

## 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                        | 100 m (16A) On Pipe                        | 100 m (10A) On Pipe                        | 100 m (16A) On Pipe                        |
|                                                                          | 60 m (10A) In Pipe                         | 60 m (16A) In Pipe                         | Not approved for in pipe use               | 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

| Pipe diameter (mm)          |               |               |               |               |               |               |               |               |               |               |               |     |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|
| Insulation thicknesses (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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |

### United Kingdom

Tel 0800 969 013  
Fax 0800 968 624  
salesthermalUK@nvent.com

### Ireland

Tel 1800 654 241  
Fax 1800 654 240  
salesIE@nvent.com

### South East Asia

Tel +65 67685800  
Fax +65 67322263

### Australia

Tel +61 2 97920250  
Fax +61 2 97745931

### India - Noida

Tel +91 120 464 9500  
Fax +91 120 464 9548  
NTMinfome@nvent.com

### India - Mumbai

Tel +91 22 6775 8800/01  
Fax +91 22 2556 1491  
NTMinfome@nvent.com

### UAE

Tel +971 4 378 1700  
Fax +971 4 378 1777  
NTMinfome@nvent.com



nVent.com

Our powerful portfolio of brands:

**CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER**