

MANUFACTURER'S DECLARATION ON KNX CABLES

Manufacturer's Name and Address:

Reference of the cable type and order number:

| No. | Features | Requirements | M | Compliance? + Reference to test report in annex | |
|------|---|--|---|---|--|
| 2.1 | Constructional features, dimensions | Wire diameter | min 0,8 mm, max 1,0 mm (AWG Cu 20 - 18) | F/S | |
| 2.2 | | Wire material | Copper, solid and stranded wires | F/S | |
| 2.3 | | Wires | Two pair(s) | F/S | |
| 2.4 | | Colors of wires | 1 pair red/black, 1 pair white/yellow | F/S | |
| 2.5 | | Tensile strength | Min 100 N | F/S | |
| 2.7a | | Cable length for <i>standardized cable</i> | 1000 m max. | S | |
| 2.7b | | Cable length for <i>non-standardized cable</i> | 1000 m max. Shorter length specified by the manufacturer ¹ | M | |
| 3.1a | Electrical properties for <i>standardized cable</i> | Loop resistance | Min. 20 Ω/km Max. 75 Ω/km | S | |
| 3.1b | Electrical properties for <i>non-standardized cable</i> | | Min. 20 Ω for the specified length Max. 75 Ω for the specified length Max. 150 Ω/km | M | |
| 3.2 | Electrical properties for <i>standardized and non-standardized cable</i> | Conductance | $G_{max} = 1 \text{ mS/km}$ $f_{measure} = 10 \text{ kHz}$ | M | |
| 4.1 | Electrical Safety | Outer sheath | Required | M/S | |
| 4.2 | | Insulation resistance core to outer sheath | 100 MΩ/km (20°) respectively 0.011 MΩ/km (70°) | M/S | |
| 4.3 | | Withstand voltage core/core | 800VAC | M/S | |
| 4.4 | | High voltage withstand | 2 kV AC 50Hz 4 kV AC 50Hz ² | M/S | |

¹ For non-standardized cables the manufacturer is obliged to inform on the allowed cable length, e.g. by the instruction sheet. The following warning shall be used in the product instruction documentation: **Warning – the maximum usable cable length per line is maximum xxx m.** The maximum cable length is normally derived from the EMC tests: it is the cable length for which the requirements of item 5.1.2 and 5.1.3 of this table are complied with.

²In some countries this 4 kV test is required

| No. | Features | Requirements | M | Compliance? + Reference to test report in annex | |
|-------|---|--|--|---|---|
| 5.1.1 | EMC | Twist | Min. 5/m | F/S | |
| 5.1.2 | | Continuous-wave induced differential voltages | $U \leq \pm 200$ mV peak (50 Hz – 150 kHz) | M ³ | |
| 5.1.3 | | Maximum peak bus voltage | $U \leq \pm 45$ V ⁴ peak: cable length as specified in Chapter 3/1/1 and transient voltages according industrial level (according EN 61000-6-2) or home level ⁵ (according EN 61000-6-1) | M ³ | |
| 5.2 | | Screen | - shall cover entire diameter - drain wire : diameter min. 0,4 mm (AWG Cu 26) | F/S | |
| 6.1 | Temperature and climate | According relevant parts of EN 50288 (-1, -2 [screened], -3 [unscreened] ⁶ , alternatively EN 50290 series ⁷ | M/S | | |
| 7.1 | Mechanical stress | According relevant parts of EN 50288 (-1, -2 [screened], -3 [unscreened] ⁸ , alternatively EN 50290 series ⁴ | M/S | | |
| 8 | Software requirements | - | - | | |
| 9.1 | Communication for standard cable | Capacity wire/wire | min. 10 nF/km max. 100 nF/km (10 kHz) | S | |
| 9.2 | | Inductance | min. 450 μ H/km max. 850 μ H/km (10 kHz) | S | |
| 9.3 | Communication for standard cable (ctd.) | Maximum signal attenuation | ≤ 50 kHz | 15 dB/km | S |
| | | | 50-500 kHz | 15-35 dB/km ⁹ | S |
| | | | 0,5-5 MHz | 35-95 dB/km ⁶ | S |
| | | | 5-25 MHz | 95-200 dB/km ⁶ | S |

³ EMC test is only necessary for cables without twist or twists < 5.

⁴ This implies that for a maximum operating bus DC voltage of 31V, the positive peak may not exceed 14 V.

⁵ Use restricted to home environment level only shall be clearly stated in the instruction sheet.

⁶ For halogen free cable, IEC 60189-2 shall be used as far as applicable. In addition EN 50265-1 and EN 50267-2-2 shall be complied with.

⁷ For special applications for which dedicated standards exist (e.g. supply tracks), these may be used alternatively.

⁸ For halogen free cable, IEC 60189-2 shall be used as far as applicable. In addition EN 50265-1 and EN 50267-2-2 shall be complied with.

⁹Increasing linearly with the logarithm of the frequency