

# OSR-NA All Purpose Self-Regulating Heating Cable ELSR-NA



## Features

### Outer jacket

- Thermoplastic (AO, BO), Fluoropolymer (BOT).

### Bus wire

- Nickel plated copper, 16 AWG.

### Minimum start-up temperature

- -30 °C (-22 °F).

### Maximum operating temperature (power on)

- 60 °C (140 °F).

### Maximum continuous exposure temperature (power off)

- 80 °C (176 °F).

### Nominal voltage

- 120V, 240/208V.

### Bending radius, minimum

- 25 mm (1 in.).

### Installation temperature, minimum

- AO, BO: -45 °C (-45 °F).
- BOT: -25 °C (-13 °F).

### Classification

- II 2G Ex e IIC T6 Gb II 2D Ex tb IIIC.
- T 80 °C Db.
- Class I, Division 2, Groups A, B, C, D.

- Class II, Division 2, Groups E, F, G.
- Class III, T6.
- Class I, Zone 1, AEx / Exe II, T6.
- Class 1, Division 1, Groups B, C, D (Contact manufacturer).

### Standards

- CSA C22.2.130.03; -WS.
- CAN/CSA 60079-7:12, 60079-0-11.
- ANSI/IEEE 515, 515.

### Certification

- IECEx EPS 12.0006U.
- 12ATEX1431U.
- CSA C US 2547790.

### Rating

- Wet rated, for outdoor use (WS).

### Warranty

- 1-year basic warranty on the heating cable.

### Application

- Freeze protection, heat tracing instrumentation, pipes, vessel and tanks, chemical and petrochemical industries, food processing, automotive, roof and gutter, sprinkler systems.

## Models

| Nominal Output W/ft. | Product # <sup>1,3</sup><br>120V | Outer jacket/Mechanical shield |           |    |           |     |           | Nominal Output W/ft. | Product # <sup>1,2,3</sup><br>240V | Outer jacket/Mechanical shield |           |    |           |     |           | Cable dimension approx. (mm) |
|----------------------|----------------------------------|--------------------------------|-----------|----|-----------|-----|-----------|----------------------|------------------------------------|--------------------------------|-----------|----|-----------|-----|-----------|------------------------------|
|                      |                                  | AO                             | Price/ft. | BO | Price/ft. | BOT | Price/ft. |                      |                                    | AO                             | Price/ft. | BO | Price/ft. | BOT | Price/ft. |                              |
| 3                    | ELSR-NA-3-1-XX                   |                                | 6.75      |    | 8.25      |     | 9.75      | 4                    | ELSR-NA-4-2-XX                     | -                              | -         | -  | -         |     | 9.75      | 13.8 x 5.6                   |
| 5                    | ELSR-NA-5-1-XX                   |                                | 6.75      |    | 8.25      |     | 9.75      | 6                    | ELSR-NA-6-2-XX                     |                                | 6.75      |    | 8.25      |     | 9.75      | 13.8 x 5.6                   |
| 7                    | ELSR-NA-7-1-XX                   |                                | 6.75      |    | 8.25      |     | 9.75      | 8                    | ELSR-NA-8-2-XX                     |                                | 6.75      |    | 8.25      |     | 9.75      | 14.1 x 5.6                   |
| -                    | -                                | -                              | -         | -  | -         | -   | -         | 10                   | ELSR-NA-10-2-XX                    |                                | 6.75      |    | 8.25      |     | 9.75      | 14.1 x 5.6                   |

<sup>1</sup> XX = Outer jacket/Mechanical shield.

AO Aluminum foil and a thermoplastic outer jacket.

BO Protective braid and a thermoplastic outer jacket.

BOT Protective braid and a fluoropolymer outer jacket.

<sup>2</sup> For operations at 208V, please consult Correction Factors/Multipliers at next page.

<sup>3</sup> When ordering, the quantity on the purchase order is equal to the length in feet of the cable required.

E.g.: To order a 500 ft. cable, write 500 for quantity with product code.

Custom cutting service available for all lengths other than 500 ft. and 1000 ft. (minimum of 25 ft.).

## Options

See OSR Options and Controls section

# OSR-NA

## Heating circuit length for ELSR-NA models

| Start-up temperature | CB capacity (A) | 120V                              |             |             |
|----------------------|-----------------|-----------------------------------|-------------|-------------|
|                      |                 | Maximum heating circuit (ft.) for |             |             |
|                      |                 | ELSR-NA-3-1                       | ELSR-NA-5-1 | ELSR-NA-7-1 |
| 10 °C (50 °F)        | 10              | 159                               | 125         | 82          |
|                      | 15              | 238                               | 187         | 123         |
|                      | 20              | 317                               | 249         | 164         |
|                      | 25              | 397                               | 312         | 205         |
|                      | 30              | 476                               | 374         | 246         |
|                      | 35              | 555                               | 436         | 287         |
| 0 °C (32 °F)         | 40              | 612                               | 499         | 328         |
|                      | 10              | 143                               | 112         | 75          |
|                      | 15              | 215                               | 168         | 113         |
|                      | 20              | 287                               | 224         | 151         |
|                      | 25              | 358                               | 280         | 188         |
|                      | 30              | 430                               | 336         | 226         |
| -10 °C (14 °F)       | 35              | 502                               | 392         | 264         |
|                      | 40              | 573                               | 448         | 301         |
|                      | 10              | 130                               | 102         | 69          |
|                      | 15              | 195                               | 153         | 104         |
|                      | 20              | 260                               | 204         | 139         |
|                      | 25              | 325                               | 255         | 173         |
| -30 °C (-22 °F)      | 30              | 390                               | 306         | 208         |
|                      | 35              | 455                               | 357         | 243         |
|                      | 40              | 520                               | 408         | 277         |
|                      | 10              | 110                               | 87          | 60          |
|                      | 15              | 165                               | 130         | 90          |
|                      | 20              | 220                               | 173         | 120         |
|                      | 25              | 275                               | 217         | 150         |
|                      | 30              | 330                               | 260         | 180         |
|                      | 35              | 385                               | 303         | 210         |
|                      | 40              | 440                               | 347         | 240         |

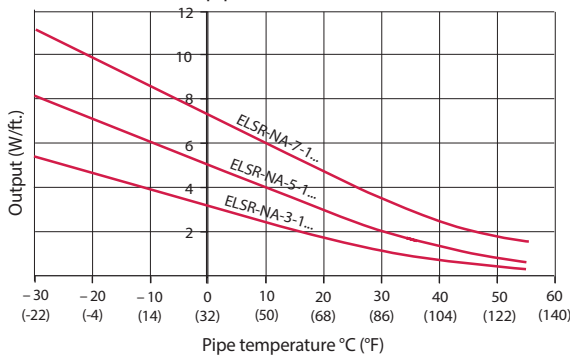
| Start-up temperature | CB capacity (A) | 240V                              |             |             |              |
|----------------------|-----------------|-----------------------------------|-------------|-------------|--------------|
|                      |                 | Maximum heating circuit (ft.) for |             |             |              |
|                      |                 | ELSR-NA-4-2                       | ELSR-NA-6-2 | ELSR-NA-8-2 | ELSR-NA-10-2 |
| 10 °C (50 °F)        | 10              | 273                               | 170         | 127         | 66           |
|                      | 15              | 410                               | 255         | 191         | 99           |
|                      | 20              | 547                               | 340         | 255         | 132          |
|                      | 25              | 683                               | 425         | 318         | 165          |
|                      | 30              | 820                               | 510         | 382         | 198          |
|                      | 35              | 957                               | 595         | 446         | 231          |
| 0 °C (32 °F)         | 40              | 1087                              | 687         | 509         | 264          |
|                      | 10              | 245                               | 154         | 117         | 61           |
|                      | 15              | 367                               | 231         | 175         | 91           |
|                      | 20              | 489                               | 308         | 233         | 121          |
|                      | 25              | 612                               | 385         | 292         | 152          |
|                      | 30              | 734                               | 462         | 350         | 182          |
| -10 °C (14 °F)       | 35              | 856                               | 539         | 408         | 212          |
|                      | 40              | 979                               | 616         | 467         | 243          |
|                      | 10              | 222                               | 141         | 108         | 57           |
|                      | 15              | 333                               | 211         | 162         | 85           |
|                      | 20              | 444                               | 281         | 216         | 113          |
|                      | 25              | 555                               | 352         | 270         | 142          |
| -30 °C (-22 °F)      | 30              | 666                               | 422         | 324         | 170          |
|                      | 35              | 777                               | 492         | 378         | 198          |
|                      | 40              | 888                               | 563         | 432         | 227          |
|                      | 10              | 187                               | 120         | 93          | 50           |
|                      | 15              | 280                               | 180         | 140         | 75           |
|                      | 20              | 373                               | 240         | 187         | 100          |
|                      | 25              | 467                               | 300         | 233         | 125          |
|                      | 30              | 560                               | 360         | 280         | 150          |
|                      | 35              | 653                               | 420         | 327         | 175          |
|                      | 40              | 747                               | 480         | 373         | 200          |

### Maximum heating circuit ELSR-NA-XX on the following conditions:

- 120/240 Voltage
- Voltage drop max. 10%
- MCB type QO (100% utilization)
- Single cable fed 1 end

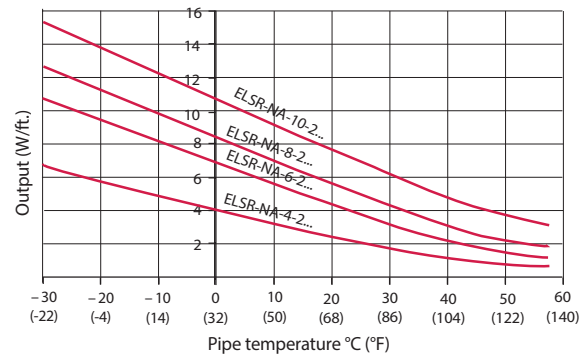
### ELSR-NA-XX-1-XX output

(on insulated metallic pipes)



### ELSR-NA-XX-2-XX output

(on insulated metallic pipes)



### Eltherm® Correction Factors/Multipliers for Operation of Heating Cables in 208V

To calculate the corrected power output for operation in 208V, multiply the published output at 240V (in W/ft.) by the nominal output factor provided for the applicable heating cable type.

To calculate maximum heating circuit lengths for operation in 208V (tables provided in product data sheets), multiply the published max. heating circuit length at 240V provided for the applicable heating cable type.

| Heating Cable Correction Factors/ Multipliers | Nominal Output 208V vs. 240V | Heating Circuit Length 208V vs. 240V |
|---|------------------------------|--------------------------------------|
| ELSR-NA-XX-2                                  | 0.88                         | 0.93                                 |

### Cable heat output depending on the environment

- In Snow and Ice (120V cable)**
  - 11W/ft. @ 50 °F (36W/m @ 10 °C)
- In Dry Air**
  - 7W/ft. @ 50 °F (23W/m @ 10 °C)
- In Snow and Ice (240/208V cable)**
  - 13W/ft. @ 50 °F (42W/m @ 10 °C)
- In Dry Air**
  - 8W/ft. @ 50 °F (26W/m @ 10 °C)