

# Taped wires

## 2FO 101 round

### ▪ Polyimide-Film taped copper wire

**Description:**

The winding wire 2FO 101 is a round copper wire wrapped tightly with 2 layers of Kapton®(Polyimide)-tape with 51 - 53 % overlap. Both tapes are coated on one side with a Teflon®-(FEP)-adhesive. A suitable heat treatment melts the thermoplastic FEP-coating and thus bonds firmly the overlapping films. This nonporous, highly flexible insulation of superior thermal, electrical and chemical resistance is typically utilized in oil pump motors.

**Dimensions:**

Round copper according to IEC 60317-0-1.

**Insulation Construction:**

|         |  |
|---------|--|
| Type    | Construction:  |
| 2FO 101 | Lapping with 2-layer, one side FEP-coated Polyimide film, thickness 0.04 mm, overlap 51 - 53 % |

**Standards:**

Polyimide-film insulated round wires meet the requirements of IEC 60317-43, Class 240.

**Applications:**

2FO 101 insulated wires are - due to their superior thermal, mechanical, dielectric and chemical properties - used especially where traditional wire insulations are inadequate.

**Processing instructions:**

Because of the excellent adherence of the insulation to the conductor, the low friction properties and mechanical toughness, such insulated wires can be processed on all common types of winding and coil forming machines.

- Nevertheless, when forming coils, the use of hard or sharp-edged tools is to be avoided.
- The best method for stripping the insulation of these wires is the mechanical one (using hand cutting tools or rotary knives).

|                                      |                        | Value               | Test norm |                      |
|--------------------------------------|------------------------|---------------------|-----------|----------------------|
| <b>Increase in insulation</b>        |                        |                     |           |                      |
| Thickness increase due to insulation | mm                     | 0.44 +/- 0.05       |           |                      |
| <b>Mechanical properties</b>         |                        |                     |           |                      |
| Elongation at break                  | <= 2.5 mm              | %                   | min. 30   | IEC 60851-3, Test 6  |
|                                      | > 2.5 mm               | %                   | min. 33   |                      |
| Springiness                          | <= 1.6 mm              | °                   | max. 30   | IEC 60851-3, Test 7  |
|                                      | >1.6 mm                | °                   | max. 5    |                      |
| Adherence after elongation           | 10 %                   | no loss of adhesion |           | IEC 60851-3, Test 8  |
| <b>Electrical properties</b>         |                        |                     |           |                      |
| Breakdown voltage                    | V                      | min. 6 000          |           | IEC 60851-5, Test 13 |
| Mandrel 3 x wire diameter            | V                      | aver. 8 000         |           |                      |
| Nominal resistance D.C. at 20 °C     | Ohm.mm <sup>2</sup> /m | max. 0.01724        |           | IEC 60851-5, Test 5  |
| <b>Thermal properties</b>            |                        |                     |           |                      |
| Heat shock at 260°C / 30 min.        |                        |                     |           |                      |
| <= 1.6 mm, mandrel Ø 5 mm            |                        | no cracks           |           | IEC 60851-6, Test 9  |
| >1.6 mm, 15 % elongation             |                        | no cracks           |           |                      |

**Appearance**

Slight color variations are raw material or process-related and have no influence on the technical properties of the wire

**Order data :**

Quantity, Designation and Mode of Supply

The designation shall contain:

|                               |            |
|-------------------------------|------------|
| Type of wire                  | round (DR) |
| Nominal dimension e.g.        | 2.5 mm     |
| Conductor material            | Cu         |
| Designation of the insulation | 2FO 101    |

The mode of supply shall indicate the type of reel required, e.g. cylindrical reel according to IEC 60264-2 (identical with DIN 46399) or other types.

Example of complete order:

500 kg DR 2FO 101 2.50 mm, reels DIN 355

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