

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 1.0 kV between a conductor to earth or 1.8 kV between phase conductors at a maximum conductor temperature of 90 °C for continuous normal operation and 250 °C for short circuit.

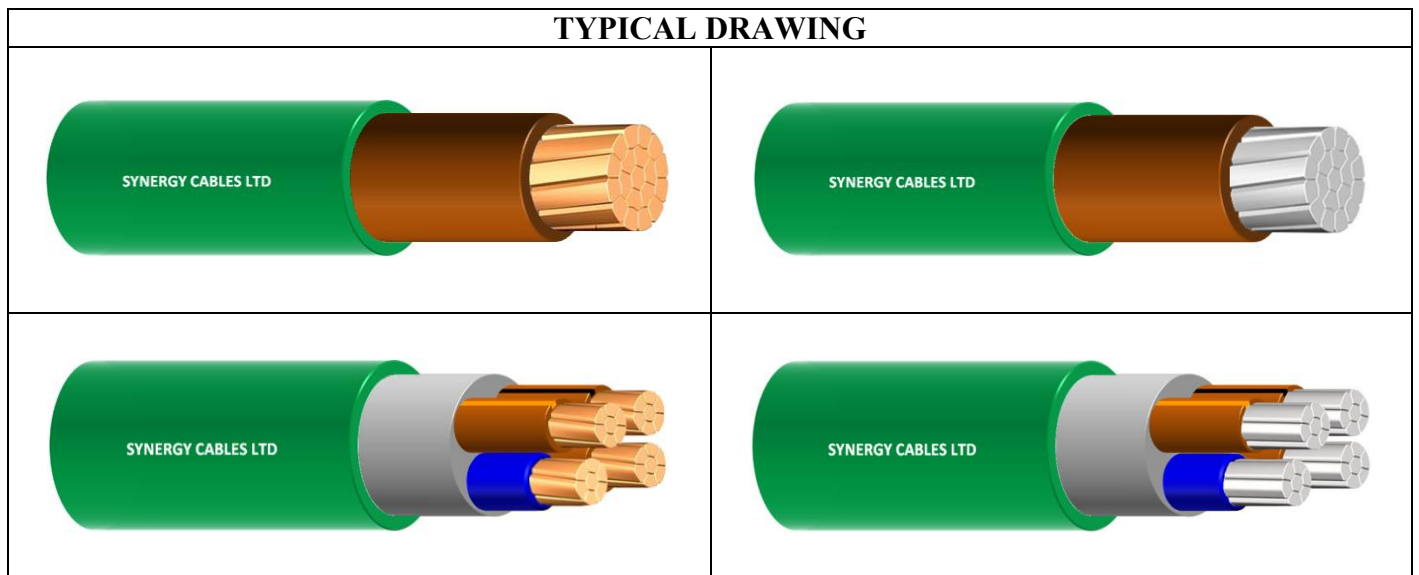
2. Reference Standards and documents

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

2.1	Based on IEC 60502-1 Standard: <i>“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)”</i> .
2.2	Based on SI 1516-1 Standard: <i>“Extruded solid dielectric insulated power cables for rated voltages from 1 kV to 30 kV”</i> .
2.3	Conforms to IEC 60228 Standard: <i>“Conductors of insulated cables”</i>
2.4	Conforms to European Union Regulation (EC) No. 1907/2006, concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (<i>REACH Regulation</i>).
2.5	Conforms to EU Directive No. 2002/95/CE on Restriction on Hazardous Substances, (<i>RoHS Directive</i>).
2.6	Conforms to IEC 60332-1 (<i>Flame propagation test</i>)

3. Low-Voltage Cables Construction

A copper or aluminum, compact stranded round conductor has an extruded cross-linked polyethylene (XLPE) colored insulation applied around the conductor. The cores are twisted together and covered with an extruded inner covering. 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.



4. Low-Voltage Cable Data

4.1 N2XY FR1 UV SINGLE CORE COPPER CONDUCTOR

Construction and Dimensional Data

Catalog number	Conductor cross-sectional area	Nominal Conductor diameter	Approximate		Minimum bending radius	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
	mm ²	mm	mm	kg/km	mm	Ω/km	kA	A		mV/A/m	
181016VUV	1 x 16	4.71	11.0	235	130	1.15	2.3	99	73	2.9	2.500
181035VUV	1 x 35	7.0	13.5	430	160	0.524	5.0	162	113	1.3	1.200
181050VUV	1 x 50	8.3	15.0	575	180	0.387	7.1	199	134	0.990	0.850
181070VUV	1 x 70	10.2	17.0	770	205	0.268	10.0	257	166	0.684	0.593
181095VUV	1 x 95	11.7	18.5	1,030	220	0.193	13.6	315	196	0.493	0.432
181300VUV	1 x 300	20.9	28.5	3,030	340	0.0601	42.9	675	368	0.160	0.139
181400VUV	1 x 400	24.0	31.5	3,855	385	0.047	57.2	790	430	0.125	0.109

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 in free air as per table 90.8 from Israeli Electrical Code.
4. Current rating for cables in buried duct as per table 90.6 from Israeli Electrical Code, duct buried at 0.8m depth, in soil having thermal resistivity of 2.5 K*m/W.
5. Calculated for cables in touching-trefoil formation, conductor temperature = 90°C, System frequency = 50 Hz, load power factor (cos φ) = 1.0

4.2 NA2XY FR1 UV SINGLE CORE ALUMINUM CONDUCTOR

Construction and Dimensional Data

Catalog number	Conductor cross-sectional area	Nominal Conductor diameter	Approximate		Minimum bending radius	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
	mm ²	mm	mm	kg/km	mm	Ω/km	kA	A		mV/A/m	
337035VUV	1 x 35	7.0	13.5	225	160	0.868	3.3	124	87	2.22	1.930
337050VUV	1 x 50	8.3	15.0	260	180	0.641	4.7	153	104	1.65	1.420
337070VUV	1 x 70	10.2	17.0	355	205	0.443	6.6	198	128	1.14	0.980
337095VUV	1 x 95	15.7	18.5	460	220	0.320	9.0	243	153	0.820	0.711
337120VUV	1 x 120	13.2	20.5	545	245	0.253	11.3	285	173	0.650	0.560
337150VUV	1 x 150	14.5	21.5	625	260	0.206	14.2	329	195	0.530	0.460
337185VUV	1 x 185	16.3	24.0	760	290	0.164	17.5	380	219	0.422	0.366
337240VUV	1 x 240	18.6	26.5	965	320	0.125	22.7	454	253	0.323	0.280
337300VUV	1 x 300	20.9	29.0	1,155	350	0.100	28.3	526	286	0.259	0.225
337400VUV	1 x 400	24.0	31.8	1470	385	0.0778	37.8	636	338	0.204	0.176
337500VUV	1 x 500	26.5	35.0	1,815	420	0.0605	47.3	739	377	0.162	0.141

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 in free air as per table 90.8 from Israeli Electrical Code.
4. Current rating for cables in buried duct as per table 90.6 from Israeli Electrical Code, duct buried at 0.8m depth, in soil having thermal resistivity of 2.5 K*m/W.
5. Calculated for cables in touching-trefoil formation, conductor temperature = 90°C, System frequency = 50 Hz, load power factor (cos φ) = 1.0

4.3 N2XY FR1 UV MULTI CORE COPPER CONDUCTOR

Construction and Dimensional Data

Catalog number	Conductor cross-sectional area	Nominal Conductor diameter	Approximate		Minimum bending radius	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
	mm ²	mm	mm	kg/km	mm	Ω/km	kA	A		mV/A/m	
1813050VUV	3x50	8.3	32.5	2,235	390	0.387	7.1	185	134	-	0.856
18135025GVUV	3x50+25G	8.3/5.9	37.0	2,785	445	0.387/0.727	7.1/3.5	185	134	-	0.856
1814050VUV	4x50	8.3	35.5	2,700	425	0.387	7.1	185	135	-	0.856
1813070VUV	3x70	10.2	36.0	2,915	430	0.268	10.0	236	166	-	0.560
1813095VUV	3x95	11.7	40.0	3,955	480	0.193	13.6	286	196	-	0.430
18137035VUV	3x70+35	10.2/7.0	41.0	3,665	490	0.268/0.524	10.0/5.0	236	166	-	0.560

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 = 35°C, as per table 90.7 from Israeli Electrical Code.
4. Current rating for one cable in buried duct as per table 90.6 from 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 = 90°C, System frequency = 50 Hz, load power factor (cos φ)= 1.0

4.4 NA2XY FR1 UV MULTI CORE ALUMINUM CONDUCTOR

Construction and Dimensional Data

Catalog number	Conductor cross-sectional area	Nominal Conductor diameter	Approximate		Minimum bending radius	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
	mm ²	mm	mm	kg/km	mm	Ω/km	kA	A		mV/A/m	
3374050VUV	4x50	8.3	35.5	1,520	425	0.641	4.7	140	104	-	1.42
33737035VUV	3x70+35	10.2/7.0	41.0	2,180	490	0.443/0.868	6.6/3.3	180	128	-	0.980
3373091VUV	3x95	11.7	40.5	2,200	485	0.320	9.0	218	153	-	0.711
33739550VUV	3x95+50	11.7/8.3	45.5	2,775	545	0.320/0.641	9.0/4.7	218	153	-	0.711
33739550GVUV	3x95+50G	11.7/8.3	45.5	2,775	545	0.320/0.641	9.0/4.7	218	153	-	0.711
3374120VUV	4x120	13.2	48.5	3,020	580	0.253	11.3	252	173	-	0.560
3374150VUV	4x150	14.5	51.5	3,500	620	0.206	14.2	292	195	-	0.460
337315070VUV	3x150+70	14.5/10.2	49.0	3,215	590	0.206/0.443	14.2/6.6	292	195	-	0.460
3373241VUV	3x240	18.6	56.0	4,360	670	0.125	22.7	393	253	-	0.280
3373240120VUV	3x240+120	18.6/17.2	59.0	4,815	710	0.125/0.253	22.7/11.3	393	253	-	0.280
3374240VUV	4x240	18.6	63.0	5,535	755	0.125	22.7	393	253	-	0.310

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 =35°C, as per table 90.7 from Israeli Electrical Code.
4. Current rating for one cable in buried duct as per table 90.6 from 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 = 90°C, System frequency = 50 Hz, load power factor (cos φ)= 1.0





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Rated Voltage 1/1.8 kV	Conductor Flexibility – Stranded CL. 2	Minimum Bending Radius during Pull 12 x D	Maximum Conductor Temperature in Service 90°C	Lead Free	Flame Retardant IEC 60332 - 1	UV-Resistant
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