

## SELF-REGULATING HEATING CABLE FOR PIPE FREEZE PROTECTION



The nVent RAYCHEM ETL self-regulating heating cables provide freeze protection to piped services in and around buildings.

### PRODUCT FEATURES

- Cut to length on site.
- Small geometry for ease of installation
- CR and CT jacketed versions for on-pipe and in-pipe applications
- 10 & 16W/m versions for a range of pipe diameters and climatic regions
- Zero maintenance after installation and commissioning
- No risk of overheating due to self-regulating technology

### SELF-REGULATING TECHNOLOGY

ETL cables feature self-regulating technology. The heat output automatically adjusts depending on the local temperature at every point along its length. It never overheats even when overlapped.

### ETL SELF-REGULATING HEATING CABLES

Product	R-ETL-A	R-ETL-B	R-ETL-A-CR	R-ETL-B-CR
Power Output @ 5 °C	10 (16W/m in Pipe)	16 (25W/m in pipe)	10	16
Supply Voltage	230Vac	230Vac	230Vac	230Vac
Maximum Exposure Temperature (Heater Power off) Max. 800 Hours Exposure.	65 °C	65 °C	65 °C	65 °C
Dimensions	8,5 mm x 5,8 mm	8,5 mm x 5,8 mm	8,5 mm x 5,8 mm	8,5 mm x 5,8 mm
Electrical Grounding Method (Earthing)	Nickel Plated Copper Braid	Nickel Plated Copper Braid	Nickel Plated Copper Braid	Nickel Plated Copper Braid
Primary (Inner) Jacket Material	Radiation cross-linked modified Polyolefin	Radiation cross-linked modified Polyolefin	Radiation cross-linked modified Polyolefin	Radiation cross-linked modified Polyolefin
Final (Outer) Jacket Material	Fluoropolymer	Fluoropolymer	Modified Polyolefin	Modified Polyolefin
Minimum Installation Temperature	-20 °C	-20 °C	-20 °C	-20 °C
Minimum Bend Radius	10 mm	10 mm	10 mm	10 mm
Maximum Circuit Length (5 °C Switch-on)	100 m (10A) On Pipe 60 m (10A) In Pipe	100 m (16A) On Pipe 60 m (16A) In Pipe	100 m (10A) On Pipe Not approved for in pipe use	100 m (16A) On Pipe Not approved for in pipe use
Certification & Approvals	Test & Approved to IEC62395. CE Marked.	Test & Approved to IEC62395. CE Marked.	Test & Approved to IEC62395. CE Marked.	Test & Approved to IEC62395. CE Marked.
PCN	924269-000	P000002042	P000002043	P000002044

## EASY TO DESIGN AND INSTALL

RAYCHEM ETL can be designed on site and cut-to-length unlike constant wattage heater cables. The heating cable is simply terminated with an end seal at the end of the pipe run. The heating cable range is also supported with a range of connection and electrical termination accessories, designed, tested, and approved by the manufacturer, for high performance and total peace of mind.

## R-ETL RANGE CIRCUIT LENGTHS

Circuit Lengths are based on 230Vac supply and C-Type characteristic circuit protection devices.

R-ETL-A-CR (10W/m @ 5 °C)	Installation On-Pipe		
	Circuit supply current (Amps)		
Switch-on Temperature ( °C)	10	13	16
-20	100	100	100
-10	100	100	100
0	100	100	100
5	100	100	100
10	100	100	100

R-ETL-B-CR (16W/m @ 5 °C)	Installation On-Pipe		
	Circuit supply current (Amps)		
Switch-on Temperature ( °C)	10	13	16
-20	80	95	95
-10	95	100	100
0	100	100	100
5	100	100	100
10	100	100	100

R-ETL-A (10W/m @ 5 °C)	Installation On-Pipe			Installation In-Pipe		
	Circuit supply current (Amps)			Circuit supply current (Amps)		
Switch-on Temperature (°C)	10	13	16	10	13	16
-20	38	60	100			
-10	45	85	100			
0	70	100	100	60	60	60
5	100	100	100	60	60	60
10	100	100	100	60	60	60

R-ETL-B (16W/m @ 5°C)	Installation On-Pipe			Installation In-Pipe		
	Circuit supply current (Amps)			Circuit supply current (Amps)		
Switch-on Temperature (°C)	10	13	16	10	13	16
-20	12	26	35	N/A	N/A	N/A
-10	12	32	44	N/A	N/A	N/A
0	30	44	75	18	26	45
5	37	58	100	22	35	60
10	49	93	100	30	45	60

## RECOMMENDED CONTROL DEVICES

PCN	Product	Description
728129-000	AT-TS-13	Ambient Sensing freeze protection thermostat. Range: -5 °C to +15 °C.
548945-000	AT-TS-14	Pipe sensing freeze protection thermostat. Range 0 °C to +120 °C.
145232-000	RayStat-ECO-10	Ambient Sensing Thermostat with Proportional Ambient Sensing Control (PASC)
828810-000	RayStat-CONTROL-10	Line Sensing thermostat with volt free alarm relay
1244-006265	RayStat-CONTROL-11-DIN	Line Sensing Thermostat with digital display (Din Rail mountable.)
1244-016626 - 31	SBS-R-FP Control Panels	Multi-circuit control panels with integrated electrical protection and circuit switching devices.

## RECOMMENDED ELECTRICAL CONNECTION AND TERMINATION KITS

PCN	Product	Description
139433-000	U-ACC-PP-07	Cold lead connection & end seal kit for R-ETL heating cables
331368-000	CE20-03	Connection and end seal kit for R-ETL-*-CR heating cables
946607-000	JB16-02	Junction Box

## ACCESSORIES

PCN	Product	Description
C77220-000	GT-66	Heat resistant glass cloth adhesive tape. (20m roll)
102823-000	KBL-10	Cable ties (100 ties per pack.)
938947-000	LAB-I-01	Electric Traced warning label

## HEATING CABLE SELECTION:

### FROST PROTECTION OF PIPEWORK. MAXIMUM OPERATING TEMPERATURE 40°C.

R-ETL-A	10W/m @ 5°C.
R-ETL-A-CR	10W/m @ 5°C.
R-ETL-B	16W/m @ 5°C.
R-ETL-B-CR	16W/m @ 5°C.

### AT AMBIENT TEMP -20°C

Insulation thicknesses (mm)	Pipe diameter (mm)											
	15	22	28	35	42	54	67	76	108	125	150	200
10	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A
20	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A
25	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A
30	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A
40	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A
50	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A

**AT AMBIENT TEMP -40°C**

Insulation thicknesses (mm)	Pipe diameter (mm)												
	15	22	28	35	42	54	67	76	108	125	150	200	
10	R-ETL-B (-CR)	NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A	N/A
50	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-A (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	R-ETL-B (-CR)	N/A	N/A	N/A	N/A	N/A

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