

# 8BCF0023.1221B-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 series 615 built-in connectors
- itec - Innovative connector system for fast and secure connections

## 2 Order data

| Order number     | Short description                                                                                                                                                                                                            | Figure                                                                              |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 8BCF0023.1221B-0 | <b>EnDat 2.2 cables</b><br>EnDat 2.2 cable, length 23 m, 1x 4x 0.14 mm <sup>2</sup> + 4x 0.35 mm <sup>2</sup> , 12-pin female series 615 signal connector, 9-pin male DSUB servo connector, can be used in cable drag chains |  |

Table 1: 8BCF0023.1221B-0 - Order data

## 3 Technical data

| Order number                               | 8BCF0023.1221B-0                                                                                                             |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>General information</b>                 |                                                                                                                              |
| Cable cross section                        | 4x 0.14 mm <sup>2</sup> + 4x 0.35 mm <sup>2</sup>                                                                            |
| Durability                                 | Oil resistance per DIN EN 50363-10-2 (VDE 0207-363-10-2) as well as standard cleaning agents and hydraulic oil <sup>1)</sup> |
| Certification                              | UL AWM Style 20963, 80°C, 30 V, E63216 <sup>1)</sup>                                                                         |
| Certifications                             |                                                                                                                              |
| CE                                         | Yes                                                                                                                          |
| UKCA                                       | Yes                                                                                                                          |
| <b>Cable construction</b>                  |                                                                                                                              |
| Supply lines                               |                                                                                                                              |
| Quantity                                   | 4                                                                                                                            |
| Wire insulation                            | Special thermoplastic material                                                                                               |
| Wire colors                                | White/Green, brown/green, blue, white                                                                                        |
| Variant                                    | Tinned copper stranded wire                                                                                                  |
| Cross section                              | 0.35 mm <sup>2</sup>                                                                                                         |
| Shield                                     | No                                                                                                                           |
| Stranding                                  | No                                                                                                                           |
| Signal line                                |                                                                                                                              |
| Quantity                                   | 4                                                                                                                            |
| Wire insulation                            | Polyolefin foam                                                                                                              |
| Wire colors                                | Yellow, gray, pink, violet                                                                                                   |
| Variant                                    | Tinned copper stranded wire                                                                                                  |
| Cross section                              | 0.14 mm <sup>2</sup>                                                                                                         |
| Shield                                     | No                                                                                                                           |
| Stranding                                  | All 4 wires together                                                                                                         |
| Cable stranding                            | With terminating foil shield                                                                                                 |
| Cable shield                               | Copper/Tin braiding                                                                                                          |
| Outer jacket                               |                                                                                                                              |
| Material                                   | PUR                                                                                                                          |
| Color                                      | Green flat                                                                                                                   |
| Labeling                                   | B&R 4x0,14 + 4x0,35 FLEX (UL) AWM STYLE 20963 80°C 30 V E63216 <sup>1)</sup>                                                 |
| <b>Connector</b>                           |                                                                                                                              |
| Type                                       | 12-pin female series 615 signal connector                                                                                    |
| Mating cycles                              | <500                                                                                                                         |
| Contacts                                   | 12                                                                                                                           |
| Additional connectors                      | 9-pin male DSUB servo connector<br>Mating cycles: <200<br>Contacts: 9                                                        |
| Degree of protection per EN 60529          | Degree of protection per EN 60529: IP20 when connected<br>IP66/67 when connected                                             |
| <b>Electrical properties <sup>1)</sup></b> |                                                                                                                              |
| Operating voltage                          | ≤30 V                                                                                                                        |

Table 2: 8BCF0023.1221B-0 - Technical data

| Order number                               | 8BCF0023.1221B-0 |
|--------------------------------------------|------------------|
| Test voltage                               |                  |
| Wire - Wire                                | 1 kV             |
| Wire - Shield                              | 0.5 kV           |
| Conductor resistance                       |                  |
| Supply lines                               | ≤55 Ω/km         |
| Signal line                                | ≤134 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 +80°C   |
| <b>Mechanical properties <sup>1)</sup></b> |                  |
| Dimensions                                 |                  |
| Length                                     | 23 m             |
| Diameter                                   | 6 mm ±0.2 mm     |
| Bend radius                                |                  |
| Single bend                                | ≥19 mm           |
| Moving                                     | ≥47 mm           |
| Drag chain data                            |                  |
| Acceleration                               | <6 g             |
| Flex cycles <sup>2)</sup>                  | ≥3000000         |
| Velocity                                   | ≤4 m/s           |
| Weight                                     | 1.3 kg           |

Table 2: 8BCF0023.1221B-0 - Technical data

1) Values refer to the raw cable being used.

2) Valid at an ambient temperature of 20°C and bend radius of 78 mm.

## 4 Wiring

### 4.1 Construction

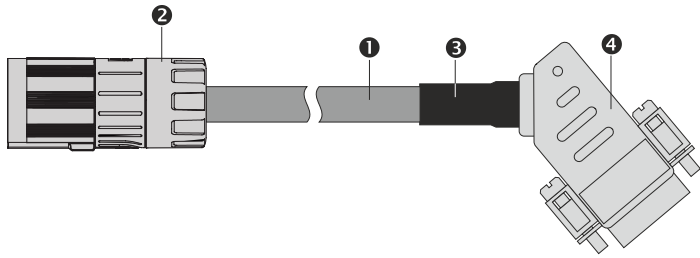
|  |                                                 |                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------|
| Pos.                                                                                 | Description                                     | Note                                              |
| 1                                                                                    | Encoder cable                                   | 4x 0.14 mm <sup>2</sup> + 4x 0.35 mm <sup>2</sup> |
| 2                                                                                    | Circular connector, 12-pin female               | Dimensions: ø 19 x 42 mm                          |
| 3                                                                                    | Heat shrink tubing                              |                                                   |
| 4                                                                                    | DSUB housing 45°, metal-plated, 9-pin connector | Dimensions: 31 x 15 x 36 mm                       |

Table 3: 8BCF EnDat 2.2 cables - Construction

### 4.2 Pinout

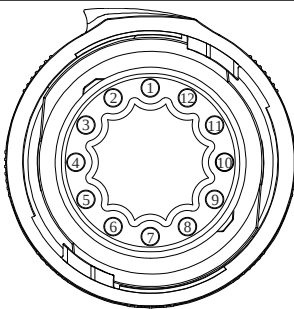
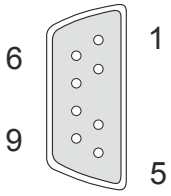
| Circular connector                                                                  | Pin | Description | Function                    | Pin | DSUB connector                                                                        |
|-------------------------------------------------------------------------------------|-----|-------------|-----------------------------|-----|---------------------------------------------------------------------------------------|
|  | 1   | +12 V out   | Encoder power supply +12 V  | 1   |  |
|                                                                                     | 2   | D           | Data input                  | 4   |                                                                                       |
|                                                                                     | 3   | D\          | Data inverted               | 8   |                                                                                       |
|                                                                                     | 4   | T           | Clock output                | 5   |                                                                                       |
|                                                                                     | 5   | T\          | Clock output inverted       | 9   |                                                                                       |
|                                                                                     | 6   | Batt COM    | Battery backup 0 V          | 7   |                                                                                       |
|                                                                                     | 7   | COM         | Encoder power supply 0 V    | 6   |                                                                                       |
|                                                                                     | 8   | ---         | Coding contact              |     |                                                                                       |
|                                                                                     | 9   | ---         |                             |     |                                                                                       |
|                                                                                     | 10  | ---         |                             |     |                                                                                       |
|                                                                                     | 11  | ---         |                             |     |                                                                                       |
|                                                                                     | 12  | Vbatt       | Battery backup power supply | 2   |                                                                                       |

Table 4: 8BCF EnDat 2.2 cables - Pinout

### 4.3 Cable diagram

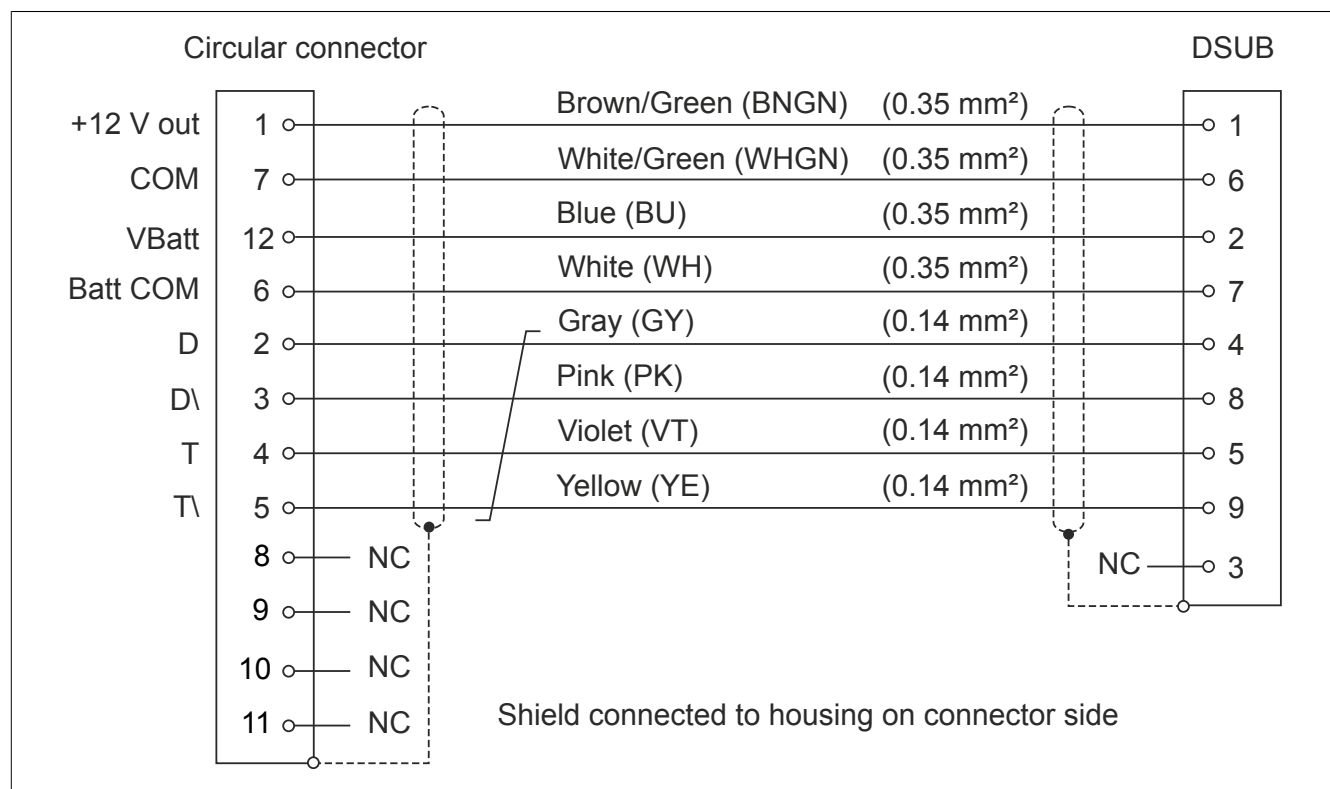


Figure 1: 8BCF EnDat 2.2 cables - Cable diagram