






### FMB910 Bus cables










- TPE outer jacket
- Shielded
- Flame resistance
- Oil-resistant
- Hydrolysis and microbe-resistant
- UV-resistance

### Dynamic Information

|   |                     |  |  |
|---|---------------------|--|--|
|    | Min. bending radius | Moving in cable carriers   | 10 x d (FMB910.001-.049和FMB910.060)<br>12.5 x d (FMB910.050-.055和FMB910.070) |
|   |                     | Flexible moving  | 8 x d  |
|   |                     | Fixed installation   | 5 x d  |
|  | Temperature         | Moving in cable carriers   | -35°C to +70°C   |
|   |                     | Flexible moving  | -45°C to +70°C   |
|   |                     | Fixed installation   | -50°C to +70°C   |
|  | v max.              | Unsupported  | 10 m/s   |
|   |                     | Gliding  | 6 m/s  |
|  | a max.              | 100 m/s <sup>2</sup>   |  |
|  | Travel distance     | Unsupported travel distances and for gliding applications up to 400 m and more |  |

### Cable structure

|   |                        |   |
|---|------------------------|---|
|  | Conductor              | Conductor consisting of bare copper wires (according to EN 60228).  |
|  | Conductor insulation   | According to bus specification.   |
|  | Conductor construction | According to bus specification.   |
|  | Color code             | According to bus specification.   |
|  | Inner jacket           | TPE mixture adapted to suit the requirements in cable carriers.   |
|  | Overall shield         | Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70 %, optical approx. 90 %  |
|  | Outer jacket           | Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in cable carriers.<br>Color: Red lilac RAL 4001 |

## Electrical Information

|  |                 |                            |
|--|-----------------|----------------------------|
|  | Nominal voltage | 50 V (following VDE0298-3) |
|  | Test voltage    | 500 V (following EN50395)  |

## Properties and approvals

|  |                       |   |
|--|-----------------------|---|
|  | UV-resistance         | Medium  |
|  | Hydrolysis-resistance | High  |
|  | Cold-resistant        | -50°C   |
|  | Oil resistance        | Oil-resistant (following IEC60811-404, tested by SGS), bio-oil-resistant (following VDMA24568, tested by SGS) |
|  | Flame resistance      | According to IEC 60332-1-2, VW-1, FT1FMB910.030/FMB910.065/FMB910.066: According to IEC 60332-1-2, FT2        |
|  | REACH                 | Accordding to the regulation (EC) No. 1907/2006 (REACH)   |
|  | EAC                   | Certificate No. KG 417/043.CN.02.00249  |
|  | Lead-free             | Following 2015/863/EU (RoHS-II Tested by SGS)   |
|  | Cleanroom             | Following ISO 14644-1   |
|  | CE                    | Following 2014/35/EU  |
|  | UL                    | Following UL21481, 300V, 80°C   |

## Guaranteed service life

| Temperature, from/to [°C] | 5 million times     |                     | 7.5 million times   |                     | 10 million times    |                     |
|---------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                           | FMB910.001-.049     | FMB910.050-.070     | FMB910.001-.049     | FMB910.050-.070     | FMB910.001-.049     | FMB910.050-.070     |
|                           | R min. [factor x d] | R min. [factor x d] | R min. [factor x d] | R min. [factor x d] | R min. [factor x d] | R min. [factor x d] |
| -35/-25                   | 12.5                | 15                  | 13.5                | 16                  | 14.5                | 17                  |
| -25/+60                   | 10                  | 12.5                | 11                  | 13.5                | 12                  | 14.5                |
| +60/+70                   | 12.5                | 15                  | 13.5                | 16                  | 14.5                | 17                  |

### FMB910 Bus cables

| Part No.                  | Number of cores and conductor nominal cross-section [mm] | Outer diameter [mm] | Copper index [kg/km] | Weight [kg/km] |
|---------------------------|--|---------------------|----------------------|----------------|
| <b>Profibus</b>           |  |                     |                      |                |
| FMB910.001                | (2×0.25)C  | 9.0                 | 33.0                 | 92.0           |
| FMB910.002                | (2×0.25)C+4×1.5  | 12.5                | 94.0                 | 191.0          |
| FMB910.003                | (2×0.25)C+3G0.75   | 11.5                | 55.0                 | 145.0          |
| <b>Interbus</b>           |  |                     |                      |                |
| FMB910.010                | (3x(2x0.25))C  | 9.0                 | 47.0                 | 91.0           |
| FMB910.011                | (3×(2×0.25)+(3G1.0)C                                     | 10.5                | 87.0                 | 152.0          |
| <b>CAN-Bus</b>            |  |                     |                      |                |
| FMB910.020 <sup>④</sup>   | (4×0.25)C  | 6.5                 | 28.0                 | 58.0           |
| FMB910.021                | (2×0.5)C   | 8.0                 | 39.0                 | 81.0           |
| FMB910.022 <sup>④</sup>   | (4×0.5)C   | 8.0                 | 43.0                 | 87.0           |
| <b>DeviceNet</b>          |  |                     |                      |                |
| FMB910.030 <sup>④</sup>   | ((2×AWG24)C+2×AWG22)C                                    | 7.0                 | 36.0                 | 57.0           |
| FMB910.031 <sup>④</sup>   | ((2×AWG18)C+2×AWG15)C                                    | 11.5                | 103.0                | 174.0          |
| <b>CC-Link</b>            |  |                     |                      |                |
| FMB910.035                | (3×AWG20)C   | 8.5                 | 43.0                 | 96.0           |
| <b>Ethernet/CAT5</b>      |  |                     |                      |                |
| FMB910.040                | (4×0.25)C  | 7.0                 | 33.0                 | 59.0           |
| <b>Ethernet/CAT5e</b>     |  |                     |                      |                |
| FMB910.045                | (4×(2×0.15))C  | 8.5                 | 42.0                 | 84.0           |
| <b>Ethernet/CAT6</b>      |  |                     |                      |                |
| FMB910.049                | (4×(2×0.15))C  | 8.5                 | 42.0                 | 84.0           |
| <b>Ethernet/CAT6A</b>     |  |                     |                      |                |
| FMB910.050                | (4×(2×0.15)C)C   | 10.5                | 83.0                 | 134.0          |
| <b>Ethernet/CAT7</b>      |  |                     |                      |                |
| FMB910.052                | (4×(2×0.15)C)C   | 10.5                | 89.0                 | 133.0          |
| <b>FireWireIEEE 1394a</b> |  |                     |                      |                |
| FMB910.055                | 2×(2×0.15)C+2×(0.34)C                                    | 8.0                 | 39.0                 | 76.0           |
| <b>Profinet</b>           |  |                     |                      |                |
| FMB910.060                | (4×0.38)C  | 7.5                 | 39.0                 | 74.0           |
| <b>USB</b>                |  |                     |                      |                |
| FMB910.065                | ((2×AWG28)+2×AWG20)C                                     | 5.5                 | 28.0                 | 45.0           |
| FMB910.066                | ((2×AWG24)+2×AWG20)C                                     | 6.5                 | 32.0                 | 51.0           |
| <b>DVI</b>                |  |                     |                      |                |
| FMB910.070                | (4×(2×AWG28)C+(2×AWG28)+3×AWG28)C                        | 9.0                 | 35.0                 | 95.0           |

④) Cables marked with ④ are four-star twisted design.

⑤) Without inner jacket

Note: The outer diameters are reference values.

G: With green-yellow earth core

x: Without earth core

AWG: American Wire Gauge

| Part No.                  | Characteristic wave impedance approx. [Ω] | Core group               | Colour code  |
|---------------------------|---|--------------------------|--|
| <b>Profibus</b>           |   |                          |  |
| FMB910.001                | 150                                       | (2x0.25)C                | red, green   |
| FMB910.002                | 150                                       | (2x0.25)C<br>4x1.5       | red/green<br>black with white numbers 1-4                                  |
| FMB910.003                | 150                                       | (2x0.25)C<br>3G0.75      | red/green<br>black, blue, green-yellow                                     |
| <b>Interbus</b>           |   |                          |  |
| FMB910.010                | 100                                       | 3x(2x0.25)               | white/brown, green/yellow, grey/pink                                       |
| FMB910.011                | 100                                       | 3x(2x0.25)<br>(3G1.0)    | white/brown, green/yellow, grey/pink<br>red, blue, green-yellow            |
| <b>CAN-Bus</b>            |   |                          |  |
| FMB910.020                | 120                                       | (4x0.25)C                | white, green, brown, yellow (Star-quad)                                    |
| FMB910.021                | 120                                       | (2x0.5)C                 | white, brown   |
| FMB910.022                | 120                                       | (4x0.5)C                 | white, green, brown, yellow (Star-quad)                                    |
| <b>DeviceNet</b>          |   |                          |  |
| FMB910.030                | 120                                       | (2xAWG24)C<br>2xAWG22    | white/blue<br>red, black   |
| FMB910.031                | 120                                       | (2xAWG18)C<br>2xAWG15    | white/blue<br>red, black   |
| <b>CC-Link</b>            |   |                          |  |
| FMB910.035                | 110                                       | 3xAWG20                  | white, blue, yellow  |
| <b>Ethernet/CAT5</b>      |   |                          |  |
| FMB910.040                | 100                                       | (4x0.25)C                | white, green, brown, yellow (Star-quad)                                    |
| <b>Ethernet/CAT5e</b>     |   |                          |  |
| FMB910.045                | 100                                       | 4x(2x0.15)               | white-blue/blue, white-orange/orange, white-green/green, white-brown/brown |
| <b>Ethernet/CAT6</b>      |   |                          |  |
| FMB910.049                | 100                                       | 4x(2x0.15)               | white-blue/blue, white-orange/orange, white-green/green, white-brown/brown |
| <b>Ethernet/CAT6A</b>     |   |                          |  |
| FMB910.050                | 100                                       | 4x(2x0.15)C              | white/blue, white/orange, white/green, white/brown                         |
| <b>Ethernet/CAT7</b>      |   |                          |  |
| FMB910.052                | 100                                       | 4x(2x0.15)C              | white/blue, white/orange, white/green, white/brown                         |
| <b>FireWireIEEE 1394a</b> |   |                          |  |
| FMB910.055                | 100                                       | 2x(2x0.15)C<br>2x(0.34)C | orange/blue, green/red<br>white, black                                     |
| <b>Profinet</b>           |   |                          |  |
| FMB910.060                | 100                                       | 4x0.38                   | white, orange, blue, yellow (Star-quad)                                    |

| Part No.   | Characteristic wave impedance approx. [Ω] | Core group   | Colour code   |
|------------|---|--------------|---|
| USB        |   |              |   |
| FMB910.065 | 90  | (2xAWG28)    | white/green   |
|            |   | 2xAWG20      | red, black  |
| FMB910.066 | 90  | (2xAWG28)    | white/green   |
|            |   | 2xAWG20      | red, black  |
| DVI        |   |              |   |
| FMB910.070 | 100                                       | 4x(2xAWG28)C | 4 x white/yellow with element-shield in blue, black, red, white |
|            |   | (2xAWG28)    | white/brown   |
|            |   | 3xAWG28      | green, yellow, grey   |