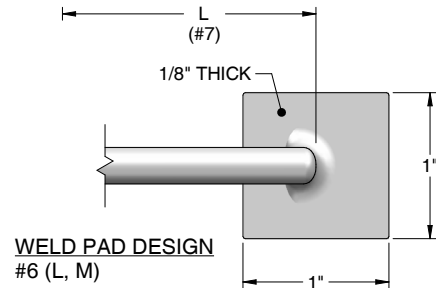


INDUSTRIAL AND MINIATURE THERMOCOUPLES

#1	DESCRIPTION [6, 7]
1	Thermocouple
#2	TYPE [8,9,10]
	J,T,K,E,N,X (Other, Specify)
#3	LIMITS OF ERROR/ELEMENT CONSTRUCTION
1	Standard Single 6 Standard Triple
2	Standard Dual X Other, specify
3	Special Single
4	Special Dual



WELD PAD DESIGN #6 (L, M)

Many more options available at JMS-SE.com

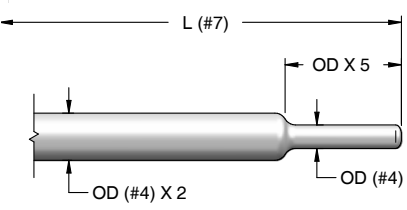
Note: For hollow tube sensors or sensors requiring a factory bend, see pages 2-1 and 2-2.

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

#4	OUTSIDE DIAMETER [1-11]			CONDUCTOR SIZE (FOR BASE METALS ONLY)							
	OD	Single	Dual	OD	Single	Dual	OD	Single	Dual		
P	1/2"	10	12	R	6mm	16	18	F	1/25"	32	34
A	3/8"	13	16	C	3/16"	19	20	X*	Other, specify		
Y	5/16"	14	16	D	1/8"	22	24	*JMS now offers sheath as small as 0.010" diameter			
B	1/4"	16	18	E	1/16"	28	30				

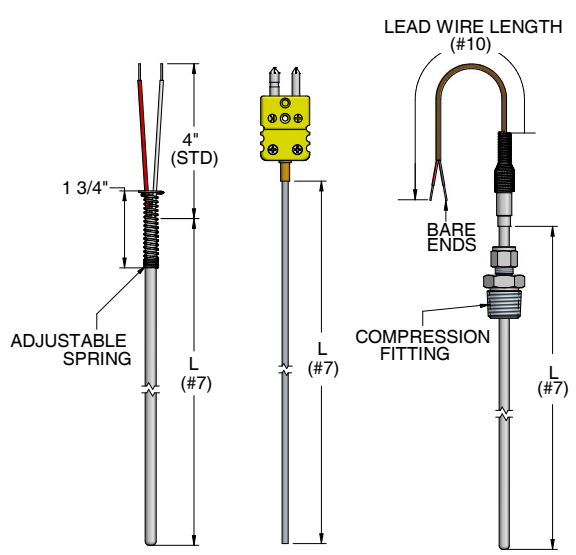
#5	SHEATH MATERIAL [11]	MAX °F [2-8, 4-17]	MAX °F
H	304 stainless steel	1650	C Teflon coated stainless steel 400
J	310 stainless steel	2100	S Titanium 400
V	STABALOY	2220	Q Hastelloy C-276 800
K	316 stainless steel	1650	P Pyrosil 2300
M	Inconel 600	2100	X Other, specify

REDUCED TIP DESIGN #6 (P,Y)



#6	MEASURING JUNCTION [1-12, 13, 14, 15]		
G	Grounded	P Reduced tip, grounded	
U	Ungrounded	Y Reduced tip, ungrounded	
E	Exposed (isolated on dual/triple)	R Gas/air, exposed	
I	Isolated	S Gas/air, grounded	
J	Pointed tip, grounded 45°	T Gas/air, ungrounded	
K	Pointed tip, ungrounded 45°	V* Enlarged tip, grounded	
L	Weld pad, grounded (Flat)	W* Enlarged tip, ungrounded	
M	Weld pad, ungrounded (Flat)	X Other, specify	
N	Weld pad, removable grounded	*Provide length and enlarged diameter description when selecting these options.	
O	Weld pad, removable ungrounded	Note: For options N, NF, O, & OF Fastrax (aka removable weld pad) designs, refer to 4-11.	
NF	Removable, "foot" only, grounded		
OF	Removable, "foot" only, ungrounded		

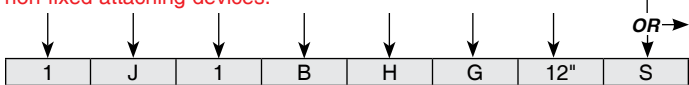
#7	LENGTH (See illustrations on page 1-1 through 1-3 for lengths)
"	Length in Inches (Lengths greater than 90" may be coiled for shipment)



Note: L is the overall length of the sensor to the transition, wire, plug, head, or fixed attaching device. L excludes non-fixed attaching devices.

NEW Skip to page 1-3 to complete selection #8 if your sensor requires a nipple and/or union extension.

#8	STANDARD INDUSTRIAL ATTACHING DEVICE [1-3, 6-13]	
X	Other, specify	
Z	N/A	No attaching device
G	Single thread (process)	Welded design
F	Single thread (reversed)	
W	Double threaded	
H*	SS w/ SS ferrule	Compression design
I*	SS w/ Teflon ferrule	
J*	SS w/ Lava ferrule	
K*	SS w/ Nylon ferrule	
L*	Brass w/ Brass ferrule	
D	Single threaded (process)	Spring-loaded design
C	Double threaded w/ oil seal	
A	Double w/ threaded retainer	
E	Adjustable spring	
S	Double threaded (most common)	
B	Double threaded Bayonet	
BS*	Double threaded Bayonet w/ oil seal	
BD	Single threaded Bayonet	
BDS*	Single threaded Bayonet w/ oil seal	



SEE PAGE 1-3

INDUSTRIAL AND MINIATURE THERMOCOUPLES

#9	PROCESS CONNECTION SIZE & TYPE [1-3]				Note: Threaded bushing may be used for sizes larger than 1/2" NPT	
L	1/8" NPT	O	3/4" NPT	X	Other, specify	
M	1/4" NPT	J	1" NPT	Z	N/A	
A	3/8" NPT	T	1 1/4" NPT			
P	1/2" NPT (Standard) w/ symbols W,S,C, & N from selection #8	Y	1 1/2" NPT			

#10	LEAD WIRE TYPE & LENGTH IN INCHES [SEE SECTION 7]			
Z	No lead wires	7"	Bare wire (AWG per #4)	
1"	Fiberglass braid	8"	PVC coil cord (Relaxed length) (4" standard length for in head bayonet sensors)	
2"	PVC	S9"	Teflon ultra premium Type T, stranded 22 AWG	
3"	Teflon	X"	Other, specify	
4"	Hi-temp fiberglass braid			
5"	Kapton			

Note: Add an S prefix to your selection to designate stranded wire. Preferred for high vibration applications with lead wires > 6". Example: S312= 12" stranded Teflon lead wire. 24 AWG or smaller may be used to accommodate some smaller diameters and flex armor extensions.

#11	ARMOR OR HEAT SHRINK [7-7,16]		A special armor adapter is used when flex armor is longer than 60".	
A	SS flex armor	J	Aluminum mylar shielded and jacketed to match primary insulation	
B	SS flex armor teflon coated white	Z	N/A	
C	SS flex armor teflon coated black	K	SS overbraid, drain, & yellow Teflon jacket overall, 20 AWG stranded (Type K only)	
D	Small 1/8" ID SS flex armor	X	Other, specify	
F	SS overbraid			
G	Heat shrink/sleeving			
H	Jacket to match primary insulation			

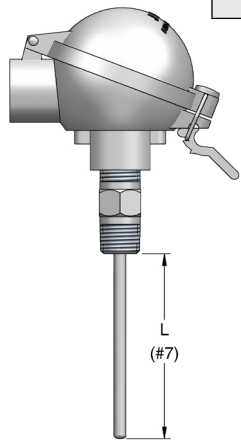
#12	TYPE OF TRANSITION [1-16]			
H	Heat shrink			
S	Size on size		Note: For high humidity/moisture environments (< 500°F), put a 2 after your selection. For example, R2.	
R	3/8" OD (Standard)			
T	1/4" OD		Note: For high temperatures at the transition area (500°F - 1200°F), put a 3 after your selection. For example, T3.	
X	Other, specify			
Z	No transition			

#13	COLD END TERMINATION Choose as many as applicable (Additional options see Pg. 1-7) (Visit our online catalog for additional terminations, www.JMS-SE.com/ends)			
Connectors		Heads [6-1] visit www.JMS-SE.com/headspecs		
B	Miniature plug	Exp. Proof	I	Aluminum, NEMA 4X, FM, CSA, IP68 (6IA)
C	Standard plug		J	316 SS, NEMA 4X, FM, CSA, IP68 (6ISS)
F	High temperature plug (< 800°F)		P	Aluminum, NEMA 4X, FM, CSA, ATEX, IECEx, IP68 (6IAIEC)
WM	Microphone style plug (6DA)		SI	Cast Iron, NEMA 4, UL, CSA (6I)
D	Miniature jack			
E	Standard jack			
G	High temperature jack (<800°F)			
WF	Microphone style jack (6DA)			
Transmitters		Gen. Purpose	L	Aluminum w/ hinged cover (6L)
8H	Isolated transmitter		M	Aluminum w/ screw cover & chain (6M)
8N	Non-isolated transmitter		R	Aluminum w/ hinged high dome cover (6R)
8I	Hart protocol		N	Cast Iron w/ screw cover (6N)
8E	Intrinsically safe		Q	Black plastic (6Q)
8D	Hart/intrinsically safe		SS	316 SS w/ screw cover & chain (6SS)
8PS	Indicating with SS Exp. housing		Other	
8PA	Indicating with Alum Exp. housing		A	Bare ends
		K	Spade lugs (6SL)	
		O	Open terminal block (6B4)	
		X	Other, specify	

Note: Add span range after transmitter selection. Example: 8H(0-200C). Transmitter output=4-20mA. (See section 8 for other options).

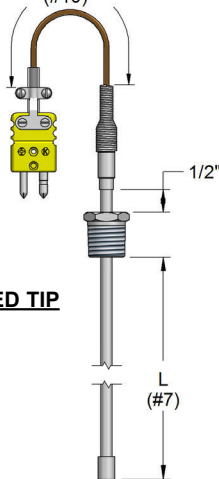
#14	OPTIONS Use only if applicable [INTRODUCTION]		
Marking / Tagging		Calibration Options	Certifications
1	Stainless steel tag	5	Calibrate at specified point(s). Corrections data provided for each point.
2	Plastic tag	5L*	Standard lot calibration
3	Paper tag	5M	Material calibration report.
4	Laser etch on probe	6**	Premium calibration report. Corrections data will be provided for temperatures within the range.
7	CE marking [page XV]	6L	Premium lot calibration report. Corrections data will be provided for temperatures within the range.
T	Calibration Tag		
			8*** Guide 17025 calibration certification
			M MTR (sheath / tubing / measuring junction components)
			Other Options
			B Head mounting bracket
			S Ship straight (Do not coil)
			X Other, specify

* AMS 2750D/E/F compliant
** Must specify increments & range (Example: 0 to 300°F, 10° increments)
*** Must choose calibration option other than 5M



Note: L is the length of the sensor to the fixed attaching device.

LEAD WIRE LENGTH (#10)



ENLARGED TIP #6 (V,W)

P	Z	Z	Z	L	1
---	---	---	---	---	---

COMPLETE PART NUMBER EXAMPLES	
• With nipple-union-spring-loaded extension assembly: 1J1BHG12"S[UN6H1]PZZZL1	
• Without extension assembly: 1J1BHG12"SPZZZL1	

CUSTOM NIPPLE/UNION EXTENSION CONFIGURATOR

An extension assembly provides extra length extending the sensor head past insulation and away from heat. Standard unions are 1/2" FNPT on both ends. The union joins two nipples in an extension assembly and has a standard pressure rating of 150 PSIG.

When a nipple-union-nipple assembly is selected and spring-loading of the thermocouple element is required, there are two different methods of spring-loading the sensor. JMS's standard, recommended method is to use the machined 1/2" x 1/2" NPT spring-loaded stainless steel fitting as one of the nipples. With this design, the probe is secured within the fitting and mounted to the head in a rigid manner instead of spring-loading against a terminal block, as is the case with a standard nipple-union-nipple. Due to stress exerted by spring, selection #8, option N "nipple" should never be used with an in-head transmitter. Any of the other options within option #8 are compatible with in-head transmitters.

Notes:

- The standard JMS spring designed specifically for a 1/4" OD sensor is made of high nickel proprietary spring wire which allows users to successfully maintain 1/2" of spring-loading even up to 1000°F.
- Spring-loaded extension assemblies should not be used with ceramic protection tubes.

		#8	COLD SIDE STANDARD INDUSTRIAL ATTACHING DEVICE [1-3, 6-13]		
		X	Other, specify		<p>STANDARD ATTACHING DEVICE (ALREADY SELECTED IN #8)</p>
		Welded design	G	Single Thread (Process)	
		H2 I2 J2 K2 L2	SS w/ SS ferrule SS w/ Teflon ferrule SS w/ Lava ferrule SS w/ Nylon ferrule Brass w/ Brass ferrule		<p>MOST COMMON</p> <p>** L is the overall length of the sensor to the fixed attaching device. Page 1-1, selection #7 for T/Cs or 3-1, selection #6 for RTDs.</p>
		Spring-loaded design	D	Single threaded	
		C	Double threaded w/ oil seal		
		A	Double w/ threaded retainer		
		N	Nipple (spring-loaded against terminal block)		
		S	Double threaded		
		B	Double threaded Bayonet		
		BS	Double threaded Bayonet w/ oil seal		
		BD	Single threaded Bayonet		
		BDS	Single threaded Bayonet w/ oil seal		
		#8.1	UNION		<p>UNION (#8.1)</p>
		U O X	Union Coupling Other, specify		
		<p>Note: Thread adapters may be used when symbol #9 is not 1/2" NPT.</p>			
		#8.2	PROCESS FITTING (MALE)		<p>PROCESS FITTING (#8.2)</p>
		N X Z	Nipple Other, specify N/A (female thread)		
		<p>Note: Thread adapters may be used when symbol #9 is not 1/2" NPT.</p>			
		#8.3	N LENGTH		<p>N (#8.3)</p>
		" Z	Specify (Inches)* N/A (female thread)		
		<p>* ONLY for configurations with nipples (option N for selection #8 or #8.2) ALL other configurations have fixed lengths and this selection is not applicable.</p>			
		#8.4	UNION and/or NIPPLE MATERIAL		
		H	304 stainless steel		
		K	316 stainless steel		
		C	Black steel		
		G	Galvanized steel		
		#8.5	UNION PRESSURE RATING		} ASTM
		1	#150 - A351 spec (Standard)		
		2	#3000 - A182 spec		
		3	#6000 - A182 spec		
		X	Other, specify		

Note: High nickel proprietary spring material is rated to 1000°F. (For 1/4" Ø sensors)

S { U N 6" H 1 }

Continue on to the "PROCESS NPT" selection to finish creating your sensor part number. Selection #9 on page 1-2 (thermocouples) and 3-2 (RTDs).

ADDITIONAL TERMINATIONS

COLD END TERMINATION [SEE SECTION 6] Choose as many as applicable **(JMS part number prefixes are shown in parenthesis)**

Connectors

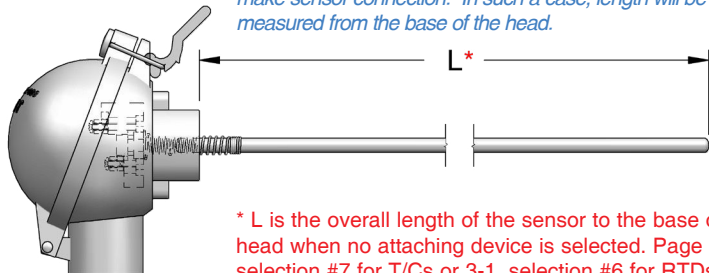
Plugs		Jacks	
B	Miniature plug (6A1B)	D	Miniature jack (6A1D)
BH	Miniature high temperature plug (6A2B) <800°F	DH	Miniature high temperature jack (6A2D) <800°F
C	Standard plug (6A1C)	E	Standard jack (6A1E)
F	Standard high temperature plug (6A2C) <800°F	G	Standard high temperature jack (6A2E) <800°F
WM	Microphone style plug (6DA)	WF	Microphone style jack (6DA)
WA	Solid pin plug, heavy duty (6A3C)	WB	Solid pin jack, heavy duty (6A3E)
WC	Jab in plug (6A4C)	WD	Jab in jack (6A4E)
WE	Ultra high temperature plug, glazed (6A5C) <1200°F	WG	Ultra high temperature jack, glazed (6A5E) <1200°F
WH	Ultra high temperature plug, unglazed (6A7C) <1200°F	WI	Ultra high temperature jack, unglazed (6A7E) <1200°F
WJ	Low noise plug (6A6C) <425°F	WK	Low noise jack (6A6E) <425°F
WL	DIN-IEC microphone plug (6DB)	WN	DIN-IEC microphone style jack (6DB)
V	Molded/water resistant plug (6DC)	VF	Molded/water resistant jack (6DC)
Y	M12 Male connector (6DY)	YF	M12 Female connector (6DY)
WQ	Miniature locking plug (6A8B2)	WR	Miniature locking jack (6A1DL2)
WS	Standard plug, locking (6A8C2)	WT	Standard jack, locking (6A8E2)

Heads [6-1] Visit www.JMS-SE.com/headspecs

Explosion Proof	
I	Aluminum, NEMA 4X, FM, CSA, IP68 (6IA)
J	316 stainless steel, NEMA 4X, FM, CSA, IP68 (6ISS)
P	Aluminum, NEMA 4X, FM, CSA, ATEX, IECEx, IP68 (6IAIEC)
U	316 stainless steel, NEMA 4X, ATEX, IP68 (6ISSATEX)
SI	Cast Iron, NEMA 3, 4, UL, CSA (6I)
GA	Aluminum, screw cover w/ indicating window, NEMA 4X, ATEX, IECEx, FM, CSA, IP68 (688A1)
GS	316SS, screw cover w/ indicating window, NEMA 4X, ATEX, IECEx, FM, CSA, IP68 (688S1)

General Purpose	
L	Aluminum w/ hinged cover (6L)
M	Aluminum w/ screw cover & chain (6M)
R	Aluminum w/ hinged high dome cover (6R)
N	Cast Iron w/ screw cover (6N)
Q	Black plastic (6Q)
SS	316 stainless steel w/ screw cover & chain (6SS)
WP	White plastic, screw cover, Sanitary (6WP)
SB	Nickel plated, cylinder style, 1/4" NPT (6S250)
SD	Nickel plated, cylinder style, 1/8" NPT (6S125)
SC	Stainless steel, socket cap style
ST	Molded plastic, mini head, 1/4" NPT, < 350F (6T)
SU	Molded plastic, mini head, 1/4" NPT, < 800F (6U)

Some applications may have pre-existing threaded pipes or protection tubes where no attaching device is needed to make sensor connection. In such a case, length will be measured from the base of the head.



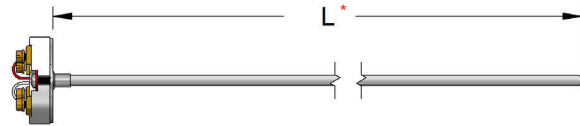
*** L is the overall length of the sensor to the base of the head when no attaching device is selected. Page 1-1, selection #7 for T/Cs or 3-1, selection #6 for RTDs.**

Transmitters [8-1 to 8-3] **Notes:** - Add span range after transmitter selection. Example: 8H(0-200C).
- Transmitter output = 4 - 20 mA. (See section 8 for other options).

8H	Isolated transmitter	8PA	Explosion proof, IP66/IP68, NEMA 4X, ATEX/IECEx, FM/CSA, Aluminum, threaded cap with glass viewing window, touch programmable [8-2]
8N	Non-isolated transmitter		
8I	Hart Protocol	8PS	Explosion proof, IP66/IP68, NEMA 4X, ATEX/IECEx, FM/CSA, 316 SS, threaded cap with glass viewing window, touch programmable [8-2]
8E	Intrinsically safe		
8D	Hart/Intrinsically safe		
8M	Integral transmitter (see page 3-5) RTDs ONLY		

Other

A	Bare ends		
K	Spade lugs (6SL)		
RL	Ring lugs (6RL)		
O	Open ceramic terminal block, brass screw terminal (6B)		
OA	Open Bakelite terminal block, nickel plated screw terminal (6BB)		
OB	Open ceramic terminal block for sensors with bayonet style connection, brass screw terminal (6B or 6C)		
OG	Ceramic terminal block, brass screw terminal (6G)		
OP	Pluggable polyimide terminal block, nickel plated screw terminal (6PT)		
OS	Open ceramic terminal block, nickel plated solder terminal (6C)		
CG	Cord connector/grip, aluminum 1/2" NPT (6CC)		
TB	Conduit bushing, 3/4" NPT male X 1/2" NPT female, plated steel (6IRB)		
X	Other, specify		



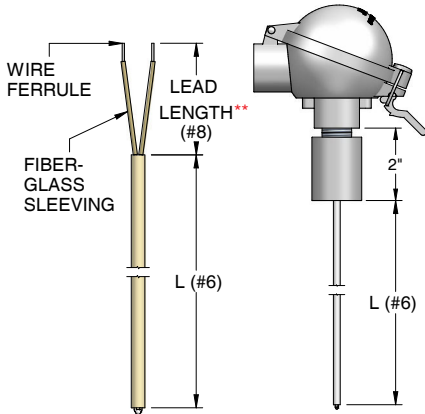
*** L is the overall length of the sensor to the base of the terminal block mounting plate when open terminal block cold end termination is selected without a fixed attaching device. Page 1-1, selection #7 for T/Cs or 3-1, selection #6 for RTDs.**

BEADED THERMOCOUPLES

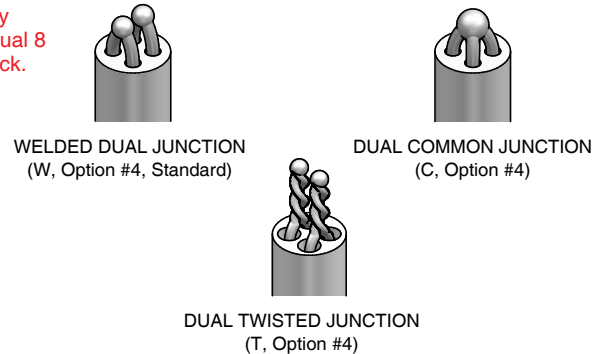
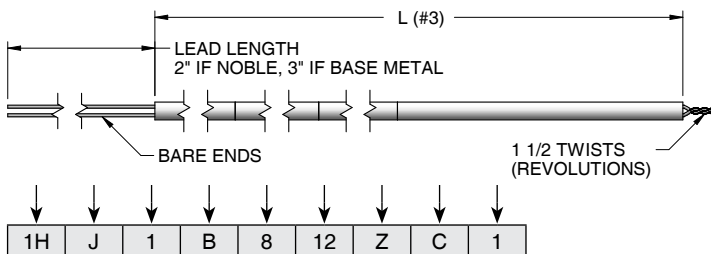
Beaded thermocouples are most common in furnace, heat treating and other high temperature applications. Noble Metal Thermocouples (Types R, S, B) and Refractory Thermocouples (Types C & A) incorporate an alumina bead to avoid contamination of the wire. Base Metal Thermocouples (Types J, K, N, E, T and L) are constructed with mullite beads or alumina where the upgrade is more readily available. Smaller AWG thermocouples (20 AWG, 24, AWG, 26 AWG and 30 AWG) are usually built with a single piece insulator. Larger AWG base metal thermocouples (8 AWG, 14 AWG, 20 AWG) are constructed with 1" to 3" long mullite beads that are either oval or rounded. **Heads and attaching devices will be shipped unassembled to the thermocouple unless assembled to a protection tube to avoid breakage in shipment. Must have attaching device and process connection to ship assembled to heads and protection tubes.** See Section 5 for typical protection tube designs. Special designs available by drawing.

#1	DESCRIPTION										
1H	Beaded Thermocouple										
#2	TYPE										
	J, K, N, R, S, B, C, T, E, A, X (Other, specify)										
#3	LIMITS OF ERROR / ELEMENT CONSTRUCTION										
1	Standard	Single	3	Special	Single	X	Other, specify				
2	Standard	Dual	4	Special	Dual						
#4	MEASURING JUNCTION										
B	Welded (Std)	(Isolated if Dual)	C	Common weld bead						(Dual Only)	
T	Twisted	(Isolated if Dual)	X	Other, specify							
#5	WIRE GAUGE										
	AWG	INSULATOR OD		AWG	INSULATOR OD		AWG	INSULATOR OD			
8	8	7/16" (1/2" DUAL)	20	20	3/16"	26	26	3/16"	X	Other, specify	
14	14	1/4"	24	24	3/16"	30	30	1/8"			
#6	LENGTH ("L" Dimension -- See illustrations on this page for length)*										
L_ "	Length in inches										
#7	ATTACHING DEVICES USED TO CONNECT TO CERAMIC OR METAL PROTECTION TUBE [5-5 TO 5-8]										
Z	N/A				C34	Nipple-Coupling SS 1/2"x3/4" NPTF					
U	Short Nipple with 1/2" NPTF 304 SS Union				C10	Nipple-Coupling SS 1/2"x1" NPTF					
C18	Nipple-Coupling SS 1/2"x1/8" NPTF				C114	Nipple-Coupling SS 1/2"x1-1/4" NPTF					
C14	Nipple-Coupling SS 1/2"x1/4" NPTF				C112	Nipple-Coupling SS 1/2"x1-1/2" NPTF					
C	Nipple-Coupling SS 1/2"x1/2" NPTF				X	Other, specify					
#8	COLD END TERMINATION (Additional Options see Page 1-7) www.JMS-SE.com/headspecs										
Quick Connectors					HEADS [6-1] std 1/2"x3/4" add prefix of 1 for 3/4"x3/4" head						
C	Standard Plug				General Purpose	L	Aluminum w/ hinged cover (6L)				
F	High Temp Plug					M	Aluminum w/ screw cover & chain (6M)				
E	Standard Jack					N	Cast Iron w/ screw cover & chain (6N)				
G	High Temp Jack					SS	316 SS w/ screw cover & chain (6SS)				
Other					Exp. Proof	I	Aluminum, NEMA 4X, FM, CSA, IP66 (6IA)				
A	Fiberglass sleeve to bare ends**					J	316 SS NEMA 4X, FM, CSA, IP66 (6ISS)				
K	Fiberglass sleeve to spade lugs**				AH	Heat shrink to bare ends**					
O	Open terminal block					AF	Mullite fish spine beads to bare ends**				
X	Other, specify										
#9	OPTIONS										
1	Stainless Steel Tag				5M	Material Calibration Report					
2	Plastic Tag				5L	Standard Lot Calibration					
3	Paper Tag				5	Calibrate at specific points					
T	Calibration Tag				6	Premium Calibration Report					
7	CE Marking				6L	Premium Lot Calibration Report					
X	Other, specify.				8	Guide 17025 Calibration					

* **Note:** Manufacturing tolerance of one piece construction is $\pm 0.5"$, one inch and three inch bead construction is $+0"/-1"$.



** **Note:** Bare ends will be 2" with wire ferrule if noble (Type R, S, B) 2" if refractory (Type C, A) thermocouples and 3" if base metal (J, K, N, T, E, L) thermocouples. Dual 8 AWG & 14 AWG thermocouples will have the leads shaped to fit a 6G4 terminal block.



ADDITIONAL TERMINATIONS

COLD END TERMINATION [SEE SECTION 6] Choose as many as applicable **(JMS part number prefixes are shown in parenthesis)**

Connectors

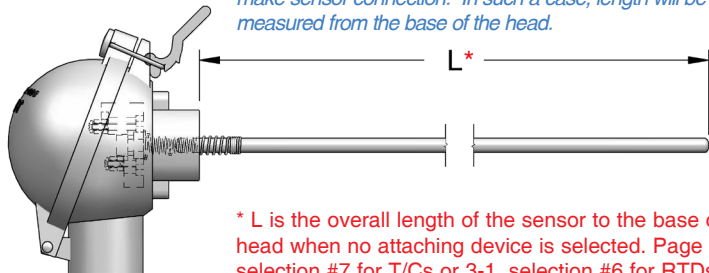
Plugs		Jacks	
B	Miniature plug (6A1B)	D	Miniature jack (6A1D)
BH	Miniature high temperature plug (6A2B) <800°F	DH	Miniature high temperature jack (6A2D) <800°F
C	Standard plug (6A1C)	E	Standard jack (6A1E)
F	Standard high temperature plug (6A2C) <800°F	G	Standard high temperature jack (6A2E) <800°F
WM	Microphone style plug (6DA)	WF	Microphone style jack (6DA)
WA	Solid pin plug, heavy duty (6A3C)	WB	Solid pin jack, heavy duty (6A3E)
WC	Jab in plug (6A4C)	WD	Jab in jack (6A4E)
WE	Ultra high temperature plug, glazed (6A5C) <1200°F	WG	Ultra high temperature jack, glazed (6A5E) <1200°F
WH	Ultra high temperature plug, unglazed (6A7C) <1200°F	WI	Ultra high temperature jack, unglazed (6A7E) <1200°F
WJ	Low noise plug (6A6C) <425°F	WK	Low noise jack (6A6E) <425°F
WL	DIN-IEC microphone plug (6DB)	WN	DIN-IEC microphone style jack (6DB)
V	Molded/water resistant plug (6DC)	VF	Molded/water resistant jack (6DC)
Y	M12 Male connector (6DY)	YF	M12 Female connector (6DY)
WQ	Miniature locking plug (6A8B2)	WR	Miniature locking jack (6A1DL2)
WS	Standard plug, locking (6A8C2)	WT	Standard jack, locking (6A8E2)

Heads [6-1] Visit www.JMS-SE.com/headspecs

Explosion Proof	
I	Aluminum, NEMA 4X, FM, CSA, IP68 (6IA)
J	316 stainless steel, NEMA 4X, FM, CSA, IP68 (6ISS)
P	Aluminum, NEMA 4X, FM, CSA, ATEX, IECEx, IP68 (6IAIEC)
U	316 stainless steel, NEMA 4X, ATEX, IP68 (6ISSATEX)
SI	Cast Iron, NEMA 3, 4, UL, CSA (6I)
GA	Aluminum, screw cover w/ indicating window, NEMA 4X, ATEX, IECEx, FM, CSA, IP68 (688A1)
GS	316SS, screw cover w/ indicating window, NEMA 4X, ATEX, IECEx, FM, CSA, IP68 (688S1)

General Purpose	
L	Aluminum w/ hinged cover (6L)
M	Aluminum w/ screw cover & chain (6M)
R	Aluminum w/ hinged high dome cover (6R)
N	Cast Iron w/ screw cover (6N)
Q	Black plastic (6Q)
SS	316 stainless steel w/ screw cover & chain (6SS)
WP	White plastic, screw cover, Sanitary (6WP)
SB	Nickel plated, cylinder style, 1/4" NPT (6S250)
SD	Nickel plated, cylinder style, 1/8" NPT (6S125)
SC	Stainless steel, socket cap style
ST	Molded plastic, mini head, 1/4" NPT, < 350F (6T)
SU	Molded plastic, mini head, 1/4" NPT, < 800F (6U)

Some applications may have pre-existing threaded pipes or protection tubes where no attaching device is needed to make sensor connection. In such a case, length will be measured from the base of the head.



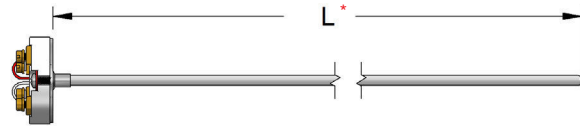
*** L is the overall length of the sensor to the base of the head when no attaching device is selected. Page 1-1, selection #7 for T/Cs or 3-1, selection #6 for RTDs.**

Transmitters [8-1 to 8-3] **Notes:** - Add span range after transmitter selection. Example: 8H(0-200C).
- Transmitter output = 4 - 20 mA. (See section 8 for other options).

8H	Isolated transmitter	8PA	Explosion proof, IP66/IP68, NEMA 4X, ATEX/IECEx, FM/CSA, Aluminum, threaded cap with glass viewing window, touch programmable [8-2]
8N	Non-isolated transmitter		
8I	Hart Protocol	8PS	Explosion proof, IP66/IP68, NEMA 4X, ATEX/IECEx, FM/CSA, 316 SS, threaded cap with glass viewing window, touch programmable [8-2]
8E	Intrinsically safe		
8D	Hart/Intrinsically safe		
8M	Integral transmitter (see page 3-5) RTDs ONLY		

Other

A	Bare ends		
K	Spade lugs (6SL)		
RL	Ring lugs (6RL)		
O	Open ceramic terminal block, brass screw terminal (6B)		
OA	Open Bakelite terminal block, nickel plated screw terminal (6BB)		
OB	Open ceramic terminal block for sensors with bayonet style connection, brass screw terminal (6B or 6C)		
OG	Ceramic terminal block, brass screw terminal (6G)		
OP	Pluggable polyimide terminal block, nickel plated screw terminal (6PT)		
OS	Open ceramic terminal block, nickel plated solder terminal (6C)		
CG	Cord connector/grip, aluminum 1/2" NPT (6CC)		
TB	Conduit bushing, 3/4" NPT male X 1/2" NPT female, plated steel (6IRB)		
X	Other, specify		



*** L is the overall length of the sensor to the base of the terminal block mounting plate when open terminal block cold end termination is selected without a fixed attaching device. Page 1-1, selection #7 for T/Cs or 3-1, selection #6 for RTDs.**

BONDED SILICON CARBIDE PROTECTION TUBES

Silicon carbide protection tubes provide excellent thermal conductivity for quick response to temperature changes. They can be used to replace cast iron tubes, eliminating the possibility of iron pick-up. Spread surface treatment assures adequate protection of the thermocouple.

JMS Southeast offers two types of silicon carbide protection tubes. Type A and B are dense silica bonded silicon carbide and are manufactured with a flange or a plain end as the following drawings indicate.

Type C and D are carbon bonded silicon carbide and graphite. They are manufactured with a black steel pipe located down the center. They have a 1/2" or 3/4" NPT connection to thread into place instead of a flange for mounting as Type A.

#1	DESCRIPTION			
5B	Protection Tube - Add "W" here for a cap and chain to fit over open end. (i.e. 5BW)			
#2	MATERIAL			
SC	Silicon carbide			
#3	MOUNTING			
F	Flange silicon carbide tube (1" I.D. x 1-3/4" O.D.)			
P	Plain end silicon carbide tube (1" I.D. x 1-3/4" O.D.)			
C	1/2" NPT threaded silicon carbide tube with reinforced pipe			
D	3/4" NPT threaded silicon carbide tube with reinforced pipe			
#4	SIZE			*3 & 4 are for symbols F & P
2	1/2" I.D. x 2" O.D.			
3*	3/4" I.D x 2" O.D.			
4*	1" I.D. x 1-3/4" O.D.			
#5	LENGTH (L)			
A	18"			
B	24"			
X	Other, specify			

5B	SC	F	4	18"
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SILICON NITRIDE PROTECTION TUBES

#1	DESCRIPTION			
5E	Silicon Nitride Protection Tube (Sialon)			
#2	TUBE SIZES	BUSHING	THREAD SIZE	<p style="color: red; text-align: center;">This material is the <u>perfect</u> choice for Aluminum melting processes!</p>
1	28mm OD x 16mm ID (1.1" OD x .630" ID)	1-1/4"	1-1/4"	
2	22mm OD x 12mm ID (.866" OD x .472" ID)	1"	1"	
3	16mm OD x 9mm ID (.630" OD x .354" ID)	3/4"	3/4"	
4	12.5mm OD x 6.5mm ID (.492" OD x .256" ID)	1/2"	1/2"	
X	Other, specify			
#3	TOTAL TUBE LENGTH			
A	5.91" (150mm)	D	17.72" (450mm)	
B	11.81" (300mm)	E	23.62" (600mm)	
C	15.75" (400mm)	X	Other, specify	
#4	TUBE STYLE			
B	Mounting bushing			
S	Carbon steel mounting sleeve - (4" long sleeve is standard)			
X	Other, specify			
Z	No fitting			

5E	1	A	S
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