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## 6.35/11kV XLPE Insulated, MDPE Sheathed, Armoured MV Power Cables (Single Core)

N2XSYB2Y (CU/XLPE/CS/PVC/ATA/PE 6.35/11KV Class 2)

N2XSYR2Y (CU/XLPE/CS/PVC/AWA/PE 6.35/11KV Class 2)

Caledonian No.: FGD300 12RVMAX-R (CU/XLPE/CS/PVC/ATA or AWA/PE 6.35/11KV Class 2)

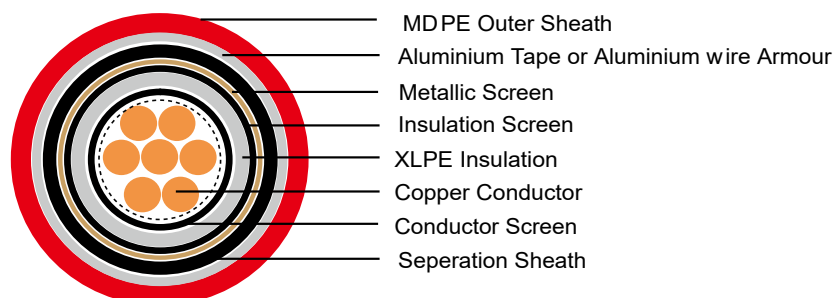
### APPLICATIONS:

They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

### STANDARD:

Basic design adapted to IEC 60502-2

### CONSTRUCTION:



**Conductor:** Plain annealed copper wire, stranded according to IEC/BS EN 60228 class 2..

**Conductor Screen:** Extruded layer of semi-conducting cross-linkable compound is applied over the conductor and shall cover the surface completely.

**Insulation:** Extruded cross-linked compound type (XLPE)

**Insulation Screen:** Extruded layer of semi-conducting cross-linkable compound is applied over the insulation.

**Metallic Screen:** The metallic layer shall be applied as a collective screen. The metallic screen shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires.

**Separation Sheath:** Thermoplastic PVC compound.

**Armour :** Aluminium tape or Aluminium wire.

**Outer Sheath:** Thermoplastic MDPE compound Type ST7 according to IEC 60502-2.

The overall cable design will be more suitable for wet locations.

**Outer Sheath Option:** UV resistance, hydrocarbon resistance, oil resistance and anti-rodent can be offered as option.

### COLOUR CODE

**Insulation Colour:** Natural colouring.

**Sheath Colour:** Red;

### PHYSICAL PROPERTIES:

**Operating Temperature:** up to 90°C



**Temperature Range: -5°C**

**Short Circuit Temperature( 5 seconds maximum duration ): 250°C**

**Bending Radius:20 x OD**

### Nominal /Operating /Testing Voltages

| Rated Voltage Uo/U | Operating Voltage (Um) | Testing Voltage (rms) |
|--------------------|------------------------|-----------------------|
| 6.35/11KV          | 12KV                   | 25.5KV                |

### DIMENSIONAL DATA

#### N2XSXB2Y (CU/XLPE/CS/PVC/ATA/PE 6.35/11KV Class 2)

| Nom. Cross-Section Area | Nom. Insulation Thickness | Copper Wire Screen Area | Copper Tape Screen Area | Nom. Bedding Thickness | Nom. Armour Tape Thickness | Nom. Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|-------------------------|---------------------------|-------------------------|-------------------------|------------------------|----------------------------|-----------------------|--------------------------|----------------|
| mm <sup>2</sup>         | mm                        | mm <sup>2</sup>         | mm <sup>2</sup>         | mm                     | mm                         | mm                    | mm                       | kg/km          |
| 70                      | 3.4                       | 16                      | 8.2                     | 1.2                    | 0.5                        | 1.9                   | 30.8                     | 1700           |
| 95                      | 3.4                       | 16                      | 8.9                     | 1.2                    | 0.5                        | 1.9                   | 32.4                     | 2020           |
| 120                     | 3.4                       | 16                      | 9.8                     | 1.2                    | 0.5                        | 2.0                   | 34.0                     | 2214           |
| 150                     | 3.4                       | 25                      | 10.4                    | 1.2                    | 0.5                        | 2.1                   | 36.7                     | 2650           |
| 185                     | 3.4                       | 25                      | 11.2                    | 1.2                    | 0.5                        | 2.1                   | 37.4                     | 3010           |
| 240                     | 3.4                       | 25                      | 12.4                    | 1.2                    | 0.5                        | 2.2                   | 40.1                     | 3260           |
| 300                     | 3.4                       | 25                      | 13.4                    | 1.2                    | 0.5                        | 2.2                   | 42.1                     | 4160           |
| 400                     | 3.4                       | 35                      | 14.6                    | 1.2                    | 0.5                        | 2.4                   | 46.2                     | 5150           |
| 500                     | 3.4                       | 35                      | 16.2                    | 1.3                    | 0.5                        | 2.5                   | 49.0                     | 6240           |
| 630                     | 3.4                       | 35                      | 18.9                    | 1.4                    | 0.5                        | 2.6                   | 54.4                     | 7590           |

#### N2XSUR2Y (CU/XLPE/CS/PVC/AWA/PE 6.35/11KV Class 2)

| Nom. Cross-Section Area | Nom. Insulation Thickness | Copper Wire Screen Area | Copper Tape Screen Area | Nom. Bedding Thickness | Nom. Armour Wire Diameter | Nom. Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|-------------------------|---------------------------|-------------------------|-------------------------|------------------------|---------------------------|-----------------------|--------------------------|----------------|
| mm <sup>2</sup>         | mm                        | mm <sup>2</sup>         | mm <sup>2</sup>         | mm                     | mm                        | mm                    | mm                       | kg/km          |
| 70                      | 3.4                       | 16                      | 8.2                     | 1.2                    | 1.6                       | 1.9                   | 32.0                     | 1840           |
| 95                      | 3.4                       | 16                      | 8.9                     | 1.2                    | 1.6                       | 1.9                   | 33.6                     | 2130           |
| 120                     | 3.4                       | 16                      | 9.8                     | 1.2                    | 1.6                       | 2.0                   | 35.2                     | 2430           |
| 150                     | 3.4                       | 25                      | 10.4                    | 1.2                    | 1.6                       | 2.1                   | 37.9                     | 2870           |
| 185                     | 3.4                       | 25                      | 11.2                    | 1.2                    | 2.0                       | 2.1                   | 39.4                     | 3240           |
| 240                     | 3.4                       | 25                      | 12.4                    | 1.2                    | 2.0                       | 2.2                   | 42.1                     | 3490           |
| 300                     | 3.4                       | 25                      | 13.4                    | 1.2                    | 2.0                       | 2.2                   | 44.1                     | 4490           |
| 400                     | 3.4                       | 35                      | 14.6                    | 1.2                    | 2.0                       | 2.4                   | 48.2                     | 5589           |
| 500                     | 3.4                       | 35                      | 16.2                    | 1.3                    | 2.5                       | 2.5                   | 52.0                     | 6780           |
| 630                     | 3.4                       | 35                      | 18.9                    | 1.4                    | 2.5                       | 2.6                   | 57.4                     | 8230           |

## ELECTRICAL DATA

| Nom. Cross-Section Area | D C Resistance | A C Resistance | Short Circuit Rating of Conductor 1 sec | Capacitance | Charging Current | Short Circuit Rating of Screen 1 sec |             | Reactance |             | Inductance |             | Impedance |             |
|-------------------------|----------------|----------------|---|-------------|------------------|--------------------------------------|-------------|-----------|-------------|------------|-------------|-----------|-------------|
|                         |                |                |   |             |                  | Copper Wire                          | Copper Tape | Trefoil   | Flat Spaced | Trefoil    | Flat Spaced | Trefoil   | Flat Spaced |
|                         |                |                |   |             |                  |                                      |             |           |             |            |             |           |             |
| mm <sup>2</sup>         | μΩ/m           | μΩ/m           | kA                                      | pF/m        | mA/m             | kA                                   |             | μΩ/m      | μΩ/m        | nH/m       | nH/m        | μΩ/m      | μΩ/m        |
| 70                      | 268            | 343            | 9.8                                     | 288         | 0.58             | 1.96                                 | 1.19        | 122       | 188         | 390        | 600         | 364       | 386         |
| 95                      | 193            | 248            | 13.3                                    | 323         | 0.65             | 1.96                                 | 1.31        | 122       | 182         | 390        | 580         | 272       | 300         |
| 120                     | 153            | 196            | 17.2                                    | 353         | 0.71             | 1.96                                 | 1.43        | 116       | 172         | 370        | 550         | 225       | 257         |
| 150                     | 124            | 159            | 21.2                                    | 380         | 0.76             | 3.06                                 | 1.52        | 110       | 166         | 350        | 530         | 193       | 229         |
| 185                     | 99             | 128            | 26.6                                    | 416         | 0.83             | 3.06                                 | 1.63        | 107       | 166         | 340        | 530         | 165       | 206         |
| 240                     | 75             | 98             | 34.9                                    | 460         | 0.92             | 3.06                                 | 1.81        | 104       | 163         | 330        | 520         | 140       | 185         |
| 300                     | 60             | 80             | 43.8                                    | 506         | 1.01             | 3.06                                 | 1.95        | 100       | 157         | 320        | 500         | 126       | 174         |
| 400                     | 47             | 64             | 57.3                                    | 561         | 1.12             | 4.29                                 | 2.13        | 94        | 154         | 300        | 490         | 113       | 164         |
| 500                     | 37             | 51             | 72.3                                    | 619         | 1.24             | 4.29                                 | 2.37        | 91        | 151         | 290        | 480         | 105       | 158         |
| 630                     | 28             | 42             | 91.2                                    | 698         | 1.37             | 4.29                                 | 2.75        | 91        | 148         | 290        | 470         | 97        | 151         |

## CURRENT RATING FOR SINGLE CORE 3.6/6KV(UM=7.2KV ) TO 18/30KV(UM=36KV) XLPE INSULATION

| Nom. Cross-Section Area | Buried direct in Ground |             | Laid in Single Way Duct |               | Laid in Air |               |             |
|-------------------------|-------------------------|-------------|-------------------------|---------------|-------------|---------------|-------------|
|                         | Trefoil                 | Flat spaced | Trefoil                 | Flat Touching | Trefoil     | Flat Touching | Flat spaced |
|                         | A                       | A           | A                       | A             | A           | A             | A           |
| mm <sup>2</sup>         | A                       | A           | A                       | A             | A           | A             | A           |
| 70                      | 239                     | 246         | 227                     | 229           | 296         | 303           | 356         |
| 95                      | 285                     | 293         | 271                     | 274           | 361         | 369           | 434         |
| 120                     | 323                     | 332         | 308                     | 311           | 417         | 426           | 500         |
| 150                     | 361                     | 366         | 343                     | 347           | 473         | 481           | 559         |
| 185                     | 406                     | 410         | 387                     | 391           | 543         | 550           | 637         |
| 240                     | 469                     | 470         | 447                     | 453           | 641         | 647           | 745         |
| 300                     | 526                     | 524         | 504                     | 510           | 735         | 739           | 846         |
| 400                     | 590                     | 572         | 564                     | 571           | 845         | 837           | 938         |
| 500                     | 650                     | 672         | 604                     | 661           | 935         | 938           | 1118        |
| 630                     | 700                     | 882         | 654                     | 771           | 1045        | 1048          | 1318        |

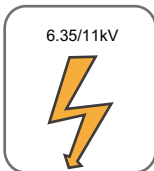
## CURRENT RATING CONDITIONS

Ground Temperature: 20°C

Ambient Temperature (air): 30°C

Depth of Soil: 0.8m

Thermal Resistance of Soil: 1.5K·m/W



Rated Voltage



Standard



## 6.35/11KV XLPE Insulated, MDPE Sheathed, Armoured MV Power Cables (Three Cores)

**N2XSEYR2Y (CU/XLPE/CS/PVC/SWA/PE 6.35/11KV Class 2)**

**N2XSEYB2Y (CU/XLPE/CS/PVC/STA/PE 6.35/11KV Class 2)**

**Caledonian No.: FGD400 12RVMX-R (CU/XLPE/CS/PVC/SWA or STA/PE 6.35/11KV Class 2)**

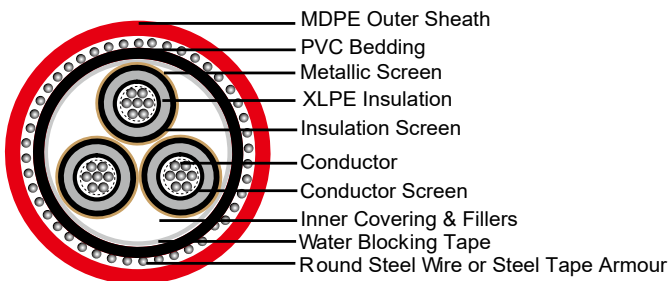
### APPLICATIONS:

They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

### STANDARD:

Basic design adapted to IEC 60502-2

### CONSTRUCTION:



**Conductor:** Plain annealed bare copper wire, stranded according to IEC 60228 class 2.

**Conductor Screen:** Extruded layer of semi-conducting cross-linkable compound is applied over the conductor and shall cover the surface completely.

**Insulation:** Extruded cross-linked polyethylene (XLPE) according to IEC 60502-2&IEC 60811.

**Insulation Screen:** Extruded layer of semi-conducting cross-linkable compound is applied over the insulation.

**Inner Covering & Fillers:** Cables shall have an inner covering over the laid-up cores. The inner covering and fillers are made of non hygroscopic material like polypropylene, except if the cable is to be made longitudinally watertight. The inner covering is extruded in general but may be lapped if the interstices between the cores are filled.

**Metallic Screen:** The metallic layer shall be applied over each core or applied as a collective screen. The metallic screen shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires.

**Waterproof:** Water blocking tape

**Bedding:** Thermoplastic PVC compound.

**Armour :** Round Steel Wire or Steel Tape Armour

**Outer Sheath:** Thermoplastic MDPE compound Type ST7 according to IEC 60502-2.

### COLOUR CODE

**Insulation Colour:** Natural colouring with coloured stripe (brown, black, grey)

**Sheath Colour:** Red, other colours can be offered upon request.

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### PHYSICAL PROPERTIES:

**Operating Temperature:** up to 90°C

**Temperature Range:** -5°C

**Short Circuit Temperature( 5 seconds maximum duration ):** 250°C

**Bending Radius:** 15 x OD

**Table 4. Nominal /Operating /Testing Voltages**

| Rated Voltage U <sub>0</sub> /U | Operating Voltage (U <sub>m</sub> ) | Testing Voltage (rms) |
|---------------------------------|-------------------------------------|-----------------------|
| 6.35/11KV                       | 12KV                                | 25.5KV                |

### DIMENSIONAL DATA

#### N2XSEYR2Y (CU/XLPE/CS/PVC/SWA/PE 6.35/11KV Class 2)

| Nom. Cross-Section Area | Nom. Insulation Thickness | Metallic Screen Area | Nom. Bedding Thickness | Armour wire Diameter | Nom. Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|-------------------------|---------------------------|----------------------|------------------------|----------------------|-----------------------|--------------------------|----------------|
| mm <sup>2</sup>         | mm                        | mm <sup>2</sup>      | mm                     | mm                   | mm                    | mm                       | kg/km          |
| 16                      | 3.4                       | 16                   | 1.2                    | 2.0                  | 2.4                   | 42.4                     | 3000           |
| 25                      | 3.4                       | 16                   | 1.3                    | 2.5                  | 2.5                   | 46.7                     | 3900           |
| 35                      | 3.4                       | 16                   | 1.3                    | 2.5                  | 2.6                   | 49.3                     | 4430           |
| 50                      | 3.4                       | 16                   | 1.4                    | 2.5                  | 2.7                   | 52.6                     | 5080           |
| 70                      | 3.4                       | 16                   | 1.5                    | 2.5                  | 2.8                   | 56.9                     | 6050           |
| 95                      | 3.4                       | 16                   | 1.5                    | 2.5                  | 2.9                   | 61.2                     | 7180           |
| 120                     | 3.4                       | 16                   | 1.6                    | 2.5                  | 3.0                   | 65.9                     | 8230           |
| 150                     | 3.4                       | 25                   | 1.7                    | 2.5                  | 3.1                   | 69.6                     | 9380           |
| 185                     | 3.4                       | 25                   | 1.7                    | 3.15                 | 3.3                   | 75.4                     | 11610          |
| 240                     | 3.4                       | 25                   | 1.8                    | 3.15                 | 3.5                   | 82.5                     | 14110          |
| 300                     | 3.4                       | 25                   | 1.9                    | 3.15                 | 3.7                   | 88.3                     | 16420          |
| 400                     | 3.4                       | 35                   | 2.0                    | 3.5                  | 3.9                   | 96.0                     | 20620          |

#### N2XSEYB2Y (CU/XLPE/CS/PVC/STA/PE 6.35/11KV Class 2)

| Nom. Cross-Section Area | Nom. Insulation Thickness | Metallic Screen Area | Nom. Bedding Thickness | Armour tape Thickness | Nom. Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|-------------------------|---------------------------|----------------------|------------------------|-----------------------|-----------------------|--------------------------|----------------|
| mm <sup>2</sup>         | mm                        | mm <sup>2</sup>      | mm                     | mm                    | mm                    | mm                       | kg/km          |
| 16                      | 3.4                       | 16                   | 1.2                    | 0.5                   | 2.3                   | 40.5                     | 2680           |
| 25                      | 3.4                       | 16                   | 1.3                    | 0.5                   | 2.4                   | 43.7                     | 3195           |
| 35                      | 3.4                       | 16                   | 1.3                    | 0.5                   | 2.5                   | 46.2                     | 3720           |
| 50                      | 3.4                       | 16                   | 1.4                    | 0.5                   | 2.6                   | 48.8                     | 4200           |
| 70                      | 3.4                       | 16                   | 1.5                    | 0.5                   | 2.7                   | 52.8                     | 5185           |
| 95                      | 3.4                       | 16                   | 1.5                    | 0.5                   | 2.8                   | 56.9                     | 6280           |
| 120                     | 3.4                       | 16                   | 1.6                    | 0.5                   | 2.9                   | 60.5                     | 7360           |
| 150                     | 3.4                       | 25                   | 1.7                    | 0.5                   | 3.0                   | 63.9                     | 8420           |
| 185                     | 3.4                       | 25                   | 1.7                    | 0.5                   | 3.1                   | 68.2                     | 9910           |
| 240                     | 3.4                       | 25                   | 1.8                    | 0.5                   | 3.3                   | 73.8                     | 12200          |
| 300                     | 3.4                       | 25                   | 1.9                    | 0.5                   | 3.4                   | 79.1                     | 14530          |
| 400                     | 3.4                       | 35                   | 2.0                    | 0.8                   | 3.7                   | 87.7                     | 18600          |



## ELECTRICAL DATA

| Nom. Cross-Section Area | D C Resistance CU | A C Resistance CU | Short Circuit Rating of Conductor CU 1 sec | Capacitance | Charging Current | Short Circuit Rating of Metallic Screen Per Core 1 sec | Reactance | Inductance |
|-------------------------|-------------------|-------------------|--|-------------|------------------|--|-----------|------------|
| mm <sup>2</sup>         | μΩm               | μΩ/m              | kA   | pF/m        | mA/m             | kA   | μΩm       | nH/m       |
| 16                      | 1150              | 1470              | 2.2  | 186         | 0.40             | 2.6  | 131       | 410        |
| 25                      | 727               | 927               | 3.6  | 216         | 0.43             | 2.6  | 123       | 390        |
| 35                      | 524               | 668               | 5.0  | 237         | 0.47             | 2.6  | 115       | 370        |
| 50                      | 387               | 494               | 6.8  | 266         | 0.52             | 2.6  | 109       | 350        |
| 70                      | 268               | 343               | 9.8  | 298         | 0.60             | 2.6  | 103       | 330        |
| 95                      | 193               | 248               | 13.3                                       | 334         | 0.67             | 4.3  | 99        | 320        |
| 120                     | 153               | 196               | 17.2                                       | 365         | 0.73             | 4.3  | 96        | 310        |
| 150                     | 124               | 159               | 21.2                                       | 392         | 0.78             | 4.3  | 93        | 300        |
| 185                     | 99                | 128               | 26.6                                       | 430         | 0.86             | 4.3  | 90        | 290        |
| 240                     | 75                | 98                | 34.9                                       | 476         | 0.95             | 4.3  | 87        | 280        |
| 300                     | 60                | 80                | 43.8                                       | 524         | 1.05             | 4.3  | 85        | 270        |
| 400                     | 47                | 64                | 57.3                                       | 580         | 1.16             | 5.8  | 81        | 260        |

## CURRENT RATING

| Nom. Cross-Section Area | Buried direct in Ground | Laid in Single Way Duct | Laid in Air |
|-------------------------|-------------------------|-------------------------|-------------|
| mm <sup>2</sup>         | A                       | A                       | A           |
| 16                      | 101                     | 88                      | 110         |
| 25                      | 129                     | 112                     | 143         |
| 35                      | 153                     | 134                     | 172         |
| 50                      | 181                     | 158                     | 205         |
| 70                      | 220                     | 194                     | 253         |
| 95                      | 263                     | 232                     | 307         |
| 120                     | 298                     | 264                     | 352         |
| 150                     | 332                     | 296                     | 397         |
| 185                     | 374                     | 335                     | 453         |
| 240                     | 431                     | 387                     | 529         |
| 300                     | 482                     | 435                     | 599         |
| 400                     | 541                     | 492                     | 683         |

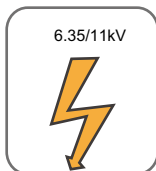
## CURRENT RATING CONDITIONS

Ground Temperature: 20°C

Ambient Temperature (air): 30°C

Depth of Soil: 0.8m

Thermal Resistance of Soil: 1.5K•m/W



Rated Voltage



Standard