

# 01

## Rolling Stock Cables

|                                                              |                                                                                 |           |
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# UNIRAIL HT – EN 50382-2 1800 V 150°C - type F

UNIKA (Italy) - EN 50382-2 1800 V 16 F 150°C - code

## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

According to table 1 (cross-section 1,5 ÷ 400 mm<sup>2</sup>) of EN 50382-2 for cables rated 1800V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter without braid [mm] | Cable mass [kg/km] |
|---------|----------------------------------|-----------------------------|--------------------|
| RA801   | 1,5                              | 6,3 ÷ 7,3                   | 57                 |
| RA802   | 2,5                              | 6,7 ÷ 7,8                   | 69                 |
| RA803   | 4                                | 7,2 ÷ 8,4                   | 86                 |
| RA804   | 6                                | 7,7 ÷ 9,0                   | 107                |
| RA805   | 10                               | 8,5 ÷ 10,0                  | 151                |
| RA806   | 16                               | 9,6 ÷ 11,2                  | 219                |
| RA807   | 25                               | 10,9 ÷ 12,7                 | 305                |
| RA808   | 35                               | 12,1 ÷ 14,1                 | 394                |
| RA809   | 50                               | 13,5 ÷ 15,8                 | 540                |
| RA810   | 70                               | 15,2 ÷ 17,8                 | 725                |
| RA811   | 95                               | 17,0 ÷ 19,9                 | 961                |
| RA812   | 120                              | 18,6 ÷ 21,7                 | 1182               |
| RA813   | 150                              | 20,1 ÷ 23,5                 | 1438               |
| RA814   | 185                              | 21,7 ÷ 25,4                 | 1760               |
| RA815   | 240                              | 24,1 ÷ 28,2                 | 2249               |
| RA816   | 300                              | 26,4 ÷ 30,9                 | 2680               |
| RA817   | 400                              | 29,9 ÷ 34,9                 | 3450               |

## CONSTRUCTION

**Type:** single core unsheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Screening separator:** semiconductive black tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, colour black if not otherwise stated

**Textile braid:** available upon request

**Marking:** UNIKA (Italy) – EN 50382-2 1800V cross-section F 150°C – WW/YYYY - traceability code

### Fire safety: hazard level HL3

according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

The characteristics of the products, described in the data sheet, do not constitute any contractual binding. UNIKA spa reserves the right to change the specifications without any notice. Partial or total reproduction of this document is forbidden.

# UNIRAIL HT – EN 50382-2 1800 V 150°C - type FF

UNIKA (Italy) - EN 50382-2 1800 V 25 FF 150°C - code



## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

According to table 2 (cross-section 1,5 ÷ 400 mm<sup>2</sup>) of EN 50382-2 for cables rated 1800V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RAA01   | 1,5                              | 6,8 ÷ 7,9     | 63                 |
| RAA02   | 2,5                              | 7,2 ÷ 8,4     | 76                 |
| RAA03   | 4                                | 7,7 ÷ 9,0     | 93                 |
| RAA04   | 6                                | 8,2 ÷ 9,6     | 115                |
| RAA05   | 10                               | 9,4 ÷ 11,0    | 168                |
| RAA06   | 16                               | 10,5 ÷ 12,2   | 236                |
| RAA07   | 25                               | 12,3 ÷ 14,4   | 339                |
| RAA08   | 35                               | 13,6 ÷ 15,9   | 432                |
| RAA09   | 50                               | 15,0 ÷ 17,5   | 583                |
| RAA10   | 70                               | 16,8 ÷ 19,7   | 780                |
| RAA11   | 95                               | 19,0 ÷ 22,2   | 1039               |
| RAA12   | 120                              | 20,8 ÷ 24,3   | 1276               |
| RAA13   | 150                              | 22,3 ÷ 26,1   | 1539               |
| RAA14   | 185                              | 24,5 ÷ 28,6   | 1871               |
| RAA15   | 240                              | 27,1 ÷ 31,7   | 2417               |
| RAA16   | 300                              | 29,5 ÷ 34,6   | 2760               |
| RAA17   | 400                              | 33,2 ÷ 38,9   | 3620               |

## CONSTRUCTION

**Type:** single core sheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Screening separator:** semiconductive black tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, colour white if not otherwise stated

**Tape (optional):** polyester or other non-hygroscopic tape

**Sheath:** silicon rubber compound, type EM107 according to Standard EN 50382-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50382-2 1800V cross-section FF 150°C – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL HT – EN 50382-2 3600 V 150°C - type F

UNIKA (Italy) - EN 50382-2 3600 V 10 F 150°C - code

## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

According to table 3 (cross-section  $2,5 \div 400 \text{ mm}^2$ ) of EN 50382-2 for cables rated 3600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter without braid [mm] | Cable mass [kg/km] |
|---------|----------------------------------|-----------------------------|--------------------|
| RA901   | 2,5                              | 7,6 ÷ 8,9                   | 84                 |
| RA902   | 4                                | 8,1 ÷ 9,5                   | 102                |
| RA903   | 6                                | 9,0 ÷ 10,6                  | 124                |
| RA904   | 10                               | 9,5 ÷ 11,1                  | 170                |
| RA905   | 16                               | 10,5 ÷ 12,3                 | 241                |
| RA906   | 25                               | 11,8 ÷ 13,8                 | 329                |
| RA907   | 35                               | 13,0 ÷ 15,2                 | 422                |
| RA908   | 50                               | 14,4 ÷ 16,9                 | 571                |
| RA909   | 70                               | 16,1 ÷ 18,9                 | 760                |
| RA910   | 95                               | 17,5 ÷ 20,5                 | 984                |
| RA911   | 120                              | 19,3 ÷ 22,6                 | 1216               |
| RA912   | 150                              | 20,8 ÷ 24,4                 | 1474               |
| RA913   | 185                              | 22,6 ÷ 26,5                 | 1810               |
| RA914   | 240                              | 25,4 ÷ 29,8                 | 2326               |
| RA915   | 300                              | 27,7 ÷ 32,4                 | 2780               |
| RA916   | 400                              | 30,8 ÷ 36,0                 | 3610               |

## CONSTRUCTION

**Type:** single core unsheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Screening separator:** semiconductive black tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, colour black if not otherwise stated

**Textile braid:** available upon request

**Marking:** UNIKA (Italy) – EN 50382-2 3600V cross-section F 150°C – WW/YYYY - traceability code

### Fire safety: hazard level HL3

according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL HT – EN 50382-2 3600 V 150°C - type FF

UNIKA (Italy) - EN 50382-2 3600 V 50 FF 150°C - code



## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

According to table 5 (cross-section 2,5 ÷ 400 mm<sup>2</sup>) of EN 50382-2 for cables rated 3600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RAB01   | 2,5                              | 9,9 ÷ 11,6    | 122                |
| RAB02   | 4                                | 10,4 ÷ 12,2   | 143                |
| RAB03   | 6                                | 10,9 ÷ 12,8   | 167                |
| RAB04   | 10                               | 11,8 ÷ 13,8   | 217                |
| RAB05   | 16                               | 12,8 ÷ 15,0   | 291                |
| RAB06   | 25                               | 14,7 ÷ 17,2   | 403                |
| RAB07   | 35                               | 15,9 ÷ 18,6   | 503                |
| RAB08   | 50                               | 17,5 ÷ 20,5   | 668                |
| RAB09   | 70                               | 19,2 ÷ 22,4   | 867                |
| RAB10   | 95                               | 20,8 ÷ 24,3   | 1110               |
| RAB11   | 120                              | 22,4 ÷ 26,2   | 1343               |
| RAB12   | 150                              | 24,1 ÷ 28,2   | 1621               |
| RAB13   | 185                              | 26,4 ÷ 30,9   | 2004               |
| RAB14   | 240                              | 29,4 ÷ 34,4   | 2555               |
| RAB15   | 300                              | 31,7 ÷ 37,1   | 3070               |
| RAB16   | 400                              | 35,0 ÷ 40,9   | 3970               |

## CONSTRUCTION

**Type:** single core sheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Screening separator:** semiconductive black tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, colour white if not otherwise stated

**Tape (optional):** polyester or other non-hygroscopic tape

**Sheath:** silicon rubber compound, type EM107 according to Standard EN 50382-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50382-2 3600V cross-section FF 150°C – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL HT – EN 50382-2 600 V 150°C - type FX



UNIKA (Italy) - EN 50382-2 600 V 70 FX 150°C - code

## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

In compliance with EN 50382-2 (see IMQ test certificate)

| Item n°       | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------------|----------------------------------|---------------|--------------------|
| <b>RAD00*</b> | 0,60                             | 2,6           | 12                 |
| <b>RAD06</b>  | 16                               | 10,1          | 220                |
| <b>RAD07</b>  | 25                               | 10,7          | 280                |
| <b>RAD08</b>  | 35                               | 12,1          | 410                |
| <b>RAD09</b>  | 50                               | 13,8          | 540                |
| <b>RAD10</b>  | 70                               | 15,6          | 770                |
| <b>RAD11</b>  | 95                               | 17,0          | 975                |
| <b>RAD12</b>  | 120                              | 18,5          | 1220               |
| <b>RAD13</b>  | 150                              | 20,6          | 1460               |
| <b>RAD14</b>  | 185                              | 25,5          | 2240               |

## CONSTRUCTION

**Type:** single core transparent cable

**Conductor:** tinned copper conductor according to class 6 EN 60228 for section  $\geq 16$  mm<sup>2</sup>, class 5 for section  $< 16$  mm<sup>2</sup>

**Tape (optional):** polyester or other non-hygroscopic transparent tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, transparent or other colour

**Marking:** UNIKA (Italy) – EN 50382-2 600V *cross-section* FX 150°C – WW/YYYY - *traceability code*

### Fire safety: hazard level HL3

according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

**Cables are suitable for flexible installations (e.g. Jumper cables)**

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# UNIRAIL HT – EN 50382-2 3600 V 150°C - type FX

UNIKA (Italy) - EN 50382-2 3600 V 70 FX 150°C - code



## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

According to table 4 (cross-section  $50 \div 185 \text{ mm}^2$ ) of EN 50382-2 for cables rated 3600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RA907X* | 35                               | 13,0 ÷ 15,2   | 465                |
| RA908X  | 50                               | 15,2 ÷ 17,8   | 580                |
| RA909X  | 70                               | 16,9 ÷ 19,8   | 770                |
| RA910X  | 95                               | 18,3 ÷ 21,4   | 995                |
| RA911X  | 120                              | 20,1 ÷ 23,5   | 1240               |
| RA912X  | 150                              | 21,6 ÷ 25,3   | 1485               |
| RA913X  | 185                              | 23,4 ÷ 27,4   | 1830               |
| RA914X  | 240                              | 26,2 ÷ 27,4   | 2400               |

\* Out of the scope of the standard

## CONSTRUCTION

**Type:** single core unsheathed cable

**Conductor:** tinned copper conductor according to class 6 EN 60228

**Screening separator:** semiconductive black tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, colour black if not otherwise stated

**Textile braid:** available upon request

**Marking:** UNIKA (Italy) – EN 50382-2 3600V cross-section FX 150°C – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

**Cables are suitable for flexible installations (e.g. Jumper cables)**

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# UNIRAIL HT – EN 50382-2 3600 V 150°C - type FFS

UNIKA (Italy) - EN 50382-2 3600 V 50 FFS 150°C - code



## TECHNICAL DATA

Temperature rating up to and including 150°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Enhanced abrasion and tear resistance and enhanced thermal aging for long term (beyond 20000h at 170°C) according to the TRENITALIA specification and principal OEMs requests

Bending radius: fixed  $\geq 3$  outer diameter, flexible  $\geq 5$  outer diameter

### Range of approval:

In compliance with table 5 (cross-section  $2,5 \div 400 \text{ mm}^2$ ) of EN 50382-2 for cables rated 3600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RAC05   | 16                               | 12,8 ÷ 15,0   | 370                |
| RAC06   | 25                               | 14,7 ÷ 17,2   | 485                |
| RAC07   | 35                               | 15,9 ÷ 18,6   | 580                |
| RAC08   | 50                               | 17,5 ÷ 20,5   | 750                |
| RAC09   | 70                               | 19,2 ÷ 22,4   | 1010               |
| RAC10   | 95                               | 20,8 ÷ 24,3   | 1200               |
| RAC11   | 120                              | 22,4 ÷ 26,2   | 1485               |
| RAC11H  | 120                              | 26,5 ÷ 30,0   | 1620               |
| RAC12   | 150                              | 24,1 ÷ 28,2   | 1770               |
| RAC13   | 185                              | 26,4 ÷ 30,9   | 2160               |
| RAC14   | 240                              | 29,4 ÷ 34,4   | 2720               |

## CONSTRUCTION

**Type:** single core screened cable with EMC performance

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Screening separator:** semiconductive black tape

**Insulation:** silicon rubber compound, type EI111 according to Standard EN 50382-1, colour white if not otherwise stated

**Tape (optional):** polyester or other non-hygroscopic tape

**Screen:** tinned copper wire braid with optional non-hygroscopic tape, minimum coverage 85%

**Sheath:** silicon rubber compound, type EM107 according to Standard EN 50382-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50382-2 3600V cross-section FFS 150°C – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

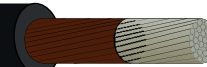
**Add letter C after the item number to have spiral tinned copper wire instead of braid**

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# UNIRAIL S – EN 50264-3-1 600 V - type M

UNIKA (Italy) - EN 50264-3-1 600 V 16 M - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, fuels, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 (cross-section 1 ÷ 400 mm<sup>2</sup>) of EN 50264-3-1 for cables rated 600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB001   | 1                                | 2,4 ÷ 2,8     | 14                 |
| RB002   | 1,5                              | 2,8 ÷ 3,3     | 20                 |
| RB003   | 2,5                              | 3,2 ÷ 3,8     | 29                 |
| RB004   | 4                                | 3,8 ÷ 4,4     | 43                 |
| RB005   | 6                                | 4,2 ÷ 5,0     | 63                 |
| RB006   | 10                               | 5,1 ÷ 5,9     | 104                |
| RB007   | 16                               | 6,1 ÷ 7,2     | 157                |
| RB008   | 25                               | 7,8 ÷ 9,1     | 253                |
| RB009   | 35                               | 9,0 ÷ 10,6    | 336                |
| RB010   | 50                               | 10,6 ÷ 12,4   | 486                |
| RB011   | 70                               | 12,5 ÷ 14,6   | 673                |
| RB012   | 95                               | 13,9 ÷ 16,3   | 892                |
| RB013   | 120                              | 15,7 ÷ 18,4   | 1124               |
| RB014   | 150                              | 17,6 ÷ 20,6   | 1399               |
| RB015   | 185                              | 19,6 ÷ 22,9   | 1745               |
| RB016   | 240                              | 22,2 ÷ 26,0   | 2261               |
| RB017   | 300                              | 24,6 ÷ 28,8   | 2776               |
| RB018   | 400                              | 28,1 ÷ 32,9   | 3795               |

Out of the scope of the Standard.

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB019   | 0,50                             | 2,2           | 10                 |
| RB020   | 0,75                             | 2,4           | 13                 |

Unless otherwise specified, all values are nominal, other values can be provided on request.  
The images are made for the sole purpose of illustrating the product and are purely indicative.

## CONSTRUCTION

**Type:** single core unsheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape for cross-section  $\geq 16$  mm<sup>2</sup>

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black or yellow-green if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-1 600V *cross-section* M – WW/YYYY - *traceability code*

### Fire safety: hazard level HL3

according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Add the following letter after the item number for colours different from black

**C:** yellow/green

**Y:** grey

**B:** blue

**R:** red

**W:** brown

**H:** white

**J:** yellow

**A:** orange

The characteristics of the products, described in the data sheet, do not constitute any contractual binding. UNIKA spa reserves the right to change the specifications without any notice. Partial or total reproduction of this document is forbidden.

# UNIRAIL S – EN 50264-3-1 1800 V – type M

UNIKA (Italy) - EN 50264-3-1 1800 V 35 M - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 2 (cross-section 1,5 ÷ 400 mm<sup>2</sup>) of EN 50264-3-1 for cables rated 1800V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB101   | 1,5                              | 5,3 ÷ 6,2     | 47                 |
| RB102   | 2,5                              | 5,7 ÷ 6,7     | 58                 |
| RB103   | 4                                | 6,2 ÷ 7,3     | 75                 |
| RB104   | 6                                | 6,7 ÷ 7,8     | 97                 |
| RB105   | 10                               | 7,5 ÷ 8,8     | 144                |
| RB106   | 16                               | 8,6 ÷ 10,0    | 201                |
| RB107   | 25                               | 9,9 ÷ 11,6    | 298                |
| RB108   | 35                               | 11,1 ÷ 13,0   | 386                |
| RB109   | 50                               | 12,5 ÷ 14,6   | 534                |
| RB110   | 70                               | 14,2 ÷ 16,6   | 717                |
| RB111   | 95                               | 16,0 ÷ 18,7   | 953                |
| RB112   | 120                              | 17,6 ÷ 20,6   | 1177               |
| RB113   | 150                              | 19,1 ÷ 22,3   | 1433               |
| RB114   | 185                              | 20,9 ÷ 24,4   | 1777               |
| RB115   | 240                              | 23,7 ÷ 27,5   | 2272               |
| RB116   | 300                              | 25,6 ÷ 30,1   | 2785               |
| RB117   | 400                              | 29,2 ÷ 34,2   | 3840               |

Out of the scope of the Standard.

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB118   | 0,50                             | 5,0           | 35                 |
| RB120   | 0,75                             | 5,2           | 40                 |
| RB119   | 1,0                              | 5,4           | 45                 |

Unless otherwise specified, all values are nominal, other values can be provided on request.  
The images are made for the sole purpose of illustrating the product and are purely indicative.

## CONSTRUCTION

**Type:** single core unsheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape for cross-section  $\geq 16$  mm<sup>2</sup>

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black or yellow-green if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-1 1800V cross-section M – WW/YYYY - traceability code

### Fire safety: hazard level HL3

according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Add the following letter after the item number for colours different from black

**C:** yellow/green

**Y:** grey

**B:** blue

**R:** red

**W:** brown

**H:** white

**X:** class 6 conductor

**A:** orange

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# UNIRAIL S – EN 50264-3-1 1800 V – type MM

UNIKA (Italy) - EN 50264-3-1 1800 V 70 MM - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 3 (cross-section 1,5 ÷ 400 mm<sup>2</sup>) of EN 50264-3-1 for cables rated 1800V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB201   | 1,5                              | 5,7 ÷ 6,7     | 49                 |
| RB202   | 2,5                              | 6,0 ÷ 7,0     | 61                 |
| RB203   | 4                                | 6,5 ÷ 7,6     | 78                 |
| RB204   | 6                                | 7,0 ÷ 8,1     | 100                |
| RB205   | 10                               | 8,2 ÷ 9,6     | 156                |
| RB206   | 16                               | 9,2 ÷ 10,8    | 215                |
| RB207   | 25                               | 11,5 ÷ 13,4   | 343                |
| RB208   | 35                               | 12,7 ÷ 14,9   | 436                |
| RB209   | 50                               | 14,1 ÷ 16,5   | 591                |
| RB210   | 70                               | 15,8 ÷ 18,5   | 781                |
| RB211   | 95                               | 18,0 ÷ 21,0   | 1045               |
| RB212   | 120                              | 19,6 ÷ 22,9   | 1278               |
| RB213   | 150                              | 21,4 ÷ 25,1   | 1564               |
| RB214   | 185                              | 23,4 ÷ 27,4   | 1923               |
| RB215   | 240                              | 25,9 ÷ 30,3   | 2434               |
| RB216   | 300                              | 28,1 ÷ 32,9   | 2940               |
| RB217   | 400                              | 32,0 ÷ 37,4   | 3980               |

## CONSTRUCTION

**Type:** single core sheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape for cross-section  $\geq 16 \text{ mm}^2$

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black if not otherwise stated (upon request compound type EI110)

**Tape (optional):** or talcum powder for strippability

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

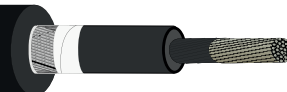
**Marking:** UNIKA (Italy) – EN 50264-3-1 1800V cross-section MM – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL S – EN 50264-3-1 1800 V – type MMS

UNIKA (Italy) - EN 50264-3-1 1800 V 70 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

In compliance with EN 50264-3-1 for cables rated 1800V (see IMQ test certificate)

| Item n°      | Cross-section [mm²] | Diameter [mm] | Cable mass [kg/km] |
|--------------|---------------------|---------------|--------------------|
| <b>RCA07</b> | 25                  | 13,0 ÷ 15,2   | 440                |
| <b>RCA08</b> | 35                  | 14,5 ÷ 16,7   | 550                |
| <b>RCA09</b> | 50                  | 15,3 ÷ 17,5   | 675                |
| <b>RCA10</b> | 70                  | 17,0 ÷ 19,2   | 910                |
| <b>RCA11</b> | 95                  | 19,2 ÷ 22,0   | 1180               |

## CONSTRUCTION

**Type:** single core sheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape for cross-section  $\geq 16 \text{ mm}^2$

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black if not otherwise stated (upon request compound type EI110)

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-1 1800V *cross-section* MMS – WW/YYYY - *traceability code*

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL S – EN 50264-3-1 3600 V - type MM

UNIKA (Italy) - EN 50264-3-1 3600 V 95 MM - code

## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 4 (cross-section 2,5 ÷ 400 mm<sup>2</sup>) of EN 50264-3-1 for cables rated 3600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB301   | 2,5                              | 8,6 ÷ 10,1    | 113                |
| RB302   | 4                                | 9,1 ÷ 10,7    | 134                |
| RB303   | 6                                | 9,6 ÷ 11,2    | 158                |
| RB304   | 10                               | 10,4 ÷ 12,2   | 210                |
| RB305   | 16                               | 11,5 ÷ 13,4   | 272                |
| RB306   | 25                               | 13,7 ÷ 16,1   | 416                |
| RB307   | 35                               | 14,9 ÷ 17,5   | 517                |
| RB308   | 50                               | 16,4 ÷ 19,1   | 680                |
| RB309   | 70                               | 18,0 ÷ 21,1   | 880                |
| RB310   | 95                               | 19,5 ÷ 22,8   | 1120               |
| RB311   | 120                              | 21,4 ÷ 25,1   | 1376               |
| RB312   | 150                              | 22,9 ÷ 26,8   | 1646               |
| RB313   | 185                              | 25,1 ÷ 29,4   | 2034               |
| RB314   | 240                              | 28,3 ÷ 33,1   | 2608               |
| RB315   | 300                              | 30,6 ÷ 35,8   | 3128               |
| RB316   | 400                              | 33,7 ÷ 39,4   | 4205               |

## CONSTRUCTION

**Type:** single core sheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** semiconductive tape to reduce partial discharge effect

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black if not otherwise stated (upon request compound type EI110)

**Tape (optional):** or talcum powder for strippability

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-1 3600V cross-section MM – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

# UNIRAIL S – EN 50264-3-1 3600 V - type MMS

UNIKA (Italy) - EN 50264-3-1 3600 V 70 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 4 (cross-section 2,5 ÷ 400 mm<sup>2</sup>) of EN 50264-3-1 for cables rated 3600V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RC906   | 25                               | 14,8 ÷ 16,5   | 510                |
| RC907   | 35                               | 16,1 ÷ 18,0   | 615                |
| RC908   | 50                               | 17,5 ÷ 19,5   | 770                |
| RC909   | 70                               | 19,1 ÷ 21,5   | 1030               |
| RC910   | 95                               | 21,1 ÷ 23,5   | 1210               |
| RC911   | 120                              | 23,0 ÷ 25,5   | 1550               |
| RC912   | 150                              | 25,0 ÷ 28,0   | 1840               |
| RC913   | 185                              | 27,0 ÷ 30,0   | 2260               |
| RC914   | 240                              | 30,5 ÷ 33,5   | 2850               |

## CONSTRUCTION

**Type:** single core sheathed cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** semiconductive tape to reduce partial discharge effect

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black if not otherwise stated (upon request compound type EI110)

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

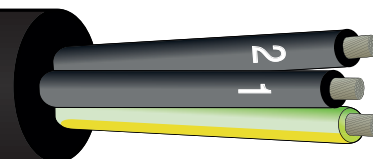
**Marking:** UNIKA (Italy) – EN 50264-3-1 3600V cross-section MMS – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL S – EN 50264-3-2 300 V – type MM

UNIKA (Italy) – EN 50264-3-2 300 V 3x1 MMG - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 (cross-section 1 ÷ 2,5 mm<sup>2</sup>) of EN 50264-3-2 for cables rated 300V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB401   | 2x1                              | 5,3 ÷ 6,2     | 42                 |
| RB425   | 3x1                              | 5,7 ÷ 6,9     | 58                 |
| RB402   | 4x1                              | 6,1 ÷ 7,2     | 67                 |
| RB426   | 5x1                              | 6,9 ÷ 8,1     | 95                 |
| RB403   | 7x1                              | 7,5 ÷ 8,7     | 111                |
| RB428   | 8x1                              | 8,5 ÷ 9,7     | 140                |
| RB404   | 9x1                              | 9,1 ÷ 10,6    | 150                |
| RB427   | 10x1                             | 9,8 ÷ 11,2    | 170                |
| RB405   | 12x1                             | 9,8 ÷ 11,5    | 180                |
| RB433   | 16x1                             | 11,6 ÷ 12,4   | 268                |
| RB436   | 18x1                             | 12,3 ÷ 13,1   | 303                |
| RB406   | 19x1                             | 11,7 ÷ 13,7   | 278                |
| RB407   | 24x1                             | 14,1 ÷ 16,5   | 363                |
| RB408   | 32x1                             | 15,5 ÷ 18,2   | 468                |
| RB409   | 37x1                             | 16,1 ÷ 18,9   | 530                |
| RB410   | 40x1                             | 16,7 ÷ 19,6   | 572                |
| RB411   | 4x1,5                            | 7,3 ÷ 8,6     | 94                 |
| RB434   | 5x1,5                            | 9,0 ÷ 9,8     | 168                |

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB412   | 7x1,5                            | 8,7 ÷ 10,2    | 153                |
| RB429   | 8x1,5                            | 9,8 ÷ 11,0    | 190                |
| RB413   | 9x1,5                            | 10,9 ÷ 12,7   | 197                |
| RB414   | 12x1,5                           | 11,8 ÷ 13,8   | 257                |
| RB415   | 19x1,5                           | 14,2 ÷ 16,6   | 402                |
| RB416   | 24x1,5                           | 16,6 ÷ 19,5   | 503                |
| RB417   | 32x1,5                           | 18,7 ÷ 21,9   | 674                |
| RB418   | 37x1,5                           | 19,5 ÷ 22,8   | 761                |
| RB437   | 3x2,5                            | 7,6 ÷ 8,4     | 122                |
| RB419   | 4x2,5                            | 8,3 ÷ 9,8     | 138                |
| RB420   | 7x2,5                            | 10,2 ÷ 11,9   | 232                |
| RB421   | 9x2,5                            | 12,9 ÷ 15,1   | 309                |
| RB422   | 12x2,5                           | 13,9 ÷ 16,3   | 396                |
| RB423   | 19x2,5                           | 16,3 ÷ 19,1   | 601                |
| RB424   | 24x2,5                           | 19,6 ÷ 22,9   | 776                |
| RB430   | 2x1,5                            | 6,7           | 70                 |
| RB431   | 6x1,5                            | 9,3           | 150                |
| RB432   | 2x2,5                            | 7,5           | 96                 |

Add letter **G** after the item number for cables with yellow/green conductor

## CONSTRUCTION

**Type:** multicore unscreened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers with or without yellow-green if not otherwise stated (upon request compound type EI110)

**Tape:** non-hygroscopic tape on the assembly

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

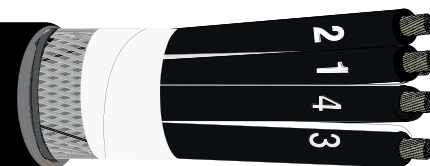
**Marking:** UNIKA (Italy) – EN 50264-3-2 300V (*core number x cross-section*) MM (MMG with yellow-green) – WW/YYYY - *traceability code*

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)



# UNIRAIL S – EN 50264-3-2 300 V – type MMS

UNIKA (Italy) – EN 50264-3-2 300 V 4x2,5 MMS eode



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 2 (cross-section 1 ÷ 2,5 mm<sup>2</sup>) of EN 50264-3-2 for cables rated 300V (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB501   | 2x1                              | 6,0 ÷ 7,1     | 60                 |
| RB525   | 3x1                              | 6,5 ÷ 7,5     | 86                 |
| RB502   | 4x1                              | 7,0 ÷ 8,2     | 94                 |
| RB530   | 6x1                              | 8,1 ÷ 8,9     | 168                |
| RB503   | 7x1                              | 8,2 ÷ 9,6     | 137                |
| RB526   | 8x1                              | 9,4 ÷ 10,6    | 185                |
| RB504   | 9x1                              | 10,2 ÷ 11,9   | 195                |
| RB505   | 12x1                             | 10,9 ÷ 12,7   | 238                |
| RB506   | 19x1                             | 13,2 ÷ 15,4   | 368                |
| RB507   | 24x1                             | 15,2 ÷ 17,8   | 461                |
| RB508   | 32x1                             | 16,6 ÷ 19,4   | 578                |
| RB509   | 37x1                             | 17,2 ÷ 20,1   | 642                |
| RB510   | 40x1                             | 18,2 ÷ 21,3   | 710                |
| RB511   | 4x1,5                            | 8,0 ÷ 9,4     | 119                |
| RB512   | 7x1,5                            | 9,6 ÷ 11,3    | 199                |
| RB527   | 8x1,5                            | 10,4 ÷ 12,4   | 245                |

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB513   | 9x1,5                            | 12,1 ÷ 14,2   | 260                |
| RB532   | 10x1,5                           | 13,1 ÷ 13,9   | 323                |
| RB514   | 12x1,5                           | 13,0 ÷ 15,2   | 324                |
| RB515   | 19x1,5                           | 15,3 ÷ 17,9   | 498                |
| RB516   | 24x1,5                           | 18,1 ÷ 21,2   | 620                |
| RB517   | 32x1,5                           | 19,8 ÷ 23,2   | 803                |
| RB518   | 37x1,5                           | 20,5 ÷ 24,0   | 891                |
| RB531   | 2x2,5                            | 8,3 ÷ 9,1     | 133                |
| RB519   | 4x2,5                            | 9,2 ÷ 10,8    | 180                |
| RB520   | 7x2,5                            | 11,1 ÷ 13,0   | 285                |
| RB521   | 9x2,5                            | 13,9 ÷ 16,3   | 393                |
| RB522   | 12x2,5                           | 15,0 ÷ 17,5   | 488                |
| RB523   | 19x2,5                           | 17,8 ÷ 20,8   | 708                |
| RB524   | 24x2,5                           | 20,6 ÷ 24,1   | 905                |
| RB528   | 2x1,5                            | 7,3           | 101                |
| RB529   | 3x1,5                            | 7,8           | 116                |

## CONSTRUCTION

**Type:** multicore screened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers with or without yellow-green if not otherwise stated (upon request compound type EI110)

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 300V (core number x cross-section) MMS – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

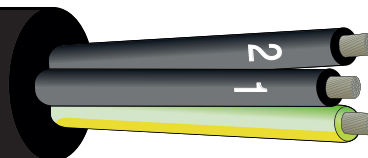
Add letter **G** after the item number for cables with yellow/green conductor

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# UNIRAIL S – EN 50264-3-2 600 V – type MM

UNIKA (Italy) – EN 50264-3-2 600 V 3x1,5 MMG - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 4, 6 e 8 (cross-section 1,5 ÷ 50 mm<sup>2</sup>) of EN 50264-3-2 for cables rated 600V (see IMQ test certificate).

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB601   | 2x1,5                            | 7,2 ÷ 9,0     | 67                 |
| RB602   | 2x2,5                            | 8,0 ÷ 10,0    | 94                 |
| RB603   | 2x4                              | 9,1 ÷ 11,3    | 123                |
| RB604   | 2x6                              | 10,1 ÷ 12,4   | 178                |
| RB605   | 2x10                             | 12,5 ÷ 15,4   | 293                |
| RB606   | 2x16                             | 14,9 ÷ 18,4   | 434                |
| RB607   | 2x25                             | 18,7 ÷ 23,0   | 665                |
| RB608   | 2x35                             | 21,2 ÷ 25,9   | 856                |
| RB609   | 2x50                             | 25,1 ÷ 30,7   | 1140               |
| RB610   | 3x1,5                            | 7,7 ÷ 9,5     | 88                 |
| RB631   | 5x1,5                            | 9,8 ÷ 10,6    | 165                |
| RB632   | 7x1,5                            | 10,5 ÷ 12,0   | 237                |
| RB611   | 3x2,5                            | 8,5 ÷ 10,5    | 124                |
| RB612   | 3x4                              | 9,7 ÷ 12,0    | 169                |
| RB613   | 3x6                              | 10,7 ÷ 13,2   | 248                |
| RB614   | 3x10                             | 13,3 ÷ 16,5   | 392                |
| RB615   | 3x16                             | 16,0 ÷ 19,6   | 590                |

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB616   | 3x25                             | 20,0 ÷ 24,7   | 902                |
| RB617   | 3x35                             | 23,0 ÷ 28,2   | 1167               |
| RB618   | 3x50                             | 26,3 ÷ 32,2   | 1515               |
| RB619   | 4x1,5                            | 8,5 ÷ 10,5    | 109                |
| RB620   | 4x2,5                            | 9,4 ÷ 11,6    | 160                |
| RB621   | 4x4                              | 10,9 ÷ 13,4   | 221                |
| RB622   | 4x6                              | 12,2 ÷ 14,9   | 310                |
| RB623   | 4x10                             | 14,7 ÷ 18,2   | 478                |
| RB624   | 4x16                             | 18,0 ÷ 22,1   | 739                |
| RB633   | 5x16                             | 20,3 ÷ 22,8   | 1040               |
| RB625   | 4x25                             | 22,6 ÷ 27,6   | 1131               |
| RB626   | 3x35+25                          | 25,7 ÷ 31,2   | 1755               |
| RB627   | 3x50+25                          | 30,0 ÷ 36,5   | 1855               |
| RB628   | 5x2,5                            | 9,9 ÷ 11,9    | 207                |
| RB629   | 6x1,5                            | 9,8 ÷ 11,8    | 186                |
| RB630   | 6x2,5                            | 10,9 ÷ 13,1   | 252                |

## CONSTRUCTION

**Type:** multicore unscreened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape for cross-section  $\geq 16 \text{ mm}^2$

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers with or without yellow-green if not otherwise stated (upon request compound type EI110). Colour code according to HD 308 S2 is available.

**Tape:** non-hygroscopic tape on the assembly

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 600V (*core number x cross-section*) MM (MMG with yellow/green) – WW/YYYY - *traceability code*

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

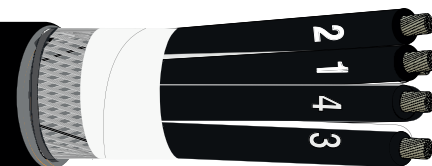
Add letter **G** after the item number for cables with yellow/green conductor

Unless otherwise specified, all values are nominal, other values can be provided on request. The images are made for the sole purpose of illustrating the product and are purely indicative.

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# UNIRAIL S – EN 50264-3-2 600 V – type MMS

UNIKA (Italy) – EN 50264-3-2 600 V 4x6 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 5, 7 and 9 (cross-section 1,5 ÷ 50 mm<sup>2</sup>) of EN 50264-3-2 for cables rated 600V (see IMQ test certificate).

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB701   | 2x1,5                            | 7,9 ÷ 9,9     | 94                 |
| RB710   | 3x1,5                            | 8,4 ÷ 10,4    | 118                |
| RB719   | 4x1,5                            | 9,1 ÷ 11,3    | 142                |
| RB728   | 6x1,5                            | 10,3 ÷ 12,6   | 226                |
| RB730   | 7x1,5                            | 10,3 ÷ 12,6   | 237                |
| RB732   | 8x1,5                            | 11,0 ÷ 13,3   | 290                |
| RB702   | 2x2,5                            | 8,7 ÷ 10,7    | 125                |
| RB711   | 3x2,5                            | 9,2 ÷ 11,4    | 157                |
| RB720   | 4x2,5                            | 10,4 ÷ 12,9   | 212                |
| RB729   | 6x2,5                            | 11,5 ÷ 13,7   | 298                |
| RB703   | 2x4                              | 10,2 ÷ 12,7   | 175                |
| RB712   | 3x4                              | 10,8 ÷ 13,3   | 226                |
| RB721   | 4x4                              | 11,8 ÷ 14,5   | 281                |
| RB704   | 2x6                              | 10,9 ÷ 13,6   | 233                |
| RB713   | 3x6                              | 11,6 ÷ 14,3   | 307                |
| RB722   | 4x6                              | 13,1 ÷ 16,1   | 375                |
| RB705   | 2x10                             | 13,4 ÷ 16,6   | 357                |
| RB714   | 3x10                             | 14,4 ÷ 18,0   | 503                |

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB723   | 4x10                             | 15,9 ÷ 19,5   | 592                |
| RB706   | 2x16                             | 16,0 ÷ 19,8   | 533                |
| RB715   | 3x16                             | 17,4 ÷ 21,3   | 721                |
| RB724   | 4x16                             | 19,3 ÷ 23,6   | 870                |
| RB731   | 5x16                             | 21,0 ÷ 25,3   | 1180               |
| RB707   | 2x25                             | 19,8 ÷ 24,6   | 789                |
| RB716   | 3x25                             | 21,3 ÷ 26,1   | 1061               |
| RB725   | 4x25                             | 24,0 ÷ 29,3   | 1314               |
| RB708   | 2x35                             | 22,8 ÷ 27,9   | 1044               |
| RB717   | 3x35                             | 24,5 ÷ 29,8   | 1368               |
| RB709   | 2x50                             | 26,4 ÷ 32,3   | 1347               |
| RB718   | 3x50                             | 28,3 ÷ 34,6   | 1761               |
| RB733   | 4x95                             | 41,0 ÷ 48,3   | 5000               |
| RB726   | 3x35+25                          | 26,9 ÷ 32,9   | 1662               |
| RB727   | 3x50+25                          | 31,5 ÷ 38,2   | 2344               |
| RB734   | 4G10+2x1,5                       | 20,0 ÷ 20,8   | 650                |

Add letter **G** after the item number for cables with yellow/green conductor

## CONSTRUCTION

**Type:** multicore screened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape for cross-section  $\geq 16 \text{ mm}^2$

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers with or without yellow-green if not otherwise stated (upon request compound type EI110). Colour code according to HD 308 S2 is available.

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 600V (*core number x cross-section*) MMS – WW/YYYY - *traceability code*

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL S – EN 50264-3-2 300 V – type MM – EN 50200

UNIKA (Italy) – EN 50264-3-2 300 V MM - EN 50200 PH120 - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 of EN 50264-3-2 for cables rated 600V (see IMQ test certificate) with fire resisting time not below 120 min

| Item n° | Cross-section [mm²] | Max. outer diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|--------------------------|--------------------|
| RB900   | 2x0,50              | 6,0                      | 44                 |
| RB910   | 3x0,50              | 6,3                      | 51                 |
| RB908   | 4x0,50              | 7,2                      | 66                 |
| RB911   | 6x0,50              | 8,7                      | 91                 |
| RB909   | 2x0,75              | 6,5                      | 50                 |
| RB907   | 3x0,75              | 7,0                      | 63                 |
| RB901   | 2x1                 | 8,0                      | 53                 |
| RB905   | 3x1                 | 8,5                      | 74                 |
| RB906   | 4x1                 | 9,0                      | 92                 |
| RB904   | 6x1                 | 9,6                      | 135                |
| RB902   | 2x1,5               | 8,5                      | 81                 |
| RB913   | 3x1,5               | 9,0                      | 95                 |
| RB916   | 4x1,5               | 10,0                     | 120                |
| RB903   | 2x2,5               | 9,5                      | 106                |
| RB914   | 3x2,5               | 10,0                     | 135                |
| RB917   | 4x2,5               | 11,0                     | 175                |
| RB912   | 2x4                 | 10,8                     | 150                |
| RB915   | 3x4                 | 11,5                     | 180                |
| RB918   | 4x4                 | 12,8                     | 240                |

## CONSTRUCTION

**Type:** multicore cable, fire resistant

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** mica tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers

**Tape:** non-hygroscopic tape on the assembly

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour red if not otherwise stated

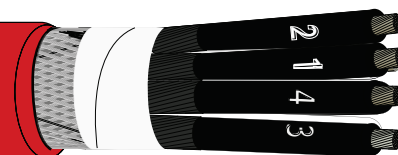
**Marking:** UNIKA (Italy) – EN 50264-3-2 300V cross-section MM – EN 50200 PH120 - WW/YYYY - *traceability code*

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

The characteristics of the products, described in the data sheet, do not constitute any contractual binding. UNIKA spa reserves the right to change the specifications without any notice. Partial or total reproduction of this document is forbidden.

# UNIRAIL S – EN 50264-3-2 300 V – type MMS – EN 50200

UNIKA (Italy) — EN 50264-3-1 300 V MMS - EN 50200 PH120 - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 of EN 50264-3-2 for cables rated 600V (see IMQ test certificate) with fire resisting time not below 120 min

| Item n° | Cross-section [mm²] | Max. outer diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|--------------------------|--------------------|
| RB900S  | 2x0,50              | 6,5                      | 64                 |
| RB915S  | 3x0,50              | 6,7                      | 68                 |
| RB908S  | 4x0,50              | 7,6                      | 82                 |
| RB912S  | 3x2x0,50            | 11,0                     | 150                |
| RB910S  | 7x0,50              | 9,5                      | 133                |
| RB914S  | 8x0,50              | 10,0                     | 150                |
| RB913S  | 2x0,75              | 7,9                      | 72                 |
| RB907S  | 3x0,75              | 8,2                      | 90                 |
| RB909S  | 4x0,75              | 8,6                      | 101                |
| RB911S  | 2x2x0,75            | 11,2                     | 135                |
| RB916S  | 1x1                 | 5,5                      | 40                 |
| RB901S  | 2x1                 | 8,5                      | 77                 |
| RB905S  | 3x1                 | 9,0                      | 100                |
| RB906S  | 4x1                 | 10,0                     | 122                |
| RB904S  | 6x1                 | 11,8                     | 176                |

| Item n° | Cross-section [mm²] | Max. outer diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|--------------------------|--------------------|
| RB917S  | 1X1,5               | 6,0                      | 45                 |
| RB918S  | 1X2,5               | 6,5                      | 60                 |
| RB902S  | 2x1,5               | 9,2                      | 109                |
| RB921S  | 3X1,5               | 9,6                      | 125                |
| RB924S  | 4x1,5               | 10,8                     | 155                |
| RB927S  | 6x1,5               | 13,0                     | 215                |
| RB903S  | 2x2,5               | 10,2                     | 143                |
| RB922S  | 3x2,5               | 10,8                     | 165                |
| RB925S  | 4x2,5               | 11,8                     | 210                |
| RB928S  | 6X2,5               | 14,2                     | 290                |
| RB919S  | 1x4                 | 7,0                      | 80                 |
| RB920S  | 2x4                 | 11,5                     | 190                |
| RB923S  | 3X4                 | 12,2                     | 225                |
| RB926S  | 4x4                 | 14,0                     | 280                |
| RB929S  | 6x4                 | 16,2                     | 420                |

## CONSTRUCTION

**Type:** multicore screened cable, fire resistant

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** mica tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour red if not otherwise stated

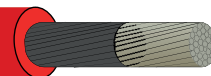
**Marking:** UNIKA (Italy) – EN 50264-3-2 300V cross-section MMS – EN 50200 PH120 - WW/YYYY traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL S – EN 50264-3-1 600 V – type M – EN 50200

UNIKA (Italy) - EN 50264-3-1 600 V 6 M - EN 50200 PH120 - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 (cross-section 1 ÷ 400 mm²) of EN 50264-3-1 for cables rated 600V (see IMQ test certificate) with fire resisting time not below 120 min

| Item n° | Cross-section [mm²] | Max. outer diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|--------------------------|--------------------|
| RB819*  | 0,50                | 2,8                      | 10                 |
| RB820*  | 0,75                | 3,0                      | 13                 |
| RB801   | 1                   | 3,1                      | 17                 |
| RB802   | 1,5                 | 3,6                      | 23                 |
| RB803   | 2,5                 | 4,1                      | 33                 |
| RB804   | 4                   | 4,7                      | 47                 |
| RB805   | 6                   | 5,3                      | 67                 |
| RB806   | 10                  | 6,4                      | 106                |
| RB807   | 16                  | 7,6                      | 158                |
| RB808   | 25                  | 9,4                      | 248                |
| RB809   | 35                  | 10,9                     | 331                |
| RB810   | 50                  | 12,7                     | 474                |
| RB811   | 70                  | 14,9                     | 655                |
| RB812   | 95                  | 16,6                     | 871                |
| RB813   | 120                 | 18,7                     | 1095               |
| RB814   | 150                 | 20,9                     | 1363               |
| RB815   | 185                 | 23,2                     | 1699               |
| RB816   | 240                 | 26,3                     | 2197               |
| RB817   | 300                 | 29,1                     | 2689               |
| RB818   | 400                 | 33,2                     | 3800               |

\*Out of the scope of the Standard.

## CONSTRUCTION

**Type:** single core cable unsheathed, fire resistant

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** mica tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour red if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-1 600V cross-section M – EN 50200 PH120 - traceability code

Outer diameter ≥ 20 mm  
UNIKA (Italy) – EN 50264-3-1 600V cross-section M – EN 50362 PH120 - WW/YYYY - traceability code

**Fire safety: hazard level HL3**  
according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Add the following letter after the item number for colours different from red  
**C:** yellow/green  
**Y:** grey  
**B:** blue  
**W:** brown  
**H:** white  
**K:** black

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# UNIRAIL S – EN 50264-3-2 600 V – type MM – EN 50200

UNIKA (Italy) – EN 50264-3-2 600 V MM – EN 50200 PH120 – code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 of EN 50264-3-2 for cables rated 600V (see IMQ test certificate) with fire resisting time not below 120 min

| Item n° | Cross-section [mm²] | Max. outer diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|--------------------------|--------------------|
| RBA00   | 2x1,5               | 9,8                      | 92                 |
| RBA01   | 2x2,5               | 10,7                     | 122                |
| RBA02   | 3x1,5               | 10,3                     | 106                |
| RBA03   | 3x2,5               | 11,3                     | 146                |
| RBA04   | 4x1,5               | 11,5                     | 137                |
| RBA05   | 4x2,5               | 12,4                     | 186                |
| RBA06   | 2x4                 | 12,0                     | 163                |

## CONSTRUCTION

**Type:** multicore cable fire resistant

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** mica tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers

**Tape:** non-hygroscopic tape on the assembly

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour red if not otherwise stated

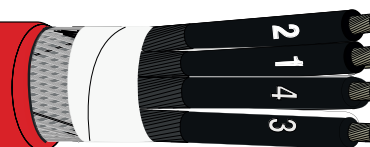
**Marking:** UNIKA (Italy) – EN 50264-3-2 600V cross-section MM – EN 50200 PH120 - WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)



# UNIRAIL S – EN 50264-3-2 600 V – type MMS – EN 50200

UNIKA (Italy) – EN 50264-3-2 300 V MMS - EN 50200 PH120 - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table 1 of EN 50264-3-2 for cables rated 600V (see IMQ test certificate) with fire resisting time not below 120 min

| Item n° | Cross-section [mm²] | Max. outer diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|--------------------------|--------------------|
| RBA00S  | 2x1,5               | 10,9                     | 129                |
| RBA01S  | 2x2,5               | 11,3                     | 163                |
| RBA02S  | 3x1,5               | 11,0                     | 146                |
| RBA03S  | 3x2,5               | 12,1                     | 190                |
| RBA04S  | 4x1,5               | 12,1                     | 184                |
| RBA05S  | 4x2,5               | 13,5                     | 233                |

## CONSTRUCTION

**Type:** multicore screened cable, fire resistant

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape:** mica tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour red if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 600V cross-section MMS – EN 50200 PH120 - WW/YYYY - traceability code

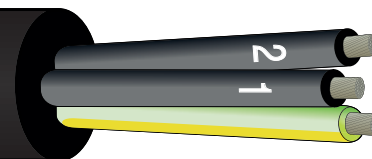
**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL P – EN 50264-3-2 300 V – type MM

UNIKA (Italy) – EN 50264-3-2 300 V 3x1 MMG - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

$(2 \div 64) \times (0,25 \div 0,75)$

(core number x cross-section)

According to EN 50264-3-2:2008 (as far as applicable) and UNIKA technical specification ref. 108/2015 rev.2 2015 (see IMQ test certificate)

| Item n° | Cross-section [mm²] | Diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|---------------|--------------------|
| RB4022  | 2x0,25              | 4,1 ÷ 5,3     | 24                 |
| RB4032  | 3x0,25              | 4,3 ÷ 5,5     | 34                 |
| RB4042  | 4x0,25              | 4,7 ÷ 5,9     | 40                 |
| RB4052  | 5x0,25              | 5,1 ÷ 6,3     | 45                 |
| RB4062  | 6x0,25              | 5,6 ÷ 6,8     | 52                 |
| RB4072  | 7x0,25              | 5,8 ÷ 7,0     | 57                 |
| RB4092  | 9x0,25              | 6,7 ÷ 7,9     | 70                 |
| RB4122  | 12x0,25             | 7,5 ÷ 8,7     | 87                 |
| RB4182  | 18x0,25             | 9 ÷ 10,2      | 126                |
| RB4242  | 24x0,25             | 10,9 ÷ 12,5   | 166                |
| RB4272  | 27x0,25             | 11,1 ÷ 12,7   | 181                |
| RB4322  | 32x0,25             | 11,9 ÷ 13,5   | 208                |
| RB4362  | 36x0,25             | 12,4 ÷ 14,0   | 231                |
| RB4402  | 40x0,25             | 12,8 ÷ 14,4   | 250                |
| RB4642  | 64x0,25             | 15,6 ÷ 17,8   | 398                |
| RB4024  | 2x0,50              | 4,6 ÷ 5,8     | 32                 |
| RB4034  | 3x0,50              | 4,8 ÷ 6,0     | 45                 |
| RB4044  | 4x0,50              | 5,3 ÷ 6,5     | 55                 |
| RB4054  | 5x0,50              | 5,8 ÷ 7,0     | 64                 |
| RB4064  | 6x0,50              | 6,3 ÷ 7,5     | 73                 |
| RB4074  | 7x0,50              | 6,5 ÷ 7,7     | 81                 |
| RB4084  | 8x0,50              | 7,2 ÷ 8,4     | 94                 |
| RB4094  | 9x0,50              | 7,6 ÷ 8,8     | 101                |
| RB4124  | 12x0,50             | 8,5 ÷ 9,7     | 131                |
| RB4184  | 18x0,50             | 10,2 ÷ 11,8   | 189                |

## CONSTRUCTION

**Type:** multicore unscreened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1 (upon request compound type EI110).

Colours for cross-section from 0,5 mm²: black with numbers with or without yellow-green if not otherwise stated.

Colours for cross-section 0,25 mm²: DIN 47100

**Tape:** non-hygroscopic tape on the assembly

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 300V (*core number x cross-section*) MM (MMG with yellow-green) – WW/YYYY - *traceability code*

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Unless otherwise specified, all values are nominal, other values can be provided on request. The images are made for the sole purpose of illustrating the product and are purely indicative.

| Item n°       | Cross-section [mm²] | Diameter [mm] | Cable mass [kg/km] |
|---------------|---------------------|---------------|--------------------|
| <b>RB4244</b> | 24x0,50             | 12,4 ÷ 14,0   | 245                |
| <b>RB4274</b> | 27x0,50             | 12,6 ÷ 14,2   | 268                |
| <b>RB4324</b> | 32x0,50             | 13,6 ÷ 15,8   | 322                |
| <b>RB4364</b> | 36x0,50             | 14,1 ÷ 16,3   | 362                |
| <b>RB4404</b> | 40x0,50             | 14,6 ÷ 16,8   | 395                |
| <b>RB4644</b> | 64x0,50             | 17,8 ÷ 20     | 617                |
| <b>RB4025</b> | 2x0,75              | 5 ÷ 6,2       | 40                 |
| <b>RB4035</b> | 3x0,75              | 5,2 ÷ 6,4     | 51                 |
| <b>RB4045</b> | 4x0,75              | 5,8 ÷ 7,0     | 62                 |
| <b>RB4055</b> | 5x0,75              | 6,3 ÷ 7,5     | 74                 |
| <b>RB4065</b> | 6x0,75              | 6,9 ÷ 8,1     | 85                 |
| <b>RB4075</b> | 7x0,75              | 7,1 ÷ 8,3     | 95                 |
| <b>RB4095</b> | 9x0,75              | 8,3 ÷ 9,5     | 119                |
| <b>RB4125</b> | 12x0,75             | 9,3 ÷ 10,5    | 156                |
| <b>RB4185</b> | 18x0,75             | 11,2 ÷ 12,8   | 222                |
| <b>RB4245</b> | 24x0,75             | 13,6 ÷ 15,8   | 288                |
| <b>RB4275</b> | 27x0,75             | 13,8 ÷ 16,0   | 319                |
| <b>RB4325</b> | 32x0,75             | 14,9 ÷ 17,1   | 373                |
| <b>RB4365</b> | 36x0,75             | 15,5 ÷ 17,7   | 422                |
| <b>RB4405</b> | 40x0,75             | 16,1 ÷ 18,3   | 464                |
| <b>RB4645</b> | 64x0,75             | 19,6 ÷ 21,8   | 735                |

Add letter **G** after the item number for cables with yellow/green conductor

Add letter **D** after the item number for DIN 47100 cores identification fir cross-section  $\geq 0,50 \text{ mm}^2$

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# UNIRAIL P – EN 50264-3-2 300 V – type MMS

UNIKA (Italy) – EN 50264-3-2 300 V 4x0,50 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

$(2 \div 25) \times 2 \times (0,25 \div 0,75) \text{ mm}^2$

(core number)  $\times 2 \times$  (cross-section)

$(2 \div 25) \times 3 \times (0,25 \div 0,75) \text{ mm}^2$

(core number)  $\times 3 \times$  (cross-section)

According to EN 50264-3-2:2008 (as far as applicable) and UNIKA technical specification ref. 108/2015 rev.2 2015 (see IMQ test certificate)

| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RB5022  | 2x0,25                           | 4,6 ÷ 5,8     | 36                 |
| RB5032  | 3x0,25                           | 4,8 ÷ 6,0     | 42                 |
| RB5042  | 4x0,25                           | 5,2 ÷ 6,4     | 49                 |
| RB5052  | 5x0,25                           | 5,6 ÷ 6,8     | 55                 |
| RB5062  | 6x0,25                           | 6,1 ÷ 7,3     | 62                 |
| RB5072  | 7x0,25                           | 6,3 ÷ 7,5     | 71                 |
| RB5092  | 9x0,25                           | 7,4 ÷ 8,6     | 96                 |
| RB5122  | 12x0,25                          | 8,2 ÷ 9,4     | 115                |
| RB5182  | 18x0,25                          | 9,7 ÷ 10,9    | 158                |
| RB5242  | 24x0,25                          | 11,6 ÷ 13,2   | 213                |
| RB5372  | 27x0,25                          | 11,8 ÷ 13,4   | 230                |
| RB5322  | 32x0,25                          | 12,8 ÷ 14,4   | 274                |
| RB5362  | 36x0,25                          | 13,3 ÷ 15,5   | 306                |
| RB5402  | 40x0,25                          | 13,7 ÷ 15,9   | 332                |
| RB5642  | 64x0,25                          | 16,5 ÷ 18,7   | 477                |
| RB5024  | 2x0,50                           | 5,1 ÷ 6,3     | 49                 |
| RB5034  | 3x0,50                           | 5,3 ÷ 6,5     | 58                 |
| RB5044  | 4x0,50                           | 5,8 ÷ 7,0     | 70                 |
| RB5054  | 5x0,50                           | 6,3 ÷ 7,5     | 82                 |
| RB5064  | 6x0,50                           | 7,0 ÷ 8,2     | 102                |
| RB5074  | 7x0,50                           | 7,2 ÷ 8,4     | 113                |
| RB5084  | 8x0,50                           | 7,9 ÷ 9,1     | 125                |

## CONSTRUCTION

**Type:** multicore screened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1 (upon request compound type EI110).

Colours for cross-section from 0,5 mm<sup>2</sup>: black with numbers with or without yellow-green if not otherwise stated.

Colours for cross-section 0,25 mm<sup>2</sup>: DIN 47100

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 300V (core number x cross-section) MMS – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Unless otherwise specified, all values are nominal, other values can be provided on request. The images are made for the sole purpose of illustrating the product and are purely indicative.

| Item n° | Cross-section [mm²] | Diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|---------------|--------------------|
| RB5094  | 9x0,50              | 8,3 ÷ 9,5     | 141                |
| RB5124  | 12x0,50             | 9,2 ÷ 10,4    | 174                |
| RB5144  | 14x0,50             | 10,2 ÷ 10,8   | 195                |
| RB5184  | 18x0,50             | 10,9 ÷ 12,5   | 250                |
| RB5244  | 24x0,50             | 13,3 ÷ 15,5   | 358                |
| RB5374  | 27x0,50             | 13,5 ÷ 15,7   | 388                |
| RB5324  | 32x0,50             | 14,5 ÷ 16,7   | 439                |
| RB5364  | 36x0,50             | 15,0 ÷ 17,2   | 480                |
| RB5404  | 40x0,50             | 15,5 ÷ 17,7   | 520                |
| RB5644  | 64x0,50             | 18,9 ÷ 21,1   | 791                |
| RB5025  | 2x0,75              | 5,5 ÷ 6,7     | 53                 |
| RB5035  | 3x0,75              | 5,8 ÷ 7,0     | 60                 |
| RB5045  | 4x0,75              | 6,3 ÷ 7,5     | 69                 |
| RB5055  | 5x0,75              | 7,0 ÷ 8,2     | 90                 |
| RB5065  | 6x0,75              | 7,6 ÷ 8,8     | 105                |
| RB5075  | 7x0,75              | 7,8 ÷ 9,0     | 118                |
| RB5085  | 8x0,75              | 8,3 ÷ 9,1     | 141                |
| RB5095  | 9x0,75              | 9,0 ÷ 10,2    | 145                |
| RB5125  | 12x0,75             | 10,0 ÷ 11,6   | 181                |
| RB5185  | 18x0,75             | 11,9 ÷ 13,5   | 262                |
| RB5245  | 24x0,75             | 14,5 ÷ 16,7   | 371                |
| RB5375  | 27x0,75             | 14,7 ÷ 16,9   | 403                |
| RB5325  | 32x0,75             | 15,8 ÷ 18,0   | 463                |
| RB5365  | 36x0,75             | 16,4 ÷ 18,6   | 509                |
| RB5405  | 40x0,75             | 17,0 ÷ 19,2   | 557                |
| RB5645  | 64x0,75             | 20,7 ÷ 22,9   | 859                |

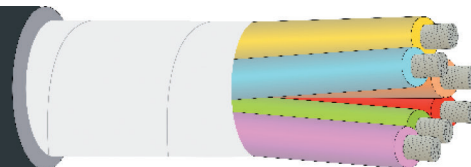
Add letter **G** after the item number for cables with yellow/green conductor

Add letter **D** after the item number for DIN 47100 cores identification for cross-section  $\geq 0,50 \text{ mm}^2$

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# UNIRAIL P – EN 50264-3-2 300 V – type MM

UNIKA (Italy) - EN 50264-3-2 300V 3x2x0,25 MM - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

$(2 \div 25) \times 2 \times (0,25 \div 0,75) \text{ mm}^2$

(core number)  $\times 2 \times$  (cross-section)

$(2 \div 25) \times 3 \times (0,25 \div 0,75) \text{ mm}^2$

(core number)  $\times 3 \times$  (cross-section)

According to EN 50264-3-2:2008 (as far as applicable) and UNIKA technical specification ref. 108/2015 rev.2 (see IMQ test certificate).

## CONSTRUCTION

**Type:** multipair unscreened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, (upon request compound type EI110). Colours for cross section from 0,5 mm<sup>2</sup>: pairs blue-white, triples: blue-white-red, with black numbers. Colours for cross-section 0,25 mm<sup>2</sup>: DIN 47100

**Assembly:** cores are twisted into pairs or triples and pairs or triples are stranded together in concentric layers

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 300V (number of pairs)  $\times 2 \times$  cross-section MM – traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

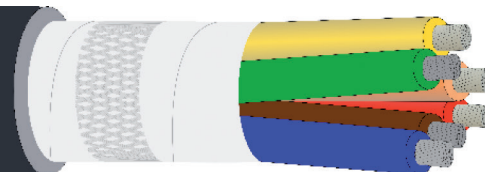
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| Item n° | Cross-section [mm <sup>2</sup> ] | Diameter [mm] | Cable mass [kg/km] |
|---------|----------------------------------|---------------|--------------------|
| RC8042  | 2x2x0,25                         | 6,0 ÷ 7,2     | 42                 |
| RC8082  | 4x2x0,25                         | 7,0 ÷ 8,2     | 64                 |
| RC8162  | 8x2x0,25                         | 9,8 ÷ 11      | 116                |
| RC8362  | 18x2x0,25                        | 13,8 ÷ 16     | 245                |
| RC8502  | 25x2x0,25                        | 16,7 ÷ 18,9   | 341                |
| RC8032  | 2x3x0,25                         | 6,7 ÷ 7,9     | 54                 |
| RC8122  | 4x3x0,25                         | 7,2 ÷ 9,1     | 86                 |
| RC8044  | 2x2x0,50                         | 6,8 ÷ 8,0     | 56                 |
| RC8084  | 4x2x0,50                         | 8,0 ÷ 9,2     | 91                 |
| RC8164  | 8x2x0,50                         | 11,2 ÷ 12,8   | 173                |
| RC8364  | 18x2x0,50                        | 16, ÷ 18,5    | 378                |
| RC8504  | 25x2x0,50                        | 19,1 ÷ 21,3   | 498                |
| RC8064  | 2x3x0,50                         | 7,6 ÷ 8,8     | 74                 |
| RC8124  | 4x3x0,50                         | 9,2 ÷ 10,4    | 129                |
| RC8045  | 2x2x0,75                         | 6,8 ÷ 8,0     | 67                 |
| RC8085  | 4x2x0,75                         | 8,0 ÷ 9,2     | 113                |
| RC8165  | 8x2x0,75                         | 11,2 ÷ 12,8   | 217                |
| RC8365  | 18x2x0,75                        | 16,3 ÷ 18,5   | 477                |
| RC8505  | 25x2x0,75                        | 19,1 ÷ 21,3   | 635                |
| RC8065  | 2x3x0,75                         | 7,6 ÷ 8,8     | 91                 |
| RC8125  | 4x3x0,75                         | 9,2 ÷ 10,4    | 162                |

# UNIRAIL P – EN 50264-3-2 300 V – type MMS

UNIKA (Italy) - EN 50264-3-2 300V 3x2x0,25 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

$(2 \div 25) \times 2 \times (0,25 \div 0,75) \text{ mm}^2$

(core number)  $\times 2 \times$  (cross-section)

$(2 \div 25) \times 3 \times (0,25 \div 0,75) \text{ mm}^2$

(core number)  $\times 3 \times$  (cross-section)

According to EN 50264-3-2:2008 (as far as applicable) and UNIKA technical specification ref. 108/2015 rev.2 (see IMQ test certificate).

| Item n° | Cross-section [mm²] | Diameter [mm] | Cable mass [kg/km] |
|---------|---------------------|---------------|--------------------|
| RC7042  | 2x2x0,25            | 6,5 ÷ 7,7     | 49                 |
| RC7082  | 4x2x0,25            | 7,7 ÷ 8,9     | 75                 |
| RC7162  | 8x2x0,25            | 10,5 ÷ 12,1   | 135                |
| RC7362  | 18x2x0,25           | 14,7 ÷ 16,9   | 270                |
| RC7502  | 25x2x0,25           | 17,5 ÷ 19,7   | 364                |
| RC7062  | 2x3x0,25            | 7,4 ÷ 8,6     | 65                 |
| RC7122  | 4x3x0,25            | 8,5 ÷ 9,7     | 96                 |
| RC7123* | 4x(3x0,34)          | 10,9 ÷ 12,5   | 210                |
| RC7044  | 2x2x0,50            | 7,5 ÷ 8,7     | 80                 |
| RC7084  | 4x2x0,50            | 8,7 ÷ 9,9     | 120                |
| RC7164  | 8x2x0,50            | 11,9 ÷ 13,5   | 213                |
| RC7364  | 18x2x0,50           | 17,1 ÷ 19,3   | 458                |
| RC7504  | 25x2x0,50           | 20,2 ÷ 22,4   | 588                |
| RC7064  | 2x3x0,50            | 8,3 ÷ 9,5     | 103                |
| RC7124  | 4x3x0,50            | 9,9 ÷ 11,5    | 162                |
| RC7045  | 2x2x0,75            | 8,2 ÷ 9,4     | 109                |
| RC7085  | 4x2x0,75            | 9,7 ÷ 10,9    | 166                |
| RC7165  | 8x2x0,75            | 13,0 ÷ 15,2   | 292                |
| RC7065  | 2x3x0,75            | 9,3 ÷ 10,5    | 114                |
| RC7125  | 4x3x0,75            | 10,8 ÷ 12,4   | 188                |

\*screen over the triples and over the complete stranding

## CONSTRUCTION

**Type:** multipair screened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, (upon request compound type EI110). Colours for cross section from 0,5 mm²: pairs blue-white, triples: blue-white-red, with black numbers. Colours for cross-section 0,25 mm²: DIN 47100

**Assembly:** cores are twisted into pairs or triples and pairs or triples are stranded together in concentric layers

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 300V (number of pairs)  $\times 2 \times$  cross-section MM – traceability code

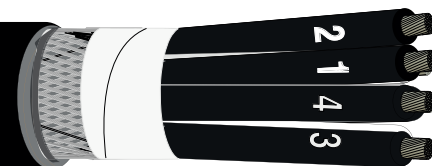
**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL P – EN 50264-3-2 300 V – type MMS

UNIKA (Italy) – EN 50264-3-2 300 V 4x0,50 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, fuels, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

$(3 \times 0,50) + (3 \div 26) \times 0,50 \text{ mm}^2$

According to EN 50264-3-2:2008 (as far as applicable) and UNIKA technical specification ref. 108/2015 rev.2 (see IMQ test certificate)

| Item n°       | Cross-section [mm <sup>2</sup> ]   | Diameter [mm]    | Cable mass [kg/km] |
|---------------|------------------------------------|------------------|--------------------|
| <b>RC7064</b> | $(3 \times 0,50) + 3 \times 0,50$  | $7,6 \div 9,0$   | 102                |
| <b>RC7154</b> | $(3 \times 0,50) + 12 \times 0,50$ | $10,0 \div 11,3$ | 186                |
| <b>RC7294</b> | $(3 \times 0,50) + 26 \times 0,50$ | $12,9 \div 14,3$ | 324                |

Add letter **G** after the item number for cables with yellow/green conductor

## CONSTRUCTION

**Type:** multicore hybrid screened cable

**Conductor:** tinned copper conductor according to class 5 EN 60228

**Tape (optional):** coloured tape

**Insulation:** crosslinked compound, type EI109 according to Standard EN 50264-1, colour black with numbers with or without yellow-green if not otherwise stated (upon request compound type EI110)

**Assembly:** cores are stranded together a screened triples in concentric layers

**Tape:** non-hygroscopic tape on the assembly

**Screen:** tinned copper wire braid with optional non-hygroscopic tape

**Sheath:** crosslinked compound, type EM104 according to Standard EN 50264-1, colour black if not otherwise stated

**Marking:** UNIKA (Italy) – EN 50264-3-2 300V  $(3 \times 0,50) + \text{core number} \times 0,50$  MMS – WW/YYYY - traceability code

**Fire safety: hazard level HL3** according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL TW – EN 50306-2 300 V – type M

Single core cable

UNIKA (Italy) - EN 50306-2 300 V 1 M - code

## TECHNICAL DATA

Temperature rating up to and including 105°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table TW1 (cross-section 0,5 ÷ 2,5 mm<sup>2</sup>) of EN 50306-2 for cables rated 300V (see IMQ test certificate) and HITACHI specification 211NW50282B

Table TW1 - dimensional data

| Item n°              | Cross-section [mm <sup>2</sup> ] | Conductor n° wires x wire diameter [mm] | Diameter [mm] |
|----------------------|----------------------------------|-----------------------------------------|---------------|
| RM006 <sup>(1)</sup> | 0,34                             | 19x0,15                                 | 1,15÷1,31     |
| RM001                | 0,5                              | 19x0,18                                 | 1,15÷1,45     |
| RM002                | 0,75                             | 37x0,16                                 | 1,35÷1,65     |
| RM003                | 1                                | 37x0,18 <sup>(2)</sup>                  | 1,40÷1,80     |
| RM004                | 1,5                              | 37x0,23 <sup>(2)</sup>                  | 1,90÷2,30     |
| RM005                | 2,5                              | 37x0,30 <sup>(2)</sup>                  | 2,45÷2,85     |

Note (1): out of the scope of the standard

Note (2): conductors with 19 wires are allowed

## CONSTRUCTION

**Conductor:** tinned copper conductor according to table TW1

**Insulation:** double layer of special compound

**Marking:** UNIKA (Italy) – EN 50306-2 300V cross-section M – WW/YYYY - traceability code

**Fire safety:** hazard level HL3 according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Add the following letter after the item number for colours different from white

**G:** yellow/green

**Y:** grey

**B:** blue

**R:** red

**W:** brown

**K:** black

**V:** greengreen

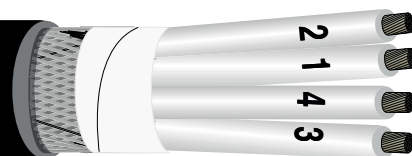
The characteristics of the products, described in the data sheet, do not constitute any contractual binding. UNIKA spa reserves the right to change the specifications without any notice. Partial or total reproduction of this document is forbidden.



# UNIRAIL TW – EN 50306-3 300 V – type MMS

Single core and multicore cables, screened and thin wall sheathed

UNIKA (Italy) – EN 50306-3 300 V 4x1,5 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table TW2 of EN 50306-3 for cables rated 300V (see IMQ test certificate)

## CONSTRUCTION

**Conductor:** tinned copper conductor according to table TW1

**Insulation:** double layer of special compound

**Identification:** numbered white cores (other identification methods may be agreed)

**Laying-up:** cores are twisted together in multicore cables with optional non-hygroscopic tape

**Screen:** tinned copper wire braid

**Sheath:** cross-linked compound type S2 according to EN 50306-1 for rated temperature 90°C, colour black

**Marking:** UNIKA (Italy) – EN 50306-3 300V (n°cores)x(cross-section) MMS 90 – WW/YYYY - traceability code

**Fire safety:** hazard level HL3 according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Table TW2 - Dimensional data

| Item n° | Conductor<br>n° wires x cross-<br>section [mm²] | Diameter<br>[mm] | Item n° | Conductor<br>n° wires x cross-<br>section [mm²] | Diameter<br>[mm] |
|---------|-------------------------------------------------|------------------|---------|-------------------------------------------------|------------------|
| RM501   | 1x0,5                                           | 2,3÷2,9          | RM512   | 4x1                                             | 5,0÷6,2          |
| RM502   | 2x0,5                                           | 3,5÷4,4          | RM528   | 6x1                                             | 6,3÷7,3          |
| RM503   | 3x0,5                                           | 3,7÷4,7          | RM524   | 7x1                                             | 6,4÷7,4          |
| RM504   | 4x0,5                                           | 4,0÷5,2          | RM529   | 8x1                                             | 7,5÷8,5          |
| RM521   | 6x0,5                                           | 5,5÷6,5          | RM513   | 1x1,5                                           | 3,1÷3,6          |
| RM525   | 8x0,5                                           | 6,1÷7,1          | RM514   | 2x1,5                                           | 5,1÷6,1          |
| RM522   | 16x0,5                                          | 7,5÷8,5          | RM515   | 3x1,5                                           | 5,4÷6,4          |
| RM505   | 1x0,75                                          | 2,5÷3,1          | RM516   | 4x1,5                                           | 6,0÷7,0          |
| RM506   | 2x0,75                                          | 3,9÷4,8          | RM523   | 5x1,5                                           | 6,6÷7,6          |
| RM507   | 3x0,75                                          | 4,0÷5,2          | RM530   | 6x1,5                                           | 7,3÷8,3          |
| RM508   | 4x0,75                                          | 4,5÷5,7          | RM531   | 8x1,5                                           | 8,5÷9,5          |
| RM526   | 6x0,75                                          | 6,1÷7,1          | RM517   | 1x2,5                                           | 3,6÷4,5          |
| RM527   | 8x0,75                                          | 7,3÷8,3          | RM518   | 2x2,5                                           | 6,4÷7,5          |
| RM509   | 1x1                                             | 2,7÷3,3          | RM519   | 3x2,5                                           | 6,8÷8,0          |
| RM510   | 2x1                                             | 4,2÷5,3          | RM520   | 4x2,5                                           | 7,5÷8,7          |
| RM511   | 3x1                                             | 4,5÷5,7          |         |                                                 |                  |

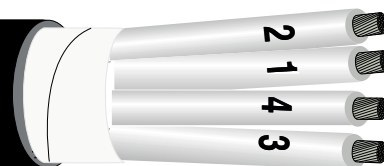
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# UNIRAIL TW – EN 50306-4 300 V – type MM (Table 1)

Multicore unscreened cables, standard wall sheathed

UNIKA (Italy) – EN 50306-4 300 V 4x1,5 MM - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table TW3 of EN 50306-4 for cables rated 300V (see IMQ test certificate). Further constructions are available upon request.

## CONSTRUCTION

**Conductor:** tinned copper conductor according to table TW1

**Insulation:** double layer of special compound

**Identification:** numbered white cores (other identification methods may be agreed)

**Laying-up:** cores are twisted together in multicore cables with optional non-hygroscopic tape

**Sheath:** cross-linked compound type EM104 according to EN 50306-1, colour black

**Marking:** UNIKA (Italy) – EN 50306-4 300V “1n” (n°cores)x(cross-section) MM 90 – WW/YYYY - “traceability code”  
n: E for exposed installations or P for protected installations

**Fire safety:** hazard level HL3 according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Table TW3 – Multicore unscreened sheathed cables - Dimensional data

| Item n° | Cable type n° cores x cross-section [mm²] | Diameter exposed type [mm] | Diameter protected type [mm] | Item n° | Cable type n° cores x cross-section [mm²] | Diameter exposed type [mm] | Diameter protected type [mm] |
|---------|-------------------------------------------|----------------------------|------------------------------|---------|-------------------------------------------|----------------------------|------------------------------|
| RM235   | 2x0,5                                     | 4,9 ÷ 5,9                  | 3,5÷4,5                      | RM214   | 13x1                                      | 9,7 ÷ 10,9                 | 8,7÷10,1                     |
| RM236   | 3x0,5                                     | 5,1 ÷ 6,1                  | 3,8 ÷4,8                     | RM215   | 19x1                                      | 10,7 ÷ 11,9                | 9,8÷11,2                     |
| RM201   | 4x0,5                                     | 5,5 ÷ 6,5                  | 4,1÷5,3                      | RM226   | 20x1                                      | 10,9 ÷ 12,1                | 10,3 ÷ 11,5                  |
| RM202   | 7x0,5                                     | 6,3 ÷ 7,3                  | 4,9÷6,1                      | RM216   | 37x1                                      | 14,0 ÷ 15,6                | 13,3÷14,7                    |
| RM238   | 9x0,5                                     | 6,8 ÷ 7,8                  | 6,3÷6,9                      | RM232   | 2x1,5                                     | 6,3 ÷ 7,3                  | 5,0 ÷ 6,0                    |
| RM203   | 13x0,5                                    | 8,3 ÷ 9,3                  | 7,3÷8,5                      | RM239   | 3x1,5                                     | 6,6 ÷ 7,6                  | 5,3 ÷ 6,3                    |
| RM204   | 19x0,5                                    | 9,0 ÷ 10,2                 | 8,1÷9,3                      | RM217   | 4x1,5                                     | 7,4 ÷ 8,4                  | 6,0÷7,2                      |
| RM237   | 25x0,5                                    | 10,2 ÷ 11,4                | 9,6÷10,4                     | RM240   | 5x1,5                                     | 8,1 ÷ 9,3                  | 7,0 ÷ 8,2                    |
| RM205   | 37x0,5                                    | 12,3 ÷ 13,5                | 10,8÷12,2                    | RM227   | 6x1,5                                     | 8,5 ÷ 9,7                  | 7,6 ÷ 8,6                    |
| RM233   | 2x0,75                                    | 5,3 ÷ 6,3                  | 4,0 ÷ 5,0                    | RM218   | 7x1,5                                     | 8,6 ÷ 9,8                  | 7,7 ÷ 8,9                    |
| RM241   | 3x0,75                                    | 5,5 ÷ 6,5                  | 4,2 ÷ 5,2                    | RM228   | 12x1,5                                    | 10,9 ÷ 12,1                | 10,3 ÷ 11,5                  |
| RM206   | 4x0,75                                    | 6,0 ÷ 7,0                  | 4,6÷5,8                      | RM219   | 13x1,5                                    | 11,7 ÷ 12,9                | 10,7÷12,1                    |
| RM207   | 7x0,75                                    | 6,9 ÷ 7,9                  | 5,5÷6,6                      | RM220   | 19x1,5                                    | 13,0 ÷ 14,2                | 12,0 ÷13,4                   |
| RM208   | 13x0,75                                   | 9,1 ÷ 10,3                 | 8,2÷9,4                      | RM229   | 20x1,5                                    | 13,2 ÷ 14,4                | 12,6 ÷ 13,8                  |
| RM209   | 19x0,75                                   | 10,0 ÷ 11,2                | 9,0÷10,4                     | RM221   | 37x1,5                                    | 17,2 ÷18,8                 | 16,2÷ 18,0                   |
| RM210   | 37x0,75                                   | 13,2 ÷ 14,4                | 12,2÷13,6                    | RM222   | 2x2,5                                     | 7,7 ÷ 8,7                  | 6,7÷7,9                      |
| RM211   | 48x0,75                                   | 14,8 ÷ 16,4                | 13,9÷15,7                    | RM223   | 3x2,5                                     | 8,1 ÷ 9,1                  | 7,1÷ 8,3                     |
| RM225   | 2x1                                       | 5,6 ÷ 6,6                  | 4,3 ÷ 5,3                    | RM224   | 4x2,5                                     | 8,8 ÷ 10,0                 | 7,9 ÷ 9,1                    |
| RM242   | 3x1                                       | 5,9 ÷ 6,9                  | 4,6 ÷ 5,6                    | RM234   | 6x2,5                                     | 10,0 ÷ 11,2                | 9,5 ÷ 10,3                   |
| RM212   | 4x1                                       | 6,3 ÷ 7,3                  | 4,9÷6,1                      | RM230   | 12x2,5                                    | 13,0 ÷ 14,2                | 12,5 ÷ 13,7                  |
| RM213   | 7x1                                       | 7,3 ÷ 8,3                  | 6,0÷7,0                      | RM231   | 20x2,5                                    | 16,0 ÷ 17,2                | 15,6 ÷ 16,8                  |

Add letter **E** for exposed installations or **P** for protected installations at the end of the item number

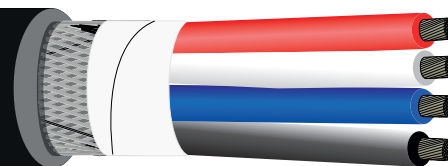
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# UNIRAIL TW – EN 50306-4 300 V – type MMS (Table 3)

Multicore screened cables, standard wall sheathed

UNIKA (Italy) – EN 50306-4 300 V 4x2,5 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table TW5 of EN 50306-4 for cables rated 300V (see IMQ test certificate) and HITACHI specification 211NW50283B. Further constructions are available upon request.

**Table TW5 – Multipair cables, individually screened and sheathed with an overall sheath - Dimensional data**

| Item n° | Cable type n° cores x cross-section [mm²] | Diameter exposed type [mm] | Diameter protected type [mm] | Item n° | Cable type n° cores x cross-section [mm²] | Diameter exposed type [mm] | Diameter protected type [mm] |
|---------|-------------------------------------------|----------------------------|------------------------------|---------|-------------------------------------------|----------------------------|------------------------------|
| RM301   | 2x0,5                                     | 5,5÷6,5                    | 4,1÷5,3                      | RM311   | 2x1                                       | 6,2÷7,2                    | 4,7÷5,9                      |
| RM302   | 3x0,5                                     | 5,7÷6,7                    | 4,3÷5,5                      | RM312   | 3x1                                       | 6,5÷7,5                    | 5,1÷6,2                      |
| RM303   | 4x0,5                                     | 6,1÷7,1                    | 4,7÷5,9                      | RM313   | 4x1                                       | 6,9÷7,9                    | 5,5÷6,7                      |
| RM342   | 5x0,5                                     | 6,2÷7,2                    | 5,1÷6,1                      | RM314   | 6x1                                       | 8,0÷9,0                    | 6,6÷7,9                      |
| RM304   | 6x0,5                                     | 6,9÷7,9                    | 5,5÷6,8                      | RM315   | 8x1                                       | 8,6÷9,8                    | 7,7÷9,0                      |
| RM305   | 8x0,5                                     | 7,5÷8,5                    | 6,0÷7,3                      | RM331   | 12x1                                      | 9,5 ÷ 10,7                 | 9,0 ÷ 10,2                   |
| RM324   | 10x0,5                                    | 7,7 ÷ 8,7                  | 7,2 ÷ 8,2                    | RM316   | 2x1,5                                     | 7,1÷8,1                    | 5,7÷6,9                      |
| RM339   | 12x0,5                                    | 8,2 ÷ 9,2                  | 7,5 ÷ 8,5                    | RM317   | 3x1,5                                     | 7,4÷8,4                    | 6,0÷7,2                      |
| RM306   | 2x0,75                                    | 5,9÷6,9                    | 4,5÷5,7                      | RM318   | 4x1,5                                     | 8,0÷9,0                    | 6,6÷7,8                      |
| RM307   | 3x0,75                                    | 6,2÷7,2                    | 4,7÷5,9                      | RM319   | 6x1,5                                     | 9,2÷10,4                   | 8,3÷9,6                      |
| RM308   | 4x0,75                                    | 6,5÷7,5                    | 5,2÷6,4                      | RM320   | 8x1,5                                     | 10,2÷11,4                  | 8,9÷10,4                     |
| RM309   | 6x0,75                                    | 7,5÷8,5                    | 6,1÷7,4                      | RM337_M | 10x1,5                                    | 10,9÷12,1                  | 10,0÷11,0                    |
| RM338   | 7x0,75                                    | 8,0÷9,0                    | 6,5÷7,5                      | RM340   | 30x1,5                                    | 16,0÷17,2                  | 15,0÷16,0                    |
| RM310   | 8x0,75                                    | 8,2÷9,2                    | 6,6÷7,9                      | RM321   | 2x2,5                                     | 8,3÷9,3                    | 7,3÷8,5                      |
| RM336   | 12x0,75                                   | 9,6÷10,6                   | 8,5÷9,5                      | RM322   | 3x2,5                                     | 8,6÷10,2                   | 7,7÷8,9                      |
| RM341   | 16x0,75                                   | 9,9÷10,9                   | 9,1÷10,1                     | RM323   | 4x2,5                                     | 9,4÷10,6                   | 8,4÷9,8                      |
| RM335   | 18x0,75                                   | 10,6 ÷ 11,8                | 9,8 ÷ 10,8                   |         |                                           |                            |                              |

Add letter **E** for exposed installations or **P** for protected installations at the end of the item number (or replace \_ with **E** or **P**)

Add letter **F** for fire resistant version

## CONSTRUCTION

**Conductor:** tinned copper conductor according to table TW1

**Insulation:** double layer of special compound

**Identification:** white, red, black, blue, brown, orange, grey, white/red (other identification methods may be agreed). Starting from 9 cores: numbered white cores

**Laying-up:** cores are twisted together in pair with optional non-hygroscopic tape

**Screen:** tinned copper wire braid

**Sheath:** cross-linked compound type EM104 according to EN 50306-1, colour black

**Laying-up:** pairs are twisted together with optional fillers and non-hygroscopic tape

**Sheath:** cross-linked compound type EM104 according to EN 50306-1

**Marking:** UNIKA (Italy) – EN 50306-4 300V “3n” (n°pairs)x(cross-section) MMS 90 – WW/YYYY - traceability code n: E for exposed installations or P for protected installations

**Fire safety:** hazard level HL3 according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL TW – EN 50306-4 300 V – type MMS (Table 5)

Multipair cables, individually screened and sheathed and with an overall sheath

UNIKA (Italy) – EN 50306-4 300 V 2x2x0,75 MMS - code



## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table TW4 of EN 50306-4 for cables rated 300V (see IMQ test certificate). Further constructions are available upon request.

Table TW4 – Multicore screened sheathed cables - Dimensional data

| Item n° | Cable type<br>n° cores x cross-<br>section [mm²] | Diameter<br>exposed type<br>[mm] | Diameter<br>protected type<br>[mm] |
|---------|--------------------------------------------------|----------------------------------|------------------------------------|
| RM401   | 2x2x0,5                                          | 10,1÷11,3                        | 9,0÷10,2                           |
| RM402   | 3x2x0,5                                          | 10,8÷12,0                        | 9,6÷10,8                           |
| RM403   | 4x2x0,5                                          | 11,8÷13,0                        | 10,7÷12,0                          |
| RM404   | 7x2x0,5                                          | 13,9÷15,5                        | 13,0÷14,2                          |
| RM405   | 2x2x0,75                                         | 10,9÷12,1                        | 9,8÷11,0                           |
| RM406   | 3x2x0,75                                         | 11,6÷13,0                        | 10,5÷11,7                          |
| RM407   | 4x2x0,75                                         | 12,8÷14,3                        | 11,6÷12,8                          |
| RM408   | 7x2x0,75                                         | 15,1÷16,9                        | 14,0÷15,6                          |
| RM417   | 1x2x(1)                                          | 7,0÷8,0                          | 6,2 ÷ 7,2                          |
| RM409   | 2x2x1                                            | 11,3÷12,5                        | 10,2÷11,6                          |
| RM410   | 3x2x1                                            | 12,0÷13,5                        | 10,9÷12,3                          |
| RM411   | 4x2x1                                            | 13,2÷14,7                        | 12,1÷13,3                          |
| RM412   | 7x2x1                                            | 15,7÷17,3                        | 14,6÷16,3                          |
| RM413   | 2x2x1,5                                          | 13,3÷14,5                        | 12,2÷13,4                          |
| RM414   | 3x2x1,5                                          | 14,0÷15,6                        | 13,1÷14,3                          |
| RM415   | 4x2x1,5                                          | 15,5÷17,1                        | 14,3÷15,9                          |
| RM416   | 7x2x1,5                                          | 18,7÷20,5                        | 17,6÷19,2                          |

Add letter **E** for exposed installations or **P** for protected installations at the end of the item number

## CONSTRUCTION

**Conductor:** tinned copper conductor according to table TW1

**Insulation:** double layer of special compound

**Identification:** numbered white cores (other identification methods may be agreed)

**Pairing:** cores are twisted in pairs

**Pair screen:** tinned wire braid

**Pair sheath:** cross-linked compound, black numbered

**Laying up:** sheathed pairs are stranded together

**Sheath:** cross-linked compound type EM104 according to EN 50306-1

**Marking:** UNIKA (Italy) – EN 50306-4 "5n" (n°pairs)x(cross-section) MMS 90 – WW/YYYY - traceability code  
n: E for exposed installations or P for protected installations

**Fire safety:** hazard level HL3 according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

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# UNIRAIL TW – EN 50306-4 300 V – type MMS (Table 7)

Multipair cables with an overall screen and sheath

UNIKA (Italy) – EN 50306-4 300 V 4x2,5 MMS - code

## TECHNICAL DATA

Temperature rating up to and including 90°C

Very low temperatures resistance (-40°C)

Resistance to ozone, oils, acids and alkali

Bending radius: refer to EN 50343 table 16

### Range of approval:

According to table TW6 of EN 50306-4 for cables rated 300V (see IMQ test certificate). Further constructions are available upon request.

## CONSTRUCTION

**Conductor:** tinned copper conductor according to table TW1

**Insulation:** double layer of special compound

**Identification:** (white-red), (black-blue), (brown-orange), (grey-green), (white/red-white/black), (white/blue-white/brown).  
Starting from 7 pairs: numbered white cores

**Pairing:** cores are twisted together in pairs

**Laying up:** pairs are stranded together

**Overall screen:** tinned copper wire braid

**Sheath:** cross-linked compound type EM104 according to EN 50306-1

**Marking:** UNIKA (Italy) – EN 50306-4 "7n" (n°pairs)x(cross-section) MMS 90 – WW/YYYY - traceability code  
n: E for exposed installations or P for protected installations

**Fire safety:** hazard level HL3 according to Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B)

Table TW6 – Multicore screened sheathed cables - Dimensional data

| Item n° | Cable type<br>n° cores x cross-section [mm <sup>2</sup> ] | Diameter<br>exposed type<br>[mm] | Diameter<br>protected type<br>[mm] |
|---------|-----------------------------------------------------------|----------------------------------|------------------------------------|
| RM327_M | 2x2x0,25                                                  | 5,9 ÷ 6,7                        | 5,4 ÷ 6,2                          |
| RM328_M | 3x2x0,25                                                  | 6,2 ÷ 7,0                        | 5,7 ÷ 6,5                          |
| RM330_M | 4x2x0,25                                                  | 6,6 ÷ 7,4                        | 6,1 ÷ 6,9                          |
| RM325_M | 2x2x0,50                                                  | 7,1 ÷ 8,9                        | 6,6 ÷ 7,9                          |
| RM332_M | 3x2x0,50                                                  | 7,5 ÷ 9,1                        | 7,0 ÷ 8,1                          |
| RM329_M | 4x2x0,50                                                  | 8,3 ÷ 9,7                        | 7,7 ÷ 8,7                          |
| RM326_M | 6x2x0,50                                                  | 9,5 ÷ 10,7                       | 9,0 ÷ 10,2                         |
| RM701   | 7x2x0,50                                                  | 9,6 ÷ 11,6                       | 9,0 ÷ 10,6                         |
| RM702_M | 2x2x0,75                                                  | 7,6 ÷ 10,0                       | 7,1 ÷ 9,0                          |
| RM703_M | 3x2x0,75                                                  | 8,2 ÷ 10,2                       | 7,7 ÷ 9,2                          |
| RM704_M | 4x2x0,75                                                  | 9,5 ÷ 10,8                       | 9,0 ÷ 10,0                         |
| RM705   | 7x2x0,75                                                  | 11,4 ÷ 12,8                      | 10,8 ÷ 11,8                        |
| RM706_M | 2x2x1,0                                                   | 8,3 ÷ 10,5                       | 7,8 ÷ 9,5                          |
| RM707_M | 3x2x1,0                                                   | 8,8 ÷ 10,7                       | 8,3 ÷ 9,7                          |
| RM708_M | 4x2x1,0                                                   | 9,6 ÷ 11,3                       | 9,1 ÷ 10,3                         |
| RM709   | 7x2x1,0                                                   | 11,6 ÷ 13,4                      | 11,0 ÷ 12,4                        |
| RM710_M | 2x2x1,5                                                   | 10,3 ÷ 12,2                      | 9,8 ÷ 11,2                         |
| RM711_M | 3x2x1,5                                                   | 11,0 ÷ 12,4                      | 10,4 ÷ 11,4                        |
| RM712_M | 4x2x1,5                                                   | 12,1 ÷ 13,1                      | 11,8 ÷ 12,6                        |
| RM713   | 7x2x1,5                                                   | 14,5 ÷ 16,3                      | 14,0 ÷ 15,3                        |

Add letter **E** for exposed installations or **P** for protected installations at the end of the item number (or replace \_ with **E** or **P**)

Substitute letter **M** with **H** for core identification with white numbering.

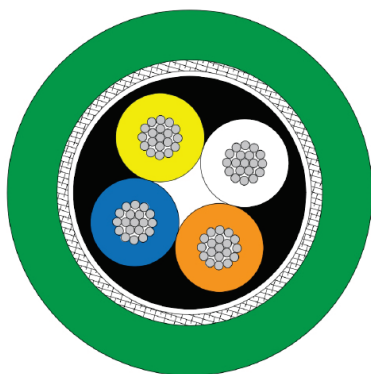
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## Note

# UNIRAIL D – ETHERNET CABLE CATEGORY 5e

Type: **1x4x22 AWG/19 SF/UTP**

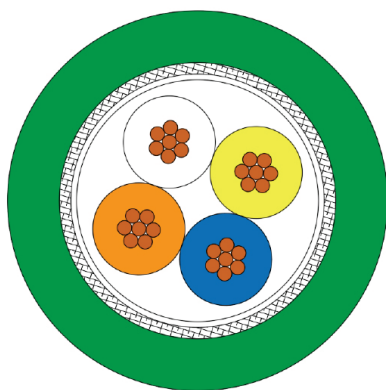
Code: **RW100A**



| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 22 AWG/19 (0,35 mm <sup>2</sup> )                                          |
| <b>Insulation</b>         | Polyolefin                                                                                               |
| <b>Insulation colours</b> | white ÷ blue ÷ yellow ÷ orange                                                                           |
| <b>Assembly of core</b>   | Stranded to quad: • pair 1 white/blue • pair 2 yellow/orange                                             |
| <b>Separation</b>         | polyester tape                                                                                           |
| <b>Inner jacket</b>       | Halogen-free compound                                                                                    |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                              |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - green colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – Profinet Cable CAT. 5e (1x4x22 AWG/19) M - 100 ohm - WW/YYYY – <i>traceability code</i>  |

Type: **1x4x26 AWG/7 SF/UTP**

Code: **RW100B**



| CONSTRUCTION              |                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded bare copper wire – 26 AWG/7 (0,14 mm <sup>2</sup> )                                            |
| <b>Insulation</b>         | polyolefin                                                                                              |
| <b>Insulation colours</b> | white ÷ blue ÷ yellow ÷ orange                                                                          |
| <b>Assembly of core</b>   | Stranded to quad: • pair1 white/blue • pair2 yellow/orange                                              |
| <b>Separation</b>         | polyester tape                                                                                          |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                             |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1. Green colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – Profinet Cable CAT. 5e (1x4x26AWG/7) M - 100 ohm - WW/YYYY – <i>traceability code</i>   |

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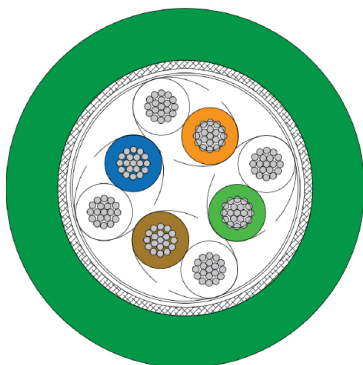
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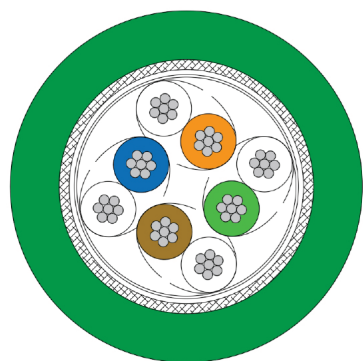
Type: **4x2x22 AWG/19 SF/UTP**  
Code: **RW100C**

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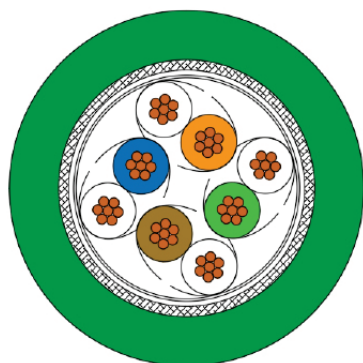
| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 22 AWG/19 (0,35 mm <sup>2</sup> )                                          |
| <b>Insulation</b>         | polyolefin                                                                                               |
| <b>Insulation colours</b> | white-blue ÷ white-orange ÷ white-brown ÷ white-green                                                    |
| <b>Assembly of core</b>   | Pair stranded together : • pair1 white/blue • pair2 white/orange • pair3 white/brown • pair4 white/green |
| <b>Overall shield</b>     | aluminized/ polyester tape - tinned copper braid 85% coverage                                            |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1. Green colour if not otherwise stated  |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 5e (4x2x22AWG/19) M - 100 ohm - WW/YYYY – <i>traceability code</i>   |

Type: **4x2x26 AWG/7 SF/UTP**  
Code: **RW100D**



| CONSTRUCTION              |                                                                                                              |
|---------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 26 AWG/7 (0,14 mm <sup>2</sup> )                                               |
| <b>Insulation</b>         | polyolefin                                                                                                   |
| <b>Insulation colours</b> | white-blue ÷ white-orange ÷ white-brown ÷ white-green                                                        |
| <b>Assembly of core</b>   | Pair stranded together : • pair 1 white/blue • pair 2 white/orange • pair 3 white/brown • pair 4 white/green |
| <b>Overall shield</b>     | aluminized/polyester tape - tinned copper braid 85% coverage                                                 |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1. Green colour if not otherwise stated      |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 5e (4x2x26AWG/7) M - 100 ohm - WW/YYYY – <i>traceability code</i>        |

Type: **4x2x24 AWG/7 SF/UTP**  
Code: **RW100E**



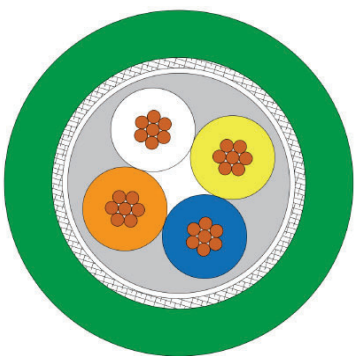
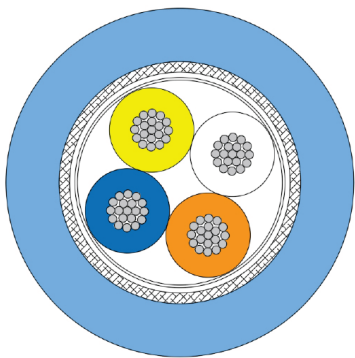
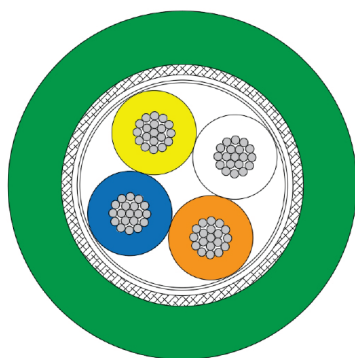
| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded bare copper wire – 24 AWG/7 (0,25 mm <sup>2</sup> )                                             |
| <b>Insulation</b>         | polyolefin                                                                                               |
| <b>Insulation colours</b> | white-blue ÷ white-orange ÷ white-brown ÷ white-green                                                    |
| <b>Assembly of core</b>   | Pair stranded together : • pair1 white/blue • pair2 white/orange • pair3 white/brown • pair4 white/green |
| <b>Overall shield</b>     | aluminized/ polyester tape - tinned copper braid 85% coverage                                            |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1. Green colour if not otherwise stated  |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 5e (4x2x24AWG/7)M - 100 ohm - WW/YYYY – <i>traceability code</i>     |



Type: **1x4x20 AWG/19 SF/UTP**

Code: **RW100F (for green outer jacket)**

Code: **RW100G (for blue outer jacket)**



#### CONSTRUCTION

|                           |                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 20 AWG/19 (0,50 mm <sup>2</sup> )                                         |
| <b>Insulation</b>         | polyolefin                                                                                              |
| <b>Insulation colours</b> | white ÷ blue ÷ yellow ÷ orange                                                                          |
| <b>Assembly of core</b>   | Stranded to quad: • pair 1 white/blue • pair 2 yellow/orange                                            |
| <b>Separation</b>         | polyester tape                                                                                          |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                             |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1. Green colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – Profinet Cable CAT. 5e (1x4x20AWG/19)M - 100 ohm - WW/ YYYY – <i>traceability code</i>  |

Type: **1x4x24 AWG/7 SF/UTP**

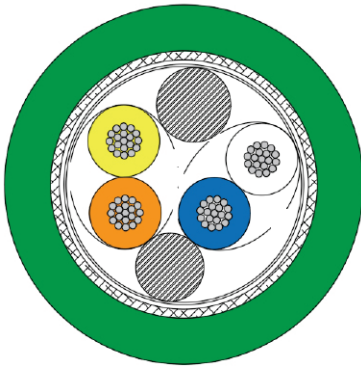
Code: **RW100H**

#### CONSTRUCTION

|                           |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded bare copper wire – 24 AWG/7                                                                     |
| <b>Insulation</b>         | Polyolefin                                                                                               |
| <b>Insulation colours</b> | white ÷ blue ÷ yellow ÷ orange                                                                           |
| <b>Assembly of core</b>   | Stranded to quad: • pair 1 white/blue • pair 2 yellow/orange                                             |
| <b>Separation</b>         | polyester tape                                                                                           |
| <b>Inner jacket</b>       | Halogen-free compound                                                                                    |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                              |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - green colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – Profinet Cable CAT. 5e (1x4x24 AWG/7) M - 100 ohm - WW/ YYYY – <i>traceability code</i>  |

Type: **2x2x22 AWG/19 SF/UTP**  
Code: **RW100J**

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| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 22 AWG/19                                                                  |
| <b>Insulation</b>         | Polyolefin                                                                                               |
| <b>Insulation colours</b> | white ÷ blue ÷ yellow ÷ orange                                                                           |
| <b>Assembly of core</b>   | Stranded to quad: • pair 1 white/blue • pair 2 yellow/orange                                             |
| <b>Separation</b>         | polyester tape                                                                                           |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper wire braid                                                      |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - green colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 5e (2x2x22 AWG/19) M - 100 ohm - WW/ YYYY – <i>traceability code</i> |

|                                        | <b>RW100A</b><br>1x4x22<br>AWG/19 | <b>RW100B</b><br>1x4x26<br>AWG/7 | <b>RW100C</b><br>4x2x22<br>AWG/19 | <b>RW100D</b><br>4x2x26<br>AWG/7 | <b>RW100E</b><br>4x2x24<br>AWG/7 | <b>RW100F</b><br><b>RW100G</b><br>1x4x20<br>AWG/19 | <b>RW100H</b><br>1x4x24<br>AWG/7 | <b>RW100J</b><br>2x4x22<br>AWG/19 |
|----------------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------------------------|----------------------------------|-----------------------------------|
| Max DC conductor resistance            | 60 Ω/km                           | 145 Ω/km                         | 60 Ω/km                           | 170 Ω/km                         | 88 Ω/km                          | 36,4 Ω/km                                          | 88 Ω/km                          | 60 Ω/km                           |
| Capacitance                            | 55 pF/m                           | 52 pF/m                          | 54 pF/m                           | 52 pF/m                          | 52 pF/m                          | 49 pF/m                                            | 50 pF/m                          | 52 pF/m                           |
| Characteristic impedance (1÷100 MHz)   | 100 Ω<br>(±15%)                   | 100 Ω<br>(±15%)                  | 100 Ω<br>(±15%)                   | 100 Ω<br>(±15%)                  | 100 Ω<br>(±15%)                  | 100 Ω<br>(±15%)                                    | 100 Ω<br>(±15%)                  | 100 Ω<br>(±15%)                   |
| Voltage rating                         | 300 V                             | 300 V                            | 300 V                             | 300 V                            | 300 V                            | 300 V                                              | 300 V                            | 300 V                             |
| Min insulation resistance              | 5,0 GΩx-km                        | 5,0 GΩx-km                       | 5,0 GΩx-km                        | 5,0 GΩx-km                       | 5,0 GΩx-km                       | 5,0 GΩx-km                                         | 5,0 GΩx-km                       | 5,0 GΩx-km                        |
| Nominal velocity of propagation 100MHz | 67%                               | 65%                              | 78%                               | 71%                              | 77%                              | 67%                                                | 67%                              | 77%                               |
| Nominal attenuation 1 MHz              | 1,8<br>dB/100m                    | 3,0<br>dB/100m                   | 2,4<br>dB/100m                    | 2,6<br>dB/100m                   | 2,1<br>dB/100m                   | 1,7<br>dB/100m                                     | 1,7<br>dB/100m                   | 3,2<br>dB/100m                    |
| 10 MHz                                 | 5,7<br>dB/100m                    | 9,1<br>dB/100m                   | 7,8<br>dB/100m                    | 8,1<br>dB/100m                   | 6,0<br>dB/100m                   | 5,3<br>dB/100m                                     | 6,8<br>dB/100m                   | 9,5<br>dB/100m                    |
| 100 MHz                                | 20,7<br>dB/100m                   | 29,8<br>dB/100m                  | 26,4<br>dB/100m                   | 27,3<br>dB/100m                  | 21,0<br>dB/100m                  | 17,8<br>dB/100m                                    | 24,9<br>dB/100m                  | 32<br>dB/100m                     |
| Nominal weight                         | 63 kg/km                          | 40 kg/km                         | 115 kg/km                         | 60 kg/km                         | 70 kg/km                         | 110 kg/km                                          | 65 kg/km                         | 80 kg/km                          |
| Nominal diameter                       | 6,5 mm                            | 4,8 mm                           | 8,6 mm                            | 6,5 mm                           | 7,0 mm                           | 8,6 mm                                             | 6,2 mm                           | 8,0 mm                            |
| Minimum bending radius                 | 8 x outer ø                       |                                  |                                   |                                  |                                  |                                                    |                                  |                                   |
| Temperature range                      | -40 °C +90°C                      |                                  |                                   |                                  |                                  |                                                    |                                  |                                   |

**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

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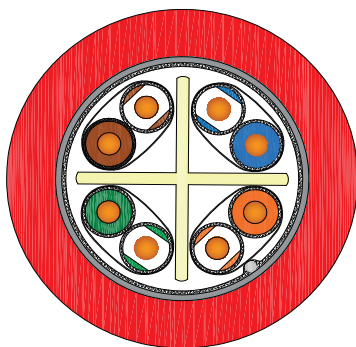
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UNIKA - ROLLING STOCK CABLES - UNIRAIL D – ETHERNET CABLE CATEGORY 5e

# UNIRAIL D – ETHERNET CABLE CATEGORY 5e FIRE RESISTANT

Type: **4x2x23 AWG/1 SF/UTP**

Code: **RW101A**



| CONSTRUCTION              |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | solid bare copper wire – 23 AWG/1 (0,25 mm <sup>2</sup> )                                                                    |
| <b>Insulation</b>         | polyolefin                                                                                                                   |
| <b>Insulation colours</b> | white/blue, blue ÷ white/orange, orange ÷ white/green, green ÷ white/brown, brown                                            |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over core insulation                                                                 |
| <b>Conductor assembly</b> | twisted to pairs • 1 pair white-blue/blue • 2 pair white-brown/brown • 3 pair white-green/green • 4 pair white-orange/orange |
| <b>Separation</b>         | polyester tape on each pair                                                                                                  |
| <b>Assembly elements</b>  | pairs stranded together around a central cross separator filler                                                              |
| <b>Separation</b>         | glass fibre tape                                                                                                             |
| <b>Overall shield</b>     | copper/polyester tape + tinned copper braid 85% coverage                                                                     |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - red colour if not otherwise stated                       |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 5e 4x2x23AWG/1 M – EN50200<br>EN50289-4-16 PH120 100MHz – <i>traceability code</i>       |

Type: **1x4x22 AWG/19 SF/UTP**

Code: **RW101B**



| CONSTRUCTION              |                                                                                                                       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded bare copper wire – 22 AWG/7 (0,35 mm <sup>2</sup> )                                                          |
| <b>Insulation</b>         | polyolefin                                                                                                            |
| <b>Insulation colours</b> | white ÷ blue ÷ yellow ÷ orange                                                                                        |
| <b>Assembly of core</b>   | Stranded to quad: • pair1 white/blue • pair2 yellow/orange                                                            |
| <b>Separation</b>         | polyester tape                                                                                                        |
| <b>Inner jacket</b>       | Halogen-free compound                                                                                                 |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                                           |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - green colour if not otherwise stated              |
| <b>Marking</b>            | UNIKA (Italy) – Profinet Cable CAT. 5e 1x4x22AWG/19 M – EN50200 EN50289-4-16 PH120 100 MHz – <i>traceability code</i> |

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|                                        |         | RW101A<br>4x2x23 AWG/1 SF/UTP                                              | RW101B<br>1x4x22 AWG/19 SF/UTP |
|----------------------------------------|---------|----------------------------------------------------------------------------|--------------------------------|
| DC conductor resistance                |         | 94,2 Ω/km                                                                  | 60 Ω/km                        |
| Capacitance                            |         | 55 pF/m                                                                    | 53 pF/m                        |
| Characteristic impedance               |         | 100 Ω (±15%)                                                               | 100 Ω (±15%)                   |
| Voltage rating                         |         | 300 V                                                                      | 300 V                          |
| Min insulation resistance              |         | 5,0 GΩxkm                                                                  | 5,0 GΩxkm                      |
| Nominal velocity of propagation 100MHz |         | 64%                                                                        | 67%                            |
| Nominal Attenuation                    |         |                                                                            |                                |
|                                        | 1 MHz   | 1,9 dB/100m                                                                | 1,6 dB/100m                    |
|                                        | 10 MHz  | 5,7dB/100m                                                                 | 5,1 dB/100m                    |
|                                        | 100 MHz | 19,3 dB/100m                                                               | 19,0 dB/100m                   |
| Nominal weight                         |         | 130 kg/km                                                                  | 63 kg/km                       |
| Nominal Diameter                       |         | 9,2 mm                                                                     | 6,8 mm                         |
| Minimum bending radius                 |         | 15 x outer ø                                                               | 15 x outer ø                   |
| Temperature range                      |         | -40 °C +90°C                                                               | -40 °C +90°C                   |
| Standard reference                     |         | IEC 61156-5, EN 50288-2-1, EN 5289-4-16, ISO/IEC 11801, EN 50173, EN 50200 |                                |

**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

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# UNIRAIL D – ETHERNET CABLE CATEGORY 6

Type: **4x2x23 AWG/1 SF/UTP**

Code: **RW104A**



| CONSTRUCTION              |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | solid bare copper wire – 23 AWG/1 (0,25 mm <sup>2</sup> )                                                                    |
| <b>Insulation</b>         | polyolefin                                                                                                                   |
| <b>Insulation colours</b> | white-blue/blue ÷ white-orange/orange ÷ white-green/green ÷ white-brown/brown                                                |
| <b>Conductor assembly</b> | twisted to pairs • 1 pair white-blue/blue • 2 pair white-brown/brown • 3 pair white-green/green • 4 pair white-orange/orange |
| <b>Assembly elements</b>  | pairs stranded together around a central cross separator filler                                                              |
| <b>Separation</b>         | polyester tape                                                                                                               |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                                                  |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - green if not otherwise stated                            |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 6 (4x2x23AWG/1)M - 100 ohm - WW/YYYY –traceability code                                  |

Type: **4x2x26 AWG/7 SF/UTP**

Code: **RW104B**



| CONSTRUCTION              |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded bare copper wire – 26 AWG/7 (0,14 mm <sup>2</sup> )                                                                 |
| <b>Insulation</b>         | polyolefin                                                                                                                   |
| <b>Insulation colours</b> | white-blue/blue ÷ white-orange/orange ÷ white-green/green ÷ white-brown/brown                                                |
| <b>Conductor assembly</b> | twisted to pairs • 1 pair white-blue/blue • 2 pair white-brown/brown • 3 pair white-green/green • 4 pair white-orange/orange |
| <b>Assembly elements</b>  | pairs stranded together around a central cross separator filler                                                              |
| <b>Separation</b>         | polyester tape                                                                                                               |
| <b>Overall shield</b>     | aluminium/polyester tape + tinned copper braid 85% coverage                                                                  |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - green if not otherwise stated                            |
| <b>Marking</b>            | UNIKA (Italy) – Ethernet Cable CAT. 6 (4x2x26AWG/7)M - 100 ohm - ww/yyyy –traceability code                                  |

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|                                        |         | RW104A<br>4x2x23 AWG/1 SF/UTP | RW104B<br>4x2x26 AWG/7 SF/UTP |
|----------------------------------------|---------|-------------------------------|-------------------------------|
| DC conductor resistance                |         | 74,5 Ω/km                     | 143 Ω/km                      |
| Capacitance                            |         | 48 pF/m                       | 52 pF/m                       |
| Characteristic impedance               |         | 100 Ω (±15%)                  |                               |
| Voltage rating                         |         | 300 V                         |                               |
| Min insulation resistance              |         | 5,0 GΩxkm                     | 5,0 GΩxkm                     |
| Nominal velocity of propagation 100MHz |         | 73%                           | 71%                           |
|                                        |         |                               |                               |
| Nominal Attenuation                    | 1 MHz   | 1,9 dB/100m                   | 2,5 dB/100m                   |
|                                        | 10 MHz  | 5,7 dB/100m                   | 8,6 dB/100m                   |
|                                        | 100 MHz | 18,7 dB/100m                  | 28,8 dB/100m                  |
|                                        | 250 MHz | 30,2 dB/100m                  | 47,5 dB/100m                  |
|                                        |         |                               |                               |
| Nominal weight                         |         | 90 kg/km                      | 52 kg/km                      |
| Nominal Diameter                       |         | 7,5 mm                        | 6,4 mm                        |
| Minimum bending radius                 |         | 10 x outer ø                  |                               |
| Temperature range                      |         | -40 °C +90°C                  |                               |

**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

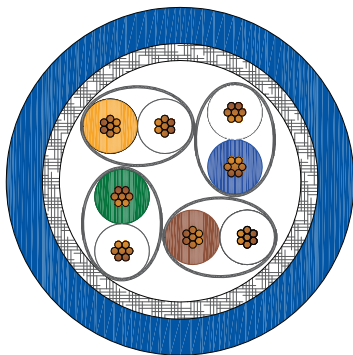
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# UNIRAIL D – ETHERNET CABLE CATEGORY 7A

Type: **4x(2x26AWG/7) S/FTP**

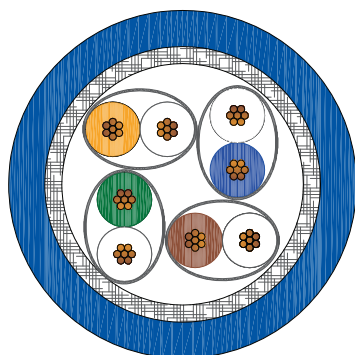
Code: **RW102A**



| CONSTRUCTION          |                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>      | stranded bare copper wire – 26 AWG/7 (0,14 mm <sup>2</sup> )                                           |
| <b>Insulation</b>     | foam-skin polyethylene                                                                                 |
| <b>Pair colours</b>   | blue/white ÷ orange/white ÷ green/white ÷ brown/white                                                  |
| <b>Pair screen</b>    | aluminium/polyester tape (aluminium surface outside)                                                   |
| <b>Assembling</b>     | shielded pairs stranded together                                                                       |
| <b>Overall shield</b> | tinned copper braid 85% coverage                                                                       |
| <b>Outer jacket</b>   | crosslinked compound, type EM104 according to standard EN 50264-1 - bluecolour if not otherwise stated |
| <b>Marking</b>        | UNIKA (Italy) – Ethernet Cable CAT. 7A 4x(2x26AWG/7) M - 100 ohm - WW/ YYYY – <i>traceability code</i> |

Type: **4x(2x24AWG/7) S/FTP**

Code: **RW102B**



| CONSTRUCTION          |                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>      | stranded bare copper wire – 24 AWG/7 (0,22 mm <sup>2</sup> )                                           |
| <b>Insulation</b>     | foam-skin polyethylene                                                                                 |
| <b>Pair colours</b>   | blue/white ÷ orange/white ÷ green/white ÷ brown/white                                                  |
| <b>Pair screen</b>    | aluminium/polyester tape (outside aluminium surface)                                                   |
| <b>Assembling</b>     | shielded pairs stranded together                                                                       |
| <b>Overall shield</b> | tinned copper braid 85% coverage                                                                       |
| <b>Outer jacket</b>   | crosslinked compound, type EM104 according to standard EN 50264-1 - bluecolour if not otherwise stated |
| <b>Marking</b>        | UNIKA (Italy) – Ethernet Cable CAT. 7A 4x(2x24/7AWG) M - 100 ohm - WW/ YYYY – <i>traceability code</i> |

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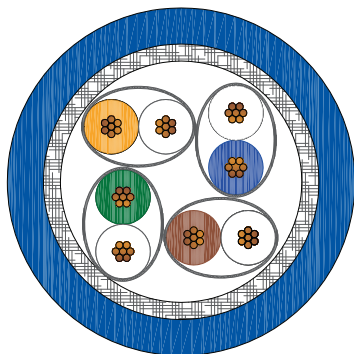
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Type: **4x(2x23AWG/7) S/FTP**  
Code: **RW102C**

**UNIKA**



| CONSTRUCTION          |                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>      | stranded bare copper wire – 23 AWG/7 (0,26 mm <sup>2</sup> )                                           |
| <b>Insulation</b>     | foam-skin polyethylene                                                                                 |
| <b>Pair colours</b>   | blue/white ÷ orange/white ÷ green/white ÷ brown/white                                                  |
| <b>Pair screen</b>    | aluminium/polyester tape (outside aluminium surface)                                                   |
| <b>Assembling</b>     | shielded pairs stranded together                                                                       |
| <b>Overall shield</b> | tinned copper braid 85% coverage                                                                       |
| <b>Outer jacket</b>   | crosslinked compound, type EM104 according to standard EN 50264-1 - bluecolour if not otherwise stated |
| <b>Marking</b>        | UNIKA (Italy) – Ethernet Cable CAT. 7A 4x(2x23/7AWG) M - 100 ohm - WW/ YYYY – <i>traceability code</i> |

|                                        | RW102A<br>4x(2x26AWG/7)<br>S/FTP                                    | RW102B<br>4x(2x24AWG/7)<br>S/FTP | RW102C<br>4x(2x23AWG/7)<br>S/FTP |
|----------------------------------------|---------------------------------------------------------------------|----------------------------------|----------------------------------|
| DC conductor resistance                | 143,0 Ω/km                                                          | 94,2 Ω/km                        | 74,5 Ω/km                        |
| Capacitance                            | 46 pF/m                                                             | 42pF/m                           | 45pF/m                           |
| Characteristic impedance               |                                                                     | 100 Ω (±15%)                     |                                  |
| Voltage rating                         |                                                                     | 300 V                            |                                  |
| Min insulation resistance              | 5,0 GΩxkm                                                           | 5,0 GΩxkm                        | 5,0 GΩxkm                        |
| Nominal velocity of propagation 100MHz | 77%                                                                 | 77%                              | 77%                              |
| Transfer Impedance 1 MHz               | 10 mΩ/m                                                             | 10 mΩ/m                          | 10 mΩ/m                          |
| 10 MHz                                 | 10 mΩ/m                                                             | 8 mΩ/m                           | 8 mΩ/m                           |
| 30 MHz                                 | 10 mΩ/m                                                             | 10 mΩ/m                          | 10 mΩ/m                          |
| Nominal attenuation 10 MHz             | 8,3 dB/100m                                                         | 6,9 dB/100m                      | 5,7 dB/100m                      |
| 100 MHz                                | 26,3 dB/100m                                                        | 19,0 dB/100m                     | 18,7 dB/100m                     |
| 250 MHz                                | 42,0 dB/100m                                                        | 30,8 dB/100m                     | 30,1 dB/100m                     |
| 600 MHz                                | 66,1 dB/100m                                                        | 49,5 dB/100m                     | 47,6 dB/100m                     |
| Nominal weight                         | 59 kg/km                                                            | 90 kg/km                         | 100 kg/km                        |
| Nominal diameter                       | 6,7 mm                                                              | 8,2 mm                           | 8,4 mm                           |
| Minimum bending radius                 |                                                                     | 10 x outer ø                     |                                  |
| Temperature range                      |                                                                     | -40 °C +90°C                     |                                  |
| Standard reference                     | EN 50173, IEC 61156-6, TIA/EIA 568 B.2, EN 50288-4-2, ISO/IEC 11801 |                                  |                                  |

**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

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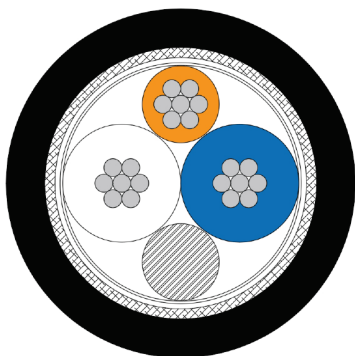
TDS\_RD04\_00



# UNIRAIL D – RS485 and BUS cables

Type: (1x2x0,35 + 1x0,35)

Code: RW103A



| CONSTRUCTION       |                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------|
| DATA PAIR          |                                                                                                          |
| Conductor          | stranded tinned copper wire – (0,35 mm <sup>2</sup> ), 7 wires                                           |
| Insulation         | foam skin polyolefin                                                                                     |
| Insulation colours | white ÷ blue                                                                                             |
| Assembly of core   | twisted pair                                                                                             |
| POWER ELEMENT      |                                                                                                          |
| Conductor          | stranded tinned copper wire – (0,35 mm <sup>2</sup> ), 7 wires                                           |
| Insulation         | solid polyethylene according to EN 50290-2-23                                                            |
| Insulation colours | orange                                                                                                   |
| Assembly           | Data pair and signal conductor stranded together                                                         |
| Overall shield     | Alu/ PET tape + tinned copper braid 90% coverage                                                         |
| Outer jacket       | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |
| Marking            | UNIKA (Italy) – RS485(1x2x0,35+1x0,35) M - 120 ohm - WW/YYYY – <i>traceability code</i>                  |

Unless otherwise specified, all values are nominal, other values can be provided on request.  
The images are made for the sole purpose of illustrating the product and are purely indicative.

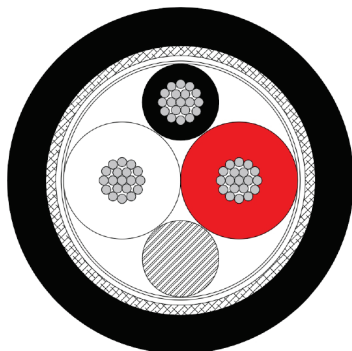
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TDS\_RD05\_00

Type: **(1x2x0,50 + 1x0,50)**

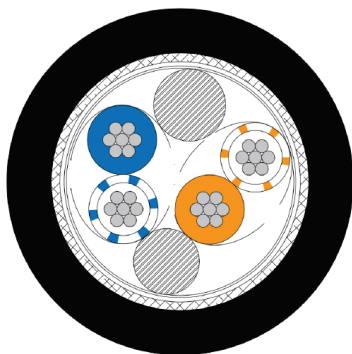
Code: **RW103BZ**



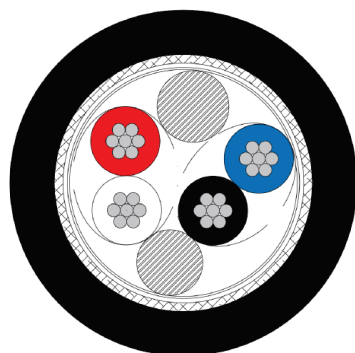
| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>DATA PAIR</b>          |                                                                                                          |
| <b>Conductor</b>          | stranded tinned copper wire – (0,50 mm <sup>2</sup> ), 19 wires                                          |
| <b>Insulation</b>         | foam skin polyolefin                                                                                     |
| <b>Insulation colours</b> | white ÷ red                                                                                              |
| <b>Assembly of core</b>   | twisted pair                                                                                             |
| <b>POWER ELEMENT</b>      |                                                                                                          |
| <b>Conductor</b>          | stranded tinned copper wire (0,50 mm <sup>2</sup> ), 19 wires                                            |
| <b>Insulation</b>         | solid polyethylene                                                                                       |
| <b>Insulation colour</b>  | black                                                                                                    |
| <b>Assembly</b>           | Data pair and signal conductor stranded together                                                         |
| <b>Overall shield</b>     | ALU/PET tape + tinned copper braid 90% coverage                                                          |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – RS485 (1x2x0,50+1x0,50) M - 120 ohm - WW/YYYY – <i>traceability code</i>                 |

Type: **(2x2x0,34 mm<sup>2</sup>)**

Code: **RW103EZ**



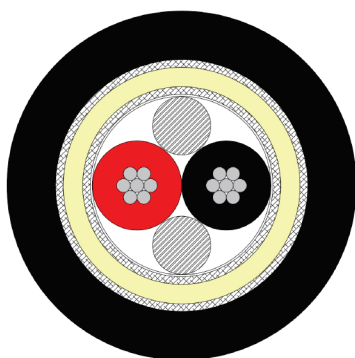
| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>DATA PAIR</b>          |                                                                                                          |
| <b>Conductor</b>          | stranded tinned copper wire – 22 AWG/7 (0,35 mm <sup>2</sup> )                                           |
| <b>Insulation</b>         | foam skin polyolefin                                                                                     |
| <b>Insulation colours</b> | (White-blue ÷ blue) (Orange-white÷orange)                                                                |
| <b>Assembly of core</b>   | twisted pair                                                                                             |
| <b>Overall shield</b>     | ALU/ PET tinned copper braid 90% coverage                                                                |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |
| <b>Marking</b>            | UNIKA (Italy) – RS485 (2x2x0,34) M - 120 ohm - WW/YYYY – <i>traceability code</i>                        |



Type: **(2x2x0,50 mm<sup>2</sup>)**

Code: **RW103F**

| CONSTRUCTION            |                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>        | stranded tinned copper wire (0,50 mm <sup>2</sup> )                                                      |
| <b>Insulation</b>       | foam skin polyolefin                                                                                     |
| <b>Pair colours</b>     | white/red ÷ black/blu                                                                                    |
| <b>Assembly of core</b> | pairs are stranded together                                                                              |
| <b>Overall shield</b>   | ALU/ PET + tinned copper braid 90% coverage                                                              |
| <b>Outer jacket</b>     | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |
| <b>Marking</b>          | UNIKA (Italy) –RS485 (2x2x0,50) M - 120 ohm - WW/YYYY – <i>traceability code</i>                         |



Type: **2x19 AWG/7 (2x0,60 mm<sup>2</sup>)**

Code: **RW105B**

| CONSTRUCTION                 |                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>             | stranded tinned copper wire – (0,60 mm <sup>2</sup> ), 7 wires                                           |
| <b>Insulation</b>            | foam skin polyolefin                                                                                     |
| <b>Pair colours</b>          | red/white                                                                                                |
| <b>Assembly of core</b>      | twisted pair                                                                                             |
| <b>1<sup>st</sup> shield</b> | tinned copper braid 90% coverage                                                                         |
| <b>Inner jacket</b>          | crosslinked compound, type EM104 according to standard EN 50264-1                                        |
| <b>2<sup>nd</sup> shield</b> | tinned copper braid 90% coverage                                                                         |
| <b>Outer jacket</b>          | crosslinked compound, type EM104 according to standard EN 50264-1 - Black colour if not otherwise stated |
| <b>Marking</b>               | UNIKA (Italy) – RS485 (2x0,60) M - 120 ohm - WW/YYYY – <i>traceability code</i>                          |

|                                        | <b>RW103A</b><br><i>1x2x0,35+1x0,35</i> | <b>RW103BZ</b><br><i>1x2x0,50+1x0,50</i> | <b>RW103F</b><br><i>2x2x0,50</i> | <b>RW105B</b><br><i>2x19/7 AWG<br/>2x0,60</i> | <b>RW103EZ</b><br><i>2x2x22 AWG<br/>2x2x0,34</i> |
|----------------------------------------|-----------------------------------------|------------------------------------------|----------------------------------|-----------------------------------------------|--------------------------------------------------|
| DC conductor resistance                | ≤ 59,4 Ω/km                             | ≤ 40,1 Ω/km                              | ≤ 40,1 Ω/km                      | ≤ 32,2 Ω/km                                   | ≤ 59,4 Ω/km                                      |
| Capacitance                            | 42 pF/m (data pair)                     | 46 pF/m (data pair)                      | 46 pF/m                          | 50 pF/m                                       | 44 pF/m                                          |
| Characteristic impedance (0,75÷3 MHz)  | 120 Ω (±10%)                            |                                          |                                  |                                               |                                                  |
| Voltage rating                         | 300 V                                   |                                          |                                  |                                               |                                                  |
| Min insulation resistance              | 5,0 GΩxkm                               | 5,0 GΩxkm                                | 5,0 GΩxkm                        | 5,0 GΩxkm                                     | 5,0 GΩxkm                                        |
| Nominal velocity of propagation 100MHz | 74%                                     | 77%                                      | 77%                              | 77%                                           | 74%                                              |
| Nom attenuation 1 MHz                  | 1,6 dB/100 m                            | 1,25 dB/100 m                            | 1,25 dB/100 m                    |                                               | 1,6 dB/100 m                                     |
| 2 MHz                                  | 2,3 dB/100 m                            | 1,8 dB/100 m                             | 1,8 dB/100 m                     |                                               | 2,3 dB/100 m                                     |
| 3 MHz                                  |                                         | 2,25 dB/100 m                            | 2,25 dB/100 m                    |                                               |                                                  |
| 4 MHz                                  | 3,8 dB/100 m                            |                                          |                                  | 0,6 dB/100 m                                  | 3,8 dB/100 m                                     |
| Nominal weight                         | 80 kg/km                                | 72 kg/km                                 | 105 kg/km                        | 125 kg/km                                     | 95 kg/km                                         |
| Nominal diameter                       | 7,6 mm                                  | 6,8 mm                                   | 9,3 mm                           | 9,0 mm                                        | 8,8 mm                                           |
| Minimum bending radius                 | 10 x outer ø                            |                                          |                                  |                                               |                                                  |
| Temperature range                      | -40 °C +90°C                            |                                          |                                  |                                               |                                                  |

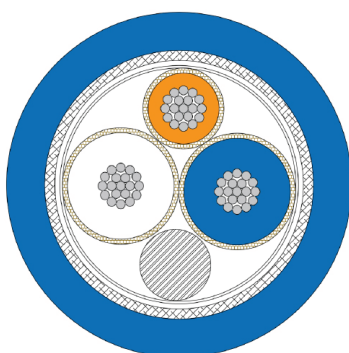
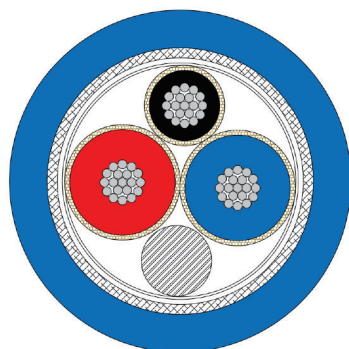
**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

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Type: **(1x2x0,50 + 1x0,50) EN 50200 PH90**

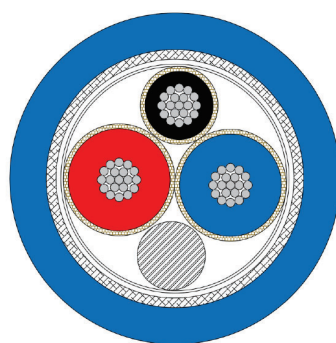
Code: **RW106B, RW106BZ**



| CONSTRUCTION              |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| DATA PAIR                 |                                                                                                          |
| <b>Conductor</b>          | stranded tinned copper wire – (0,50 mm <sup>2</sup> ), 19 wires                                          |
| <b>Insulation</b>         | foam skin polyolefin                                                                                     |
| <b>Insulation colours</b> | red ÷ blue (for RW106B), white ÷ blue (for RW106BZ)                                                      |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over each insulation                                             |
| POWER ELEMENT             |                                                                                                          |
| <b>Conductor</b>          | stranded tinned copper wire – (0,50 mm <sup>2</sup> ), 19 wires                                          |
| <b>Insulation</b>         | solid polyethylene                                                                                       |
| <b>Insulation colour</b>  | black (for RW106B), orange (for RW106BZ)                                                                 |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over each insulation                                             |
| <b>Assembly</b>           | Data pair and signal conductor stranded together                                                         |
| <b>Overall shield</b>     | Metallic tape + tinned copper braid 90% coverage                                                         |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - blue colour if not otherwise stated  |
| <b>Marking</b>            | UNIKA (Italy) – RS485 (1x2x0,50+1x0,50) M - 120 ohm - EN 50200 PH90- WW/ YYYY – <i>traceability code</i> |

Type: **(1x2x0,75 + 1x0,75) EN 50200 PH90**

Code: **RW106E**



| CONSTRUCTION              |                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------|
| DATA PAIR                 |                                                                                                           |
| <b>Conductor</b>          | stranded tinned copper wire – (0,75 mm <sup>2</sup> )                                                     |
| <b>Insulation</b>         | foam skin polyolefin                                                                                      |
| <b>Insulation colours</b> | red ÷ blue                                                                                                |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over each insulation                                              |
| POWER ELEMENT             |                                                                                                           |
| <b>Conductor</b>          | stranded tinned copper wire – (0,50 mm <sup>2</sup> ), 19 wires                                           |
| <b>Insulation</b>         | solid polyethylene                                                                                        |
| <b>Insulation colour</b>  | black                                                                                                     |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over each insulation                                              |
| <b>Assembly</b>           | Data pair and signal conductor stranded together                                                          |
| <b>Overall shield</b>     | Metallic tape + tinned copper braid 90% coverage                                                          |
| <b>Outer jacket</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - blue colour if not otherwise stated   |
| <b>Marking</b>            | UNIKA (Italy) – RS485 (1x2x0,75+1x0,75) M - 120 ohm - EN 50200 PH90 - WW/ YYYY – <i>traceability code</i> |

|                                        | RW106B<br>(1x2x0,50 + 1x0,50)<br>EN 50200 | RW106E<br>(1x2x0,75 + 1x0,75)<br>EN 50200 |                         |                        |
|----------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------|------------------------|
| DC conductor resistance                | ≤ 40,1 Ω/km                               | ≤ 26,0 Ω/km                               |                         |                        |
| Capacitance                            | 46 pF/m                                   | 50 pF/m                                   |                         |                        |
| impedance                              | 120 Ω (±10%)                              |                                           |                         |                        |
| Voltage rating                         | 300 V                                     |                                           |                         |                        |
| Min insulation resistance              | ≥ 1,0 GΩxkm                               | 1,0 GΩxkm                                 |                         |                        |
| Nominal velocity of propagation 100MHz | 66%                                       | 75%                                       |                         |                        |
|                                        |                                           |                                           |                         |                        |
|                                        | Before EN 50200<br>test                   | After EN 50200<br>test                    | Before EN 50200<br>test | After EN 50200<br>test |
| Nominal attenuation 1 MHz              |                                           | < 12,0 dB/100m                            | 10 dB/100m              | 10 dB/100m             |
| 1,5 MHz                                | < 15,0 dB/100m                            |                                           |                         |                        |
| 2 MHz                                  |                                           | < 17,0 dB/100m                            | 14 dB/100m              | 14 dB/100m             |
| 3 MHz                                  | < 20,0 dB/100m                            |                                           |                         |                        |
|                                        |                                           |                                           |                         |                        |
| Nominal weight                         | 102 kg/km                                 |                                           | 148 kg/km               |                        |
| Nominal diameter                       | 8,0 mm                                    |                                           | 10,0 mm                 |                        |
| Minimum bending radius                 | 10 x outer ø                              |                                           |                         |                        |
| Temperature range                      | -40 °C +90°C                              |                                           |                         |                        |
| Standard reference                     | EN 50200, EIA RS485                       |                                           |                         |                        |

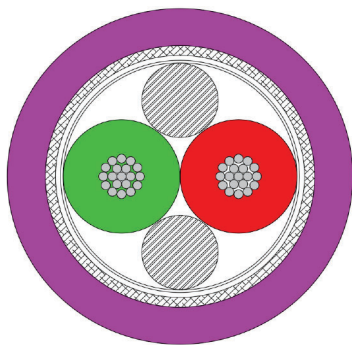
**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

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Type: **1x2xAWG22/19**

Code: **RW103DM**



#### CONSTRUCTION

|                         |                                                                                                         |
|-------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>        | stranded tinned copper wire – 22/19 AWG (0,38 mm <sup>2</sup> )                                         |
| <b>Insulation</b>       | foam skin polyolefin                                                                                    |
| <b>Pair colours</b>     | red/green                                                                                               |
| <b>Assembly of core</b> | twisted pair + fillers and tape are assembled together                                                  |
| <b>Overall shield</b>   | aluminium/ polyester tape, tinned copper braid 85% coverage                                             |
| <b>Outer jacket</b>     | crosslinked compound, type EM104 according to standard EN 50264-1 violet colour if not otherwise stated |
| <b>Marking</b>          | UNIKA (Italy) – PROFIBUS DP (1x2xAWG22/19) M - 150 Ω - WW/YYYY – <i>traceability code</i>               |

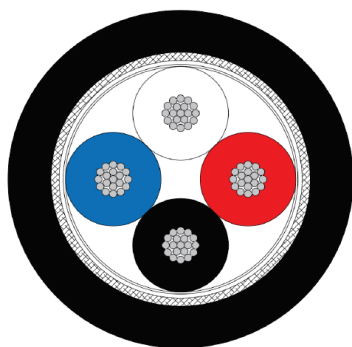
#### RW103DM 1x2xAWG22 Profibus DP

|                                        |              |
|----------------------------------------|--------------|
| DC conductor resistance                | ≤ 59,4 Ω/km  |
| Capacitance                            | ≤ 30 pF/m    |
| Characteristic impedance (0,25÷20 MHz) | 150 Ω (±10%) |
| Voltage rating                         | 300 V        |
| Min insulation resistance              | 5,0 GΩxkm    |
| Nominal velocity of propagation 100MHz | 78%          |
| Nom.attenuation 0,20 MHz               | 0,6 dB/100 m |
| 4 MHz                                  | 2,2 dB/100 m |
| 16 MHz                                 | 4,4 dB/100 m |
| 20 MHz                                 | 4,9 dB/100 m |
| Nominal weight                         | 73 kg/km     |
| Maximum diameter                       | 8,0 mm       |
| Minimum bending radius                 | 8 x outer ø  |
| Temperature range                      | -40 °C +90°C |

# UNIRAIL D – MVB and WTB cables

Type: **MVB 1x4x0,50**

Code: **RW105C**

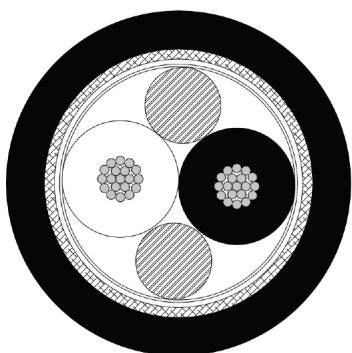


## CONSTRUCTION

|                           |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 0,50 mm <sup>2</sup> (19 wires)                                            |
| <b>Insulation</b>         | foam skin polyolefin                                                                                     |
| <b>Insulation colours</b> | White, red, black, blue                                                                                  |
| <b>Assembly of core</b>   | 4 cores stranded to quad                                                                                 |
| <b>Overall shield</b>     | metallic tape, tinned copper braid, coverage 85%                                                         |
| <b>Outer sheath</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |

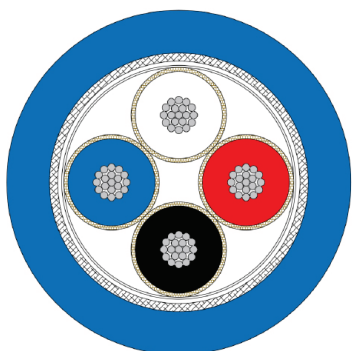
Type: **WTB 1x2x0,75**

Code: **RW105A**



## CONSTRUCTION

|                           |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 0,75 mm <sup>2</sup> (19 wires)                                            |
| <b>Insulation</b>         | foam skin polyolefin                                                                                     |
| <b>Insulation colours</b> | White - Black                                                                                            |
| <b>Assembly of core</b>   | 2 cores stranded to pair                                                                                 |
| <b>Overall shield</b>     | metallic tape, tinned copper braid, coverage 85%                                                         |
| <b>Outer sheath</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |

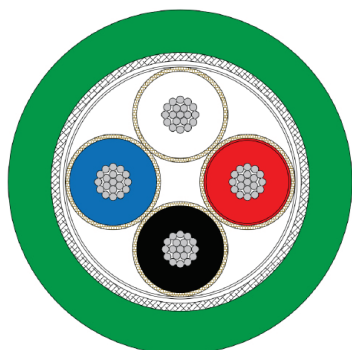


Type: **MVB 1x4x0,50 EN 50200 PH15**

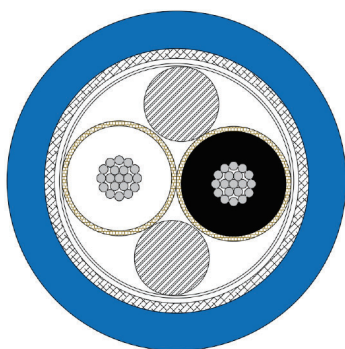
Code: **RW106C (blue) - RW106CV (green)**

## CONSTRUCTION

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 0,50 mm <sup>2</sup> (19 wires)                     |
| <b>Insulation</b>         | foam skin polyolefin                                                              |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over core insulation                      |
| <b>Insulation colours</b> | White, red, black, blue                                                           |
| <b>Assembly of core</b>   | 4 cores stranded to quad                                                          |
| <b>Overall shield</b>     | metallic tape, tinned copper braid, coverage 85%                                  |
| <b>Outer sheath</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - blue or green |






**CONSTRUCTION**

|                           |                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>          | stranded tinned copper wire – 0,75 mm <sup>2</sup> (19 wires)                                           |
| <b>Insulation</b>         | foam skin polyolefin                                                                                    |
| <b>Insulation colours</b> | White - Black                                                                                           |
| <b>Fire barrier</b>       | special mineral glass tape with overlap over core insulation                                            |
| <b>Assembly of core</b>   | 2 cores stranded to pair                                                                                |
| <b>Overall shield</b>     | metallic tape, tinned copper braid, coverage 85%                                                        |
| <b>Outer sheath</b>       | crosslinked compound, type EM104 according to standard EN 50264-1 - blue colour if not otherwise stated |

|                                            | <b>MVB 1x4x0,50<br/>RW105C</b> | <b>WTB 1x2x0,75<br/>RW105A</b> | <b>MVB 1x4x0,50 EN 50200<br/>RW106C/ RW106CV</b> | <b>WTB 1x2x0,75 EN 50200<br/>RW106D</b> |
|--------------------------------------------|--------------------------------|--------------------------------|--------------------------------------------------|-----------------------------------------|
| DC conductor resistance                    | ≤ 40,1 Ω/km                    | ≤ 26,7 Ω/km                    | ≤ 40,1 Ω/km                                      | ≤ 26,0 Ω/km                             |
| Capacitance                                | 48 pF/m (data pair)            | 65 pF/m (data pair)            | 48 pF/m (data pair)                              | 65 pF/m (data pair)                     |
| Characteristic impedance (0,5÷5 MHz)       | 120 Ω (±10%)                   |                                |                                                  |                                         |
| Voltage rating                             | 300 V                          |                                |                                                  |                                         |
| Min insulation resistance                  | 1,0 GΩ x km                    | 1,0 GΩ x km                    | 1,0 GΩ x km                                      | 1,0 GΩ x km                             |
| Nominal velocity of propagation 100MHz     | 66%                            | 74%                            | 66%                                              | 66%                                     |
|                                            |                                |                                |                                                  |                                         |
|                                            |                                |                                | <b>Before EN 50200</b>                           | <b>After EN 50200</b>                   |
| Nom attenuation 1 MHz                      |                                | 14,0 dB/km                     |                                                  | 12,0 dB/km                              |
| 1,5 MHz                                    | 15,0 dB/km                     | 21,1 dB/km                     | 15,0 dB/km                                       |                                         |
| 2 MHz                                      |                                | 24,1 dB/km                     | 17,0 dB/km                                       | 14,0 dB/km                              |
| 3 MHz                                      | 20,0 dB/km                     | 26,7 dB/km                     | 20,0 dB/km                                       |                                         |
| Nominal weight                             | 98 kg/km                       | 105 kg/km                      | 100 kg/km                                        | 116 kg/km                               |
| Nominal outer diameter                     | 8,3 mm                         | 8,4 mm                         | 8,1 mm                                           | 8,7 mm                                  |
| Minimum bending radius, fixed installation | 10 x outer ø                   |                                |                                                  |                                         |
| Temperature range, fixed installation      | -40 °C +90°C                   |                                |                                                  |                                         |

**Fire safety:** cables are classified in compliance with the highest requirements established by hazard level HL3 into Standard EN 45545-2 for indoor cables (EL1A) and outdoor cables (EL1B).

The characteristics of the products, described in the data sheet, do not constitute any contractual binding.

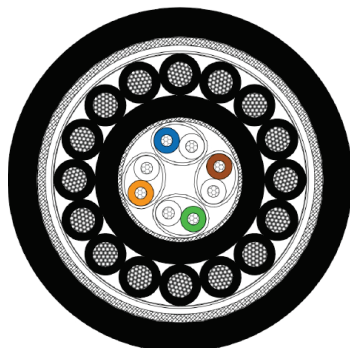
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# UNIRAIL J - JUMPER cables

Type: **[16x1 + CAT. 7 4x(2xAWG24)] M**

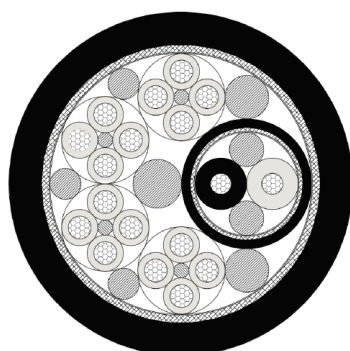
Code: **RJ001**



| CONSTRUCTION                |                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------|
| <b>CONTROL CORES</b>        |                                                                                                          |
| <b>Conductor</b>            | flexible strand of tinned copper wire according to class 6 EN 60228                                      |
| <b>Insulation</b>           | crosslinked compound, type EI109 according to EN 50264                                                   |
| <b>Cores identification</b> | black with white numbers                                                                                 |
| <b>DATA CORES</b>           |                                                                                                          |
| <b>Conductor</b>            | flexible stranded tinned copper wire – AWG24 (7 wires)                                                   |
| <b>Insulation</b>           | foam skin polyethylene according to EN 50290-2-23                                                        |
| <b>Insulation colours</b>   | white-blue, white-orange, white-green, white-brown                                                       |
| <b>Assembly of core</b>     | 4 cores stranded to quad                                                                                 |
| <b>Overall shield</b>       | aluminium/ polyester tape, tinned copper braid, coverage 85%                                             |
| <b>Outer jacket</b>         | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |

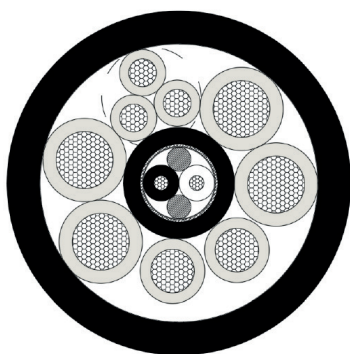
Type: **[4x4x1+(2x0,75)]M**

Code: **RJ002**



| CONSTRUCTION                 |                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>DATA CORES (0,75 mm²)</b> |                                                                                                          |
| <b>Conductor</b>             | flexible strand of tinned copper wire - 19 wires                                                         |
| <b>Insulation</b>            | halogen free compound                                                                                    |
| <b>Cores identification</b>  | white, black                                                                                             |
| <b>Pair assembly</b>         | cores are stranded together                                                                              |
| <b>Pair screen</b>           | Tinned copper wire braid                                                                                 |
| <b>Pair jacket</b>           | Halogen free compound, black                                                                             |
| <b>POWER CORES (1 mm²)</b>   |                                                                                                          |
| <b>Conductor</b>             | flexible stranded of tinned copper wire – 19 wires                                                       |
| <b>Insulation</b>            | halogen free compound                                                                                    |
| <b>Cores identification</b>  | white with black numbers from 1 to 16                                                                    |
| <b>Quad assembly</b>         | Cores are stranded together around central filler                                                        |
| <b>Total assembly</b>        | Quads and pair are stranded together around central filler                                               |
| <b>Overall shield</b>        | Tinned copper wire braid (min. coverage 90%)                                                             |
| <b>Outer jacket</b>          | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |

Type: **4x10+2x6+3x2,5+1x(2x0,75)**

Code: **RJ005**


| CONSTRUCTION                |                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------|
| POWER CORES                 |                                                                                                          |
| <b>Conductor</b>            | flexible strand of tinned copper wire according to class 6 EN 60228                                      |
| <b>Insulation</b>           | halogen free compound                                                                                    |
| <b>Cores identification</b> | 6 mm²: white marked A, B<br>2,5 mm²: white marked D, F, G<br>10 mm² white marked 1, 2, 3, 4              |
| <b>Triad assembly</b>       | 2,5 mm² cores are stranded together                                                                      |
| DATA CORES                  |                                                                                                          |
| <b>Conductor</b>            | flexible stranded of tinned copper wire – 19 wires                                                       |
| <b>Insulation</b>           | halogen free compound                                                                                    |
| <b>Cores identification</b> | white marked X, black marked Y                                                                           |
| <b>Pair assembly</b>        | Cores are twisted together with suitable fillers                                                         |
| <b>Pair screen</b>          | Tinned copper wire braid, coverage 90%                                                                   |
| <b>Pair jacket</b>          | Halogen free compound, black                                                                             |
| <b>Total assembly</b>       | Cores and triad are stranded together around bus pair, separator foil over the assembly                  |
| <b>Outer jacket</b>         | crosslinked compound, type EM104 according to standard EN 50264-1 - black colour if not otherwise stated |

|                                                  | [16x1+CAT. 7 4x(2xAWG24)]M<br>RJ001   | [4x4x1+(2x0,75)] M<br>RJ002           | 4x10+2x6+3x2,5+1x(2x0,75)<br>RJ005 |
|--------------------------------------------------|---------------------------------------|---------------------------------------|------------------------------------|
| Capacitance                                      | 65 pF/m                               | 65 pF/m                               | 65 pF/m                            |
| Characteristic impedance                         | 100 Ω (±5%)                           | 120 Ω (±10%)                          | 120 Ω (±10%)                       |
| Voltage rating                                   | 300 V                                 | 0,6/1 kV (Power),<br>300 v (BUS pair) | 500 V (Power),<br>v (BUS) 300      |
| Nominal weight                                   | 540 kg/km                             | 505 kg/km                             | 1190 kg/km                         |
| Nominal outer diameter                           | 17,5 mm                               | 17,9 mm                               | 26,0 mm                            |
| Minimum bending radius,<br>fixed installation    | 4 x outer ø                           | 5 x outer ø                           | 5 x outer ø                        |
| Minimum bending radius, flexible<br>installation | 6 x outer ø<br>(tested acc. ISO 4141) | 8 x outer ø                           | 8 x outer ø                        |
| Temperature range,<br>fixed installation         | -50 °C +90°C                          | -40 °C +90°C                          | -40 °C +90°C                       |
| Temperature range,<br>flexible installation      | -25 °C +90°C                          | -25 °C +90°C                          | -25 °C +90°C                       |

Unless otherwise specified, all values are nominal, other values can be provided on request.  
The images are made for the sole purpose of illustrating the product and are purely indicative.

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## Note