

The background of the entire page is a high-angle, long-exposure photograph of a city at night. The image shows a dense urban landscape with numerous skyscrapers and buildings. A prominent feature is a multi-lane highway or bridge that runs diagonally across the frame, with light trails from vehicles creating a sense of motion. Overlaid on the city scene are several white, glowing arcs that connect different points, suggesting a network or data flow. The overall color palette is dominated by blues and greys, with the city lights providing a warm, yellowish glow.

i-Tec compact series (A/E/C)

DATASHEET

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- Temperature range: -20°C to 1000°C
- Choice of precision optics for large or small targets at short or long distances
- Fast response with high stability
- Stainless steel housing, sealed to IP65
- Quick and easy installation
- Wide range of accessories

The Sensor Partners i-Tec Compact Series is a range of high quality, low cost non-contact sensors that measure the temperature of inaccessible or moving objects and materials. They measure temperatures from -20°C to 1000°C, accurately and consistently, with an outstanding response time of 240 ms. All models conform to industrial EMC standards.



i-Tec A with indicator



i-Tec E with i-Tec Tune emissivity adjuster



i-Tec C with CAN Bus communications

The **i-Tec A** is a simple infrared temperature sensor with a choice of analogue outputs. No complicated setup is required - just connect a temperature indicator and power supply, and instantly start taking measurements.

- Suitable for non-contact temperature measurement on most non-reflective non-metal surfaces, such as paper, thick plastics, asphalt, painted surfaces, food, rubber and organic materials, among many others.
- Choice of analogue outputs for measured temperature:
Two-wire 4-20 mA,
Four-wire 0-50 mV,
Four-wire Type K, J or T thermocouple
- Additional 4-20 mA sensor body temperature output on the power supply loop of four-wire models: indicates the air temperature around the sensor and helps prevent overheating or

The **i-Tec E** is a simple sensor with an adjustable emissivity setting. It is ideal if the target is partially reflective.

- Two-wire 4-20 mA output
- Emissivity adjustment via a separate two-wire 4-20 mA input
- Adjust the emissivity continuously during the process using a variable 4-20 mA source
- Set the emissivity manually with the i-TecTune emissivity adjuster
- If you are not sure the emissivity of the target is high, choose the i-Tec E instead of the i-Tec A.

The **i-Tec C** is an infrared temperature sensor with CAN communications.

- Temperature range: -20°C to 1000°C
- Raw CAN communications
- Adjustable emissivity setting for measuring a variety of materials
- Ideal for onboard vehicle temperature monitoring, and many other applications
- Conforms with EMC standard EN 13309:2010

GENERAL SPECIFICATIONS - SENSORS

Output (i-Tec A)

i-Tec A Output Option (see Model Numbers)	Target Temperature Output	Sensor Temperature Output
-0	4-20 mA	Not available
-1	0-50 mV	4-20 mA
-3	Type J thermocouple	4-20 mA
-4	Type K thermocouple	4-20 mA

	i-Tec A	i-Tec E	i-Tec C
Output	See Above	Two-wire 4-20 mA	Raw CAN
Temperature Range	LT = -20 to +100 °C MT = 0 to 250 °C HT = 0 to 500 °C		-20 to 1000°C
Accuracy	±1% of reading or ±1°C whichever is greater		
Repeatability	± 0.5% of reading or ± 0.5°C whichever is greater		
Emissivity Setting	Fixed at 0.95	Variable 0.2 to 1.0 via continuous 4-20 mA input	Adjustable 0.2 to 1.0 via CAN
Response Time, t ₉₀	240 ms (90% response)		
Spectral Range	8 to 14 µm		
Supply Voltage	24 V DC (28 V DC max.)		24 V DC (28 V DC max.)
Min. Sensor Voltage	6 V DC		12 V DC
Max. Loop Impedance	900 Ω (4-20 mA output)		-
Output Impedance	56 Ω (voltage/thermocouple output)	-	
Input Impedance	-	50 Ω	-
Current Draw	20 mA max. (i-Tec B -5 models: 3.2 mA @ 24 V DC)		50 mA max
Baud Rate	-		250 kbps*
Format	-		

* Other configurations available upon request

MECHANICAL

Construction	Stainless Steel
Dimensions	18 mm diameter x 103 mm long
Thread Mounting	M16 x 1 mm pitch
Cable Length	1m (longer lengths available to order)
Weight with Cable	95 g

ENVIRONMENTAL

Environmental Rating	IP65
Ambient Temperature Range	0°C to 70°C (i-Tec A/E) / 0°C to 90°C (i-Tec C)
Relative Humidity	95% max. non-condensing

GENERAL SPECIFICATIONS - i-Tec TUNE

Output	4-20 mA for emissivity adjustment of i-Tec E sensor
Supply Voltage	24 V DC (13 V to 28 V DC)
Display Format	3.5 digit LCD
Display Units	Emissivity (0.2 to 1.0) or current (4 - 20 mA)
Adjustment	Push-buttons (raise/lower/set)

MECHANICAL

Construction	Polycarbonate with gasket, transparent lid (PC) and quick release screws
Mounting	Surface
Dimensions	65 mm tall x 50 mm wide x 35 mm deep
Weight	72 g

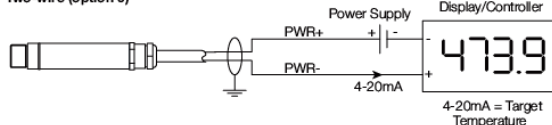
ENVIRONMENTAL

Environmental Rating	IP65
Ambient Temperature Range	0°C to 70°C
Relative Humidity	95% max. non-condensing

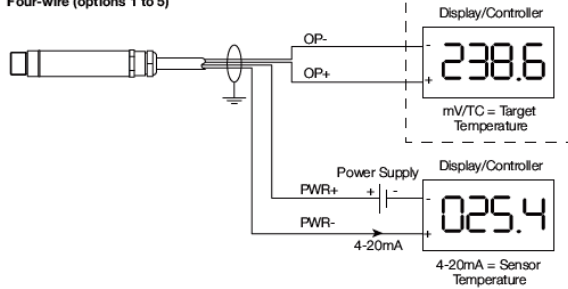
CONNECTIONS

i-Tec A

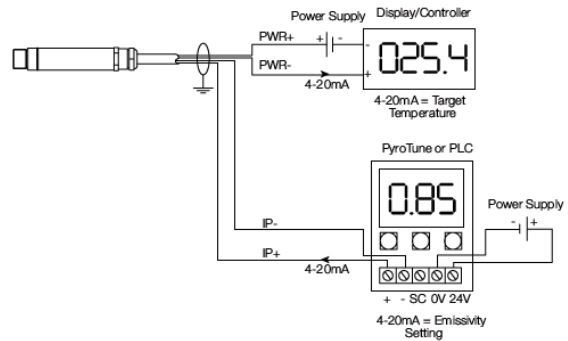
Two-wire (option 0)



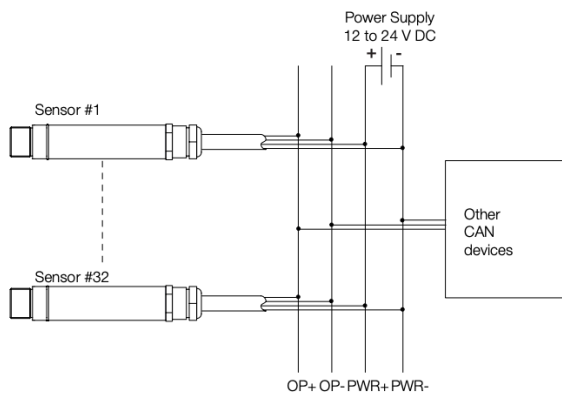
Four-wire (options 1 to 5)



i-Tec E

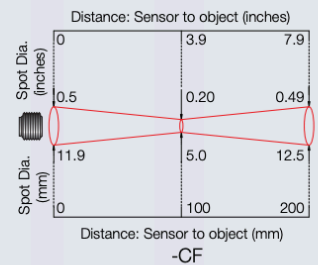
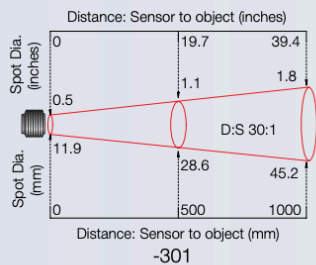
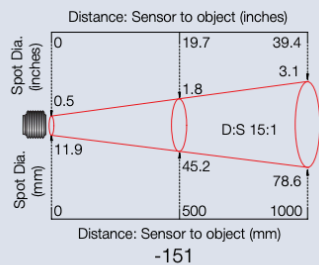
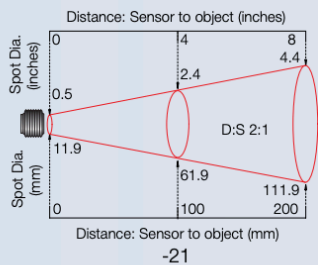


i-Tec C

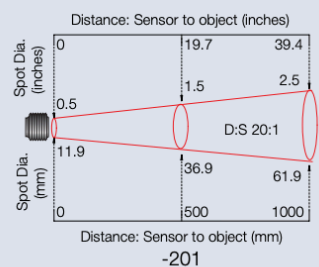
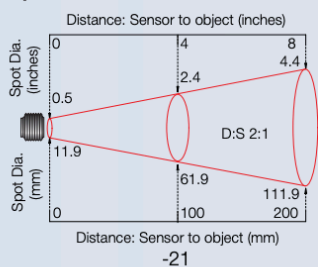


OPTICS

Optics available for i-Tec A, i-Tec E



Optics available for i-Tec C



Sensors can measure at longer distances than shown, with a larger measured spot size. Diagrams show the diameter of the measured target spot versus the distance from the sensing head (90% energy).

ACCESSORIES



Fixed mounting bracket **FBS**



Air purge collar for 2:1 optics **APSW**
or for all other optics (shown above) **APSN**



Laser sighting tool **LSTS**



Adjustable mounting bracket
ABS



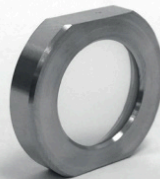
Air or water cooled jacket with
air purge collar **WJ** (see Model Numbers)



Dual laser sighting bracket, adjustable
DLSBAS or fixed **DLSBFS**



i-Tec Tune emissivity adjuster **PT**
(for i-Tec E only)



Protective plastic window with
stainless steel holder **PWS**
(not compatible with i-Tec A)

MODEL NUMBERS



i-Tec

A

115

MT

0

WJ

Example Model Numbers: i-Tec A-115-MT-0

i-Tec

E

115

MT

WJ

Example Model Numbers: i-Tec E-115-MT

i-Tec

C

115

WJ

Example Model Numbers: i-Tec C-102-WJ

0

1

3

4

2 wire, 4-20mA

4-wire, 0-50mV (target temp.), 4-20mA (sensor temp.)

4-wire, J Thermocouple (target temp.), 4-20mA (sensor temp.)

4-wire, K Thermocouple (target temp.), 4-20mA (sensor temp.)

Output option (i-Tec C only)

e.g. Model i-Tec A-115-HT-4 has a type K thermocouple output representing target temperatures of 0°C to 500°C plus a 4-20 mA output proportional to internal sensor temperature. For simplicity, the sensor temperature range is always set the same as the target temperature range

LT

MT

HT

-20 to +100 °C

0 to 250 °C

0 to 500 °C

Temperature range (i-Tec A and i-Tec E only)

102

115

120

130

CF

2:1 divergent optics

15:1 divergent optics

20:1 general-purpose divergent optics (C series only)

30:1 divergent optics

Close-focus optics (focal spot size 5 mm at 100mm distance)

Field of view

Note: i-Tec C sensors are available with 2:1 and 20:1 optics only

Series

A

E

C

i-Tec A

i-Tec E

i-Tec C

Fixed emissivity, choice of analogue outputs

Adjustable emissivity, 4-20 mA output

Adjustable emissivity, CAN Bus communications

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