

CIP SANITARY RTDS & THERMOCOUPLES

JMS's Clean-in-Place (CIP) Sanitary RTDs and Thermocouples are manufactured to 3-A Standard 74-07 and are specially designed to meet the needs of the food, dairy, beverage, pharmaceutical, chemical, and cosmetic industries. They are ideally suited for a number of applications where corrosion and contamination are factors. They are fabricated from stainless steel or other 3-A accepted material using a method assuring imperfection-free surfaces. All sanitary grade thermocouples are provided to special limits of error. All sanitary RTDs are available in 4 wire construction.

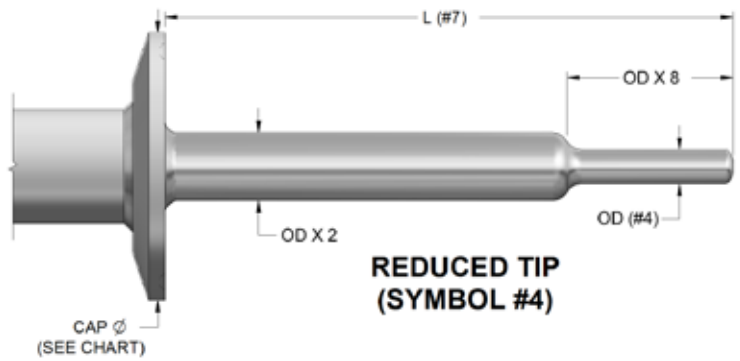


Standard Number 74-07

Direct Immersion sanitary sensors incorporate sanitary caps manufactured per the ASME BPE standard. Removeable sensors for sanitary applications typically incorporate spring loaded fittings and are assembled with sanitary thermowells. Wetted materials are polished to a #4 finish to assure that there are no pits, folds or crevices. The exterior nipple, also stainless steel, can be joined to a connection head, designed to withstand caustic washdown. A typical RTD or Thermocouple (see pages 1-1 and 3-1) may be used with a sanitary thermowell (see pages 4-3 through 4-6).

#1	DESCRIPTION	
4S	Sanitary sensors	
#2	RTD/THERMOCOUPLE TYPE (RTD—Platinum 0.00385 alpha ($\Omega/\Omega/^\circ\text{C}$). Resistor accuracies at 0°C below & [3-1,17,18])	
B	RTD Options	} Resistor accuracies at 0°C. Add 3 before selection for 3 wire RTD
E	4 wire $\pm 0.30^\circ\text{C}$	
P	4 wire $\pm 0.15^\circ\text{C}$	
S	4 wire $\pm 0.06^\circ\text{C}$	
X	4 wire $\pm 0.03^\circ\text{C}$ (JMS Standard)	
	Other, specify	T Thermocouple Options K Copper/Constantan J Chromel/Alumel X Iron/Constantan Other, specify
#3	ELEMENT CONSTRUCTION	
1	Single	
2	Dual	
X	Other, specify	
#4	OUTSIDE DIAMETER (OD)	
A	3/8"	E 1/16"
B	1/4"	X Other, specify
C	3/16"	Z NA
D	1/8"	
	Note: For a reduced tip, add R before selection. The shank OD will equal twice the tip OD. See illustration below. (Example RB steps down from 1/2" to 1/4" at the tip)	
#5	TUBING MATERIAL	
K	316 stainless steel	S Titanium
L	316 low carbon stainless steel (Standard)	
H	304 stainless steel	
I	304 low carbon stainless steel	
X	Other, specify	
#6	MEASURING JUNCTION	
G	Grounded	
U	Ungrounded (Standard)	
	Note: RTDs are always ungrounded.	
#7	IMMERSION LENGTH (L)	
—"	Length in inches	

[] Brackets indicate page numbers where additional helpful information can be found in our technical catalog.
 Now available online at www.JMS-SE.com/TechnicalCatalog



REDUCED TIP (SYMBOL #4)

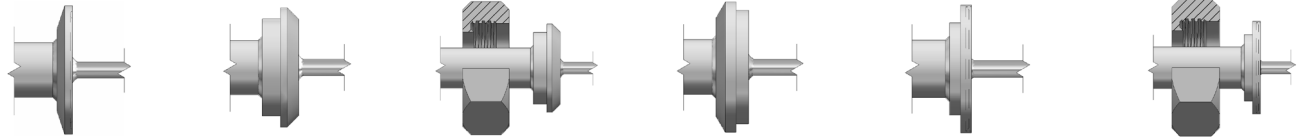
4S	S	1	C	K	U	12
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TRI-CLAMP (16 AMP) CAP SIZE CHART	
CAP SIZE (#9)	CAP Ø
1/2 or 3/4	.984"
1 or 1 1/2	1.984"
2	2.516"
2 1/2	3.047"
3	3.579"
4	4.682"
6	6.570"
8	8.563"
10	10.563"
12	12.563"

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#8	SANITARY CAP OPTIONS [SEE BELOW] Note: Standard sanitary thermowells can be found on page 4-4 and 4-5.		
T B*** BH*** I**	Tri-Clamp (16 AMP) Bevel seat (16 A) without 13-H nut Bevel seat with 13-H nut I Clamp (16AI-14I)	P PH A*** X*	PV Gasket (16APV) without 13-H nut PV Gasket with 13-H nut 3A4 Adapter Other, specify

* When specifying X, ensure that it meets 3-A standard.
 ** Not 3-A authorized.
 *** Must be cleaned manually.



T Tri-Clamp (16 AMP) **B** Bevel Seat (16A) without 13-H Nut **BH** Bevel Seat (16A) with 13-H Nut **I** I Clamp (16AI-14I) **P** PV Gasket (16APV) without 13-H Nut **PH** PV Gasket (16APV) with 13-H Nut

#9	CAP SIZE See Tri-Clamp Size Chart on page 4-1		
05	1/2 or 3/4	60	6
15	1 or 1 1/2	80	8
20	2	100	10
25	2 1/2	120	12
30	3	Z	N/A
40	4	X	Other, specify

Note: 05 Cap sizes (1/2 x 3/4) will use 1/4" NPT nipple. Not available for Bevel seat or I-Clamp



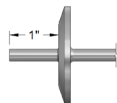
A 3A4 Adapter

#10	POLISH (Wetted surfaces only)		
H E P	High polish #4 finish (≤ 32 microinches(µin)) (Standard) Electropolish after #4 finish (≤ 32 microinches(µin)) Passivate after #4 finish (≤ 32 microinches(µin))	F V X	Fine polish (≤ 20 microinches(µin)) Ultra polish 8G finish (≤ 8 microinches(µin)) Other, specify

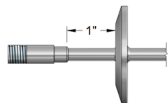
#11	LEAD WIRE TYPE AND LENGTH IN INCHES	MAX. TEMP. °C	MAX. TEMP. °C
Z	No lead wire (Teflon will insulate the wires in the head)	200°C	5" Kapton 288°C
1"	Fiberglass braid	350°C	9" Kapton & white teflon flex 200°C
3"	Teflon	200°C	X" Other, specify
7"	Teflon wire with white Teflon coated flex armor	200°C	

#12	TRANSITION TYPE		
H S R T N B	Heat shrink Size on size 1/4" OD 3/8" OD or larger Nipple (Standard w/ head) 7/16" OD (Standard for high humidity)	X Z	Other, specify No transition Note: For extra high humidity/moisture/washdown environments ≤ 500°F, please add a 2 suffix to your selection. Example: T2 Note: For high temperature at the transition area (>500°F) please add a 3 suffix to your selection. Example: T3

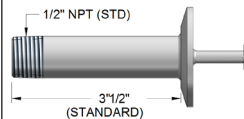
Z No Transition



B, T or R Transition, or M12 Direct Connect Transition



N Threaded Nipple



#13	COLD END TERMINATION Choose as many as applicable [Additional options see Pg 1-7]		
WP A P IA ISS SS	White plastic head (3-A Standard) Bare ends Epoxy coated explosion proof rated cast Iron head w/ gasket Epoxy coated explosion proof rated aluminum head w/ chain Explosion proof stainless steel head General purpose stainless steel head w/ screw cover	AW SC 8H 8M 8N 8PS 8PA Y* X	Bare ends, Teflon with nipple Capped socket connection [4-6] Isolated transmitter Integral transmitter (see page 4-6 for details) Non-isolated transmitter Indicating transmitter w/ SS housing Indicating transmitter w/ aluminum housing M12 watertight male connector Other, specify * See page 4-6 for wiring diagram.

Note: For detailed specifications and ratings see JMS-SE.com/headspecs

#14	OPTIONS—USE ONLY IF APPLICABLE [INTRODUCTION]		
M T 1* 2* 3* 4* 5	MTR (wetted parts) Calibration tag Stainless steel tag Plastic tag Paper tag Laser etch on probe Calibrate at specified point(s). Corrections data will be provided for each point.	6** 6C 7 8 9*	Premium calibration report Corrections data will be provided for all temperatures within the range. Premium calibration report. Callendar-Van Dusen coefficients will be provided.(RTD only) CE marking [page XV] Guide 17025 calibration Bar code on paper tag

* Must specify information required on tag/probe
 ** Must specify increments & range.(Example: 0 to 300°F, 10° increments)

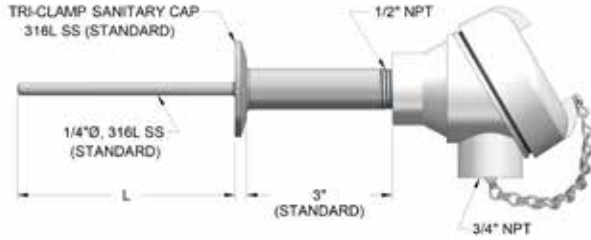
T	15	H	3-36"	T	WP
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Note: When specifying X, be sure to observe requirements and restrictions as imposed by the 3-A Sanitary standards for sensors and sensor fittings and connections, Number 74-03.

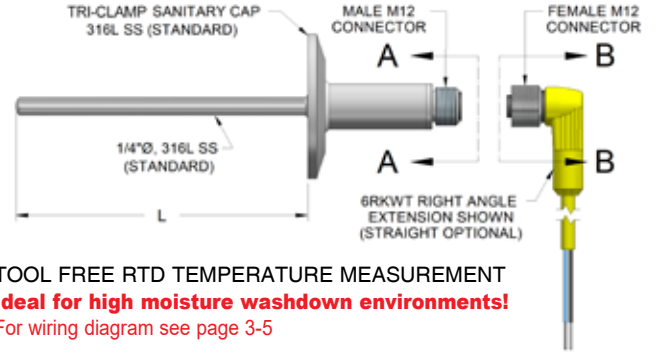
TYPICAL COMPLETE SANITARY SENSORS

SANITARY CAP TYPICAL DESIGNS

TRI-CLAMP (16 AMP) (CAP OPTION "T")



3-A RTD with 4-20 mA INTEGRAL OUTPUT (RTD *in*, 4-20 mA *OUT*!!)



TOOL FREE RTD TEMPERATURE MEASUREMENT

Ideal for high moisture washdown environments!

For wiring diagram see page 3-5