SynFlex Elektro GmbH
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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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Dimension AWG	Unit of measure						
Nominal cross section		AWG 22	AWG 20	AWG 18	AWG 16	AWG 14	AWG 12
Strands x diameter	Richtwerte	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