Intrinsically Safe Infrared Temperature Sensor
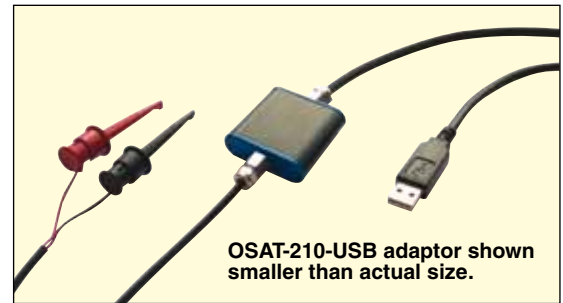## For Use in Hazardous Areas

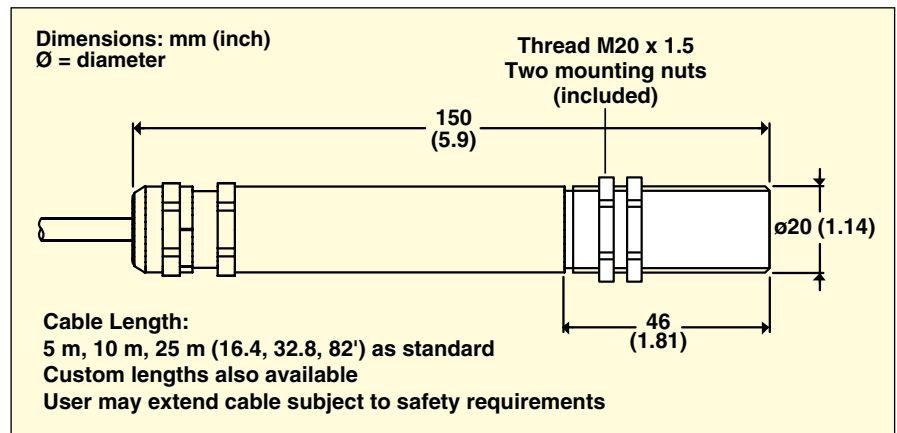### OSAT Series

CE RoHS Ex

✔ **Suitable for Hazardous Areas, Zone 0, 1 and 2 (Gas), and Zone 20, 21 and 22 (Dust), With a Suitable Intrinsically Safe Isolator**

✔ **Temperature Range: -20 to 1000°C (-4 to 1832°F)**

✔ **Two-Wire, 4 to 20 mA Output**

✔ **Re-Scalable Output and Adjustable Emissivity Setting via Optional USB Adaptor**

✔ **Fast Response Time and High Stability**

✔ **316 Stainless Steel Housing—Ideal for Offshore Applications**

✔ **IP65 Sealed**

✔ **Supplied with Up to 25 m Cable**

OSAT-151-LT-C-05 shown smaller than actual size.

OSAT-210-USB adaptor shown smaller than actual size.

Dimensions: mm (inch)
Ø = diameter

Thread M20 x 1.5
Two mounting nuts (included)

150 (5.9)

ø20 (1.14)

46 (1.81)

Cable Length:
5 m, 10 m, 25 m (16.4, 32.8, 82') as standard
Custom lengths also available
User may extend cable subject to safety requirements

General Specifications

Output: 4 to 20 mA

Temperature Range: See To Order chart on next page

Maximum Temperature Span: 1000°C (1832°F)

Minimum Temperature Span: 100°C (180°F)

Field of View: See To Order chart on next page for details

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

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

Emissivity Setting Range: 0.20 to 1.00 (pre-set to 0.95)

Emissivity Setting Method: User configurable via USB interface
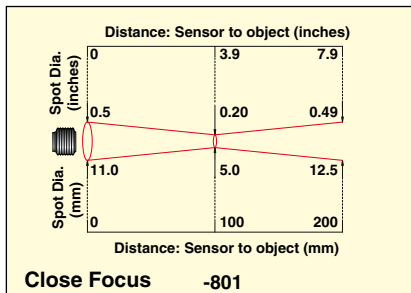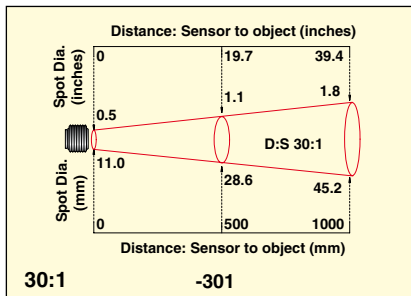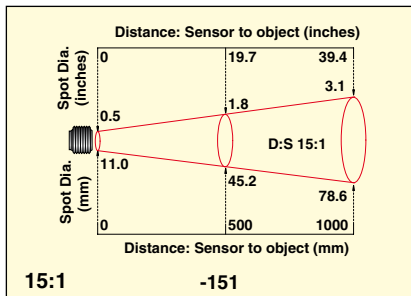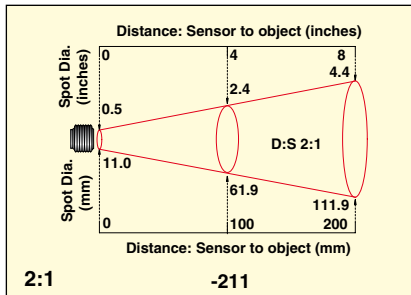
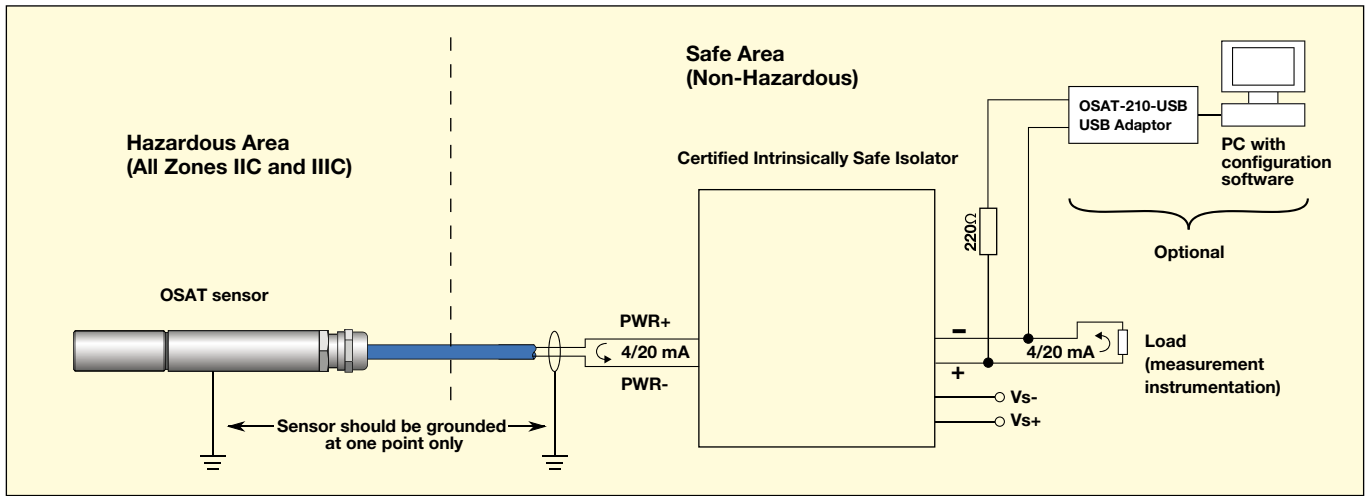**Response Time, t90:** 240 ms (90% response)

Spectral Range: 8 to 14 μm

Supply Voltage: 12 to 24 Vdc, ±5%

Maximum Current Draw: 25 mA

Construction: Stainless Steel 316

Dimensions: ø20 x length 150 mm (5.9")

Mounting: M20 x 1.5 mm thread, length 46 mm (1.81"), supplied with two mounting nuts

Cable Length: 5, 10 or 25 m (16.4, 32.8, 82') as standard (custom lengths also available)

Weight: 475 g (1 lb), with 5 m (16.4') cable

ENVIRONMENTAL

Environmental Rating: NEMA 4 (IP65)

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

Relative Humidity: 95% non-condensing maximum

HAZARDOUS AREA CLASSIFICATION

ATEX Classification: Ex II 1GD

IECEx Classification (Gas): Ex ia IIC T4 Ga

IECEx Classification (Dust): Ex ia IIIC T135°C IP65 Da

Ambient Temperature Rating: -20°C ≤Ta ≤70°C

Maximum DC Input Voltage: Ui = 28V

Maximum Input Current: Ii = 93 mA

Maximum Input Power: Pi = 650 mW

Maximum Internal Capacitance: Ci = 8 nF

Maximum Internal Inductance: Li = 0 mH

ATEX Certificate Number: CML 14ATEX2079

IECEx Certificate Number: IECEx CML 14.0032

J

Hazardous Area (All Zones IIC and IIIC)

OSAT sensor

Sensor should be grounded at one point only

Safe Area (Non-Hazardous)

OSAT-210-USB USB Adaptor

PC with configuration software

Certified Intrinsically Safe Isolator

220Ω

Optional

PWR+
4/20 mA
PWR-

−
4/20 mA
+

Load (measurement instrumentation)

Vs−
Vs+

Field of View Diagrams

2:1 -211

Distance: Sensor to object (inches)
Spot Dia. (inches): 0, 4, 8 / 0.5, 2.4, 4.4
D:S 2:1
Spot Dia. (mm): 11.0, 61.9, 111.9
Distance: Sensor to object (mm): 0, 100, 200

15:1 -151

Distance: Sensor to object (inches)
Spot Dia. (inches): 0, 19.7, 39.4 / 0.5, 1.8, 3.1
D:S 15:1
Spot Dia. (mm): 11.0, 45.2, 78.6
Distance: Sensor to object (mm): 0, 500, 1000

30:1 -301

Distance: Sensor to object (inches)
Spot Dia. (inches): 0, 19.7, 39.4 / 0.5, 1.1, 1.8
D:S 30:1
Spot Dia. (mm): 11.0, 28.6, 45.2
Distance: Sensor to object (mm): 0, 500, 1000

Close Focus -801

Distance: Sensor to object (inches)
Spot Dia. (inches): 0, 3.9, 7.9 / 0.5, 0.20, 0.49
Spot Dia. (mm): 11.0, 5.0, 12.5
Distance: Sensor to object (mm): 0, 100, 200

To Order

Model No.	Description
OSAT-[*]-[**]-C-[***]	ATEX infrared temperature transmitter
Field of View [*] Select	
211	2:1
151	15:1
301	30:1
801	5 mm diameter at 100 mm (⅕" at 4")
Temperature Range [**] Select	
LT	-20 to 100°C (-4 to 212°F)
MT	0 to 250°C (32 to 482°F)
HT	0 to 500°C (32 to 932°F)
XT	0 to 1000°C (32 to 1832°F)
ST	Custom, within -20°C (-4°F) and 1000°C (1832°F)
Cable Length [***] Select	
05	5 m (16')
10	10 m (33')
25	25 m (82')

To order with a UKAS traceable calibration certificate at 3 temperature points add "-CALCERTA" to end of model number, contact Sales for additional cost.

If ordering "ST" custom range option, then specify range required in order comments.

Ordering Example: OSAT-151-LT-C-05, *ATEX infrared temperature sensor with 15:1 optics, -20 to 100°C (-4 to 212°F) measurement range, user configurable, with 5 m (16') of cable.*

Accessories

Model No.	Description
OSUSB-FBL	Fixed mounting bracket (1-axis rotation)
OSUSB-ABL	Adjustable mounting bracket (2-axis rotation)
OSAT-210-APM	Air purge collar
OSAT-210-USB	USB adaptor and configuration software