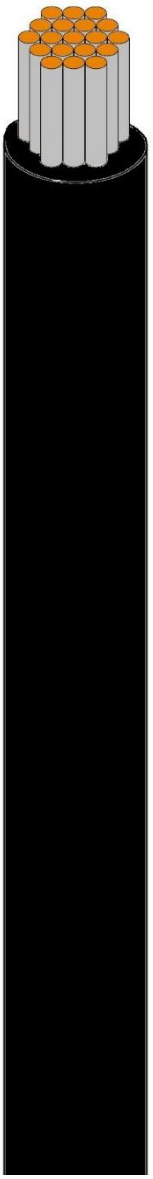
# TE Connectivity

# EN 50264-3-1 POWER CABLE PRODUCTS



**Wire and Cable/// Technical Data Sheet**
Document Number: WTDS-023
Issue 1
Date: January 2020

## Application/Use:



Zero Halogen, light weight cable for Low/Medium voltage applications (600V & 1800V) The construction is made with a TE Connectivity polymer blend.
Developed to meet rail specification requirements, whilst maintaining the desirable features of flexibile and non-wrinkling.

Applications include driver desks, Control panels, wiring harness in inside/outside moving vehicles.

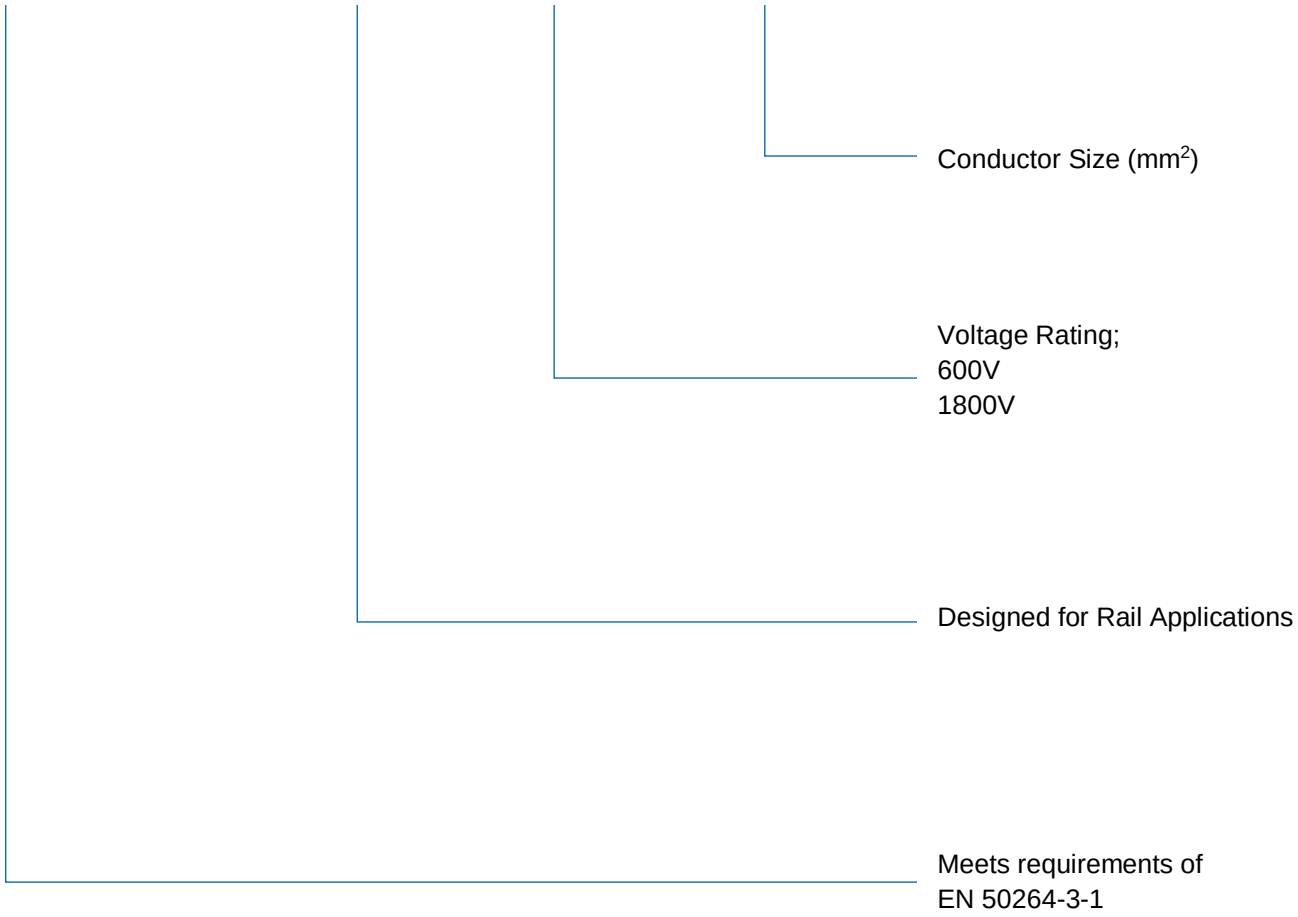
Specifications relating to the selection and installation of cables are described in standards EN 50355 and EN 50343.

## Features:

- Electron beam crosslinked insulation
- Dual wall construction using TE's polymer technology
- EL 109 Insulation Material
- Meets common railway requirements
- Highly flexible and low bending radii
- Excellent resistance to high and low temperature
- Outstanding flame refardant
- Easy to strip
- Resistance to oil, fuel, ozone and weathering
- Resistance to corona effect
- Low smoke density
- Low toxicity

## EN50264 Part Description:

# EN50264 – RAIL – 600V – XX



## EN50264-RAIL-600V: 600V POWER CABLE

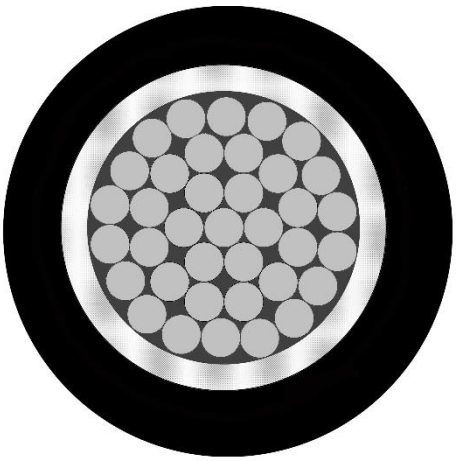
| | | | |
|---|---|---|---|
| Conductor | IEC 60288 Class 5 | Voltage Rating | 600/1000 V AC |
| Number of Conductors | 1 | | |
| Cross Section | 1.00mm² – 400mm² | Temperature Range | -40°C to +90°C |

### *Construction*

| | |
|---|---|
| Insulation | EBXL – EL 109<br>Colour: As per customer request |
| Conductor | Finely Stranded Annealed Electro Tinned Copper<br>Class 5 |

### *Characteristics*

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Resistance to oil, fuel,ozone and weathering.
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked.
- Low bend radius;
    - Single supported installation = 3 X Cable Diameter
    - Limited Flexing = 5 X Cable Diameter



### *Standards*

| Specification / Standard | Category / Hazard Level |
|---|---|
| EN 45545-2 | R15/R16 – Hazard Level 3 |
| BS EN 50264-3-1 | Meets physical performance requirements of **EN 50264-3-1** |
| DIN 5510-2 | |

## EN50264-RAIL-600V: 600V POWER CABLE

| Part Description | Conductor | | | Finished Wire | | | | |
|---|---|---|---|---|---|---|---|---|
| | Nominal Cross Sectional Area | Nominal Conductor Stranding No./Diam. | Diameter Nom. | Insulation Thickness Min. | Maximum Resistance @ 20°C | Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC | Diameter (mm) | Approx. Weight |
| | ($mm^2$) | (mm) | (mm) | (mm) | (Ohms/km) | Max. | Nominal | (kg/km) |
| EN50264-RAIL-600V-1.00-* | 1 | 32 X 0.20 | 1.3 | 0.6 | 20 | 20 | 2.6 ± 0.2 | 13.9 |
| EN50264-RAIL-600V-1.50-* | 1.5 | 29 X 0.25 | 1.5 | 0.7 | 13.7 | 25 | 3.0 ± 0.2 | 18.5 |
| EN50264-RAIL-600V-2.50-* | 2.5 | 47 X 0.25 | 2.0 | 0.7 | 8.21 | 33 | 3.5 ± 0.2 | 27.8 |
| EN50264-RAIL-600V-4.0-* | 4 | 52 X 0.30 | 2.4 | 0.7 | 5.09 | 46 | 4.0 ± 0.2 | 41.7 |
| EN50264-RAIL-600V-6.0-* | 6 | 78 X 0.30 | 3.0 | 0.7 | 3.39 | 60 | 4.6 ± 0.2 | 60.2 |
| EN50264-RAIL-600V-10.0-* | 10 | 77 X 0.40 | 4.1 | 0.7 | 1.95 | 85 | 5.6 ± 0.3 | 97.2 |
| EN50264-RAIL-600V-16.0-* | 16 | 126 X 0.40 | 5.1 | 0.7 | 1.24 | 110 | 6.7 ± 0.3 | 152.8 |
| EN50264-RAIL-600V-25.0-* | 25 | 190 X 0.40 | 6.3 | 0.9 | 0.795 | 150 | 8.4 ± 0.4 | 236.1 |
| EN50264-RAIL-600V-35.0-* | 35 | 266 X 0.40 | 7.6 | 0.9 | 0.565 | 190 | 9.7 ± 0.4 | 324.1 |
| Meets physical performance requirements of EN 50264-3-1 | | | | | | | | |

## EN50264-RAIL-600V: 600V POWER CABLE

| Part Description | Conductor | | | Finished Wire | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Nominal Cross Sectional Area | Conductor Stranding No./Diam. | Diameter Nom. | Insulation Thickness Min. | Maximum Resistance @ 20°C | Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC | Diameter (mm) | | Approx. Weight |
| | ($mm^2$) | (mm) | (mm) | (mm) | (Ohms/km) | Max. | Min. | Max. | (kg/km) |
| EN50264-RAIL-600V-50.0-* | 50 | 378 X 0.40 | 9.7 | 1.0 | 0.393 | 240 | 10.6 | 12.4 | 458.3 |
| EN50264-RAIL-600V-70.0-* | 70 | 350 X 0.50 | 11.7 | 1.1 | 0.277 | 300 | 12.5 | 14.6 | 638.9 |
| EN50264-RAIL-600V-95.0-* | 95 | 456 X 0.50 | 13.5 | 1.1 | 0.210 | 360 | 13.9 | 16.3 | 847.2 |
| EN50264-RAIL-600V-120.0-* | 120 | 570 X 0.50 | 15.2 | 1.2 | 0.164 | 425 | 15.7 | 18.4 | 1069.4 |
| EN50264-RAIL-600V-150.0-* | 150 | 722 X 0.50 | 17.1 | 1.4 | 0.132 | 490 | 17.6 | 20.6 | 1333.3 |
| EN50264-RAIL-600V-185.0-* | 185 | 874 X 0.50 | 18.6 | 1.6 | 0.108 | 560 | 19.6 | 22.9 | 1648.1 |
| EN50264-RAIL-600V-240.0-* | 240 | 1147 X 0.50 | 21.3 | 1.7 | 0.0817 | 675 | 22.2 | 26.0 | 2125.0 |
| EN50264-RAIL-600V-300.0-* | 300 | 1443 X 0.50 | 24.0 | 1.8 | 0.0654 | 775 | 24.6 | 28.8 | 2638.9 |
| EN50264-RAIL-600V-400.0-* | 400 | 1952 X 0.50 | 27.6 | 2.0 | 0.0495 | 950 | 28.1 | 32.9 | 3518.5 |

Meets physical performance requirements of EN 50264-3-1

## EN50264-RAIL-1800V: 1800V POWER CABLE

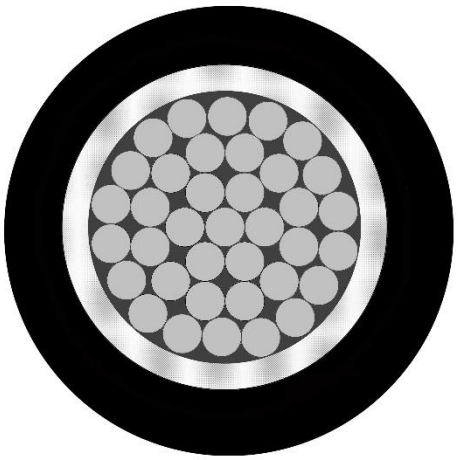
| | | | |
|---|---|---|---|
| Conductor | IEC 60288 Class 5 | Voltage Rating | 1800/3000 V AC |
| Number of Conductors | 1 | | |
| Cross Section | 1.50mm² – 400mm² | Temperature Range | -40°C to +90°C |

### *Construction*

| | |
|---|---|
| Insulation | EBXL – EL 109<br>Colour: As per customer request |
| Conductor | Finely Stranded Annealed Electro Tinned Copper<br>Class 5 |

### *Characteristics*

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Resistance to oil, fuel,ozone and weathering.
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked.
- Low bend radius;
    - Single supported installation = 3 X Cable Diameter
    - Limited Flexing = 5 X Cable Diameter



### *Standards*

| Specification / Standard | Category / Hazard Level |
|---|---|
| EN 45545-2 | R15/R16 – Hazard Level 3 |
| BS EN 50264-3-1 | Meets physical performance requirements of **EN 50264-3-1** |
| DIN 5510-2 | |

## EN50264-RAIL-1800V: 1800V POWER CABLE

| | Conductor | | | Finished Wire | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Part Description | Nominal Cross Sectional Area | Conductor Stranding No./Diam. | Diameter Nom. | Insulation Thickness Min. | Maximum Resistance @ 20°C | Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC | Diameter (mm) | | Approx. Weight |
| | ($mm^2$) | (mm) | (mm) | (mm) | (Ohms/km) | Max. | Min. | Max. | (kg/km) |
| EN50264-RAIL-1800V-1.50-* | 1.5 | 29 X 0.25 | 1.5 | 2.0 | 13.7 | 25 | 5.3 | 6.2 | 50.9 |
| EN50264-RAIL-1800V-2.50-* | 2.5 | 47 X 0.25 | 2.0 | 2.0 | 8.21 | 33 | 5.7 | 6.7 | 60.2 |
| EN50264-RAIL-1800V-4.0-* | 4 | 52 X 0.30 | 2.4 | 2.0 | 5.09 | 46 | 6.2 | 7.3 | 78.7 |
| EN50264-RAIL-1800V-6.0-* | 6 | 78 X 0.30 | 3.0 | 2.0 | 3.39 | 60 | 6.7 | 7.8 | 102 |
| EN50264-RAIL-1800V-10.0-* | 10 | 77 X 0.40 | 4.1 | 2.0 | 1.95 | 85 | 7.5 | 8.8 | 144 |
| EN50264-RAIL-1800V-16.0-* | 16 | 126 X 0.40 | 5.1 | 2.0 | 1.24 | 110 | 8.6 | 10.0 | 204 |
| EN50264-RAIL-1800V-25.0-* | 25 | 190 X 0.40 | 6.3 | 2.0 | 0.795 | 150 | 9.9 | 11.6 | 292 |
| EN50264-RAIL-1800V-35.0-* | 35 | 266 X 0.40 | 7.6 | 2.0 | 0.565 | 190 | 11.1 | 13.0 | 384 |
| Meets physical performance requirements of EN 50264-3-1 | | | | | | | | | |

## EN50264-RAIL-1800V

## 1800V POWER CABLE

| Part Description | Conductor | | | Finished Wire | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Nominal Cross Sectional Area | Conductor Stranding No./Diam. | Diameter Nom. | Insulation Thickness Min. | Maximum Resistance @ 20°C | Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC | Diameter (mm) | | Approx. Weight |
| | ($mm^2$) | (mm) | (mm) | (mm) | (Ohms/km) | Max. | Min. | Max. | (kg/km) |
| EN50264-RAIL-1800V-50.0-* | 50 | 378 X 0.40 | 9.7 | 2.0 | 0.393 | 240 | 12.5 | 14.6 | 523 |
| EN50264-RAIL-1800V-70.0-* | 70 | 350 X 0.50 | 11.7 | 2.0 | 0.277 | 300 | 14.2 | 16.6 | 699 |
| EN50264-RAIL-1800V-95.0-* | 95 | 456 X 0.50 | 13.5 | 2.2 | 0.210 | 360 | 16.0 | 18.7 | 935 |
| EN50264-RAIL-1800V-120.0-* | 120 | 570 X 0.50 | 15.2 | 2.2 | 0.164 | 425 | 17.6 | 20.6 | 1153 |
| EN50264-RAIL-1800V-150.0-* | 150 | 722 X 0.50 | 17.1 | 2.2 | 0.132 | 490 | 19.1 | 22.3 | 1417 |
| EN50264-RAIL-1800V-185.0-* | 185 | 874 X 0.50 | 18.6 | 2.4 | 0.108 | 560 | 20.9 | 24.4 | 1736 |
| EN50264-RAIL-1800V-240.0-* | 240 | 1147 X 0.50 | 21.3 | 2.4 | 0.0817 | 675 | 23.7 | 27.5 | 2208 |
| EN50264-RAIL-1800V-300.0-* | 300 | 1443 X 0.50 | 24.0 | 2.4 | 0.0654 | 775 | 25.6 | 30.1 | 2722 |
| EN50264-RAIL-1800V-400.0-* | 400 | 1952 X 0.50 | 27.6 | 2.6 | 0.0495 | 950 | 29.2 | 34.2 | 3597 |

Meets physical performance requirements of EN 50264-3-1

## EN50264-RAIL PART NUMBERS

| Part Description | Product Detail | TE Part Number |
|---|---|---|
| EN50264-RAIL-600V-1.0 | EN50264-3-1 Power Cable, 600 V, 1.00 $mm^2$, Black, unsheathed | 2336270-1 |
| EN50264-RAIL-600V-1.5 | EN50264-3-1 Power Cable, 600 V, 1.50 $mm^2$, Black, unsheathed | 2336271-1 |
| EN50264-RAIL-600V-2.5 | EN50264-3-1 Power Cable, 600 V, 2.50 $mm^2$, Black, unsheathed | 2336273-1 |
| EN50264-RAIL-600V-4 | EN50264-3-1 Power Cable, 600 V, 4.00 $mm^2$, Black, unsheathed | 2336275-1 |
| EN50264-RAIL-600V-6 | EN50264-3-1 Power Cable, 600 V, 6.00 $mm^2$, Black, unsheathed | 2336278-1 |
| EN50264-RAIL-600V-10 | EN50264-3-1 Power Cable, 600 V, 10.0 $mm^2$, Black, unsheathed | 2336279-1 |
| EN50264-RAIL-600V-16 | EN50264-3-1 Power Cable, 600 V, 16.0 $mm^2$, Black, unsheathed | 2336280-1 |
| EN50264-RAIL-600V-25 | EN50264-3-1 Power Cable, 600 V, 25.0 $mm^2$, Black, unsheathed | 2336281-1 |
| EN50264-RAIL-600V-35 | EN50264-3-1 Power Cable, 600 V, 35.0 $mm^2$, Black, unsheathed | 2336282-1 |
| EN50264-RAIL-600V-50 | EN50264-3-1 Power Cable, 600 V, 50.0 $mm^2$, Black, unsheathed | 2336283-1 |
| EN50264-RAIL-600V-70 | EN50264-3-1 Power Cable, 600 V, 70.0 $mm^2$, Black, unsheathed | 2336290-1 |
| EN50264-RAIL-600V-95 | EN50264-3-1 Power Cable, 600 V, 95.0 $mm^2$, Black, unsheathed | 2336293-1 |
| EN50264-RAIL-600V-120 | EN50264-3-1 Power Cable, 600 V, 120.0 $mm^2$, Black, unsheathed | 2336294-1 |
| EN50264-RAIL-600V-150 | EN50264-3-1 Power Cable, 600 V, 150.0 $mm^2$, Black, unsheathed | 2336295-1 |
| EN50264-RAIL-600V-185 | EN50264-3-1 Power Cable, 600 V, 185.0 $mm^2$, Black, unsheathed | 2336296-1 |
| EN50264-RAIL-600V-240 | EN50264-3-1 Power Cable, 600 V, 240.0 $mm^2$, Black, unsheathed | 2336298-1 |
| EN50264-RAIL-600V-300 | EN50264-3-1 Power Cable, 600 V, 300.0 $mm^2$, Black, unsheathed | 2336299-1 |
| EN50264-RAIL-600V-400 | EN50264-3-1 Power Cable, 600 V, 400.0 $mm^2$, Black, unsheathed | 2336300-1 |
| EN50264-RAIL-1800V-1.0 | EN50264-3-1 Power Cable, 1800 V, 1.00 $mm^2$, Black, unsheathed | 2339890-1 |
| EN50264-RAIL-1800V-1.5 | EN50264-3-1 Power Cable, 1800 V, 1.50 $mm^2$, Black, unsheathed | 2336743-1 |
| EN50264-RAIL-1800V-2.5 | EN50264-3-1 Power Cable, 1800 V, 2.50 $mm^2$, Black, unsheathed | 2336747-1 |
| EN50264-RAIL-1800V-4 | EN50264-3-1 Power Cable, 1800 V, 4.00 $mm^2$, Black, unsheathed | 2336748-1 |
| EN50264-RAIL-1800V-6 | EN50264-3-1 Power Cable, 1800 V, 6.00 $mm^2$, Black, unsheathed | 2336750-1 |
| EN50264-RAIL-1800V-10 | EN50264-3-1 Power Cable, 1800 V, 10.0 $mm^2$, Black, unsheathed | 2336751-1 |
| EN50264-RAIL-1800V-16 | EN50264-3-1 Power Cable, 1800 V, 16.0 $mm^2$, Black, unsheathed | 2336753-1 |
| EN50264-RAIL-1800V-25 | EN50264-3-1 Power Cable, 1800 V, 25.0 $mm^2$, Black, unsheathed | 2336756-1 |
| EN50264-RAIL-1800V-35 | EN50264-3-1 Power Cable, 1800 V, 35.0 $mm^2$, Black, unsheathed | 2336757-1 |

## EN50264-RAIL PART NUMBERS

| Part Description | Product Detail | TE Part Number |
|---|---|---|
| EN50264-RAIL-1800V-50 | EN50264-3-1 Power Cable, 1800 V, 50.0 $mm^2$, Black, unsheathed | 2336759-1 |
| EN50264-RAIL-1800V-70 | EN50264-3-1 Power Cable, 1800 V, 70.0 $mm^2$, Black, unsheathed | 2336789-1 |
| EN50264-RAIL-1800V-95 | EN50264-3-1 Power Cable, 1800 V, 95.0 $mm^2$, Black, unsheathed | 2336790-1 |
| EN50264-RAIL-1800V-120 | EN50264-3-1 Power Cable, 1800 V, 120.0 $mm^2$, Black, unsheathed | 2336792-1 |
| EN50264-RAIL-1800V-150 | EN50264-3-1 Power Cable, 1800 V, 150.0 $mm^2$, Black, unsheathed | 2336793-1 |
| EN50264-RAIL-1800V-185 | EN50264-3-1 Power Cable, 1800 V, 185.0 $mm^2$, Black, unsheathed | 2336794-1 |
| EN50264-RAIL-1800V-240 | EN50264-3-1 Power Cable, 1800 V, 240.0 $mm^2$, Black, unsheathed | 2336795-1 |
| EN50264-RAIL-1800V-300 | EN50264-3-1 Power Cable, 1800 V, 300.0 $mm^2$, Black, unsheathed | 2336796-1 |
| EN50264-RAIL-1800V-400 | EN50264-3-1 Power Cable, 1800 V, 400.0 $mm^2$, Black, unsheathed | 2336797-1 |