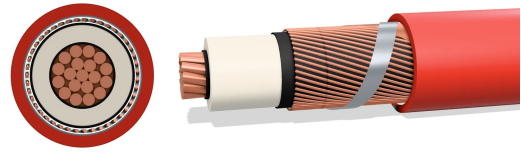


## Application

N2XSY is a single-core medium-voltage power cable with a bare stranded copper conductor, cross-linked polyethylene (XLPE) insulation, a copper wire screen with copper counter helix and a red polyvinyl chloride (PVC) outer sheath. The 6/10, 12/20 and 18/30 kV classes are made to DIN VDE 0276-620 (HD 620 S3:2023, section 10-C). It is intended for installation in the ground, in water, outdoors, indoors and in cable ducts, for power stations, industrial applications and distribution networks, and its good installation properties make it easy to lay, even on difficult routes. Not longitudinally watertight: if the sheath is damaged, water can travel along the length of the cable. In wet ground we recommend N2XS(F)2Y. Acc. to VDE 0276-603 the cable must be protected from direct sunlight. The inner and outer semi-conductive layers are extruded together with the insulation (triple extrusion); the copper wire screen carries earth-fault and capacitive currents. It is available for the 6/10, 8.7/15, 12/20, 18/30 and 20.8/36 kV voltage classes (dimensions per class in the tables below).



## CONSTRUCTION

|                          |                                                                                                                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>         | Bare stranded round copper, class 2 acc. to IEC 60228 (conductor standard; German edition DIN EN 60228, VDE 0295).                                                                              |
| <b>Conductor screen</b>  | Extruded semi-conductive compound (inner conductive layer).                                                                                                                                     |
| <b>Insulation</b>        | Cross-linked polyethylene (XLPE), nominal thickness per voltage class (3.4 mm at 6/10 kV, 4.5 mm at 8.7/15 kV, 5.5 mm at 12/20 kV, 8.0 mm at 18/30 kV; not published for the 20.8/36 kV class). |
| <b>Insulation screen</b> | Extruded semi-conductive compound (outer conductive layer), extruded together with the conductor screen and insulation (triple extrusion).                                                      |
| <b>Metallic screen</b>   | Copper wire screen (CWS) with copper counter helix; nominal screen cross-section per size (e.g. 16 / 25 / 35 mm <sup>2</sup> ).                                                                 |
| <b>Separator</b>         | Binder tape over the screen.                                                                                                                                                                    |
| <b>Outer sheath</b>      | Polyvinyl chloride (PVC), red.                                                                                                                                                                  |

## ELECTRICAL & THERMAL PROPERTIES

|                                                        |                                                                                                                                                                                                                              |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Voltage classes U<sub>0</sub>/U (U<sub>m</sub>)</b> | 6/10 (12) kV, test 21 kV; 8.7/15 (17.5) kV, test 30.5 kV; 12/20 (24) kV, test 42 kV; 18/30 (36) kV, test 63 kV; 20.8/36 (42) kV (AC, 5 min).                                                                                 |
| <b>Standard</b>                                        | HD 620 S3:2023 part 10-C / DIN VDE 0276-620 for 6/10, 12/20 and 18/30 kV; IEC 60502-2 for 8.7/15 kV; 20.8/36 kV constructed following DIN VDE 0276-620. Conductors acc. to IEC 60228.                                        |
| <b>Conductor</b>                                       | Copper, class 2 acc. to IEC 60228.                                                                                                                                                                                           |
| <b>Max. conductor temperature</b>                      | +90 °C (normal operation).                                                                                                                                                                                                   |
| <b>Max. short-circuit temperature</b>                  | +250 °C (max. 5 s).                                                                                                                                                                                                          |
| <b>Flame-retardant</b>                                 | Acc. to VDE 0482-332-1-2 / IEC 60332-1-2 (single vertical cable).                                                                                                                                                            |
| <b>Permitted outer cable temperature, fixed</b>        | Up to +70 °C.                                                                                                                                                                                                                |
| <b>Permitted outer cable temperature, moved</b>        | -5 °C to +70 °C.                                                                                                                                                                                                             |
| <b>Partial discharge</b>                               | 2 pC.                                                                                                                                                                                                                        |
| <b>Outdoor use</b>                                     | Yes; protect from direct sunlight acc. to VDE 0276-603.                                                                                                                                                                      |
| <b>Min. bending radius, fixed</b>                      | 15 × outer diameter (single-core).                                                                                                                                                                                           |
| <b>Reaction to fire (CPR)</b>                          | Fca acc. to EN 50575 (AVCP system 4). The Declaration of Performance for the version supplied is available from Q Cables on request. Halogen-free flame-retardant MV versions up to B2ca-s1a,d1,a1 are available on request. |

**DIMENSIONS, WEIGHTS & RATINGS PER VOLTAGE CLASS**
**6/10 kV (Um 12 kV, test 21 kV, XLPE 3.4 mm)**

| Nominal c.s.a.<br>(mm <sup>2</sup> ) | Cond. R @20°C<br>(Ω/km) | Nominal O.D.<br>(mm) | Weight<br>(kg/km) |
|--------------------------------------|-------------------------|----------------------|-------------------|
| 35                                   | 0.524                   | 24                   | 920               |
| 50                                   | 0.387                   | 25                   | 1100              |
| 70                                   | 0.268                   | 27                   | 1300              |
| 95                                   | 0.193                   | 28                   | 1600              |
| 120                                  | 0.153                   | 30                   | 1850              |
| 150                                  | 0.124                   | 31                   | 2050              |
| 185                                  | 0.0991                  | 33                   | 2450              |
| 240                                  | 0.0754                  | 35                   | 3000              |
| 300                                  | 0.0601                  | 37                   | 3750              |
| 400                                  | 0.047                   | 41                   | 4650              |
| 500                                  | 0.0366                  | 44                   | 5700              |
| 630                                  | 0.0283                  | 49                   | 7090              |

**8.7/15 kV (Um 17.5 kV, test 30.5 kV, XLPE 4.5 mm)**

| Nominal c.s.a.<br>(mm <sup>2</sup> ) | Cond. R @20°C<br>(Ω/km) | Nominal O.D.<br>(mm) | Weight<br>(kg/km) |
|--------------------------------------|-------------------------|----------------------|-------------------|
| 25                                   | 0.727                   | 24.3                 | 746               |
| 35                                   | 0.524                   | 25.3                 | 856               |
| 50                                   | 0.387                   | 26.3                 | 1005              |
| 70                                   | 0.268                   | 28.3                 | 1234              |
| 95                                   | 0.193                   | 30.3                 | 1512              |
| 120                                  | 0.153                   | 31.9                 | 1771              |
| 150                                  | 0.124                   | 33.3                 | 2090              |
| 185                                  | 0.0991                  | 35.3                 | 2458              |
| 240                                  | 0.0754                  | 38.3                 | 3035              |
| 300                                  | 0.0601                  | 40.3                 | 3672              |
| 400                                  | 0.047                   | 43.3                 | 4547              |
| 500                                  | 0.0366                  | 47.3                 | 5602              |
| 630                                  | 0.0283                  | 52.3                 | 7134              |

**12/20 kV (Um 24 kV, test 42 kV, XLPE 5.5 mm)**

| Nominal c.s.a.<br>(mm <sup>2</sup> ) | Cond. R @20°C<br>(Ω/km) | Nominal O.D.<br>(mm) | Weight<br>(kg/km) |
|--------------------------------------|-------------------------|----------------------|-------------------|
| 35                                   | 0.524                   | 28                   | 1100              |
| 50                                   | 0.387                   | 29                   | 1250              |
| 70                                   | 0.268                   | 31                   | 1500              |
| 95                                   | 0.193                   | 32                   | 1800              |
| 120                                  | 0.153                   | 34                   | 2050              |
| 150                                  | 0.124                   | 35                   | 2300              |
| 185                                  | 0.0991                  | 37                   | 2650              |
| 240                                  | 0.0754                  | 40                   | 3250              |
| 300                                  | 0.0601                  | 42                   | 4000              |
| 400                                  | 0.047                   | 45                   | 4950              |
| 500                                  | 0.0366                  | 49                   | 6050              |
| 630                                  | 0.0283                  | 53                   | 7090              |

## 18/30 kV (Um 36 kV, test 63 kV, XLPE 8.0 mm)

| Nominal c.s.a.<br>(mm <sup>2</sup> ) | Cond. R @20°C<br>(Ω/km) | Nominal O.D.<br>(mm) | Weight<br>(kg/km) |
|--------------------------------------|-------------------------|----------------------|-------------------|
| 35                                   | 0.524                   | 33                   | 1350              |
| 50                                   | 0.387                   | 34                   | 1550              |
| 70                                   | 0.268                   | 36                   | 1750              |
| 95                                   | 0.193                   | 37                   | 2050              |
| 120                                  | 0.153                   | 39                   | 2350              |
| 150                                  | 0.124                   | 40                   | 2700              |
| 185                                  | 0.0991                  | 42                   | 3100              |
| 240                                  | 0.0754                  | 44                   | 3700              |
| 300                                  | 0.0601                  | 47                   | 4350              |
| 400                                  | 0.047                   | 50                   | 5350              |
| 500                                  | 0.0366                  | 53                   | 6450              |

## 20.8/36 kV (Um 42 kV; insulation thickness and test voltage on request)

| Nominal c.s.a.<br>(mm <sup>2</sup> ) | Cond. R @20°C<br>(Ω/km) | Nominal O.D.<br>(mm) | Weight<br>(kg/km) |
|--------------------------------------|-------------------------|----------------------|-------------------|
| 35                                   | 0.524                   | 34.5                 | 1300              |
| 50                                   | 0.387                   | 36                   | 1550              |
| 70                                   | 0.268                   | 37.5                 | 1800              |
| 95                                   | 0.193                   | 39.5                 | 2100              |
| 120                                  | 0.153                   | 41.5                 | 2400              |
| 150                                  | 0.124                   | 43                   | 2850              |
| 185                                  | 0.0991                  | 44.5                 | 3200              |
| 240                                  | 0.0754                  | 47.5                 | 3800              |
| 300                                  | 0.0601                  | 49.5                 | 4500              |
| 400                                  | 0.047                   | 53                   | 5650              |
| 500                                  | 0.0366                  | 56                   | 6700              |
| 630                                  | 0.0283                  | 60                   | 8000              |

Outer diameters and weights are the nominal manufacturer values for the base copper-wire-screen variant of each conductor cross-section; conductor resistances are IEC 60228 class-2 copper nominals. All values are indicative and non-binding.