



L.H. MARSHALL THERMOCOUPLES™



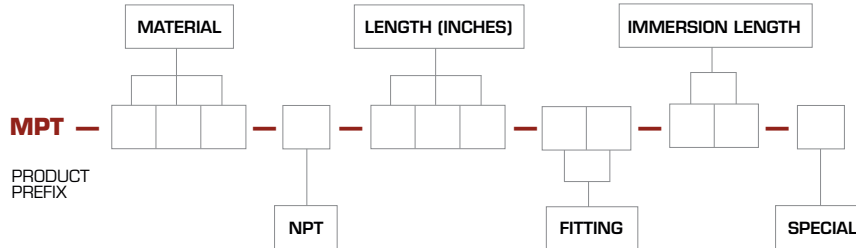
METAL PROTECTION TUBES



METAL PROTECTION TUBES (MPT)

To protect thermocouples from corrosion, physical damage and contamination, it is important to use some type of protection tube or well. Metal protection tubes are generally used with base metal thermocouples.

We stock the most widely used standard tubes and can provide other metal tubes on request. See [page 11](#) for Tube Specifications and Applications.



*Effective length is the length from the closed end of the tube to the bottom thread of the fitting.

SPECIFICATIONS / CODES

MATERIAL	OPERATING TEMP	REMARKS	NPT	LENGTH	FITTING	IMMERSION LENGTH	SPECIAL
600 - 600 Inconel 601 - 601 Inconel	2220°F	Generally used for high temperature. Good corrosion-resistance.	A - 1/4" NPT B - 1/2" NPT C - 3/4" NPT D - 1" NPT	Specify from 000" to 999"	00 - None AF - Adjustable Flange C3 - 3/8" Steel Hex Bushing C2 - 1/2" Steel Hex Bushing C4 - 3/4" Steel Hex Bushing C1 - 1" Steel Hex Bushing C5 - 1-1/4" Steel Hex Bushing C6 - 1-1/2" Steel Hex Bushing S3 - 3/8" St.St. Hex Bushing S2 - 1/2" St.St. Hex Bushing S4 - 3/4" St.St. Hex Bushing S1 - 1" St.St. Hex Bushing S5 - 1-1/4" St.St. Hex Bushing S6 - 1-1/2" St.St. Hex Bushing TP - Tapered Plug RF - Raised Face Flange S7 - 2" NPT SS Bushing C7 - 2" NPT Steel Bushing FF - Flat Face Flange	Specify from 00" to 99"	0 - None B - Open Both Ends H - SCH 80 X - Special (Consult Factory) T - No Threads
304 - 304 Stainless Steel 309 - 309 Stainless Steel	1800°F	Good corrosion-resistance. Embrittles in the 900°F to 1450°F range.	E - 3/4" NPT Tap F - 1/8" NPT H - 3/8" NPT J - 3-1/2" NPT				
310 - 310 Stainless Steel	2100°F	High mechanical and creep strength at elevated temperature. Very good corrosion resistance.					
316 - 316 Stainless Steel	1700°F	Higher corrosion resistance than 304SS. Resists pitting in sulfuric, phosphoric acids.					
330 - 330 Stainless Steel	2200°F	Good in oxidizing or reducing atmosphere.					
446 - 446 Stainless Steel	2000°F	Highly resistant to sulfur attack. General purpose alloy.					
200 - Pure Nickel	2000°F	Do not use in the presence of sulfur or reducing atmosphere.					
CIT - Cast Iron	1400°F	Withstands sulfuric and caustic solutions. Good mechanical strength.					
LT-1 - Metal Ceramic	2600°F	Good resistance to mechanical and thermal shock.					
CSP - Carbon Steel Pipe	1000°F	Non-corrosive gases and liquids. Scales quickly at higher temperatures.					

All pipe available in schedule 80. Consult factory for additional information.

EXAMPLE ORDERING NUMBERS

1/2" NPT x 36" Inconel 601 Protection Tube with 1-1/4" steel bushing for 29" immersion.

MPT - 601 - B - 036 - C5 - 29 - 0