

# BiT 1000<sup>®</sup>H Power B2ca



Halogen-free, flexible power cables, 0,6/1 kV



## Technical data:

### Thermal parameters:

#### Operating temperature:

fixed installation: -40 °C do 80 °C

flexible installation: -5 °C do 80 °C

**Max. core temp. during operation:** 90 °C

**Max. core temp. during short-circuit:** 250 °C

### Electrical parameters:

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

**Test voltage 50 Hz:** 4000 V

**Insulation Resistance:** > 200 MΩxkm

### Mechanical parameters:

#### Min. bending radius:

flexible installation: 10xØ

fixed installation: 6xØ

## Design:

### Conductors:

bare copper conductors, multi-stranded class 5 acc. to EN 60228

### Insulation:

### Core identification:

XLPE, special halogen-free cross-linked compound color coded (see the table with conductor insulation colours), G – protective core (green-yellow)

### Core arrangement:

### Inner sheath:

### Outer sheath:

cores twisted together  
halogen-free compound  
halogen-free compound, selfextinguishing and flame retardant, UV resistant;  
colour: black

## Application:

BiT 1000<sup>®</sup>H Power B2ca cables are designed for supplying power to electric devices and working in low voltage energy networks. Flexible construction enables easy and fast connections as well as application as power supply cables for portable devices. Cables are suitable for operation in dry and damp rooms as well as for outdoor installations and direct burial. Outer sheath is UV resistant. The cables are completely halogen-free, do not emit dense smoke and corrosive gases during combustion. Cables classified according to **EN 50575 (CPR)**.

## Tests:

### Single core cables:

Flame resistance of a single cable (fire resistance):

Flame resistance of the cable bundle:

Emission of corrosive gases released during combustion:

Emission of gases evolved during the combustion of materials from cables and wires. Determination of the amount of halogen acid gas:

Emission of smoke density during combustion:

EN 60332-1-2, IEC 60332-1-2, DIN-VDE 0482-332-1

EN 60332-3-22, IEC 60332-3-22 cat. A

EN 60754-2, IEC 60754-2, VDE 0482-754-2

EN 60754-1, IEC 60754-1

EN 61034-2, IEC 61034-2, VDE 0482-1034-2

### Multicore cables:

Flame resistance of a single cable (fire resistance):

Flame resistance of the cable bundle:

Emission of corrosive gases during combustion:

Emission of gases evolved during the combustion of materials from cables and wires. Determination of the amount of halogen acid gas:

Emission of smoke density during combustion:

EN 60332-1-2, IEC 60332-1-2, DIN-VDE 0482-332-1

EN 60332-3-22, IEC 60332-3-22 cat. A

EN 60754-2, IEC 60754-2, VDE 0482-754-2

EN 60754-1, IEC 60754-1

EN 61034-2, IEC 61034-2, VDE 0482-1034-2

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## Single-core cables without protective conductor

| Cat. no. | n x mm <sup>2</sup> | Approximate outer diameter [mm] | Calculated cable weight [kg/km] |
|----------|---------------------|---------------------------------|---------------------------------|
| EM9677   | 1x16                | 10,8                            | 244                             |
| EM9678   | 1x25                | 12,5                            | 343                             |
| EM9679   | 1x35                | 13,8                            | 448                             |
| EM9680   | 1x50                | 16,2                            | 629                             |
| EM9681   | 1x70                | 18,1                            | 835                             |
| EM9682   | 1x95                | 20,2                            | 1085                            |
| EM9683   | 1x120               | 22,2                            | 1331                            |
| EM9684   | 1x150               | 24,2                            | 1624                            |
| EM9685   | 1x185               | 27,0                            | 1982                            |
| EM9686   | 1x240               | 30,6                            | 2597                            |
| EM9687   | 1x300               | 33,9                            | 3322                            |
| EM9688   | 1x400               | 37,6                            | 4472                            |
| EM9689   | 1x500               | 42,9                            | 5318                            |
| EM9690   | 1x630               | 47,2                            | 6788                            |

## Single-core cables with protective conductor

| Cat. no. | n x mm <sup>2</sup> | Approximate outer diameter [mm] | Calculated cable weight [kg/km] |
|----------|---------------------|---------------------------------|---------------------------------|
| EM9660   | 1G16                | 10,8                            | 244                             |
| EM9661   | 1G25                | 12,5                            | 343                             |
| EM9662   | 1G35                | 13,8                            | 448                             |
| EM9663   | 1G50                | 16,2                            | 629                             |
| EM9664   | 1G70                | 18,1                            | 835                             |
| EM9665   | 1G95                | 20,2                            | 1085                            |
| EM9666   | 1G120               | 22,2                            | 1331                            |
| EM9667   | 1G150               | 24,2                            | 1624                            |
| EM9668   | 1G185               | 27,0                            | 1982                            |
| EM9669   | 1G240               | 30,6                            | 2597                            |
| EM9670   | 1G300               | 33,9                            | 3322                            |
| EM9671   | 1G400               | 37,6                            | 4472                            |
| EM9672   | 1G500               | 42,9                            | 5318                            |
| EM9673   | 1G630               | 47,2                            | 6788                            |

## Multi-core cables without protective conductor

| Cat. no. | n x mm <sup>2</sup> | Approximate outer diameter [mm] | Calculated cable weight [kg/km] |
|----------|---------------------|---------------------------------|---------------------------------|
| EM5360   | 2x1,5               | 10,6                            | 166                             |
| EM5361   | 3x1,5               | 11,0                            | 189                             |
| EM5362   | 4x1,5               | 11,9                            | 222                             |
| EM5363   | 5x1,5               | 12,6                            | 254                             |
| EM5364   | 7x1,5               | 13,7                            | 307                             |
| EM5365   | 2x2,5               | 11,7                            | 210                             |
| EM5366   | 3x2,5               | 12,2                            | 242                             |
| EM5367   | 4x2,5               | 13,5                            | 295                             |
| EM5368   | 5x2,5               | 14,3                            | 340                             |
| EM5369   | 7x2,5               | 15,4                            | 407                             |
| EM5370   | 2x4,0               | 12,6                            | 261                             |
| EM5371   | 3x4,0               | 13,4                            | 315                             |
| EM5372   | 4x4,0               | 14,6                            | 380                             |
| EM5373   | 5x4,0               | 15,5                            | 444                             |
| EM5374   | 7x4,0               | 16,9                            | 550                             |
| EM5375   | 2x6,0               | 14,0                            | 335                             |
| EM5376   | 3x6,0               | 14,7                            | 400                             |
| EM5377   | 4x6,0               | 16,2                            | 496                             |
| EM5378   | 5x6,0               | 17,8                            | 601                             |
| EM5379   | 7x6,0               | 18,7                            | 718                             |
| EM5380   | 2x10                | 16,0                            | 469                             |
| EM5381   | 3x10                | 16,8                            | 573                             |
| EM5382   | 4x10                | 18,4                            | 707                             |
| EM5383   | 5x10                | 20,4                            | 871                             |
| EM5384   | 7x10                | 21,8                            | 1073                            |
| EM5385   | 2x16                | 17,6                            | 612                             |
| EM5386   | 3x16                | 19,2                            | 797                             |
| EM5387   | 4x16                | 21,1                            | 989                             |
| EM5388   | 5x16                | 23,3                            | 1216                            |
| EM5389   | 7x16                | 25,0                            | 1520                            |

| Cat. no. | n x mm <sup>2</sup> | Approximate outer diameter [mm] | Calculated cable weight [kg/km] |
|----------|---------------------|---------------------------------|---------------------------------|
| EM5390   | 2x25                | 22,0                            | 960                             |
| EM5391   | 3x25                | 23,2                            | 1204                            |
| EM5392   | 4x25                | 25,9                            | 1518                            |
| EM5393   | 5x25                | 28,7                            | 1878                            |
| EM5394   | 2x35                | 24,0                            | 1196                            |
| EM5395   | 3x35                | 25,6                            | 1529                            |
| EM5396   | 4x35                | 28,5                            | 1934                            |
| EM5397   | 5x35                | 31,6                            | 2392                            |
| EM5398   | 2x50                | 28,2                            | 1660                            |
| EM5399   | 3x50                | 29,9                            | 2110                            |
| EM5400   | 4x50                | 34,4                            | 2769                            |
| EM5401   | 5x50                | 37,4                            | 3344                            |
| EM5402   | 2x70                | 33,2                            | 2325                            |
| EM5403   | 3x70                | 35,4                            | 2980                            |
| EM5404   | 4x70                | 39,5                            | 3776                            |
| EM5405   | 5x70                | 43,0                            | 4565                            |
| EM5407   | 3x95                | 39,2                            | 3834                            |
| EM5408   | 4x95                | 44,1                            | 4894                            |
| EM5409   | 5x95                | 48,0                            | 5931                            |
| EM5411   | 3x120               | 43,0                            | 4791                            |
| EM5412   | 4x120               | 48,3                            | 6108                            |
| EM5413   | 5x120               | 52,8                            | 7453                            |
| EM5415   | 3x150               | 48,4                            | 5932                            |
| EM5416   | 4x150               | 54,4                            | 7576                            |
| EM5417   | 5x150               | 59,4                            | 9096                            |
| EM5418   | 2x185               | 51,4                            | 5629                            |
| EM5419   | 3x185               | 54,8                            | 7267                            |
| EM5420   | 4x185               | 61,5                            | 9258                            |
| EM5421   | 5x185               | 67,2                            | 11251                           |
| EM5422   | 2x240               | 56,6                            | 7181                            |
| EM5423   | 3x240               | 60,3                            | 9307                            |
| EM5424   | 4x240               | 67,7                            | 11882                           |
| EM5425   | 5x240               | 74,2                            | 14505                           |

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

G - cables with green/yellow earthing conductor

x- cables without green/yellow earthing conductor

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Multi-core cables with protective conductor

| Nr kat. | n x mm <sup>2</sup> | Orientacyjna średnica [mm] | Obliczeniowa waga kabla [kg/km] | Nr kat. | n x mm <sup>2</sup> | Orientacyjna średnica [mm] | Obliczeniowa waga kabla [kg/km] |
|---------|---------------------|----------------------------|---------------------------------|---------|---------------------|----------------------------|---------------------------------|
| EM5430  | 3G1,5               | 11,0                       | 189                             | EM5455  | 4G25                | 25,9                       | 1518                            |
| EM5431  | 4G1,5               | 11,9                       | 222                             | EM5456  | 5G25                | 28,7                       | 1878                            |
| EM5432  | 5G1,5               | 12,6                       | 254                             | EM5457  | 3G35                | 25,6                       | 1529                            |
| EM5433  | 7G1,5               | 13,7                       | 307                             | EM5458  | 4G35                | 28,5                       | 1934                            |
| EM5434  | 3G2,5               | 12,2                       | 242                             | EM5459  | 5G35                | 31,6                       | 2392                            |
| EM5435  | 4G2,5               | 13,5                       | 295                             | EM5460  | 3G50                | 29,9                       | 2110                            |
| EM5436  | 5G2,5               | 14,3                       | 340                             | EM5461  | 4G50                | 34,4                       | 2769                            |
| EM5437  | 7G2,5               | 15,4                       | 407                             | EM5462  | 5G50                | 37,4                       | 3344                            |
| EM5438  | 3G4,0               | 13,4                       | 315                             | EM5463  | 3G70                | 35,4                       | 2980                            |
| EM5439  | 4G4,0               | 14,6                       | 380                             | EM5464  | 4G70                | 39,5                       | 3776                            |
| EM5440  | 5G4,0               | 15,5                       | 444                             | EM5465  | 5G70                | 43,0                       | 4565                            |
| EM5441  | 7G4,0               | 16,9                       | 550                             | EM5466  | 3G95                | 39,2                       | 3834                            |
| EM5442  | 3G6,0               | 14,7                       | 400                             | EM5467  | 4G95                | 44,1                       | 4894                            |
| EM5443  | 4G6,0               | 16,2                       | 496                             | EM5468  | 5G95                | 48,0                       | 5931                            |
| EM5444  | 5G6,0               | 17,8                       | 601                             | EM5469  | 3G120               | 43,0                       | 4791                            |
| EM5445  | 7G6,0               | 18,7                       | 718                             | EM5470  | 4G120               | 48,3                       | 6108                            |
| EM5446  | 3G10                | 16,8                       | 573                             | EM5471  | 5G120               | 52,8                       | 7453                            |
| EM5447  | 4G10                | 18,4                       | 707                             | EM5472  | 3G150               | 48,4                       | 5932                            |
| EM5448  | 5G10                | 20,4                       | 871                             | EM5473  | 4G150               | 54,4                       | 7576                            |
| EM5449  | 7G10                | 21,8                       | 1073                            | EM5474  | 5G150               | 59,4                       | 9096                            |
| EM5450  | 3G16                | 19,2                       | 797                             | EM5475  | 3G185               | 54,8                       | 7267                            |
| EM5451  | 4G16                | 21,1                       | 989                             | EM5476  | 4G185               | 61,5                       | 9258                            |
| EM5452  | 5G16                | 23,3                       | 1216                            | EM5477  | 5G185               | 67,2                       | 11251                           |
| EM5453  | 7G16                | 25,0                       | 1520                            | EM5478  | 3G240               | 60,3                       | 9307                            |
| EM5454  | 3G25                | 23,2                       | 1204                            | EM5479  | 4G240               | 67,7                       | 11882                           |
|         |                     |                            |                                 | EM5480  | 5G240               | 74,2                       | 14505                           |

Note: on customer's request other cross sections or number of cores can be produced  
G - cables with green/yellow earthing conductor  
x - cables without green/yellow earthing conductor

| Number of cores                | Cores colors                           |
|--------------------------------|----------------------------------------|
| Cables without protective core |                                        |
| 1                              | black                                  |
| 2                              | blue, brown                            |
| 3                              | brown, black, grey                     |
| 4                              | blue, brown, black, grey               |
| 5                              | blue, brown, black, grey, black        |
| Cables with protective core    |                                        |
| 1                              | green-yellow                           |
| 3                              | green-yellow, blue, brown              |
| 4                              | green-yellow, brown, black, grey       |
| 5                              | green-yellow, blue, brown, black, grey |
| > 5                            | green-yellow, numbered                 |

| Conductor cross-section [mm <sup>2</sup> ] | 1,5  | 2,5  | 4    | 6    | 10   | 16   | 25   | 35    | 50    | 70    | 95    | 120   | 150   | 185   | 240    | 300    | 400    | 500    | 630    |
|--------------------------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| Max. conductor resistance at 20°C          | 13,3 | 7,98 | 4,95 | 3,30 | 1,91 | 1,21 | 0,78 | 0,554 | 0,386 | 0,272 | 0,205 | 0,161 | 0,129 | 0,106 | 0,0801 | 0,0641 | 0,0486 | 0,0384 | 0,0287 |

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Halogen-free, flexible power cables, 0,6/1 kV

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<br>mm <sup>2</sup> | 1,5 | 2,5 | 4  | 6  | 10 | 16  | 25  | 35  | 50  | 70  | 95  | 120 | 150 | 185 | 240 |
|----------------------------|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| air<br>30 °C               | 23  | 32  | 42 | 53 | 75 | 100 | 133 | 162 | 197 | 250 | 308 | 359 | 412 | 475 | 564 |
| ground<br>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<br>mm <sup>2</sup> | 16  | 25  | 35  | 50  | 70  | 95  | 120 | 150 | 185 | 240 | 300 | 400  | 500  | 630  |
|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| air<br>30 °C               | 131 | 177 | 217 | 265 | 336 | 415 | 485 | 557 | 646 | 774 | 900 | 1060 | 1190 | 1280 |
| ground<br>20 °C            | 176 | 229 | 275 | 326 | 400 | 480 | 548 | 616 | 698 | 815 | 927 | 1064 | 1226 | 1304 |

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

| Section<br>mm <sup>2</sup> | 16  | 25  | 35  | 50  | 70  | 95  | 120 | 150 | 185 | 240 | 300 | 400 | 500 | 630  |
|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| air<br>30 °C               | 102 | 138 | 170 | 207 | 263 | 325 | 380 | 437 | 507 | 604 | 697 | 811 | 968 | 1045 |
| ground<br>20 °C            | 115 | 148 | 177 | 209 | 256 | 307 | 349 | 393 | 445 | 517 | 583 | 663 | 729 | 978  |

Correction factors for ambient temperature other than 30 °C

| ambient<br>temperature °C | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 55   | 60   | 65   | 70   | 75   |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| correction<br>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 |

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