Synergy Cables Ltd.
Sapirim Industrial park, 1 Eshel Street
P. O. Box 102, Sderot, 8701002, Israel
TEL 972-8-6809444, FAX 972-8-6890014
http://www.synergy-cables.com

PV DC ARRAY and PV DC MAIN CABLES

Aluminum Conductor, XLPE Insulated, PVC Sheathed Single-Core Cables, 900/1500(1800) Volts for DC Systems

DESCRIPTION:
For indoor or outdoor installation in open air, trough conduit or for direct burial in free draining soil or inside duct where no mechanical damage is to be expected.
These cables have a rating of 90ºC and are UV resistant.
These cables are used to connect Combiner boxes (CBs) to Inverters (INVs)
When one of conductors is (accidentally) grounded, the phase-to-phase voltage and (ungrounded phase)-to-ground are the same 1.5/1.5 KV.

STANDARDS:
1. Conforms to IEC 60502-1 Standard: *"Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV)" – "Part 1: Cables for rated voltages of 1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)"*.
2. Conforms to European Union Regulation (EC) No. 1907/2006, concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (*REACH Regulation*).
3. Conforms to EU Directive No. 2002/95/CE on Restriction on Hazardous Substances, (*RoHS Directive*).
4. IEC 60038 Standard: "*IEC Standard Voltages*"
5. IEC 60364-7-712 Standard: "*Electrical Installations of buildings – part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems*".
6. IEC 60332-1-2 Standard: *"Tests on electrical and optical fibre cable under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – procedure for 1 kW pre-mixed flame"*

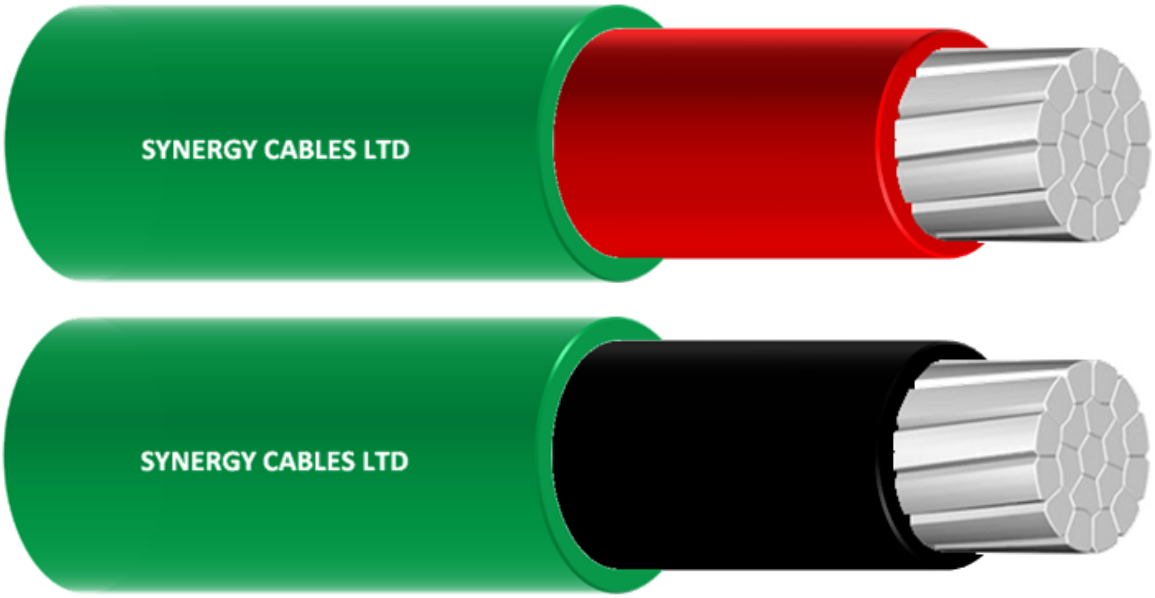
CONSTRUCTION:
Compacted circular aluminum conductor - Class 2, has an extruded cross-linked polyethylene - XLPE red (suffix -2) or black (suffix -0) insulation applied around the conductor. A Green **PVC UV resistant** outer sheath with printed marking is extruded overall.
The **UV/sunlight**- resistance performance of the outer sheath is assessed by using the Arc Xenon test as per *UL1581.*
The cables covered by this specification pass the test for vertical flame propagation (**FR1** designation as per SI 1516-1) when tested as per **IEC-60332-1-2** standard.

MARKING:
SYNERGY CABLES NA2XY/FR1 UV 1x*<Conductor-Cross-Sectional Area>* MM2 0.9/1.5 kV
FOR DC SYSTEM =*<running-length in meters><production-year><production-batch-number>*= RoHS REACH

TESTING:
The cables shall withstand when tested as per paragraph 15.3.2 from IEC-60502-1, at a DC voltage of 8.4 kV.
The UV/Sunlight resistance of the outer sheath is tested by using the arc Xenon test as per UL-1581.

Typical Drawings

NA2XY



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Cable P/N	Nominal Cross-sectional Area of the conductor	Insulation thickness (Nominal)	Sheath thickness (Nominal)	Overall diameter (approx.)	Minimum bending radius	Complete Cable Weight	Conductor DC resistance (20°C)	Short-Circuit rating (1 s) (1)	Current rating - direct buried (2),(3)	Current rating - In free air (2),(4)	Voltage drop for two-lead DC system
	mm²	mm	mm	mm	mm	kg/km	Ω/km	kA	A	A	V/A/km
ALUMINUM (Designation NA2XY)											
337DC0832UV	25	0.9	1.4	11	165	145	1.200	2.4	91	117	3.08
337DC0830UV											
337DC0842UV	35	0.9	1.4	12	180	190	0.868	3.3	108	143	2.23
337DC0840UV											
337DC0852UV	50	1.0	1.4	13	195	225	0.641	4.7	128	174	1.64
337DC0850UV											
337DC0862UV	70	1.1	1.4	15.5	235	315	0.443	6.6	157	222	1.14
337DC0860UV											
337DC0872UV	95	1.1	1.5	17	255	415	0.320	9.0	186	251	0.82
337DC0870UV											
337DC0922UV	120	1.2	1.5	19	285	480	0.253	11.3	212	317	0.65
337DC0920UV											
337DC0932UV	150	1.4	1.6	20.5	310	580	0.206	14.2	237	362	0.53
337DC0930UV											
337DC0942UV	185	1.6	1.6	23.0	345	715	0.164	17.5	268	421	0.42
337DC0940UV											
337DC0952UV	240	1.70	1.7	25.5	385	925	0.125	22.7	313	503	0.32
337DC0950UV											
337DC13002UV	300	1.8	1.8	28.5	430	1,135	0.100	28.4	355	594	0.26
337DC13000UV											
337DC14002UV	400	2.0	1.9	32	480	1,470	0.0778	37.8	407	691	0.20
337DC14000UV											
337DC15002UV	500	2.20	2.0	35.5	535	1,815	0.0605	47.3	467	813	0.16
337DC15000UV											

(1) Short circuit rating is based on an initial conductor temperature of 90 °C and a final temperature of 250 °C.

(2) Current ratings calculated by CYME/CYMCAP software, for a load factor of 1.0 (100%).

*(3) Cable directly buried, in touching-pair formation, at 0.8 m depth in soil at, having a temperature of 30°and a thermal resistivity of 2.5 K*m/w has been considered in calculation. Without additional heat source in the vicinity.*

(4) Cable in free-air, in touching-pair formation, ambient temperature of 35°, protected against direct sun radiation (shaded).

TEMPERATURE RATING FACTORS

Ambient Temperature °C	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**
Correction factor air	1.13	1.09	1.04	1.00	0.95	0.90	0.85	0.80	0.74	0.67
Correction factor ground	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65