

Model 190

Protection Tube

Daily Thermetrics' Model 190 Protection Tubes are constructed from ceramic or metal/ceramic composites and offer much higher temperature limits and better chemical resistance than metal alternatives. They are designed to be in direct contact with process and can be built with either threaded or flanged connection types. Designed for use with thermocouples, RTDs, and other instrumentation devices (see Daily Thermetrics' Sensor Catalog).

B	Type
<p>PL</p> <p>Plain</p>	
<p>TF</p> <p>Threaded Fitting</p>	
<p>FF</p> <p>Fitting & Flange</p>	

Model 190 How to Order

EXAMPLE:

A	B	C	D	E	F	G	H	I	J	K
190	TF	L18	U12	P1	AL	NA	NA	NA	A	12

• INDICATES COMMON SELECTION

A	Model
190	Protection Tube •

B	Type
PL	Plain •
TF	Threaded Fitting (Flange is threaded and shipped separately) •
FF	Fitting & Flange •

C	L Dimension (Overall Length)
L12	12" •
L18	18" •
L24	24" •
L36	36" •
L48	48" •
L72	72" •
LXX	Custom •

Metal Ceramic Tubes have 48" max length

D	U Dimension (Insertion Length)
U12	12" •
U18	18" •
U24	24" •
U30	30" •
U36	36" •
U48	48" •
U60	60" •
U72	72" •
UXX	Custom •

Metal Ceramic Tubes have 48" max length

E	P Size (Process Connection)
P.75	3/4" NPT •
P1.00	1" NPT •
P1.50	1-1/2" NPT •
NA	Non-Threaded Connection (Plain or Fitting & Flange) •

Metal Ceramic Tubes only come in 1" or greater

F	Ceramic Material Code
AL	Alumina •
ML	Mullite •
HX	Hexoloy® •
MC	Metal Ceramic •

G	Flange Size and Type ⁴
1RF	1" RF •
1.5RF	1-1/2" RF •
2RF	2" RF •
3RF	3" RF •
1.5RTJ	1-1/2" RTJ •
2RTJ	2" RTJ •
XRF	Custom RF •
XRTJ	Custom RTJ •
NA	No Flange •

H	Flange Rating ⁴
150	150# •
300	300# •
600	600# •
900	900# ⁶ •
1500	1500# •
2500	2500# •
NA	No Flange or Fitting •

I	Flange or Fitting Material Code
316	316/316L SS •
347	347/347H SS •
M400	Monel® 400 •
I600	Inconel® 600 •
I800	Incoloy® 800 •
NA	No Flange •

See Page 19 for Additional Materials

J	OD/ID
A	OD = 3/8" ; ID = 1/4" Alumina, Mullite or Hexoloy® •
B	OD = 11/16" ; ID = 7/16" Alumina, Mullite or Hexoloy® •
C	OD = 1" ; ID = 3/4" Alumina, Mullite or Hexoloy® •
D	OD = 7/8" ; ID = 5/8" Metal Ceramic •

Contact Sales for Other Options

K	Optional Test Reports ¹ (String Numbers Together for Multiple)
1	Positive Material Identification Report ⁵ •
2	Positive Material Identification Certificate ⁵ •
4	Material Test Reports •
5	Ultrasonic Test Report (Full Penetration Welds Only) •
NA	No Additional Reports •

1. See Page 25 for more information on testing and reports.
2. Unique and simplified item number will be generated and issued to every customized thermowell for ease of reordering.
3. The majority of options are customizable. Please contact sales if your requirements are not met by this catalog.
4. Flange face finish is 125-250 RMS for raised face and 63 AARH for RTJ sealing surface.
5. Positive Material Identification for flange and fitting only.
6. Per ASME B16.5, 900# flanges have the same dimensions as 1500# flanges for flanges 2-1/2" and smaller. For those sizes, 1500# will be provided.