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SynWire V 155, copper wire, round, enamelled

- Solderable enamelled round cu.wire
- Insulated with polyurethane
- Class 155

Attributes

SynWire V 155 is a thermal class F enamelled copper wire which can be directly soldered. The most outstanding characteristic of this wire is the possibilty of having an efficient and safe contact of the wire ends by fast and easy solderability with a solder bath temperature from 390 °C upwards without prior mechanical removal of the insulation film. This type of enamelled copper wire fulfills the requirements of modern winding technology.
State-of-the-art process technology ensures excellent formability, high elongation and good insulating properties. The chemical resistance to aggressive, fluid or gaseous media is limited; therefore, compatibility tests are recommended prior to application.

Application

transformers, relays, contactors, solenoid coils, small motors

Standards

IEC / DIN EN 60317-20

NEMA MW 79-C

UL approved

Delivery forms

Grade 1+2: 0.036 – 1.7 mm

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Updated 04/24

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Typical properties of enamelled round copper wire 0.160 mm, with insulation film grade 1

Mechanical	Unit of measure	Set value	Actual value (typ.)
Outer diameter with varnish	mm	min. 0.172 - max. 0.182	as set value
Bare wire diameter	mm	0.157-0.163	as set value
Adhesion and elongation		mandrel diameter 0.160 mm	1xd / 10 % pre-elongation
Scrape resistance	N	/	/
Pencil hardness of varnish		H	2H - 4H
Elongation at break	%	≥22	≥28
Coefficient of friction	µ	/	≤ 0.140

Electrical	Unit of measure	Set value	Actual value (typ.)
Dielectric strength RT	kV	≥ 1.7 (twist)	≥ 2.5 (cylinder)
High voltage discontiniuties (test voltage 500 V)		≤ 10 on 30 m	≤ 7 on 100 m
Electrical conductivity of Cu conductor	MS/m	58-59	≥ 58.5

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Thermal	Unit of measure	Set value	Actual value (typ.)
Temperature index TI	°C	155	160
Cut through temperature (pre-heated block)	°C	200	≥ 200
Dielectric loss factor	(°C)(tan δ)	/	≥ 140
Heat shock at 175 °C (no cracks in varnish after winding)		mandrel diameter: 0.250 mm	1 x d / 10 % pre-longation
Solderability at 390 °C	s	≤ 2	≤ 1

Chemical	Set value	Actual value (typ.)
Enamel pencil harness after storage ½ h/60 °C in standard solvent	min. H	2H - 4H
Enamel pencil harness after storage ½ h/60 °C in alcohol	min. H	H
Resistance to impregnants (1)	/	yes
Resistance to commercial refrigerants (1)	/	no
Resistance to dry transformer oils (1)	/	not recommended
Resistance to hydraulic oils (1)	/	no

(1) Due to the variety of individual applications we cannot make any generally binding commitments regarding the compatibility. We recommend testing compatibility with the materials being used.

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