



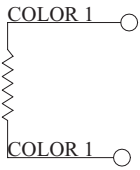
## INSTRUMENTS

### ELEMENT CONNECTION (RTD)

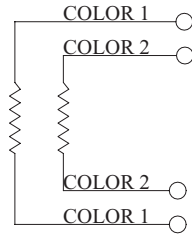
RTD Sensor assemblies are available with 2, 3, and 4 wire leads. Two wire-connected elements do not provide lead resistance compensation for the measuring device. Three and four wire-connected elements provide a means for compensating for lead resistance between the sensor and the measuring device. (REOTEMP model DMT with RDT uses 3-wire connection as standard.)

**Two-Wire:** Provides one connection to each end of the element. This construction is suitable where the resistance of the lead wire may be considered as an additive constant in the circuit, and particularly where the changes in lead resistance due to ambient temperature changes may be ignored.

2 WIRE SINGLE



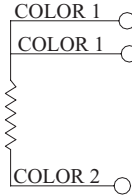
2 WIRE SINGLE DUPLEX



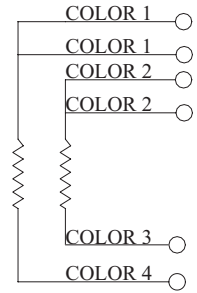
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**Three-Wire:** Provides one connection to one end of the element and two to the other end of the element. Connected to an instrument designed to accept three-wire input, sufficient compensation is usually achieved for leadwire resistance and temperature change in leadwire resistance. This is the most commonly used configuration.

3 WIRE SINGLE

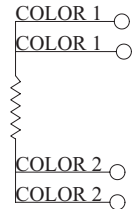


3 WIRE SINGLE DUPLEX

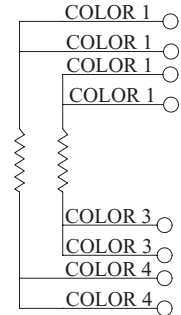


**Four-Wire:** Provides two connections to each end of the element to completely compensate for leadwire resistance and temperature change in leadwire. This configuration is used where highly accurate temperature measurement is vital.

4 WIRE SINGLE



4 WIRE SINGLE DUPLEX



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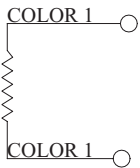
## INSTRUMENTS

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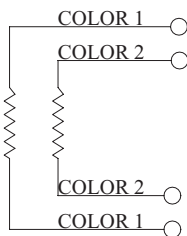
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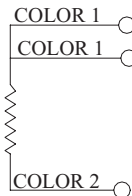
2 WIRE SINGLE DUPLEX



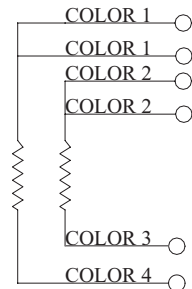
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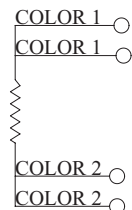


3 WIRE SINGLE DUPLEX

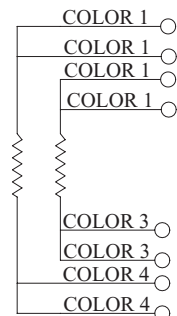


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4 WIRE SINGLE



4 WIRE SINGLE DUPLEX



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## THERMOCOUPLE

Thermocouple and extension wires are now generally ordered and specified by ANSI designations for calibration. Popular generic and trade name examples are Chromel/Alumel-ANSI Type K; Iron/Constantan-ANSI Type J; Copper/Constantan-ANSI Type T; Chromel/Constantan-ANSI Type E; Nicrosil/Nisil-ANSI Type N; Platinum/Platinum 10% Rhodium-ANSI Type S; Platinum/Platinum 13% Rhodium-ANSI Type R; and Platinum 6% Rhodium/Platinum 30% Rhodium-ANSI Type B.

### COLOR CODING

Standard ANSI color-coding is used on all insulated thermocouple wires and extension wires, when type of insulation permits. In color-coding, the right is reserved to include a tracer to distinguish the calibration.



Red = NEG (-)      COLOR= POS (+)

ANSI Type		Magnetic		ANSI Color Code		
T/C	Sgl.	Yes	No	Sgl.	Overall Extension Wire	Overall T/C Wire
T	TP TN		X X	Blue Red	Blue	Brown
J	JP JN	X	X	White Red	Black	Brown
E	EP EN		X X	Purple Red	Purple	Brown
K	KP KN	X	X	Yellow Red	Yellow	Brown
N	NP NN		X X	Orange Red	Orange	Brown
R,S	RP,SP RN,SN		X X	Black Red	Green	-----
B	BP BN		X X	Grey Red	Grey	-----

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