

# BITNER BiTflame®1000 FE180/PH120/E90



Fire resistant, halogen-free control and power cable

LVD 2014/35/EU



## Technical data:

### Thermal parameters:

#### Operating temperature:

fixed installation: -40°C to 90°C

min. installation temp.: -5°C

#### Permissible conductor operating temperature:

90°C

#### Permissible conductor temperature during short circuit:

250°C

### Electrical parameters:

Operating voltage:  $U_0/U=0,6/1kV$

Test voltage: 3500V

Insulation resistance: > 200 MΩxkm

### Mechanical parameters:

Min. bending radius: 10xØ

## Design:

### Cores:

bare copper conductors, singlewires cl.1 (RE) or multiwires cl.2 (RM) (acc. to EN 60228, IEC 60228)

### Insulation:

mica tape wrapping and special halogen-free compound up to 5 cores colour coded (acc. to the table), >5 cores number coded conductors, cables with protective earth conductor marked G (e.g. 7G2,5)

### Fillers:

special halogen-free compound, only in multi-core cables over 16mm<sup>2</sup>

### Outer sheath:

special halogen-free compound, self-extinguishing and flame retardant (acc. to EN 60332-1, IEC 60332-1-2 flame propagation test for a single insulated cable and EN 60332-3-24, IEC 60332-3-24 flame propagation test for vertically-mounted bunched cables); colour: orange

## Application:

E90 fire resistant cables that keep supplying power or controlling properties under fire conditions for 90 minutes. Cables designed to supply power in the buildings with higher requirements of fire protection (skyscrapers, hospitals, shopping centres, tunnels, museums, theatres, cinemas). Cables can be used to supply power and control to receivers (lighting, fire protection appliances, pumps). Cables with improved fire characteristics E90 must be installed on the supporting systems tested in accordance with DIN 4102-12. Cables made of halogen-free materials, not emitting harmful substances under fire conditions. Suitable for fixed installation in dry and damp rooms-also in public buildings. Cables are suitable for outdoor installation. The outer sheath is UV resistant. Suitable for installation in sprinklers zones (cables BiTflame®1000 with diameter < 20 mm and BiTflame®1000 with diameter > 20 mm and number of cores 1 to 5).

## Tests:

Flame propagation test for a single insulated cable: EN 60332-1-2, IEC 60332-1-2, VDE 0482-332-1

Flame propagation test for vertically-mounted bunched cables: EN 60332-3-24, IEC 60332-3-24, VDE 0482-332-3-24, EN 60332-3-23, IEC 60332-3-23, VDE 0482-332-3-23

Test on corrosive gases emitted during burning: EN 60754-2, IEC 60754-2, VDE 0482-754-2

Smoke density emission during burning: EN 61034-2, IEC 61034-2, VDE 0482-1034-2

Insulation resistance to long term fire exposure (insulation resistance) **FE180**: IEC 60331-21, VDE 0472-814

Fire integrity function of cable support system **E90**: DIN 4102-12

Fire integrity function during a fire **PH120**: EN 50200, PN-EN IEC 60331-1, EN 50362

Reaction-to-fire: EN 50399

### cables without green-yellow core

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63800	1x1,5 RE	6,0	53
B63801	1x2,5 RE	6,4	65
B63802	1x4 RE	6,8	84
B63803	1x6 RE	7,3	105
B63804	1x10 RE	8,1	150
B63805	1x16 RE	9,1	220
B63806	1x25 RM	11,2	330
B63807	1x35 RM	12,3	425
B63808	1x50 RM	14,4	588
B63809	1x70 RM	15,8	775

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63814	1x240 RM	27,6	2545
B63815	1x300 RM	29,7	3090
B63819	2x1,5 RE	10,4	131
B63820	2x2,5 RE	11,2	160
B63821	2x4 RE	12,1	202
B63822	2x6 RE	13,1	255
B63823	2x10 RE	14,7	350
B63824	2x16 RE	16,7	505
B63825	2x25 RM	20,8	770
B63826	2x35 RM	23,1	985

# BiTflame® 1000 FE180/PH120/E90

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## cables without green-yellow core

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63810	1x95 RM	17,9	1060
B63811	1x120 RM	19,6	1280
B63812	1x150 RM	22,2	1640
B63813	1x185 RM	23,9	1990
B63831	3x4 RE	12,8	240
B63832	3x6 RE	13,8	325
B63833	3x10 RE	15,5	460
B63834	3x16 RE	17,7	675
B63835	3x25 RM	22,1	1035
B63836	3x35 RM	24,6	1335
B63837	3x50 RM	29,3	1870
B63838	3x70 RM	32,3	2460
B63839	3x95 RM	36,7	3380
B63840	3x120 RM	40,5	4090
B63841	3x150 RM	46,0	5255
B63842	3x185 RM	49,8	6370
B63843	3x240 RM	57,6	8190
B63844	4x1,5 RE	11,9	186
B63845	4x2,5 RE	12,8	235
B63846	4x4 RE	13,9	305
B63847	4x6 RE	15,1	412
B63848	4x10 RE	17,0	590
B63849	4x16 RE	19,5	875
B63850	4x25 RM	24,4	1355
B63851	4x35 RM	27,2	1760
B63852	4x50 RM	32,6	2480

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63827	2x50 RM	27,4	1365
B63828	2x70 RM	30,2	1790
B63829	3x1,5 RE	11,0	150
B63830	3x2,5 RE	11,8	186
B63853	4x70 RM	36,0	3280
B63854	4x95 RM	41,1	4490
B63855	4x120 RM	45,2	5440
B63856	4x150 RM	51,4	6995
B63857	4x185 RM	57,4	8640
B63858	4x240 RM	64,3	10910
B63859	5x1,5 RE	12,9	225
B63860	5x2,5 RE	14,0	285
B63861	5x4 RE	15,2	372
B63862	5x6 RE	16,5	482
B63863	5x10 RE	18,7	700
B63864	5x16 RE	21,4	1045
B63865	5x25 RM	27,0	1620
B63866	5x35 RM	30,3	2110
B63867	5x50 RM	36,3	2995
B63868	5x70 RM	40,1	3975
B63869	5x95 RM	45,8	5460
B63870	5x120 RM	50,4	6615
B63871	5x150 RM	57,4	8505
B63872	5x185 RM	62,0	10320
B63873	5x240 RM	71,9	13276

## cables with green-yellow core

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63877	1G1,5 RE	6,0	53
B63878	1G2,5 RE	6,4	65
B63879	1G4 RE	6,8	84
B63880	1G6 RE	7,3	105
B63881	1G10 RE	8,1	150
B63882	1G16 RE	9,1	220
B63883	1G25 RM	11,2	330
B63884	1G35 RM	12,3	425
B63885	1G50 RM	14,4	588
B63886	1G70 RM	15,8	775
B63887	1G95 RM	17,9	1060
B63888	1G120 RM	19,6	1280
B63889	1G150 RM	22,2	1640
B63890	1G185 RM	23,9	1990
B63891	1G240 RM	27,6	2545
B63892	1G300 RM	29,7	3090
B63895	3G1,5 RE	11,0	150
B63896	3G2,5 RE	11,8	186
B63897	3G4 RE	12,8	240
B63898	3G6 RE	13,8	325
B63899	3G10 RE	15,5	460
B63900	3G16 RE	17,7	675
B63901	3G25 RM	22,1	1035
B63902	3G35 RM	24,6	1335
B63903	3G50 RM	29,3	1870
B63904	3G70 RM	32,3	2460
B63905	3G95 RM	36,7	3380
B63906	3G120 RM	40,5	4090

Cat. no.	nxmm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63907	3G150 RM	46,0	5255
B63908	3G185 RM	49,8	6370
B63909	3G240 RM	57,6	8190
B63910	4G1,5 RE	11,9	186
B63911	4G2,5 RE	12,8	235
B63912	4G4 RE	13,9	305
B63913	4G6 RE	15,1	412
B63914	4G10 RE	17,0	590
B63915	4G16 RE	19,5	875
B63916	4G25 RM	24,4	1355
B63917	4G35 RM	27,2	1760
B63918	4G50 RM	32,6	2480
B63919	4G70 RM	36,0	3280
B63920	4G95 RM	41,1	4490
B63921	4G120 RM	45,2	5440
B63922	4G150 RM	51,4	6995
B63923	4G185 RM	57,4	8640
B63924	4G240 RM	64,3	10910
B63925	5G1,5 RE	12,9	225
B63926	5G2,5 RE	14,0	285
B63927	5G4 RE	15,2	372
B63928	5G6 RE	16,5	482
B63929	5G10 RE	18,7	700
B63930	5G16 RE	21,4	1045
B63931	5G25 RM	27,0	1620
B63932	5G35 RM	30,3	2110
B63933	5G50 RM	36,3	2995
B63934	5G70 RM	40,1	3975

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Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63935	5G95 RM	45,8	5460
B63936	5G120 RM	50,4	6615
B63937	5G150 RM	57,4	8505
B63938	5G185 RM	62,0	10320
B63939	5G240 RM	71,9	13276
B63942	7G1,5 RE	14,0	276
B63943	7G2,5 RE	15,1	357
B63944	7G4 RE	16,5	473
B63945	7G6 RE	18,0	620
B63946	7G10 RE	20,4	915
B63947	10G1,5 RE	17,6	392
B63948	10G2,5 RE	19,1	510
B63949	10G4 RE	20,9	665
B63950	12G1,5 RE	18,1	437

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
B63951	12G2,5 RE	19,7	572
B63952	12G4 RE	21,6	770
B63953	14G1,5 RE	19,4	520
B63954	14G2,5 RE	21,1	675
B63955	14G4 RE	23,1	910
B63956	19G1,5 RE	21,5	665
B63957	19G2,5 RE	23,4	875
B63958	19G4 RE	25,7	1185
B63959	24G1,5 RE	25,1	835
B63960	24G2,5 RE	27,5	1105
B63961	30G1,5 RE	26,6	995
B63962	30G2,5 RE	29,2	1335
B63963	48G1,5 RE	33,1	1550
B63964	48G2,5 RE	36,4	2085

\*Outer diameter tolerance: +/-5%

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

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

## Cores coloring:

Number of cores	Colours
<b>Cables without protective core</b>	
1	black
2	blue, brown
3	brown, black, grey
4	blue, brown, black, grey
5	blue, brown, black, grey, black
<b>Cables with protective core</b>	
1	green-yellow
2	green-yellow, black
3	green-yellow, blue, brown
4	green-yellow, brown, black, grey
5	green-yellow, blue, brown, black, grey
> 5	green-yellow, numbered