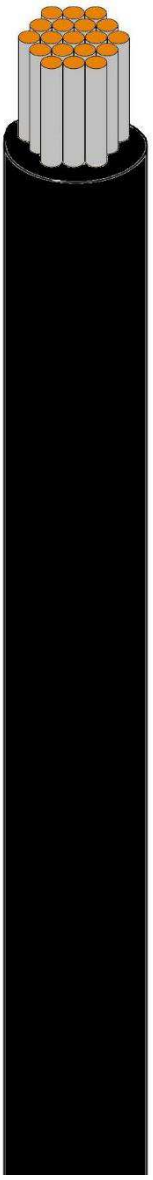
TE Connectivity

RAIL-PC POWER CABLE PRODUCTS

Wire and Cable/// Technical Data Sheet
Document Number: WTDS-020
Issue 6
Date: Dec 2022

Application/Use:

Zero Halogen, light weight cable for Low/Medium voltage applications (600V, 1800V, 3600V & Flexible). 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
- 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

RAIL-PC Part Description:

RAIL – PC – XX – XXX - X

- **Colour Indicator Code;**
  - 0 - Black
  - 1 - Brown
  - 2 - Red
  - 3 - Orange
  - 4 - Yellow
  - 5 - Green
  - 45 - Yellow & Green
  - 6 - Blue
  - 7 - Violet
  - 8 - Gray
  - 9 - White
- **Conductor Size (mm^2)**
- **Voltage Rating;**
  - 15 = 600V
  - 35 = 1800V
  - 36 = 1800V Flexible (Class 6)
- **Power Cable**
- **Designed for Rail Applications**

RAIL-PC-15: 600V POWER CABLE

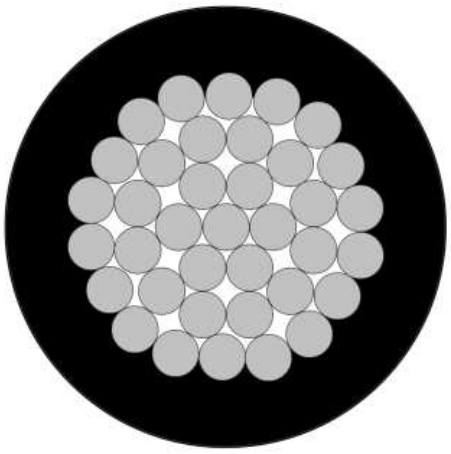
Conductor	IEC 60288 Class 5	Voltage Rating	600/1000 V AC
Number of Conductors	1		
Cross Section	1.00mm² – 400mm²	Temperature Range	-40°C to +90°C

Construction

Insulation	EBXL – EL 109 Colour: As per customer request
Conductor	Finely Stranded Annealed Electro Tinned Copper 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	

RAIL-PC-15: 600V POWER CABLE

Part Description	Conductor			Finished Wire					
	Nominal Cross Sectional Area	Conductor Stranding No./Diam.	Diameter Nom.	Insulation Thickness Nom.	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)
RAIL-PC-15-1.00-*	1	32 X 0.20	1.3	0.6	20.0	20	2.4	2.8	15
RAIL-PC-15-1.50-*	1.5	29 X 0.25	1.5	0.7	13.7	25	2.8	3.3	20
RAIL-PC-15-2.50-*	2.5	47 X 0.25	2.0	0.7	8.21	33	3.2	3.8	30
RAIL-PC-15-4.0-*	4	52 X 0.30	2.4	0.7	5.09	46	3.8	4.4	45
RAIL-PC-15-6.0-*	6	78 X 0.30	3.0	0.7	3.39	60	4.2	5	65
RAIL-PC-15-10.0-*	10	77 X 0.40	4.1	0.7	1.95	85	5.1	5.9	105
RAIL-PC-15-16.0-*	16	126 X 0.40	5.1	0.7	1.24	110	6.1	7.2	160
RAIL-PC-15-25.0-*	25	190 X 0.40	6.3	0.9	0.795	150	7.8	9.1	250
RAIL-PC-15-35.0-*	35	266 X 0.40	7.6	0.9	0.565	190	9.0	10.6	330
Meets physical performance requirements of EN 50264-3-1									

RAIL-PC-15: 600V POWER CABLE

Part Description	Conductor			Finished Wire					
	Nominal Cross Sectional Area	Nominal Conductor Stranding No./Diam.	Diameter Nom.	Insulation Thickness Nom.	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)
RAIL-PC-15-50.0-*	50	378 X 0.40	9.9	1.0	0.393	240	10.6	12.4	495
RAIL-PC-15-70.0-*	70	350 X 0.50	11.7	1.1	0.277	300	12.5	14.6	665
RAIL-PC-15-95.0-*	95	456 X 0.50	13.5	1.1	0.210	360	13.9	16.3	885
RAIL-PC-15-120.0-*	120	570 X 0.50	15.2	1.2	0.164	425	15.7	18.4	1120
RAIL-PC-15-150.0-*	150	722 X 0.50	17.1	1.4	0.132	490	17.6	20.6	1400
RAIL-PC-15-185.0-*	185	874 X 0.50	18.6	1.6	0.108	560	19.6	22.9	1710
RAIL-PC-15-240.0-*	240	1147 X 0.50	21.3	1.7	0.0817	675	22.2	26.0	2200
RAIL-PC-15-300.0-*	300	1443 X 0.50	24.0	1.8	0.0654	775	24.6	28.8	2710
RAIL-PC-15-400.0-*	400	1952 X 0.50	27.6	2.0	0.0495	950	28.1	32.9	3610

Meets physical performance requirements of EN 50264-3-1

RAIL-PC-35: 1800V POWER CABLE

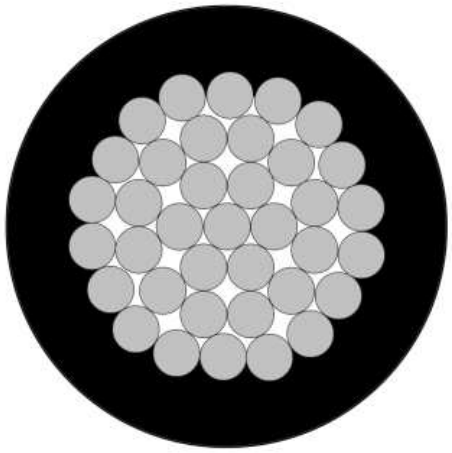
Conductor	IEC 60288 Class 5	Voltage Rating	1800/3000 V AC
Number of Conductors	1		
Cross Section	1.50mm² – 400mm²	Temperature Range	-40°C to +90°C

Construction

Insulation	EBXL – EL 109 Colour: As per customer request
Conductor	Finely Stranded Annealed Electro Tinned Copper 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	

RAIL-PC-35: 1800V POWER CABLE

	Conductor			Finished Wire					
Part Description	Nominal Cross Sectional Area	Nominal Conductor Stranding No./Diam.	Diameter Nom.	Insulation Thickness Nom.	Maximum Resistance @ 20°C	Current Rating EN 50343 TC(max) = 90°C Tref = 45°C	Diameter (mm)		Approx. Weight
	(mm^2)	(mm)	(mm)	(mm)	(Ohms/km)	Max.	Min.	Max.	(kg/km)
RAIL-PC-35-1.50-*	1.5	29 X 0.25	1.5	2	13.7	25	5.3	6.2	55
RAIL-PC-35-2.50-*	2.5	47 X 0.25	2.0	2	8.21	33	5.7	6.7	65
RAIL-PC-35-4.0-*	4	52 X 0.30	2.4	2	5.09	46	6.2	7.3	85
RAIL-PC-35-6.0-*	6	78 X 0.30	3.0	2	3.39	60	6.7	7.8	105
RAIL-PC-35-10.0-*	10	77 X 0.40	4.1	2	1.95	85	7.5	8.8	155
RAIL-PC-35-16.0-*	16	126 X 0.40	5.1	2	1.24	110	8.6	10.0	215
RAIL-PC-35-25.0-*	25	190 X 0.40	6.3	2	0.795	150	9.9	11.6	300
RAIL-PC-35-35.0-*	35	266 X 0.40	7.6	2	0.565	190	11.1	13.0	400
Meets physical performance requirements of EN 50264-3-1									

RAIL-PC-35: 1800V POWER CABLE

	Conductor			Finished Wire					
Part Description	Nominal Cross Sectional Area	Conductor Stranding No./Diam.	Diameter Nom.	Insulation Thickness Nom.	Maximum Resistance @ 20°C	Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC	Diameter (mm)		Approx. Weight
	(mm²)	(mm)	(mm)	(mm)	(Ohms/km)	Max.	Min.	Max.	(kg/km)
RAIL-PC-35-50.0-*	50	378 X 0.40	9.9	2	0.393	240	12.5	14.6	550
RAIL-PC-35-70.0-*	70	350 X 0.50	11.7	2	0.277	300	14.2	16.6	740
RAIL-PC-35-95.0-*	95	456 X 0.50	13.5	2.2	0.210	360	16.0	18.7	980
RAIL-PC-35-120.0-*	120	570 X 0.50	15.2	2.2	0.164	425	17.6	20.6	1190
RAIL-PC-35-150.0-*	150	722 X 0.50	17.1	2.2	0.132	490	19.1	22.3	1480
RAIL-PC-35-185.0-*	185	874 X 0.50	18.6	2.4	0.108	560	20.9	24.4	1820
RAIL-PC-35-240.0-*	240	1147 X 0.50	21.3	2.4	0.0817	675	23.7	27.5	2300
RAIL-PC-35-300.0-*	300	1443 X 0.50	24.0	2.4	0.0654	775	25.6	30.1	2830
RAIL-PC-35-400.0-*	400	1952 X 0.50	27.6	2.6	0.0495	950	29.2	34.2	3700
Meets physical performance requirements of EN 50264-3-1									

RAIL-PC-36: FLEXIBLE 1800V POWER CABLE

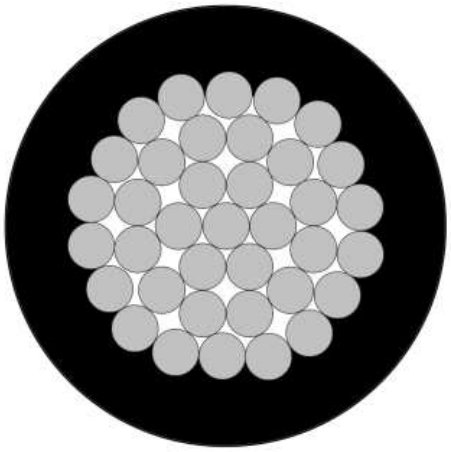
Conductor	IEC 60288 Class 6	Voltage Rating	1800/3000 V AC
Number of Conductors	1		
Cross Section	1.50mm² – 400mm²	Temperature Range	-40°C to +90°C

Construction

Insulation	EBXL – EL 109 Colour: As per customer request
Conductor	Finely Stranded Annealed Electro Tinned Copper Class 6

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	

RAIL-PC-36: 1800V FLEXIBLE POWER CABLE

	Conductor			Finished Wire					
Part Description	Nominal Cross Sectional Area	Conductor Stranding	Diameter Nom.	Insulation Thickness Nom.	Maximum Resistance @ 20°C	Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC	Diameter (mm)		Approx. Weight
	(mm^2)		(mm)	(mm)	(Ohms/km)	Max.	Min.	Max.	(kg/km)
RAIL-PC-36-1.50-*	1.5	72 X 0.15	1.6	2.0	13.7	25	5.1	6.1	50
RAIL-PC-36-2.50-*	2.5	120 X 0.15	2.1	2.0	8.21	33	5.5	6.7	65
RAIL-PC-36-4.00-*	4	200 X 0.15	2.8	2.0	5.09	46	6.2	7.4	85
RAIL-PC-36-6.00-*	6	176 X 0.20	3.4	2.0	3.39	60	6.7	8.1	110
RAIL-PC-36-10.0-*	10	288 X 0.20	4.5	2.0	1.95	85	7.7	9.3	160
RAIL-PC-36-16.0-*	16	464 X 0.20	5.6	2.0	1.24	110	8.8	10.4	225
RAIL-PC-36-25.0-*	25	720 X 0.20	6.9	2.0	0.795	150	9.9	11.9	320
RAIL-PC-36-35.0-*	35	1008 X 0.20	8.2	2.2	0.565	190	11.1	13.3	431
RAIL-PC-36-50.0-*	50	648 X 0.30	10.7	2.2	0.393	240	14.0	18.8	600
Meets physical performance requirements of EN 50264-3-1									

RAIL-PC-36: 1800V FLEXIBLE POWER CABLE

	Conductor			Finished Wire					
Part Description	Nominal Cross Sectional Area	Conductor Stranding	Diameter Nom.	Insulation Thickness Nom.	Maximum Resistance @ 20°C	Current Rating EN 50343 TC(max) = 90ºC Tref = 45ºC	Diameter (mm)		Approx. Weight
	(mm^2)		(mm)	(mm)	(Ohms/km)	Max.	Min.	Max.	(kg/km)
RAIL-PC-36-70.0-*	70	928 X 0.30	12.2	2.2	0.277	300	15.0	20.0	795
RAIL-PC-36-95.0-*	95	1256 X 0.30	14.8	2.2	0.210	360	17.5	22.8	1030
RAIL-PC-36-120.0-*	120	1592 X 0.30	15.9	2.2	0.164	425	18.6	23.0	1280
RAIL-PC-36-150.0-*	150	1984 X 0.30	17.0	2.2	0.132	490	19.6	23.2	1570
RAIL-PC-36-185.0-*	185	1400 X 0.40	20.9	2.4	0.108	560	22.1	29.4	1900
RAIL-PC-36-240.0-*	240	1816 X 0.40	22.6	2.4	0.0817	675	25.1	29.7	2450
RAIL-PC-36-300.0-*	300	2379 X 0.40	25.0	2.4	0.0654	775	27.3	32.3	2980

Meets physical performance requirements of EN 50264-3-1

RAIL-PC-15 PART NUMBERS

Part Description	Product Detail	TE Part Number
RAIL-PC-15-1.00-0	Power Cable, 600 V, 1.00 mm^2, Black	2370656-1
RAIL-PC-15-1.50-0	Power Cable, 600 V, 1.50 mm^2, Black	2362247-1
RAIL-PC-15-2.50-0	Power Cable, 600 V, 2.50 mm^2, Black	2369890-1
RAIL-PC-15-4.00-0	Power Cable, 600 V, 4.00 mm^2, Black	2370598-1
RAIL-PC-15-6.00-0	Power Cable, 600 V, 6.00 mm^2, Black	2362248-1
RAIL-PC-15-10.0-0	Power Cable, 600 V, 10.0 mm^2, Black	2362249-1
RAIL-PC-15-16.0-0	Power Cable, 600 V, 16.0 mm^2, Black	2362253-1
RAIL-PC-15-25.0-0	Power Cable, 600 V, 25.0 mm^2, Black	2362255-1
RAIL-PC-15-35.0-0	Power Cable, 600 V, 35.0 mm^2, Black	2362257-1
RAIL-PC-15-50.0-0	Power Cable, 600 V, 50.0 mm^2, Black	2370599-1
RAIL-PC-15-70.0-0	Power Cable, 600 V, 70.0 mm^2, Black	2362258-1
RAIL-PC-15-95.0-0	Power Cable, 600 V, 95.0 mm^2, Black	2362260-1
RAIL-PC-15-120.0-0	Power Cable, 600 V, 120.0 mm^2, Black	2370600-1
RAIL-PC-15-150.0-0	Power Cable, 600 V, 150.0 mm^2, Black	2370604-1
RAIL-PC-15-185.0-0	Power Cable, 600 V, 185.0 mm^2, Black	2370605-1
RAIL-PC-15-240.0-0	Power Cable, 600 V, 240.0 mm^2, Black	2370606-1
RAIL-PC-15-300.0-0	Power Cable, 600 V, 300.0 mm^2, Black	2370607-1
RAIL-PC-15-400.0-0	Power Cable, 600 V, 400.0 mm^2, Black	2370608-1

RAIL-PC-35 PART NUMBERS

Part Description	Product Detail	TE Part Number
RAIL-PC-35-1.50-0	Power Cable, 1800 V, 1.50 mm2, Black	2370657-1
RAIL-PC-35-2.50-0	Power Cable, 1800 V, 2.50 mm2, Black	2362261-1
RAIL-PC-35-4.00-0	Power Cable, 1800 V, 4.00 mm2, Black	2362262-1
RAIL-PC-35-6.00-0	Power Cable, 1800 V, 6.00 mm2, Black	2365281-1
RAIL-PC-35-10.0-0	Power Cable, 1800 V, 10.0 mm2, Black	2370662-1
RAIL-PC-35-16.0-0	Power Cable, 1800 V, 16.0 mm2, Black	2362263-1
RAIL-PC-35-25.0-0	Power Cable, 1800 V, 25.0 mm2, Black	2365282-1
RAIL-PC-35-35.0-0	Power Cable, 1800 V, 35.0 mm2, Black	2362264-1
RAIL-PC-35-50.0-0	Power Cable, 1800 V, 50.0 mm2, Black	2362265-1
RAIL-PC-35-70.0-0	Power Cable, 1800 V, 70.0 mm2, Black	2362266-1
RAIL-PC-35-95.0-0	Power Cable, 1800 V, 95.0 mm2, Black	2362267-1
RAIL-PC-35-120.0-0	Power Cable, 1800 V, 120.0 mm2, Black	2362268-1
RAIL-PC-35-150.0-0	Power Cable, 1800 V, 150.0 mm2, Black	2370672-1
RAIL-PC-35-185.0-0	Power Cable, 1800 V, 185.0 mm2, Black	2362269-1
RAIL-PC-35-240.0-0	Power Cable, 1800 V, 240.0 mm2, Black	2362270-1
RAIL-PC-35-300.0-0	Power Cable, 1800 V, 300.0 mm2, Black	2370673-1
RAIL-PC-35-400.0-0	Power Cable, 1800 V, 400.0 mm2, Black	2370674-1

RAIL-PC-36 PART NUMBERS

Part Description	Product Detail	TE Part Number
RAIL-PC-36-25.0-0	Flexible Power Cable, 1800 V, 25.0 mm2, Black	2372895-1
RAIL-PC-36-50.0-0	Flexible Power Cable, 1800 V, 50.0 mm2, Black	2362271-1
RAIL-PC-36-70.0-0	Flexible Power Cable, 1800 V, 70.0 mm2, Black	2406273-1
RAIL-PC-36-95.0-0	Flexible Power Cable, 1800 V, 95.0 mm2, Black	2362272-1
RAIL-PC-36-185.0-0	Flexible Power Cable, 1800 V, 185.0 mm2, Black	2362273-1
RAIL-PC-36-240.0-0	Flexible Power Cable, 1800 V, 240.0 mm2, Black	2376687-1