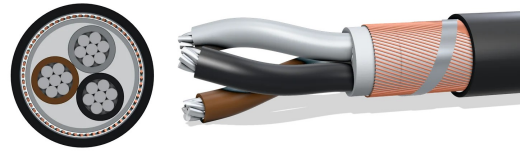


## Application

NAYCWY is a 0.6/1 kV power cable to DIN VDE 0276-603 (HD 603 S1) with aluminium conductors, PVC insulation and a concentric copper conductor under a black PVC outer sheath. It is used for power distribution in power stations, industrial installations, switchgear and local mains, for fixed installation indoors, in cable ducts, outdoors, in the ground, in water and in concrete, where protection against contact voltage in the event of mechanical damage or electrical screening is required. The concentric conductor serves as the protective conductor (PE) or as the combined protective and neutral conductor (PEN); its wave form allows branch joints without cutting it. The cable is available with 2, 3 and 4 cores from 16 to 240 mm<sup>2</sup>, with round or sector-shaped conductors.



## CONSTRUCTION

|                             |                                                                                                                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>            | Aluminium, solid (class 1) or stranded (class 2) acc. to IEC 60228, round or sector-shaped (see the shape column).                                                                                   |
| <b>Insulation</b>           | Polyvinyl chloride (PVC), type DIV 4.                                                                                                                                                                |
| <b>Inner covering</b>       | Over the laid-up cores, extruded elastomer or plastomer compound or tape, depending on the manufacturer.                                                                                             |
| <b>Concentric conductor</b> | Bare copper wires applied in wave form, with a copper tape counter helix.                                                                                                                            |
| <b>Outer sheath</b>         | Polyvinyl chloride (PVC), type DMV 5, black, UV-resistant.                                                                                                                                           |
| <b>Core identification</b>  | Acc. to HD 308. 2-core: blue, brown. 3-core: brown, black, grey. 4-core: blue, brown, black, grey. There is NO green/yellow core: the protective earth runs through the concentric copper conductor. |

## ELECTRICAL & THERMAL PROPERTIES

|                                                    |                                                         |
|----------------------------------------------------|---------------------------------------------------------|
| <b>Rated voltage Uo/U</b>                          | 0.6/1 kV.                                               |
| <b>Max. operating voltage, three-phase systems</b> | 1.2 kV.                                                 |
| <b>Rated voltage DC (core-earth/core-core)</b>     | 1.8/1.8 kV.                                             |
| <b>Test voltage</b>                                | 4 kV AC.                                                |
| <b>Max. conductor temperature</b>                  | 70 °C in operation; 160 °C in short circuit (max. 5 s). |
| <b>Operating temperature, fixed</b>                | -35 °C to +70 °C.                                       |
| <b>Min. laying temperature</b>                     | -5 °C.                                                  |
| <b>Min. bending radius</b>                         | 12 × D (D = overall diameter).                          |
| <b>Earthing</b>                                    | Through the concentric copper conductor (PE or PEN).    |

## STANDARDS & CERTIFICATES

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| <b>Reaction to fire (CPR)</b> | Eca acc. to EN 50575.                               |
| <b>Standard</b>               | DIN VDE 0276-603 (HD 603 S1, part 3G); IEC 60502-1. |
| <b>Conductors</b>             | IEC 60228.                                          |
| <b>Flame-retardant</b>        | IEC 60332-1-2 / EN 60332-1-2.                       |

## DIMENSIONS & TECHNICAL DATA

Conductor shape: RE = round, solid (class 1); RM = round, stranded (class 2); SE = sector-shaped, solid (class 1); SM = sector-shaped, stranded (class 2). The size is given as phase conductor / concentric copper conductor in mm<sup>2</sup>. Short-circuit current: aluminium conductor, 1 s, from 70 to 160 °C (76 A per mm<sup>2</sup>). Current ratings acc. to NEN 1010: see the tables below. The weights of the two 3 × 240 constructions are corrected values; confirmation on request.

| Cores × mm <sup>2</sup><br>(phase/conc.) | Shape | Insulation<br>(mm) | Sheath<br>(mm) | Overall Ø<br>(mm) | Weight<br>(kg/km) | Cond. R<br>@20°C<br>(Ω/km) | Short-circuit<br>1 s (kA) |
|------------------------------------------|-------|--------------------|----------------|-------------------|-------------------|----------------------------|---------------------------|
| 2 × 16/16                                | RE    | 1.0                | 1.8            | 20                | 584               | 1.91                       | 1.22                      |
| 3 × 16/16                                | RM    | 1.0                | 1.8            | 21                | 644               | 1.91                       | 1.22                      |
| 3 × 25/16                                | RM    | 1.2                | 1.8            | 26                | 887               | 1.20                       | 1.90                      |
| 3 × 50/25                                | SM    | 1.4                | 1.9            | 29                | 1,248             | 0.641                      | 3.80                      |
| 3 × 50/50                                | SE    | 1.4                | 1.9            | 28                | 1,315             | 0.641                      | 3.80                      |
| 3 × 70/70                                | SE    | 1.4                | 2.0            | 33                | 1,772             | 0.443                      | 5.32                      |
| 3 × 95/50                                | SM    | 1.6                | 2.2            | 37                | 2,099             | 0.320                      | 7.22                      |
| 3 × 95/95                                | SE    | 1.6                | 2.2            | 37                | 2,326             | 0.320                      | 7.22                      |
| 3 × 120/70                               | SM    | 1.6                | 2.3            | 41                | 2,565             | 0.253                      | 9.12                      |
| 3 × 120/120                              | SE    | 1.6                | 2.3            | 39                | 2,783             | 0.253                      | 9.12                      |
| 3 × 150/70                               | SM    | 1.8                | 2.4            | 45                | 3,083             | 0.206                      | 11.40                     |
| 3 × 150/150                              | SM    | 1.8                | 2.4            | 45                | 3,513             | 0.206                      | 11.40                     |
| 3 × 150/150                              | SE    | 1.8                | 2.4            | 43                | 3,377             | 0.206                      | 11.40                     |
| 3 × 185/95                               | SM    | 2.0                | 2.6            | 50                | 3,760             | 0.164                      | 14.06                     |
| 3 × 185/185                              | SM    | 2.0                | 2.6            | 50                | 4,324             | 0.164                      | 14.06                     |
| 3 × 185/185                              | SE    | 2.0                | 2.6            | 47                | 4,155             | 0.164                      | 14.06                     |
| 3 × 240/120                              | SM    | 2.2                | 2.9            | 57                | 4,781             | 0.125                      | 18.24                     |
| 3 × 240/240                              | SE    | 2.2                | 2.8            | 56                | 5,604             | 0.125                      | 18.24                     |
| 4 × 16/16                                | RE    | 1.0                | 1.8            | 23                | 739               | 1.91                       | 1.22                      |
| 4 × 25/16                                | RM    | 1.2                | 1.8            | 28                | 1,052             | 1.20                       | 1.90                      |
| 4 × 25/16                                | RE    | 1.2                | 1.8            | 27                | 1,006             | 1.20                       | 1.90                      |
| 4 × 35/16                                | RE    | 1.2                | 1.8            | 29                | 1,227             | 0.868                      | 2.66                      |
| 4 × 50/25                                | SM    | 1.4                | 2.0            | 31                | 1,551             | 0.641                      | 3.80                      |
| 4 × 50/25                                | SE    | 1.4                | 2.0            | 31                | 1,474             | 0.641                      | 3.80                      |
| 4 × 70/35                                | SM    | 1.4                | 2.1            | 35                | 1,982             | 0.443                      | 5.32                      |
| 4 × 70/35                                | SE    | 1.4                | 2.1            | 34                | 1,871             | 0.443                      | 5.32                      |
| 4 × 95/50                                | SM    | 1.6                | 2.3            | 40                | 2,588             | 0.320                      | 7.22                      |
| 4 × 95/50                                | SE    | 1.6                | 2.3            | 39                | 2,473             | 0.320                      | 7.22                      |
| 4 × 120/70                               | SM    | 1.6                | 2.4            | 45                | 3,237             | 0.253                      | 9.12                      |
| 4 × 120/70                               | SE    | 1.6                | 2.4            | 43                | 3,117             | 0.253                      | 9.12                      |
| 4 × 150/70                               | SM    | 1.8                | 2.6            | 50                | 3,871             | 0.206                      | 11.40                     |
| 4 × 150/70                               | SE    | 1.8                | 2.6            | 47                | 3,695             | 0.206                      | 11.40                     |
| 4 × 185/95                               | SM    | 2.0                | 2.8            | 55                | 4,754             | 0.164                      | 14.06                     |
| 4 × 185/95                               | SE    | 2.0                | 2.8            | 53                | 4,539             | 0.164                      | 14.06                     |
| 4 × 240/120                              | SM    | 2.2                | 3.0            | 62                | 6,100             | 0.125                      | 18.24                     |
| 4 × 240/120                              | SE    | 2.2                | 3.0            | 58                | 5,786             | 0.125                      | 18.24                     |

Current-carrying capacity (A) acc. to NEN 1010 (IEC 60364-5-52), aluminium, PVC 70 °C, one multicore cable; the concentric conductor is not counted as a loaded conductor. Method C: clipped direct on a wall. Method E: in free air or on a perforated cable tray. Method D1: in a duct in the ground. Method D2: direct in the ground. Reference: 30 °C in air, 20 °C and 2.5 K·m/W in the ground. Correct for grouping and other installation conditions.

## 2 loaded conductors: 2-core, single-phase AC or DC

| Size (mm <sup>2</sup> ) | C  | E  | D1 | D2 |
|-------------------------|----|----|----|----|
| 16                      | 66 | 73 | 61 | 63 |

## 3 loaded conductors: 3- and 4-core, three-phase AC

| Size (mm <sup>2</sup> ) | C   | E   | D1  | D2  |
|-------------------------|-----|-----|-----|-----|
| 16                      | 59  | 61  | 50  | 53  |
| 25                      | 73  | 78  | 64  | 69  |
| 35                      | 90  | 96  | 77  | 83  |
| 50                      | 110 | 117 | 91  | 99  |
| 70                      | 140 | 150 | 112 | 122 |
| 95                      | 170 | 183 | 132 | 148 |
| 120                     | 197 | 212 | 150 | 169 |
| 150                     | 227 | 245 | 169 | 189 |
| 185                     | 259 | 280 | 190 | 214 |
| 240                     | 305 | 330 | 218 | 250 |

Dimensions and weights are approximate manufacturer values within production tolerance; conductor resistances are the IEC 60228 maxima at 20 °C. Actual outer diameters may differ per delivery; allow for this when selecting glands and accessories. All values are indicative and non-binding.