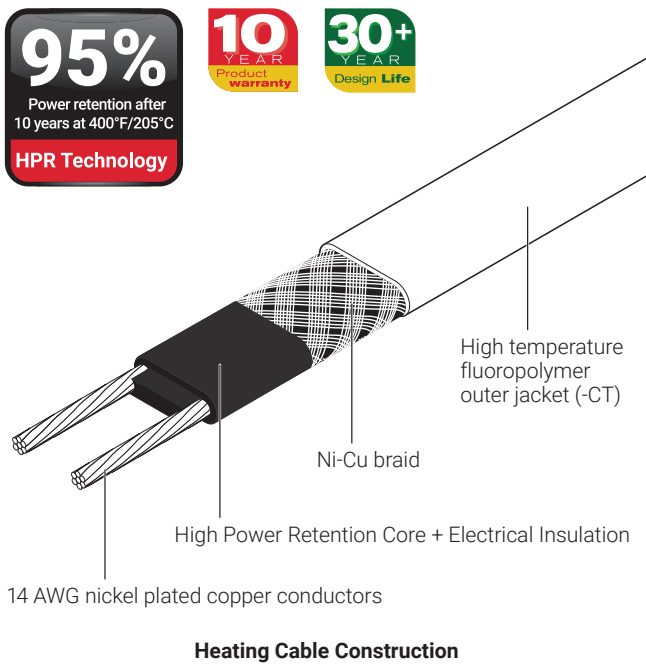


## CONNECT AND PROTECT

### High power retention self regulating heating cables freeze protection or process temperature maintenance for both nonhazardous and hazardous locations

#### PRODUCT OVERVIEW



The nVent RAYCHEM HTV self-regulating heating cable is designed for freeze protection or process temperature maintenance of pipes and vessels requiring high power output and exposure temperatures.

The HTV heating cables can withstand temperatures up to 500°F (260°C) and provide process temperature maintenance to 400°F (205°C). The HTV cable has a solid construction with a high power retention (HPR) heating core and pressure extruded electrical insulation. This innovative heating core technology and product design results in:

- Superior heat transfer
- Highly reliable power output for long operational life
- Ease of stripping, flexing and installation
- Eight wattage levels for efficient heat trace designs and lower installation costs

Power retention: Minimum 95% after 10 years at maximum operating temperature of 400°F (205°C).

Certified for use in hazardous and ordinary areas and comes with a 10 year product warranty.

Design life: 30+ years of design life, depending on application.

nVent RAYCHEM HTV 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
Chemical resistance	Organic and aqueous inorganic chemicals and corrosives

#### SUPPLY VOLTAGE

HTV1	100–130 Vac
HTV2	200–277 Vac

## SPECIFICATIONS

Maximum maintain or continuous operating temperature (power on)	400°F (205°C)
Maximum intermittent exposure temperature (power on/off)	500°F (260°C) for 2000 hours cumulative. Longer durations allowed between 500°F (260°C) and 400°F (205°C)
Temperature classification (T-Rating or Temperature ID numbers)	T2B 464°F (240°C) 28HTV2-CT T2D 419°F (215°C) 20HTV1-CT; 20HTV2-CT
Temperature ID numbers are consistent with North America National Electrical Codes	T3 400°F (200°C) 5, 8, 10, 12, 15 HTV1-CT 5, 8, 10, 12, 15 HTV2-CT T3A 356°F (180°C) 3HTV1-CT, 3HTV2-CT
Minimum installation temperature	-76°F (-60°C)
Bus-Wire size	14 AWG
Thickness (nominal)	0.28 in (7.1 mm)
Width (nominal)	0.429 in (10.9 mm)
Weight (nominal)	114 lb/1000 ft (170 g/m)
Minimum bend radius	-76°F (-60°C) ≤ T < -4°F (-20°C): 1" (25 mm) -4°F (-20°C) ≤ T < 14°F (-10°C): 0.8" (20 mm) 14°F (-10°C) ≤ T < 50°F (+10°C): 0.6" (15 mm) T ≥ 50°F (+10°C): 0.5" (13 mm)
Design Life	30 years or more depending on application (contact nVent for more details)
Power Retention	Minimum 95% after 10 years at maximum operating temperature of 400°F (205°C)

## APPROVALS

For HTV Cable



Class I Division 1 (Zone 1\*), Groups A, B, C, D  
Class I Division 2 (Zone 2\*), Groups A, B, C, D  
-WS for Canada. \* Per CE Code Table 18

Class I Zone 1 Group IIC Class II/III Division 1 (Zone 21\*)  
Groups E, F, G Zone 21 IIIC  
Class I Zone 2 Group IIC Class II/III Division 2 (Zone 22\*)  
Groups F, G Zone 22 IIIB



Ex 60079-30-1 IIC T\*\* Gb  
Ex 60079-30-1 IIIC T\*\* Db  
Class I Zone 1 AEx eb IIC T\*\* Gb  
Zone 21 AEx tb IIIC T\*\* Db  
-WS for Canada

IECEX PTB 21.0007X

Ex 60079-30-1 IIC T\*\* Gb

Ex 60079-30-1 IIIC T\*\* Db

System's hazardous area location rating and ambient temperature range depend on the connection kits used (see schedule).



IEx 21.0097X

Ex eb mb 60079-30-1 IIC 85°C (T6)...215°C (T2) Gb

Ex tb 60079-30-1 IIIC T85°C...T215°C Db

\*\* For system T-rating, refer to design document or see schedule.

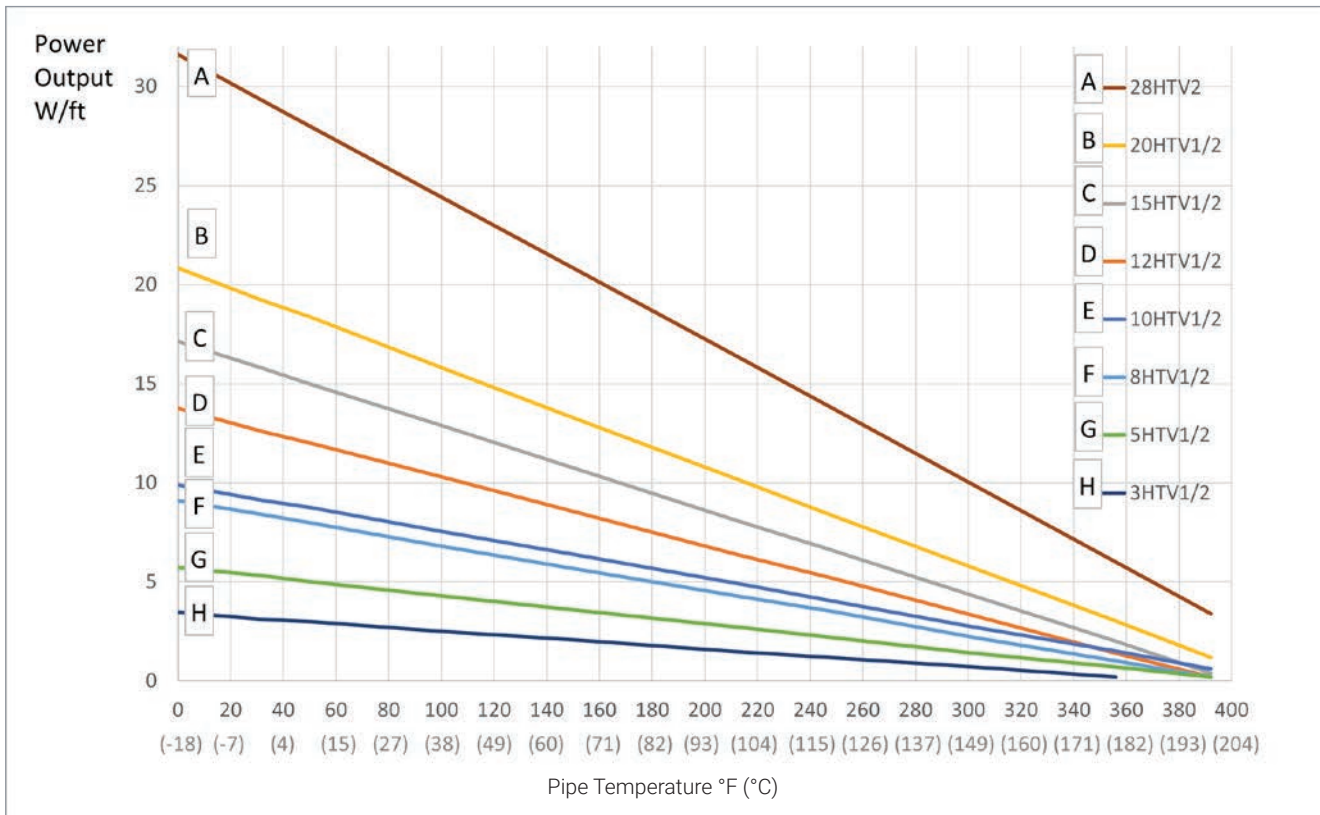
## DESIGN AND INSTALLATION

For proper design and installation, use TraceCalc Pro design software or the Self-Regulating Heating Cables Design Guide H56882. See Design Guide document H56882 for circuit length tables with 208 V and 277 V. Also, refer to the nVent Installation and Maintenance manual (H57274). Literature is available via the nVent web site, [nVent.com/RAYCHEM](http://nVent.com/RAYCHEM).

Power Adjustment Factors	Voltage	
	208 V	277 V
3HTV2-CT	0.85	1.1
5HTV2-CT	0.87	1.08
8HTV2-CT	0.88	1.06
10HTV2-CT	0.88	1.08
12HTV2-CT	0.88	1.08

Power Adjustment Factors		
	Voltage	
15HTV2-CT	0.91	1.05
20HTV2-CT	0.92	1.04
28HTV2-CT	0.96	1.02

### NOMINAL POWER OUTPUT RATING ON METAL PIPES AT 120 V / 240 V



### 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				
	°F	°C	15 A	20 A	30 A	40 A	50 A	15 A	20 A	30 A	40 A	50 A
3HTV-CT	50	10	241	322	482	485	485	482	643	964	978	978
	0	-18	213	284	426	485	485	415	554	831	978	978
	-20	-29	203	271	407	485	485	395	527	791	978	978
	-40	-40	195	260	390	485	485	378	504	756	978	978
5HTV-CT	50	10	180	240	360	372	372	360	480	720	751	751
	0	-18	157	209	314	372	372	314	418	627	751	751
	-20	-29	151	201	302	372	372	299	398	598	751	751
	-40	-40	145	194	291	372	372	285	380	571	751	751
8HTV-CT	50	10	131	174	261	289	289	261	348	523	581	581
	0	-18	113	151	227	289	289	229	305	457	581	581
	-20	-29	108	144	216	288	289	218	291	437	581	581
	-40	-40	103	138	207	276	289	209	278	418	557	581
10HTV-CT	50	10	111	148	221	254	254	221	296	443	508	508
	0	-18	97	130	195	254	254	196	261	392	508	508
	-20	-29	93	124	185	247	254	187	249	374	498	508
	-40	-40	89	118	177	236	254	178	238	357	476	508

	Ambient temperature at start-up		Maximum circuit length (in feet) per circuit breaker									
			120 V					240 V				
	°F	°C	15 A	20 A	30 A	40 A	50 A	15 A	20 A	30 A	40 A	50 A
12HTV-CT	50	10	96	128	192	226	226	192	256	384	462	462
	0	-18	85	114	171	226	226	167	223	335	446	462
	-20	-29	81	109	163	217	226	160	213	319	426	462
	-40	-40	78	104	156	207	226	153	204	305	407	462
15HTV-CT	50	10	75	101	151	201	201	151	202	302	400	400
	0	-18	67	89	133	177	201	132	176	264	352	400
	-20	-29	63	84	127	169	201	126	168	252	336	397
	-40	-40	60	80	121	161	193	120	160	240	320	381
20HTV-CT	50	10	60	80	120	160	169	115	154	230	307	330
	0	-18	53	71	106	141	155	101	135	203	271	294
	-20	-29	51	68	101	135	149	97	129	194	259	283
	-40	-40	49	65	97	130	144	93	124	186	248	273
28HTV2-CT	50	10	n/a	n/a	n/a	n/a	n/a	86	114	172	229	231
	0	-18	n/a	n/a	n/a	n/a	n/a	76	101	152	202	208
	-20	-29	n/a	n/a	n/a	n/a	n/a	73	97	145	194	200
	-40	-40	n/a	n/a	n/a	n/a	n/a	70	93	139	185	193

## ORDERING DETAILS

Part description	Part number
3HTV1-CT	P000004312
5HTV1-CT	P000004313
8HTV1-CT	P000004314
10HTV1-CT	P000004315
12HTV1-CT	P000004316
15HTV1-CT	P000004317
20HTV1-CT	P000004318

Part description	Part number
3HTV2-CT	P000004319
5HTV2-CT	P000004320
8HTV2-CT	P000004321
10HTV2-CT	P000004322
12HTV2-CT	P000004323
15HTV2-CT	P000004324
20HTV2-CT	P000004325
28HTV2-CT	2000003152

## 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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