



Food & Beverage
Processing



Pharmaceuticals



Smart Sanitary RTD Sensors

- High Accuracy
- CIP Design
- Sensor Matching
- Fast Response

Smart Sanitary Temperature Sensors

Recognizing the need for high accuracy in most sanitary applications, SSI is proud to introduce our Smart Sanitary Temperature Sensors. Standard accuracies as stated in this catalog are better than commercial RTD products, but we didn't stop there. Our High Accuracy option guarantees the user superior accuracy and stability and is backed up by an accuracy statement certified by NIST traceability. As if this was not enough, with sensor matching we can virtually eliminate even the small uncertainty identified by our high accuracy certification.

Accuracy plus a product that is void of crevices and pits where bacteria can grow make this the **SMART** choice for all Sanitary and Clean In Place (CIP) temperature applications.

Call us and let us show you how we provide...
SMART SANITARY MEASUREMENT.

General Specifications

FINISH: A minimum finish per 3A Sanitary Council Standard #09-08 is applied to all stainless steel surfaces that come in contact with the process.

RESPONSE TIME: A maximum response time of 1.5 seconds for a 63.2% step change in water flowing through a pipe at 3 FPS. This is available only on our FAST RESPONSE SANITARY design and meets or exceeds FDA requirements.

RANGE: -20 to 200°C

SENSOR: Three-wire 100 ohm platinum .00385 Alpha

SENSOR SHEATH: 316SS

HEADS: Mounting heads are available in cast stainless steel and aluminum, FDA approved thermoplastic, and epoxy coated cast aluminum. All heads are suitable for CIP; the **SMART** head choice is stainless which is impervious to virtually all caustic wash down concentrations.

Head Code	Description
CA	Cast Aluminum
EPS	Cast Stainless
FTS	FDA Approved Thermoplastic Flip Top Design
CAX	Cast Aluminum Epoxy Coated
PPS	Polypropylene



STANDARD ACCURACY: Per ASTM E1137 for grade A elements.

HIGH ACCURACY: This option is supplied with NIST traceable calibration certification.

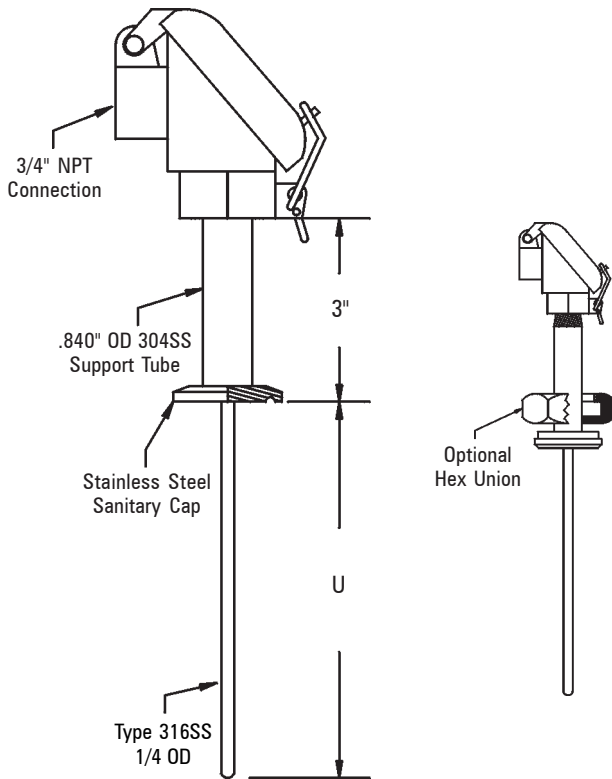
Temperature	Uncertainty	
	High Accuracy*	Grade A
°C	°C	°C
0	+ or - .13	+ or - .15
25		+ or - .20
50	+ or - .2	+ or - .25
75		+ or - .30
100	+ or - .26	+ or - .35
150		+ or - .45
200		+ or - .55

*Only available in a 0 to 100°C range.

SANITARY CIP MOUNTING FITTINGS:

CODE	FITTING TYPE	CAP OD INCHES
LADISH TRI CLOVER		
L16A	16 AMP CAP – TRI CLAMP	1,1 1/2, 2, 2 1/2, 3, 4
L16B	16 A CAP BEVEL SEAT	1, 1 1/2, 2, 2 1/2, 3, 4
CHERRY BURRELL		
C16A	16 AMP CAP "S" CLAMP	1, 1 1/2, 2, 2 1/2, 3, 4
C16B	16 A-14 CAP BEVEL SEAT	1, 1 1/2, 2, 2 1/2, 3, 4
ALLOY PRODUCTS		
A16A	16 SOLID END CAP K16A	1, 1 1/2, 2, 2 1/2, 3, 4
A16B	16A CAP BEVEL SEAT	1, 1 1/2, 2, 2 1/2, 3, 4
HEX UNION NUT OPTION		
HU	USE WITH BEVEL SEAT ONLY	

Type CIP-GP

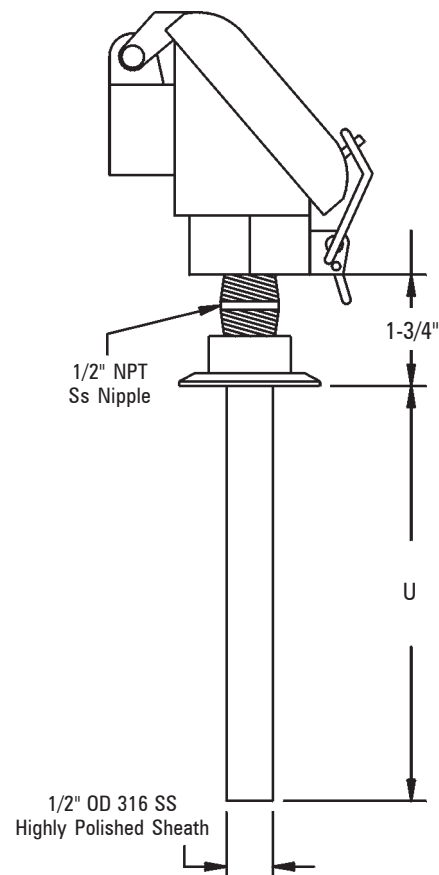


Our **SMART** CIP-GP (Clean in place) general purpose sanitary RTD offers a standard accuracy that provides uncertainty equal to half that of process accuracies. The high accuracy (HA) option utilizes special manufacturing techniques in delivering the best-known accuracy in the industry. For improved accuracy specify the Callendar-Van Dusen (CVD) option. This algorithm matches sensor and transmitter uncertainty assuring optimum accuracy. (The CVD option must be used with a transmitter.)

The **SMART** 4 Ra finish resists corrosion and bacteria growth and is designed to meet the requirements of the food, beverage, dairy and pharmaceutical industries.

The **SMART** sanitary connections come from industry leaders, Ladish, Cherry-Burrell and Alloy and coupled with the standard FDA approved white thermoplastic head allow this design to withstand any washdown process. We recommend our 316 SS head for extremely caustic or high-pressure washdown solutions.

Type CIP-PRO



When there is a need to remove the sensor the **SMART** CIP-PRO protection tube design is the logical choice. The RTD is spring-loaded to the bottom of the protection tube – this positive metal-to-metal contact improves response time. The RTD is easily removed without disturbing process conditions.

The **SMART** protection tube is constructed of high quality 316 SS and provides all of the same standard finish characteristics.

To order: Indicate the code letter or value for each requirement.

Head Type	Sensor Type	U Length (in inches)	Junction	Cap Size	Connection Type	Options

HEAD TYPE

CA	Cast Aluminum
EPS	Cast Stainless
FTS	FDA Approved Thermoplastic Flip Top Design
CAX	Cast Aluminum Epoxy Coated
PPS	Polypropylene

SENSOR TYPE

CIP-GP
CIP-PRO

SENSOR "U" LENGTHS

*Standard Lengths: 4, 6, and 9

SENSOR JUNCTION

S	Single
D	Dual

CAP SIZE

1	2 1/2
1 1/2	3
2	4

CONNECTION TYPE

LADISH TRI CLOVER	
L16A	16 Amp Cap – Tri-Clamp
L16B	16 A Cap Bevel Seat

CHERRY BURRELL	
C16A	16 Amp Cap "S" Clamp
C16B	16 A-14 Cap Bevel Seat

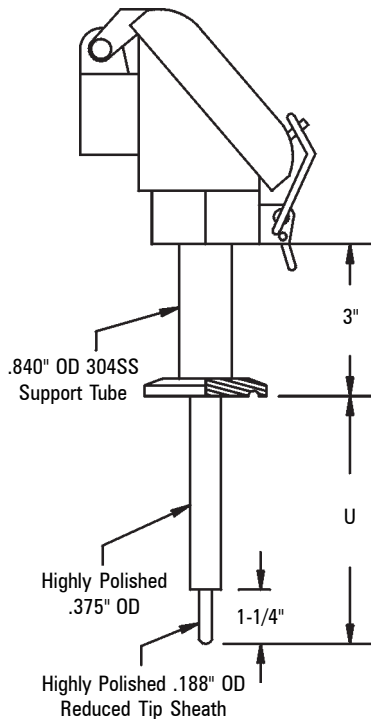
ALLOY PRODUCTS

A16A	16 Solid End Cap K16A
A16B	16A Cap Bevel Seat

OPTIONS

HA	High Accuracy
PT	Programmable Transmitter
FW	Four Wire
HC	Hart® Transmitter
CVD	Callendar Van Dusen (Specify transmitter option PT or HC when requesting the CVD curve)
HU	Hex Union Nut

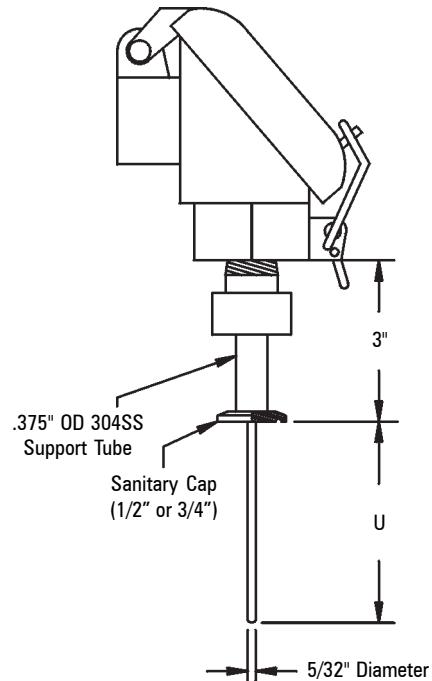
Type CIP-FR



In today's fast reacting process, response time is critical to optimizing product quality and through put. RTD sensors are inherently self-heating and do not possess the fast response time characteristics of other temperature sensors. By carefully selecting materials that are good conductors of heat and through a unique manufacturing technique the **SMART** CIP-FR provides response time of less than 2 seconds for a 63.2% step change of temperature in water flowing through a pipe at 3 FPS.

The **SMART** CIP-FR has all of the same standard characteristics as the **SMART** CIP-GP and is an excellent choice for food, beverage, dairy and pharmaceutical applications.

Type CIP-MINI



The **SMART** MINI meets the measurement need for small diameter lines without compromising on washdown bacteria rejection. The caps are welded to the sheath of the RTD and the support tube. All the component parts are 316 stainless steel and process wetted surfaces are free of any pits, crevices, or voids preventing corrosion or bacteria growth. The RTD diameter is 5/32", providing superior response time, without sacrificing reliability. Materials that come in contact with the process meet or exceed the finish requirements of the 3-A Sanitary Council and are designed for direct immersion in sanitary applications.

To order: Indicate the code letter or value for each requirement.

Head Type	Sensor Type	U Length	Junction	Cap Size	Connection Type	Options
<input type="text"/>	<input type="text"/>	<input type="text"/> (in inches)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

HEAD TYPE

CA Cast Aluminum
 EPS Cast Stainless
 FTS FDA Approved Thermoplastic Flip Top Design
 CAX Cast Aluminum Epoxy Coated
 PPS Polypropylene

SENSOR TYPE

CIP-FR
 CIP-MINI

SENSOR "U" LENGTHS

*Standard Lengths: 4, 6, and 9

SENSOR JUNCTION

S-Single
 D-Dual

CAP SIZE

1/2 - CIP MINI only	2
3/4 - CIP MINI only	2 1/2
1	3
1 1/2	4

CONNECTION TYPE

LADISH TRI CLOVER
 L16A 16 Amp Cap - Tri-Clamp
 L16B 16 A Cap Bevel Seat

CHERRY BURRELL

C16A 16 Amp Cap "S" Clamp
 C16B 16 A-14 Cap Bevel Seat

ALLOY PRODUCTS

A16A 16 Solid End Cap K16A
 A16B 16A Cap Bevel Seat

OPTIONS

HA High Accuracy
 PT Programmable Transmitter
 FW Four Wire
 HC Hart® Transmitter
 CVD Callendar Van Dusen (Specify transmitter option PT or HC when requesting the CVD curve)
 HU Hex Union Nut

Smart Sensors, Inc.

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