

COMBINATION THERMOCOUPLES AND RTD'S

JMS Southeast, Inc., manufactures a sensor that contains both a thermocouple and an RTD. The standard design allows the user to check and validate readings with one sensor while using another type for control or monitoring. Although two thermocouples can be used simultaneously, it is not advisable to use the thermocouple and RTD at the same time.

This type of sensor can be used in applications that require two different inputs. One advantage of this system is that the conditions which adversely affect a thermocouple may not affect the RTD and vice versa. Therefore, combination sensors provide a back-up sensor in the same probe. In extremely high temperature applications, this procedure is not recommended. JMS Southeast can also manufacture triple elements of just about any combination. Contact JMS for details.

There are three types of popular transmitters which accept this sensor directly. We recommend our 8B (AI-2000) and the 8A (AI-1000).

#1	DESCRIPTION			
4C	Combination, 4 wire, dual element, 1/4" diameter, ungrounded/ non isolated thermocouple and RTD			
#2	THERMOCOUPLE TYPE			
J	Dual element J thermocouple	N	Dual element N thermocouple	
K	Dual element K thermocouple	X	Other, specify	
T	Dual element T thermocouple			
#3	RTD TYPE			
3	Single element 100Ω Platinum RTD (.00385)	X	Other, specify	
#4	TEMPERATURE LIMITS			
1	Hollow tube < 550°F (T/C's and RTD's are not electrically connected)			
2	Sheath < 1200°F (Type K & N thermocouples only)			
3	Hollow tube (T/C's and RTD's are electrically connected)			
#5	IMMERSION LENGTH (L)			
--"	Immersion in inches			
#6	STAND. INDUSTRIAL FITTING [6-13]		COMPRESSION FITTINGS	
S	Spring loaded 1/2"x 1/2" NPT SS fitting		H	Stainless steel w/ SS ferrule
W	Welded 1/2" x 1/2" NPT SS fitting		M	1/8" NPT
B	Bayonet style 1/2" process connection		P	1/4" NPT
X	Other, specify		X	1/2" NPT
				Other, specify
#7	LEAD WIRE INSULATION AND LENGTH IN INCHES [3-2]			
Z	No lead wire		3"	Teflon
1"	Fiberglass		5"	Kapton (Standard)
			X	Other, specify
#8	TYPE OF TRANSITION [1-16, 3-14]			
T	3/8" OD			
X	Other, specify			
Z	No transition			
#9	COLD END TERMINATION [SEE SECTION 6]			
A	Bare ends			
I	Explosion proof Nema 7 head (6I / 6PT)			
K	Spade lugs (6SL)			
L	Aluminum head w/ hinged cover (6L / 6B4)			
M	Aluminum head w/ screw cover & chain (6M / 6B4)			
N	Cast iron head w/ screw cover (6N / 6B4)			
O	Open ceramic terminal block (6O)			
Q	Black nylon Nema 4 head (6Q / 6B4)			
R	High dome head (6R)			
V*	Hermetic connector (6DC) - Male			
W*	Microphone style connector (6DA) - Male			
X	Other, use appropriate part numbers from sect.#6			
#10	TAGGING AND CALIBRATION OPT			
---	Use only if applicable. See page 1-2 #14 for ordering selections.			

WIRING DIAGRAMS

SYMBOL #4=1	SYMBOL #4=2 or 3

(SEE TIP DETAIL)

TIP DETAIL (TYPE K TC SHOWN)

4C	K	3	1	12"	W	Z	Z	N
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* Use double symbol for matching female connector. i.e. W/WW (male with matching female).