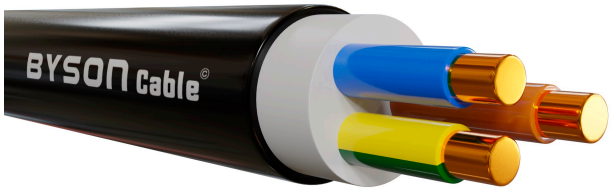
NYY– J 0.6/1kV Power Cable

Building Installation Cables

Power and control cables fixed installation



REGULATORY COMPLIANCE

Application

NYY Power cables for energy supply are an econmical solution for power and control where increased mechanical protection is not required. NYY cables can be installed in open air, in underground, in water, in concrete, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks, where mechanical damages are not to be expected.

CE = Product conforms with Low-Voltage Directive 2014/35/EU.

Technical data

- Power and control cable
  acc. to DIN VDE 0276-603 /HD 603 S1 / IEC 60502
  7 core and above
  acc. to DIN VDE 0276-627 /HD 627 S1 / IEC 60502
- **Temperature range**
  flexing -5°C to +50°C
  fixed installation -40°C to +70°C
- Permissible **operating temperature** at conductor +70°C
- Permissible **short circuit temperature** (short circuit duration max. 5 s)
  ≤ 300 mm² +160°C
  > 300 mm² +140°C
- **Nominal voltage**
  U_0/U 0,6/1 kV
- **Test voltage**
  4 kV
- **Minimum bending radius**
  single core 15x outer Ø multi core 12x outer Ø

Cable structure

- Bare copper conductor,
  single wire or multi wire acc. to DIN VDE 0295 cl.1 or cl.2 /IEC 60228 cl.1 or cl.2
- Core insulation of PVC compound type DIV4
  acc. to HD 603 S1
- Core identification acc. to DIN VDE 0293-308 / 0276-603
- Core colour for 3+½ conductor
  J-version: GN-YE (½), BN, BK, GY
  O-version: BU (½), BN, BK, GY
- Cores stranded in concentric layers
- Outer sheath of PVC compound type DMV5 to HD 603 S1
- Sheath colour: black

Properties

- The materials used during manufacturing are cadmium-free, contain no silicone and are free from substances harmful to the wetting properties of lacquers

Tests

- Flame retardant acc. to DIN VDE 0482-332-1-2 / DIN EN 60332-1-2 / IEC 60332-1-2

Highest permissible voltage

- Direct current systems
  - Conductor/conductor 1,8 kV
  - Conductor/earth 0,9 kV
- Alternating current systems
  - Single phase systems both outer conductors insulated 1,4 kV
  - Single phase systems one outer conductor earthed 0,7 kV
- Three phase systems 1,2 kV

Note

- re = round conductor, single wire
  rm = round conductor, multi wire
  sm = sectional conductor, mutli wire
- J-version = with GN-YE conductor
  O-version = without GN-YE conductor
- In respect to 3+½ conductors
  Whereby only one conductor is allowed to contain a smaller cross section (as per DIN VDE 0276-603) and permitted to place as insulated core (gree-yellow and blue as ½-conductor), stranded in layer.
- UV Resistant unless installation in extreme UV exposure and or high/low ambient temperatures i.e. desert or arctic conditions then additional carbon loading sheathing requirements maybe necessary

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Part number	Numberofcoresand mm²per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
NYY-J				
100459	1x25rm	13.0	240.0	380
100460	1x35rm	14.0	336.0	447
100461	1x50rm	15.0	480.0	650
100462	1x70rm	17.0	672.0	864
100466	1 x 185rm	25.0	1776.0	2080
100400	3 x 1,5re	12.0	43.0	223
100401	4 x 1,5re	13.0	58.0	256
100402	5 x 1,5re	14.0	72.0	293
100403	7 x 1,5re	15.0	101.0	360
100404	10x1,5re	18.0	144.0	520
100405	12x1,5re	19.0	173.0	560
100418	14x1,5re	20.0	202.0	620
100406	16x1,5re	21.0	230.0	680
100407	19x1,5re	22.0	274.0	760
100408	24x1,5re	24.0	346.0	900
100419	30x1,5re	26.0	432.0	1100
100409	3 x 2,5re	13.0	72.0	272
100410	4 x 2,5re	14.0	96.0	316
100411	5 x 2,5re	15.0	120.0	323
100412	7 x 2,5re	16.0	168.0	450
100420	10x2,5re	20.0	240.0	630
100451	12x2,5re	20.0	288.0	680
100452	14x2,5re	21.0	336.0	790
100453	19x2,5re	23.0	456.0	990
100454	24x2,5re	26.0	576.0	1300
100455	30x2,5re	28.0	720.0	1400
100434	3x4re	15.0	115.0	373
100426	4x4re	16.0	154.0	439
100432	5x4re	17.0	192.0	510
100435	3x6re	16.0	173.0	466
100427	4x6re	17.0	230.0	547
100433	5x6re	19.0	288.0	640
100436	3x10re	18.0	288.0	629

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Part number	Numberofcoresand mm^2per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
100428	4x10re	19.0	384.0	743
100449	5x10re	21.0	480.0	899
100437	3x16re	20.0	461.0	850
100429	4x16re	22.0	614.0	1039
100450	5x16re	23.0	768.0	1240
100438	3 x 25rm/16re	25.0	874.0	1595
100430	4x25rm	27.0	960.0	1620
100421	3 x 35sm/16re	27.0	1162.0	1718
100442	4 x 35sm	27.0	1344.0	1916
100422	3 x 50sm/25rm	31.0	1680.0	2383
100476	4 x 50sm	31.0	1920.0	2639
100423	3 x 70sm/35sm	33.0	2352.0	3196
100443	4 x 70sm	35.0	2688.0	3576
100424	3 x 95sm/50sm	38.0	3216.0	4271
100478	4 x 95sm	40.0	3648.0	4746
100439	3 x 120sm/70sm	41.0	4128.0	5281
100445	4 x 120sm	43.0	4608.0	5813
100440	3 x 150sm/70sm	46.0	4992.0	6408
100446	4 x 150sm	48.0	5760.0	7263
100441	3 x 185sm/95sm	50.0	6240.0	7909
100447	4 x 185sm	53.0	7104.0	8905
100425	3 x 240sm/120sm	57.0	8064.0	10162
100448	4 x 240sm	60.0	9216.0	11430

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ELECTRICAL CHARACTERISTICS

Current Ratings – Table 1A - Current Carrying Capacity at 30 ºC

NOMINAL CROSS SECTIONAL AREA *mm²*	*CURRENT RATING* *Amps*
0.25	4
0.34	6
0.5	9
0.75	12
1.0	15
1.5	18
2.5	25
4	34
6	44
10	61
16	82
25	108
35	135
50	168
70	207
95	250
120	292
150	335
185	382
240	453
300	523
The above table is a guide extracted from DIN VDE 0298 Part 4 and DIN 0100 Part 430 (2003-08 Table 11 Column 5)	

NYY– J 0.6/1kV Power Cable

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Table 1B – Conductor Resistances

Nominal cross-section in mm^2	Conductor resistances at 20 °C for 1 km in Ω (max. value)			
	Made of wires with metal sheath		Made of bare wires	
	Class 2	Class 5 + 6	Class 2	Class 5 + 6
0.14		142.0		138.0
0.25		82.0		79.0
0.34		59.0		57.0
0.38		52.8		48.5
0.5	36.7	40.1	36.0	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	8.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206
120	0.154	0.164	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.100	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801

The above table is in accordance with BS EN 60228 (previously BS 6360)

Table 1C – Correction Factors

For Multi core cables with conductor cross-sections up to

Number of cores under load	Conversion factor for installation in the open air	Conversion factor for installation underground
5	0.75	0.70
7	0.65	0.60
10	0.55	0.50
14	0.50	0.45
19	0.45	0.40
24	0.40	0.35
40	0.35	0.30
61	0.30	0.25

The above table is a guide extracted from DIN VDE 0298 Part 4 (2003-08 Table 26)

NYY– J 0.6/1kV Power Cable

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Table 1D – Correction Factors for ambient temperatures other than 30°C

Permissible/recommended operating conductor temperature					
	60°C	70°C	80°C	85°C	90°C
Ambient temperature in °C	Conversion factors to be applied to the current rating values in Table 1A				
10	1.29	1.22	1.18	1.17	1.15
15	1.22	1.17	1.14	1.13	1.12
20	1.15	1.12	1.10	1.09	1.08
25	1.08	1.06	1.05	1.04	1.04
30	1.00	1.00	1.00	1.00	1.00
35	0.91	0.94	0.95	0.95	0.96
40	0.82	0.87	0.89	0.90	0.91
45	0.71	0.79	0.84	0.85	0.87
50	0.58	0.71	0.77	-	0.82
55	0.41	0.61	0.71	-	0.76
60	-	0.50	0.63	-	0.71
65	-	0.35	0.55	-	0.65
70	-	-	0.45	-	0.58
75	-	-	0.32	-	0.50
80	-	-	-	-	0.41
85	-	-	-	-	0.29
The above table is a guide extracted from DIN VDE 0298 Part 4 (2003-08 Table 17)					

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