Raychem

BTV

Self-Regulating Heating Cables

Electrical freeze protection for both ordinary and hazardous (classified) areas.

The 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 cables are configured for use in ordinary and hazardous (classified) areas, including areas where corrosives may be present.

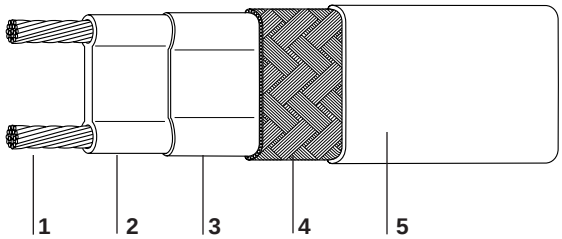
BTV-CR
Use in ordinary (nonclassified) areas and hazardous (classified Division 2) areas where exposure to *aqueous inorganic* chemicals is expected.

BTV-CT
Use in ordinary (nonclassified) areas and hazardous (classified Division 2) areas where exposure to *organic* chemicals or corrosives is expected.

Raychem designed BTV cables to meet the requirements of the U.S. National Electrical Code and the Canadian Electrical Code. For additional information contact your Raychem representative or call Raychem at (800) 545-6258.

Product construction

1 Copper bus wire
2 Self-regulating conductive core
3 Modified polyolefin jacket
4 Tinned-copper braid
5 Polyolefin jacket (-CR) or fluoropolymer outer jacket (-CT)



Product characteristics and design information

	3BTV 5BTV	8BTV 10BTV
Weight (lb per 10 ft, nominal)	0.7	1.0
Bus wire size	16 AWG	16 AWG
Outer jacket color	Black	Black
Heating cable dimensions	0.46" x 0.25"	0.65" x 0.26"
Temperature rating		
Maximum maintain or continuous exposure temperature (power on)	150°F (65°C)	150°F (65°C)
Maximum intermittent exposure temperature, 1000 hours (power on or off)	185°F (85°C)	185°F (85°C)
Temperature I.D. no. (T-rating)*	T6: 185°F (85°C)	T6: 185°F (85°C)
Voltage	120 V (100–130 Vac)	120 V (100–130 Vac)
	240 V (200–277 Vac)	240 V (200–277 Vac)
Design and installation	For proper design and installation, use the TraceCalc software or Design Guide for Insulated Pipes and Tubings (ID# 51149) and the Installation and Maintenance Guide (ID# 54484). Literature is available through Raychem's Fax-on-Demand system. In addition, the appropriate Raychem components must be used.	

Standards associations have established the T-rating as a means of classifying electrical equipment based on the maximum temperature an exposed surface may attain.

The purpose of the T-rating is to ensure that electrical equipment does not exceed the auto-ignition temperatures of flammables handled in hazardous (classified) areas.

*Per Table 500-3(d) of the National Electrical Code (1996).

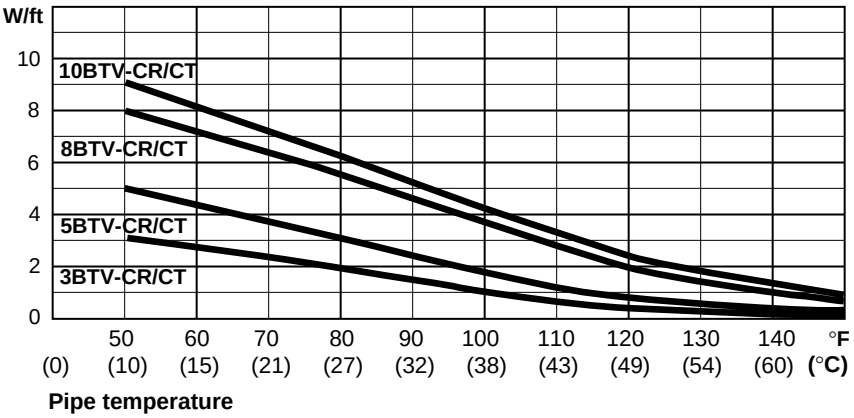
Maximum circuit lengths based on circuit breaker sizes

	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	50 A	15 A	20 A	30 A	40 A	50 A
3BTV-CR/CT	50°F	330	330	330	330	N/A	660	660	660	660	N/A
	0°F	185	250	330	330	N/A	430	575	660	660	N/A
	–20°F	145	195	290	330	N/A	370	495	660	660	N/A
5BTV-CR/CT	50°F	230	270	270	270	N/A	460	540	540	540	N/A
	0°F	150	200	270	270	N/A	300	400	540	540	N/A
	–20°F	130	175	260	270	N/A	260	345	520	540	N/A
8BTV-CR/CT	50°F	150	200	210	210	N/A	295	390	420	420	N/A
	0°F	105	140	210	210	N/A	195	260	390	420	N/A
	–20°F	95	125	185	210	N/A	170	230	340	420	N/A
10BTV-CR/CT	50°F	115	150	180	180	N/A	230	305	360	360	N/A
	0°F	70	95	145	180	N/A	150	200	300	360	N/A
	–20°F	60	85	125	165	N/A	135	180	270	360	N/A

⚠ **Note:** Raychem and the 1996 edition of the U.S. National Electrical Code require both ground-fault protection of equipment and a grounded metallic covering (usually braid) on all heating cables. All Raychem products meet the metallic covering requirement. Following are some of the ground-fault breakers that satisfy this equipment protection requirement: Square D Type QOB-EPD or QO-EPD; Raychem/Square D Type GFPD EHB-EPD (277 Vac); Cutler Hammer (Westinghouse) Type QBGFEP.

Nominal power output rating on metal pipes at 120 V/240 V

	Adjustment factors	
	Power output	Circuit length
208 V		
3BTV2-CR/CT	0.82	0.96
5BTV2-CR/CT	0.85	0.94
8BTV2-CR/CT	0.89	0.92
10BTV2-CR/CT	0.89	0.92
277 V		
3BTV2-CR/CT	1.13	1.08
5BTV2-CR/CT	1.12	1.09
8BTV2-CR/CT	1.08	1.11
10BTV2-CR/CT	1.08	1.11



Note: For design and installation, use the TraceCalc software or Design Guide for Insulated Pipes and Tubings (ID# 51149) and the Installation and Maintenance Guide (ID# 54484).

Approvals and certifications

UL · FM APPROVED · CSA Desig. 3A, 3B, 3C, 5A, 5B · ISO 9001

North America	**Ordinary areas**	
	Factory Mutual	
	Canadian Standards Association	
	Underwriters Laboratories Inc.	
	Hazardous (classified) areas	
	Factory Mutual	Class I, Division 2, Groups A, B, C, D
		Class II, Division 2, Groups F and G
		Class III
	Canadian Standards Association	Class I, Divisions 1 and 2, Groups A, B, C, D
		Class II, Divisions 1 and 2, Groups E, F, G
		Class III
	Underwriters Laboratories Inc.	Class I, Division 2, Groups A, B, C, D Class II, Division 2, Groups F and G
Europe	BTV heating cables are approved in Zone 1 and Zone 2 hazardous areas by BASEEFA, FEI, PTB, LCIE, DEMKO, and SEV.	

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