CABLE DATA for (N)A2XY PHOTOCONNECT

General Information

Cable standards

- IEC 60502 Part 1.

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: Eca (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 specified in EN 60332–1–2 (single vertical wire flame test).

Temperature Ratings

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

Minimum Bending Radius *(D = external diameter of the cable)*

- 15 × D (single core cable).

Application of the cable:

- The NA2XY PHOTOCONNECT is a robust power distribution cable engineered specifically for static installations. With an increased voltage rating of 1.8/3 kV AC and 1.5 kV DC, this cable is optimized for the demanding requirements of renewable energy collector systems and heavy-duty industrial applications. Its construction offers exceptional mechanical strength and thermal stability, ensuring long-term reliability even in harsh weather conditions.
- Primary Applications
  - Photovoltaic (Solar) Systems:
  - Designed to facilitate efficient energy transfer within solar power plants:
  - Connectivity: Used for connecting solar panels to inverters, and linking inverters to distribution boards or grid interfaces.
  - Underground Routing: Ideal for underground cable runs between solar arrays and control units.
  - Durability: Resistant to moisture and temperature fluctuations, making it perfect for outdoor collector systems.

- Wind Turbine Installations
  - Provides stable power transmission for wind energy generation:
  - Internal Wiring: Applied in the internal wiring of wind turbines and connections between the generator, transformer, and control systems.
  - Grid Integration: Suitable for underground or tower-based cable routing from the turbine to the grid or local storage facilities.
- Industrial & Urban Distribution
  - Targeted for use in industrial facilities and urban power distribution networks requiring high voltage stability.

Installation & Operating Environment

- The NA2XY PHOTOCONNECT offers superior versatility for various installation methods:
  - Placement: Suitable for direct burial underground, installation in water, placement within concrete, routing through cable ducts, or fixed indoor installation.
  - Outdoor Use: While the cable is designed for outdoor use, it should be shielded from direct UV radiation unless the installation method provides adequate protection.
  - Constraints: The cable is optimized for fixed operating conditions and should not be subjected to heavy mechanical damage or significant tensile strain.

Technical Specifications

Cable Construction and Electrical Properties

Conductor(s)

- Stranded round (RM) aluminium conductor, in accordance with IEC 60228.

Insulation:

- XLPE insulation compound DIX3, according to HD 603-1 Table 2A.
- Insulation color: Natural or Black.

Sheath:

- PVC outer sheath, compound type DMV6, according to HD 603-1 Table 4A.
- Sheath color: Black

Rated Voltage:

- Uo/U = 1,8/3 kV AC
- U/Um = 1,5/1,8 kV DC

Test Voltage:

- 6,5 kV AC

Dimensional Specifications

№	Construction [n×mm²]	Metal index [kg/km]	Weight (approx.) [kg/km]	Insulation thickness [mm]	Sheath thickness [mm]	Diameter (approx.) [mm]	Resistance at 20 °C [Ω/km]
1	1×16 RM	47	122	2,0	1,4	12,3	1,910
2	1×25 RM	73	175	2,0	1,4	13,4	1,200
3	1×35 RM	102	206	2,0	1,4	14,5	0,868
4	1×50 RM	145	267	2,0	1,5	16,0	0,641
5	1×70 RM	203	358	2,0	1,5	17,4	0,443
6	1×95 RM	276	451	2,0	1,6	19,2	0,320
7	1×120 RM	348	546	2,0	1,6	20,6	0,253
8	1×150 RM	435	655	2,0	1,7	22,2	0,206
9	1×185 RM	537	800	2,0	1,7	23,7	0,164
10	1×240 RM	696	987	2,0	1,8	26,1	0,125
11	1×300 RM	870	1324	2,0	1,9	28,3	0,100

Current Carrying Capacity (Ampacity) - AC & DC Applications

№	Cross section [mm²]	In Ground (Trefoil) [A]	In Ground (Flat Spaced) [A]	In Duct (One Duct) [A]	In Duct (Separate Ducts) [A]	In Air (Trefoil) [A]	In Air (Flat Spaced) [A]
1	16	102	106	74	83	85	100
2	25	131	139	96	108	112	132
3	35	157	167	115	128	137	164
4	50	185	198	137	152	166	200
5	70	227	245	170	188	210	255
6	95	271	295	205	226	257	310
7	120	309	339	236	260	300	360
8	150	346	382	267	295	343	415
9	185	393	436	306	338	398	480
10	240	456	510	361	398	475	580
11	300	516	580	414	455	551	670

Technical Notes:

- **Trefoil:** Three single-core cables laid in a triangle formation (touching).
- **Flat Spaced:** Three single-core cables laid side-by-side with spacing of at least 1×Diameter.
- **In Duct:** „One Duct“ refers to 3 cables in a single pipe. „Separate Ducts“ refers to 3 cables in individual pipes.
- **Standard:** According to DIN VDE 0276-603. Operating temperature 90°C.