Synergy Cables Ltd.
Sapirim Industrial Park, 1 Eshel Street P.O.B.102,
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TEL 972-8-6809444, FAX 972-8-6890014
http://www.synergy-cables.com

1. Applications

For indoor or outdoor installation in the open-air in-tray, trough, and conduit or for direct burial in free-draining soil or inside duct where no mechanical damage is to be expected. Power cable for utilities low voltage underground distribution systems and in commercial buildings, industrial plants, power stations and substations. Especially for the inverter-to-transformer link in photo-voltaic power stations, where operating voltage not more than 0.6 kV between a conductor to earth or 1.0 kV between phase conductors at a maximum conductor temperature of 90 °C for continuous normal operation and 250 °C for short circuit.

2. Reference Standards and documents

The cables covered by this specification are manufactured and tested as per the following references:

2.1	Conforms to IEC 60502-1 Standard: *"Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV)" – "Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)".*
2.2	Conforms to SI 1516-1 Standard: *"Extruded solid dielectric insulated power cables for rated voltages from 1 kV to 30 kV"*.
2.3	Conforms to IEC 60228 Standard: *"Conductors of insulated cables*
2.4	Conforms to European Union Regulation (EC) No. 1907/2006, concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (*REACH Regulation*).
2.5	Conforms to EU Directive No. 2002/95/CE on Restriction on Hazardous Substances, (*RoHS Directive*).
2.6	Conforms to IEC 60332-1 (*Flame propagation test*)

3. Low-Voltage Cables Construction

A flexible plain copper conductor (class 5) has an extruded cross-linked polyethylene (XLPE) colored insulation applied around the conductor. A green PVC UV-Resistant outer sheath with printed marking, assessed by using the Arc Xenon test as per *UL 1581* & *UL 2556*, is extruded overall.

TYPICAL DRAWING

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4. Low-Voltage Cable Data

4.1 N2XY FR1 UV SINGLE CORE COPPER CL.5 CONDUCTOR

Construction and Dimensional Data

Catalog number	Conductor cross-sectional area	Nominal Conductor diameter	Approximate		Minimum bending radius static	Max. conductor resistance at 20°C	Short circuit rating, 1sec (1)	Current rating (2)		Voltage drop ac (5)	
			Outer diameter	Cable weight				In Air (3)	Buried (4)	Single phase	Three phase
	mm²	mm	mm	kg/km	mm	Ω/km	kA	A		mV/A/m	
1810105UV-A	1x185	17.4	24.0	1,845	96	0.106	26.4	490	283	0.29	0.22
1810125UV-A	1x240	20.0	27.0	2,400	108	0.0801	34.3	583	326	0.19	0.17
1810145UV-A	1x300	24.5	32.0	2,975	128	0.0641	42.9	675	368	0.16	0.14

1. *Short-circuit current calculated for adiabatic heating considering a temperature rise from 90°C up to 250°C in 1.0 sec.*
2. *Current rating based on the value listed in Israeli Electrical Code 2014, for a conductor working temperature of 90°C, load factor LF = 1.0 (100%)*
3. *Current rating for one cable in free air, ambient temperature =35ºC, as per table 90.7 from Israeli Electrical Code.*
4. *Current rating for three cables, in touching-trefoil formation, in buried duct as per table 90.6 form Israeli Electrical Code, duct buried at 0.8m depth, ambient temperature=30°C, in soil having thermal resistivity of 2.5 K*m/W.*
5. *Calculated for one cable, conductor temperature = 90ºC, System frequency = 50 Hz, load power factor (cos φ)= 1.0*


Rated Voltage 0.6/1 kV


Conductor Flexibility – Stranded CL. 5


Minimum Bending Radius During Pull 6 x D


Maximum Conductor Temperature in Service 90°C


Lead Free


Flame Retardant IEC 60332 - 1


UV-Resistant