

# 8BCE0050.1111A-0

## 1 General information

- Can be used in cable drag chains
- Assembled specifically for use with ACOPOSmulti drive systems and B&R servo motors with Y-Tec connectors
- speedtec - Innovative connector system for secure connections

## 2 Order data

| Order number     | Short description                                                                                                                                                                                                                   | Figure                                                                              |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 8BCE0050.1111A-0 | <b>EnDat 2.1 cables</b><br>ACOPOSmulti EnDat 2.1 cable, length 50 m, 10x 0.14 mm <sup>2</sup> + 2x 0.5 mm <sup>2</sup> , 17-pin female speedtec EnDat connector, 15-pin male DSUB servo connector, can be used in cable drag chains |  |

Table 1: 8BCE0050.1111A-0 - Order data

## 3 Technical data

| Order number                               | 8BCE0050.1111A-0                                                                                                                  |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>General information</b>                 |                                                                                                                                   |
| Cable cross section                        | 5x 2x 0.14 mm <sup>2</sup> + 1x 2x 0.50 mm <sup>2</sup>                                                                           |
| Durability                                 | Oil resistance per VDE 0472 Part 803 as well as standard hydraulic oils <sup>1)</sup>                                             |
| Certifications                             |                                                                                                                                   |
| CE                                         | Yes                                                                                                                               |
| UKCA                                       | Yes                                                                                                                               |
| UL                                         | cULus E225616<br>Power conversion equipment                                                                                       |
| <b>Cable construction</b>                  |                                                                                                                                   |
| Supply lines                               |                                                                                                                                   |
| Quantity                                   | 2                                                                                                                                 |
| Wire insulation                            | Special thermoplastic material                                                                                                    |
| Wire colors                                | White/Green, white/red                                                                                                            |
| Variant                                    | Tinned copper stranded wire                                                                                                       |
| Cross section                              | 0.5 mm <sup>2</sup>                                                                                                               |
| Shield                                     | No                                                                                                                                |
| Stranding                                  | White/Red with white/green and filler elements                                                                                    |
| Signal line                                |                                                                                                                                   |
| Quantity                                   | 10                                                                                                                                |
| Wire insulation                            | Special thermoplastic material                                                                                                    |
| Wire colors                                | Blue, brown, yellow, gray, green, pink, red, black, violet, white                                                                 |
| Variant                                    | Tinned copper stranded wire                                                                                                       |
| Cross section                              | 0.14 mm <sup>2</sup>                                                                                                              |
| Shield                                     | No                                                                                                                                |
| Stranding                                  | Green with brown, gray with yellow, white with violet, black with red, pink with blue                                             |
| Cable stranding                            | With terminating foil shield                                                                                                      |
| Cable shield                               | Copper braiding, optical coverage >85% and foil shield                                                                            |
| Outer jacket                               |                                                                                                                                   |
| Material                                   | PUR                                                                                                                               |
| Color                                      | Green, similar to RAL 6018 flat                                                                                                   |
| <b>Connector</b>                           |                                                                                                                                   |
| Type                                       | 17-pin female speedtec EnDat connector                                                                                            |
| Mating cycles                              | <500                                                                                                                              |
| Contacts                                   | 17                                                                                                                                |
| Additional connectors                      | 15-pin male DSUB servo connector<br>Mating cycles: <200<br>Contacts: 15<br>Degree of protection per EN 60529: IP20 when connected |
| Degree of protection per EN 60529          | IP66/67 when connected                                                                                                            |
| <b>Electrical properties <sup>1)</sup></b> |                                                                                                                                   |
| Operating voltage                          | ≤30 V <sub>eff</sub>                                                                                                              |

Table 2: 8BCE0050.1111A-0 - Technical data

| Order number                               | 8BCE0050.1111A-0 |
|--------------------------------------------|------------------|
| Test voltage                               |                  |
| Wire - Wire                                | 1 kV             |
| Wire - Shield                              | 0.8 kV           |
| Conductor resistance                       |                  |
| Supply lines                               | ≤40 Ω/km         |
| Signal line                                | ≤140 Ω/km        |
| Insulation resistance                      | >200 MΩ*km       |
| <b>Ambient conditions <sup>1)</sup></b>    |                  |
| Temperature                                |                  |
| Moving                                     | -20°C to +80°C   |
| Static                                     | -20°C to +90°C   |
| <b>Mechanical properties <sup>1)</sup></b> |                  |
| Dimensions                                 |                  |
| Length                                     | 50 m             |
| Diameter                                   | 7.85 mm ±0.2 mm  |
| Bend radius                                |                  |
| Single bend                                | ≥24 mm           |
| Moving                                     | ≥60 mm           |
| Drag chain data                            |                  |
| Acceleration                               | ≤6 g             |
| Flex cycles <sup>2)</sup>                  | >3,000,000       |
| Velocity                                   | ≤4 m/s           |
| Weight                                     | 4 kg             |

Table 2: 8BCE0050.1111A-0 - Technical data

1) Values refer to the raw cable being used.

2) At an ambient temperature of 20°C and bend radius of 65 mm.

## 4 Wiring

### 4.1 Construction

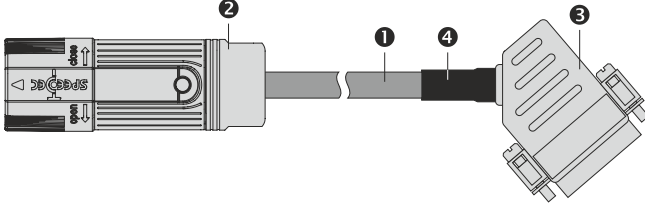
|  |                                        |                                                     |
|--------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------|
| Pos.                                                                                 | Description                            | Note                                                |
| 1                                                                                    | Encoder cable                          | 5x 2x 0.14 mm <sup>2</sup> + 2x 0.5 mm <sup>2</sup> |
| 2                                                                                    | 17-pin female circular connector       | Dimensions: ø 26 x 58 mm                            |
| 3                                                                                    | DSUB housing 45°, metal-plated, 15-pin | Dimensions: 31 x 15 x 40 mm                         |
| 4                                                                                    | Heat shrink tubing                     |                                                     |

Table 3: 8BCE EnDat 2.1 cables - Construction

### 4.2 Pinout

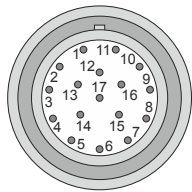
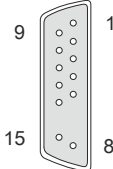
| Circular connector                                                                  | Pin | Description                 | Function                  | Pin | DSUB connector                                                                        |
|-------------------------------------------------------------------------------------|-----|-----------------------------|---------------------------|-----|---------------------------------------------------------------------------------------|
|  | 15  | A                           | Channel A                 | 1   |  |
|                                                                                     | 10  | COM (1, 3 - 9, 11, 13 - 15) | Encoder power supply 0 V  | 2   |                                                                                       |
|                                                                                     | 12  | B                           | Channel B                 | 3   |                                                                                       |
|                                                                                     | 7   | +5 V out / 0.25 A           | Encoder power supply +5 V | 4   |                                                                                       |
|                                                                                     | 14  | D                           | Data input                | 5   |                                                                                       |
|                                                                                     | 8   | T                           | Clock output              | 8   |                                                                                       |
|                                                                                     | 16  | A\                          | Channel A inverted        | 9   |                                                                                       |
|                                                                                     | 4   | Sense COM                   | Sense input 0 V           | 10  |                                                                                       |
|                                                                                     | 13  | B\                          | Channel B inverted        | 11  |                                                                                       |
|                                                                                     | 1   | Sense +5 V                  | Sense input +5 V          | 12  |                                                                                       |
|                                                                                     | 17  | D\                          | Data inverted             | 13  |                                                                                       |
|                                                                                     | 9   | T\                          | Clock output inverted     | 15  |                                                                                       |

Table 4: 8BCE EnDat 2.1 cables - Pinout

### 4.3 Cable diagram

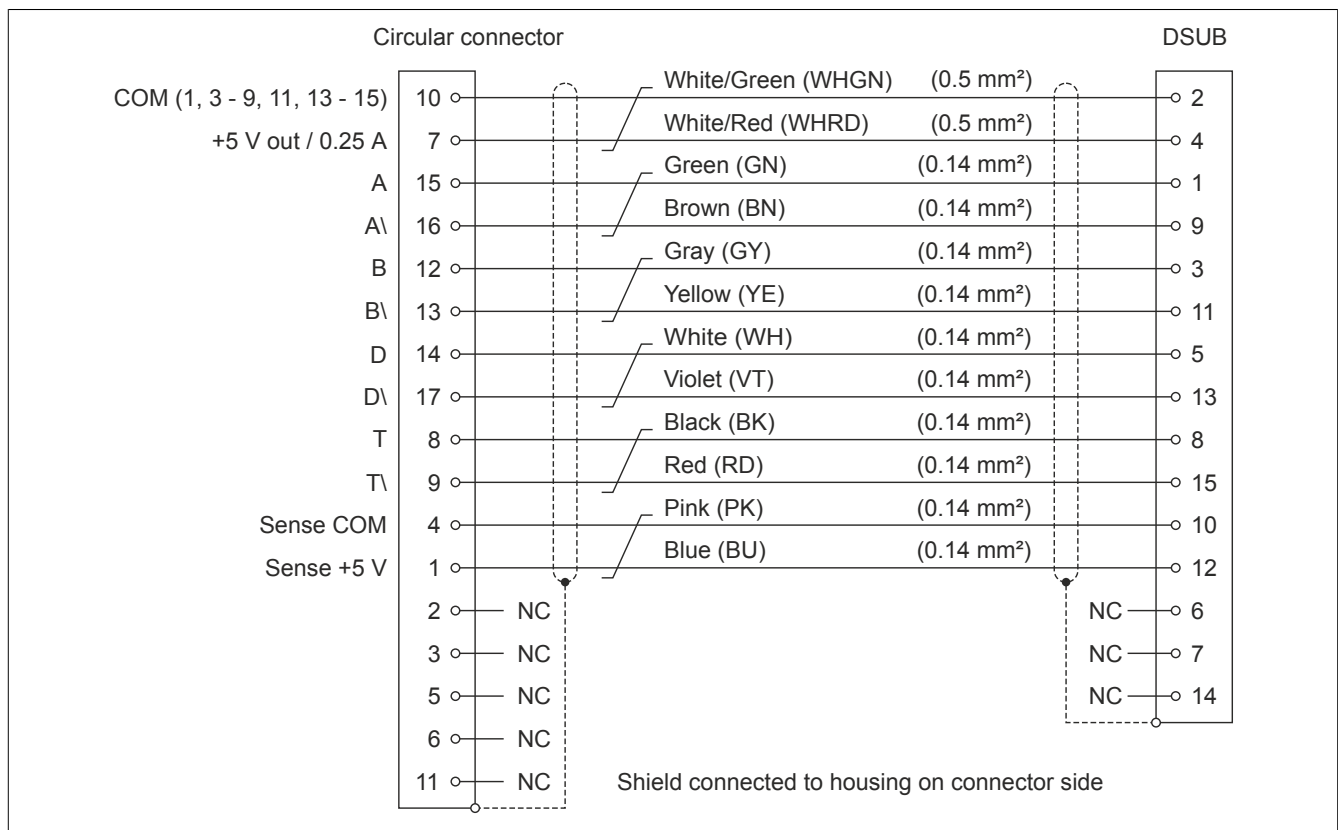


Figure 1: 8BCE EnDat 2.1 cables - Cable diagram