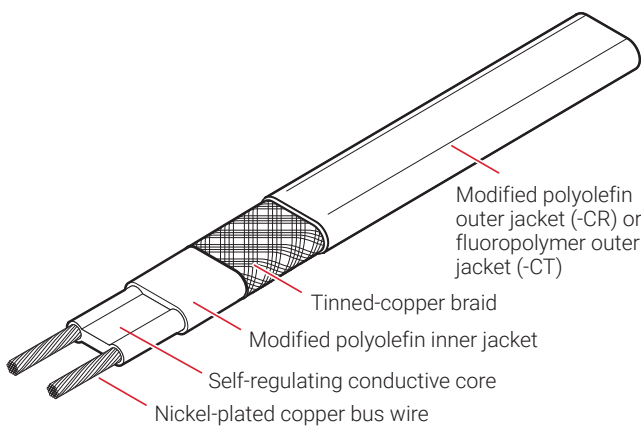


Self-regulating heating cables Electrical freeze protection for both nonhazardous and hazardous locations

PRODUCT OVERVIEW



Heating cable construction

The nVent RAYCHEM BTV family of self-regulating heating cables provides the solution to freeze-protection and process-temperature maintenance applications.

BTV heating cables maintain process temperatures up to 150°F (65°C) and can withstand intermittent exposure to temperatures up to 185°F (85°C).

The heating cables are configured for use in nonhazardous and hazardous locations, including areas where corrosives may be present.

BTV cables meet the requirements of the U.S. National Electrical Code and the Canadian Electrical Code.

For additional information, contact your nVent representative or call (800) 545-6258.



APPLICATION

Area classification	Nonhazardous and hazardous locations
Traced surface type	Metal and plastic
Chemical resistance	<ul style="list-style-type: none"> • -CR Flame Retardant modified polyolefin outer jacket for exposure to aqueous inorganic chemicals • -CT Fluoropolymer outer jacket, inherently fire resistant for exposure to organic chemicals or corrosives • For aggressive organics and corrosives: Consult your nVent representative.

SUPPLY VOLTAGE

BTV1	100–130 Vac
BTV2	200–277 Vac

SPECIFICATIONS

Maximum maintain or continuous exposure temperature (power on/off)	150°F (65°C)
Maximum intermittent exposure temperature (power on/off)	185°F (85°C) Maximum cumulative exposure 1000 hours
Temperature classification	T6: 185°F (85°C) Temperature ID numbers are consistent with North America national electrical codes.
Minimum installation temperature	-76°F (-60°C)
Minimum bend radius	-76°F (-60°C) ≤ T < -4°F (-20°C): 1.4" (35 mm) -4°F (-20°C) ≤ T < 14°F (-10°C): 1.2" (30 mm) 14°F (-10°C) ≤ T < 32°F (0°C): 1" (25 mm) 32°F (0°C) ≤ T < 50°F (+10°C): 0.8" (20 mm) T ≥ 50°F (+10°C): 0.5" (12.7 mm)
Bus wire size	16 AWG
Outer jacket color	Black

APPROVALS

Hazardous Locations



Class I, Div. 2
Groups A, B, C, D
Class II, Div. 2
Groups F, G
Class III
Tmin -40°C



BTV-CT
Class I, Div. 1
Groups A, B, C, D
Class II, Div. 1
Groups E, F, G
Class III
-WS for Canada

Zone Approvals

IECEX

IECEX BAS 20.0011X
Ex 60079-30-1 eb IIC T6 Gb or
Ex 60079-30-1 eb mb IIC T6 Gb
Ex 60079-30-1 tb IIIC T80°C or
Ex 60079-30-1 mb tb IIIC T80°C
Tmin -60°C



Ex 60079-30-1 IIC T6 Gb
Ex 60079-30-1 IIIC T85°C Db
Class I Zone 1 AEx eb IIC T6 Gb
Zone 21 AEx tb IIIC T85°C Db
-WS for Canada (for -CT)
-W for Canada (for -CR)



BTV-CR
Class I, Div. 2
Groups A, B, C, D
Class II Div. 2
Groups F, G
Class III
-W for Canada

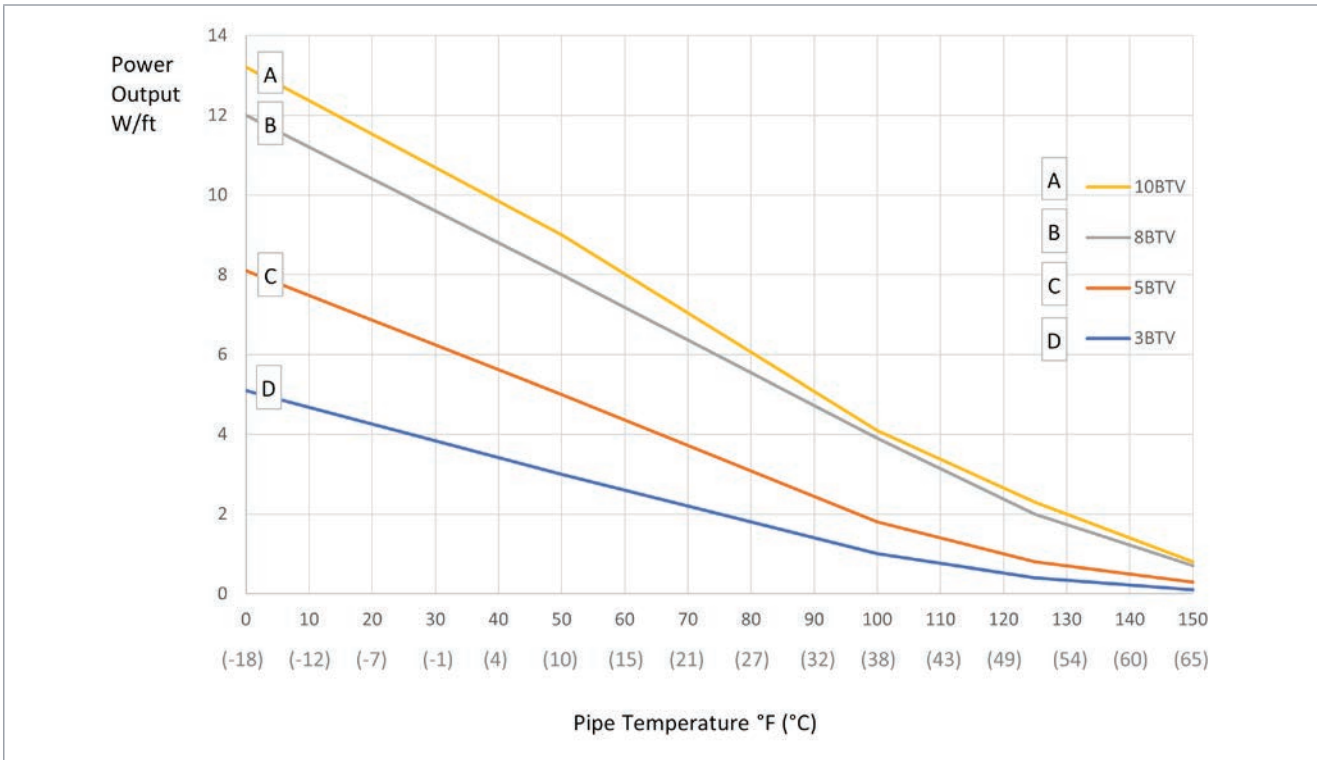
IEx 09.0004X
Ex eb IIC T6 Gb
Ex eb mb IIC T6 Gb

DESIGN AND INSTALLATION

For proper design and installation, use TraceCalc Pro design software or the Self-Regulating Heating Cables Design Guide H56882. Also, refer to the nVent Installation and Maintenance Manual (H57274). Literature is available via nVent.com/RAYCHEM.

Adjustment Factors				
	Power Output	Circuit Length	Power Output	Circuit Length
	208 V	208 V	277 V	277 V
3BTV2-CR/CT	0.88	0.96	1.13	1.08
5BTV2-CR/CT	0.91	0.94	1.08	1.09
8BTV2-CR/CT	0.93	0.92	1.05	1.11
10BTV2-CR/CT	0.95	0.92	1.05	1.11

BTV (CR AND CT) - NOMINAL POWER OUTPUT ON METAL PIPES AT 120 AND 240 VOLTS



MAXIMUM CIRCUIT LENGTHS BASED ON CIRCUIT BREAKER SIZES

	Ambient temperature at start-up		Maximum circuit length (in feet) per circuit breaker							
			120 V				240 V			
			15 A	20 A	30 A	40 A	15 A	20 A	30 A	40 A
3BTV-CR/CT	50°F	(10°C)	330	330	330	330	660	660	660	660
	0°F	(-18°C)	200	265	330	330	395	530	660	660
	-20°F	(-29°C)	175	235	330	330	350	465	660	660
	-40°F	(-40°C)	155	205	310	330	310	410	620	660
5BTV-CR/CT	50°F	(10°C)	230	270	270	270	460	540	540	540
	0°F	(-18°C)	140	190	270	270	285	380	540	540
	-20°F	(-29°C)	125	165	250	270	250	330	500	540
	-40°F	(-40°C)	110	145	220	270	220	295	440	540
8BTV-CR/CT	50°F	(10°C)	150	200	210	210	300	400	420	420
	0°F	(-18°C)	100	130	200	210	200	265	400	420
	-20°F	(-29°C)	85	115	175	210	175	235	350	420
	-40°F	(-40°C)	80	105	155	210	155	210	315	420
10BTV-CR/CT	50°F	(10°C)	120	160	180	180	240	315	360	360
	0°F	(-18°C)	80	110	160	180	160	215	325	360
	-20°F	(-29°C)	70	95	140	180	145	190	285	360
	-40°F	(-40°C)	65	85	125	170	125	170	255	340

PRODUCT DIMENSIONS AND WEIGHT

	3BTV, 5BTV	8BTV, 10BTV
Weight	74 lbs/1000 ft (110 g/m)	100 lbs/1000 ft (150 g/m)
Width x Thickness (nominal)	0.413 x 0.217 in (10.5 x 5.5 mm)	0.520 x 0.217 in (13.2 x 5.5 mm)

ORDERING DETAILS

Description	Part number	Description	Part number
3BTV1-CR	013331-000	3BTV2-CR	914279-000
5BTV1-CR	208489-000	5BTV2-CR	414809-000
8BTV1-CR	413851-000	8BTV2-CR	479821-000
10BTV1-CR	002349-000	10BTV2-CR	677245-000
3BTV1-CT	893301-000	3BTV2-CT	469145-000
5BTV1-CT	313747-000	5BTV2-CT	487509-000
8BTV1-CT	481491-000	8BTV2-CT	008633-000
10BTV1-CT	516277-000	10BTV2-CT	567513-000

CONNECTION KITS

nVent offers a full range of connection kits for power connections, splices, and end seals. These connection kits must be used to ensure proper functioning of the product and compliance with warranty, code, and approvals requirements.

GROUND-FAULT PROTECTION

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of nVent, agency certifications, and national electrical codes, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection. Many nVent RAYCHEM control and monitoring systems meet the ground-fault protection requirement.

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