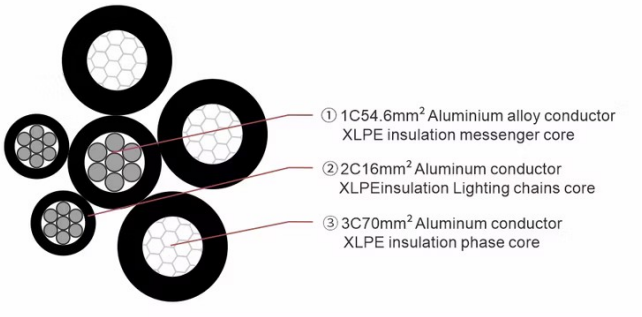
TECHNICAL DATA SHEET for FR-N1XD4(9)-AR

General Information



Cable standard(s)

- HD626 S1 part 4E (N1XD4), HD626 S1 part 6E (N1XD9)

Construction Product Regulation (CPR) Classification

- Regulation: Compliant with the EU Regulation (EU) No. 305/2011 on construction products.
- Intended Use: Suitable for general applications in construction works with fire safety requirements.
- Harmonized Standard: EN 50575:2014
- Reaction to Fire Classification: Fca (according to EN 13501-6)
- Release of Dangerous Substances: N.P.D. (No Performance Determined)

Flame Retardant Properties

- The cable complies with the self–extinguishing requirements (single vertical wire flame test) specified in EN60332-1-2:2004+A1:2015+A11:2016+A12:2020.

Temperature Ratings

- Minimum temperature for installation and handling: -5 °C
- Maximum continuous conductor temperature: +90 °C
- Maximum short–circuit conductor temperature (max 5 seconds): +250 °C
- Permissible ambient temperature range during operation: –30 °C to +50 °C

Minimum internal bending radius (*D = external diameter of the cable*):

- 20 × D for cable N1XD9
- 15 × D for cable N1XD4
- 12 × D for single core

Application of the Cable

- Self-supporting aerial cable designed for the distribution of electrical energy in urban, suburban, and rural networks. Suitable for overhead service lines, including connections to residential, commercial, and industrial buildings.
- Intended for above-ground house connections and for supplying remote installations or settlements of both temporary and permanent nature.
- Can be used in low-voltage three-phase AC distribution networks, with or without integrated lighting circuits.
- The cable is suitable for installations on poles, facades, or other support structures where self-supporting properties are required.
- Cable type N1XD9 have similar features to N1XD4 but more robust mechanical construction and enhanced resistance to corrosion. This cable is particularly recommended for environments with increased mechanical stress, such as areas with frequent wind, ice load, or accidental contact risks (e.g., forestry, coastal and industrial areas).

Cable Construction and Electrical Properties

Conductor(s)

- Phase conductors: Circular compacted stranded aluminum, Class 2 according to IEC 60228 Clause 5.
- Neutral conductor:
  - Circular compacted stranded aluminum, Class 2, for cable type N1XD4, in accordance with IEC 60228 Clause 5.
  - Circular compacted stranded aluminum alloy (AlMgSi or AlMg1), Class 2, for cable type N1XD9, in accordance with IEC 60228 Clause 5.
- Public lighting conductor (if present): Circular compacted stranded aluminum, Class 2 according to IEC 60228 Clause 5.
- Conductors are normal stranded; compact stranding is optional for improved dimensional stability and reduced outer diameter.

Insulation

- Cross-linked polyethylene (XLPE), compound type TIX5 in accordance with EN 50363-1.
- Insulation color: Black (UV-resistant, suitable for outdoor use).

Sheath

- No outer sheath.

Core Identification / Marking

- Phase conductors: Identified by 1, 2, or 3 longitudinal protrusions in a semicircular shape, corresponding to phases L1, L2, and L3, or alternatively by embossed/engraved numeric markings (1, 2, 3) grouped in sequences of 5 identical numbers.
- Neutral conductor: Identified by a longitudinal protrusion in the shape of a triangle, minimum height 1 mm.
- Public lighting conductor (if applicable): May be marked according to project specification or national standard.
- Additional marking specifications:
  - Numbers marked longitudinally, oriented downward.
  - Maximum distance between code groupings: 50 mm.
  - Maximum distance between beginning and end of full marking cycle: 200 mm.
  - Minimum character height: 5 mm; line thickness: 2 mm (1 mm for digit “1”).
  - Cable marking format:

<FR-N1XD4-AR> <number of cores>x<cross-section> mm² <voltage rating> <manufacturer> <standard(s)> <year> <meter marking>

Rated Voltage:

- Uo/U = 0,6/1 kV

Test Voltage:

- 4 kV (AC)

Dimensional Specifications

Cross section [mm²]	Core diameter [mm]	Resistance at 20 °C [Ω/km]	Ampacity in air at 30 °C [A]	Insulated core diameter [mm]
Phase Conductor				
16	4,6–5,1	1,910	93	7,0–7,8
25	5,8–6,3	1,200	112	8,6–9,4
35	6,8–7,3	0,868	131	10,0–10,9
50	7,9–8,4	0,641	168	11,1–12,0
70	9,7–10,2	0,443	213	13,3–14,2
95	11,0–12.0	0,320	258	14,6–15,7
120	12,0–13.1	0,253	300	15,6–16,7
150	13,9–15	0,206	344	17,3–18,6
Neutral conductor				
54,6	9,2–9,6	0,630	185	12,3–13,0
70,0	10,0–10,4	0,500	213	12,9–13,6
71,5	10,2–11,0	0,470	220	12,2–13,3
95,0	12,2–12,9	0,340	258	15,3–16,3

- For higher ambient temperatures, apply derating factors.

Construction [n×mm²]	Bundle diameter (approx.) [mm]	Weight (approx.) [kg/km]
FR-N1XD4-AR		
2×16	15,0	155
4×16	18,0	305
2×25	18,4	240
4×25	22,2	490
FR-N1XD9-AR		
3×25+70 (71,5 or 54,6)	26,6	670
3×25+70 (71,5)+16	26,6	750
3×25+70 (71,5)+2×16	26,6	825
3×35+70 (71,5 or 54,6)	29,8	780
3×35+70 (71,5)+16	29,8	860
3×35+70 (71,5)+2×16	29,8	935
3×50+70 (71,5 or 54,6)	33,1	930
3×50+70 (71,5)+16	33,1	1010
3×50+70 (71,5)+2×16	33,1	1085
3×70+70 (71,5 or 54,6)	38,6	1160
3×70+70 (71,5)+16	38,6	1220
3×70+70 (71,5)+2×16	38,6	1315
3×70+70 (71,5)+2×25	38,6	1400

- The metal index depends on the type of material: aluminium or aluminium alloy