

## MICRO IRT/C

### **Product Overview**

- The Micro IRt/c features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered .
- Intrinsically Safe Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0003°C (0.0006°F)
- Small Size

#### **Technical Data**

Sensing Range	-18 to 524°C (0 to 975°F)
Ambient Temperature Range	-20 to 85°C (-29 to 185°F) permanent -20 to 100°C (-29 to 212°F) non permanent. Air Purge jacket available for cooling to 175°C (347°F)
Optimum Range Selections	Eight models per t/c type (see Tempera- ture Selection Chart)
Field of View	approximately 110° (1:2)
Minimum Spot Size	3 mm (.1")
Spectral Response	5,5 to 20 m
Output Impedance	17-45 Kohms

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Response TIme	50 Milliseconds
Dimensions	6,3 mm (0.25") Dia. x 25,4 mm (1.0")
Housing	Stainless Steel, Hermetically sealed, exceeds NEMA 4X, IP67
Cable	0,9 m (3 ft) of unsheilded, duplex insulated, type K, 24 AWG, PFA jacket rated to 260°C (500°F) (Shielded cable available upon request)
Input Device Compatibility	It is recommended to use input devices with less than 1 nA of leakage current to minimize offsets, and sensor break detection should be set to 40 Kohm maximum.
Weight	Approximately 30g (1oz.) with cable

### Calibration

Ordering information Micro IRt/c.4-K-440F/220C



Pastoor Clercxstraat 26 5465 RH Veghel The Netherlands



## MICRO IRT/C.SV

### **Product Overview**

The Micro IRt/c.SV features:

- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0003°C (0.0006°F)
- Small Size

#### **Technical Data**

Sensing Range	-18 to 524°C (-0 to 975°F)
Ambient Temperature Range	-20 to 85°C (-29 to 185°F) permanent -20 to 100°C (-29 to 212°F) non permanent
Optimum Range Selections	Eight models per t/c type (see Temperature selection Chart)
Field of View	approximately 1:2 (110°)
Minimum Spot Size	3 mm (.1")
Spectral Response	5,5 to 20µm
Output Impedance	17-45 Kohms

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Response Time	50 Milliseconds
Dimensions	See diagram above
Housing	Stainless Steel, Hermetically sealed, exceeds NEMA 4X, IP67
Cable	0,9 m (3 ft) of unsheilded, duplex insulated, type K, 24 AWG, PFA jacket rated to 260°C (500°F) (Shielded cable available upon request)
Input Device Compatibility	It is recommended to use input devices with less than 1 nA of leakage current to minimize offsets, and sensor break detection should be set to 45 Kohm maximum.
Weight	Approximately 30g (1oz.) with cable

### Calibration

Ordering information Micro IRt/c.SV-K- (Precalibrated Temperature Range).



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## MICRO IRT/C.4

### **Product Overview**

- The Micro IRt/c.4 features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered .
- Intrinsically Safe Repeatability 0,01°C (0.02°F) .
- .
- Interchangeability ±1%
- Resolution approx. 0,0003°C (0.0006°F)
- Small Size

#### **Technical Data**

Sensing Range	-49 to 625°C (-45 to 1157°F)
Ambient Temperature Range	-20 to 100°C (-4 to 212°F) Air purge jacket available for cooling to 175°C (347°F)
Optimum Range Selections	One model: 2% linear to match a Kt/c from 212-240°C (see Temperature Selection Chart). For other temperature ranges please contact Exergen Global
Field of View	approximately 4:1 (14°)
Minimum Spot Size	3 mm (.1")
Spectral Response	3 to 20μm
Output Impedance	40 Kohms

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Response Time	60 Milliseconds
Dimensions	6,3 mm (0.25") Dia. x 25,4 mm (1.0")
Housing	Stainless Steel, Hermetically sealed, exceeds NEMA 4X, IP67
Cable	0,9 m (3 ft) of unsheilded, duplex insulated, type K, 24 AWG, PFA jacket rated to 260°C (500°F) (Shielded cable available upon request)
Input Device Compa- tibility	It is recommended to use input devices with less than 1 nA of leakage current to minimize offsets, and sensor break detection should be set to 40 Kohm maximum.
Weight	Approximately 30g (1oz.) with cable

### Calibration

Ordering information Micro IRt/c.4-K-440F/220C





## MICRO IRT/C.4SV

### **Product Overview**

The Micro IRt/c.4SV features:

- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe . .
- , Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0003°C (0.0006°F)
- Small Size

#### **Technical Data**

Sensing Range	-45 to 625°C (-49 to 1157°F)
Ambient Temperature Range	-20 to 100°C (-4 to 212°F) with air off -20 to 120°C (-4 to 248°F) with air on
Optimum Range Selections	One model: 2% linear to match a Kt/c from 212-240°C (see Temperature Selection Chart). For other temperature ranges please contact Exergen Global
Field of View	approximately 4:1 (14°)
Minimum Spot Size	3 mm (.1")
Spectral Response	5,5 to 20µm
Output Impedance	40 Kohms

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Response Time	60 Milliseconds
Dimensions	See diagram above
Housing	Stainless Steel, Hermetically sealed, exceeds NEMA 4X, IP67
Cable	0,9 m (3 ft) of unsheilded, duplex insulated, type K, 24 AWG, PFA jacket rated to 260°C (500°F) (Shielded cable available upon request)
Air Purge	Built-in; designed for severe paint or ink environment
Input Device Compatibility	It is recommended to use input devices with less than 1 nA of leakage current to minimize offsets, and sensor break detection should be set to 40 Kohm maximum.
Weight	Approximately 60g (2oz.) with cable

### Calibration

Ordering information Micro IRt/c.4.SV-K-440F/220C





O.D.0.725 x 18 T.P.I.REF (DINPG11 Threads)

### **IRT/C.01**

### **Product Overview**

- The IRt/c.01 features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered .
- Intrinsically Safe Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0001°C (0.0002°F) Small Size

#### **Technical Data**

Sensing Range	-45 to 290°C (-50 to 550°F)
Ambient Temperature Range	-18 to 70°C (0 to 160°F)
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)
Field of View	approximately 60° (1:1)
Minimum Spot Size	8 mm (.3")
Spectral Response	6,5 to 14µm
Output Impedance	3 Kohms approx

Response Time	100 Milliseconds
Dimensions	32.5 x 20 mm Dia. (1.28" x .71")
Housing	High strength ABS, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, intrinsically safe. Two locknuts supplied
Cable	Thermocouple extension grade, PVC jacket, unshielded, 0,9 m (3")
Weight	40g (1.4oz.) with cable

1.28 (32,5)

.497 (12,6

.06 (1.5)

Black Abs Plastic

### Calibration

Ordering information IRt/c.01-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.



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## IRT/C.3X

### **Product Overview**

- The IRt/c.3X features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe
- Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0001°C (0.0002°F)
- Small Size

#### **Technical Data**

Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-58 to 185 °F (-50 to 85 °C) with air on: -58 to 212 °F (-50 to 100 °C)
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)
Field of View	approximately 17° (3:1)
Minimum Spot Size	6 mm (.25")
Spectral Response	6,5 to 14µm
Output Impedance	4 to 8 Kohms approx

		Air Fitting	
	0.500 (12,7) Dia	M12x1.0 Thread*	
-		Air Purge Passag	e

\*IRt/c.3X includes ss mounting bracket & locknuts

Response Time	100 Milliseconds
Dimensions	44,7 x 12,7 mm Dia. (1.76" x .50")
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Air Purge	Built-in; designed for severe paint or ink environment
Weight	40g (1.4oz.) with cable

### Calibration

Ordering information IRt/c.3X-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.



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O.D.0.725 x 18 T.P.I.REF (DINPG11 Threads)

## IRT/C.03

### **Product Overview**

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- Features
  Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe
- Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0001°C (0.0002°F)
- Small Size

### **Technical Data**

Sensing Range	-45 to 290°C (-50 to 550°F)
Ambient Temperature Range	-18 to 70°C (0 to 160°F)
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)
Field of View	approximately 17° (3:1)
Minimum Spot Size	6 mm (.25")
Spectral Response	6,5 to 14µm
Output Impedance	4 to 8 Kohms approx

Response Time	100 Milliseconds
Dimensions	32,5 x 20 mm Dia. (1.28" x .71")
Housing	High strength ABS, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, intrinsically safe. Two locknuts supplied
Cable	Thermocouple extension grade, PVC jacket, unshielded, 0,9 m (3")
Weight	40g (1.4 oz.) with cable

1.28 (32,5)

.497 (12,6

25 (6.4)

.06 (1,5)

Black Abs Plasti

### Calibration

Ordering information IRt/c.O3-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.



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1.75 (44)

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#### **Product Overview**

- The IRt/c features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered .
- Intrinsically Safe Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0001°C (0.0002°F)
- Small Size

#### **Technical Data**

Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-18 to 100°C (0 to 212°F)
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)
Field of View	approximately 60° (1:1)
Minimum Spot Size	8 mm (.3")
Spectral Response	6,5 to 14µm
Output Impedance	3 Kohms approx

Response Time	100 Milliseconds
Dimensions	44 x 12,7 mm Dia. (1.75" x .50")
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Weight	40g (1.4oz.) with cable

0.500 (12.7)

### Calibration

Ordering information IRt/c-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.



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## IRT/C.SV

### **Product Overview**

- The IRt/c.SV features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-poweredIntrinsically Safe
- Intrinsically Safe
  Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx.  $0,0001^{\circ}C$  (0.0002
- Small Size

### **Technical Data**

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0.0002°F)	



Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-18 to 100°C (0 to 212°F)
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)
Field of View	approximately 60° (1:1)
Minimum Spot Size	8 mm (.3")
Spectral Response	6,5 to 14µm
Output Impedance	3 Kohms approx

Response Time	100 Milliseconds
Dimensions	57,8 x 12,7 mm Dia. (2.77" x .50")
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Weight	40g (1.4 oz.) with cable

### Calibration

Ordering information IRt/c.10-K- (Precalibrated Temperature Range).



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### IRT/C.1X

### **Product Overview**

- The IRt/c.1X features;
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered .
- Intrinsically Safe , Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0001°C (0.0002°F)
- Small Size

#### **Technical Data**

Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-18 to 100°C (0 to 212°F)
Optimum Range Selections	Eight models per t/c type (see Tempera- ture Selection Chart)
Field of View	approximately 60° (1:1)
Minimum Spot Size	8 mm (.3")
Spectral Response	6,5 to 14µm
Output Impedance	3 Kohms approx

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Response Time	100 Milliseconds
Dimensions	36 x 12,7 mm Dia. (1.43" x .50")
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Weight	40g (1.4 oz.) with cable

### Calibration

Ordering information IRt/c.1X-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.



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0.62 [15.7]

0.975 [24.8]

0.625 [15.9]

2.27 [57.7]

1.93 [49.1]

3'(0.9M) of K t/c cable

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0.50 [12.7]

0.69 [17.5]

0.69 [17.5]

Elbow adjustable air fitting

## IRT/C.3SV

### **Product Overview**

- The IRt/c.3SV features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe
  Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx.  $0,0001^{\circ}C (0.0002^{\circ}F)$
- Small Size

#### **Technical Data**

Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-18 to 120°C (0 to 248°F)
Optimum Range Selections	Eight models per t/c type (see Tempera- ture Selection Chart)
Field of View	approximately 17° (3:1)
Minimum Spot Size	5 mm (.2")
Spectral Response	6,5 to 14µm
Output Impedance	4 to 8 Kohms approx

Response Time	100 Milliseconds
Dimensions	See diagram above
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Air Purge	Built-in; designed for severe paint or ink environment
Weight	44g (1.6oz.) with cable

### Calibration

Ordering information IRt/c.3SV-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.



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### IRT/C.5

### **Product Overview**

- The IRt/c.5 features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe
  Repeatability 0,01°C (0.02°F)
- Repeatability 0,01°C (0.0
  Interchangeability ±1%
- Resolution approx.  $0,0001^{\circ}C (0.0002^{\circ}F)$
- Small Size



Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-18 to 200°C (0 to 400°F)
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)
Field of View	approximately 11° (5:1)
Minimum Spot Size	20 mm (.8")
Spectral Response	6,5 to 14µm
Output Impedance	4 to 8 Kohms approx
Response Time	100 Milliseconds

Dimensions	86 x 35 mm Dia. (3.4" x 1.375")
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Air Purge	Built-in; designed for severe paint or ink environment; 0,9 m (3") of tubing provided
Weight	184g (6.5oz.) with cable

1.375(34,9)dia

### Calibration

Ordering information IRt/c.5-\* (Thermocouple Type) - (Precalibrated Temperature Range). Thermocouple type J,K,E,T over temperature range specified.





### IRT/C.10

#### **Product Overview**

The IRt/c.10 features:

- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered
- Intrinsically Safe
- Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx. 0,0001°C (0.0002°F)
- Small Size

#### **Technical Data**

Sensing Range	-45 to 650°C (-50 to 1200°F)	
Ambient Temperature Range	-18 to 200°C (0 to 400°F)	
Optimum Range Selections	Eight models per t/c type (see Temperature Selection Chart)	
Field of View	approximately 6° (10:1)	
Minimum Spot Size	20 mm (.8")	
Spectral Response	6,5 to 14µm	
Output Impedance	4 to 8 Kohms approx	
Response Time	100 Milliseconds	

Dimensions	86 x 35 mm Dia. (3.4" x 1.375")
Housing	Stainless steel, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J,K,E,T), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Air Purge	Built-in; designed for severe paint or ink environment; 0,9 m (3') of tubing provided
Weight	184g (6.5oz.) with cable

### Calibration

Ordering information IRt/c.10-K- (Precalibrated Temperature Range).



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## IRT/C.01HB

### **Product Overview**

- The IRt/c.01HB features:
- Infrared Thermocouple IRt/c
- Non-contact
  Self-powered
- Self-powered
  Intrinsically Saf
- Intrinsically Safe
  Repeatability 0,01°C (0.02°F)
- Interchangeability ±1%
- Resolution approx.  $0,0001^{\circ}C (0.0002^{\circ}F)$
- Small Size

### **Technical Data**

Sensing Range	-45 to 290°C (-50 to 550°F)	
Ambient Temperature Range	-18 to 70°C (0 to 160°F)	
Optimum Range Selections	0 to 50°C (32 to 122°F) (Human body range)	
Field of View	approximately 60° (1:1)	
Minimum Spot Size	8 mm (.3")	
Spectral Response	6,5 to 14µm	
Output Impedance	3 Kohms approx	

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Tubing Size Range	8 to 25 mm (0.3 to 1.0") 0.D.
Response TIme	100 Milliseconde
Dimensions	51 x 25 mm Dia. (2.0" x 1.0")
Housing	Hight strength ABS, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, intrinsically safe
Cable	Thermocouple extension grade, PVC jacket, unschielded
Weight	40g (1.4 oz.) with cable

### Calibration

Custom specific calibration depending on application and tubing properties. Please contact Exergen Global for more information.



1.75 (44,5)

.67 (17)

0.090 (2,3)

.500(12,7)Dia.

Germanium Lens

### IRt/c.2G

### **Product Overview**

- The IRt/c.2G features:
- Infrared Thermocouple IRt/c
- Non-contact
- Self-powered .
- Intrinsically Safe Repeatability 0,01°C (0.02°F) •
- .
- Interchangeability ±1% .
- Resolution approx. 0,0001°C (0.0002°F)
- Small Size

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Technical Data	
Sensing Range	-45 to 650°C (-50 to 1200°F)
Ambient Temperature Range	-10 to 70°C (0 to 160°F)
Optimum Range Selections	0 to 50°C (32 to 122°F) (Human body range)
Field of View	approximately 60° (1:1)
Minimum Spot Size	4 mm (.16")
Spectral Response	2 to 20µm

10 Kohms approx

Response Time	100 Milliseconds
Dimensions	44 x 12,7 mm Dia. (1.75" x 0.50")
Housing	Stainless steal, hermetically sealed, exceeds NEMA 4,4X; IP65, 67, intrinsically safe, cable shield grounded to housing and electrically isolated from signal
Cable	Twisted shielded pair of base thermocouple material (J), 0,9 m (3 ft) std length, Teflon sheathed, rated to 200°C (392°F) continuous service
Weight	40g (1.4oz.) with cable

### Calibration

**Output Impedance** 

