
Single Core Conductor BETAtherm® 155 UL/cUL (AWG)

BETAtherm® 155 UL/cUL is a flexible low-voltage cable with UL recognition, consisting of a tinned copper stranded wire and insulated with coloured electron-beam crosslinked polyolefine copolymer.

Attributes

Due to its electron-beam cross-linked insulation, BETAtherm® 155 UL/(AWG) achieves a special thermal resistance required for Class F. This results in excellent thermal resistance. However, it cannot even be melted at elevated temperatures and has to be skinned during processing. Skinning is simple and also possible at machines.

BETAtherm® cables are resistant to all common insulating varnishes. They are flame retardant.

Application

BETAtherm® 155 UL/cUL (AWG) is suitable for the internal wiring of electric machines, lamps, heating appliances, as well as for application in apparatus, mechanical and plant engineering. Due to the high thermal load capacity, it might be possible to reduce the conductor cross section and, therefore, save space and reduce the weight.

Standards

- Thermal class F (155 °C) according to IEC (UL Rating 150 °C)
- UL 3289 and CSA cUL 1503 (valid from 0.50 mm²)
- (UL-standard for American market / cUL-standard for canadian market)

Delivery forms

AWG dimensions:

AWG 14-24: 300 m rings

Other cross sections available on request.

Conductor

Tinned copper wire VDE 0295/ IEC 60228 class 5.

The dimensions specified in the technical datasheet are regarded as standard values. The actual cross sections may vary. The cables are manufactured according to European standards with a AMG conductor cross section, AWG sizes are approximate values and viceversa. Always observe relevant standards valid for divergent operating conditions when laying for greater limit current loads.

Color

Green-yellow, black, light blue, red, yellow, green.

Brown, white, grey, violet, orange, and 2-coloured on request.

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Updated 05/24



| Dimension AWG | Unit of measure | | | | | | |
|------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Nominal cross section | | AWG 22 | AWG 20 | AWG 18 | AWG 16 | AWG 14 | AWG 12 |
| Strands x diameter | ref. value | 19 x 0.160 | 19 x 0.203 | 19 x 0.254 | 19 x 0.297 | 19 x 0.374 | 65 x 0,254 |
| Cu Litz nom. diameter | mm | 0.80 | 1.00 | 1.30 | 1.45 | 1.85 | 2.40 |
| Wall thickness desired | mm | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| Wall thickness min. | mm | 0.686 | 0.686 | 0.686 | 0.686 | 0.686 | 0.686 |
| Outer diameter | mm | 2.50 ± 0.10 | 2.70 ± 0.10 | 3.00 ± 0.10 | 3.15 ± 0.20 | 3.55 ± 0.20 | 4.10 ± 0.20 |
| Thermal load | kWh/m | 0.049 | 0.056 | 0.064 | 0.069 | 0.082 | 0.097 |

| Mechanical | Value |
|----------------------|-------------|
| Bend radius | 4 x outer-Ø |
| Soldering resistance | very good |

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| Thermal | Unit of measure | Value | Test method |
|-------------------------------------|-----------------|----------------------|-------------------|
| Thermal class | | F | |
| Temperature range fixed application | °C | -55 to +150 | UL 3289 /cUL 1503 |
| Temperature range short circuit | °C | max. +280 for 5 sec. | |
| Thermal resistance | | 155° C/5000 h | IEC 60216-2 |
| Burning behaviour | | flame retardent | EN IEC 60332-1-2 |

| Electrical | Unit of measure | Conditions | Value | Test method |
|-----------------|-----------------|------------------|-------------------|--------------------|
| Rated voltage | V | | U0/U 0,6 / 1kV AC | UL 3289 / cUL 1503 |
| Testing voltage | V | at 50 Hz, 2 min. | 3500 | UL 3289 / cUL 1503 |

| Chemical | Value |
|--------------------|---|
| Insulation | Polyolefin-copolymer electron-beam cross linked |
| Resistance against | Resistant against common impregnants |

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