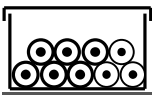




Annex H (informative)

Operating current and power loss of copper conductors

The following tables provide guidance values for conductor operating currents and power losses under ideal conditions within an ASSEMBLY. The calculation methods used to establish these values are given to enable values to be calculated for other conditions.

**Table H.1 – Operating current and power loss of single-core copper cables
with a permissible conductor temperature of 70 °C
(ambient temperature inside the ASSEMBLY: 55 °C)**

| <u>Conductor arrangement</u> | |  | |  | | <u>Spacing at least one cable diameter</u>  | |
|---|---|---|---|--|---|---|---|
| | | <u>Single-core cables in a cable trunking on a wall, run horizontally or vertically. 6 of the cables (2 three-phase circuits) continuously loaded</u> | | <u>Single-core cables, touching free in air or on a perforated tray. 6 cables (2 three-phase circuits) continuously loaded</u> | | <u>Single-core cables, spaced horizontally in free air</u> | |
| <u>Cross-sectional area of conductor</u> mm^2 | <u>Resistance of conductor at 20 °C,</u> R_{20}^a $\text{m}\Omega/\text{m}$ | <u>Max. operating current</u> I_{max}^b A | <u>Power-losses per conductor</u> P_V W/m | <u>Max. operating current</u> I_{max}^c A | <u>Power-losses per conductor</u> P_V W/m | <u>Max. operating current</u> I_{max}^d A | <u>Power-losses per conductor</u> P_V W/m |
| 0.50 | 36.0 | 3.7 | 0.6 | - | - | - | - |
| 0.75 | 24.5 | 4.8 | 0.7 | - | - | - | - |
| 1 | 18.1 | 5.8 | 0.7 | - | - | - | - |
| 1.5 | 12.1 | 7.6 | 0.8 | 9.6 | 1.3 | 15 | 3.2 |
| 2.5 | 7.41 | 10 | 0.9 | 13 | 1.6 | 21 | 3.7 |
| 4 | 4.61 | 14 | 1.0 | 18 | 1.9 | 28 | 4.2 |
| 6 | 3.08 | 18 | 1.1 | 24 | 2.1 | 36 | 4.7 |
| 10 | 1.83 | 24 | 1.3 | 33 | 2.5 | 50 | 5.4 |
| 16 | 1.15 | 33 | 1.5 | 45 | 2.9 | 67 | 6.2 |
| 25 | 0.727 | 43 | 1.6 | 61 | 3.3 | 89 | 6.9 |
| 35 | 0.524 | 54 | 1.8 | 76 | 3.6 | 110 | 7.7 |
| 50 | 0.387 | 65 | 2.0 | 93 | 4.0 | 134 | 8.3 |
| 70 | 0.268 | 83 | 2.2 | 120 | 4.6 | 171 | 9.4 |
| 95 | 0.193 | 101 | 2.4 | 147 | 5.0 | 208 | 10.0 |
| 120 | 0.153 | 117 | 2.5 | 171 | 5.4 | 242 | 10.7 |
| 150 | 0.124 | - | - | 198 | 5.8 | 278 | 11.5 |
| 185 | 0.099 1 | - | - | 227 | 6.1 | 318 | 12.0 |
| 240 | 0.075 4 | - | - | 269 | 6.6 | 375 | 12.7 |
| 300 | 0.060 1 | - | - | 311 | 7.0 | 432 | 13.5 |