

Miniature Infrared Temperature Sensor for High Temperature Targets and Metals



OS-MINI22 Series



- ✓ Short Wavelength Measurement for Low-Emissivity Targets Such as Steel Rollers and Other Metal Surfaces
- ✓ Ranges from 100°C to 2000°C (212 to 3632°F)
- ✓ 4 to 20 mA or RS485 Modbus® Output Models
- ✓ Miniature Sensing Head to Fit Most Applications with Configurable Electronics Package
- ✓ Optional Touch Screen Display for Temperature Indication and Configuration
- ✓ Bright Red Alarm Screen
- ✓ Adjustable Emissivity on All Models
- ✓ Data Logging SD Card (Optional) on All Touch Screen Models
- ✓ MAX/MIN/AVG and Instantaneous Read Modes, Peak or Valley Hold, Reflected energy Compensation
- ✓ Sensing Head Sealed to IP65 (NEMA 4)
- ✓ Resistant to Errors Due to Moving Cables as on Robotic Arms

The OS-MINI has miniature sensing head to fit most applications and configurable electronics package. They use short wavelength measurement for low-emissivity targets such as steel rollers and other metal surfaces. Field of views from 15:1 to 75:1 plus a close focus model are designed to fill most industrial



OS-MINI22-SN151-D-MA-MT miniature sensor with display, shown smaller than actual size.

requirements. The optional backlit touch screen interface mounted in the electronics module, provides an easy-to-read large, bright display of the measured Temperature, as well as controls allowing full configuration of the sensor. The graph view allows viewing the history of the measured temperature.

In alarm condition, the display turns bright red to provide an immediate and obvious alarm indication. The alarm levels and modes can be configured from the touch screen.

Specifications

Min/Max Adjustable Span (D-MA Model): 100°C (212°F)/up to 1550°C (2822°F) within the full range

Output: 4 to 20 mA or RS485 Modbus (up to 247 sensors may be installed on a single Modbus network)

Field of View: See To Order chart on next page

Accuracy: ±2°C or 1% reading, whichever is greater

Repeatability: ±0.5°C or 0.5% reading, whichever is greater

Emissivity Setting Range:
0.10 to 1.00

Emissivity Setting Method:

-MA Models: Two rotary switches in electronics package

C4 and /D-C4 Models: RS485

D-MA/D-C4 Models: Touch screen

Response Time, t_{90} : ≥240 ms (90% response)

Spectral Range: 2.0 to 2.6 μ m

Supply Voltage: 24 Vdc ±5%

Maximum Current Draw: 100 mA

Maximum Loop Impedance (4 to 20 mA Output Models): 900 Ω

"D-" Models Alarm Relays:

2 x Single Pole alarm relays 24 Vdc, 1A, 500 Vdc isolation

MECHANICAL

Sensing Head:

Material: 316 SS

Dimensions: 18 dia. x 45 mm (see diagram above)

Mounting: M16 x 1 mm thread, nut included

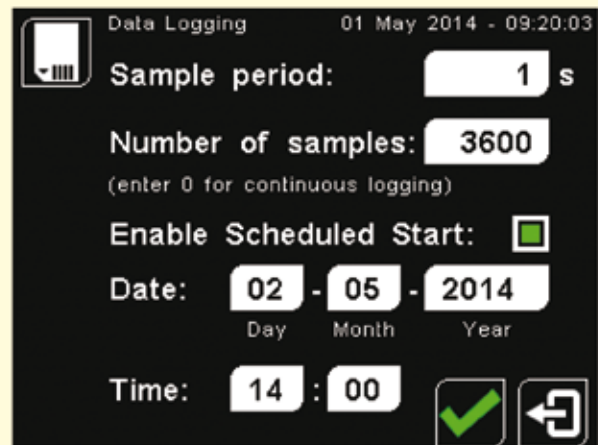
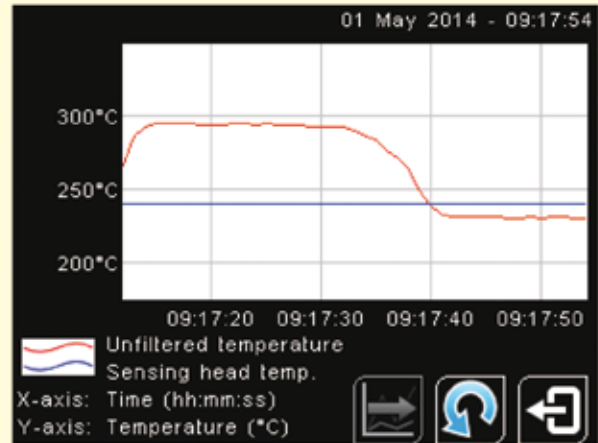
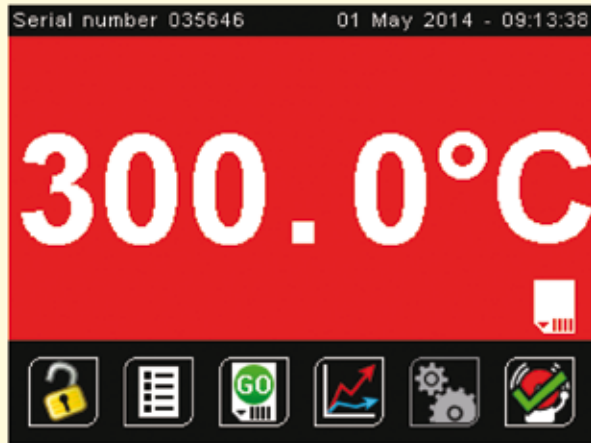
Electronics Module:

Material: Cast aluminum

Dimensions: 98 L x 64 W x 36 mm D (3.9 x 2.5 x 1.4")

The touch screen option can also be used as a data logger. They include a MicroSD card slot for data logging which can be configured using the touch screen. The user can select the sample rate, the number of samples to be taken and schedule the start time. Using the optional 2 GB card, the unit can store 28.4 million readings (which is approximately a 1-years worth of data at the highest

sampling rate of 1 reading per second). Alarm events can also be logged. Readings are time and date stamped using the sensor internal clock. Data is stored in .csv format which is easily viewed and stored by spreadsheet programs. The clock resets when power is disconnected or will continue if the optional battery is installed.



ENVIRONMENTAL

Environmental Sealing:
NEMA 4 (IP65)

Ambient Range: 0 to 70°C
(32 to 158°F)

Relative Humidity: 95% non-condensing

Electronics Module:

Environmental Sealing: NEMA 4 (IP65) models with touch screen

Ambient Range: 0 to 60°C
(32 to 140°F)

Relative Humidity:
95% non-condensing

Electromagnetic Standards:

EMC Directive: EN61326-1:2006

Immunity: IEC 61000-4-2,
IEC 61000-4-3, IEC 61000-4-4,
IEC 61000-4-5, IEC 61000-4-6,
EN 55022A, EN 55022B

Data Logging (Models with Display Data Logging Interval):
1 to 86,400 sec (1-day)

MicroSD Card: 2 GB max capacity
(not included)

Internal Clock Battery: 1 x BR1225
3V (not included)

Variables Logged: Target temp,
Sensing head temp, electronics
module temp, max, min, average,
emissivity setting, reflected energy
compensation, alarm events

File Format: .csv

Configurable Parameters: Sample
period, number of samples, scheduled
start date and time

TOUCH SCREEN DISPLAY

Display Format: 72 mm (2.83")
resistive touch TFT, 320 x 240 pixels,
backlit

Configurable Parameters:

Temperature range, temperature
units, emissivity setting, reflected
energy compensation, alarms, signal
processing, Modbus address (D-C4
models), date, time, data logging

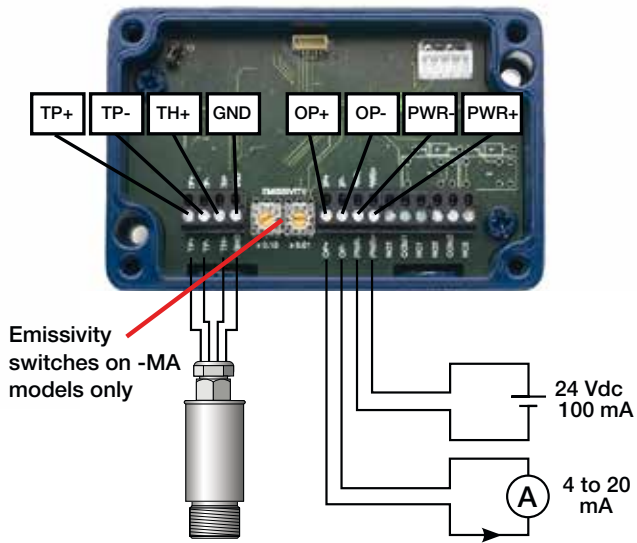
Temperature Units: °C, °F

Temperature Resolution: 0.1°

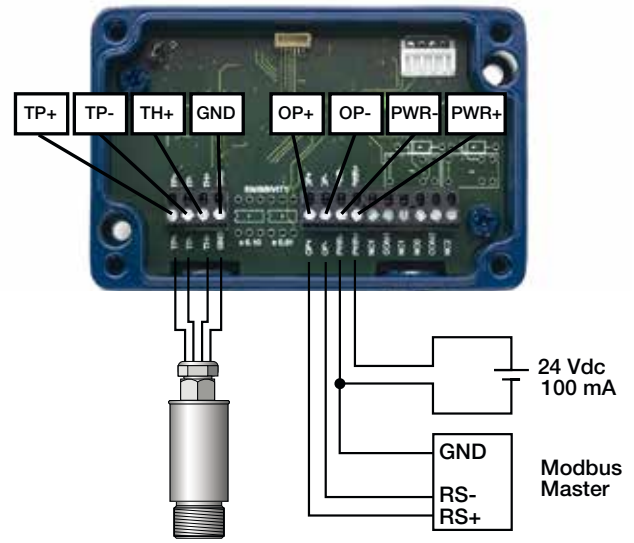
Alarm Configuration: Two alarms
with adjustable levels, individually
configurable as HI or LO; Alarm 2
can be set to target temperature or
sensing head internal temperature

Signal Processing: Average, peak
hold, valley hold, minimum, maximum

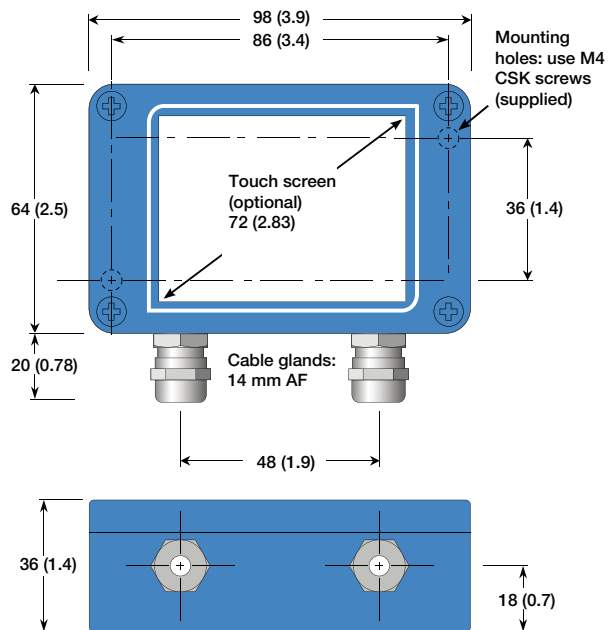
MA and D-MA models



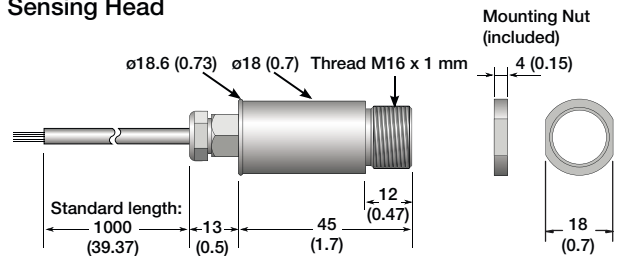
C4 and D-C4 models



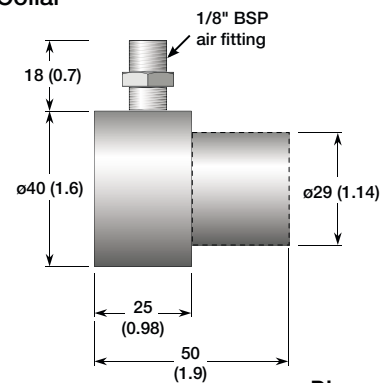
Electronics Module



Sensing Head



Air Purge Collar



Dimensions: mm (in)
 ϕ = diameter

To Order		
OS-MINI22-SN[*]- [**-][***]- [XXX]		
Field of View [*]	151	15:1 optics [all ranges, 0 to 60°C (32 to 140°F) head]
	251	25:1 optics [all ranges, 0 to 60°C (32 to 140°F) head]
	751	75:1 optics [all ranges, 0 to 60°C (32 to 140°F) head]
	801	Close focus optics 60 mm @ 1500 mm (2.4" @ 59.1") [all ranges, 0 to 60°C (32 to 140°F) head]
Output Display [**]	MA	4 to 20 mA (no display) fixed range
	D-MA	4 to 20 mA, touch screen display, adjustable range, 2 alarm relays
	C4	RS485 Modbus output (no display), digital output, full temperature range
	D-C4	RS485 Modbus output, touch screen display, full temperature range, 2 alarm relays
Temperature Range [***]	PT	100 to 400°C (212 to 752°F) only valid for 15:1 optics
	MT	250 to 1000°C (482 to 1832°F)
	HT	450 to 2000°C (842 to 3632°F)
Extra Cable Length [XXX]	Add total length in meters up to 30 m (98') [1 m (3') is standard]	

Accessories

Model No.	Description
MINI-MSD	Micro SD card
CALA	Calibration certificate
OS210-LSTS	Laser sighting tool
OS210-ABS	Adjustable mounting bracket (3-axis)
OS210-FBS	Fixed mounting bracket (1-axis)
OS210-DLSB	Dual laser sighting bracket
OS210-APSN	Air purge collar
OSMINI-D6	6-channel Modbus temperature indicator with touch screen display and data logging

Comes with OS-MINI22, sensing head and 1 m (3') cable, electronics module and operators manual.

Ordering Example: OS-MINI22-SN251-D-MA-MT, OS-MINI with 2.2 µm spectral range, 25:1 field of view, touch screen display, 4 to 20 mA output and 2 alarm relays, and 250 to 1000°C (482 to 1832°F) temperature range.