Heat Trace
Quick Design Guide

Ω | HTS

A Division of CLASSIC INDUSTRIAL SERVICES

A Pipe Heat Loss Calculations

Table 1 *Pipe Heat Loss in W/ft Based on Temperature Differential and Insulation Thickness*

Nominal Pipe Size (In.)	Temperature Difference Between Pipe and Ambient														
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F	160°F	180°F	200°F	220°F	240°F	260°F
1" Insulation															
0.5	1.4	1.8	2.1	2.5	2.8	3.2	3.5	4.2	5.1	5.9	6.6	7.7	8.5	9.2	10.0
0.75	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.8	5.9	6.7	7.6	8.8	9.7	10.6	11.4
1	1.8	2.3	2.8	3.2	3.7	4.1	4.6	5.5	6.8	7.7	8.7	10.1	11.1	12.1	13.2
1.5	2.4	3.1	3.7	4.3	4.9	5.5	6.1	7.3	9.0	10.2	11.5	13.4	14.8	16.1	17.4
2	2.8	3.5	4.1	4.8	5.5	6.2	6.9	8.3	10.1	11.6	13.0	15.2	16.7	18.2	19.7
2.5	3.2	4.0	4.8	5.6	6.4	7.2	8.0	9.6	11.8	13.4	15.1	17.6	19.4	21.1	22.9
3	3.7	4.7	5.6	6.5	7.4	8.4	9.3	11.2	13.7	15.6	17.6	20.5	22.5	24.6	26.6
4	4.6	5.8	6.9	8.1	9.2	10.4	11.5	13.8	16.9	19.3	21.7	25.3	27.8	30.4	32.9
6	6.4	8.0	9.6	11.2	12.8	14.4	16.0	19.2	23.5	26.9	30.2	35.2	38.7	42.2	45.8
8	8.1	10.1	12.1	14.1	16.2	18.2	20.2	24.2	29.7	33.9	38.2	44.4	48.9	53.3	57.8
10	9.9	12.4	14.8	17.3	19.8	22.2	24.7	29.6	36.3	41.5	46.7	54.3	59.8	65.2	70.6
12	11.6	14.5	17.4	20.3	23.2	26.1	29.0	34.8	42.6	48.7	54.8	63.8	70.2	76.6	82.9
14	12.6	15.8	19.0	22.1	25.3	28.4	31.6	37.9	46.5	53.1	59.7	69.5	76.5	83.4	90.4
16	14.3	17.9	21.5	25.1	28.7	32.3	35.9	43.0	52.7	60.2	67.8	78.9	86.8	94.6	102.5
18	16.0	20.1	24.1	28.1	32.1	36.1	40.1	48.1	58.9	67.4	75.8	88.2	97.0	105.9	114.7
20	17.7	22.2	26.6	31.0	35.4	39.9	44.3	53.2	65.1	74.4	83.7	97.5	107.2	117.0	126.7
22	19.4	24.3	29.1	34.0	38.8	43.7	48.5	58.2	71.3	51.5	91.7	106.7	117.4	128.0	138.7
24	21.1	26.4	31.6	36.9	42.2	47.4	52.7	63.2	77.5	88.5	99.6	115.9	127.5	139.1	150.7
1.5" Insulation															
0.5	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.5	4.1	4.7	5.5	6.2	6.8	7.4	8.0
0.75	1.2	1.6	1.9	2.2	2.5	2.8	3.1	3.9	4.6	5.2	6.1	6.8	7.5	8.2	8.9
1	1.4	1.8	2.2	2.5	2.9	3.2	3.6	4.5	5.3	6.0	7.1	7.9	8.7	9.5	10.3
1.5	1.8	2.3	2.8	3.2	3.7	4.1	4.6	5.8	6.8	7.7	9.1	10.1	11.1	12.1	13.2
2	2.1	2.6	3.1	3.6	4.2	4.7	5.2	6.6	7.6	8.7	10.3	11.4	12.6	13.7	14.9
2.5	2.4	3.0	3.5	4.1	4.7	5.3	5.9	7.4	8.7	9.9	11.7	13.0	14.3	15.6	16.9
3	2.7	3.4	4.1	4.8	5.4	6.1	6.8	8.6	10.0	11.4	13.5	15.0	16.5	18.0	19.4
4	3.3	4.2	5.0	5.8	6.6	7.5	8.3	10.5	12.2	13.9	16.4	18.3	20.1	21.9	23.7
6	4.5	5.7	6.8	7.9	9.0	10.2	11.3	14.2	16.6	19.0	22.4	24.9	27.3	29.8	32.3
8	5.6	7.1	8.5	9.9	11.3	12.7	14.1	17.8	20.7	23.7	27.9	31.0	34.1	37.2	40.3
10	6.8	8.6	10.3	12.0	13.7	15.4	17.1	21.5	25.1	28.7	33.9	37.6	41.4	45.1	48.9
12	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.2	29.4	33.6	39.6	44.0	48.4	52.8	57.2
14	8.7	10.9	13.0	15.2	17.4	19.5	21.7	27.3	31.9	36.5	43.0	47.7	52.5	57.3	62.1
16	9.8	12.3	14.8	17.2	19.7	22.1	24.6	31.0	36.2	41.5	48.7	54.1	59.5	64.9	70.4
18	11.0	13.7	16.4	19.2	21.9	24.7	27.4	34.5	40.3	46.0	54.3	60.3	66.3	72.3	78.4
20	12.1	15.1	18.1	21.1	24.2	27.2	30.2	38.1	44.4	50.7	59.8	66.4	73.1	79.7	86.4
22	13.2	16.5	19.8	23.1	26.4	29.7	33.0	41.6	48.5	55.4	65.3	72.6	79.9	87.1	94.4
24	14.3	17.9	21.5	25.1	28.6	32.2	35.8	45.1	52.6	60.1	70.9	78.8	86.6	94.5	102.4

1. Basic Heat Loss: After determining the difference between the ambient and desired pipe maintenance temperature, T_M use Table 1 to figure the basic heat loss for the pipe size and insulation thickness.
2. Insulation adjustment: Using Table 2, find the type of insulation being used and its adjustment factor (middle column).
3. Calculate Q_F : Multiply the basic heat loss figure from Table 1 by the adjustment factor from Table 2 to calculate the estimated heat loss, Q_F in watts per foot of pipe length.
4. Correct for Indoor Location/Windspeed: if location is indoors, multiply Q_F by 0.9. Table 1 is based on 10% safety factor and 20 mph windspeed; add 5% margin for each 5 mph over 20 mph wind speed.

Table 1 *Pipe Heat Loss in W/ft Based on Temperature Differential and Insulation Thickness*

Nominal Pipe Size (In.)	Temperature Difference Between Pipe and Ambient														
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F	160°F	180°F	200°F	220°F	240°F	260°F
2" Insulation															
0.5	1.0	1.2	1.4	1.7	1.9	2.2	2.4	3.0	3.5	4.0	4.8	5.3	5.8	6.3	7.2
0.75	1.1	1.4	1.6	1.9	2.2	2.4	2.7	3.4	4.0	4.5	5.3	5.9	6.5	7.1	8.1
1	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.8	4.4	5.0	5.9	6.6	7.3	7.9	9.0
1.5	1.5	1.9	2.3	2.7	3.0	3.4	3.8	4.8	5.6	6.4	7.5	8.4	9.2	10.0	11.4
2	1.7	2.2	2.6	3.0	3.4	3.9	4.3	5.4	6.3	7.2	8.5	9.5	10.4	11.4	12.9
2.5	1.9	2.4	2.9	3.4	3.8	4.3	4.8	6.0	7.1	8.1	9.5	10.6	11.6	12.7	14.4
3	2.2	2.8	3.3	3.9	4.4	5.0	5.5	6.9	8.1	9.2	10.9	12.1	13.3	14.5	16.4
4	2.6	3.3	4.0	4.6	5.3	5.9	6.6	8.3	9.7	11.1	13.1	14.5	16.0	17.4	19.7
6	3.6	4.5	5.3	6.2	7.1	8.0	8.9	11.2	13.1	15.0	17.6	19.6	21.5	23.5	26.6
8	4.4	5.6	6.7	7.8	8.9	10.0	11.1	14.0	16.3	18.6	22.0	24.4	26.9	29.3	33.2
10	5.3	6.7	8.0	9.3	10.6	12.0	13.3	16.8	19.6	22.3	26.3	29.3	32.2	35.1	39.8
12	6.2	7.8	9.3	10.9	12.4	14.0	15.5	19.5	22.8	26.0	30.7	34.1	37.5	40.9	46.3
14	6.7	8.4	10.1	11.8	13.4	15.1	16.8	21.2	24.7	28.2	33.3	37.0	40.7	44.4	50.2
16	7.6	9.5	11.3	13.2	15.1	17.0	18.9	23.8	27.8	31.8	37.4	41.6	45.7	49.9	56.5
18	8.4	10.5	12.6	14.7	16.8	18.9	21.0	26.5	30.9	35.3	41.6	46.2	50.8	55.4	62.8
20	9.2	11.6	13.9	16.2	18.5	20.8	23.1	29.1	34.0	38.8	45.7	50.8	55.9	61.0	69.1
22	10.1	12.6	15.2	17.7	20.2	22.7	25.3	31.8	37.1	42.4	50.0	55.6	61.1	66.7	75.5
24	11.0	13.7	16.4	19.2	21.9	24.7	27.4	34.5	40.3	46.0	54.3	60.3	66.3	72.3	81.9
3" Insulation															
0.5	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.5	2.9	3.4	4.0	4.4	4.8	5.5	6.0
0.75	0.9	1.1	1.3	1.5	1.8	2.0	2.2	2.8	3.2	3.7	4.4	4.8	5.3	6.1	6.6
1	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.2	3.7	4.2	5.0	5.5	6.1	6.9	7.5
1.5	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.8	4.4	5.0	5.9	6.6	7.3	8.3	9.0
2	1.3	1.7	2.0	2.3	2.6	3.0	3.3	4.2	4.9	5.5	6.5	7.3	8.0	9.1	9.9
2.5	1.5	1.9	2.2	2.6	3.0	3.3	3.7	4.7	5.4	6.2	7.3	8.1	9.0	10.2	11.1
3	1.7	2.1	2.5	2.9	3.4	3.8	4.2	5.3	6.2	7.1	8.3	9.2	10.2	11.6	12.6
4	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.3	7.4	8.4	9.9	11.0	12.1	13.8	15.0
6	2.6	3.3	3.9	4.6	5.2	5.9	6.5	8.2	9.6	10.9	12.9	14.3	15.7	17.9	19.4
8	3.2	4.0	4.8	5.6	6.4	7.2	8.0	10.1	11.8	13.4	15.8	17.6	19.4	22.1	23.9
10	3.8	4.8	5.7	6.7	7.6	8.6	9.5	12.0	14.0	16.0	18.8	20.9	23.0	26.2	28.4
12	4.4	5.5	6.5	7.6	8.7	9.8	10.9	13.7	16.0	18.3	21.6	24.0	26.4	30.1	32.6
14	4.7	5.9	7.1	8.3	9.4	10.6	11.8	14.9	17.3	19.8	23.4	26.0	28.6	32.6	35.3
16	5.3	6.7	8.0	9.3	10.6	12.0	13.3	16.8	19.6	22.3	26.3	29.3	32.2	36.7	39.8
18	5.9	7.4	8.8	10.3	11.8	13.2	14.7	18.5	21.6	24.7	29.1	32.3	35.6	40.6	44.0
20	6.4	8.1	9.7	11.3	12.9	14.5	16.1	20.3	23.7	27.0	31.9	35.4	39.0	44.4	48.1
22	7.0	8.8	10.5	12.3	14.0	15.8	17.5	22.1	25.7	29.4	34.7	38.5	42.4	48.3	52.3
24	7.6	9.5	11.3	13.2	15.1	17.0	18.9	23.8	27.8	31.8	37.4	41.6	45.7	52.2	56.5

Table 2 *Insulation Adjustment Factors*

Pipe Insulation Type	Insulation Factor	K factor at 50°F (BTU/hr-°F-ft²/in)
Glass Fiber (ASTM C547)	1	0.25
Calcium Silicate (ASTM C533)	1.48	0.37
Cellular Glass (ASTM C552)	1.48	0.33
Rigid Cellular Urethane (ASTM C591)	0.64	0.16
Foamed Elastomer (ASTM C534)	1.16	0.29
Mineral Fiber Blanket (ASTM C553)	1.16	0.3
Expanded Perlite (ASTM C610)	1.9	0.48

B HTS Cable Selection

Table 3 HTS *Cable Families*

Heating Cable Family	Area Classification	Pipe Material	Max. Maintenance Temperature	Max. Exposure Temperature (POWER OFF)
Self-Regulating				
LXR - High Temp	Ordinary CID2 Gr. A, B, C, D CIID2 Gr. E, F, G	Plastic/Metal	150°F (65°C)	185°F (85°C)
MXR - High Temp	Ordinary CID2 Gr. A, B, C, D CIID2 Gr. E, F, G	Metal Only	250°F (120°C)	366°F (185°C)
HXR - High Temp	Ordinary CID2 Gr. A, B, C, D CIID2 Gr. E, F, G	Metal Only	375°F (190°C)	450°F (232°C)

1. Select Heating Cable Family. Based on the maximum maintenance temperature rating, maximum exposure temperature rating, and area classification, select the heating cable family from Table 3. (See HTS Heat Trace Cable Product Information Sheets for cable construction options, voltage ratings, and wattage outputs available).

2. Select Thermal Output Rating:
   a) For Metal Pipes—Use Figure 1 or 2.
   b) For Plastic Pipes—Use Figure 3 by finding the intersection of the calculated heat loss, Q_F, and pipe maintenance temperature, $T_{M.}$ mmm
3. Determine Total Cable Length: In addition to pipe length, in-line components such as valves, flanges, and pipe supports require additional heat tracing to maintain $T_{M.}$ See Table 4. Calculate the total cable length required by combining the pipe length with the additional lengths needed for all the other components.

Total cable required+ (pipe length x no. Of cable runs)+ additional cable for in-line components.

Additional Cable Lengths Required for In-Line Components ((Based on Pipe IPS (Iron Pipe Size))

IPS Piping Size (Inches)	Gate Valve	Globe Valve	Ball Valve	Butterfly Valve	Shoe Support	Hanger Support	Sleeper Support	Flange Pair
0.125	1	1	1	1	1	1	1	0.3
0.25	1	1	1	1	1	1	1	0.3
0.375	1	1	1	1	1	1	1	0.3
0.5	1	1	1	1	1	1	1	0.3
75	1.5	1	1	1	1.5	1.5	1.5	0.3
1	2	1	1	1	1.5	1.5	1.5	0.3
1.25	2	1	1	1	1.5	1.5	1.5	0.3
1.5	2.5	1.5	1.5	1.5	2	2	2	0.3
2	2.5	2	2	2	2	2	2	0.3
2.5	2.5	2	2	2	2	2	2	0.3
3	3	2.5	2.5	2.5	2	2	2	0.5
3.5	3	2.5	2.5	2.5	2	2	2	0.5
4	4	3	3	3	2.5	2.5	2.5	0.5
5	4	3	3	3	2.5	2.5	2.5	0.5
6	5	3.5	3.5	3.5	2.5	2.5	2.5	0.8
8	7	4	4	4	2.5	2.5	2.5	0.8
10	8	4.5	4.5	4.5	3	3	3	0.8
12	9	5	5	5	3	3	3	0.8
14	10	5.5	5.5	5.5	3	3	3	1
16	11	6	6	6	3.5	3.5	3.5	1
18	12	7	7	7	3.5	3.5	3.5	1
20	13	7.5	7.5	7.5	3.5	3.5	3.5	1
22	13	7.5	7.5	7.5	3.5	3.5	3.5	1
24	15	8	8	8	4	4	4	1
26	15	8	8	8	4	4	4	1
28	15	8	8	8	4	4	4	2
30	15	8	8	8	4	4	4	2
36	15	8	8	8	4	4	4	2
42	20	10	10	10	8	8	8	4
48	20	10	10	10	8	8	8	4

Thermal Output Ratings

Cable Output vs Temperature

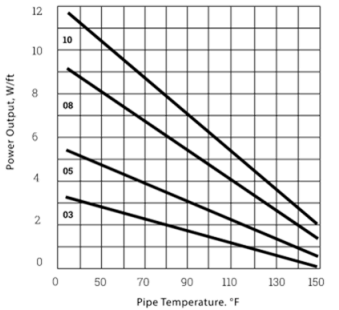

Figure 1-LXR

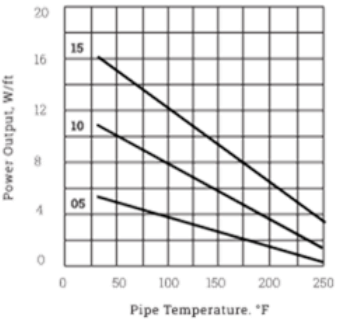

Figure 2-MXR

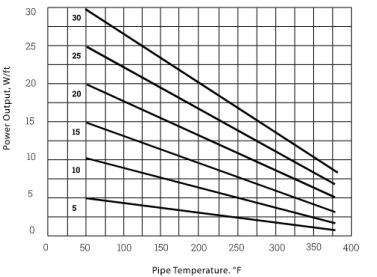

Figure 3-HXR

C Electrical Design & Accessory Selection

Maximum Circuit Length vs Breaker Size & Start-Up Temp FT					
	Start-Up Temp Deg F Deg C	15 A	20 A	30 A	40 A
LXR03-1	50 (10)	300 (92)	330 (100)	330 (100)	330 (100)
	0 (-18)	200 (60)	270 (82)	330 (100)	330 (100)
	-20 (-29)	180 (55)	230 (70)	330 (100)	330 (100)
LXR03-2	50 (10)	660 (200)	660 (200)	660 (200)	660 (200)
	0 (-18)	410 (125)	560 (170)	660 (200)	660 (200)
	-20 (-29)	360 (110)	480 (146)	660 (200)	660 (200)
LXR05-1	50 (10)	230 (70)	270 (82)	270 (82)	270 (82)
	0 (-18)	150 (45)	200 (60)	270 (82)	270 (82)
	-20 (-29)	130 (40)	175 (54)	260 (80)	270 (82)
LXR05-2	50 (10)	460 (140)	540 (165)	540 (165)	540 (165)
	0 (-18)	300 (92)	400 (122)	540 (165)	540 (165)
	-20 (-29)	260 (80)	345 (105)	520 (160)	540 (165)
LXR08-1	50 (10)	150 (45)	200 (60)	210 (64)	210 (64)
	0 (-18)	95 (30)	125 (38)	190 (58)	210 (64)
	-20 (-29)	85 (26)	100 (31)	170 (52)	210 (64)
LXR08-2	50 (10)	295 (90)	390 (119)	420 (128)	420 (128)
	0 (-18)	195 (60)	250 (76)	375 (115)	420 (128)
	-20 (-29)	170 (52)	225 (69)	340 (104)	420 (128)
LXR10-1	50 (10)	115 (35)	150 (45)	180 (55)	180 (55)
	0 (-18)	70 (22)	95 (30)	145 (44)	180 (55)
	-20 (-29)	60 (18)	85 (26)	120 (37)	165 (50)
LXR10-2	50 (10)	230 (70)	305 (93)	360 (110)	360 (110)
	0 (-18)	150 (45)	200 (60)	300 (92)	360 (110)
	-20 (-29)	130 (40)	175 (54)	260 (80)	360 (110)

Maximum Circuit Length vs Breaker Size & Start-Up Temp FT					
	Start-Up Temp Deg F Deg C	15 A	20 A	30 A	40 A
MXR05-1	50 (10)	150 (45)	200 (60)	240 (73)	240 (73)
	0 (-18)	135 (41)	180 (55)	220 (67)	220 (67)
	-40 (-40)	130 (40)	170 (52)	210 (64)	210 (64)
MXR05-2	50 (10)	250 (76)	330 (100)	480 (146)	480 (146)
	0 (-18)	230 (70)	305 (93)	440 (134)	440 (134)
	-40 (-40)	220 (67)	295 (90)	420 (128)	420 (128)
MXR10-1	50 (10)	90 (27)	120 (37)	180 (55)	180 (55)
	0 (-18)	85 (26)	110 (34)	165 (50)	165 (50)
	-40 (-40)	80 (24)	105 (32)	160 (49)	160 (49)
MXR10-2	50 (10)	140 (43)	190 (58)	280 (85)	280 (85)
	0 (-18)	130 (40)	175 (53)	260 (79)	260 (79)
	-40 (-40)	125 (38)	170 (52)	250 (76)	250 (76)
MXR15-1	50 (10)	70 (21)	90 (27)	130 (40)	130 (40)
	0 (-18)	65 (20)	85 (26)	125 (38)	125 (38)
	-40 (-40)	60 (18)	80 (24)	120 (37)	120 (37)
MXR15-2	50 (10)	100 (30)	135 (41)	200 (60)	200 (60)
	0 (-18)	95 (29)	125 (38)	185 (56)	185 (56)
	-40 (-40)	90 (27)	120 (37)	180 (55)	180 (55)

Maximum Circuit Length vs Breaker Size & Start-Up Temp FT					
Model	Start-Up Temp Deg F Deg C	15 A	20 A	30 A	40 A
HXR5-1	50 (10)	180 (55)	240 (73)	335 (102)	350 (107)
	0 (-20)	165 (50)	220 (67)	330 (101)	350 (107)
	-50 (-45)	150 (46)	200 (61)	300 (91)	350 (107)
HXR5-2	50 (10)	360 (110)	480 (146)	540 (165)	680 (299)
	0 (-20)	325 (99)	430 (131)	540 (165)	680 (299)
	-50 (-45)	290 (88)	385 (117)	540 (165)	680 (299)
HXR10-1	50 (10)	120 (37)	160 (49)	180 (55)	240 (73)
	0 (-20)	105 (32)	140 (43)	180 (55)	220 (67)
	-50 (-45)	90 (27)	120 (37)	180 (55)	220 (67)
HXR10-2	50 (10)	240 (73)	320 (98)	360 (110)	470 (143)
	0 (-20)	230 (70)	305 (93)	360 (110)	470 (143)
	-50 (-45)	225 (69)	300 (91)	360 (110)	450 (137)
HXR15-1	50 (10)	80 (24)	105 (32)	135 (41)	180 (55)
	0 (-20)	70 (21)	90 (27)	135 (41)	160 (49)
	-50 (-45)	60 (18)	80 (24)	120 (37)	135 41)
HXR15-2	50 (10)	160 (49)	210 (64)	270 (82)	350 (107)
	0 (-20)	140 (43)	185 (56)	270 (82)	340 (104)
	-50 (-45)	120 (37)	160 (49)	240 (73)	300 (91)
HXR20-1	50 (10)	60 (18)	90 (27)	120 (37)	120 (37)
	0 (-18)	55 (17)	70 (21)	110 (34)	110 (34)
	-50 (-45)	50 (15)	65 (20)	100 (30)	100 (30)
HXR20-2	50 (10)	115 (35)	150 (46)	230 (70)	230 (70)
	0 (-18)	110 (34)	145 (440	220 (67)	220 (67)
	-50 (-45)	105 (32)	140 (43)	210 (64)	210 (64)
HXR25-1	50 (10)	45 (14)	60 (18)	85 (26)	85 (26)
	0 (-18)	40 (12)	50 (15)	80 (24)	80 (24)
	-50 (-45)	40 (12)	50 (15)	80 (24)	80 (24)
HXR25-2	50 (10)	90 (27)	120 (37)	170 (52)	170 (52)
	0 (-18)	80 (24)	100 (30)	160 (49)	160 (49)
	-50 (-45)	80 (24)	100 (30)	160 (49)	160 (49)
HXR30-1	50 (10)	40 (12)	50 (15)	70 (21)	70 (21)
	0 (-18)	35 (11)	45(14)	70 (21)	70 (21)
	-50 (-45)	35 (11)	45 (14)	70 (21)	70 (21)
HXR30-2	50 (10)	80 (24)	100 (30)	140 (43)	140 (43)
	0 (-18)	70 (21)	90 (27)	140 (43)	140 (43)
	-50 (-45)	70 (21)	90 (27)	140 (43)	140 (43)

1. Determine the Circuit Breaker Rating:

For Self-Regulating Cable: From Table, Select the circuit breaker trip rating by finding maximum circuit length for each breaker rating to the total cable length required for each pipe. Select the breaker rating whose maximum circuit length just exceeds the total cable required for the pipe.

If circuit breaker rating is predetermined, use the maximum circuit length shown in Table for the cable type at the minimum start-up temperature.

If the required cable footage exceeds the max circuit length, determine the number of circuits required:

Number of Circuits=Total Cable Footage Required/Max Circuit Length.

Accessories

Accessories		PCN
Power Connection	SR Heat trace Power Connection Kit	PCX-40J / PCX-81J
Splice & Tee	SR Heat Trace Splice/Tee Kit	TCX
End Seal	SR Heat Trace End Termation	ESX-40 / ESX-81
Thermostat	Ambient air sensing thermostat	TSO-A
	Line sensing mechanical thermostat	TSO-L
RTD	Line Sensing RTD w/25' Armored Lead Wire	ST-RTD-25

Attachment Accessories

Model	Description
SRFT-1	Fiberglas Tape to Attach SR Cable To Pipe
SRAT-1	Aluminum Tape to Attach SR Cable To Pipe
KPS-3	Pipe strap to Connection Kit Pipe, <=3" pipes
KPS-6	Pipe strap to Connection Kit Pipe, <=6" pipes
KPS-10	Pipe strap to Connection Kit Pipe, <=10" pipes
CLEL-EN	Caution Labels-Electrially Traced (10' Intervals)

SRFT-1-Fiberglass Tape Caclulator (EA)

		Average Dia				
		2	4	6	8	10
Pipe Footage	150	4	8	11	15	18
	300	8	15	22	29	36
	450	11	22	33	43	54
	600	15	29	43	58	72
	750	18	36	54	72	90
	900	22	43	65	86	108
	1050	25	50	75	100	125
	1200	29	58	86	115	143
	1350	33	65	97	129	161