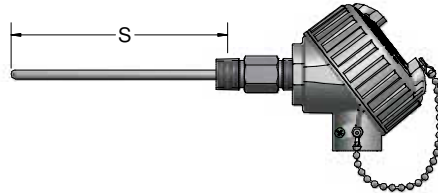


Explosion-Proof, Spring-Loaded RTDs are made for use in U.S. and Canadian hazardous areas. They are designed to extinguish flames inside the device, eliminating the potential for ignition of flammable mixtures in the surrounding atmosphere. CSA certified assemblies, dependent on connection head type, meet XP Class I Division I & II; Groups B, C, D; DIP Class II Division I; Groups E, F, G; Class III; IP66 when installed in a thermowell. Pyromation provides sensors for installation into your existing thermowell or provides the required thermowell as part of the assembly. Refer to the Thermowell Section of this catalog for product selection. The assemblies feature 316 stainless steel sheaths. They are available with aluminum or stainless steel explosion-proof connection heads. **Note:** The "S" dimension will measure 1/4" longer than specified when the spring is in the relaxed position. The "S" dimension is calculated when the sensor is compressed or in the installed position. This design allows 1/4" spring compression to ensure positive contact with the bottom of the thermowell.



## ORDER CODES

**Example Order Number:** **HL09** - **R1T185L** **48** **3** - **006** - **FP** - **8HN** **93**, **T** Select Type and Range from back of Section

### 1-0 Agency Approval

CODE	DESCRIPTION
HL09	CSA US/CAN explosion-proof-certified assembly

### 2-0 100 Ω Platinum RTD Elements α = 0.003 85 °C<sup>-1</sup>

CODE		TOLERANCE <sup>[1]</sup>	TEMP. RANGE
SINGLE	DUPLEX		
R1T185L	R1T285L	Grade B	(-200 to 200) °C
R5T185L	R5T285L	(1/5) Class B	(-30 to 150) °C
RBF185L	RBF285L	Class B	(-50 to 200) °C
RAF185L	RAF285L	Class A	(-30 to 200) °C
R1T185H	R1T285H	Grade B	(-200 to 600) °C
RAT185H	RAT285H	Class A	(-100 to 450) °C

[1] Refer to RTD tolerance information in the General Information section for calculations to determine specific tolerance at temperature.

### 2-1 Sheath Diameters 316 SS

CODE	DIAMETERS (inches)
48	1/4

### 2-2 Element Connection

CODE	DESCRIPTION
2	2-wire
3	3-wire
4	4-wire

### 3-0 "S" Dimensions

Insert three digit sheath length ("S" Dimension) in inches

### 5-1 Head Terminations

CODE	DESCRIPTION
74	DIN form B aluminum explosion-proof head
75T142C	(4 to 20) mA HART® Field Transmitter with aluminum explosion-proof housing
76T71-D10	(4 to 20) mA isolated programmable transmitter with digital display and explosion-proof aluminum housing
76T72-D10	(4 to 20) mA isolated programmable HART® transmitter with digital display and explosion-proof aluminum housing
76T82-D10	(4 to 20) mA dual input HART® Field Transmitter with digital display and explosion-proof aluminum housing
93	Aluminum explosion-proof head
94	316L stainless steel explosion-proof head

### 5-2 Options

SB	1/2" NPT conduit reducer bushing
I	Stainless steel tag
T31	(4 to 20) mA head-mounted transmitter
T71-00	(4 to 20) mA isolated head-mounted transmitter
T72-00	(4 to 20) mA HART® isolated head-mounted transmitter
T82-00	(4 to 20) mA dual input, isolated HART® head-mounted transmitter

See transmitter ordering information in back of section.

### 5-0 Head Mounting Fittings

CODE	DESCRIPTION
<b>316 STAINLESS STEEL FITTINGS</b>	
8HN	1/2" NPT flame-path fitting (1-1/2" "E" length)
8PU4 <sup>[1]</sup>	1/2" NPT union/nipple with flame-path fitting (specify "E" length in inches, maximum allowable 9")

[1] For longer lengths replace "4" with length in inches.

### 4-0 Element Options

FP	Spring-loaded element with flame path
----	---------------------------------------

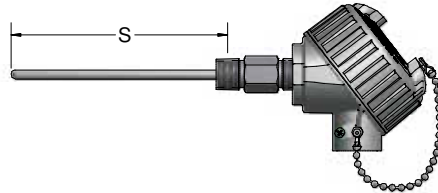
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# HAZARDOUS LOCATION

Configuration Code XP05  
 Hazardous Location Flame-Proof-Certified,  
 Spring-Loaded RTD Assemblies

Flame-Proof, Spring-Loaded RTDs are made for use in IEC hazardous areas. They are designed to extinguish flames inside the device, eliminating the potential for ignition of flammable mixtures in the surrounding atmosphere. ATEX and IECEx certified assemblies are rated for Ex db IIC Gb and Ex tb IIIC Db locations for applications with process temperatures of 180 °C or less. The assemblies feature 316 stainless steel sheaths. They are available with aluminum or stainless steel explosion-proof connection heads. Note: The "S" dimension will measure 1/4" longer than specified when the spring is in the relaxed position. The "S" dimension is calculated when the sensor is compressed or in the installed position. This design allows 1/4" spring compression to ensure positive contact with the bottom of the thermowell.



## ORDER CODES

**Example Order Number:** HL06 - R1T185L 48 3 - 006 - FP - 8HN 93, T Select Type and Range from back of Section

### 1-0 Agency Approval

CODE	DESCRIPTION
HL06	ATEX/IECEx flame-proof-certified assembly

### 2-0 100 Ω Platinum RTD Elements $\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$

CODE		TOLERANCE <sup>[1]</sup>	TEMP. RANGE
SINGLE	DUPLEX		
R1T185L	R1T285L	Grade B	(-200 to 200) °C
R5T185L	R5T285L	(1/5) Class B	(-30 to 150) °C
RBF185L	RBF285L	Class B	(-50 to 200) °C
RAF185L	RAF285L	Class A	(-30 to 200) °C
R1T185H	R1T285H	Grade B	(-200 to 600) °C
RAT185H	RAT285H	Class A	(-100 to 450) °C

[1] Refer to RTD tolerance information in the General Information section for calculations to determine specific tolerance at temperature.

### 2-1 Sheath Diameters 316 SS

CODE	DIAMETERS (inches)
48	1/4

### 2-2 Element Connection

CODE	DESCRIPTION
2	2-wire
3	3-wire
4	4-wire

### 3-0 "S" Dimensions

Insert three digit sheath length ("S" Dimension) in inches

### 5-1 Head Terminations

CODE	DESCRIPTION
75T142E	(4 to 20) mA HART® Field Transmitter with aluminum flame-proof housing
76T71-D10	(4 to 20) mA isolated programmable transmitter with digital display and explosion-proof aluminum housing
76T72-D10	(4 to 20) mA isolated programmable HART® transmitter with digital display and explosion-proof aluminum housing
76T82-D10	(4 to 20) mA dual input HART® Field Transmitter with digital display and explosion-proof aluminum housing
93	Aluminum flame-proof head
94	316L stainless steel flame-proof head

### 5-2 Options

SB	1/2" NPT conduit reducer bushing, Aluminum
I	Stainless steel tag
M2	M20x1.5 conduit reducer bushing, Nickel Plated Brass
M5	M25x1.5 conduit reducer bushing, Nickel Plated Brass
T71-00	(4 to 20) mA isolated head-mounted transmitter
T72-00	(4 to 20) mA HART® isolated head-mounted transmitter
T82-00	(4 to 20) mA dual input, isolated HART® head-mounted transmitter

See transmitter ordering information in back of section.

### 5-0 Head Mounting Fittings

CODE	DESCRIPTION
<b>316 STAINLESS STEEL FITTINGS</b>	
8HN	1/2" NPT hex nipple (1-1/2" "E" length)
8XU <sup>[1]</sup>	1/2" NPT union/nipple (specify "E" length in inches)
[1] 3 1/2" minimum length, maximum length is 9".	

### 4-0 Element Options

FP	Spring-loaded element with flame path
----	---------------------------------------

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## ORDER CODES

**Example Order Number:** 1-0 **75T142C** - 1-1 **D** - 1-2 **3** 1-3 **85** 1-4 **U** - 1-5 **S(0-200)** 1-6 **C** - 1-7 **B**

### 1-0 Transmitter Type

CODE	DESCRIPTION
T31	(4 to 20) mA programmable head-mounted RTD transmitter
T71-00	(4 to 20) mA programmable head-mounted universal transmitter
T72-00	(4 to 20) mA HART® programmable head-mounted universal transmitter
75T142C	(4 to 20) mA HART® Field Transmitter with explosion-proof aluminum housing FM/CSA /XP Class I Div I Groups A,B,C,D; DIP Class II Div 1 Groups E,F,G; Class III; NI Class I Div II Groups A,B,C,D
75T142E	(4 to 20) mA HART® Field Transmitter with flame-proof/dust-protected aluminum housing ATEX/IECEX; Ex d IIC T6...T4Gb; Ex tb IIIC T110 °C Db, IP66/67
76T71-D10	(4 to 20) mA isolated Programmable transmitter with digital display and explosion-proof aluminum housing
76T72-D10	(4 to 20) mA isolated Programmable HART® transmitter with digital display and explosion-proof aluminum housing

### 1-1 Options (For 142 Series only)

CODE	DESCRIPTION
T	Solid cover
D	Glass cover with digital display
Leave blank if using T31, T71 or T72	

### 1-2 Input Type

CODE	DESCRIPTION
00 <sup>[1]</sup>	Unconfigured
1	Thermocouple (TC)
2	RTD (2-wire)
3	RTD (3-wire)
4	RTD (4-wire)
[1] Default setting supplied as 4-wire Pt100 (0-100) °C	

### 1-7 Options

CODE	DESCRIPTION
B <sup>[1]</sup>	Bluetooth (APP) Configuration
[1] Only available with T72 Models	

### 1-6 Unit of Measure

CODE	DESCRIPTION
C	Celsius
F	Fahrenheit

### 1-5 Range

CODE	DESCRIPTION
S	(lower limit – upper limit)

### 1-4 Failure Mode

CODE	DESCRIPTION
U	Upscale burnout ≥ 20.5 mA
D	Downscale burnout ≤ 3.8 mA

### 1-3 Sensor Type

CODE	DESCRIPTION
J	Type J thermocouple
K	Type K thermocouple
T	Type T thermocouple
N	Type N thermocouple
E	Type E thermocouple
85	100 ohm platinum ( $\alpha = 0.00385 \text{ } ^\circ\text{C}$ )

**For complete transmitter specifications see Transmitter Section.**

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### ORDER CODES

**Example Order Number:**

1-0      1-1      1-2      1-3      1-4      1-5      1-6      1-7      1-8  
**76T82-D10 - 33 - 85 - 85 - A - U - S(0-200) C - SIL**

#### 1-0 Transmitter Type

CODE	DESCRIPTION
T82-00	(4 to 20) mA dual input, isolated HART® head-mounted Transmitter, no display (transmitter only)
76T82-D10	(4 to 20) mA dual input HART® programmable Transmitter with digital display and explosion-proof aluminum housing, FM/CSA,NI,IS,XP,DIP Class I Div I and Div II, Groups A,B,C,D

#### 1-1 Configuration Input

CODE	DESCRIPTION
00	T82 Unconfigured
2I	Ch1: RTD 2-wire, Ch2: inactive
22	Ch1: RTD 2-wire, Ch2: RTD 2-wire
23	Ch1: RTD 2-wire, Ch2: RTD 3-wire
2T	Ch1: RTD 2-wire, Ch2: Thermocouple
3I	Ch1: RTD 3-wire, Ch2: inactive
32	Ch1: RTD 3-wire, Ch2: RTD 2-wire
33	Ch1: RTD 3-wire, Ch2: RTD 3-wire
3T	Ch1: RTD 3-wire, Ch2: Thermocouple
4I	Ch1: RTD 4-wire, Ch2: inactive
4T	Ch1: RTD 4-wire, Ch2: Thermocouple
TI	Ch1: Thermocouple, Ch2: inactive
TT	Ch1: Thermocouple, Ch2: Thermocouple

#### 1-2 Sensor Input Channel 1

CODE	DESCRIPTION
J	Type J thermocouple
K	Type K thermocouple
T	Type T thermocouple
N	Type N thermocouple
E	Type E thermocouple
85	100 ohm platinum ( $\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$ )

#### 1-8 SIL Option

CODE	DESCRIPTION
SIL	Safety Integrity Level SIL2 and Supports SIL3

#### 1-7 Unit of Measure

CODE	DESCRIPTION
C	Celsius
F	Fahrenheit

#### 1-6 Range

CODE	DESCRIPTION
S	(lower limit – upper limit)

#### 1-5 Failure Mode

CODE	DESCRIPTION
U	Upscale Burnout $\geq 20.5 \text{ mA}$
D	Downscale Burnout $\leq 3.8 \text{ mA}$

#### 1-4 Input Set-ups

CODE	DESCRIPTION
A	Process Variable = Ch1; CH2 = inactive
B	Process variable = CH1; secondary variable = Ch2
C	Process variable = the difference between CH1 and Ch2
D	Process variable = the average between CH1 and Ch2
E	Sensor backup; Process variable= Ch1 and Ch2

#### 1-3 Sensor Input Channel 2

CODE	DESCRIPTION
J	Type J thermocouple
K	Type K thermocouple
T	Type T thermocouple
N	Type N thermocouple
E	Type E thermocouple
85	100 ohm platinum ( $\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$ )
00	No second channel

For complete transmitter specifications see Transmitter Section.

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