

ACCURACY OF JMS EXTENSION WIRE

Thermocouple extension wire has approximately the same thermoelectric characteristics as thermocouple wire, but its accuracy is guaranteed over a more limited range of temperatures. Thermocouple extension wire can offer advantages in cost when used for connections between thermocouples and instruments. For base metal types of thermocouples, extension wire is of substantially the same composition as the corresponding thermocouple type. For noble metal types, however, an entirely different alloy is formulated to match the noble metal characteristics over a specified temperature range. This is necessary due to the high cost of the noble metals which would otherwise be necessary for the interconnection. The “X” in the ordering codes denotes extension grade wire.

LIMITS OF ERROR FOR THERMOCOUPLE EXTENSION WIRE

THERMOCOUPLE TYPE		°F.				
EXTENSION WIRE ALLOY	ANSI TYPE SYMBOL	TEMPERATURE RANGE °F	STANDARD LIMITS	ORDER CODE	SPECIAL LIMITS	ORDER CODE
Copper vs. Constantan™	TX	-75° to +210°	±2°	TX	±1°	TTX
Iron vs. Constantan™	JX	+32 to +400°	±4°	JX	±2°	JJX
Chromel™ (+) vs. Constantan™	EX	+32 to +400°	±3°	EX	±2°	EEX
Chromel™ vs. Alumel™	KX	+32 to +400°	±4°	KX	±2°	KKX
Nicrosil™ vs. Nisil™	NX	+32 to +400°	±4°	NX	±2°	NNX
Copper vs. Copper Alloy	SX	+75 to +400°	±12°	SX		
Copper vs. Copper Alloy	RX			RX		
PCLW630 vs. Copper	BX	+32 to +400°	±4°	BX		
Copper vs. Copper	2CU	+32 to +150°	±2°	BX		
Alloy 203 vs. Alloy 225	W3X	+32 to +500°	±12°	W3X		
Alloy 405 vs. Alloy 426	W5X	+32 to +1600°	±12°	W5X		

THERMOCOUPLE TYPE		°C.				
EXTENSION WIRE ALLOY	ANSI TYPE SYMBOL	TEMPERATURE RANGE °C	STANDARD LIMITS	ORDER CODE	SPECIAL LIMITS	ORDER CODE
Copper vs. Constantan™	TX	-60° to +100°	±1°	TX	±.5°	TTX
Iron vs. Constantan™	JX	+0 to +200°	±2.2°	JX	±1.1°	JJX
Chrome™I (+) vs. Constantan™	EX	0 to +200°	±1.7°	EX	±1.1°	EEX
Chromel™ vs. Alumel™	KX	0 to +200°	±2.2°	KX	±1.1°	KKX
Nicrosil™ vs. Nisil™	NX	0 to +200°	±2.2°	NX	±1.1°	NNX
Copper vs. Copper Alloy	SX	+25 to +200°	±7°	SX		
	RX			RX		
PCLW630 vs. Copper	BX	0 to +200°	±2.2°	BX		
Copper vs. Copper	2CU	0 to 65°	±1°	BX		
Alloy 203 vs. Alloy 225	W3X	0 to 260°	±7°	W3X		
Alloy 405 vs. Alloy 426	W5X	0 to 870°	±7°	W5X		

Special Note: Using Cu/ Cu wire for type B thermocouples can introduce an error from 7°F to 85°F(3.7°C to 48°C) if the connection point is from 212 - 572°F (100 - 300°C). Up to 99% of these errors are avoided by using the appropriate extension wire.