to 1700°C
<b>Spectral Response</b>	
FA1	1,0 µm (Si detector)
FA2	1,6 µm (InGaAs detector)
<b>System Accuracy</b>	±(0,3% T <sub>meas</sub> + 2°C), T <sub>meas</sub> in °C
<b>Repeatability</b>	±1°C
<b>Temperature Resolution</b>	
Current output	±0,05°C
Display and RS485	±1°C
<b>Response Time</b>	10 ms (95%), selectable to 10 s
<b>Emissivity</b>	0,10 to 1,00 in 0,01 increments
<b>Signal Processing</b>	Peak hold, valley hold, averaging

### Dimensions

#### Electronics Housing



#### Optical Head

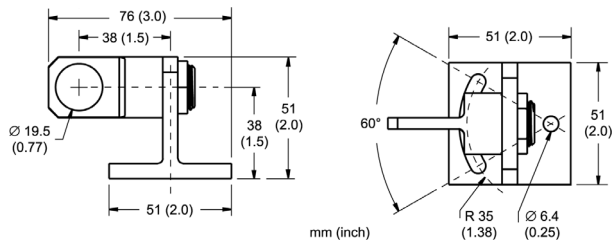


## Accessories

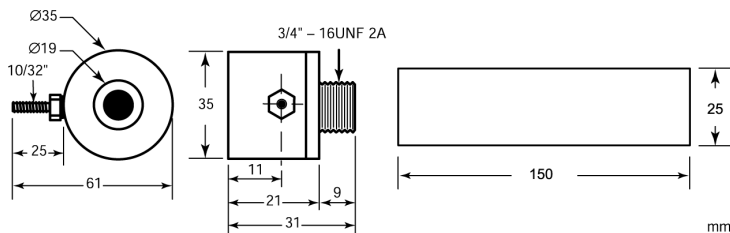
The models include a mounting nut, adjustable mounting bracket, an operator's manual and the Marathon DataTemp Software. Additional accessories are available:

- Furnace rooftop mounting/purging system available with either flange (XXXFORFMF) or gravity-held base (XXXFORFMC)
- Stainless steel air-purge collar for optical head with integrated stainless steel sighting tube (XXXFOHAPA), air flow 0,5 – 1,5 l per second
- Fiber-optic sighting tube conduit accessory, L 300 mm,  $\varnothing$  32 mm, with connection to standard electrical conduit (XXXFOSTCA)
- 24 VDC / 1,1 A power supply with universal 110 / 220 VAC input (XXX2CDCPSS)
- Smart RS232/485 interface converters with built-in smart switching allowing for use in either 2-wire or 4-wire mode, in either multi drop or stand-alone mode (XXX485CVT2)
- Aiming-light (battery powered) for fiber optic front end including adapter to FA fiber cable (XXXFAFAL)
- Terminal block (XXXMATB)
- Terminal block with 24 VDC power supply and IP 65 enclosure (RAYMAPB)

### Adjustable Bracket (XXXFOMB)



### Air Purge Collar (XXXFOHAPA)



**Furnace rooftop mounting/purging system** available with either flange (XXXFORFMF) or gravity-held base (XXXFORFMC)

## Optical Specifications

### Optical Resolution D : S<sup>1</sup>

FA1A <sup>2</sup>	20 : 1
FA1B	100 : 1
FA1C	100 : 1
FA2A <sup>2</sup>	20 : 1
FA2B	40 : 1

### Focus Distances

Standard Focus	$\infty$
Close Focus 1	100 mm
Close Focus 2	300 mm

<sup>1</sup> at 95% energy, D: Distance between sensor and object, S: diameter of spot size  
<sup>2</sup> available with laser sighting

## Options

Options must be specified at time of order.

- Fiber optic cable lengths: 1, 3, 6, or 10 m
- ISO Calibration Certificate, based on NIST/DKD certified probes (XXXFACERT)
- Laser Sighting (...L), only for FA1A/FA2A
- Electronics Housing Cooling Platform (...W) water flow 2 l per minute, 16°C for efficient cooling
- 12-pin DIN quick disconnect connector on electronics box (...C)
- High Temperature Fiber Cable (...H), rated to 315°C, not available on FA2, option excludes Viton coating and IP65 rating

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