Application

ETHERLINE® CAT.7 Y (bandwidth up to 600 MHz), has a performance for the cabling class “F” and a maximum transfer rate (IEEE 802.3) of 10 GBit/s to 100m. The electrical parameter of the cable with a nominal impedance of 100 Ω and excellent shielding Properties (pair and total screen) are normatively specified to IEC 61156-5.

It is provided for industrial secondary and tertiary cable according to EN 50173-3 ISO/IEC 24702. Other applications are Profinet with 4 Pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE’s 802.3af) and Power over Ethernet Plus (802.3at).

The product is flame retardant has a moderate oil resistant and comes in rough industrial environments for use. It is suitable for fixed installation and serves to wiring of machines, tools, devices, appliances and control cabinets.

Design

Conductor
solid bare copper
AWG 22/1,
∅ approx. 0,643 mm

Insulation
foamed skin polyethylene (02YS),
nom ∅ 1,50, max ∅ 1,60 mm

Core identification code
white-blue/blue, white-orange/orange,
white-green/green, white-brown/brown

Stranding
2 cores twisted to pairs
Pair screening with aluminium laminated foil (overlapping ≥ 25 %)
4 screened pairs twisted and shielded with aluminium laminated foil

Screen
braid of tinned copper wires,
coverage 85 % ±5 %

Taping
thin non-woven tape (optional)

Outer sheath
PVC compound,
Colour: green (similar RAL 6018),
outer ∅: 8,70 mm ± 0,30 mm

Electrical properties at 20°C

Conductor resistance
max. 57.1 Ω/km

Insulation resistance
min. 5 GΩ×km

Mutual capacitance
nom. 42 nF/km (1 kHz)

Inductance
nom. 850 μH/km (1 kHz / in loop)

Characteristic impedance
100 Ω (±5%) bei 100 MHz

Velocity of propagation
nom. 0,80 c

Signal transit time
nom. 420 ns/100m

Peak operating voltage
125 V

Test voltage
core/core: 1000 V DC/min or 2500 V DC/2sec
core/screening: 700 V AC/min or 1700 V AC/2sec
**Electrical transmission properties at 20°C**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>standard</td>
<td>standard</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>4</td>
<td>3,8</td>
<td>78</td>
<td>78</td>
<td>23</td>
</tr>
<tr>
<td>10</td>
<td>5,9</td>
<td>78</td>
<td>74</td>
<td>25</td>
</tr>
<tr>
<td>16</td>
<td>7,5</td>
<td>78</td>
<td>69,9</td>
<td>25</td>
</tr>
<tr>
<td>31,25</td>
<td>10,4</td>
<td>78</td>
<td>64,2</td>
<td>23,6</td>
</tr>
<tr>
<td>62,5</td>
<td>14,9</td>
<td>75,6</td>
<td>58,3</td>
<td>21,6</td>
</tr>
<tr>
<td>100</td>
<td>19,2</td>
<td>72,4</td>
<td>54</td>
<td>20,1</td>
</tr>
<tr>
<td>200</td>
<td>27,6</td>
<td>67,9</td>
<td>48</td>
<td>18</td>
</tr>
<tr>
<td>250</td>
<td>31,1</td>
<td>66,4</td>
<td>46</td>
<td>17,3</td>
</tr>
<tr>
<td>300</td>
<td>34,3</td>
<td>65,3</td>
<td>44,5</td>
<td>17,3</td>
</tr>
<tr>
<td>350</td>
<td>37,4</td>
<td>64,3</td>
<td>43,1</td>
<td>17,3</td>
</tr>
<tr>
<td>500</td>
<td>45,5</td>
<td>62</td>
<td>40,1</td>
<td>17,3</td>
</tr>
<tr>
<td>600</td>
<td>50,4</td>
<td>60,7</td>
<td>38,4</td>
<td>17,3</td>
</tr>
</tbody>
</table>

**Mechanical and thermal properties**

- **Minimum bending radius**: fixed installation: 10 x d
- **Temperature range**: fixed installation: -30°C up to +80°C
- **Flammability**: acc. to IEC 60332-3-25
- **General requirements**: This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).