

## AMCMK

Screen-protected 1 kV power cable with aluminium conductors



### RATED VOLTAGE

$U_0/U = 0,6/1 \text{ kV}$ ,  $U_m = 1,2 \text{ kV}$

### APPLICATION

For fixed installation indoors, outdoors and underground; as well as in building structures e.g. directly in concrete (but not in sliding joints).

Not for installations subject to severe electrical interference. For EMC-applications see cable type AXCCMK. And if there is need for low smoke halogen-free power cable, see cable types AXCMK-HF and AXCMK-PLUS.

Highest permissible conductor temperature:

- continuous operation 70 °C
- short circuit (duration up to 5 s) 160 °C

Lowest recommended temperature during laying:

-15 °C

### CONSTRUCTION

|                     |                                                                                                                                                                               |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>    | 16 mm <sup>2</sup> : solid annealed aluminium wire<br>25 mm <sup>2</sup> : stranded annealed aluminium wire<br>35-300 mm <sup>2</sup> : sector shaped annealed aluminium wire |
| <b>Insulation</b>   | Lead-free PVC compound                                                                                                                                                        |
| <b>Laying up</b>    | Insulated conductors stranded together                                                                                                                                        |
| <b>PE-conductor</b> | Copper wire layer and copper wires/tape binding                                                                                                                               |
| <b>Outer sheath</b> | Black lead-free PVC compound                                                                                                                                                  |

### IDENTIFICATION OF CORES

Colours of inner cores:

|         |                          |
|---------|--------------------------|
| 3-cores | Brown, black, grey       |
| 4-cores | Blue, brown, black, grey |

### STANDARDS

SFS 4880  
 HD 603-3F  
 IEC 60502-1  
 IEC / EN 60332-1  
 25-300 mm<sup>2</sup>: IEC / EN 60332-3

### CERTIFICATES, APPROVALS

 (SGS Fimko)

**CE**

The cable does not contain any substances on the REACH/SVHC -list.

All substances of the cable meet the requirements of RoHS directive.

### CUSTOMS CODE

8544 49 91

# 1 kV power cables

## AMCMK 3½-cores

### PROPERTIES

| PRODUCT NAME                                                 |          |                                                     | AMCMK<br>3x16/10<br>1 kV | AMCMK<br>3x25/16<br>1 kV | AMCMK<br>3x35/16<br>AN 1 kV | AMCMK<br>3x50/16<br>AN 1 kV | AMCMK<br>3x70/21<br>AN 1 kV | AMCMK<br>3x95/29<br>AN 1 kV | AMCMK<br>3x120/41<br>AN 1 kV | AMCMK<br>3x150/41<br>AN 1 kV | AMCMK<br>3x185/57<br>AN 1 kV | AMCMK<br>3x240/72<br>AN 1 kV | AMCMK<br>3x300/88<br>AN 1 kV |
|--------------------------------------------------------------|----------|-----------------------------------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| STK-code                                                     |          |                                                     | 0622157                  | 0622158                  | 0622159                     | 0622160                     | 0622161                     | 0622162                     | 0622163                      | 0622164                      | 0622165                      | 0622166                      | 0622167                      |
| CONSTRUCTION DATA (1)                                        |          |                                                     |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Diameter over cable                                          |          | mm                                                  | 20                       | 24                       | 24                          | 27                          | 30                          | 35                          | 38                           | 42                           | 46                           | 52                           | 58                           |
| Weight                                                       | aluminum | kg/km                                               | 125                      | 200                      | 275                         | 370                         | 540                         | 750                         | 945                          | 1160                         | 1460                         | 1910                         | 2390                         |
|                                                              | copper   | kg/km                                               | 90                       | 145                      | 145                         | 145                         | 190                         | 260                         | 370                          | 370                          | 525                          | 660                          | 790                          |
|                                                              |          | cable                                               | 460                      | 680                      | 765                         | 975                         | 1300                        | 1750                        | 2150                         | 2550                         | 3200                         | 4050                         | 5000                         |
| DELIVERY DATA                                                |          |                                                     |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Standard delivery lenght                                     |          | m                                                   | 1000                     | 1000                     | 1000                        | 500                         | 500                         | 500                         | 500                          | 500                          | 500                          | 500                          | 500                          |
| Standard delivery drum                                       |          |                                                     | K12                      | K14                      | K14                         | K12                         | K14                         | K14                         | K16                          | K18                          | K20                          | K22                          | K24                          |
| Weight (1)                                                   |          | cable+drum kg                                       | 550                      | 790                      | 880                         | 580                         | 765                         | 990                         | 1270                         | 1505                         | 1940                         | 2435                         | 2950                         |
| MECHANICAL DATA (2)                                          |          |                                                     |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Minimum permissible bending radius during laying             |          | m                                                   | 0,24                     | 0,26                     | 0,30                        | 0,32                        | 0,36                        | 0,42                        | 0,46                         | 0,51                         | 0,55                         | 0,62                         | 0,70                         |
| Minimum permissible bending radius at final installation (3) |          | m                                                   | 0,17                     | 0,18                     | 0,21                        | 0,23                        | 0,25                        | 0,30                        | 0,32                         | 0,36                         | 0,39                         | 0,44                         | 0,49                         |
| Maximum permissible pulling force with a pulling grip        |          | kN                                                  | 0,9                      | 1,1                      | 1,6                         | 2,2                         | 3,1                         | 4,3                         | 5,4                          | 6,7                          | 8,3                          | 8,5                          | 8,5                          |
| Maximum permissible pulling force with a pulling eye         |          | kN                                                  | 2,4                      | 3,7                      | 5,2                         | 7,5                         | 10,5                        | 14,2                        | 18,0                         | 20,0                         | 20,0                         | 20,0                         | 20,0                         |
| ELECTRICAL DATA (2)                                          |          |                                                     |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Maximum DC resistance of phase conductor.                    |          | conductor 20°C Ω/km                                 | 1,91                     | 1,20                     | 0,868                       | 0,641                       | 0,443                       | 0,320                       | 0,253                        | 0,206                        | 0,164                        | 0,125                        | 0,100                        |
| AC resistance of phase and neutral conductor (1)             |          | conductor 70°C Ω/km                                 | 2,3                      | 1,4                      | 1,0                         | 0,77                        | 0,53                        | 0,39                        | 0,31                         | 0,25                         | 0,20                         | 0,15                         | 0,13                         |
| Maximum DC resistance of PE conductor                        |          | conductor 20°C Ω/km                                 | 1,83                     | 1,15                     | 1,15                        | 1,15                        | 0,868                       | 0,641                       | 0,443                        | 0,443                        | 0,320                        | 0,253                        | 0,206                        |
| Inductance (1)                                               |          | mH/km                                               | 0,28                     | 0,28                     | 0,26                        | 0,25                        | 0,24                        | 0,24                        | 0,23                         | 0,23                         | 0,23                         | 0,23                         | 0,23                         |
| Operating capacitance (1)                                    |          | µF/km                                               | 0,40                     | 0,45                     | 0,55                        | 0,60                        | 0,65                        | 0,75                        | 0,80                         | 0,80                         | 0,85                         | 0,85                         | 0,90                         |
| CURRENT RATINGS (2)                                          |          |                                                     |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| In ground                                                    |          | conductor 70°C A                                    | 78                       | 100                      | 125                         | 150                         | 185                         | 220                         | 255                          | 290                          | 330                          | 375                          | 430                          |
| In free air                                                  |          | conductor 70°C A                                    | 64                       | 83                       | 105                         | 125                         | 155                         | 190                         | 220                          | 250                          | 285                          | 330                          | 380                          |
| SHORT CIRCUIT CURRENTS (2)                                   |          |                                                     |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Maximum permissible short circuit current for one second     |          | phase conductor (4)<br>PE-conductor (5)<br>kA<br>kA | 1,5<br>1,7               | 1,9<br>2,6               | 2,6<br>2,6                  | 3,8<br>2,6                  | 5,3<br>3,7                  | 7,2<br>4,6                  | 9,1<br>6,7                   | 11,4<br>6,7                  | 14,0<br>8,8                  | 18,2<br>11,4                 | 22,8<br>13,9                 |

- (1) Approximate value.  
 (2) See the basic assumptions at general information of products.  
 (3) Final installation with careful single bending into final position.  
 (4) Initial temperature of conductor before short circuit 70°C, final temperature of conductor after short circuit 160°C.  
 (5) Initial temperature of PE conductor before short circuit 65°C, final temperature of PE conductor after short circuit maximum 250°C.

# 1 kV power cables

## AMCMK 4½-cores

### PROPERTIES

| PRODUCT NAME                                                 |                 |                                                           | AMCMK<br>4x16/10<br>1 kV | AMCMK<br>4x25/16<br>1 kV | AMCMK<br>4x35/16<br>AN 1 kV | AMCMK<br>4x50/16<br>AN 1 kV | AMCMK<br>4x70/21<br>AN 1 kV | AMCMK<br>4x95/29<br>AN 1 kV | AMCMK<br>4x120/41<br>AN 1 kV | AMCMK<br>4x150/41<br>AN 1 kV | AMCMK<br>4x185/57<br>AN 1 kV | AMCMK<br>4x240/72<br>AN 1 kV | AMCMK<br>4x300/88<br>AN 1 kV |
|--------------------------------------------------------------|-----------------|-----------------------------------------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| STK-code                                                     |                 |                                                           | 0621854                  | 0621855                  | 0621859                     | 0621860                     | 0621861                     | 0621862                     | 0621863                      | 0621864                      | 0621865                      | 0621866                      | 0621867                      |
| CONSTRUCTION DATA (1)                                        |                 |                                                           |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Diameter over cable                                          |                 | mm                                                        | 22                       | 27                       | 27                          | 31                          | 34                          | 40                          | 43                           | 48                           | 52                           | 59                           | 66                           |
| Weight                                                       | aluminum        | kg/km                                                     | 165                      | 265                      | 365                         | 495                         | 720                         | 1000                        | 1260                         | 1550                         | 1950                         | 2550                         | 3190                         |
|                                                              | copper<br>cable | kg/km                                                     | 90<br>550                | 145<br>820               | 145<br>955                  | 145<br>1250                 | 195<br>1600                 | 270<br>2200                 | 370<br>2650                  | 370<br>3150                  | 530<br>3950                  | 660<br>5050                  | 795<br>6300                  |
| DELIVERY DATA                                                |                 |                                                           |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Standard delivery lenght                                     |                 | m                                                         | 1000                     | 1000                     | 1000                        | 500                         | 500                         | 500                         | 500                          | 500                          | 500                          | 500                          | 500                          |
| Standard delivery drum                                       |                 |                                                           | K14                      | K16                      | K16                         | K14                         | K14                         | K18                         | K20                          | K20                          | K22                          | K24                          | K24                          |
| Weight (1)                                                   |                 | cable+drum<br>kg                                          | 650                      | 1000                     | 1150                        | 740                         | 915                         | 1330                        | 1665                         | 1915                         | 2385                         | 2975                         | 3600                         |
| MECHANICAL DATA (2)                                          |                 |                                                           |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Minimum permissible bending radius during laying             |                 | m                                                         | 0,26                     | 0,32                     | 0,32                        | 0,37                        | 0,41                        | 0,48                        | 0,52                         | 0,58                         | 0,62                         | 0,71                         | 0,80                         |
| Minimum permissible bending radius at final installation (3) |                 | m                                                         | 0,18                     | 0,23                     | 0,23                        | 0,26                        | 0,29                        | 0,34                        | 0,36                         | 0,41                         | 0,44                         | 0,50                         | 0,56                         |
| Maximum permissible pulling force with a pulling grip        |                 | kN                                                        | 0,9                      | 1,5                      | 2,1                         | 3,0                         | 4,2                         | 5,7                         | 7,2                          | 8,5                          | 8,5                          | 8,5                          | 8,5                          |
| Maximum permissible pulling force with a pulling eye         |                 | kN                                                        | 3,2                      | 5,0                      | 7,0                         | 10,0                        | 14,0                        | 19,0                        | 20,0                         | 20,0                         | 20,0                         | 20,0                         | 20,0                         |
| ELECTRICAL DATA (2)                                          |                 |                                                           |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Maximum DC resistance of phase and neutral conductor.        |                 | conductor 20°C<br>Ω/km                                    | 1,91                     | 1,20                     | 0,868                       | 0,641                       | 0,443                       | 0,320                       | 0,253                        | 0,206                        | 0,164                        | 0,125                        | 0,100                        |
| AC resistance of phase and neutral conductor (1)             |                 | conductor 70°C<br>Ω/km                                    | 2,3                      | 1,4                      | 1,0                         | 0,77                        | 0,53                        | 0,39                        | 0,31                         | 0,25                         | 0,20                         | 0,15                         | 0,13                         |
| Maximum DC resistance of PE conductor                        |                 | conductor 20°C<br>Ω/km                                    | 1,83                     | 1,15                     | 1,15                        | 1,15                        | 0,868                       | 0,641                       | 0,443                        | 0,443                        | 0,320                        | 0,253                        | 0,206                        |
| Inductance (1)                                               |                 | mH/km                                                     | 0,31                     | 0,30                     | 0,27                        | 0,27                        | 0,26                        | 0,26                        | 0,26                         | 0,26                         | 0,26                         | 0,26                         | 0,26                         |
| Operating capacitance (1)                                    |                 | µF/km                                                     | 0,40                     | 0,45                     | 0,45                        | 0,50                        | 0,55                        | 0,65                        | 0,70                         | 0,70                         | 0,75                         | 0,80                         | 0,80                         |
| CURRENT RATINGS (2)                                          |                 |                                                           |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| In ground                                                    |                 | conductor 70°C<br>A                                       | 78                       | 100                      | 125                         | 150                         | 185                         | 220                         | 255                          | 290                          | 330                          | 375                          | 430                          |
| In free air                                                  |                 | conductor 70°C<br>A                                       | 64                       | 83                       | 105                         | 125                         | 155                         | 190                         | 220                          | 250                          | 285                          | 330                          | 380                          |
| SHORT CIRCUIT CURRENTS (2)                                   |                 |                                                           |                          |                          |                             |                             |                             |                             |                              |                              |                              |                              |                              |
| Maximum permissible short circuit current for one second     |                 | phase and neutral conductor (4)<br>PE-Conductor (5)<br>kA | 1,5<br>1,7               | 1,9<br>2,6               | 2,6<br>2,6                  | 3,8<br>2,6                  | 5,3<br>3,7                  | 7,2<br>4,6                  | 9,1<br>6,7                   | 11,4<br>6,7                  | 14,0<br>8,8                  | 18,2<br>11,4                 | 22,8<br>13,9                 |

(1) Approximate value.

(2) See the basic assumptions at general information of products.

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