SynFlex Elektro GmbH
Auf den Kreuzen 24
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Single Core Conductor BETAtherm 155

BETAtherm® 155 is a flexible low-voltage conductor consisting of a tinned copper stranded wire insulated with coloured electron-beam cross-linked polyolefine copolymer.

Attributes

Due to its electron-beam cross-linked insulation, BETAtherm® 155 achieves a special thermal resistance required for Class F. This results in excellent thermal resistance. However, it cannot even be melted at elevated temperatures. Skinning is simple and also possible at machines.BETAtherm® cables are resistant to common insulating varnishes. They are flame retardant.

Application

BETAtherm® 155 can be used for the internal wiring of all electric machines and dry transformers, as well as in apparatus, machine and plant engineering and lighting applications. 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
- VDE 0295 / IEC 60228, class 5
- IEC 60216-2,155 °C/5000 h
- Flame retardant EN/IEC 60332-1-2

Delivery forms

Format

Conductor cross section mm²	Length in m on a ring
0.25 - 0.75	200
1.0 - 10.0	100
16.0 - 25.0	50
35.0 - 95.0	25

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 metric conductor cross section, AWG sizes are approximate values and viceversa.

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Always observe relevant standards valid for divergent operating conditions when laying for greater limit current loads.

Color

Green/yellow, black, light blue, red, white and green.

Brown, grey, violet, orange and yellow on request.

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Dimension	Unit of measure						
Nominal cross section	mm²	0.25	0.5	0.75	1	1.5	2.5
Strands x diameter	mm	14 x 0.15	16 x 0.20	24 x 0.20	32 x 0.20	27 x 0.25	45 x 0.25
Cu Litz nom. diameter	mm	0.65	0.90	1.15	1.25	1.55	2.05
Wall thickness desired	mm	0.45	0.48	0.53	0.58	0.70	0.80
Wall thickness min.	mm	0.35	0.35	0.35	0.40	0.53	0.62
Outer diameter	mm	1.55 ± 0.10	1.85 ± 0.20	2.20 ± 0.20	2.40 ± 0.20	2.95 ± 0.20	3.65 ± 0.20
Thermal load	kWh/m	0.017	0.023	0.031	0.037	0.056	0.081

Dimension	Unit of measure						
Nominal cross section	mm²	4	6	10	16	25	35
Strands x diameter	mm	52 x 0.30	78 x 0.30	74 x 0.40	119 x 0.40	181 x 0.40	257 x 0.40

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Dimension	Unit of measure						
Cu Litz nom. diameter	mm	2.55	3.10	4.10	5.0	6.20	7.70
Wall thickness desired	mm	0.80	0.80	1.00	1.00	1.20	1.20
Wall thickness min.	mm	0.62	0.62	0.80	0.80	0.98	0.98
Outer diameter	mm	4.15 ± 0.20	4.70 ± 0.20	6.10 ± 0.40	7.0 ± 0.40	8.60 ± 0.40	10.10 ± 0.40
Thermal load	kWh/m	0.095	0.111	0.181	0.213	0.314	0.420

Dimension	Unit of measure			
Nominal cross section	mm²	50	70	95
Strands x diameter	mm	371 x 0.40	336 x 0.50	444 x 0.50
Cu Litz nom. diameter	mm	9.70	11.20	12.80
Wall thickness desired	mm	1.40	1.40	1.60
Wall thickness min.	mm	1.16	1.16	1.34
Outer diameter	mm	12.50 ± 0.40	14.0 ± 0.40	16.0 ± 0.60
Thermal load	kWh/m	0.649	0.754	0.933

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Mechanical	Value
Bend radius	4 x outer diameter
Soldering resistance	very good

Thermal	Unit of measure	Value
Thermal class		F
Temperature range fixed application	°C	-55 up to +155
Temperature range short circuit	°C	+280

Chemical	Value
Insulation	electron-beam crosslinked polyolefine-copolymer
Resistance against	resistant against standard impregnants

Electrical	Unit of measure	Value
Rated voltage	V	Uo/U 300/500 ≤ 1 mm^2
Rated voltage	V	Uo/U 450/750 ≥ 1.5 mm^2
Nominal voltage with fixed and protected application	V	Uo/U 600/1000 1.5 mm^2 AC

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Electrical	Unit of measure	Value
Testing voltage	V	5000

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