

FOT-8 Infrared Thermometer Datasheet

FOT-8 Highlights

FOT-8 fiber optic infrared thermometer can realize temperature measurement in harsh industrial environments that are inaccessible, very hot, or located in strong electromagnetic fields. It measures target temperatures ranging from 400°C to 3000°C with four models. The sensor consists of a rugged fiber optic cable, plus optical head assembly connected to a sturdy electronics housing. In this housing are detector, processing electronics, internal user-interface/ LED display, and termination connections for field wiring. The electronics maintain high accuracy in ambient operating temperature up to 60°C. The optical head consists of a small aluminium cylindrical housing and lens assembly capable of withstanding ambient temperatures up to 160°C. The fiber optic cable is protected by metal armor and sealed with a resin jacket to prevent water or oil penetration. The whole assembly has a small bend radius for threading through tight spaces.

LED display provides a convenient on-line indicator of the thermometer's operating status and easy operation of setting the parameters. The sensor features coaxial laser sighting. The optical resolution is 160:1 and the smallest spot size is 2mm. The emissivity is 0.10-1.00 in 0.01 increment.

FOT-8 fiber optic thermometer can be equipped with a compact, value-priced monitor that configures the functions via the front panel. It also includes optional bidirectional RS485 serial interface between the thermometer in the factory and a computer in control room. This enables remote set-up, monitoring and maintenance, especially valuable for installation in hard-to-reach locations.

Measurement Specifications:

Temperature Ranges:

FOT-8L1	50-300°C
FOT-8H1	400-1200°C
FOT-8H2	500-1400°C
FOT-8H3	800-2500°C
FOT-8H4	1000-3000°C

Detector

FOT-8L1	InGaAs 2-2.5μm
FOT-8H1, FOT-8H2	InGaAs 0.7-1.7μm
FOT-8H3, FOT-8H4	Si 0.4-1.1μm

Accuracy

FOT-8L1	±1%(FS)
FOT-8H1/H2/H3/H4	±0.5%(FS)

Repeatability

±0.2%

Temperature Resoution

0.5°C

Response Time

≤5ms

Emissivity

0.10 to 1.00 (0.01)



Optical Specifications:

Typical Spot Size at Minimum Focus Distance

Models	D:S	Minimum Spot Size
All series	150:1	2mm@300mm
All series	300:1	1mm@300mm

Electrical Specifications:

Outputs

Analog	0-20mA, 4-20mA, 0-5V
Digital	RS485
Alarm	Relay (42V, 300mA)

Signal Processing

Peak hold
Valley hold
Averaging

Power Supply

24VDC ±20% 500mA

General Specifications:

Environmenta Rating IP65

Ambient Temperature

Without cooling	0-65°C
With air cooling	110°C
With water cooling	165°C

Storage Temperature

-20-70°C

Relative Humidity

10-95%, non-condensing

Thermal Shock

GB/T2423.1, GB/t2423.2

Anti Disturbance

JB/T9233.11-1999

Dimension

L:max186mm; Φ50mm

Weight

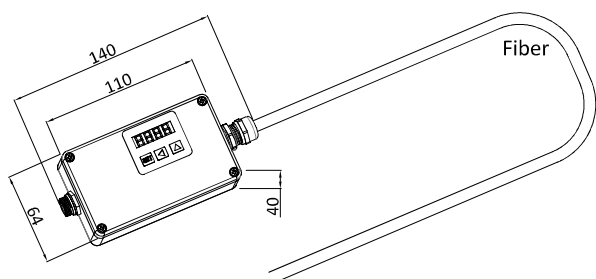
Optical head	100g
Electronics housing	275g

Fiber Cable Protection

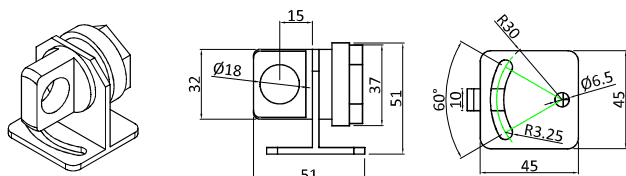
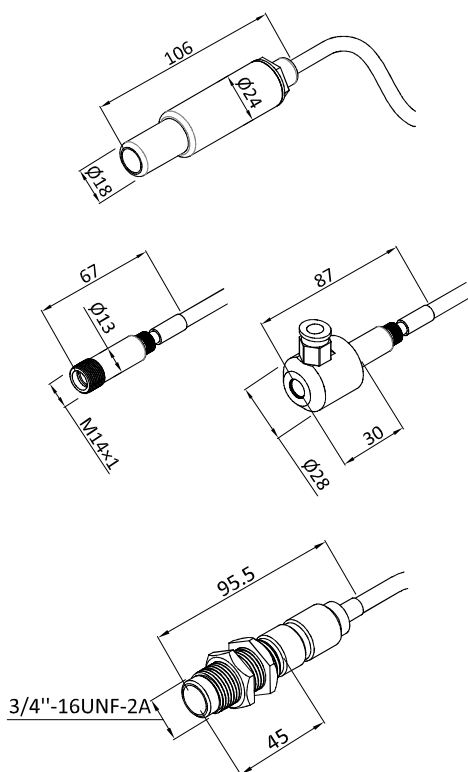
rated to 100°C (optional up to 315°C), stainless steel armour, Viton coated, IP65, provision for conduit to protect fiber cable

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Dimension :

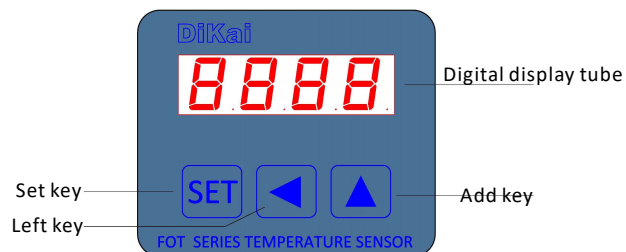


Selection of the probe

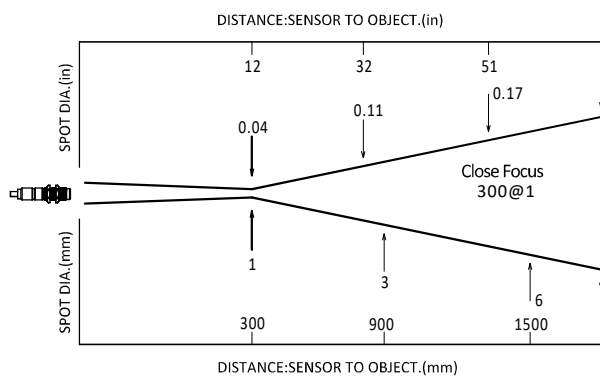
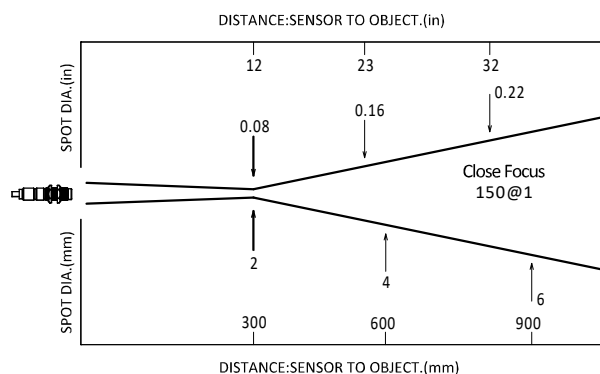


NOTES: All dimensions are in millimeters.

User Interface



Optical Specifications



Options

Options must be specified at time of order

- Manufacturer's calibration certificate based on Q/DK001-2015

Accessories

- RS232/485 converter serving for stand-alone or multiple sensors
- Protective Windows according to spectral range
- Cable extensions in different lengths
- Water/Air Cooled Housing for field retrofit as stainless steel or aluminium
- Extra rugged cast metal housing for thermal/mechanical environmental protection