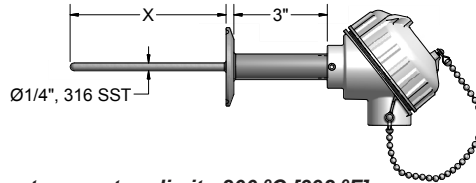


General-purpose CIP sanitary-connected RTD temperature sensors are used in food, dairy, beverage, pharmaceutical, and chemical processing applications where sensor corrosion and product contamination are critical factors. The sanitary caps listed are those most commonly used in such processes. Sanitary caps are welded to the sheath and to a heavier support tube, all made of stainless steel, and then ground and polished to a finish that exceeds the No. 4 minimum finish required by the **3-A Sanitary Standard 74**. Assemblies are supplied with a surface finish that meets or exceeds  $32\mu\text{in } R_a$ . Surface finishes of  $15\mu\text{in } R_a$  or better are available upon request. The process contact surfaces are free of pits, crevices, and pockets thus preventing corrosion and bacteria growth. The 3-wire constructed sensor assembly consists of a high-accuracy platinum element sealed inside a 316 stainless steel sheath, and is provided with a white FDA compliant polypropylene connection head. The complete assembly provides excellent washdown protection. It is recommended that once customer connections are made, the connecting terminals be further protected by applying a coating of moisture-proof sealant over the connections.



74-



Maximum temperature limit: 200 °C [392 °F]

### ORDER CODES

**Example Order Number:** **R5T185L48** **3** - **04** - **CIP** - **2** - **5** - **63, T** Select Type and Range from back of Section

#### 1-0 Pt100 ( $\alpha = 0.00385 \text{ } ^\circ\text{C}^{-1}$ ) RTD Assemblies

CODE	TOLERANCE <sup>[1]</sup>
<b>SINGLE</b>	
RAF185L48	Class A
R1T185L48	Grade B
R3T185L48	Class AA
R5T185L48	(1/5) Class B
<b>DUPLEX</b>	
RAF285L48	Class A
R1T285L48	Grade B
R3T285L48	Class AA
R5T285L48	(1/5) Class B

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

#### Thermocouple Assemblies

For CIP thermocouple assemblies use T/C types J, K, T, or E and options G for grounded junction or U for ungrounded junction as per example.  
EXAMPLE: TP48G-04 - CIP - 2 - 5 - 63

#### 1-1 Element Connection

CODE	DESCRIPTION
3	3-Wire Element
4 <sup>[1]</sup>	4-Wire Element

[1] Not Available in Duplex

#### 1-2 Immersion Length "X"

Specify "X" length in inches using 2 digits, plus any fractional length desired  
Examples: 04 = 4", 05(1/2) = 5.5"

#### 2 Sanitary Cap Size

CODE	TUBE O.D. (inches)	CODE	TUBE O.D. (inches)
1	1(1/2)	4	3
2	2	5	4
3	2(1/2)	Z	Other (specify)

#### 4 Terminations

CODE	DESCRIPTION
91	316L stainless steel screw-cover head
63	White polypropylene screw-cover head
31,W	Aluminum screw-cover head with white epoxy coating
35T-642A	(4 to 20) mA HART® Field Transmitter with aluminum general-purpose housing
36T82-D10	(4 to 20) mA dual input HART® transmitter with digital display and general-purpose aluminum housing with glass lid
37T-662A	(4 to 20) mA HART® Field Transmitter with general-purpose dual cavity aluminum housing
22 (06)	6" individual fluoropolymer leads with terminal pins
02	1/2" O.D., 2 1/4" long extension leadwire transition (requires table 4 & 5 selections from RTD section)
<b>Head Options</b>	
T-440	(4 to 20) mA head-mounted RTD transmitter
T-441	(4 to 20) mA isolated head-mounted transmitter
T-442	(4 to 20) mA isolated HART® head-mounted transmitter
T82-00	(4 to 20) mA dual input HART® head-mounted transmitter
I	Stainless steel tags
HS	Wire seal security screws

**See transmitter ordering information in back of section.**

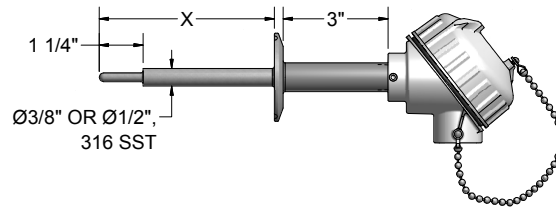
#### 3 Sanitary Cap Style

CODE	DESCRIPTION
2	16A cap - Bevel Seat with 13-H Nut <sup>[1]</sup> 304SS
5	16 AMP cap - Tri-Clamp® 316SS
7	16Al-141 cap <sup>[2]</sup> 304SS
8	Other (describe)

[1] Must be manually cleaned      [2] Not 3-A authorized

Tri-Clamp® is a registered trademark of Alfa Laval, Inc.  
HART® is a registered trademark of HART Communication Foundation.

General-purpose reduced-tip CIP sanitary-connected RTD temperature sensors are used in food, dairy, beverage, pharmaceutical, and chemical processing applications where sensor corrosion and product contamination are critical factors. The reduced tip construction provides strength along the major sheath length, and faster temperature response times at the reduced tip. The reduced tip sizes listed below are the most common constructions. For other configurations please consult the factory. The sanitary caps listed are those most commonly used in such processes. The sanitary caps are welded to the sheath and to a heavier support tube, all made of stainless steel, and then ground and polished to a finish that exceeds the No. 4 minimum finish required by the **3-A Sanitary Standard 74**. Assemblies are supplied with a surface finish that meets or exceeds 32µin R<sub>a</sub>. Surface finishes of 15µin R<sub>a</sub> or better are available upon request. The process contact surfaces are free of pits, crevices, and pockets thus preventing corrosion and bacteria growth. The 3-wire constructed sensor assembly consists of a high-accuracy platinum element sealed inside a 316 stainless steel sheath, and is provided with a white FDA compliant polypropylene connection head. The complete assembly provides excellent washdown protection. It is recommended that once customer connections are made, the connecting terminals be further protected by applying a coating of moisture-proof sealant over the connections.



Maximum temperature limit: 200 °C [392 °F]

### ORDER CODES

**Example Order Number:** **R5T185L68R38** <sup>1-0</sup> **3** <sup>1-1</sup> - **04** <sup>1-2</sup> - **CIP** - **2** <sup>2</sup> - **5** <sup>3</sup> - **63, I** <sup>4</sup>

#### 1-0 Pt100 (α = 0.003 85 °C<sup>-1</sup>) RTD Assemblies

CODE		TOLERANCE <sup>[1]</sup>	NORMAL SHEATH DIA. OD (in)	TIP DIAMETER OD (in)
SINGLE	DUPLEX			
RAF185L88R48	RAF285L88R48	Class A	1/2	1/4
RAF185L68R38	RAF285L68R38	Class A	3/8	3/16
R1T185L88R48	R1T285L88R48	Grade B	1/2	1/4
R1T185L68R38	R1T285L68R38	Grade B	3/8	3/16
R3T185L88R48	R3T285L88R48	Class AA	1/2	1/4
R3T185L68R38	R3T285L68R38	Class AA	3/8	3/16
R5T185L88R48	R5T285L88R48	(1/5) Class B	1/2	1/4
R5T185L68R38	R5T285L68R38	(1/5) Class B	3/8	3/16

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

#### Thermocouple Assemblies

For CIP thermocouple assemblies use T/C types J, K, T, or E and options G for grounded junction or U for ungrounded junction as per example. EXAMPLE: TP68R38G-04 - CIP - 2 - 5 - 63

#### 1-1 Element Connection

CODE	DESCRIPTION
3	3-Wire Element
4 <sup>[1]</sup>	4-Wire Element

[1] Not Available in Duplex

#### 1-2 Immersion Length "X"

Specify "X" length in inches using 2 digits, plus any fractional length desired. Examples: 04 = 4", 05(1/2) = 5.5"

#### 2 Sanitary Cap Size

CODE	TUBE O.D. (inches)	CODE	TUBE O.D. (inches)
1	1(1/2)	4	3
2	2	5	4
3	2 (1/2)	Z	Other (specify)

#### 4 Terminations

CODE	DESCRIPTION
91	316L stainless steel screw-cover head
63	White polypropylene screw-cover head
31,W	Aluminum screw-cover head with white epoxy coating
35T-642A	(4 to 20) mA HART® Field Transmitter with aluminum general-purpose housing
36T82-D10	(4 to 20) mA dual input HART® transmitter with digital display and general-purpose aluminum housing with glass lid
37T-662A	(4 to 20) mA HART® Field Transmitter with general-purpose aluminum housing
22 (06)	6" individual fluoropolymer leads with terminal pins
02	1/2" O.D., 2 1/4" long extension leadwire transition (requires table 5 & 6 selections from RTD section)

#### Head Options

T-440	(4 to 20) mA head-mounted RTD transmitter
T-441	(4 to 20) mA isolated head-mounted transmitter
T-442	(4 to 20) mA isolated HART® head-mounted transmitter
T82-00	(4 to 20) mA dual input HART® head-mounted transmitter
I	Stainless steel tags
HS	Wire seal security screws

#### 3 Sanitary Cap Style

CODE	DESCRIPTION
2	16A cap - bevel seat with 13-H nut <sup>[1]</sup> 304SS
5	16 AMP cap - Tri-Clamp® 316SS
7	16AI-14I cap <sup>[2]</sup> 304SS
8	Other (describe)

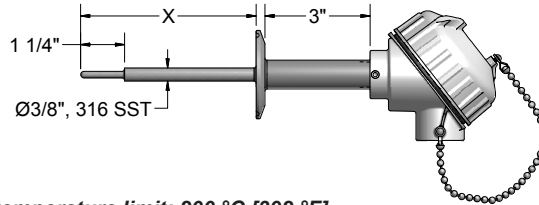
[1] Must be manually cleaned [2] Not 3-A authorized

Tri-Clamp® is a registered trademark of Alfa Laval, Inc.  
HART® is a registered trademark of HART Communication Foundation.

The sensors listed below are sanitary-connected RTD temperature sensor assemblies designed to meet the stringent requirements of HTST pasteurization systems. HTST requirements are described in the Grade "A" Milk Pasteurization Ordinance. The sensors listed on this page have response times below four seconds and come standard in accuracies at 100 °C [212 °F] ± 0.5 °C. The below listed assemblies are available in a variety of sanitary connections. All wetted parts are ground and polished to a finish that exceeds the No. 4 minimum finish required by the 3-A Sanitary Standards for Sensors and Sensor Fittings and Connections used on Milk and Milk Product Equipment Standard 74-. Assemblies are supplied with a surface finish that meets or exceeds 32µin R<sub>a</sub>. Surface finishes of 15µin R<sub>a</sub> or better are available upon request. The three-wire constructed sensor assembly consists of a high accuracy platinum element sealed inside a 316 stainless steel sheath and a white FDA compliant polypropylene connection head. The complete assembly provides excellent wash down protection. It is recommended that once customer connections are made, the connecting terminals be further protected by applying a coating of moisture-proof sealant over the connections.



74-



Maximum temperature limit: 200 °C [392 °F]  
Pasteurization Test Response Time: 2 to 3 seconds typical

### ORDER CODES

Example Order Number:

**R5T185L68R38** - **04** - **HTST** - **2** - **5** - **63**

#### 1-0 Pt100 (α = 0.003 85 °C<sup>-1</sup>) RTD Assemblies

CODE		TOLERANCE <sup>[1]</sup>
SINGLE	DUPLEX	
R3T185L68R38	R3T285L68R38	Class AA
R5T185L68R38	R5T285L68R38	(1/5) Class B

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

#### 1-1 Element Connection

CODE	DESCRIPTION
3	3-Wire Element
4 <sup>[1]</sup>	4-Wire Element

[1] Not Available in Duplex

#### 1-2 Immersion Length "X"

Specify "X" length in inches using 2 digits, plus any fractional length desired. 2" minimum length is required. Examples: 04 = 4", 05(1/2) = 5.5"

#### 2 Sanitary Cap Size

CODE	TUBE O.D. (inches)	CODE	TUBE O.D. (inches)
1	1(1/2)	4	3
2	2	5	4
3	2 (1/2)	Z	Other (specify)

#### 3 Sanitary Cap Style

CODE	DESCRIPTION
2	16A cap - bevel seat with 13-H nut <sup>[1]</sup> 304SS
5	16 AMP cap - Tri-Clamp <sup>®</sup> 316SS
7	16AI-14I cap <sup>[2]</sup> 304SS
8	Other (describe)

[1] Must be manually cleaned [2] Not 3-A authorized

#### 4 Terminations

CODE	DESCRIPTION
91	316L stainless steel screw-cover head
63	White polypropylene screw-cover head
31,W	Aluminum screw-cover head with white epoxy coating
35T-642A	(4 to 20) mA HART <sup>®</sup> Field Transmitter with aluminum general-purpose housing
36T82-D10	(4 to 20) mA dual input HART <sup>®</sup> transmitter with digital display and general-purpose aluminum housing with glass lid
37T-662A	(4 to 20) mA HART <sup>®</sup> Field Transmitter with general-purpose aluminum housing
22 (06)	6" individual fluoropolymer leads with terminal pins
02	1/2" O.D., 2 1/4" long extension leadwire transition (requires table 5 & 6 selections from RTD section)

#### Head Options

T-440	(4 to 20) mA head-mounted RTD transmitter
T-441	(4 to 20) mA isolated head-mounted transmitter
T-442	(4 to 20) mA isolated HART <sup>®</sup> head-mounted transmitter
T82-00	(4 to 20) mA dual input HART <sup>®</sup> head-mounted transmitter
I	Stainless steel tags
HS	Wire seal security screws

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