# 2XS(FL)2Y MDPE High Voltage 36/60 (72.5) kV Cable


Eland Product Group: H9C

## 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** Uo/U
36/60 (72.5) 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**
MDPE (Medium Density Polyethylene)

Optional – semi-conductive layer

**Sheath Colour**
● Black

## STANDARDS

IEC 60840

## THE CABLE LAB®

### AN ISO/IEC 17025 AND IECEE CBTL ACCREDITED FACILITY

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

ISO/IEC 17025 Accredited Testing Laboratory
IECEE CBTL Accredited Testing Laboratory

## 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

SCIENCE BASED TARGETS
BUSINESS AMBITION FOR 1.5°C

## 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®.

RoHS REACH

## DIMENSIONS

| ELAND PART NO. | NO. OF CORES | NOMINAL CROSS SECTIONAL AREA mm² | NOMINAL DIAMETER OF CONDUCTOR mm | INSULATION mm | | METALLIC SCREEN | | NOMINAL OUTER DIAMETER OF CABLE mm | NOMINAL WEIGHT kg/km | MAXIMUM PULLING FORCE mm | MINIMUM BENDING RADIUS m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Nominal thickness | Nominal diamter over | Nominal cross section mm² | Nominal diameter over mm | | | | |
| H9C60KV010120 | 1 | 120RM | 12.8 | 10.0 | 34.0 | 35 | 37.8 | 44 | 2670 | 6.0 | 1.1 |
| H9C60KV010150 | 1 | 150RM | 14.4 | 10.0 | 35.6 | 35 | 39.4 | 46 | 2980 | 7.5 | 1.1 |
| H9C60KV010185 | 1 | 185RM | 15.8 | 10.0 | 37.0 | 35 | 40.8 | 47 | 3370 | 9.3 | 1.2 |
| H9C60KV010240 | 1 | 240RM | 18.5 | 10.0 | 39.7 | 35 | 43.5 | 50 | 3990 | 12.0 | 1.3 |
| H9C60KV010300 | 1 | 300RM | 20.5 | 10.0 | 41.7 | 35 | 45.5 | 52 | 4650 | 15.0 | 1.3 |
| H9C60KV010400 | 1 | 400RM | 23.6 | 10.0 | 45.2 | 35 | 49.4 | 56 | 5660 | 20.0 | 1.4 |
| H9C60KV010500 | 1 | 500RM | 26.4 | 10.0 | 48.0 | 35 | 52.2 | 59 | 6780 | 25.0 | 1.5 |
| H9C60KV010630 | 1 | 630RM | 30.3 | 10.0 | 52.1 | 35 | 56.3 | 64 | 8220 | 31.5 | 1.6 |
| H9C60KV010800 | 1 | 800RM | 34.7 | 10.0 | 56.5 | 35 | 60.7 | 68 | 9980 | 40.0 | 1.7 |
| H9C60KV011000 | 1 | 1000RM | 38.3 | 10.0 | 60.5 | 35 | 65.1 | 73 | 12140 | 50.0 | 1.8 |
| H9C60KV011200 | 1 | 1200RMS | 41.6 | 10.0 | 65.8 | 50 | 70.4 | 79 | 14500 | 60.0 | 2.0 |
| H9C60KV011400 | 1 | 1400RMS | 45.8 | 10.0 | 70.0 | 50 | 74.6 | 83 | 16360 | 70.0 | 2.1 |
| H9C60KV011600 | 1 | 1600RMS | 49.6 | 10.0 | 73.8 | 50 | 78.4 | 87 | 18580 | 80.0 | 2.2 |
| H9C60KV011800 | 1 | 1800RMS | 53.2 | 10.0 | 77.4 | 50 | 82.0 | 91 | 20930 | 90.0 | 2.3 |
| H9C60KV012000 | 1 | 2000RMS | 54.6 | 10.0 | 78.8 | 50 | 83.4 | 93 | 22490 | 100.0 | 2.3 |
| H9C60KV012500 | 1 | 2500RMS | 60.0 | 10.0 | 85.2 | 50 | 90.2 | 100 | 27450 | 100.0 | 2.5 |
| H9C60KV013000 | 1 | 3000RMS | 68.4 | 10.0 | 93.6 | 50 | 98.6 | 109 | 33750 | 100.0 | 2.7 |

## ELECTRICAL DATA

De – Cable diameter

Cables in flat formation, the distance between the cable axes = 2 × De

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

## ELECTRICAL CHARACTERISTICS

| NOMINAL CROSS SECTIONAL AREA mm² | NOMINAL RESISTANCE OF CONDUCTOR 90 °C Ω/km | ELECTRICAL FIELD STRESS kV/mm | | CAPACITANCE µF/km | ZERO REACTANCE Ω/km | INDUCTANCE Ω/km | |
|---|---|---|---|---|---|---|---|
| | | Conductor screen | Insulation | | | Flat formation | Trefoil formation |
| 120RM | 0.1956 | 5.80 | 2.40 | 0.155 | 0.085 | 0.200 | 0.140 |
| 150RM | 0.1588 | 5.60 | 2.45 | 0.160 | 0.080 | 0.190 | 0.135 |
| 185RM | 0.1272 | 5.45 | 2.50 | 0.170 | 0.077 | 0.185 | 0.130 |
| 240RM | 0.0973 | 5.25 | 2.60 | 0.190 | 0.071 | 0.180 | 0.125 |
| 300RM | 0.0781 | 5.10 | 2.65 | 0.205 | 0.067 | 0.175 | 0.120 |
| 400RM | 0.0619 | 4.90 | 2.75 | 0.230 | 0.064 | 0.175 | 0.115 |
| 500RM | 0.0492 | 4.80 | 2.80 | 0.250 | 0.060 | 0.170 | 0.110 |
| 630RM | 0.0395 | 4.65 | 2.90 | 0.275 | 0.056 | 0.165 | 0.110 |
| 800RM | 0.0325 | 4.55 | 2.95 | 0.305 | 0.052 | 0.160 | 0.105 |
| 1000RM | 0.0275 | 4.45 | 3.00 | 0.335 | 0.051 | 0.160 | 0.100 |



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| NOMINAL CROSS SECTIONAL AREA mm² | NOMINAL RESISTANCE OF CONDUCTOR 90 °C Ω/km | ELECTRICAL FIELD STRESS kV/mm | | CAPACITANCE µF/km | ZERO REACTANCE Ω/km | INDUCTANCE Ω/km | |
|---|---|---|---|---|---|---|---|
| | | Conductor screen | Insulation | | | Flat formation | Trefoil formation |
| 1200RMS | 0.0222 | 4.35 | 3.05 | 0.370 | 0.050 | 0.160 | 0.100 |
| 1400RMS | 0.0198 | 4.30 | 3.10 | 0.400 | 0.048 | 0.155 | 0.100 |
| 1600RMS | 0.0182 | 4.25 | 3.10 | 0.425 | 0.046 | 0.155 | 0.095 |
| 1800RMS | 0.0169 | 4.20 | 3.15 | 0.450 | 0.044 | 0.155 | 0.095 |
| 2000RMS | 0.0158 | 4.20 | 3.15 | 0.455 | 0.044 | 0.150 | 0.095 |
| 2500RMS | 0.0140 | 4.15 | 3.20 | 0.500 | 0.043 | 0.150 | 0.095 |
| 3000RMS | 0.0126 | 4.10 | 3.25 | 0.555 | 0.040 | 0.145 | 0.090 |

## CURRENT RATING FOR SINGLE-CORE CABLES – AMPERES

| NOMINAL CROSS SECTIONAL AREA mm² | FLAT FORMATION | | TREFOIL FORMATION | | FLAT FORMATION | | TREFOIL FORMATION | |
|---|---|---|---|---|---|---|---|---|
| | CONFIGURATIONS | | | | | | | |
| | SPP; CB | | BOTH-ENDS | | SPP; CB | | BOTH-ENDS | |
| | CABLES IN EARTH | | | | | | | |
| | 65°C | 90°C | 65°C | 90°C | 65°C | 90°C | 65°C | 90°C |
| 95RM | 285 | 340 | 275 | 330 | 275 | 325 | 270 | 325 |
| 120RM | 325 | 390 | 305 | 370 | 310 | 370 | 305 | 365 |
| 150RM | 365 | 440 | 340 | 415 | 350 | 415 | 340 | 410 |
| 185RM | 415 | 495 | 380 | 460 | 390 | 470 | 385 | 460 |
| 240RM | 480 | 575 | 425 | 520 | 455 | 545 | 440 | 535 |
| 300RM | 540 | 650 | 465 | 570 | 515 | 615 | 495 | 600 |
| 400RM | 620 | 745 | 510 | 625 | 585 | 700 | 560 | 675 |
| 500RM | 705 | 850 | 550 | 685 | 660 | 795 | 625 | 755 |
| 630RM | 805 | 970 | 595 | 740 | 740 | 895 | 695 | 845 |
| 800RM | 905 | 1090 | 630 | 790 | 825 | 1000 | 760 | 930 |
| 1000RM | 995 | 1210 | 660 | 825 | 900 | 1090 | 815 | 1005 |
| 1200RMS | 1105 | 1335 | 650 | 820 | 1020 | 1235 | 875 | 1075 |
| 1400RMS | 1185 | 1435 | 665 | 840 | 1085 | 1320 | 915 | 1130 |
| 1600RMS | 1250 | 1520 | 680 | 860 | 1140 | 1385 | 945 | 1175 |
| 1800RMS | 1310 | 1590 | 690 | 870 | 1180 | 1440 | 970 | 1205 |
| 2000RMS | 1360 | 1660 | 695 | 880 | 1220 | 1490 | 990 | 1235 |
| 2500RMS | 1470 | 1790 | 710 | 900 | 1300 | 1595 | 1035 | 1295 |
| 3000RMS | 1580 | 1930 | 725 | 920 | 1380 | 1695 | 1075 | 1345 |

| | CABLES IN AIR | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 65°C | 90°C | 65°C | 90°C | 65°C | 90°C | 65°C | 90°C |
| 95RM | 310 | 415 | 295 | 400 | 265 | 360 | 265 | 360 |
| 120RM | 355 | 480 | 335 | 455 | 305 | 415 | 300 | 410 |
| 150RM | 405 | 545 | 380 | 515 | 345 | 470 | 340 | 465 |
| 185RM | 460 | 625 | 425 | 580 | 395 | 540 | 390 | 530 |
| 240RM | 545 | 740 | 490 | 675 | 465 | 635 | 455 | 625 |
| 300RM | 625 | 850 | 545 | 755 | 530 | 730 | 515 | 710 |
| 400RM | 730 | 985 | 615 | 855 | 615 | 845 | 595 | 820 |
| 500RM | 845 | 1145 | 685 | 955 | 710 | 975 | 680 | 935 |
| 630RM | 980 | 1330 | 755 | 1060 | 815 | 1120 | 770 | 1070 |
| 800RM | 1125 | 1535 | 825 | 1170 | 925 | 1275 | 865 | 1205 |
| 1000RM | 1255 | 1720 | 880 | 1255 | 1025 | 1420 | 945 | 1325 |
| 1200RMS | 1405 | 1915 | 895 | 1275 | 1175 | 1625 | 1035 | 1455 |
| 1400RMS | 1530 | 2090 | 930 | 1335 | 1270 | 1760 | 1105 | 1550 |
| 1600RMS | 1640 | 2245 | 965 | 1390 | 1355 | 1880 | 1160 | 1640 |
| 1800RMS | 1735 | 2380 | 990 | 1430 | 1425 | 1980 | 1210 | 1715 |
| 2000RMS | 1810 | 2490 | 1010 | 1455 | 1480 | 2060 | 1245 | 1765 |
| 2500RMS | 1980 | 2720 | 1050 | 1520 | 1605 | 2240 | 1325 | 1885 |
| 3000RMS | 2180 | 3005 | 1100 | 1590 | 1750 | 2440 | 1410 | 2015 |

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