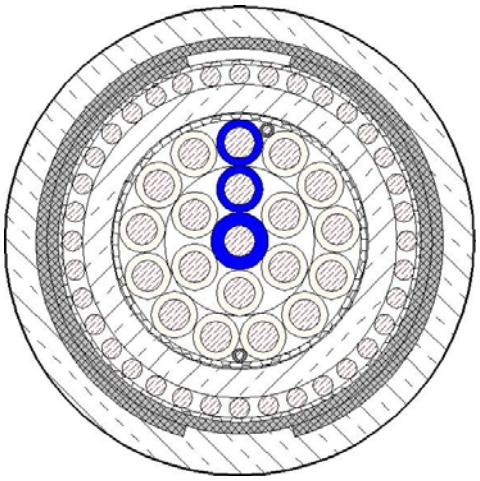
AJ-2Y2YDB2Y
n x 1 x 0.9 or 1.4 or 1.8 mm S

PE-insulated, halogen free SIGDRAK®- signalling cable, cores in concentric layers, protected against inductive interferences

Specification Deutsche Bahn AG 416.0113
(formerly Dlk 1.013.107 y)



Principle drawing
AJ-2Y2YDB2Y
20x1x1.4 S LG 504

Application

Cables are used as railway cables for laying directly into the ground or in ducts.
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Colour Coding, Marking

Cores: natural coloured with blue tracer wire in each layer

Construction

AJ-2Y2YDB2Y	
Conductor	copper, solid, 0.9, 1.4 or 1.8 mm, soft annealed
Insulation	PE (2Y)
Twisting	cores stranded in concentric layers, two perforated pilot cores 0.5 mm if ≥ 14 cores
Cable core wrapping	with suitable non-hygroscopic plastic tape(s)
Inner sheath	PE (2Y), black
Protection against inductive interferences	concentric screen of copper wires 0.9, 1.2, 1.4 or 1.8 mm and two layers galvanized steel tape 0.5 or 0.8 mm, depending from required reduction factor
Outer sheath	PE (2Y), black

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Mechanical and Thermal Properties

Admissible bending radius	un-armoured	≥ 7.5 x outer cable diameter
	armoured	≥ 10 x outer cable diameter
Temperature range	during operation	- 40°C to + 60°C
	during installation	- 10°C to + 60°C

Electrical Properties

at 20°C ± 5°C

Conductor diameter	mm	0.9	1.4	1.8
Conductor resistance	Ω/km	≤ 28.9	≤ 11.9	≤ 7.2
Insulation resistance	GΩxkm		≥ 10	
Mutual capacitance at 800 Hz	nF/km	≤ 115 [1)]	≤ 145 [2)]	≤ 145 [2)]
Operating voltage DC/AC	V		≤ 600 / ≤ 420	
Test voltage – 50 Hz – 1 min				
core/core	V		2500	
core/screen	V		2500	

[1)] ≤ 120 nF/km for single core in cable core
[2)] ≤ 155 nF/km for single core in cable core

Typical Reduction Factor Curve

according to 416.0116 (formerly Dlk 1.013.110)
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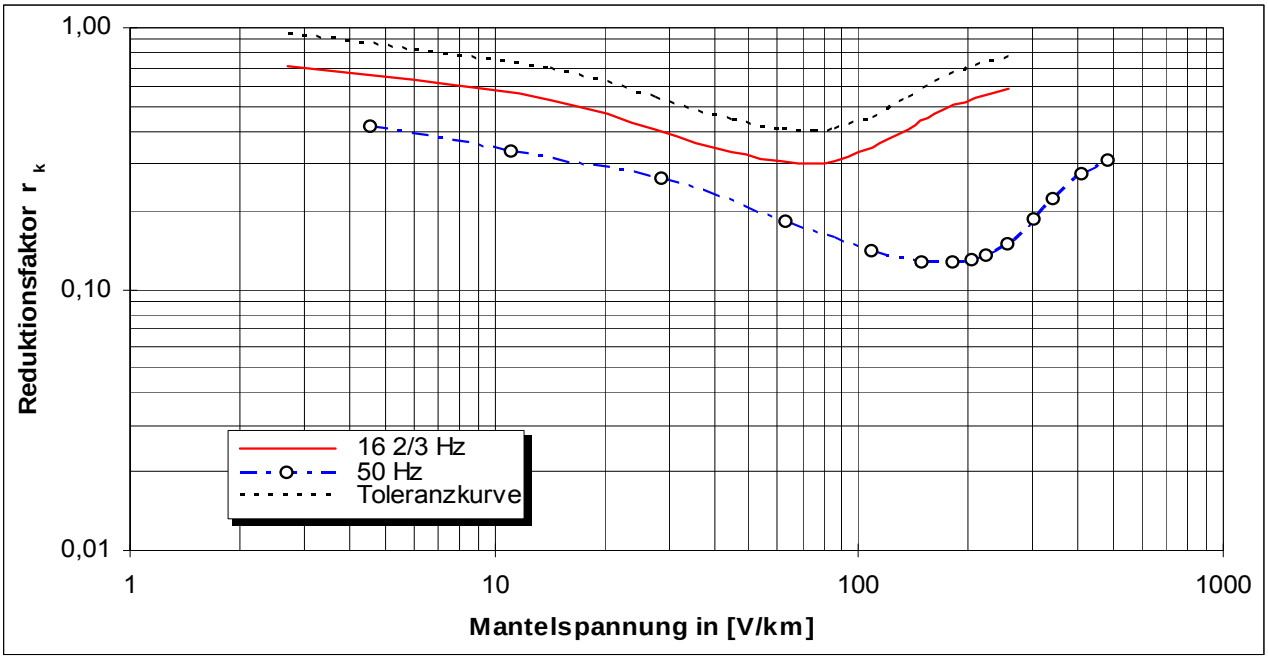

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Additional Properties

Dimension	r_k reduction factor class (16.34 Hz)	Outer diameter	Cable weight net	Standard supply length	Drum size flange-Ø	Transport weight gross	Copper content	Tensile strength max.	Fire load	SAP material number
		mm	kg/km	m	KTG	kg/reel	kg/km	N	MJ/m	
AJ-2Y2YDB2Y n x 1 x 0.9 S (H115)										
8 x *)	600	16.0	470	1000	121	700	134	650	6	-
10 x	600	19.0	520	1000	121	770	153	870	8	1007016
20 x	600	20.0	650	1000	121	930	227	1250	9	1007018
30 x	600	22.0	780	1000	141	1120	303	1650	10	1007021
50 x	600	25.0	1010	1000	161	1520	443	2360	13	1007023
80 x	600	29.0	1330	1000	161	1880	647	3370	16	1007025
120 x	600	32.0	1740	1000	181	2480	921	4640	20	1007027
160 x	600	35.0	2310	1000	201	3100	1194	5850	24	1007029
200 x	600	38.0	2520	1000	221	3690	1461	7010	28	1007031
10 x	500	19.0	600	1000	121	840	223	1270	8	1007017
20 x	500	20.0	740	1000	121	1030	312	1710	9	1007019
30 x	500	22.0	890	1000	161	1350	399	2170	10	1007022
50 x	500	25.0	1150	1000	161	1660	559	2980	13	1007024
80 x	500	29.0	1480	1000	161	2050	786	4070	16	1007026
120 x	500	32.0	1910	1000	201	2840	1073	5380	20	1007028
160 x	500	35.0	2130	1000	201	3300	1361	6640	24	1007030
200 x	500	38.0	2730	1000	221	3890	1639	7810	28	1007032
AJ-2Y2YDB2Y n x 1 x 1.4 S (H145)										
10 x	600	21.0	670	1000	141	1020	256	1430	9	1007033
20 x	600	23.5	940	1000	161	1460	433	2330	11	1007038
30 x	600	27.0	1180	1000	161	1740	600	3170	13	1007041
50 x	600	31.0	1650	1000	181	2410	927	4710	18	1007046
80 x	600	35.0	2270	1000	201	3350	1414	6900	23	1007051
120 x	600	41.0	3110	500	181	2505	2055	9480	31	1007056
160 x	600	46.0	3900	500	201	3210	2696	11880	37	1007060
200 x	600	49.0	4670	500	221	3890	3331	14070	43	1007064
10 x	500	21.0	780	1000	141	1130	346	1920	9	1007034
20 x	500	23.5	1070	1000	161	1580	540	2890	11	1007039
30 x	500	26.0	1320	1000	161	1890	715	3760	13	1007042
50 x	500	31.0	1810	1000	181	2600	1079	5460	18	1007047
80 x	500	35.0	2460	1000	201	3550	1587	7700	23	1007052
120 x	500	42.0	3380	500	181	2655	2281	10460	31	1007057
160 x	500	46.0	4190	500	201	3380	2942	12880	37	1007061
200 x	500	49.0	5000	500	121	4070	3603	15110	42	1007065
50 x	400	33.0	2450	1000	201	3520	1315	6540	18	1007048
80 x	400	38.0	3280	500	161	2490	1923	9110	23	1007053
120 x	400	44.0	4290	500	181	3270	2641	11790	31	1007058
160 x	400	48.0	5200	500	221	4220	3333	14120	37	1007062
200 x	400	52.0	6060	500	221	4780	4025	16400	43	1007066

*) based on (not according to) Deutsche Bahn specification as core count is not mentioned in PH 416.0113

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Additional Properties

Dimension	r_k reduction factor class (16.34 Hz)	Outer diameter	Cable weight net	Standard supply length	Drum size flange-Ø	Transport weight gross	Copper content	Tensile strength max.	Fire load	SAP material number
		mm	kg/km	m	KTG	kg/Spule	kg/km	N	MJ/m	
AJ-2Y2YDB2Y n x 1 x 1.8 S (H145)										
10x	600	23.0	850	1000	161	1360	369	2020	10	1007067
20x	600	27.0	1260	1000	161	1870	647	3380	14	1007071
30x	600	30.0	1620	1000	181	2390	921	4700	17	1007074
50x	600	36.0	2080	1000	201	3440	1461	7070	23	1007077
80x	600	41.0	3310	500	181	2670	2250	10250	31	1007084
120x	600	48.0	4570	500	221	3880	3306	13930	40	1007087
160x	600	54.0	5950	500	221	4720	4370	17230	50	1007090
200x	600	58.0	6970	250	181	3270	5387	20120	58	1007093
10x	500	23.0	970	1000	161	1470	471	2570	10	1007068
20x	500	27.0	1410	1000	161	2030	774	4020	14	1007072
30x	500	30.0	1780	1000	181	2570	1061	5390	17	1007076
50x	500	36.0	2520	1000	221	3800	1627	7830	23	1007081
80x	500	42.0	3570	500	181	2820	2481	11240	31	1007086
120x	500	49.0	5950	500	221	4050	3578	14970	40	1007089
160x	500	55.0	6170	250	181	2915	4663	18150	50	1007092
200x	500	59.0	7380	250	181	3410	5726	21090	58	1007095
30x	400	32.0	2400	1000	201	3450	1290	6450	17	1007075
50x	400	38.0	3350	500	181	2675	1989	9340	23	1007080
80x	400	44.0	3310	500	201	3620	2854	12560	31	1007085
120x	400	51.0	4900	500	221	4760	3974	16150	41	1007088
160x	400	57.0	7340	250	181	3388	5119	19430	50	1007091
200x	400	61.0	8650	250	201	4090	6123	22280	58	1007094