



## 2XS(FL)2Y HDPE High Voltage 64/110 (123) kV Cable



Eland Product Group: H9A

### APPLICATION

High Voltage cables for distribution networks; also for connection to generation units and plant and process connection. For installation in ground, in water outdoors, indoors and in cable ducts for power stations, industry and distribution networks. The water blocking tape avoids water propagation inside the cable.

### CHARACTERISTICS

**Voltage Rating** U<sub>0</sub>/U  
64/110 (123) kV

### CONSTRUCTION

#### Conductor

Copper conductor (optional watertightness – WTC)

#### Conductor Screen

Semi-conductive screen extruded on the phase conductor

#### Insulation

XLPE (Cross-linked Polyethylene)

#### Insulation Screen

Semi-conductive screen extruded on insulation

#### Wrapping

Semi-conductive water swelling tape

#### Metallic Screen

Copper wires and equalising tape

#### Wrapping

Semi-conductive water swelling tape

#### Tape

Longitudinally applied aluminium tape coated with PE copolymer

#### Sheath

HDPE (High Density Polyethylene)

Optional – semi-conductive layer

#### Sheath Colour

● Black

### STANDARDS

IEC 60840

### THE CABLE LAB<sup>®</sup>

AN ISO/IEC 17025 AND IECCE CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.



### SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: [www.elandcables.com/company/about-us/esg-sustainability](http://www.elandcables.com/company/about-us/esg-sustainability)



### REGULATORY COMPLIANCE

This cable meets the requirements of the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab<sup>®</sup>.





## DIMENSIONS

| ELAND PART NO. | NO. OF CORES | NOMINAL CROSS SECTIONAL AREA<br>mm <sup>2</sup> | NOMINAL DIAMETER OF CONDUCTOR<br>mm | INSULATION<br>mm  |                       | METALLIC SCREEN                          |                             | NOMINAL OUTER DIAMETER OF CABLE<br>mm | NOMINAL WEIGHT<br>kg/km | MAXIMUM PULLING FORCE<br>mm | MINIMUM BENDING RADIUS<br>m |
|----------------|--------------|-------------------------------------------------|-------------------------------------|-------------------|-----------------------|------------------------------------------|-----------------------------|---------------------------------------|-------------------------|-----------------------------|-----------------------------|
|                |              |                                                 |                                     | Nominal thickness | Nominal diameter over | Nominal cross section<br>mm <sup>2</sup> | Nominal diameter over<br>mm |                                       |                         |                             |                             |
| H9A110KV010150 | 1            | 150RM                                           | 14.4                                | 18.0              | 53.4                  | 95                                       | 59.2                        | 67                                    | 5280                    | 7.5                         | 1.7                         |
| H9A110KV010185 | 1            | 185RM                                           | 15.8                                | 17.0              | 52.2                  | 95                                       | 58.0                        | 66                                    | 5450                    | 9.3                         | 1.7                         |
| H9A110KV010240 | 1            | 240RM                                           | 18.5                                | 16.5              | 53.5                  | 95                                       | 59.3                        | 67                                    | 6000                    | 12.0                        | 1.7                         |
| H9A110KV010300 | 1            | 300RM                                           | 20.5                                | 15.5              | 53.5                  | 95                                       | 59.3                        | 67                                    | 6500                    | 15.0                        | 1.7                         |
| H9A110KV010400 | 1            | 400RM                                           | 23.6                                | 14.5              | 54.6                  | 95                                       | 60.4                        | 69                                    | 7300                    | 20.0                        | 1.7                         |
| H9A110KV010500 | 1            | 500RM                                           | 26.4                                | 14.0              | 56.4                  | 95                                       | 62.2                        | 71                                    | 8350                    | 25.0                        | 1.8                         |
| H9A110KV010630 | 1            | 630RM                                           | 30.3                                | 14.0              | 60.9                  | 95                                       | 66.7                        | 75                                    | 9920                    | 31.5                        | 1.9                         |
| H9A110KV010800 | 1            | 800RM                                           | 34.7                                | 14.0              | 65.3                  | 95                                       | 71.1                        | 80                                    | 11740                   | 40.0                        | 2.0                         |
| H9A110KV011000 | 1            | 1000RM                                          | 38.3                                | 14.0              | 68.9                  | 95                                       | 74.7                        | 84                                    | 13880                   | 50.0                        | 2.1                         |
| H9A110KV011200 | 1            | 1200RMS                                         | 41.6                                | 14.0              | 73.8                  | 95                                       | 79.6                        | 89                                    | 16090                   | 60.0                        | 2.2                         |
| H9A110KV011400 | 1            | 1400RMS                                         | 45.8                                | 14.0              | 78.0                  | 95                                       | 83.8                        | 94                                    | 18040                   | 70.0                        | 2.3                         |
| H9A110KV011600 | 1            | 1600RMS                                         | 49.6                                | 14.0              | 81.8                  | 95                                       | 87.6                        | 98                                    | 20290                   | 80.0                        | 2.4                         |
| H9A110KV011800 | 1            | 1800RMS                                         | 53.2                                | 14.0              | 85.4                  | 95                                       | 91.2                        | 102                                   | 22700                   | 90.0                        | 2.5                         |
| H9A110KV012000 | 1            | 2000RMS                                         | 54.6                                | 14.0              | 86.8                  | 95                                       | 92.6                        | 103                                   | 24270                   | 100.0                       | 2.6                         |
| H9A110KV012500 | 1            | 2500RMS                                         | 60.0                                | 14.5              | 94.2                  | 95                                       | 100.4                       | 112                                   | 29830                   | 100.0                       | 2.8                         |
| H9A110KV013000 | 1            | 3000RMS                                         | 68.4                                | 14.5              | 102.6                 | 95                                       | 108.8                       | 121                                   | 35960                   | 100.0                       | 3.0                         |

## ELECTRICAL DATA

De – Cable diameter

Cables in flat formation, the distance between the cable axes =  $2 \times De$



Cables in trefoil formation, the distance between the cable axes = De



## ELECTRICAL CHARACTERISTICS

| NOMINAL CROSS SECTIONAL AREA<br>mm <sup>2</sup> | NOMINAL RESISTANCE OF CONDUCTOR 90 °C<br>Ω/km | ELECTRICAL FIELD STRESS<br>kV/mm |            | CAPACITANCE<br>μF/km | ZERO REACTANCE<br>Ω/km | INDUCTANCE<br>Ω/km |                   |
|-------------------------------------------------|-----------------------------------------------|----------------------------------|------------|----------------------|------------------------|--------------------|-------------------|
|                                                 |                                               | Conductor screen                 | Insulation |                      |                        | Flat formation     | Trefoil formation |
| 150RM                                           | 0.1588                                        | 6.56                             | 2.14       | 0.119                | 0.104                  | 0.215              | 0.155             |
| 185RM                                           | 0.1272                                        | 6.67                             | 2.33       | 0.127                | 0.098                  | 0.210              | 0.150             |
| 240RM                                           | 0.0973                                        | 6.51                             | 2.49       | 0.135                | 0.089                  | 0.200              | 0.140             |
| 300RM                                           | 0.0781                                        | 6.57                             | 2.76       | 0.154                | 0.083                  | 0.195              | 0.135             |
| 400RM                                           | 0.0619                                        | 6.60                             | 3.10       | 0.176                | 0.075                  | 0.185              | 0.130             |
| 500RM                                           | 0.0492                                        | 6.60                             | 3.35       | 0.195                | 0.071                  | 0.180              | 0.125             |
| 630RM                                           | 0.0395                                        | 6.35                             | 3.45       | 0.220                | 0.067                  | 0.175              | 0.120             |
| 800RM                                           | 0.0325                                        | 6.15                             | 3.50       | 0.240                | 0.062                  | 0.170              | 0.115             |
| 1000RM                                          | 0.0275                                        | 6.05                             | 3.60       | 0.260                | 0.059                  | 0.170              | 0.110             |
| 1200RMS                                         | 0.0222                                        | 5.90                             | 3.65       | 0.280                | 0.058                  | 0.165              | 0.110             |



Click here for more information:

[elandcables.com](http://elandcables.com) | [2XS\(FL\)2Y HDPE High Voltage 64/110 \(123\) kV Cable](#)

ELAND  
CABLES

| NOMINAL CROSS<br>SECTIONAL AREA<br>mm <sup>2</sup> | NOMINAL<br>RESISTANCE OF<br>CONDUCTOR 90 °C<br>Ω/km | ELECTRICAL FIELD STRESS<br>kV/mm |            | CAPACITANCE<br>μF/km | ZERO REACTANCE<br>Ω/km | INDUCTANCE<br>Ω/km                                                                                    |                                                                                                          |
|----------------------------------------------------|-----------------------------------------------------|----------------------------------|------------|----------------------|------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                                    |                                                     | Conductor screen                 | Insulation |                      |                        | Flat formation<br> | Trefoil formation<br> |
| 1400RMS                                            | 0.0198                                              | 5.80                             | 3.70       | 0.300                | 0.055                  | 0.165                                                                                                 | 0.105                                                                                                    |
| 1600RMS                                            | 0.0182                                              | 5.70                             | 3.75       | 0.320                | 0.053                  | 0.160                                                                                                 | 0.105                                                                                                    |
| 1800RMS                                            | 0.0169                                              | 5.65                             | 3.80       | 0.340                | 0.051                  | 0.160                                                                                                 | 0.100                                                                                                    |
| 2000RMS                                            | 0.0158                                              | 5.60                             | 3.80       | 0.345                | 0.050                  | 0.160                                                                                                 | 0.100                                                                                                    |
| 2500RMS                                            | 0.0140                                              | 5.35                             | 3.70       | 0.365                | 0.050                  | 0.160                                                                                                 | 0.100                                                                                                    |
| 3000RMS                                            | 0.0126                                              | 5.30                             | 3.80       | 0.405                | 0.046                  | 0.155                                                                                                 | 0.095                                                                                                    |

## CURRENT RATING FOR SINGLE-CORE CABLES – AMPERES

| NOMINAL<br>CROSS<br>SECTIONAL<br>AREA<br>mm <sup>2</sup> | FLAT FORMATION                                                                    |      |           |      | TREFOIL FORMATION                                                                 |      |           |      | FLAT FORMATION                                                                     |      |           |      | TREFOIL FORMATION                                                                   |      |           |      |
|----------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------|------|-----------------------------------------------------------------------------------|------|-----------|------|------------------------------------------------------------------------------------|------|-----------|------|-------------------------------------------------------------------------------------|------|-----------|------|
|                                                          |  |      |           |      |  |      |           |      |  |      |           |      |  |      |           |      |
|                                                          | CONFIGURATIONS                                                                    |      |           |      |                                                                                   |      |           |      |                                                                                    |      |           |      |                                                                                     |      |           |      |
|                                                          | SPP; CB                                                                           |      | BOTH-ENDS |      | SPP; CB                                                                           |      | BOTH-ENDS |      | SPP; CB                                                                            |      | BOTH-ENDS |      | SPP; CB                                                                             |      | BOTH-ENDS |      |
|                                                          | CABLES IN EARTH                                                                   |      |           |      |                                                                                   |      |           |      | CABLES IN AIR                                                                      |      |           |      |                                                                                     |      |           |      |
| 65°C                                                     | 90°C                                                                              | 65°C | 90°C      | 65°C | 90°C                                                                              | 65°C | 90°C      | 65°C | 90°C                                                                               | 65°C | 90°C      | 65°C | 90°C                                                                                | 65°C | 90°C      |      |
| 150RM                                                    | 360                                                                               | 435  | 325       | 395  | 345                                                                               | 415  | 335       | 405  | 390                                                                                | 520  | 360       | 490  | 350                                                                                 | 470  | 345       | 465  |
| 185RM                                                    | 410                                                                               | 490  | 355       | 435  | 390                                                                               | 465  | 375       | 450  | 445                                                                                | 595  | 405       | 545  | 400                                                                                 | 540  | 390       | 525  |
| 240RM                                                    | 475                                                                               | 570  | 395       | 485  | 450                                                                               | 545  | 430       | 520  | 530                                                                                | 710  | 465       | 630  | 470                                                                                 | 635  | 455       | 615  |
| 300RM                                                    | 540                                                                               | 645  | 430       | 525  | 510                                                                               | 615  | 480       | 580  | 610                                                                                | 815  | 515       | 705  | 535                                                                                 | 725  | 510       | 700  |
| 400RM                                                    | 615                                                                               | 740  | 465       | 570  | 580                                                                               | 700  | 535       | 650  | 705                                                                                | 950  | 570       | 790  | 620                                                                                 | 840  | 585       | 800  |
| 500RM                                                    | 700                                                                               | 845  | 500       | 615  | 660                                                                               | 795  | 595       | 725  | 815                                                                                | 1100 | 630       | 875  | 715                                                                                 | 970  | 660       | 910  |
| 630RM                                                    | 800                                                                               | 965  | 530       | 660  | 745                                                                               | 900  | 660       | 805  | 945                                                                                | 1275 | 695       | 970  | 820                                                                                 | 1120 | 750       | 1030 |
| 800RM                                                    | 900                                                                               | 1090 | 560       | 695  | 830                                                                               | 1005 | 715       | 880  | 1085                                                                               | 1465 | 755       | 1055 | 930                                                                                 | 1275 | 835       | 1155 |
| 1000RM                                                   | 995                                                                               | 1205 | 580       | 725  | 910                                                                               | 1105 | 765       | 945  | 1215                                                                               | 1650 | 800       | 1130 | 1035                                                                                | 1415 | 905       | 1265 |
| 1200RMS                                                  | 1100                                                                              | 1330 | 605       | 755  | 1020                                                                              | 1235 | 825       | 1020 | 1355                                                                               | 1830 | 850       | 1200 | 1170                                                                                | 1605 | 995       | 1390 |
| 1400RMS                                                  | 1180                                                                              | 1430 | 620       | 775  | 1085                                                                              | 1320 | 860       | 1065 | 1475                                                                               | 2000 | 885       | 1255 | 1265                                                                                | 1740 | 1055      | 1485 |
| 1600RMS                                                  | 1250                                                                              | 1515 | 630       | 790  | 1140                                                                              | 1390 | 885       | 1100 | 1575                                                                               | 2140 | 915       | 1300 | 1350                                                                                | 1855 | 1110      | 1560 |
| 1800RMS                                                  | 1305                                                                              | 1590 | 640       | 805  | 1185                                                                              | 1450 | 910       | 1135 | 1665                                                                               | 2270 | 940       | 1340 | 1420                                                                                | 1955 | 1150      | 1625 |
| 2000RMS                                                  | 1360                                                                              | 1655 | 650       | 815  | 1230                                                                              | 1500 | 930       | 1160 | 1740                                                                               | 2375 | 960       | 1365 | 1475                                                                                | 2035 | 1185      | 1675 |
| 2500RMS                                                  | 1465                                                                              | 1790 | 665       | 835  | 1310                                                                              | 1605 | 965       | 1205 | 1900                                                                               | 2595 | 1000      | 1430 | 1600                                                                                | 2210 | 1255      | 1780 |
| 3000RMS                                                  | 1580                                                                              | 1930 | 680       | 855  | 1395                                                                              | 1710 | 1000      | 1255 | 2095                                                                               | 2860 | 1050      | 1495 | 1740                                                                                | 2410 | 1330      | 1895 |

SPB – Single Point Bonding; CB – Cross-bonding Both-ends; BE – Both-ends bonding