



BURNS[®]
ENGINEERING

Temperature Measurement Experts



Series D

Air Temperature Sensors: Averaging, Room, HVAC



Temperature Measurement Experts®

Since 1960, Burns Engineering has been an industry leader in the design and manufacture of temperature sensors to meet a multitude of measurement applications. Accuracy, reliability and consistency are hallmarks of the Burns brand. At Burns, we focus on the measurement. We understand the subtleties of temperature measurement, from selection through installation, and how they impact your processes and ultimately your success. We worry about the details so you don't have to. When you select Burns you're getting more than a sensor, you're getting your own team of Temperature Measurement Experts.

Series D Air Temperature Sensors

Available in multiple configurations and styles, these RTDs provide air temperature as a distributed average, multi-point average or as a single point. Models available with transmitters or cables to meet your installation needs.

If you don't see something that meets your needs, give us a call and we'll customize for your specific application.



Request a Quote:

Visit BurnsEngineering.com to configure your Air Temperature Sensor today.

Here's how:

1. Register or sign-in to access the product configurator
2. Search for the model (D01, D07, etc.) using the search box (upper right) or click on the "View Products/Request a Quote" tab
3. Select the model of interest
4. Click on "Configure My Part"
5. Select the parameters to support your application
6. Click "Finish" in the upper or lower left of the configuration screen
7. Click "Submit quote for confirmation"
8. Done – We'll be in touch shortly

Product Index

D01, D02, D03, and D04 Averaging Sensor, Pages 3 – 10

Continuous averaging temperature measurement in diameters of 0.188" and 0.25", and sensitive lengths from 13 feet to 58 feet. Available with operating temperature up to 500°F and sheath materials of copper, stainless steel and aluminum depending on model. Available with cable or connection head for installation flexibility.

D05 & D06 Multi-Point Averaging Sensor, Pages 11 – 14

Designed with 4 discrete measurement points to represent the average over the sensitive length. These models are available with cable or a connection head. Operating range to 400°F, with 0.25" diameter stainless steel sheath and lengths from 1 foot to 3 feet.

D07 Flush Wall Plate Sensor, Pages 15 – 16

Low profile design to minimize intrusion into the room and easy installation with a standard electrical junction box. Stainless steel plate for use in clean room environments.

D08 Wall Plate with Sensor Guard, Pages 17 – 18

High accuracy wall plate temperature measurement with protective guard over the exposed sensor sheath. Available with optional transmitter and matched calibration to yield the highest accuracy. All stainless steel construction for clean room environments.

D09 & D10 Wall Mounted Sensor with Plastic Housing, Pages 19 – 22

Room temperature sensor available with optional transmitter. Resistances of 100 ohms and 1000 ohms for excellent signal strength and resolution and 2 mounting options.

D11 Heavy Duty Room Temperature Sensor, Pages 23 – 24

Built for tough environments with a stainless steel perforated guard tube or sun shield. This model is available in Standard and Precision accuracy with optional transmitter and local indicator.

Common Options Applicable to These Models, Pages 25-26

Options available include: Lead Wires, Compression Fittings, Reducing Bushings, Strain Reliefs, Tagging, and Calibration.

D01: Averaging Sensor with Connection Head, 275°F Max. Specifications

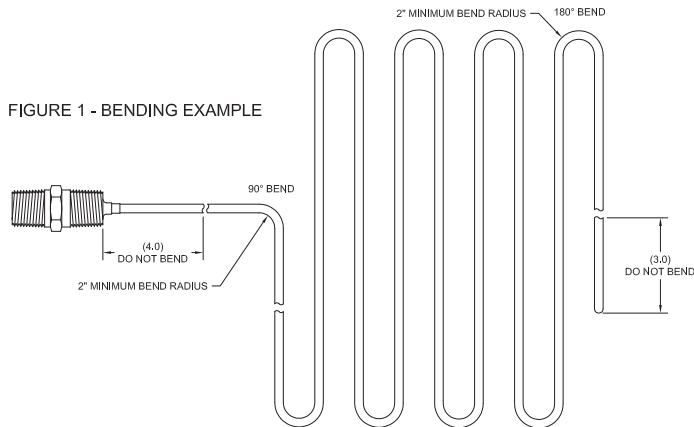
The D01 provides temperature averaging for large area air measurements in rooms or HVAC systems. Model D01 is available in lengths up to 58 feet that can be formed in the field for a custom fit. The sensor can be installed with an optional threaded mounting flange.

Features and Benefits:

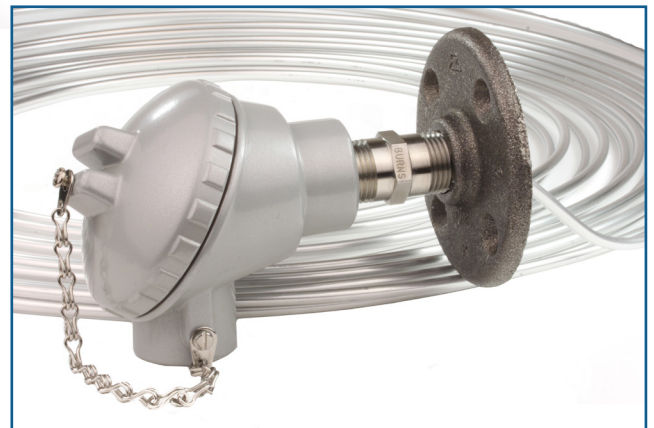
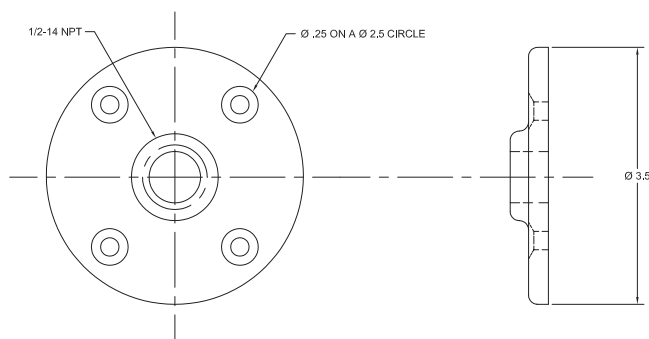
- Application: Average air temperature measurement in rooms or ductwork
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element/Lead Wire Configuration: Single 3 or 4 wire, Dual 3 wire
- Sheath:
 - Material: Available in 316L stainless steel for cleanroom applications, or 3003 aluminum or 122 copper where ease of forming is desired.
 - Diameter: Single 0.188", Dual 0.25"
- Sensitive lengths from 3 to 58 feet
- Field formable for custom installation (See Figure 1)
- Optional Connection Head – multiple styles available

Specifications

- Element Configuration: Single and Dual, 100 ohms at 0.0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 135°C (-50°F to 275°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature



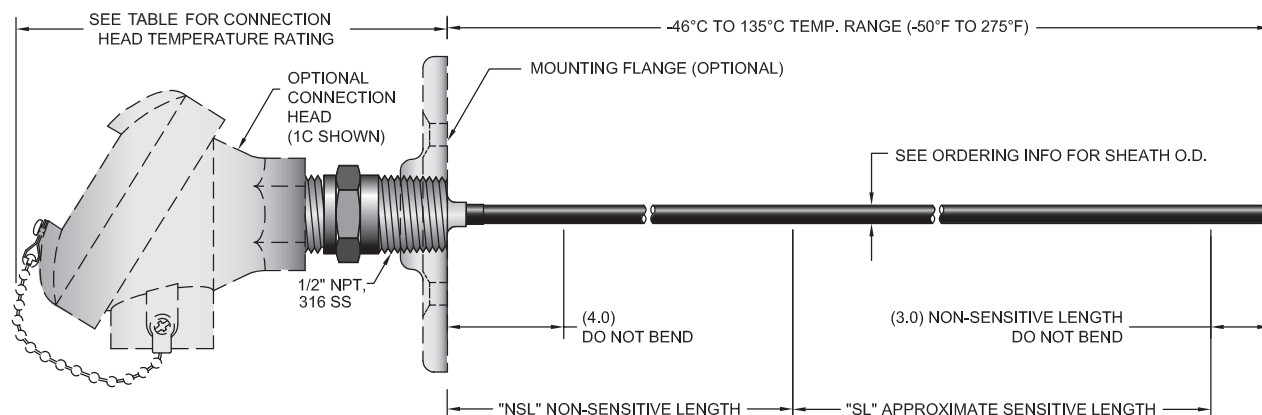
Optional Mounting Flange:



D01: Averaging Sensor

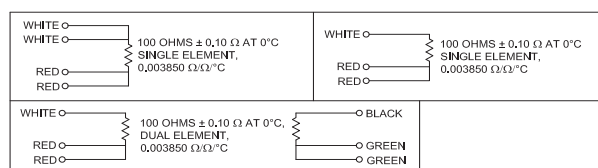
with Connection Head, 275°F Max.

Ordering Information



D01 Averaging Sensor, 135°C (275°F) Maximum Temperature, 1/2" NPT Connection																																																	
RTD (Accuracy)	Sheath Material																																																
10 Standard RTD 100 OHMS \pm 0.1 Ω at 0°C																																																	
Element/Lead Wire Configuration	Sheath O.D.																																																
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C Three Wire Dual Element	\varnothing 0.250"																																																
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-53 3003 Aluminum																																																	
-54 122 Copper																																																	
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Basic Order Codes																																																	
D01																																																	
Common Options (pages 25-26)																																																	

Example Part # D01-10A1-3-06-01-14S



D02: Averaging Sensor with Connection Head, 500°F Max. Specifications

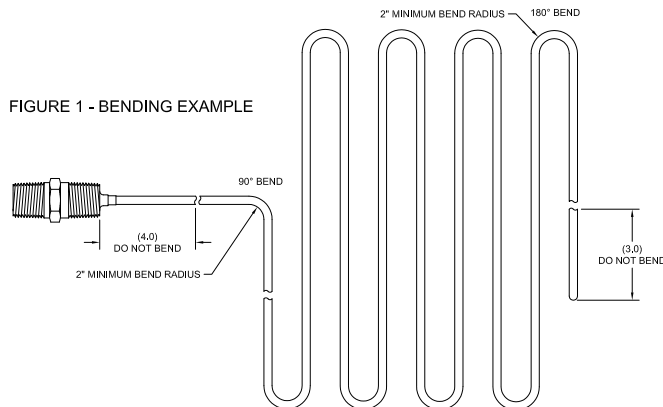
The D02 is a high temperature averaging sensor. The small 3/16" diameter with a 13 foot sensitive length can be custom formed to fit most air temperature applications. The sensor can be mounted with an optional mounting flange.

Features and Benefits:

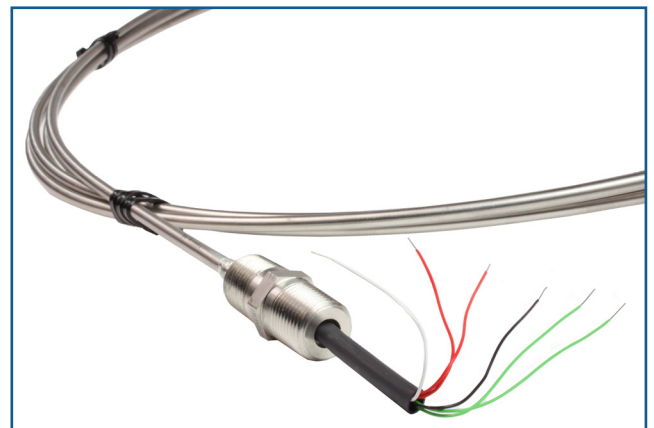
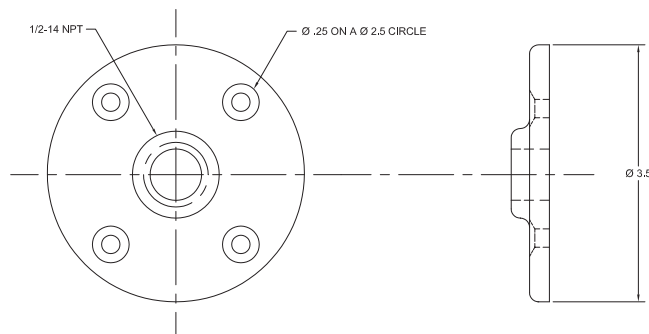
- Application: Air temperature in ovens, pipes, or ductwork. Can also be used to measure average surface temperature of a vessel or pipe by wrapping the sensor around the object and covering with insulation.
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element/Lead Wire Configuration: Single 3 or 4 wire
- Sheath: 316 stainless steel, 3/16" diameter
- High Temperature Capability: 260°C (500°F)
- Field formable for custom installation (2" minimum bend radius) (See Figure 1)
- Optional Connection Head – Multiple styles available

Specifications

- Element Configuration: Single, 100 or 200 ohms at 0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 260°C (-50°F to 500°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature



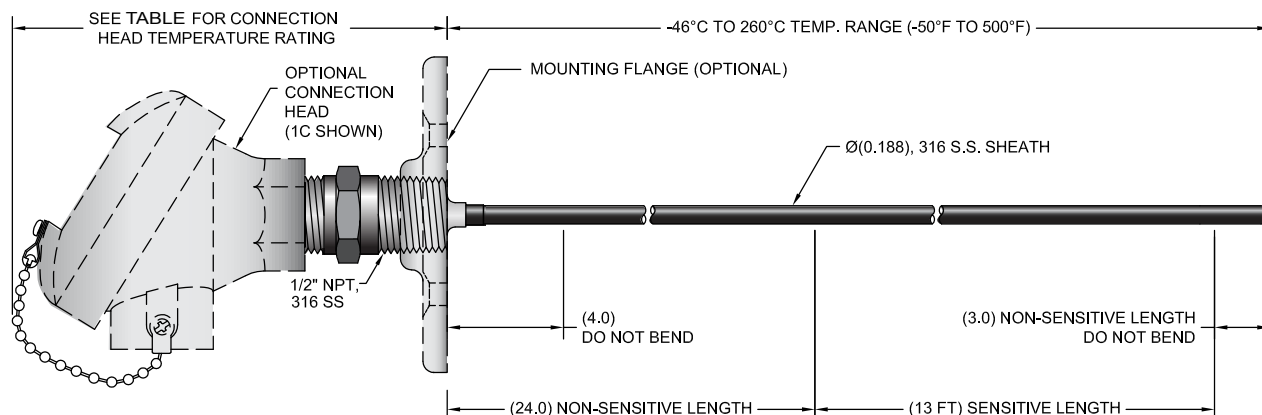
Optional Mounting Flange:



D02: Averaging Sensor

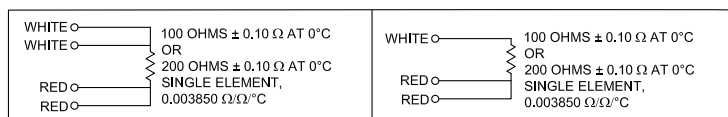
with Connection Head, 500°F Max.

Ordering Information



D02- Averaging Sensor, 260°C (500°F) Maximum Temperature, 1/2" NPT Connection					
RTD (Accuracy)					
10	Standard RTD $\pm 0.1 \Omega$ of Resistance at 0°C				
Element/Lead Wire Configuration					
A	Three Wire Single Element				
B	Four Wire Single Element				
Element Resistance					
-21	100 Ω Element				
-22	200 Ω Element				
Mounting Type					
-01	3.5" Mounting Flange, Cast Iron, Four 1/4" Holes on a Ø 2.5" Circle No Flange (Leave Blank)				
Connection Head					
-1C	Medium Cast Iron Head	93°C (200°F)			
-2A	Medium Aluminum Head	93°C (200°F)			
-2E	Medium Aluminum Head, Epoxy Coated	93°C (200°F)			
-5A	Large Aluminum Head	93°C (200°F)			
-5E	Large Aluminum Head, Epoxy Coated	93°C (200°F)			
-9P	Polypropylene Head	93°C (200°F)			
-14S	Stainless Steel Head	93°C (200°F)			
-19A	Large Aluminum Head with Loop Powered LED Indicator	93°C (200°F)			
-20P	Medium Polycarbonate Head with Loop Powered LED Indicator	93°C (200°F)			
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-22A	Large Aluminum Head with Battery Powered LED Indicator	93°C (200°F)			
-23P	Medium Polycarbonate Head with Battery Powered LCD Indicator	75°C (167°F)			
-24S	Medium Stainless Steel Head with Battery Powered LCD Indicator	93°C (200°F)			
-ND	No Connection Head, 4" 22 AWG Lead Wires	135°C (275°F)			
-*	See Connection Head Supplement for More Options				
Maximum Temperature					
(Leave Blank if not Required)					
D02					
Basic Order Codes					Common Options (pages 25-26)

Example Part # D02-10A-21-1C



D03: Averaging Sensor with Cable, 275°F Max. Specifications

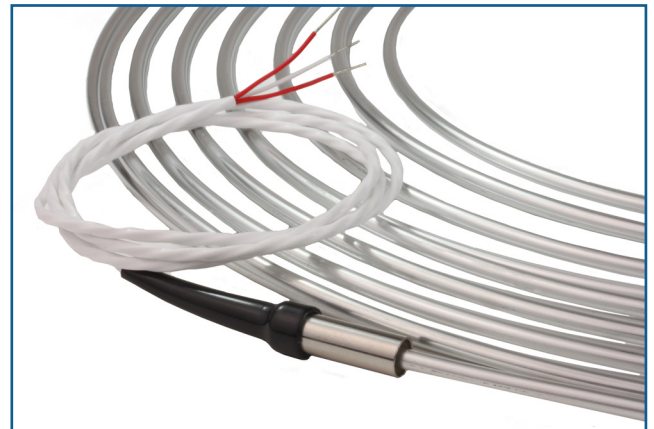
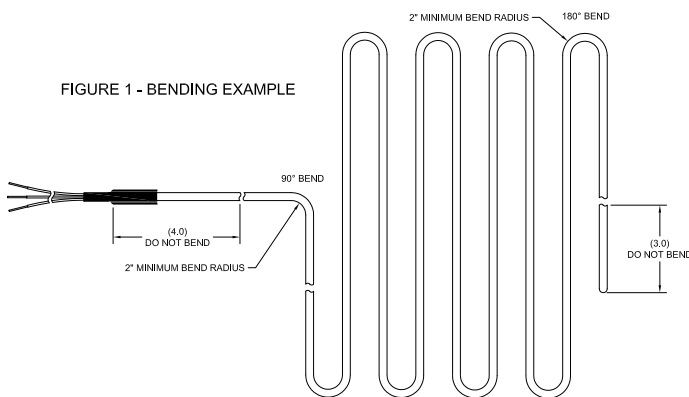
The D03 provides temperature averaging for large area air measurements in rooms or HVAC systems. This low-profile sensor is available in lengths up to 58 feet that can be formed in the field for a custom fit. The sensor can be mounted with a compression fitting or clamps.

Features and Benefits:

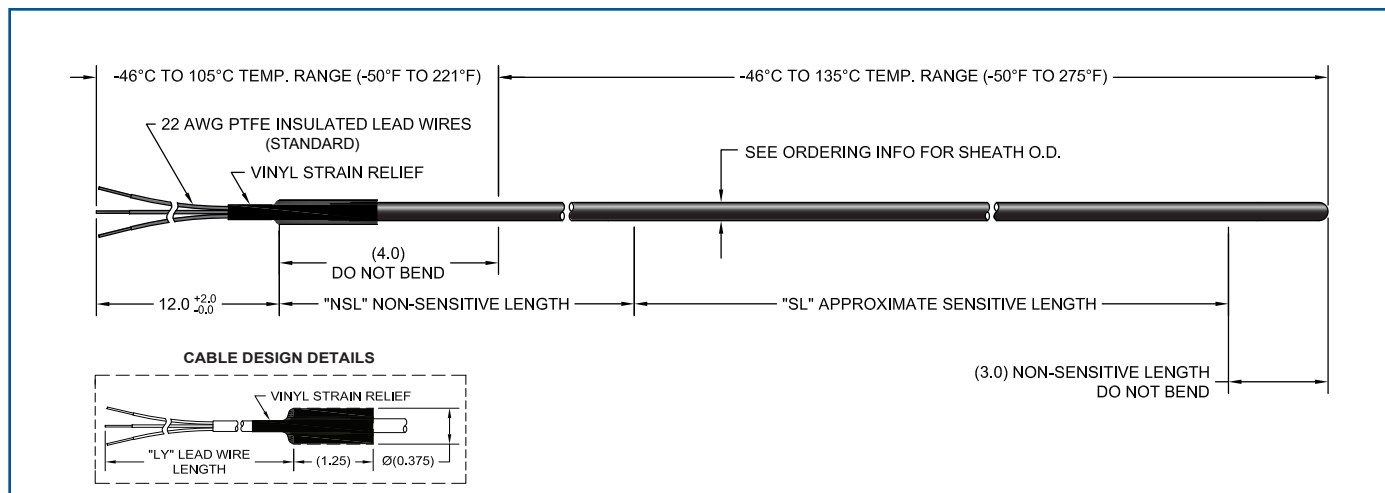
- Application: Average air temperature measurement in rooms or ductwork
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element/Lead Wire Configuration: Single 3 or 4 wire, Dual 3 wire
- Sheath:
 - Material: Available in 316L stainless steel for cleanroom applications, or 3003 aluminum or 122 copper where ease of forming is desired. (See Figure 1)
 - Diameter: Single 0.188", Dual 0.25"
- Sensitive lengths from 3 to 58 feet
- Mounts with compression fitting or clamps
- Field formable for custom installation (See Figure 1)

Specifications

- Element Configuration: Single and Dual, 100 ohms at 0.0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 135°C (-50°F to 275°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature
- Wire:
 - Individual lead wires: 12.0" PTFE insulated wires; Single- 22 AWG, Dual- 26 AWG
 - Cable designs:
 - > 0.375" diameter, 1.25" long transition fitting added
 - > PTFE insulated wires with FEP jacket; Single- 22 AWG, Dual- 26 AWG
 - > Add '/LY___' to specify cable. See Common Options on page 26 for details.



D03: Averaging Sensor with Cable, 275°F Max. Ordering Information



D03- Averaging Sensor, 135°C (275°F) Maximum Temperature

RTD (Accuracy)

10 Standard RTD 100 OHMS ± 0.1 Ω at 0°C

Element/Lead Wire Configuration		Sheath O.D.
A	Three Wire Single Element	Ø0.188"
B	Four Wire Single Element	Ø0.188"
C	Three Wire Dual Element	Ø0.250"

"NSL" - Non Sensitive Length

1	1 Foot
2	2 Foot
3	3 Foot

"SL" - Approximate Sensitive Length

-3	3 Feet	-9	9 Feet	-17	17 Feet
-4	4 Feet	-10	10 Feet	-19	19 Feet
-5	5 Feet	-11	11 Feet	-23	23 Feet
-6	6 Feet	-12	12 Feet	-29	29 Feet
-7	7 Feet	-13	13 Feet	-58	58 Feet
-8	8 Feet	-15	15 Feet		

Sheath Material

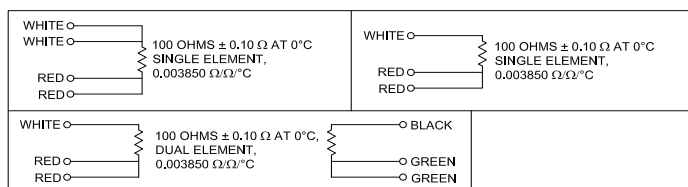
-06	316L Stainless Steel
-53	Aluminum 3003
-54	Copper 122

(Leave Blank if not Required)

Basic Order Codes

Common Options
(pages 25-26)

Example Part # D03-10A1-3-06



NOTE: For cable designs add LY option code to the part number. See page 26 for cable options.

D04: Averaging Sensor with Cable, 500°F Max. Specifications

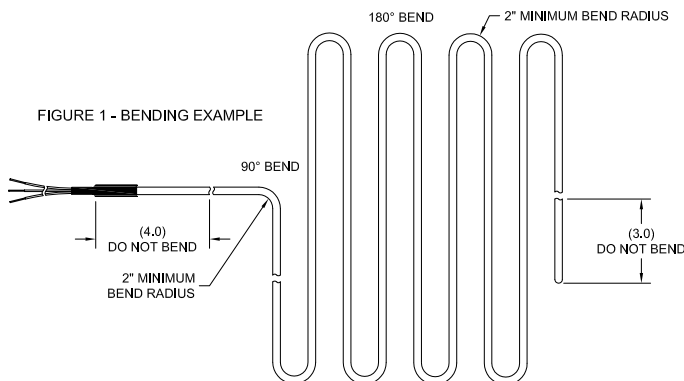
The D04 is a high temperature averaging sensor. The small 3/16" diameter with a 13 foot sensitive length can be custom formed to fit most air temperature applications. The sensor can be mounted with a compression fitting or clamps

Features and Benefits:

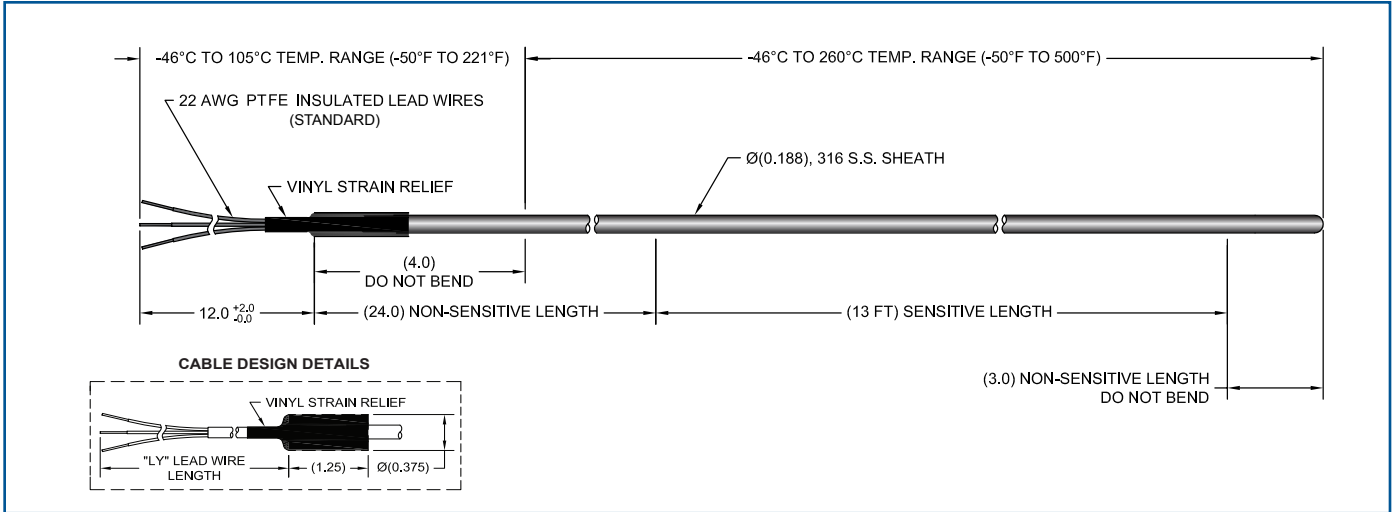
- Application: Air temperature in ovens, pipes, or ductwork. Can also be used to measure average surface temperature of a vessel or pipe by wrapping the sensor around the object and covering with insulation.
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element/Lead Wire Configuration: Single 3 or 4 wire
- Sheath: 316 stainless steel, 3/16" diameter
- High Temperature Capability: 260°C (500°F)
- Field formable for custom installation (2" minimum bend radius)

Specifications

- Element Configuration: Single, 100 or 200 ohms at 0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 260°C (-50°F to 500°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature
- Wire:
 - Individual lead wires: 120" PTFE insulated wires - 22 AWG
 - Cable designs:
 - > 0.375" diameter, 1.25" long transition fitting added
 - > PTFE insulated wires with FEP jacket - 22 AWG
 - > Add 'LY___' to specify cable. See Common Options on page 26 for details.



D04: Averaging Sensor with Cable, 500°F Max. Ordering Information



D04- Averaging Sensor, 260°C (500°F) Maximum Temperature

RTD (Accuracy)

10 Standard RTD ± 0.1 Ω of Resistance at 0°C

Element/Lead Wire Configuration

A Three Wire Single Element

B Four Wire Single Element

Element Resistance

-21 100 Ω Element

-22 200 Ω Element

(Leave Blank if not Required)

D04 [] [] [] []

Basic Order Codes

Common Options (pages 25-26)

Example Part # D04-10A-21

WHITE ○ WHITE ○ RED ○ RED ○	100 OHMS ± 0.10 Ω AT 0°C OR 200 OHMS ± 0.10 Ω AT 0°C SINGLE ELEMENT, 0.003850 Ω/Ω°C	WHITE ○ RED ○ RED ○	100 OHMS ± 0.10 Ω AT 0°C OR 200 OHMS ± 0.10 Ω AT 0°C SINGLE ELEMENT, 0.003850 Ω/Ω°C
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NOTE: For cable designs add LY option code to the part number. See page 26 for cable options.

D05: Multi-Point Averaging Sensor with Connection Head, 400°F Max. Specifications

The D05 is an averaging sensor incorporating four (4) discrete sensors within a rigid sheath to provide an average temperature. Designed for dryers and HVAC systems, the sensor can be mounted with an optional mounting flange. This sensor is not designed to be bent.

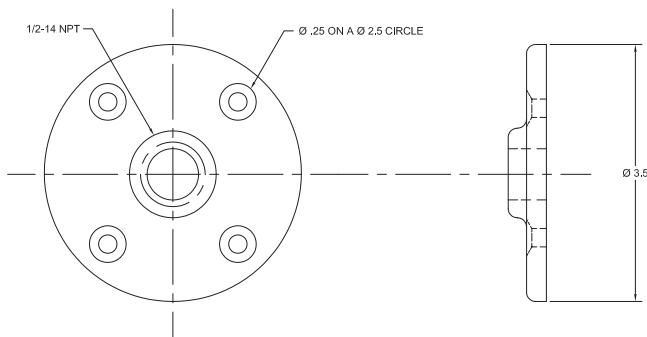
Features and Benefits:

- Application: High temperature air measurements in dryers, pipes, ducts, or other temperature chambers
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element/Lead Wire Configuration: Single 3 or 4 wire
- Sheath:
 - Material: Rigid 316L stainless steel
 - Diameter: 0.25"
- Sensing elements are evenly spaced along the measurement length
- Optional connection heads and digital indicators available
- Can be installed in a thermowell for improved durability

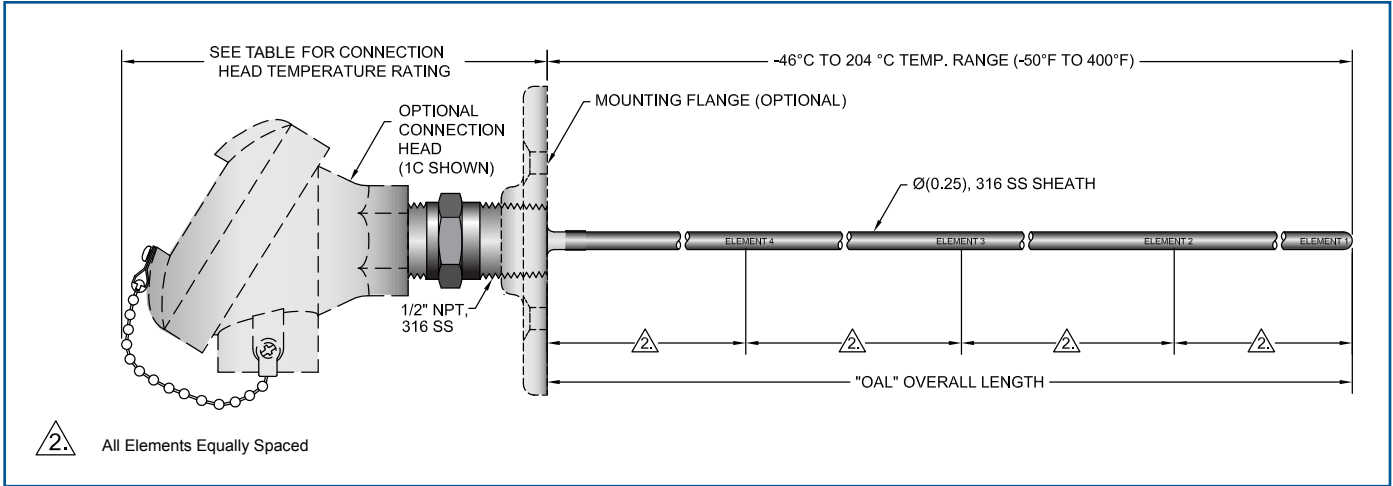
Specifications

- Element Configuration: Single 100 ohms at 0.0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 204°C (-50°F to 400°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature

Optional Mounting Flange:



D05: Multi-Point Averaging Sensor with Connection Head, 400°F Max. Ordering Information



D05- 204°C (400°F) Multipoint Averaging Sensor, 1/2" NPT Housing

RTD (Accuracy)

10 Standard RTD 100 OHMS $\pm 0.1 \Omega$ at 0°C

Element/Lead Wire Configuration

A Three Wire Single Element
B Four Wire Single Element

"OAL" - Overall Length in Inches

-12 12 Inches
-24 24 Inches
-36 36 Inches

Mounting Type

-01 3.5" Mounting Flange, Cast Iron, Four 1/4" Holes on a Ø 2.5" Circle
No Flange (Leave Blank)

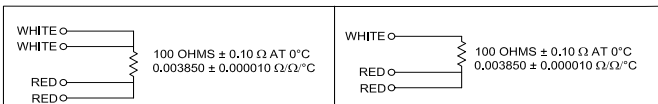
Connection Head		Maximum Temperature
-1C	Medium Cast Iron Head	93°C (200°F)
-2A	Medium Aluminum Head	93°C (200°F)
-2E	Medium Aluminum Head, Epoxy Coated	93°C (200°F)
-5A	Large Aluminum Head	93°C (200°F)
-5E	Large Aluminum Head, Epoxy Coated	93°C (200°F)
-9P	Polypropylene Head	93°C (200°F)
-14S	Stainless Steel Head	93°C (200°F)
-19A	Large Aluminum Head with Loop Powered LED Indicator	93°C (200°F)
-20P	Medium Polycarbonate Head with Loop Powered LED Indicator	75°C (167°F)
-21S	Medium Stainless Steel Head with Loop Powered LED Indicator	93°C (200°F)
-22A	Large Aluminum Head with Battery Powered LED Indicator	93°C (200°F)
-23P	Medium Polycarbonate Head with Battery Powered LCD Indicator	75°C (167°F)
-24S	Medium Stainless Steel Head with Battery Powered LCD Indicator	93°C (200°F)
-ND	No Connection Head, 4" 22 AWG Lead Wires	135°C (275°F)
-*	See connection Head Supplement for More Options	

(Leave Blank if not Required)

Basic Order Codes

Common Options
(pages 25-26)

Example Part # D05-10A-12-2A



D06: Multi-Point Averaging Sensor with Cable, 400°F Max. Specifications

The D06 is an averaging sensor incorporating four (4) discrete sensors within a rigid sheath to provide an average temperature. This low-profile sensor allows various installation approaches. Designed for dryers and HVAC systems, the sensor can be mounted with a compression fitting or clamps. This sensor is not designed to be bent.

Features and Benefits:

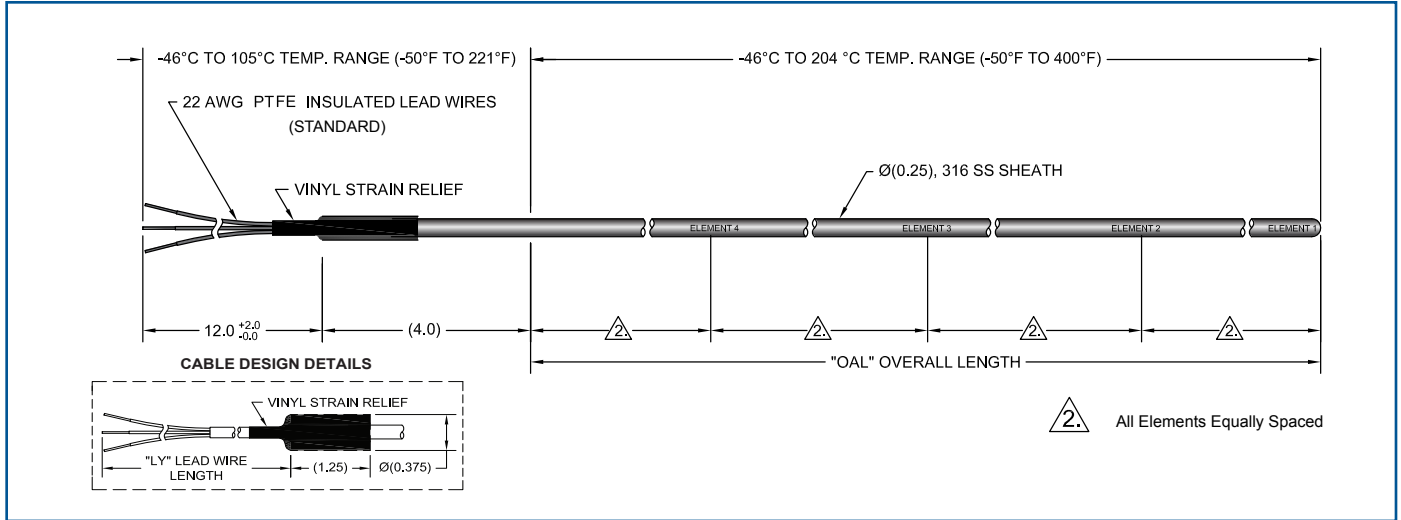
- Application: High temperature air measurements in dryers, pipes, ducts, or other temperature chambers
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element/Lead Wire Configuration: Single 3 or 4 wire
- Sheath:
 - Material: Rigid 316L stainless steel
 - Diameter: 0.25"
- Sensing elements are evenly spaced along the measurement length
- Can be installed in an optional thermowell for improved durability

Specifications

- Element Configuration: Single 100 ohms at 0.0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 204°C (-50°F to 400°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature
- Wire:
 - Individual lead wires: 120" PTFE insulated wires - 22 AWG
 - Cable designs:
 - > 0.375" diameter, 1.25" long transition fitting added
 - > PTFE insulated wires with FEP jacket - 22 AWG
 - > Add '/LY____' to specify cable. See Common Options on page 26 for details.

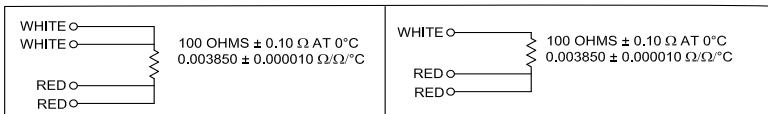


D06: Multi-Point Averaging Sensor with Cable, 400°F Max. Ordering Information



D06- 240°C (400°F) Multipoint Averaging Sensor			
RTD (Accuracy)			
10	Standard RTD 100 OHMS ± 0.1 Ω at 0°C		
Element/Lead Wire Configuration			
A	Three Wire Single Element		
B	Four Wire Single Element		
"OAL" - Overall Length in Inches			
12	12 Inches		
24	24 Inches		
36	36 Inches		
(Leave Blank if not Required)			
D06			
Basic Order Codes			Common Options (pages 25-26)

Example Part # D06-10B12



NOTE: For cable designs add LY option code to the part number. See page 26 for cable options.

D07: Flush Wall Plate Temperature Sensor

Specifications

The D07 provides room temperature measurements in a low profile design. The sensor is incorporated into a stainless steel wall plate to facilitate a minimally intrusive measurement. This design mounts to a standard electrical junction box for easy installation.

Features and Benefits:

- Application: Room air temperature
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element / Lead Wire Configuration: Single 3 or 4 wire
- Sensor surface: Stainless steel
- Low-profile wall mounted design
- Insulating gasket included for thermal isolation from the wall
- Built in terminal block

Specifications

- Element Configuration: Single, 100 ohms at 0.0°C(32°F) , 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 149°C (-50°F to 300°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature

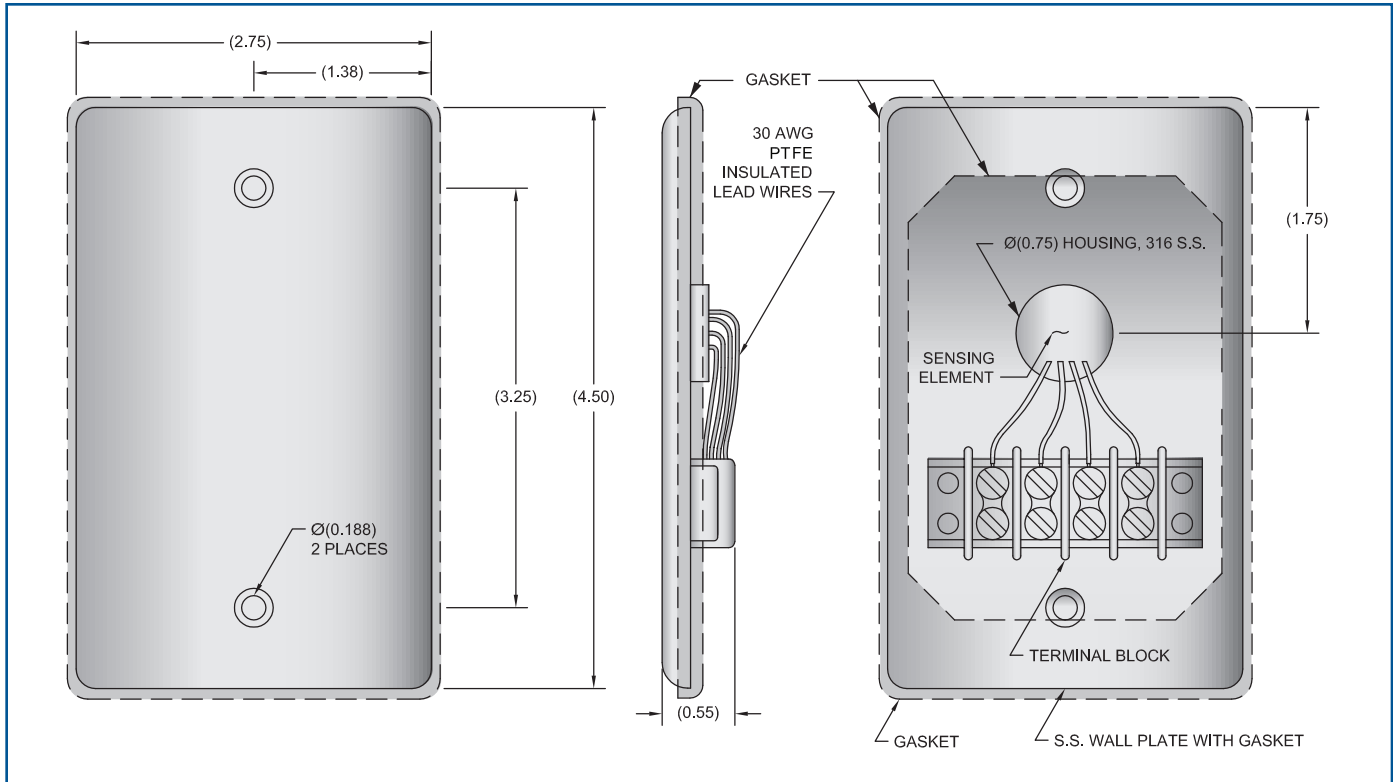
Note: Insulation inside the junction box is recommended for best measurement accuracy.



D07: Flush Wall Plate Temperature Sensor

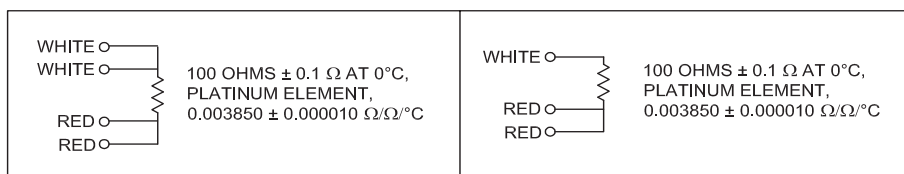
Ordering Information

16



D07- Flush Wall Plate Air Temperature Sensor		
RTD (Accuracy)		
10	Standard RTD 100 OHMS $\pm 0.1 \Omega$ at 0°C	
Element/Lead Wire Configuration		
A	Three Wire Single Element	
B	Four Wire Single Element	
(Leave Blank if not Required)		
D07		
Basic Order Codes		Common Options (pages 25-26)

Example Part # D07-10B



D08: Wall Plate Temperature Sensor with Transmitter Option

Specifications

The D08 provides room temperature measurement with the option for a transmitter. The sensor extends 0.5" into the room for improved sensitivity and is protected from accidental damage by a rugged protection loop. Incorporated into a stainless steel wall plate, this design mounts to a standard electrical junction box for easy installation.

Features and Benefits:

- Application: Room air temperature
- Accuracy:
 - Standard 0.10% of resistance at 0.0°C (32°F)
 - Matched transmitter option for improved accuracy
- Element / Lead Wire Configuration: Single 3 or 4 wire
- Faster response time than D07
- Sensor surface: Stainless steel
- Low-profile wall mounted design with protection loop
- Insulating gasket included for thermal isolation from the wall
- Available with various transmitter options
- Mounts in a standard junction box (See Ordering Table for required junction box depth)

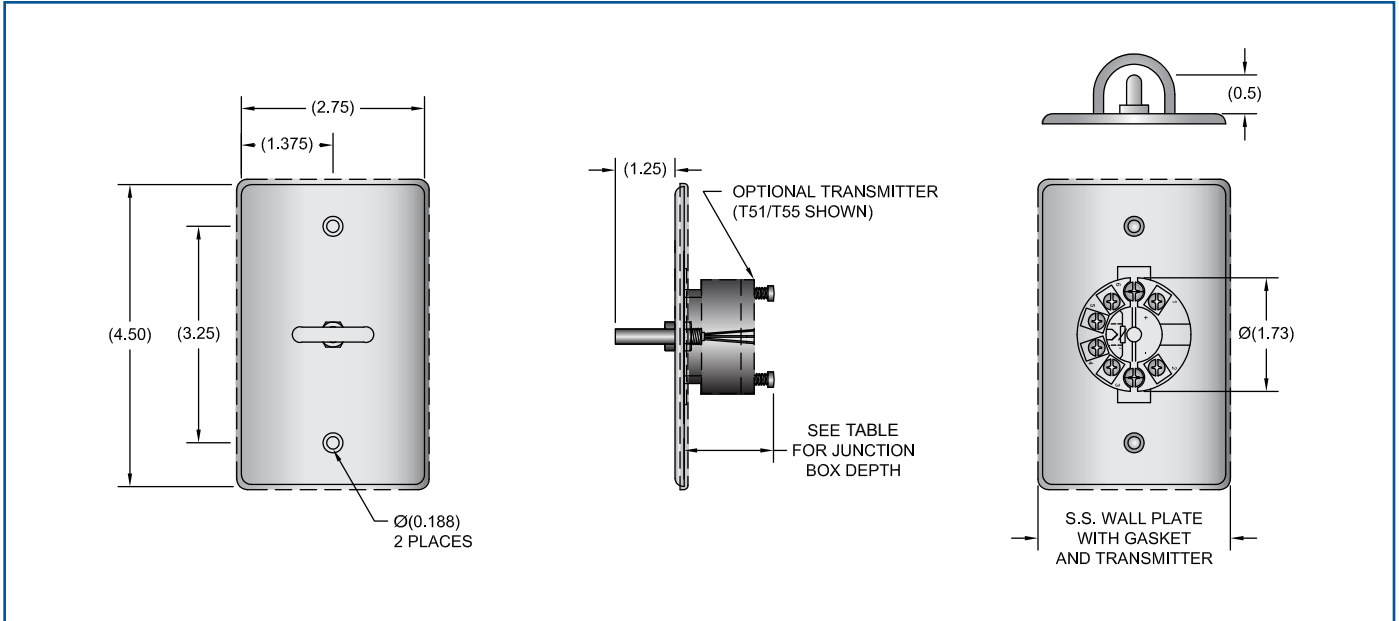
Specifications

- Element Configuration: Single, 100 ohms at 0.0°C (32°F) , 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 149°C (-50°F to 300°F); with transmitter: -40°C to 85°C (-50°F to 185°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature

Note: Insulation inside the junction box is recommended for best measurement.



D08: Wall Plate Temperature Sensor with Transmitter Option Ordering Information



D08- Wall Plate Air Temperature Sensor with Optional Transmitter			
RTD (Accuracy)			
10	Standard RTD 100 OHMS \pm 0.1 Ω at 0°C		
Element/Lead Wire Configuration			
A	Three Wire Single Element		
B	Four Wire Single Element		
Transmitter			
/T51	Digital Transmitter	25°C (45°F)	1.4"
/T55	Digital Transmitter, Matching Capabilities, Hart Communication	10°C (18°F)	1.4"
/TL21	Analog Transmitter	NA	3.4"
	Terminal Block Per Detail A (Leave Blank)	NA	0.5"
Transmitter Calibration Type			
M	Transmitter and Sensor Matched for Improved Performance (T55 and TL21 Only)		
	Not Matched (Leave Blank)		
Transmitter Temperature Range			
[Tmin TO Tmax]	Minimum Temp Reading (4 mA Output) - Maximum Temp Reading (20 mA Output)		
Transmitter Temperature Units			
C	Degrees Celsius		
F	Degrees Fahrenheit		

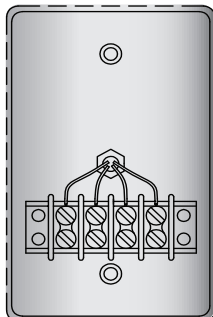
(Leave Blank if not Required)

Basic Order Codes

D08 [] [] [] [] [] [] [] []

Common Options
(pages 25-26)

Example Part # D08-10A/T55M [-50 to 80] F



Detail A: Terminal Block Configuration

WHITE	100 OHMS \pm 0.1 Ω AT 0°C, PLATINUM ELEMENT, 0.003850 \pm 0.000010 $\Omega/\Omega/^{\circ}\text{C}$	WHITE	100 OHMS \pm 0.1 Ω AT 0°C, PLATINUM ELEMENT, 0.003850 \pm 0.000010 $\Omega/\Omega/^{\circ}\text{C}$
WHITE		RED	
RED		RED	
RED			

D09: Wall Mount Temperature Sensor with Transmitter

Specifications

The D09 wall mounted room temperature sensor incorporates a plastic enclosure to reduce the influence of drafts and provides extra protection. The “on board” transmitter can provide additional enhancements such as improved accuracy, HART communication and ease of signal transfer to support devices.

Features and Benefits:

- Application: Room air temperature
- Accuracy:
 - Standard 0.10% of resistance at 0.0°C (32°F)
 - "Matched" transmitter provides improved accuracy
- Element / Lead Wire Configuration: Single 3 wire
- Protective plastic enclosure reduces draft effects and provides protection
- Various transmitter options available
- Ideal for indoor applications

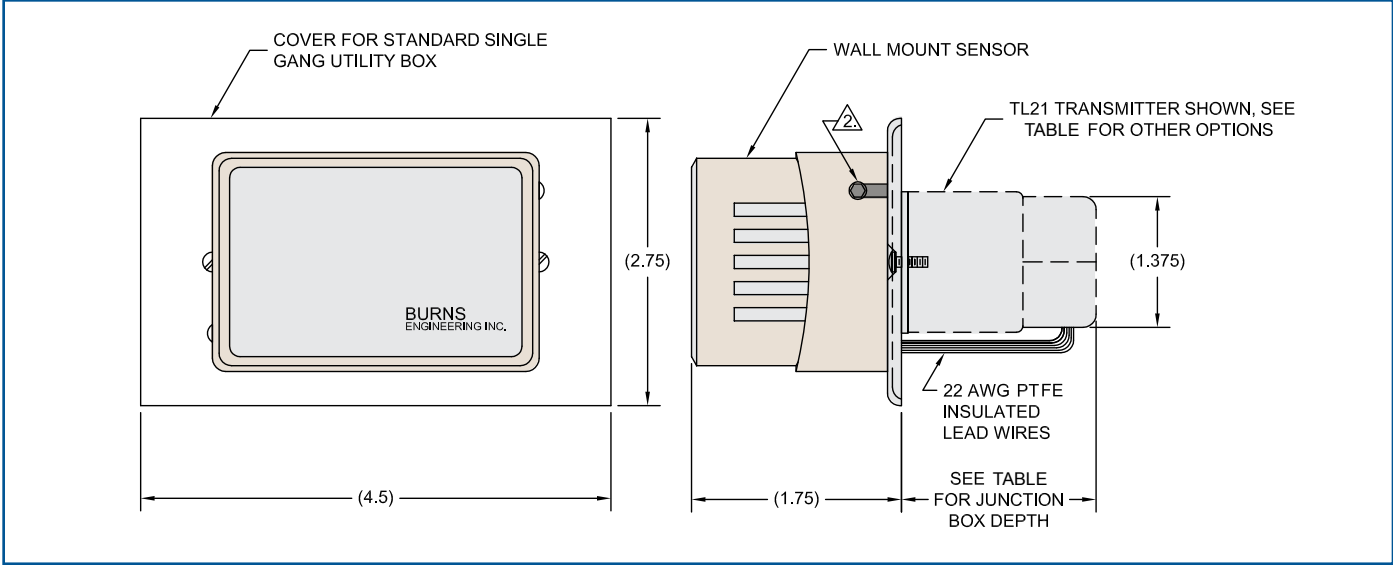
Specifications

- Element Configuration: Single, 100 ohms at 0.0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -40°C to 85°C (-50°F to 185°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature



D09: Wall Mount Temperature Sensor with Transmitter

Ordering Information



D09- Wall Plate Air Temperature Sensor with Transmitter

RTD (Accuracy)

10 Standard RTD 100 OHMS \pm 0.1 Ω at 0°C

Element/Lead Wire Configuration

A Three Wire Single Element

Transmitter

	Minimum Span	Required Junction Box Depth
/T51 Digital Transmitter	25°C	1.5"
/T55 Digital Transmitter, Matching Capabilities, Hart Communication	10°C	1.5"
/TL21 Analog Transmitter	NA	1.9"

Transmitter Calibration Type

M Transmitter and Sensor Matched for Improved Performance (T55 and TL21 Only)
Not Matched (Leave Blank)

Transmitter Temperature Range

[Tmin TO Tmax] Minimum Temp Reading (4 mA Output) - Maximum Temp Reading (20 mA Output)

Transmitter Temperature Units

C Degrees Celsius
F Degrees Fahrenheit

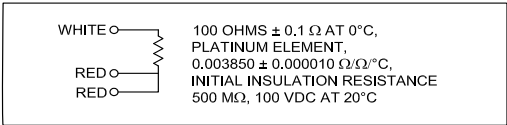
D09

Basic Order Codes

(Leave Blank if not Required)

Common Options
(pages 25-26)

Example Part # D09-10A/T55M [-50 to 85] F



D10: Wall Mount Temperature Sensor

Specifications

The D10 wall mounted room air temperature sensor can mount nearly anywhere, no junction box required only access to system wiring. This design offers up to 1000 ohms resistance for excellent resolution and incorporates a plastic enclosure for draft management and added protection.

Features and Benefits:

- Application: Room air temperature
- Accuracy: Standard 0.10% of resistance at 0.0°C (32°F)
- Element / Lead Wire Configuration: Single 2,3 or 4 wire
- Protective plastic enclosure reduces draft effects and provides protection
- Ideal for indoor applications
- Mounts on any flat surface, no junction box required

Specifications

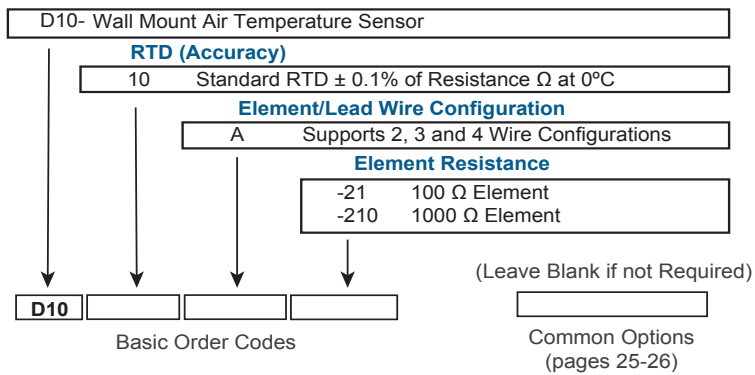
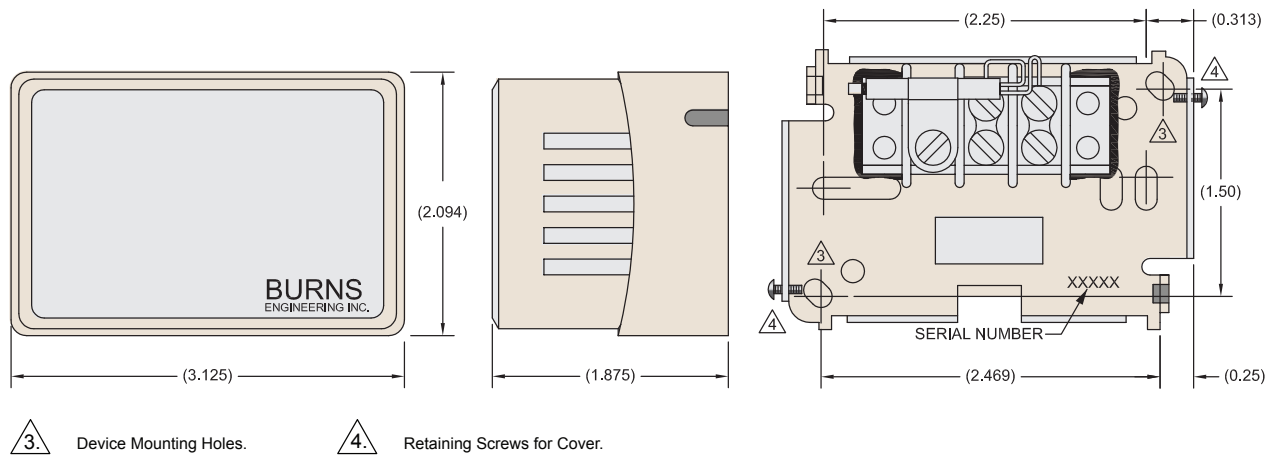
- Element Configuration: Single, 100 ohms at 0.0°C (32°F), 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 149°C (-50°F to 300°F)
- Insulation Resistance: 500 MΩ, 100 VDC at room temperature



D10: Wall Mount Temperature Sensor

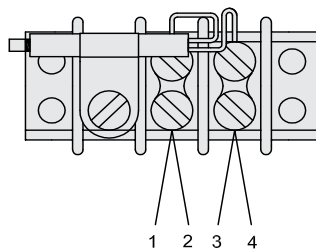
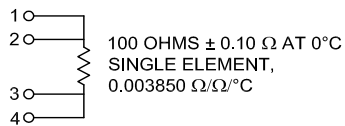
Ordering Information

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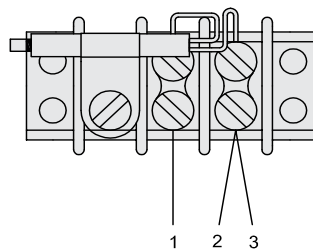
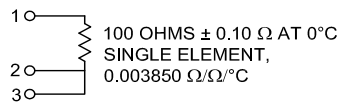


Example Part # D10-10A-21

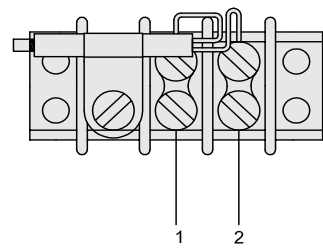
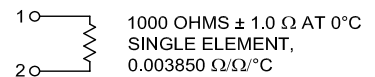
WIRING DIAGRAMS



4-WIRE



3-WIRE



2-WIRE

D11: Heavy Duty Room Temperature Sensor

Specifications

The D11 is built for durability and accuracy for air temperature measurement in the harshest environments. The guard tube and transmitter options provide excellent performance in a heavy duty assembly. This configuration is available with Hazardous Environment rating, contact Burns Customer Service.

Features and Benefits:

- Application: Air temperature measurement
- Accuracy:
 - Standard 0.10% of resistance at 0.0°C (32°F)
 - Precision 0.05% of resistance at 0.0°C (32°F)
- Element/ Lead Wire Configuration: Single 3 or 4 wire; Dual 3 wire
- Sheath: 0.25" stainless steel
- Multiple connection heads and indicators
- Optional transmitter available
- 100% waterproof for use indoors or out
- Wall or pipe mount with options
- Optional perforated guard tube or sun shield
- Hazardous environment rating available: Contact Customer Service for details.

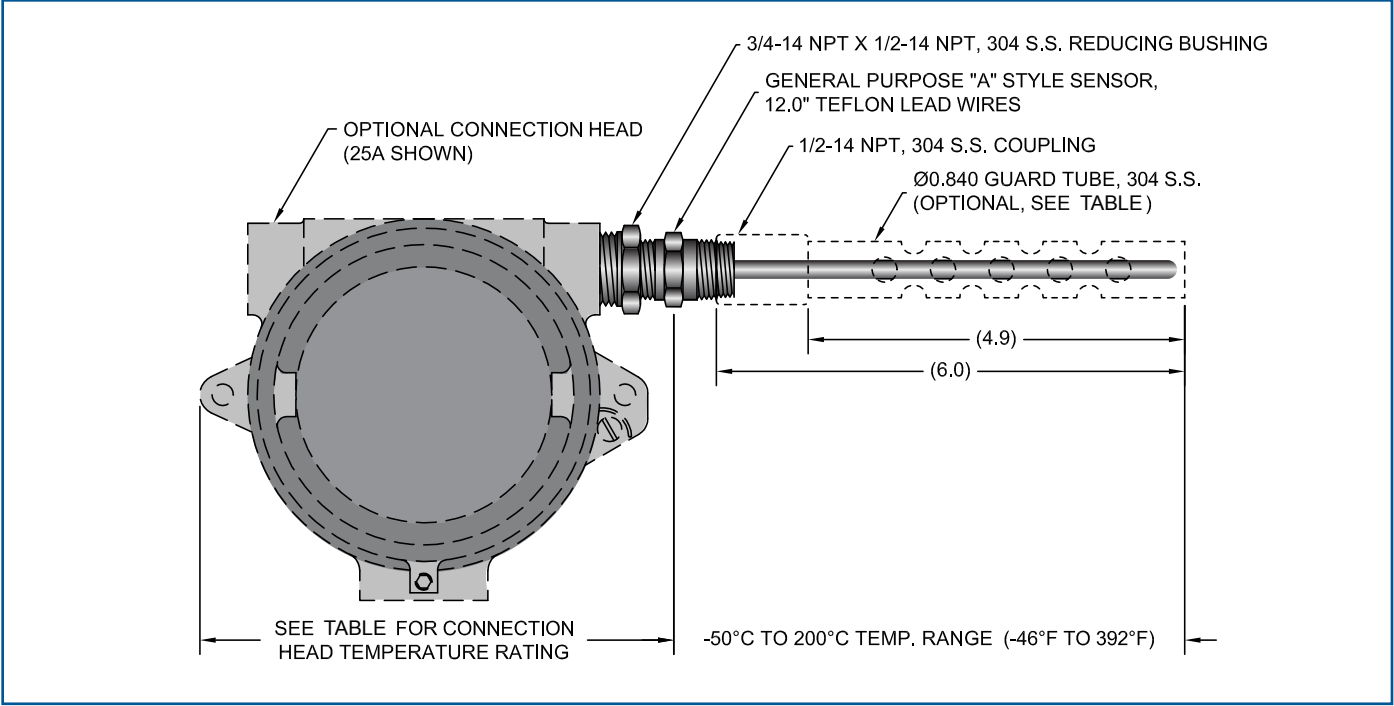
Specifications

- Element Configuration: Single, 100 ohms at 0.0°C, 0.00385 ohm/ohm/°C nominal alpha
- Temperature Range: -46°C to 200°C (-50°F to 392°F)
- Insulation Resistance: 100 MΩ, 100 VDC at room temperature



D11: Heavy Duty Room Temperature Sensor

Ordering Information



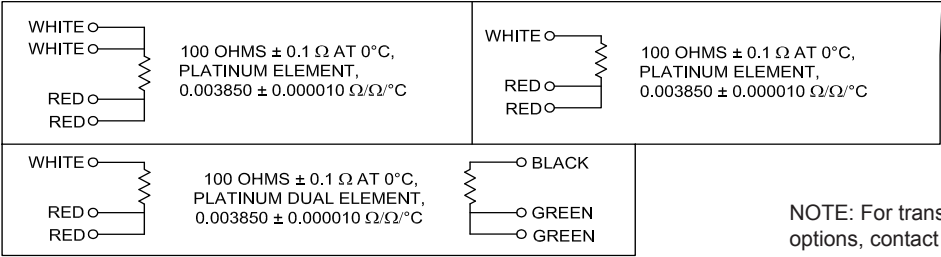
D11- Heavy Duty Room Air Temperature Sensor	
RTD (Accuracy)	
10	Standard RTD 100 OHMS \pm 0.10 Ω at 0°C
05	Standard RTD 100 OHMS \pm 0.05 Ω at 0°C
Element/Lead Wire Configuration	
A	Three Wire Single Element
B	Four Wire Single Element
C	Three Wire Dual Element
Connection Head	
19A	Large Aluminum Head with Loop Powered LED Indicator
23P	Medium Polycarbonate Head with Battery Powered LCD Indicator
25A	Large Aluminum Head
Guard Tube	
-02	Guard Tube, 1/2" NPT x 5.5 304SS, Ø 0.840
-03	Sun Shield, 1/2" NPT x 5.5" CPVC
	None (Leave Blank)
Maximum Temperature	
19A	93°C (200°F)
23P	75°C (167°F)
25A	93°C (200°F)

(Leave Blank if not Required)

Basic Order Codes

Common Options
(pages 25-26)

Example Part # D11-10B25A-02



NOTE: For transmitters and additional connection head options, contact Burns Customer Service.

Common Options Available for Series D Models

Specifications

Lead Wire Options, Applies to D01, D02, D03, D04, D05, and D06

L Lead Wire Options (Note: Only fill in the codes applicable to your specifications)

Lead Wire Length ('Y' option)

Y _ _ _ Specify lead wire length in one inch increments
 Example: For a 6 inch 'Y' length specify 006, For a 15 foot 'Y' length specify 180
 Cable Designs: minimum 12.0 inches (Y012), Maximum 999.0 inches (Y999)
 Leadwire Designs: minimum 3.0 inches (Y003), Maximum 36.0 inches (Y036)

Lead Wire Insulation Material ('M' option)

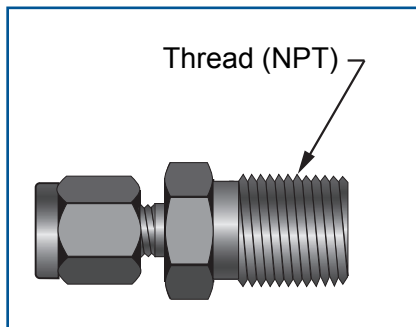
M02	Fiberglass insulation with epoxy seal. (Leads rated to 450°C, seal rated to 200°C) (Fiberglass insulated conductors and fiberglass jacket)	Series 200 only
M03	Kapton® insulation with epoxy seal. (Leads rated to 250°C, seal rated to 200°C) (Kapton® insulated conductors and Kapton® jacket)	Series 200 & Series 300

Lead Wire Configuration ('C' option)

C10	Cable, standard for D and G style sensors
C20	Shielded cable (stainless steel braid)
C23	Shielded cable (foil shield with drain wire)
C30	Cable with stainless steel overbraid
C40	Cable with stainless steel armor, specify armor length below
C41	Shielded cable with stainless steel armor, specify armor length below
C50	Cable with PVC coated armor, specify armor length below
C52	Shielded cable with PVC coated armor, specify armor length below

Compression Fitting Options

Applies to D03, D04, and D06



FC Fitting Options, Compression ('C' option)

Fitting Material

03	316 Stainless Steel
13	Brass

Ferrule Type

1	PTFE, re-adjustable
2	Stainless Steel

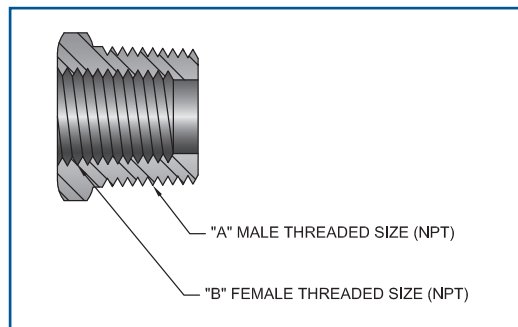
Threads

1	1/8" NPT
3	1/4" NPT
4	3/8" NPT
5	1/2" NPT

Reducing Bushing (FR)

Applies to D01, D02, and D05

Code	Description	Material
FR01	3/4 MNPT to 1/2 inch FNPT	galvanized steel
FR02	3/4 MNPT to 1/2 inch FNPT	304 stainless steel
FR03	3/4 MNPT to 1/2 inch FNPT	316 stainless steel
FR28	1 MNPT to 1/2 inch FNPT	galvanized steel
FR29	1 MNPT to 1/2 inch FNPT	304 stainless steel
FR30	1 MNPT to 1/2 inch FNPT	316 stainless steel
FR48	0.750-28 UNS 2A to 1/2" FNPT	Series 300
FR49	1 1/4 MNPT to 1/2 inch FNPT	316 SS
FR51	M20 Male to 1/2" FNPT	304 stainless steel
FR57	1.25 - 18 UNF 2A to 1/2" FNPT	304 stainless steel

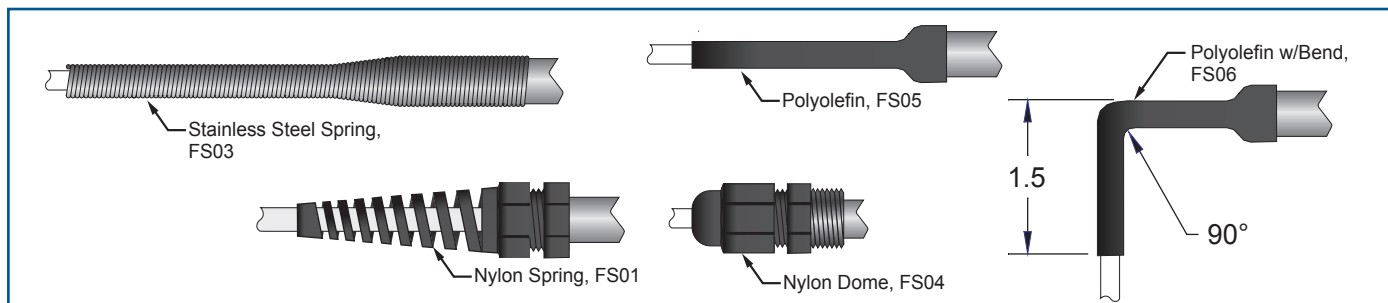


Common Options Available for Series D Models

Specifications

26

Strain Relief Options Applies to D03, D04, and D06 ONLY



F Fitting Options

Strain Relief Options ('S' option) available only with 'G' Style sensor

S01	Nylon Spring, Maximum temperature 100°C
S03	Stainless Steel Spring
S04	Nylon Dome, Maximum temperature 100°C
S05	Polyolefin, Adhesive lined, Maximum temperature 100°C
S06	Polyolefin, Adhesive lined with 90 degree bend, Maximum temperature 100°C

Tagging Options

For assistance to meet your tagging requirements, contact Burns Customer Service.

Calibration Options, Applies to D08, D09, D10, and D11

Regarding Calibration for D01 thru D07, contact Burns Customer Service.

Calibration in Degree C Options (CI)

Code	Temp. Range	Calibration points in Degree C
CI02	-38	-38
CI03	0	0
CI04	50	50
CI05	100	100
CI06	200	200
CI25	-38 to 100	-38, 0 50, 100
CI26	-38 to 200	-38, 0, 100, 200
CI35	0 to 100	0, 50, 100
CI36	0 to 200	0, 100, 200

Calibration in Degree F Options (CF)

Code	Temp. Range	Calibration points in Degree F	(for ref. only °C)
CF02	-36	-36	(-38)
CF03	32	32	(0)
CF04	122	122	(50)
CF05	212	212	(100)
CF06	392	392	(200)
CF25	-36 to 212	-36, 32, 122, 212	(-38, 0, 50, 100,)
CF26	-36 to 392	-36, 32, 212, 392	(-38, 0, 100, 200)
CF35	32 to 212	32, 122, 212	(0, 50, 100)
CF36	32 to 392	32, 212, 392	(0, 100, 200)

Calibration Report Options (CR)

Contact Burns Customer Service regarding Reports available for the Series D.

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