8CM003.12-3

1 General information

- Can be used in cable drag chains
- Assembled specifically for use with ACOPOS 1180/1320 servo drives and B&R servo motors with motor connector size 1

2 Order data

<table>
<thead>
<tr>
<th>Model number</th>
<th>Short description</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>8CM003.12-3</td>
<td>4 mm² motor cables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Motor cable, length 3 m, 4x 4 mm² + 2x 0.75 mm² + 2x 1 mm², 8-pin female Intercontec motor connector size 1, can be used in cable drag chains</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: 8CM003.12-3 - Order data

3 Technical data

<table>
<thead>
<tr>
<th>Model number</th>
<th>8CM003.12-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information</td>
<td></td>
</tr>
<tr>
<td>Cable cross section</td>
<td>4 x 4 mm² + 2 x 0.75 mm² + 2 x 1 mm²</td>
</tr>
<tr>
<td>Durability</td>
<td>Oil resistance per HD 22.10 appendix A and DIN EN 60811-404 ¹</td>
</tr>
<tr>
<td>Certification</td>
<td>E170315 cRUus AWM STYLE 21223 AWM III A/B 80°C 1000 V FT1 ¹</td>
</tr>
<tr>
<td>Certifications</td>
<td></td>
</tr>
<tr>
<td>CE</td>
<td>Yes</td>
</tr>
<tr>
<td>UL</td>
<td>cULus E225616 Power conversion equipment</td>
</tr>
<tr>
<td>Cable construction</td>
<td></td>
</tr>
<tr>
<td>Power lines</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>4</td>
</tr>
<tr>
<td>Wire insulation</td>
<td>PP</td>
</tr>
<tr>
<td>Wire colors</td>
<td>Black, brown, blue, yellow/green</td>
</tr>
<tr>
<td>Variant</td>
<td>Tinned copper stranded wire</td>
</tr>
<tr>
<td>Cross section</td>
<td>4 mm²</td>
</tr>
<tr>
<td>Shield</td>
<td>No</td>
</tr>
<tr>
<td>Stranding</td>
<td>No</td>
</tr>
<tr>
<td>Signal line</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>4</td>
</tr>
<tr>
<td>Wire insulation</td>
<td>PP</td>
</tr>
<tr>
<td>Wire colors</td>
<td>White, white/red, white/blue, white/green</td>
</tr>
<tr>
<td>Variant</td>
<td>Tinned copper stranded wire</td>
</tr>
<tr>
<td>Cross section</td>
<td>2 x 0.75 mm² + 2 x 1 mm²</td>
</tr>
<tr>
<td>Shield</td>
<td>Individually shielded in pairs, tinned copper braiding, optical coverage &gt; 85% and foil shield</td>
</tr>
<tr>
<td>Stranding</td>
<td>White with white/red and white/blue with white/green</td>
</tr>
<tr>
<td>Cable stranding</td>
<td>With filler elements and foil shield</td>
</tr>
<tr>
<td>Cable shield</td>
<td>Tinned copper braiding, optical coverage &gt; 85% and foil shield</td>
</tr>
<tr>
<td>Outer jacket</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>TPU</td>
</tr>
<tr>
<td>Color</td>
<td>Orange, similar to RAL 2003 flat</td>
</tr>
<tr>
<td>Labeling</td>
<td>B&amp;R 4 G 4 + (2x0.75)C + (2x1)C E170315 cRUus AWM STYLE 21223 AWM III A/B 80°C 1000 V FT1 ¹</td>
</tr>
<tr>
<td>Connector</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>8-pin female speedtec motor connector, size 1.0</td>
</tr>
<tr>
<td>Mating cycles</td>
<td>&lt;500</td>
</tr>
<tr>
<td>Contacts</td>
<td>8 (4 power and 4 signal contacts)</td>
</tr>
<tr>
<td>Degree of protection per EN 60529</td>
<td>IP66/67 when connected</td>
</tr>
<tr>
<td>Electrical properties</td>
<td>¹</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Max. 1000 V AC (UL)</td>
</tr>
<tr>
<td>Test voltage</td>
<td></td>
</tr>
<tr>
<td>Wire/Wire</td>
<td>4 kV</td>
</tr>
<tr>
<td>Wire/Shield</td>
<td>4 kV</td>
</tr>
<tr>
<td>Conductor resistance</td>
<td></td>
</tr>
<tr>
<td>Power lines</td>
<td>≤5.1 Ω/km</td>
</tr>
<tr>
<td>Signal line</td>
<td>0.75 mm²: ≤26.7 Ω/km, 1 mm²: ≤20 Ω/km</td>
</tr>
</tbody>
</table>

Table 2: 8CM003.12-3 - Technical data
### 8CM003.12-3

<table>
<thead>
<tr>
<th>Model number</th>
<th>8CM003.12-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation resistance</td>
<td>≥500 MΩ*km</td>
</tr>
<tr>
<td>Current-carrying capacity per DIN VDE 0298 part 4, table 11</td>
<td></td>
</tr>
<tr>
<td>Wall mounting</td>
<td>30 A (^2)</td>
</tr>
<tr>
<td>Installed in conduit or cable duct</td>
<td>30 A (^2)</td>
</tr>
<tr>
<td>Installed in cable tray</td>
<td>30 A (^2)</td>
</tr>
<tr>
<td>Ambient conditions (^\text{1)})</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Moving</td>
<td>-20°C to +80°C</td>
</tr>
<tr>
<td>Static</td>
<td>-20°C to +90°C</td>
</tr>
<tr>
<td>Mechanical properties (^\text{2)})</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>3 m</td>
</tr>
<tr>
<td>Diameter</td>
<td>15.4 mm ± 0.4 mm</td>
</tr>
<tr>
<td>Bend radius</td>
<td></td>
</tr>
<tr>
<td>Single bend</td>
<td>&gt;48 mm</td>
</tr>
<tr>
<td>Moving</td>
<td>&gt;119 mm</td>
</tr>
<tr>
<td>Drag chain data</td>
<td></td>
</tr>
<tr>
<td>Acceleration</td>
<td>Max. 50 m/s(^2) (depends on the length of the travel path)</td>
</tr>
<tr>
<td>Flex cycles</td>
<td>≥5,000,000</td>
</tr>
<tr>
<td>Speed</td>
<td>Max. 300 m/min</td>
</tr>
<tr>
<td>Weight</td>
<td>0.8 kg</td>
</tr>
</tbody>
</table>

### Table 2: 8CM003.12-3 - Technical data

1) Values refer to the raw cable being used.
2) Limited to 30 A by the motor connector.
3) At an ambient temperature from -20°C to +60°C.

### 4 Wiring

#### 4.1 Cable construction

**Diagram of 8CM003.12-3 cable with color codes and pinout details.**

#### Table 3: Motor cables - Cable construction

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motor line</td>
<td>4x 0.75 mm(^2) + 2x 1 mm(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4x 1.5 mm(^2) + 2x 1 mm(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4x 4 mm(^2) + 2x 1 mm(^2) + 2x 0.75 mm(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4x 10 mm(^2) + 2x 0.75 mm(^2) + 2x 1.5 mm(^2)</td>
</tr>
<tr>
<td>2</td>
<td>8-pin female circular connector</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Heat shrink tubing</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Wire end sleeves</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2 8CMxxx.12-0, 8CMxxx.12-1, 8CMxxx.12-3

<table>
<thead>
<tr>
<th>Circular connector</th>
<th>Pin</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>U</td>
<td>Motor connection U</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PE</td>
<td>Protective ground conductor</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>W</td>
<td>Motor connection W</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>V</td>
<td>Motor connection V</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>T+</td>
<td>Temperature +</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>T-</td>
<td>Temperature -</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>B+</td>
<td>Brake +</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>B-</td>
<td>Brake -</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4: 8CMxxx.12-0, 8CMxxx.12-1, 8CMxxx.12-3 motor cables - Pinout
4.3 8CMxxx.12-1, 8CMxxx.12-3

Figure 1: 8CMxxx.12-1, 8CMxxx.12-3 motor cables - Cable diagram