

BiT 1100[®]Power OR



Flame retardant and oil resistant power cables acc. to IEC 60502-1



Technical data:

Thermal parameters:

Operating temperature:

Operation temperature: -30 °C to 80 °C

Min. installation temp.: -5 °C

Max. conductor operating temp.: 90 °C

Max. conductor temperature during short circuit: 250 °C

Electrical parameters:

Operating voltage: U₀/U = 0,6/1 kV

Test voltage (50 Hz): 4000 V

Mechanical parameters:

Min. bending radius: 10 x Ø

Design:

Conductors:

bare copper solid (class 1) or stranded (class 2) (acc. to EN 60228, IEC 60228)

Insulation:

cross-linked polyethylene (XLPE)

Core identification:

coloured conductors (see the table with conductor insulation colours), cables with protective earth conductor marked G (e.g. 7G1,5)

Core arrangement:

cores twisted together special filling compound

Inner sheath:

special PVC, oil resistant (EN 60811-404, IEC 60811-404), self-extinguishing and flame retardant (acc. to EN/IEC 60332-1-2 - test for vertical flame propagation for a single insulated cable, EN/IEC 60332-3-24 cat. C – test for vertical flame spread of vertically-mounted bunched cables for single and multi core cables, EN/IEC 60332-3-23 cat. B – test for vertical flame spread of vertically-mounted bunched cables for multi core cables ≥16mm², UV resistant; colour: black

Outer sheath:

Application:

Power cables designed for supplying energy to low voltage collectors. They are suitable for installation in industrial buildings especially for application in places with increased fire safety requirements and in places exposed to oil. Cables used for fixed external, internal and underground application, in cable ducts, on constructions, in places with low risk of mechanical damage. Cables are designed for industrial application, power stations, in local supply networks. The XLPE insulation improves current carrying capacity maintaining at the same time low capacitance in comparison to PVC insulated cables.

Cables classified according to **EN 50575 (CPR)**.

Max. pulling tension during installation:

- tension applied directly to the conductors: 50xS

- tension applied by means of pulling device (pulling grip): 50xS

S – the sum of the cross-sectional areas of all contained conductors [mm²]

Core colours:

Number of conductors	Conductor insulation colours
BiT 1100 [®] Power OR - cables without protective conductor	
1	black (other colours available on special request)
2	blue, brown
3	brown, black, grey
4	blue, brown, black, grey
5	blue, brown, black, grey, black
≥ 6	white numbered cores
BiT 1100 [®] Power OR - cables with protective conductor	
1	green/yellow
3	green/yellow, blue, brown
4	green/yellow, brown, black, grey
5	green/yellow, blue, brown, black, grey
≥ 6	white numbered cores, green/yellow core in outer layer

Section [mm ²]	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400
Max. cores resistance in 20°C	12,1	7,41	4,61	3,08	1,83	1,15	0,727	0,524	0,387	0,268	0,193	0,153	0,124	0,0991	0,0754	0,0601	0,047

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Single-stranded cables with protective conductor

Cat. no.	n x mm ²	Outer diameter* [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
EN5400	1G1,5 RE	5,6	48	14,4
EN5401	1G2,5 RE	6,0	60	24,0
EN5402	1G4,0 RE	6,5	76	38,4
EN5403	1G6,0 RE	7,0	98	57,6
EN5404	1G10 RE	7,8	139	96,0
EN5405	1G16 RE	8,8	207	153,6
EN5406	1G25 RM	10,7	305	240,0
EN5407	1G35 RM	11,9	402	336,0
EN5408	1G50 RM	13,5	540	480,0
EN5409	1G70 RM	15,0	726	672,0
EN5410	1G95 RM	16,9	988	912,0
EN5411	1G120 RM	18,8	1210	1152,0
EN5412	1G150 RM	21,1	1543	1440,0
EN5413	1G185 RM	22,9	1882	1776,0
EN5414	1G240 RM	26,3	2403	2304,0
EN5415	1G300 RM	28,3	2984	2880
EN5416	1G400 RM	32,5	3952	3840

Single-stranded cables without protective conductor

Cat. no.	n x mm ²	Outer diameter* [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
EN5420	1x1,5 RE	5,6	48	14,4
EN5421	1x2,5 RE	6,0	60	24,0
EN5422	1x4,0 RE	6,5	76	38,4
EN5423	1x6,0 RE	7,0	98	57,6
EN5424	1x10 RE	7,8	139	96,0
EN5425	1x16 RE	8,8	207	153,6
EN5426	1x25 RM	10,7	305	240,0
EN5427	1x35 RM	11,9	402	336,0
EN5428	1x50 RM	13,5	540	480,0
EN5429	1x70 RM	15,0	726	672,0
EN5430	1x95 RM	16,9	988	912,0
EN5431	1x120 RM	18,8	1210	1152,0
EN5432	1x150 RM	21,1	1543	1440,0
EN5433	1x185 RM	22,9	1882	1776,0
EN5434	1x240 RM	26,3	2403	2304,0
EN5435	1x300 RM	28,3	2984	2880
EN5436	1x400 RM	32,5	3952	3840

Cat. no.	n x mm ²	Outer diameter* [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
EN5440	3G1,5 RE	10,9	175	43,2
EN5441	4G1,5 RE	11,7	203	57,6
EN5442	5G1,5 RE	12,4	233	72
EN5560	7G1,5 RE	13,7	290	100,8
EN5561	10G1,5 RE	16,8	403	144
EN5562	12G1,5 RE	16,8	427	172,8
EN5562	14G1,5 RE	17,5	470	201,6
EN5563	19G1,5 RE	19,2	580	273,6
EN5564	24G1,5 RE	21,9	720	345,6
EN5565	30G1,5 RE	23,0	834	432
EN5566	37G1,5 RE	24,7	979	532,8
EN5443	3G2,5 RE	11,7	218	72
EN5444	4G2,5 RE	13,1	273	96
EN5445	5G2,5 RE	13,9	311	120
EN5575	7G2,5 RE	14,8	376	168
EN5576	10G2,5 RE	18,4	527	240
EN5582	12G2,5 RE	18,4	565	288
EN5577	14G2,5 RE	19,2	627	336
EN5578	19G2,5 RE	21,1	786	456
EN5579	24G2,5 RE	24,2	980	576
EN5580	30G2,5 RE	25,4	1150	720
EN5581	37G2,5 RE	27,3	1363	888
EN5446	3G4 RE	13,1	294	115,2
EN5447	4G4 RE	14,2	352	153,6
EN5448	5G4 RE	15,1	405	192
EN5449	3G6 RE	14,2	371	172,8
EN5450	4G6 RE	15,4	450	230,4
EN5451	5G6 RE	16,4	523	288
EN5452	3G10 RE	15,9	520	288
EN5453	4G10 RE	17,4	639	384
EN5454	5G10 RE	18,6	753	480
EN5455	3G16 RE	18,0	750	460,8
EN5456	4G16 RE	19,8	934	614,4
EN5457	5G16 RE	21,2	1112	768
EN5458	3G25 RM	22,3	1136	720
EN5459	4G25 RM	24,6	1419	960
EN5460	5G25 RM	26,6	1697	1200
EN5461	3G35 RM	24,7	1481	1008
EN5462	4G35 RM	27,4	1861	1344
EN5463	5G35 RM	29,9	2245	1680
EN5464	3G50 RM	28,7	2023	1440

Cat. no.	n x mm ²	Outer diameter* [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
EN5465	4G50 RM	32,1	2563	1920
EN5466	5G50 RM	34,9	3090	2400
EN5467	3G70 RM	32,5	2734	2016
EN5468	4G70 RM	36,3	3465	2688
EN5469	5G70 RM	39,6	4184	3360
EN5470	3G95 RM	36,4	3649	2736
EN5471	4G95 RM	40,9	4665	3648
EN5472	5G95 RM	44,6	5651	4560
EN5473	3G120 RM	41,3	4564	3456
EN5474	4G120 RM	46,8	5663	4608
EN5475	5G120 RM	50,9	7104	5760
EN5476	3G150 RM	46,6	5842	4320
EN5477	4G150 RM	52,1	7423	5760
EN5478	5G150 RM	57,2	9037	7200
EN5479	3G185 RM	50,2	6964	5328
EN5480	4G185 RM	56,7	9034	7104
EN5481	5G185 RM	62,2	10886	8880
EN5482	3G240 RM	57,8	9058	6912
EN5483	4G240 RM	65,4	11621	9216
EN5484	5G240 RM	71,4	14091	11520
EN5490	2x1,5 RE	10,5	156	28,8
EN5491	3x1,5 RE	10,9	175	43,2
EN5492	4x1,5 RE	11,7	203	57,6
EN5493	5x1,5 RE	12,4	233	72
EN5600	7x1,5 RE	13,7	290	100,8
EN5601	10x1,5 RE	16,8	403	144
EN5602	12x1,5 RE	16,8	427	172,8
EN5603	14x1,5 RE	17,5	470	201,6
EN5604	19x1,5 RE	19,2	580	273,6
EN5605	24x1,5 RE	21,9	720	345,6
EN5606	30x1,5 RE	23,0	834	432
EN5607	37x1,5 RE	24,7	979	532,8
EN5494	2x2,5 RE	11,3	190	48
EN5495	3x2,5 RE	11,7	218	72
EN5496	4x2,5 RE	13,1	273	96
EN5497	5x2,5 RE	13,9	311	120
EN5620	7x2,5	14,8	376	168
EN5621	10x2,5	18,4	527	240
EN5622	12x2,5	18,4	565	288
EN5623	14x2,5	19,2	627	336
EN5624	19x2,5	21,1	786	456

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Cat. no.	n x mm ²	Outer diameter* [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
EN5625	24x2,5	24,2	980	576
EN5626	30x2,5	25,4	1150	720
EN5627	37x2,5	27,3	1363	888
EN5498	2x4 RE	12,6	251	76,8
EN5499	3x4 RE	13,1	294	115,2
EN5500	4x4 RE	14,2	352	153,6
EN5501	5x4 RE	15,1	405	192
EN5502	2x6 RE	13,6	311	115,2
EN5503	3x6 RE	14,2	371	172,8
EN5504	4x6 RE	15,4	450	230,4
EN5505	5x6 RE	16,4	523	288
EN5506	2x10 RE	15,2	426	192
EN5507	3x10 RE	15,9	520	288
EN5508	4x10 RE	17,4	639	384
EN5509	5x10 RE	18,6	753	480
EN5510	2x16 RE	17,1	598	307,2
EN5511	3x16 RE	18,0	750	460,8
EN5512	4x16 RE	19,8	934	614,4
EN5513	5x16 RE	21,2	1112	768
EN5514	2x25 RM	21,1	904	480
EN5515	3x25 RM	22,3	1136	720
EN5516	4x25 RM	24,6	1419	960
EN5517	5x25 RM	26,6	1697	1200
EN5518	2x35 RM	23,4	1167	672
EN5519	3x35 RM	24,7	1481	1008
EN5520	4x35 RM	27,4	1861	1344
EN5521	5x35 RM	29,9	2245	1680

Cat. no.	n x mm ²	Outer diameter* [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
EN5522	2x50 RM	26,9	1575	960
EN5523	3x50 RM	28,7	2023	1440
EN5524	4x50 RM	32,1	2563	1920
EN5525	5x50 RM	34,9	3090	2400
EN5526	2x70 RM	30,5	2113	1344
EN5527	3x70 RM	32,5	2734	2016
EN5528	4x70 RM	36,3	3465	2688
EN5529	5x70 RM	39,6	4184	3360
EN5530	2x95 RM	34,3	2811	1824
EN5531	3x95 RM	36,4	3649	2736
EN5532	4x95 RM	40,9	4665	3648
EN5533	5x95 RM	44,6	5651	4560
EN5534	2x120 RM	38,7	3511	2304
EN5535	3x120 RM	41,3	4564	3456
EN5536	4x120 RM	46,8	5663	4608
EN5537	5x120 RM	50,9	7104	5760
EN5538	2x150 RM	43,7	4493	2880
EN5539	3x150 RM	46,6	5842	4320
EN5540	4x150 RM	52,1	7423	5760
EN5541	5x150 RM	57,2	9037	7200
EN5542	2x185 RM	47,1	5383	3552
EN5543	3x185 RM	50,2	6964	5328
EN5544	4x185 RM	56,7	9034	7104
EN5545	5x185 RM	62,2	10886	8880
EN5546	2x240 RM	54,2	6956	4608
EN5547	3x240 RM	57,8	9058	6912
EN5548	4x240 RM	65,4	11621	9216
EN5549	5x240 RM	71,4	14091	11520

*Outer diameter tolerance: +/-5%

Cable Factory BITNER reserves the right to modify the specifications without prior notice

Note: On customer's request other cross sections or number of cores can be produced

Long term current rating for 3-, 4- and 5-core cables laid as single in air or in ground, operating in 3-phase symmetrical systems

Section mm ²	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240
air 30°C	23	32	42	53	75	100	133	162	197	250	308	359	412	475	564
ground 20°C	31	40	52	64	86	112	145	174	206	254	305	348	392	444	517

Long term current rating of single core cables laid in air or ground as single cable operating in DC systems with distant protective conductor

Section mm ²	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400
air 30°C	33	43	57	72	99	131	177	217	265	336	415	485	557	646	774	900	1060
ground 20°C	41	63	82	102	136	176	229	275	326	400	480	548	616	698	815	927	1064

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Long term current rating of single core cables laid in air or ground in triangle, operating in 3-phase symmetrical systems

Section mm ²	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400
air 30°C	26	34	44	56	77	102	138	170	207	263	325	380	437	507	604	697	811
ground 20°C	33	42	54	67	89	115	148	177	209	256	307	349	393	445	517	583	663

Correction factors for ambient temperature other than 30°C

ambient temperature°C	10	15	20	25	30	35	40	45	50	55	60	65	70	75
correction factor	1,18	1,14	1,10	1,05	1,00	0,95	0,89	0,84	0,77	0,71	0,63	0,55	0,45	0,32