TRACEPAK®

TECHNICAL SPECIFICATIONS

O'BRIEN

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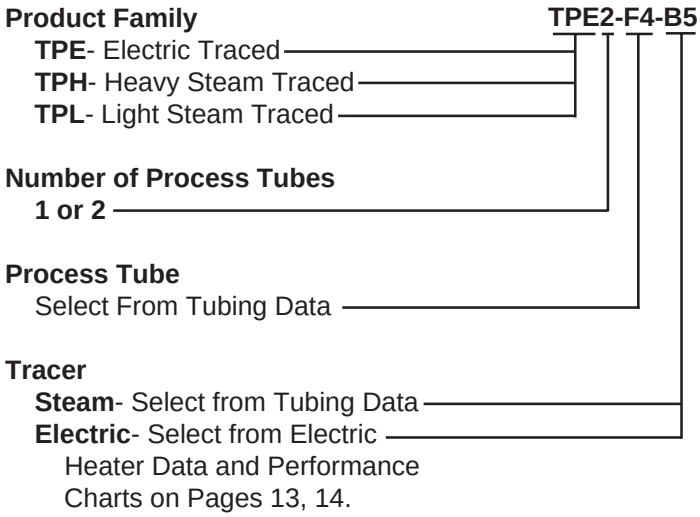
TRACEPAK® TUBING BUNDLES
Technical Specifications

This brochure contains specifications and technical information about O'Brien Tracepak and S-Line tubing bundles.

Custom bundles may contain materials, tubes and design specifications that differ from these. Special bundles are designated with a four digit code and special marking on the jacket and supported with specific product data sheets.

Tracepak Model Number



Example:
O'Brien Model **TPE2-F4-B5**
Electric traced bundle with two 1/2" x 0.035 wall 316SS Seamless process tubes and a 5 watt/ft high temperature tracer and TPU jacket.

Material Specifications

Jacket
Thermoplastic Polyether Urethane Elastomer
Hydrolytically Stabilized
Halogen Free
Abrasion Resistant
UV Resistant
Low Temperature Flexibility

Insulation
Fibrous Glass
Water Soluble Chlorides less than 100 ppm.
Non-hygroscopic

Temperature Limits

Minimum installation temperature -40°F (-40°C)
Maximum process temperature +400°F (204°C)
Maximum tracer temperature +400°F (204°C)
Maximum jacket surface temperature +140°F (60°C) at ambient temperature of +80°F (27°C) with 10 mph (16 Km/h) wind.

TUBING DATA

TUBING

Fractional

Designation	Material	Construction	OD	Wall	Max. Pressure*	Max. Continuous Length Possible**	Specifications
F1	316/316L SS	Seamless	1/8"	0.035"	10,900 psig	900 ft	A269, A213-EAW
F2	316/316L SS	Seamless	1/4"	0.035"	5,100	1,000	A269, A213-EAW
F3	316/316L SS	Seamless	3/8"	0.035"	3,300	1,200	A269, A213-EAW
F4	316/316L SS	Seamless	1/2"	0.035"	2,600	700	A269, A213-EAW
B3	316/316L SS	Seamless	3/8"	0.049"	4,800	500	A269, A213-EAW
B4	316/316L SS	Seamless	1/2"	0.049"	3,700	460	A269, A213-EAW
K4	316/316L SS	Seamless	1/2"	0.065"	5,100	250	A269, A213-EAW
A2	316/316L SS	Welded	1/4"	0.035"	4,080	1,000	A269
A3	316/316L SS	Welded	3/8"	0.035"	2,640	1,000	A269
A4	316/316L SS	Welded	1/2"	0.035"	2,080	1,000	A269
J2	Copper	Seamless	1/4"	0.030"	1,400	1,000	B68, B75
C3	Copper	Seamless	3/8"	0.032"	900	1,500	B68, B75
D4	Copper	Seamless	1/2"	0.035"	800	1,000	B68, B75
M4	Copper	Seamless	1/2"	0.049"	1,100	500	B68, B75
G2	PFA Teflon	Extruded	1/4"	0.030"	155	1,000	
G3	PFA Teflon	Extruded	3/8"	0.030"	95	1,000	
N2	Monel	Seamless	1/4"	0.035"	4,800	1,000	B163, B165
N3	Monel	Seamless	3/8"	0.035"	3,100	600	B163, B165
P4	Monel	Seamless	1/2"	0.049"	3,210	600	B163, B165
H4	PFA Teflon	Extruded	1/2"	0.062"	155	1,000	

Metric

Designation	Material	Construction	OD	Wall	Max. Pressure*	Max. Continuous Length Possible**	Specifications
MF6	316/316L SS	Seamless	6mm	1mm	460 Bar	300M	A269, A213-EAW, DIN 17458 1.4401/1.4404
MF8	316/316L SS	Seamless	8mm	1mm	330	210	A269, A213-EAW, DIN 17458 1.4401/1.4404
MF10	316/316L SS	Seamless	10mm	1mm	260	165	A269, A213-EAW, DIN 17458 1.4401/1.4404
MF12	316/316L SS	Seamless	12mm	1mm	210	150	A269, A213-EAW, DIN 17458 1.4401/1.4404
MB10	316/316L SS	Seamless	10mm	1.5mm	410	150	A269, A213-EAW, DIN 17458 1.4401/1.4404
MB12	316/316L SS	Seamless	12mm	1.5mm	330	120	A269, A213-EAW, DIN 17458 1.4401/1.4404
MD6	Copper	Seamless	6mm	1mm	95	600	B68, B75
MD8	Copper	Seamless	8mm	1mm	60	455	B68, B75
MD12	Copper	Seamless	12mm	1mm	55	300	B68, B75
MG6	PFA Teflon	Extruded	6mm	1mm	10	300	
MG8	PFA Teflon	Extruded	8mm	1mm	8	300	
MA12	316/316L SS	Welded	12mm	1mm	170	300	ASTM, A269
MG10	PFA Teflon	Extruded	10mm	1mm	7	300	
MG12	PFA Teflon	Extruded	12mm	1mm	4	300	

*Maximum Pressure @ 72F (23C)
Values calculated using S values as specified in ANSI B31.3 code.
** Consult Factory for availability of longer continuous lengths.

Pressure Correction Factors

	PFA Teflon	Copper	316SS	Monel
200F (93C)	0.84	0.80	1.00	0.88
400F (204C)	0.30	0.50	0.95	0.79
600F (316C)	-	-	0.82	0.79
800F (427C)	-	-	0.79	0.76

ELECTRIC HEATER DATA

ELECTRIC TRACERS

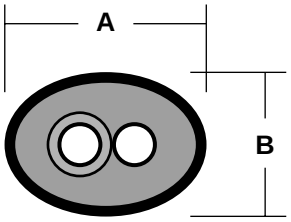
Code	V	W/ft	W/M	Max. Continuous Exposure* & Maintain	Max. Intermittant Exposure**	T-Rating	Power	End	Approvals
J5	120	5	16	150F (65C)	185F (85C)	T6	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T6, PTB Ex s II T6
J8	120	8	26	150F (65C)	185F (85C)	T6	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T6, PTB Ex s II T6
J10	120	10	33	150F (65C)	185F (85C)	T6	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T6, PTB Ex s II T6
P5	240	5	16	150F (65C)	185F (85C)	T6	T210-PC T9310-PC TPC1	T210-ET T310-ET	FMAppvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T6, PTB Ex s II T6
P8	240	8	26	150F (65C)	185F (85C)	T6	T210-PC T9310-PC TPC1	T210-ET T310-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T6, PTB Ex s II T6
P10	240	10	33	150F (65C)	185F (85C)	T6	T210-PC T9310-PC TPC1	T210-ET T310-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T6, PTB Ex s II T6
B5	120	5	-	250F (120C)	420F (215C)	T3	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G
B10	120	10	-	250F (120C)	420F (215C)	T3	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G
B15	120	15	-	250F (120C)	420F (215C)	T2D	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G
B20	120	20	-	250F (120C)	420F (215C)	T2C	T210-PC TPC1	T210-ET	FMAppvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G
N5	240	5	-	250F (120C)	420F (215C)	T3	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G
N10	240	10	-	250F (120C)	420F (215C)	T3	T210-PC TPC1	T210-ET	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G
N15	240	15	49	250F (120C)	420F (215C)	T3	T210-PC T9310-PC TPC1	T210-ET T310-ET13	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T3, PTB Ex s II T3
N20	240	20	66	250F (120C)	420F (215C)	T2	T210-PC T9310-PC TPC1	T210-ET T310-ET13	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T2, PTB Ex s II T2
MN4	240	4	12	250F (120C)	420F (215C)		T9310-PC	T310-ET13	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T3, PTB Ex s II T3
MN8	240	8	26	250F (120C)	420F (215C)	T3	T9310-PC	T310-ET13	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T3, PTB Ex s II T3
MN12	240	12	39	250F (120C)	420F (215C)	T3	T9310-PC	T310-ET13	FM Appvd. Cl I, II, III Div. 2 Gr. A,B,C,D,F,G CSA Cert. Cl I, II Div. 1 & 2 Gr. A,B,C,D,E,F,G CENELEC Ex e II T3, PTB Ex s II T3

* Continuous Power On/Off
** 1,000 Hours Cumulative Power On or Off

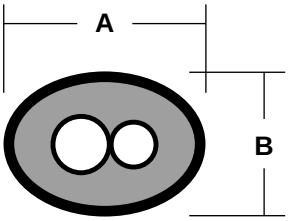
TRACEPAK® TPL and TPH

Dimensions

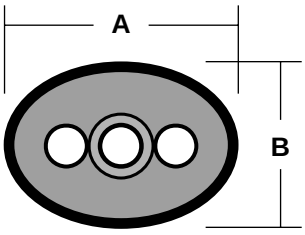
	MIN. BEND RADIUS - IN (CM)	SUPPORT CENTERS - FT. (M) HORIZ.	VERT.	NOMINAL WT. LB/FT (KG/M)	NOMINAL DIMENSIONS A - IN (CM) A	B
TPL1 - One ⅜" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.5 (0.74)	1.6 (4.1)	1.1 (2.8)
TPL1 - One ½" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.6 (0.89)	1.9 (4.8)	1.2 (3.0)
TPL1 - One ½" Process with ½" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.7 (1.04)	1.9 (4.8)	1.2 (3.0)
TPL2 - Two ⅜" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.6 (0.89)	2.3 (5.8)	1.2 (3.0)
TPL2 - Two ½" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.8 (1.19)	2.6 (6.6)	1.3 (3.3)
TPL2 - Two ½" Process with ½" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.9 (1.34)	2.6 (6.6)	1.3 (3.3)
TPH1 - One ⅜" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.5 (0.74)	1.5 (3.8)	1.2 (3.0)
TPH1 - One ½" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.6 (0.89)	1.6 (4.1)	1.2 (3.0)
TPH1 - One ½" Process with ½" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.7 (1.04)	1.7 (4.3)	1.2 (3.0)
TPH2 - Two ⅜" Process with ⅜" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.6 (0.89)	2.0 (5.1)	1.2 (3.0)
TPH2 - Two ½" Process with ½" Tracer	8" (20)	6' (1.8)	15' (4.6)	0.8 (1.19)	2.2 (5.6)	1.2 (3.0)



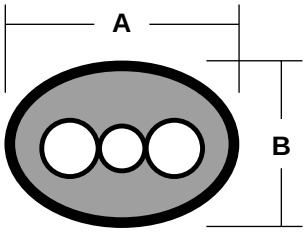
TPL1



TPH1



TPL2



TPH2

Recommended Accessories

End Seal Kit	Model TPKSK-10
End Seal Boot	Model TPKHS-C2, D2, A3 or B3
Jacket Patch Kit	Model TPKJP-1 or -2

Typical Performance

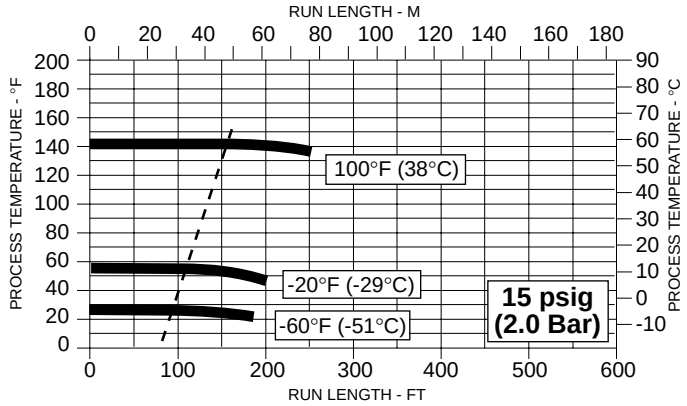
The information presented represents typical performance data for the conditions given. Actual results may vary with the conditions of installation. For critical or special applications, consult the factory for specific performance data.

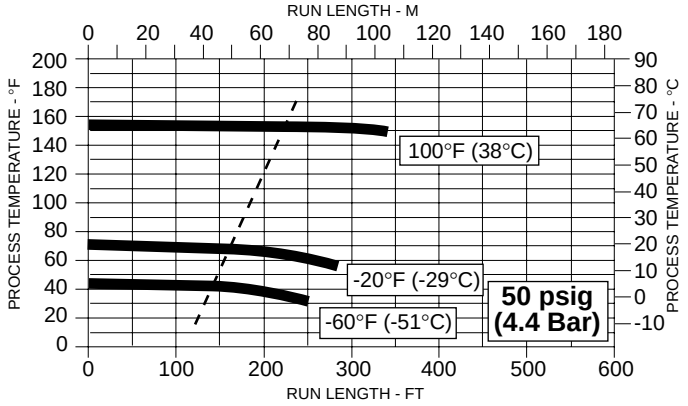
For freeze protection use 50°F (10°C) as the minimum allowable process tube temperature. This will provide a sufficient factor of safety.

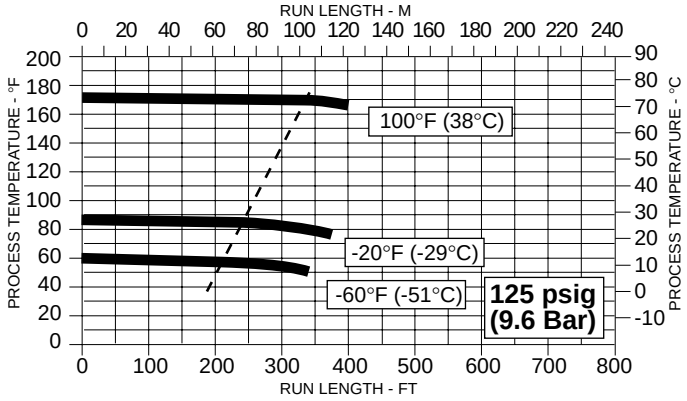
Winter ambients assume a 25 mph (40 Km/h) wind and summer ambients assume a 10 mph (16 Km/h) wind.

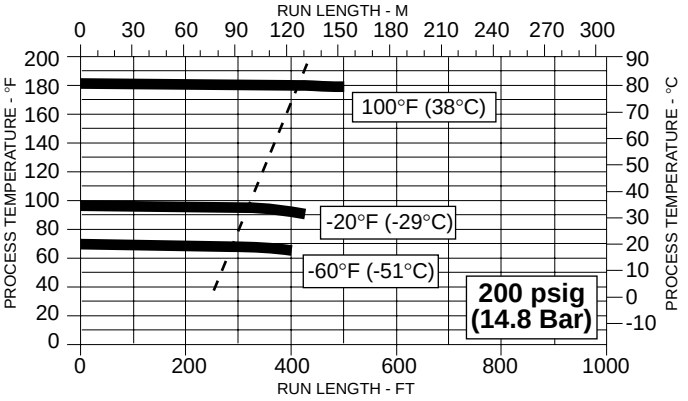
Ideal design of a steam traced installation dictates a slope of ¼" drop per foot (20 mm/M) of run and a maximum steam pressure drop of 10%. The dashed line (– – – –) on the graphs indicates the length at which a 10% drop in steam pressure can be expected.

TPL1-½" Process with ⅜" Tracer (also 12mm Process with 8mm Tracer)

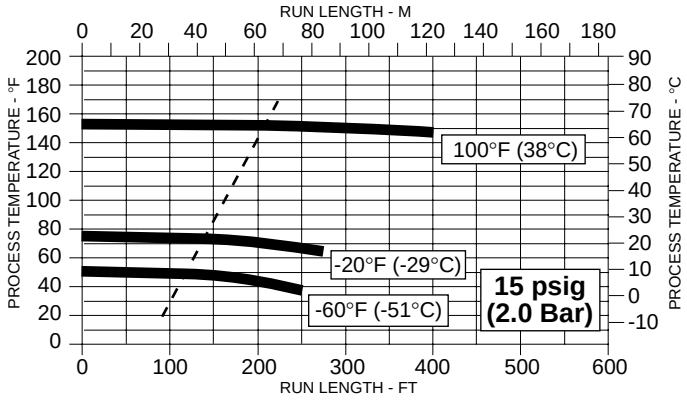


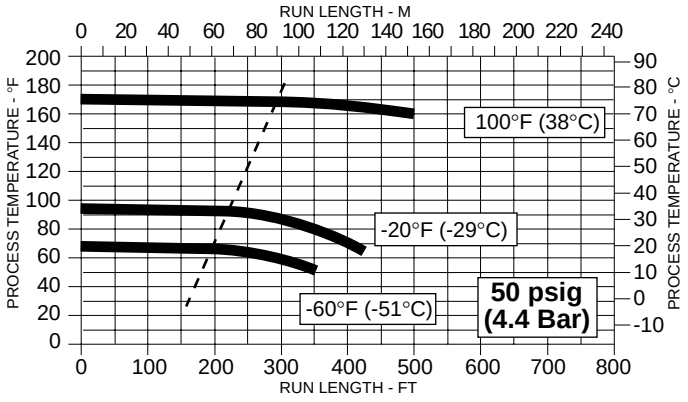


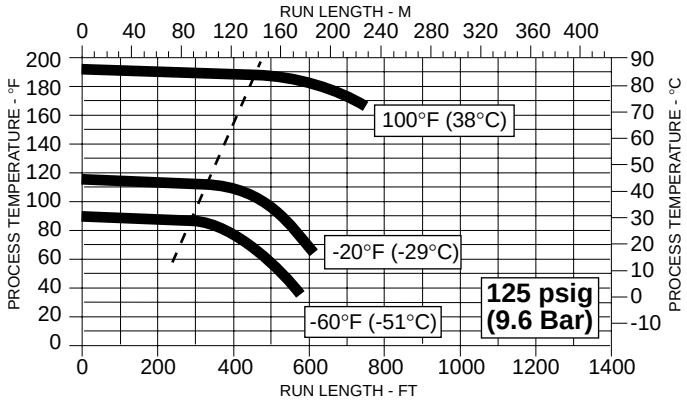


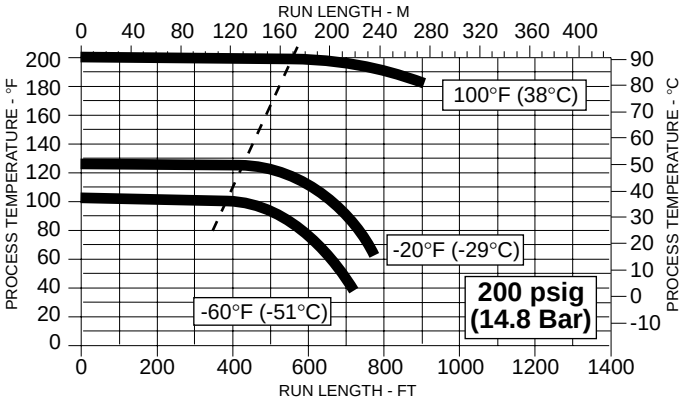


TPL1-½" Process with ½" Tracer (also 12mm Process with 12mm Tracer)



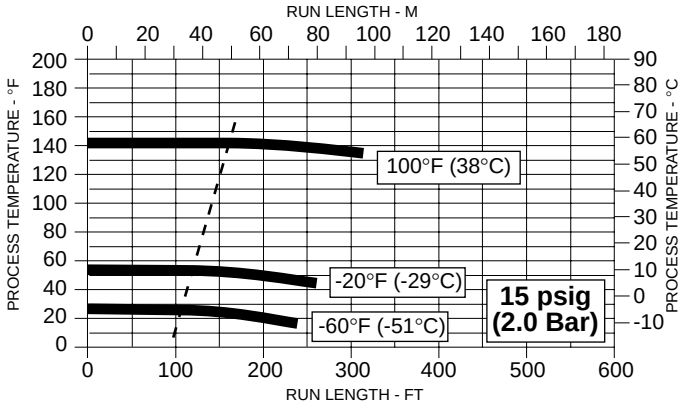


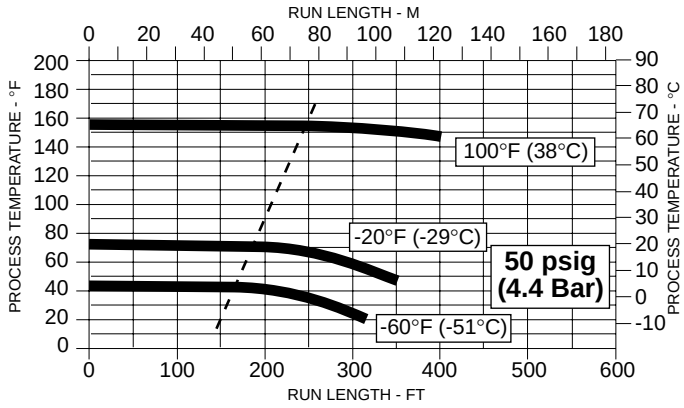


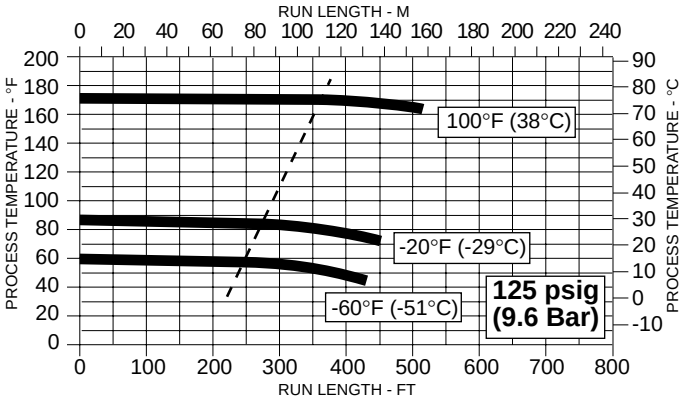


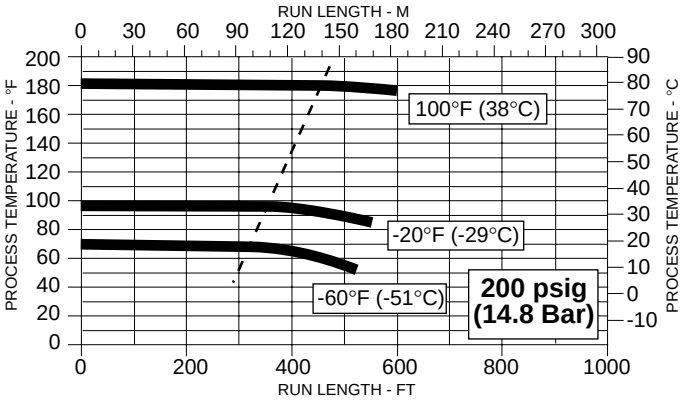
Typical Performance-TPL2

TPL2 - ½" Process with ⅜" Tracer (also 12mm Process with 8mm Tracer)

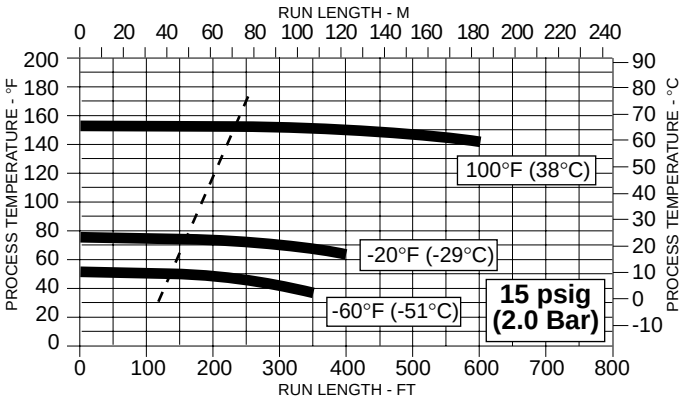


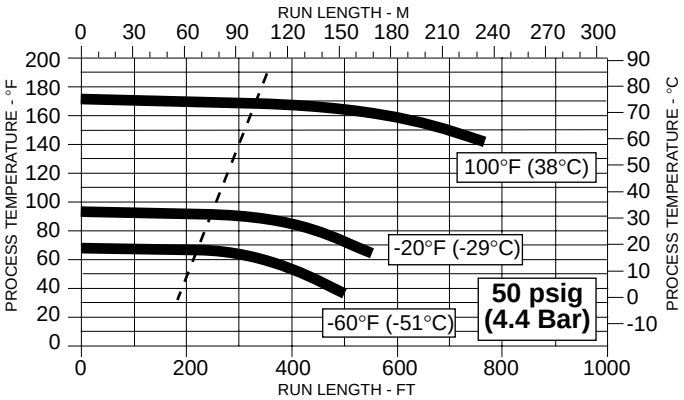


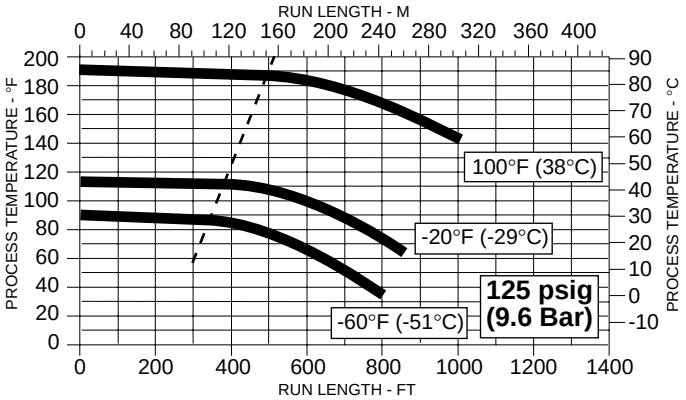


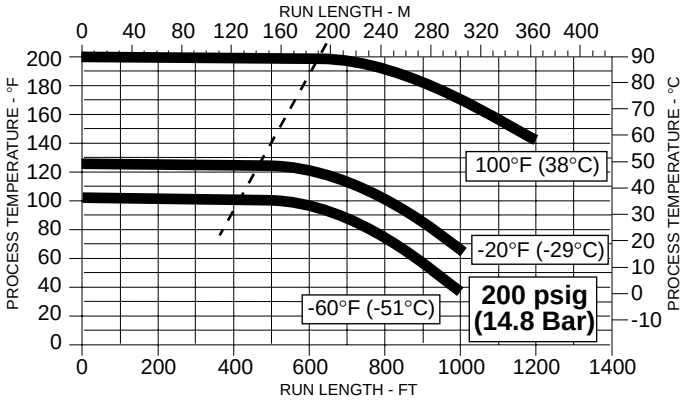


TPL2 - ½" Process with ½" Tracer (also 12mm Process with 12mm Tracer)

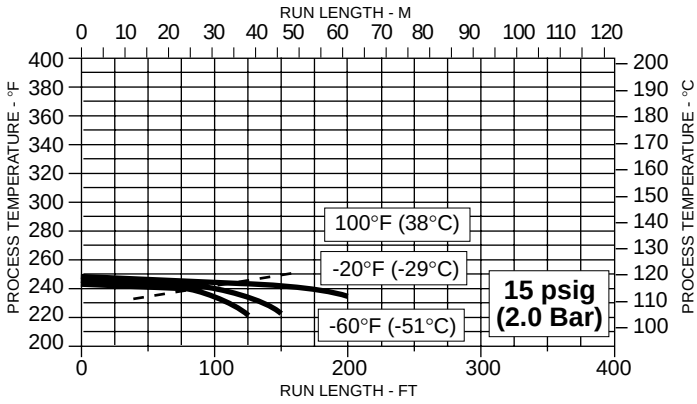


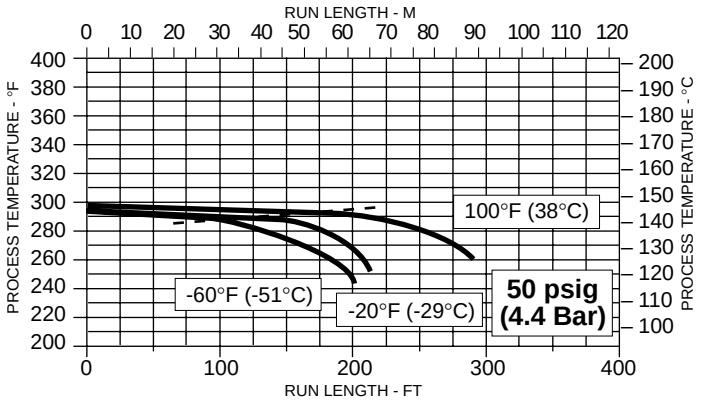


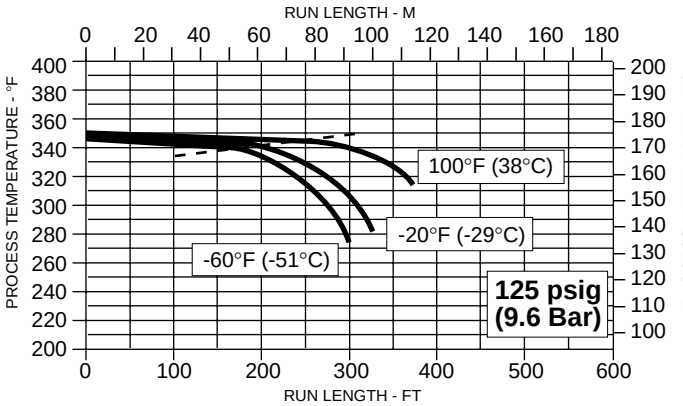


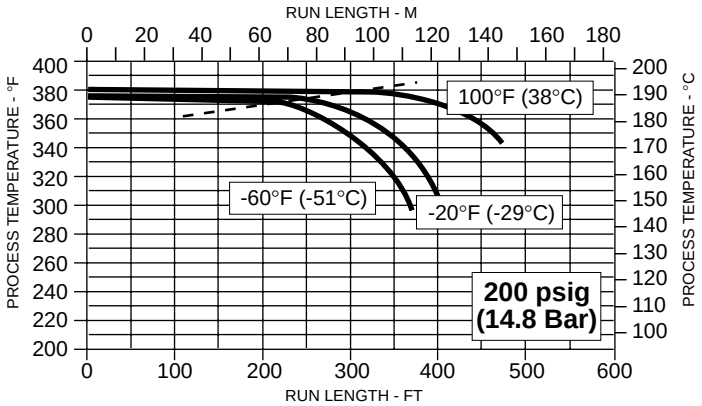


TPH1-⅜" Process with ⅜" Tracer (also 8mm Process with 8mm Tracer)

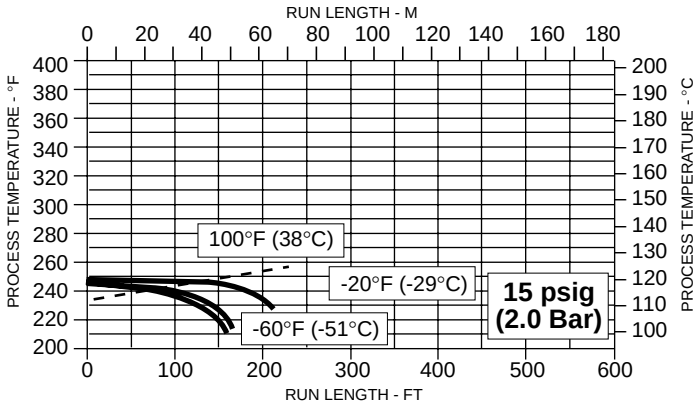


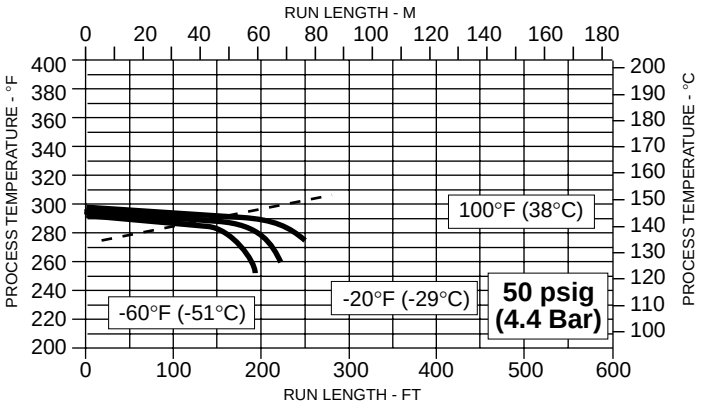


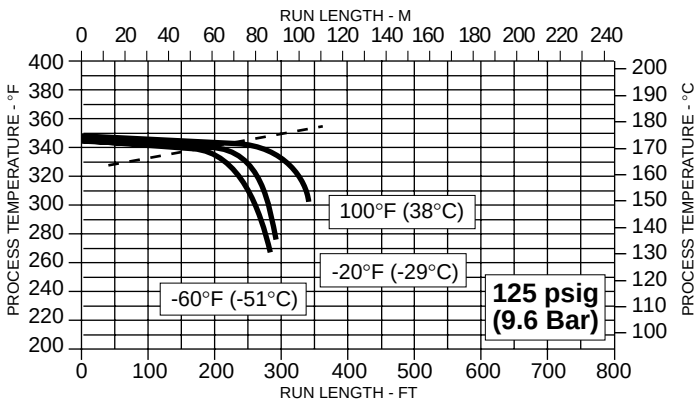


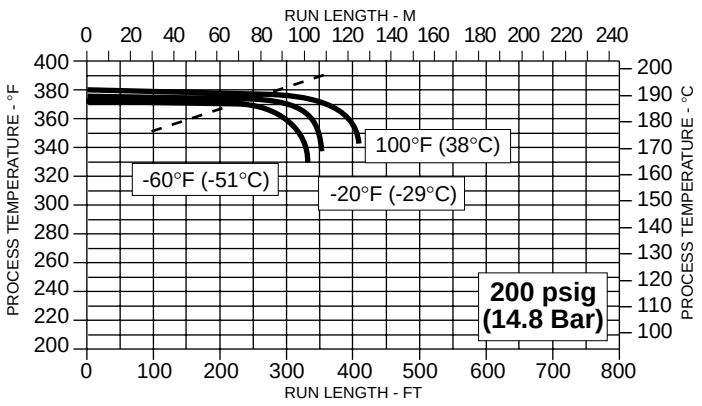


TPH1-½" Process with ⅜" Tracer (also 12mm Process with 8mm Tracer)



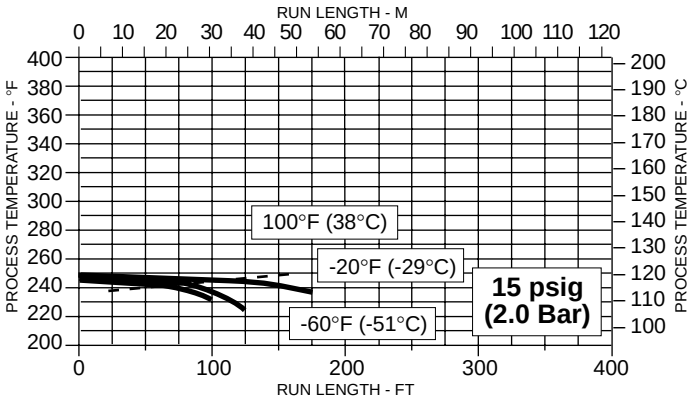


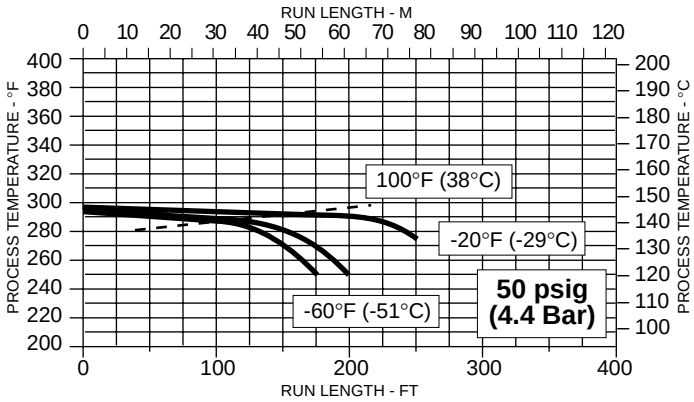


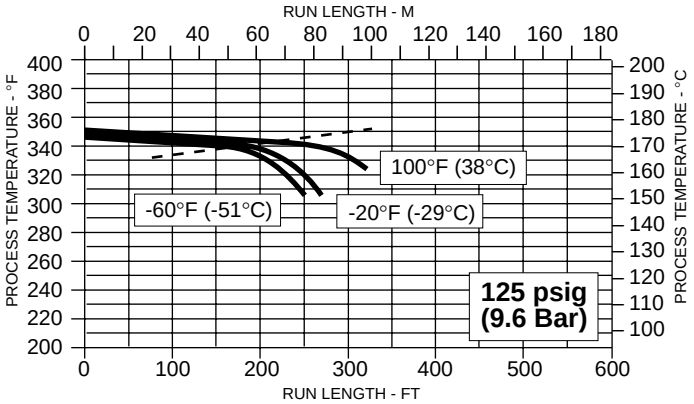


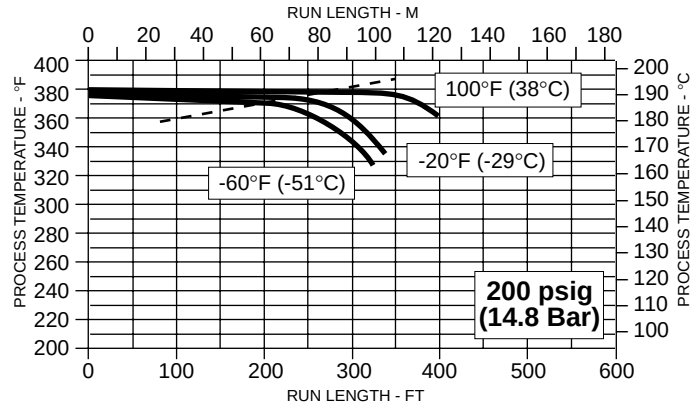
Typical Performance-TPH2

TPH2 - ⅜" Process with ⅜" Tracer (also 8mm Process with 8mm Tracer)

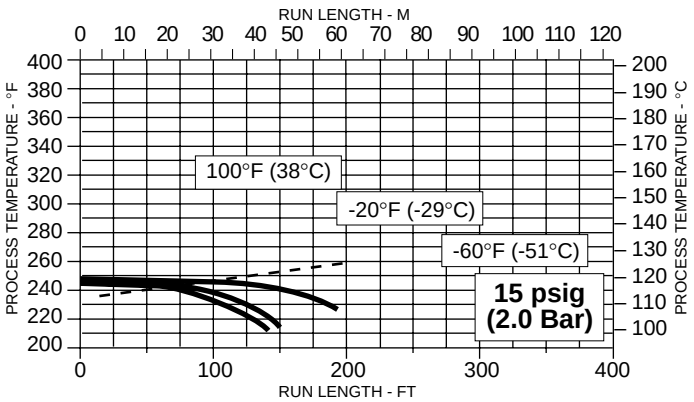


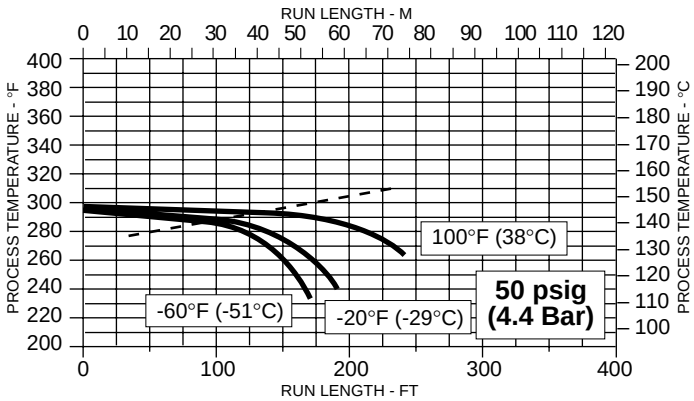


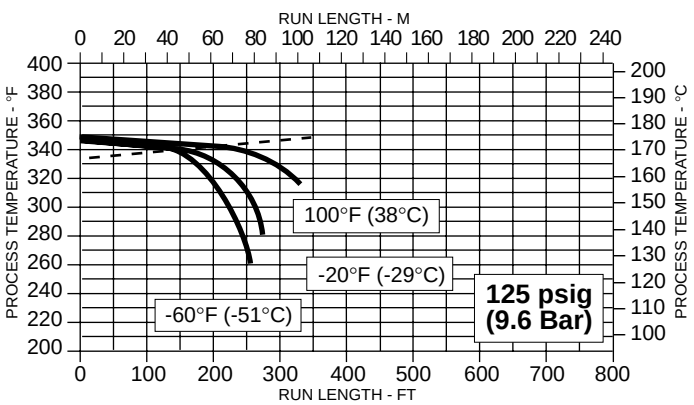


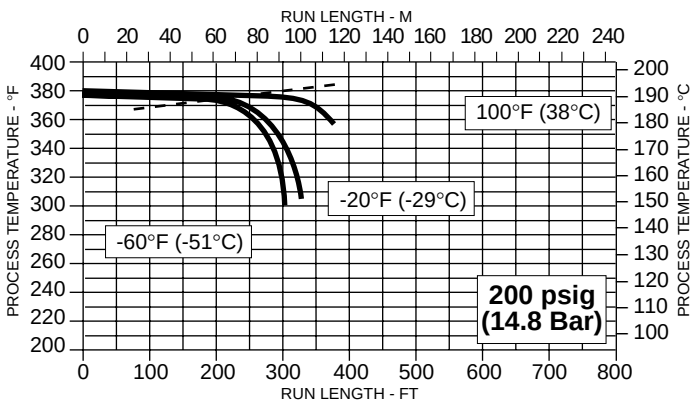


TPH2 - ½" Process with ⅜" Tracer (also 12mm Process with 8mm Tracer)









TRACEPAK® TPE
Self Regulating Technical Specifications

Recommended Accessories

End Seal Kit	Model TPKSK-10
End Seal Boot	Model TPKHS-D2 or B3
Jacket Patch Kit	Model TPKJP-1 or -2
Power Connection Kit	Model T210-PC
	Model T9310-PC
	Model TPC1
Termination Kit	Model T210-ET
	Model T310-ET10
	Model T310-ET13

Optional Accessories

General Purpose J or K Thermocouple Controller - HC5 Series
Ambient Sensing Temperature Controller - Model TPKTS-A-7
Line Sensing Temperature Controller - Model TPKTS-B-7

Maximum Circuit Length Vs. Circuit Breaker Rating (To determine maximum circuit length in Meters - M = FT x 0.3048)

		120 VAC					240 VAC				
START-UP TEMP. - °F (°C)		15A	20A	30A	40A	50A	15A	20A	30A	40A	50A
B5 (120 VAC)	**50 (10)**	180'	240'	360'	380'	380'	360'	480'	720'	765'	765'
N5 (240 VAC)	**0 (-18)**	160'	215'	325'	380'	380'	320'	425'	640'	765'	765'
Heater	**-20 (-28)**	155'	210'	315'	380'	380'	305'	410'	615'	765'	765'
	-40 (-40)	150'	200'	305'	380'	380'	295'	390'	590'	765'	765'
B10 (120 VAC)	**50 (10)**	110'	145'	220'	270'	270'	220'	295'	440'	540'	540'
N10 (240 VAC)	**0 (-18)**	95'	130'	195'	265'	270'	195'	260'	390'	520'	540'
Heater	**-20 (-28)**	95'	125'	190'	255'	270'	185'	245'	370'	495'	540'
	-40 (-40)	90'	120'	180'	245'	270'	175'	235'	355'	475'	540'
B15 (120 VAC)	**50 (10)**	76'	101'	151'	201'	220'	151'	202'	302'	403'	425'
N15 (240 VAC)	**0 (-18)**	66'	88'	133'	176'	220'	132'	177'	265'	353'	425'
Heater	**-20 (-28)**	63'	84'	126'	168'	210'	126'	168'	252'	336'	420'
	-40 (40)	60'	80'	120'	160'	200'	120'	161'	241'	321'	401'
B20 (120 VAC)	**50 (10)**	60'	80'	119'	159'	190'	115'	153'	229'	305'	360'
N20 (240 VAC)	**0 (-18)**	55'	73'	109'	145'	182'	104'	139'	208'	277'	347'
Heater	**-20 (-28)**	53'	71'	106'	141'	176'	101'	134'	201'	268'	335'
	-40 (40)	51'	69'	103'	137'	171'	97'	130'	195'	259'	324'
J5 (120 VAC)	**50 (10)**	230'	270'	270'	270'	270'	460'	540'	540'	540'	540'
P5 (240 VAC)	**0 (-18)**	150'	200'	270'	270'	270'	300'	400'	540'	540'	540'
Heater	**-20 (-28)**	130'	175'	260'	270'	270'	260'	345'	520'	540'	540'
J8 (120 VAC)	**50 (10)**	150'	200'	210'	210'	210'	295'	390'	420'	420'	420'
P8 (240 VAC)	**0 (-18)**	105'	140'	210'	210'	210'	195'	260'	390'	420'	420'
Heater	**-20 (-28)**	95'	125'	185'	210'	210'	170'	230'	340'	420'	420'
J10 (120 VAC)	**50 (10)**	115'	150'	180'	180'	180'	230'	305'	360'	360'	360'
P10 (240 VAC)	**0 (-18)**	70'	95'	145'	180'	180'	150'	200'	300'	360'	360'
Heater	**-20 (-28)**	60'	85'	125'	165'	180'	135'	180'	270'	360'	360'

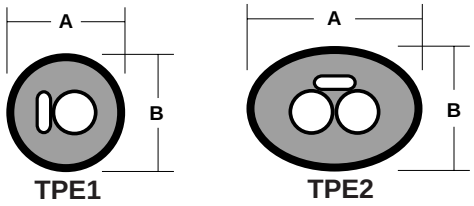
CENELEC APPROVED HEATERS		240 VAC			
	START-UP TEMP. - °C	16A	25A	32A	40A
MN4 Heater	**10**	165m	250m	250m	250m
	-20	140m	215m	250m	250m
MN8 Heater	**10**	105m	165m	180m	180m
	-20	85m	135m	175m	180m
MN12 Heater	**10**	75m	120m	145m	145m
	-20	65m	100m	130m	145m

Dimensions

	NOMINAL WT. LB/FT (KG/M)	NOMINAL DIMENSIONS - IN (CM) A	B
TPE1- ¼" Process Tube	0.3 (0.45)	1.1 (2.8)	1.0 (2.5)
TPE1- ⅜" Process Tube	0.4 (0.60)	1.3 (3.3)	1.0 (2.5)
TPE1- ½" Process Tube	0.5 (0.74)	1.4 (3.6)	1.1 (2.8)
TPE2- ¼" Process Tubes	0.4 (0.60)	1.3 (3.3)	1.1 (2.8)
TPE2- ⅜" Process Tubes	0.6 (0.89)	1.5 (3.8)	1.2 (3.0)
TPE2- ½" Process Tubes	0.8 (1.19)	1.7 (4.3)	1.4 (3.6)

Minimum bending radius 8 in. (20 cm).

Maximum support centers-ft. Horizontal 6' (2 m) Vertical 15' (4 m).



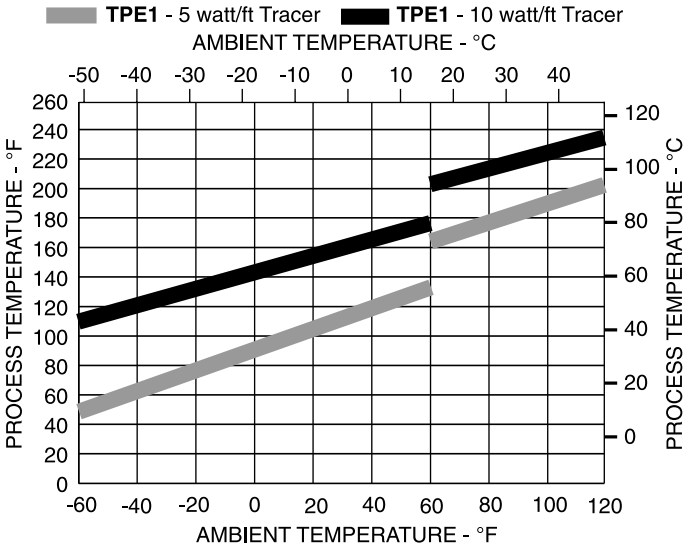
Typical Performance

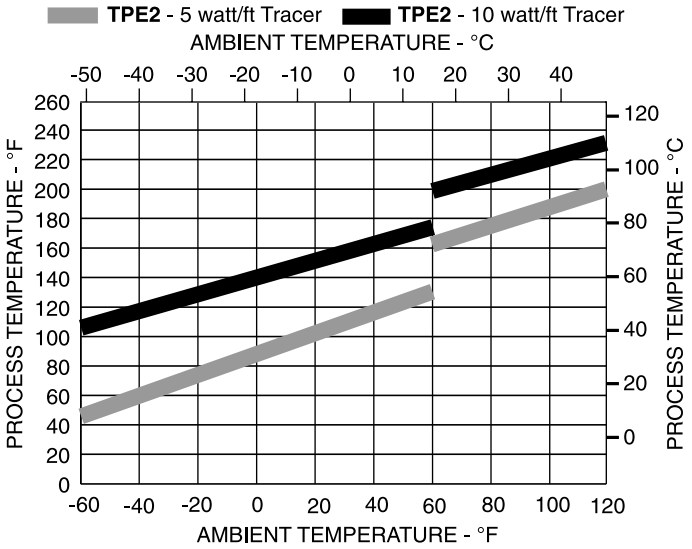
The information presented represents typical performance data for the conditions given and at the rated voltage. Actual results may vary with the conditions of installation. For critical applications, consult the factory for specific performance data.

Winter ambients, below 60°F (16°C), assume a 25 mph (40 Km/H) wind and summer ambients, above 60°F (16°C), assume a 10 mph (16 Km/H) wind. For freeze protection use 50°F (10°C) as the minimum allowable process tube temperature. This will provide sufficient factor of safety.

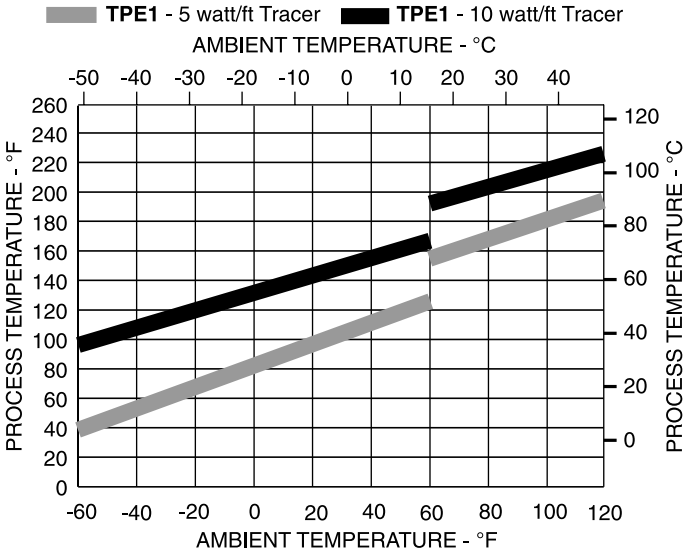
Typical Performance for High Temperature

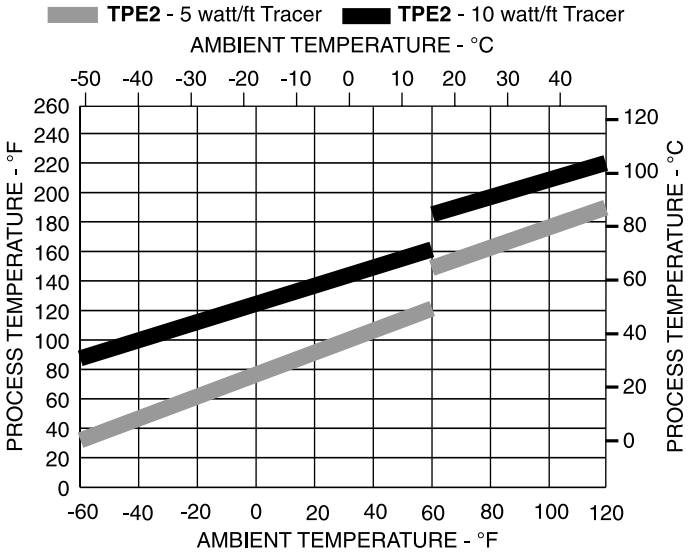
¼" Process



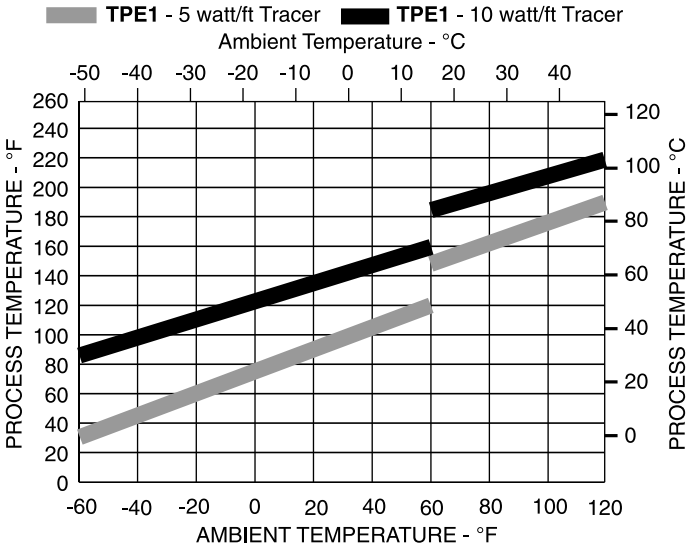


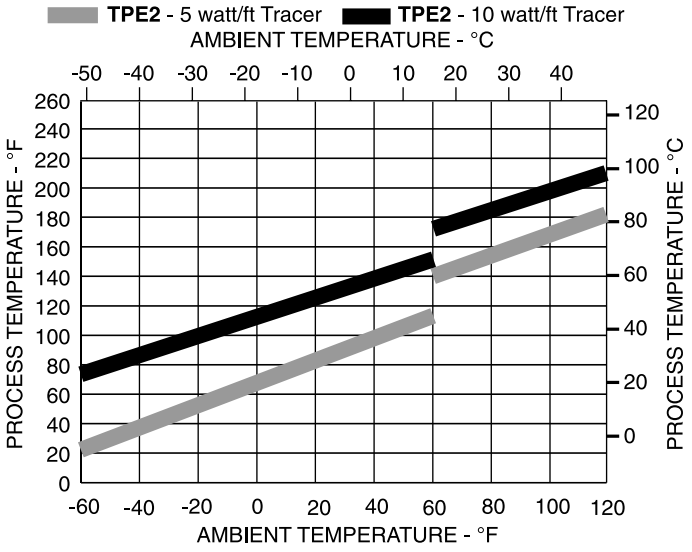
⅜" Process





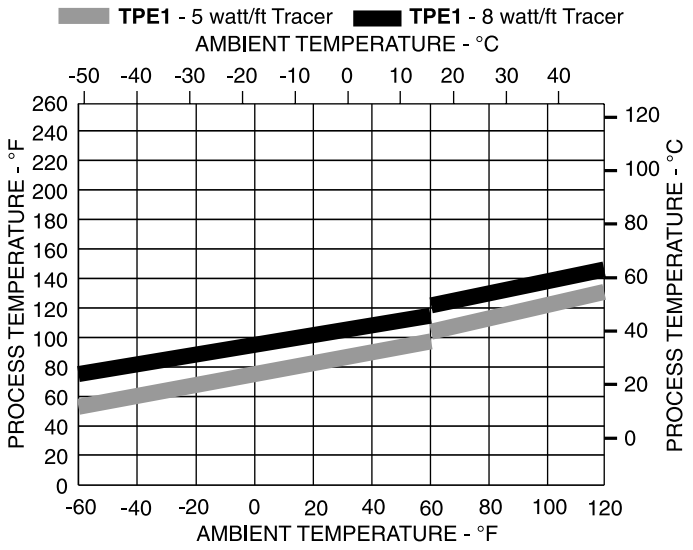
½" Process

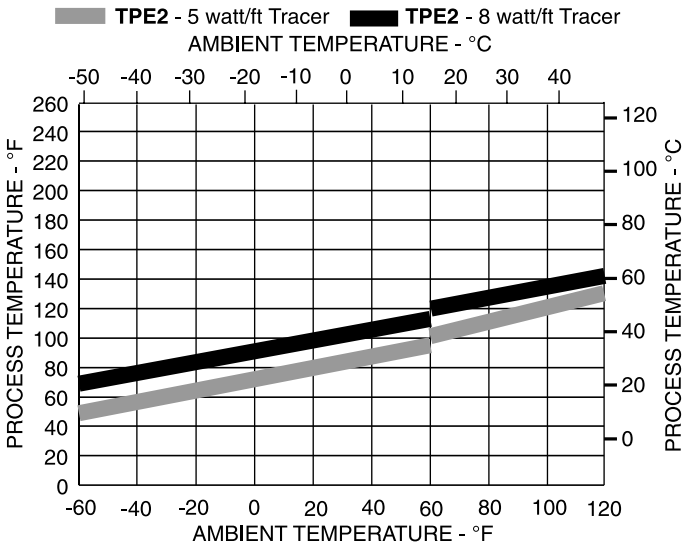




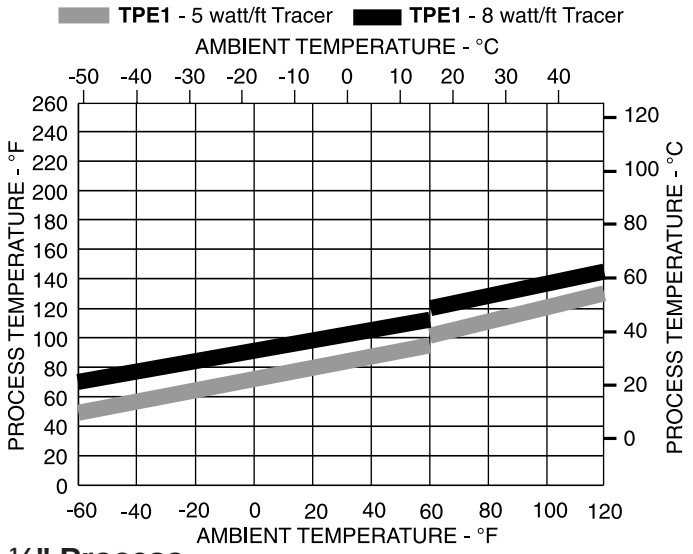
Typical Performance for Freeze Protection

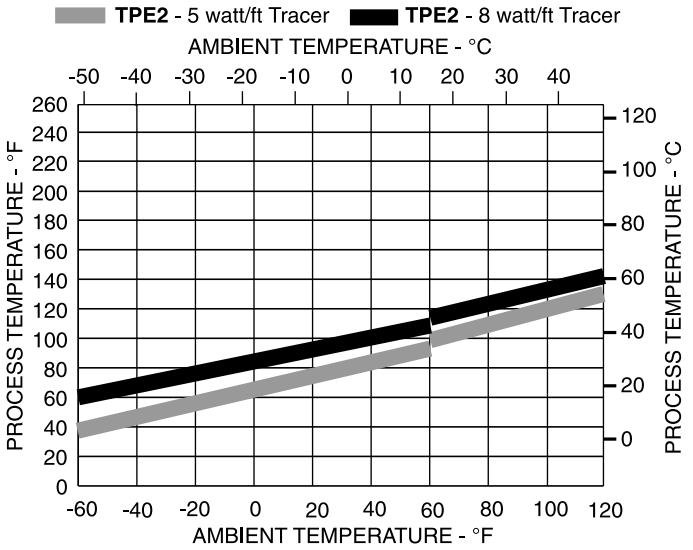
¼" Process



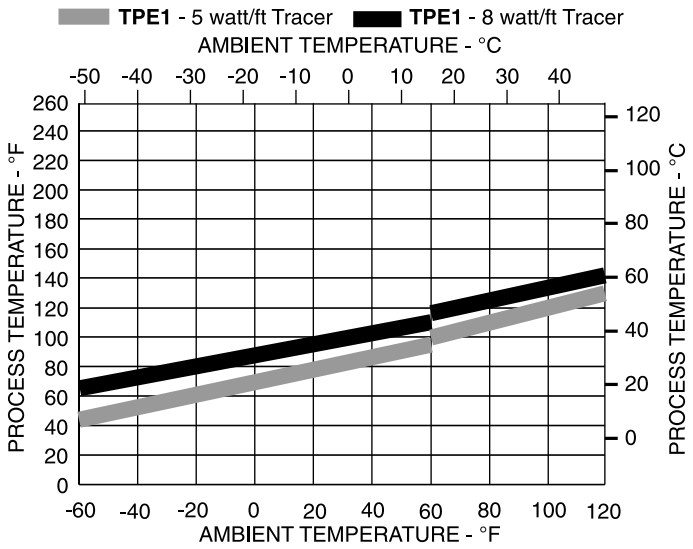


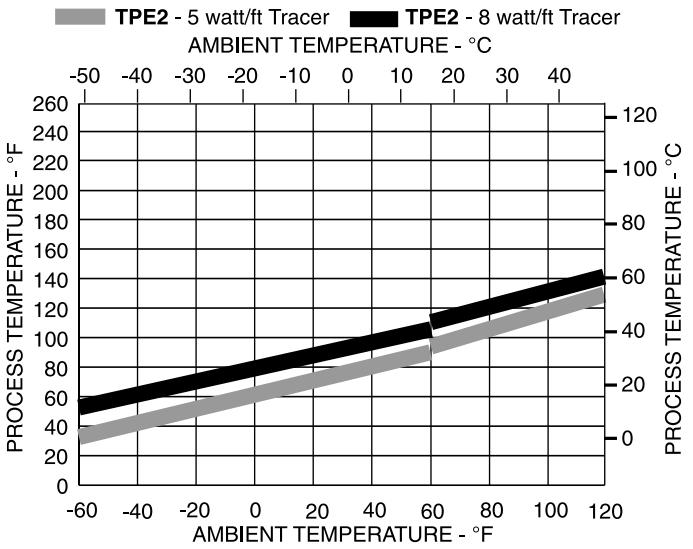
⅜" Process





½" Process





Model Number

Product Family

S-Preinsulated Single Process Tube

Process Tube (Select from below.)

A2	¼" x 0.035 wall welded 316 SS
A3	⅜" x 0.035 wall welded 316 SS
A4	½" x 0.035 wall welded 316 SS
F2	¼" x 0.035 wall seamless 316 SS
F3	⅜" x 0.035 wall seamless 316 SS
F4	½" x 0.035 wall seamless 316 SS
B3	⅜" x 0.049 wall seamless 316 SS
B4	½" x 0.049 wall seamless 316 SS
J2	¼" x 0.030 wall copper
C3	⅜" x 0.032 wall copper
D4	½" x 0.035 wall copper
M4	½" x 0.049 wall copper
M6	¾" x 0.049 wall copper
MF6	6mm OD x 1mm wall seamless 316 SS
MF8	8mm OD x 1mm wall seamless 316 SS
MF10	10mm OD x 1mm wall seamless 316 SS
MF12	12mm OD x 1mm wall copper
MB10	10mm OD x 1.5mm wall seamless 316 SS
MB12	12mm OD x 1.5mm wall seamless 316 SS
MD6	6mm OD x 1mm wall copper
MD8	8mm OD x 1mm wall copper
MD12	12mm OD x 1mm wall copper

Example:

SC3 One preinsulated ⅜" x 0.032 wall copper process line.

Material Specifications

Jacket

SV47

SV47 is a proprietary thermoplastic formulation that exceeds the requirements of 105C PVC and outperforms other PVC jacket materials in UV resistance as well as providing low temperature flexibility to -40° F/C.

	Standard 105C PVC	**O'Brien SV47**
Abrasion Resistance	G	G
Tensile Strength PSI	18-1900	2200
Elongation %	250	350
Hardness, Shore A	85-90	80
Minimum Installation Temp.	15°F/-9°C	-40°F/C
UL94 Flame	V2	V2
Halogenated (Chlorides)	YES	YES
Maximum Temperature	220°F/105°C	220°F/105°C
Water Absorption %	0.1%	0.1%
Aromatic Hydrocarbons	F	F
Weathering	G	G
UV Resistance	F	G

P = Poor F = Fair G = Good E = Excellent

Insulation

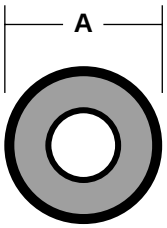
Fibrous Glass
Water Soluble Chlorides less than 100 ppm.
Non-hygroscopic

Temperature Limits

Minimum installation temperature -20°F (-29°C)
Maximum process temperature 400°F (204°C)
Maximum jacket surface temperature 140°F (60°C) at ambient temperature of 80°F (27°C) with 10 mph (16 Km/h) wind.

Dimensions

	MIN. BEND RADIUS - IN (CM)	SUPPORT CENTERS - FT. (M) HORIZ.	VERT.	NOMINAL WT. LB/FT (KG/M)	NOMINAL DIMENSIONS A - IN (CM)
S-LINE - One ¼" Process Line	8" (20)	6' (1.8)	15' (4.6)	0.2 (0.30)	1.0 (2.5)
S-LINE - One ⅜" Process Line	10" (25)	6' (1.8)	15' (4.6)	0.3 (0.45)	1.1 (2.8)
S-LINE - One ½" Process Line	12" (30)	6' (1.8)	15' (4.6)	0.4 (0.60)	1.2 (3.0)

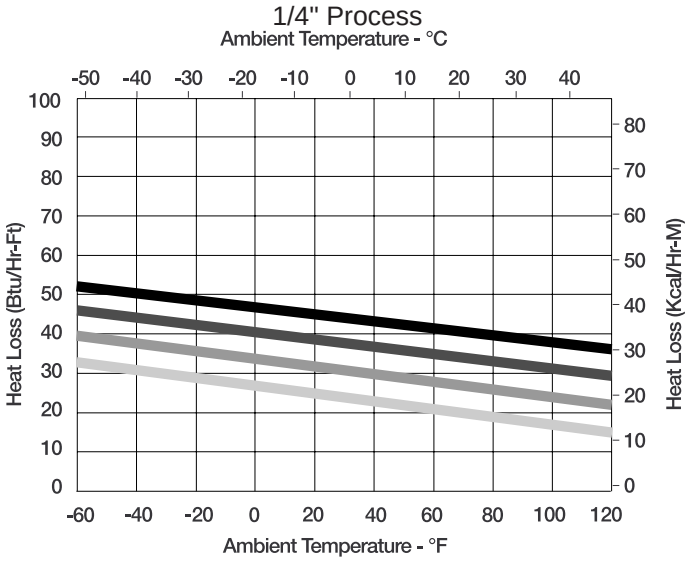


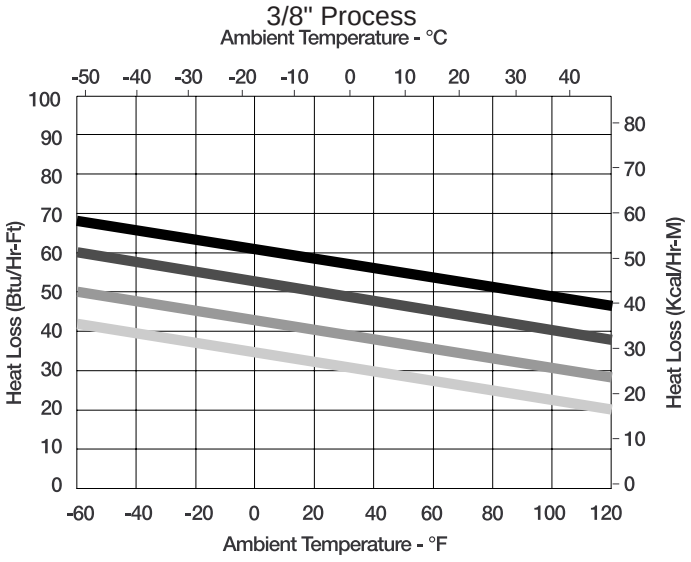
S-LINE

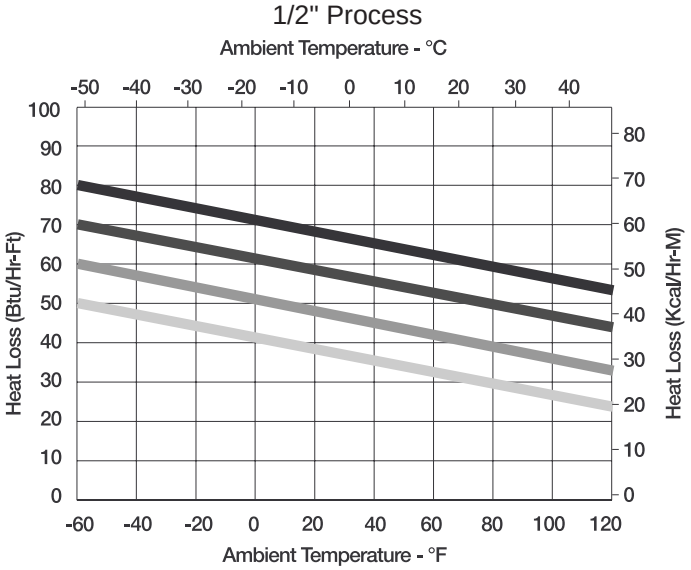
Recommended Accessories

End Seal Kit	Model TPKSK-10
End Seal Boot	Model TPKHS-E1
Jacket Patch Kit	Model TPKJP-1 or -2

Typical Performance







The information presented represents typical performance data for the conditions given. Actual results may vary with the conditions of installation. Heat loss calculated with 25 mph (40km/h) wind.

TRACEPAK® END SEALS
TPKSK, TPKHS and TPKES

Even though O'Brien's TRACEPAK products use a non-hygroscopic, non-wicking insulation, all bundle ends must be sealed to prevent contamination of the insulation.

TPKHS - Boots

TPKHS is a series of heat-shrinkable end seal boots made of a thermally stabilized, modified polyolefin. They are designed to provide a weatherproof seal at the end of tubing bundles. These boots may be used for process temperatures up to 400°F (204°C).

	Body Min/Max	Leg Min/Max
TPKHS-E1	0.375"/1.3"	------

TPKHS-C2	0.95"/1.90"	0.30"/0.75"
TPKHS-D2	0.45"/1.60"	0.15"/0.55"

TPKHS-A3	1.40"/2.40"	0.50"/1.13"
TPKHS-B3	0.90"/1.70"	0.30"/0.80"

TPKHS Selection

TRACEPAK Family	Process Tube	Tracer Tube	Model Number-Size
S-LINE			
	⅜" (8mm)	----	TPKHS-E1
TPL1	⅜" (8mm)	⅜" (8mm)	TPKHS-C2
	½" (12mm)	⅜" (8mm)	TPKHS-C2
TPL2	⅜" (8mm)	⅜" (8mm)	TPKHS-B3
	½" (12mm)	⅜" (8mm)	*TPKHS-A3
TPH1	⅜" (8mm)	⅜" (8mm)	TPKHS-C2
	½" (12mm)	⅜" (8mm)	TPKHS-C2
TPH2	⅜" (8mm)	⅜" (8mm)	TPKHS-B3
TPE1	¼" (6mm)	----	TPKHS-D2
	½" (12mm)	----	TPKHS-C2
TPE2			
	⅜" (8mm)	----	TPKHS-B3

*Boot leg should be pinched with pliers while hot and held until cool to reduce leg diameter.

TPKSK - Sealant

TPKSK is a black silicone RTV sealant used to prevent moisture from contaminating the bundle. The cure time is approximately 24 hours at 77°F (25°C). Service temperature is from -50°F (-46°C) to 400°F (204°C). It has excellent resistance to weather, oil, and many chemicals. This option should be used to seal both ends of the tubing bundle. TPKSK-10 will seal approximately 10 bundles.

Order **TPKSK-10**.

TPKES - Entry Seal

TPKES The heat-shrinkable entry seal provides a waterproof fitting where TRACEPAK enters an enclosure. They can be added to parting line or surface mounted plates on VIPAK enclosures or any enclosure. The thermally stabilized, modified polyolefin entry seal consists of an O-ring assembly that seals at the enclosure and a heat-shrinkable nose that seals to the TRACEPAK bundle.

TPKES Selection

Model Number	Max. Panel Thickness (A)	Maximum I.D. Nose (B)	Minimum I.D. Nose (C)	Mounting Hole Diameter (D)
TPKES-4	0.50"	1.60"	0.75"	2.00"
TPKES-4S	1.00"	2.10"	0.75"	2.38"
TPKES-5	1.00"	2.75"	1.43"	3.50"

TRACEPAK® ACCESSORIES

Power connection, Tracer termination, Controllers and Thermostats

Power Connection

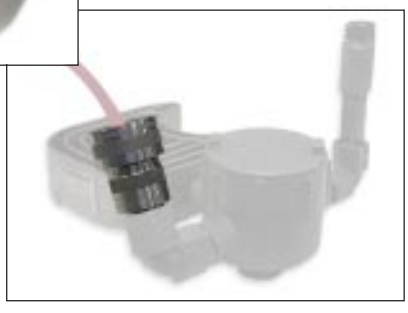
Used to power the tracer when the bundle is used by itself. They are also used when the bundle is powered from the end opposite the enclosure.

T210-PC

FM Approved and CSA Certified Class I Div. 2 power connection kit for use with any wattage B, N, J, or P tracer. Includes junction box and bundle mounting bracket with adjustable straps. Junction also includes surface mounting feet.

T9310-PC

Approved to CENELEC standards for hazardous area locations. Use with any wattage P, MN and N15 or N20 tracers. Installs in customer supplied junction box with M25 hub.



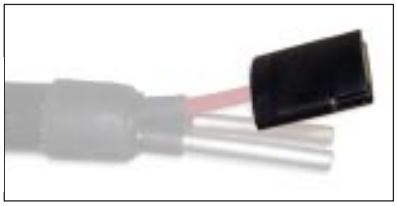
TPC1

CSA Certified Class I Div. 1 power connection or end termination kit for use with any wattage B, N, J or P tracer. Installs in customer supplied junction box with $^1/_2$" npt hub.

Tracer Termination

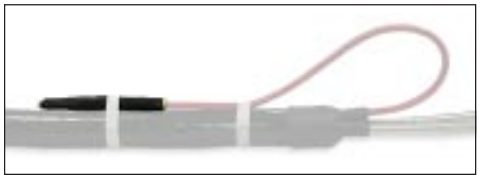
End fitting is FM approved and CSA certified for XTV and BTV self-regulating tracer.

T210-ET



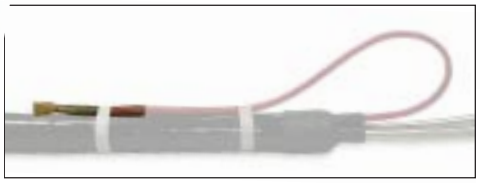
FM Approved and CSA Certified Class I Div. 2 termination kit for use with any wattage B, N, J or P tracer.

T310-ET10



Approved to CENELEC standards for hazardous area locations. Use with any wattage P tracer.

T310-ET13



Approved to CENELEC standards for hazardous area locations. Use with any wattage MN and N15 or N20 tracers.

Controller

Desired control temperature is set with a knob and scale marked in both °F and °C. The controller is equipped with power, heater on, and open heater indication. A local master power switch is located on the outside of the enclosure and a replaceable fuse is located on the front panel.

HC5

Input: Type J or K thermocouple
Control Power: 120/240V 10%
Output: SPDT relay 20A
Housing: NEMA 4X – General Purpose

Thermostats

When used with electrically traced tubing bundles, optional thermostats are used to control the temperature of the process tube or to turn on the heater at a specified ambient temperature.

TPKTS-A-7

TPKTS-B-7

Both thermostats are:
FM approved for Class I, II Div. 1, 2 Gr. B, C, D, E, F, G
CSA Certified for Class I, II Gr. C, D, E, F, G
CSA Certified for Class III

TPKTS-A-7 Ambient Sensing Thermostat with adjustable temperature range and external adjustment knob, NEMA 7 and 9 Housing, 22 amp 125/250 VAC

TPKTS-B-7 Line Sensing Thermostat with adjustable temperature range, external adjustment knob and 10 ft. long capillary without armor, NEMA 7 and 9 Housing, 22 amp 125/250 VAC

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