



PRODUCT SPECIFICATIONS

VSX™-HT

SELF-REGULATING HEATING CABLE

APPLICATION

High performance VSX-HT self-regulating heating cables are designed specifically for process temperature maintenance or freeze protection applications where high maintain temperatures or high temperature exposures are required.

The heat output of VSX-HT cable varies in response to the surrounding temperature by reducing its thermal output with increasing temperature.

VSX-HT cables are approved for use in ordinary (nonclassified) areas, hazardous (classified) areas, and Zone 1, 2, 21, and 22 areas.

RATINGS

Available watt densities	5, 10, 15, 20 w/ft @ 50°F (16, 33, 49, 66 w/m @ 10°C)
Supply voltages	110-120 or 208-277 Vac
Max. maintenance temperature	392°F (200°C)
Max. exposure temperature	
Intermittent power-on or off	482°F (250°C)
Minimum installation temperature	-60°F (-51°C)
Minimum bend radius	
@ 5°F (-15°C)	0.38" (10mm)
@ -76°F (-60°C)	1.25" (32 mm)
T-rating ¹	
5, 10 W/ft	T3 392°F (200°C)
15, 20 W/ft	T2C 446°F (230°C)
Based on stabilized design ²	T2 to T6

Notes

1. T-rating per the National Electrical Code and Canadian Electrical Code.
2. Thermon heating cables are approved for the listed T-ratings using the stabilized design method. This enables the cable to operate in hazardous areas without limiting thermostats. The T-rating may be determined using CompuTrace® Electric Heat Tracing Design Software or contact TC-E for design assistance.



CONSTRUCTION

- 1 Nickel-plated copper bus wires (14 AWG)
- 2 Semiconductive heating matrix and fluoropolymer dielectric insulation
- 3 Nickel-plated copper braid
- 4 Fluoropolymer overjacket provides additional protection for cable and braid where exposure to chemicals or corrosives is expected.

BASIC ACCESSORIES

Thermon offers system accessories designed specifically for rapid, trouble-free installation of Thermon heating cables.

All cables require a connection kit to comply with approval requirements. Information on accessories to complete a heater circuit installation can be found in the "Heating Cable Systems Accessories" product specification sheet (Form TEP0010).

Hot end terminations > 428°F (220°C) must be completed using the Terminator DS/DE, ZS/ZE, DE-B, ZE-B kits.

Note:

"D" Kits Division 2 and Zone 2 Areas

"Z" Kits Zone 1 Areas



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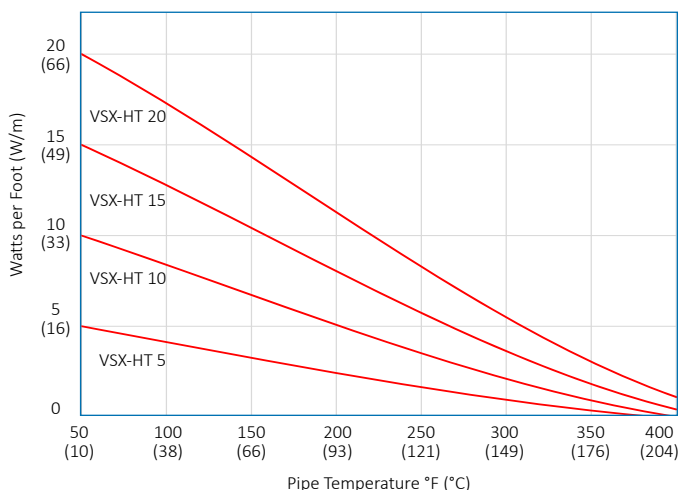
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POWER OUTPUT CURVES¹

The power outputs shown apply to cable installed on insulated metallic pipe (using the procedures outlined in IEC/IEEE 60079-30-1) at the service voltages stated below. For use on other service voltages, contact TC-E.

Catalog Number 120 Vac Nominal	Catalog Number 240 Vac Nominal	Power Output at 50°F (10°C) w/ft (m)
VSX-HT 5-1	VSX-HT 5-2	5 (16)
VSX-HT 10-1	VSX-HT 10-2	10 (33)
VSX-HT 15-1	VSX-HT 15-2	15 (49)
VSX-HT 20-1	VSX-HT 20-2	20 (66)



CERTIFICATIONS/APPROVALS



FM Approvals
Ordinary Locations
Hazardous (Classified) Locations
Class I, Division 2, Groups B, C and D
Class II, Division 2, Groups F and G
Class III, Divisions 1 and 2
Class I, Zones 1 and 2, AEx eb IIC, AEx tb IIIC



Canadian Standards Association
Ordinary Locations
Hazardous (Classified) Locations
Class I, Division 1, Groups A, B, C and D
Class II, Division 1, Groups E, F and G
Class I, Division 2, Groups A, B, C and D
Class II, Division 2, Groups E, F and G
Ex eb IIC, Ex tb IIIC

Notes

- For more precise power output values as a function of pipe temperature, refer to CompuTrace®.
- Based on the trip current characteristic of Type QOB or Type QO equipment protection devices. For devices with other trip current characteristics, contact TC-E.
- The maximum circuit length is for one continuous length of cable, not the sum of segments of cable. Refer to CompuTrace® design software or contact TC-E for current loading of segments.

CIRCUIT BREAKER SIZING²

Maximum circuit lengths for various circuit breaker amperages are shown below. Breaker sizing should be based on the National Electrical Code, Canadian Electrical Code or any other applicable code. The National Electrical Code and Canadian Electrical Code require ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Check local codes for ground-fault protection requirements.

120 Vac Service Voltage		Max. Circuit Length ³ vs. Breaker Size ft (m)			
Catalog Number	Start-Up Temperature °F (°C)	20A	30A	40A	50A
VSX-HT 5-1	50 (10)	205 (62)	330 (100)	330 (100)	330 (100)
	0 (-18)	205 (62)	330 (100)	330 (100)	330 (100)
	-20 (-29)	205 (62)	330 (100)	330 (100)	330 (100)
	-40 (-40)	205 (62)	330 (100)	330 (100)	330 (100)
VSX-HT 10-1	50 (10)	130 (39)	215 (65)	255 (77)	255 (77)
	0 (-18)	130 (39)	215 (65)	255 (77)	255 (77)
	-20 (-29)	130 (39)	215 (65)	255 (77)	255 (77)
	-40 (-40)	130 (39)	215 (65)	255 (77)	255 (77)
VSX-HT 15-1	50 (10)	95 (28)	155 (47)	230 (70)	230 (70)
	0 (-18)	95 (28)	155 (47)	230 (70)	230 (70)
	-20 (-29)	95 (28)	155 (47)	230 (70)	230 (70)
	-40 (-40)	95 (28)	155 (47)	230 (70)	230 (70)
VSX-HT 20-1	50 (10)	70 (21)	110 (33)	155 (47)	210 (64)
	0 (-18)	60 (18)	95 (28)	140 (42)	185 (56)
	-20 (-29)	60 (18)	95 (28)	135 (41)	180 (54)
	-40 (-40)	60 (18)	90 (27)	130 (39)	175 (53)

240 Vac Service Voltage		Max. Circuit Length ³ vs. Breaker Size ft (m)			
Catalog Number	Start-Up Temperature °F (°C)	20A	30A	40A	50A
VSX-HT 5-2	50 (10)	410 (124)	680 (207)	680 (207)	680 (207)
	0 (-18)	410 (124)	680 (207)	680 (207)	680 (207)
	-20 (-29)	410 (124)	680 (207)	680 (207)	680 (207)
	-40 (-40)	410 (124)	590 (179)	590 (179)	590 (179)
VSX-HT 10-2	50 (10)	265 (80)	435 (132)	555 (169)	555 (169)
	0 (-18)	265 (80)	435 (132)	555 (169)	555 (169)
	-20 (-29)	265 (80)	435 (132)	555 (169)	555 (169)
	-40 (-40)	265 (80)	435 (132)	555 (169)	555 (169)
VSX-HT 15-2	50 (10)	195 (59)	310 (94)	460 (140)	515 (156)
	0 (-18)	185 (56)	300 (91)	445 (135)	515 (156)
	-20 (-29)	180 (54)	290 (88)	425 (129)	515 (156)
	-40 (-40)	175 (53)	280 (85)	410 (124)	515 (156)
VSX-HT 20-2	50 (10)	150 (45)	235 (71)	340 (103)	475 (144)
	0 (-18)	135 (41)	215 (65)	305 (92)	420 (128)
	-20 (-29)	130 (39)	205 (62)	295 (89)	400 (121)
	-40 (-40)	130 (39)	200 (60)	285 (86)	390 (118)