

ERROR MESSAGES

Condition	Prior-ity	LED Display	0-5V	0-10V	4-20mA	RS-232
Low Power	1	OFF	Under 0.1V	Under 0.1V	Under 4mA	Not Implemented
Hardware Internal Errors	2, 13	Uniform Flash	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Vsig-Offset High	3	Uniform Flash	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Vsig-Offset Low	4	Uniform Flash	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
EMI	5	Uniform Flash	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Range Error	6	Uniform Flash	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
High Ambient	7	Long Flash**	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Low Ambient	8	Short Flash*	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Too Much Heat Flow	9	Long Flash**	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Too Little Heat Flow	10	Short Flash*	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
High Target	11	Long Flash**	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented
Low Target	12	Short Flash*	Over 4.9V	Over 9.8V	Over 19.7mA	Not Implemented

*Six counts off one count on
 **Six counts on one count off

ORDERING INFORMATION

SmartIRt/c, F-P-O-T or Smart-microIRt/c, F-P-O-T
 Examples: SmartIRt/c.3-24V-010-100C or Smart-microIRt/c.24V-420-250C

F	FIELD OF VIEW	P	POWER	O	OUTPUT	T	TEMPERATURE RANGE
.3	3:1	12V	12 VDC	05	0-5V	70C	-30-70C
.5	5:1	24V	24 VDC	010	0-10V	100C	0-100C
.20	20:1			420	4-20mA	250C	0-250C
.40	40:1				RS232	500C	0-500C
-	1:2					1000C	0-1000C
.SV	1:2						
.4	4:1						
.4SV	4:1						

OPTION: Add Ta to any part # to add ambient temperature option to output ambient temperature surrounding sensor

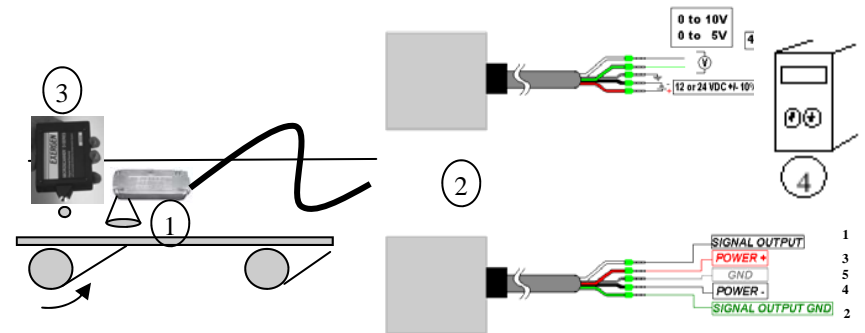
NOTE: 0-10V only available in 24VDC and RS232 only available in 12VDC from 0-250C

Examples: SmartIRt/c.3-24V-420-250C (3:1 field of view, 24VDC power, 4-20mA output from 0-250C), Smart-microIRt/c-12V-05-250C (1:2 field of view, 12VDC power, 0-5V output from 0-250C), or SmartIRt/c.3-24V-420-250C-Ta (with 4-20mA outputting target temperature and ambient temperature from 0-250C)

INSTALLATION INSTRUCTIONS

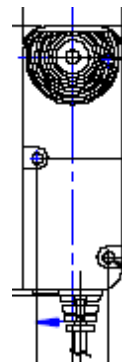
The following procedure is recommended:

1. Install the SmartIRt/c as close as practical to view the target material to be measured.
2. Wire the SmartIRt/c to the controller, PLC, etc. in standard fashion (see PINOUT and WIRING DIAGRAM)
3. Bring the process up to normal operating temperature and measure the actual temperature of the target material with the Microscanner D-Series, DX-Series Infrared Thermometer or any other reliable reference.
4. Adjust "input offset," "zero," "low cal," on the readout device to match the reading of your reference.
5. Installation Complete. (For OEM installations preset the same adjustments. Individual calibration is not required.)



WIRING DIAGRAM

PINOUT			Carol C074 Series/Belden 953 Series/Alpha 630 Series cable		
Pin	Color	Function	Pin	Color	Function
1	White	Positive Output Signal	6	Brown	TA Pull Down Pin / IO option
2	Green	Reference Output Signal	7	Yellow	RS232_TXD / IO option
3	Red	Positive Power	8	Violet	RS232_RXD / IO option
4	Black	Ground	9	Blue	RS232_RTD (READY_TO_SEND)
5	Bare	Shield	10	Orange	RS232_CTS (CLEAR_TO_SEND)



EASY TO USE

Simply attach the sensor utilizing the mounting holes built into the sensor and connect the unit to power and a controller. If air purge is desired, plug the air supply into the unit's connector. This is all that's required to use the SmartIRt/c and all of its features. No special knowledge of thermocouples or thermal management needed. The SmartIRt/c does all this for you.

SPECIFICATIONS	0-5V	0-10V	4-20mA	RS232
Sensing Range	-30 to 70 °C, 0 to 100 °C, 0 to 250 °C, 0 to 500 °C, or 0 to 1000 °C			
Ambient Temperature Range	0 °C to 70 °C (internal case temperature), Smart-microIRt/c sensor head to 100 °C			
Storage Temperature Range	-10 °C to 70 °C			
Field of View of Sensing Element	1:2, 3:1, 4:1, 5:1, 20:1, or 40:1 (distance:spot)			
Minimum Spot size	3 mm (0.1") (Smart-micro) 5 mm (0.2") (Smart) (16 mm (0.625") (SmartIRt/c.20 and 40)			
Dominant Spectral Response	5 to 14 um (Smart-micro), 5.5 to 20 um (Smart)			
Impedance	Less than 1 Kohms	50 ohm max	NA	
Emissivity Setting (e)	0.90 (can be factory adjusted)			
Measurement Type	Thermopile			
Resolution	10 bit***		4 Digit w/ floating decimal	
Update Time	Less than 250ms after first reading**			
Response Time (95% of step change)	Less than 650 ms**			
Bandwidth	Typically 5Hz			
First Reading in	Less than 2 seconds			
Accuracy (Includes Repeatability and Interchangeability)	Typically: ± 1 °C (± 1.8 °F) or 1% of reading (e = 0.9)			
Recommended Power Supply	12 \pm 10% V DC or 24 \pm 10% V DC; depending on model			
Power Accepted*	Shuts off when voltage is functionally low*			
Power Consumption	12V power less than 400mW 24V Power less than 800 mW			
Dimensions	Contact Exergen for Drawings			
Housing	Zinc-Aluminum Alloy Z-12 (ISO/DIS 301) and stainless steel			
Sensor Connection	3 foot pigtail (and 3 feet from sensor to transmitter on Smart-microIRt/c)		DB9 and loose power wires	
Recommended Air Purge Pressure	3 PSI - Contact Exergen for Pressure/Flow/Error Graphs			
Maximum Air Pressure	20 PSI - may cause reading errors on SmartIRt/c (Smart-microIRt/c with APJ-1 to 5 PSI)			
Air Cleanliness	Instrument Air is Recommended, ANSI/ISA-7.0.01-1996			
Humidity	Non-Condensing - ISA-71.01-1985 Environment Class C Severity X			
Shock	100G			
Weight	Approximately 200 grams (7oz.)			
LED	Constantly on for normal operation			



SmartIRt/c and Smart-microIRt/c™ Infrared Temperature Sensor

INSTALLATION GUIDE



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www.exergen.com/industrial

* The unit will not give an error message if the input voltage exceeds recommended high limit, but functionality or accuracy is not guaranteed when exceeding the Recommended Power Supply voltage.

** At room temperature

*** Current Output 10bit 0-20mA

Note: For additional or updated specifications please contact Exergen Corporation.

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