



# 100G CK0226 SIGNAL CABLE

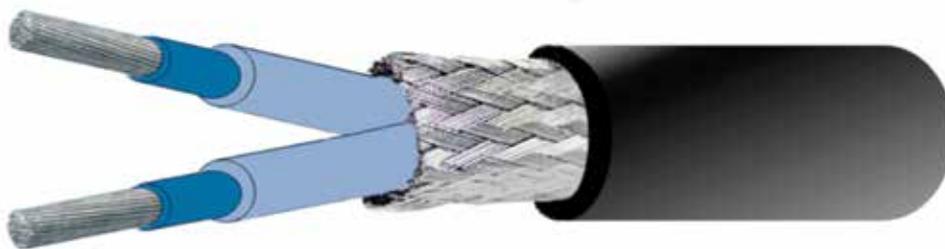
WIRE & CABLE

# 100G CK0226 SIGNAL

## WIRE & CABLE

### Application/Use

Rail approved zero Halogen, light weight wire and cable for signal, and low voltage applications. The construction is a dual wall combination of TE Connectivity formulated polymer blends. Developed to meet Rail specification requirements, whilst maintaining the desirable features of small size, lightweight, flexibility, non-wrinkling.



### 100 Series Product Family

#### 100G CK0226/0042

(Rail qualified, EN50306, EN45545-2, Din 5510-2)

#### 100E

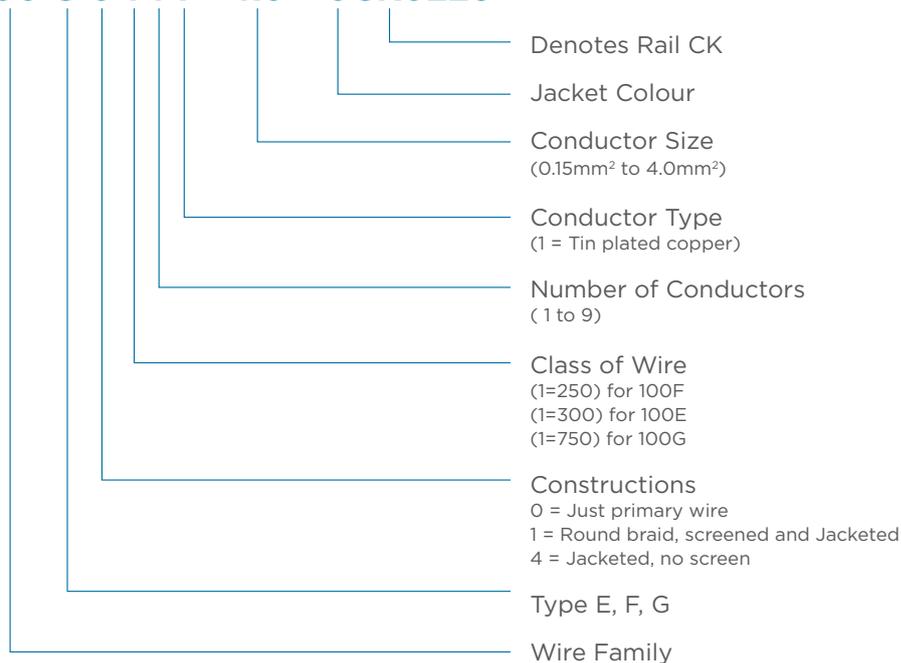
(EN 50306 approved low voltage signal wire)

#### 100F

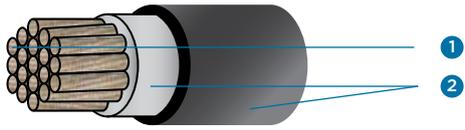
(NFF French norme: NFF 63 808)

### Part Description

#### 100 G 0 1 1 1 - 4.0 - OCK0226



## SINGLE CORE 100G0111-xx (Issue 9)



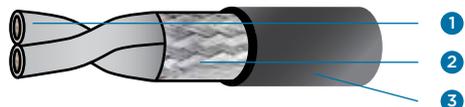
- 100G zero halogen thin wall Rail wire
- 750/1300V AC and continuous temperature rating of -55°C to +125°C

1. Conductor - Tin Plated Copper
2. Insulation - Halogen Free Polymer

The full requirements for procuring 100G cable are included in this document.

Part Description	Nominal Cross Sectional Area (mm <sup>2</sup> )	Nominal Conductor Stranding No./Diam. (mm)	Equivalent AWG Size	Conductor Diameter (mm)		Minimum Insulation Thickness (mm)	Maximum Resistance @ 20°C (ohms/km)	Finished Wire			Maximum Weight (kg/km)
				Min.	Max.			Diameter (mm)			
								Lower Spec Limit	Target	Upper Spec Limit	
100G0111-0-15-*	0.15	19/0.10	26	0.45	0.50	0.20	132.9	0.98	1.03	1.08	2.59
100G0111-0-25-*	0.25	19/0.13	24	0.55	0.63	0.20	84.32	1.09	1.14	1.19	3.59
100G0111-0-40-*	0.40	19/0.16	22	0.73	0.79	0.20	50.50	1.28	1.33	1.38	5.18
100G0111-0-50-*	0.50	19/0.18	-	0.82	0.90	0.20	40.10	1.37	1.40	1.45	6.60
100G0111-0-60-*	0.60	19/0.20	20	0.95	1.01	0.20	31.10	1.47	1.52	1.57	7.40
100G0111-0-75-*	0.75	19/0.23	-	1.04	1.15	0.20	26.70	1.59	1.60	1.65	8.90
100G0111-1-00-*	1.00	19/0.25	18	1.17	1.26	0.20	20.00	1.69	1.75	1.80	10.70
100G0111-1-20-*	1.20	19/0.29	16	1.32	1.42	0.20	15.80	1.88	1.93	1.98	13.60
100G0111-1-50-*	1.50	37/0.23	15	1.46	1.58	0.20	13.70	2.03	2.08	2.13	16.00
100G0111-2-00-*	2.00	37/0.25	14	1.68	1.82	0.20	10.50	2.31	2.36	2.41	20.30
100G0111-2-50-*	2.50	37/0.29	13	1.85	2.01	0.25	8.21	2.50	2.55	2.63	25.70
100G0111-3-00-*	3.00	37/0.32	12	2.12	2.24	0.25	6.58	2.70	2.78	2.86	31.00
100G0111-4-00-*	4.00	56/0.30	-	2.41	2.57	0.25	4.89	3.01	3.09	3.17	43.60

## TWO CORE 100G1121-xx (Issue 8)



- Two conductor cable with zero halogen insulation, shielded and zero halogen jacketed
- 750/1300V AC and continuous temperature rating of -30°C to +105°C

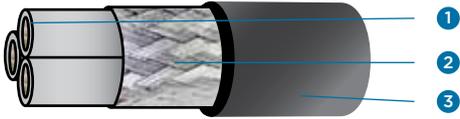
1. Component wire - 100G0111
2. Shield - Tin Coated Copper, Optimised
3. Jacket - Black Zerohal®

The full requirements for procuring 100G cable are included in this document.

Part Description	Nominal Cross Sectional Area (mm <sup>2</sup> )	Equivalent AWG Size	Shield Size (mm)	Jacket Thickness (mm)		Overall Diameter (mm)		Maximum Weight (kg/km)
				Min.	Nom.	Nom.	Max.	
100G1121-0-15-*/*-*	0.15	26	0.10	0.22	0.30	3.09	3.23	15.9
100G1121-0-25-*/*-*	0.25	24	0.10	0.22	0.30	3.30	3.45	18.9
100G1121-0-40-*/*-*	0.40	22	0.13	0.22	0.30	3.81	3.96	26.5
100G1121-0-50-*/*-*	0.50	-	0.13	0.22	0.30	3.99	4.14	30.3
100G1121-0-60-*/*-*	0.60	20	0.13	0.22	0.30	4.19	4.35	33.3
100G1121-0-75-*/*-*	0.75	-	0.13	0.22	0.30	4.44	4.63	37.4
100G1121-1-00-*/*-*	1.00	18	0.13	0.22	0.30	4.65	4.83	42.2
100G1121-1-20-*/*-*	1.20	16	0.13	0.22	0.30	5.00	5.22	50.0
100G1121-1-50-*/*-*	1.50	15	0.13	0.22	0.30	5.30	5.46	56.6
100G1121-2-00-*/*-*	2.00	14	0.13	0.22	0.30	5.88	6.03	68.7
100G1121-2-50-*/*-*	2.50	13	0.13	0.22	0.30	6.29	6.44	81.4
100G1121-3-00-*/*-*	3.00	12	0.13	0.22	0.30	6.72	6.87	94.9
100G1121-4-00-*/*-*	4.00	-	0.13	0.22	0.30	7.33	7.48	124

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## THREE CORE 100G1131-xx (Issue 8)



- Three conductor cable with zero halogen insulation, shielded and zero halogen jacketed
- 750/1300V AC and continuous temperature rating -30°C to +105°C

1. Component wire - 100G0111
2. Shield - Tin Coated Copper, Optimised
3. Jacket - Black Zerohal®

The full requirements for procuring 100G cable are included in this document.

Part Description	Nominal Cross Sectional Area (mm <sup>2</sup> )	Equivalent AWG Size	Shield Size (mm)	Jacket Thickness (mm)		Overall Diameter (mm)		Maximum Weight (kg/km)
				Min.	Nom.	Nom.	Max.	
100G1131-0.15-*/*/*-*	0.15	26	0.10	0.22	0.30	3.26	3.39	20.0
100G1131-0.25-*/*/*-*	0.25	24	0.13	0.22	0.30	3.60	3.77	26.9
100G1131-0.40-*/*/*-*	0.40	22	0.13	0.22	0.30	4.04	4.20	34.0
100G1131-0.50-*/*/*-*	0.50	-	0.13	0.22	0.30	4.23	4.38	39.5
100G1131-0.60-*/*/*-*	0.60	20	0.13	0.22	0.30	4.40	4.55	43.6
100G1131-0.75-*/*/*-*	0.75	-	0.13	0.22	0.30	4.70	4.86	49.3
100G1131-1.00-*/*/*-*	1.00	18	0.13	0.22	0.30	4.93	5.09	56.2
100G1131-1.20-*/*/*-*	1.20	16	0.13	0.22	0.30	5.25	5.41	67.4
100G1131-1.50-*/*/*-*	1.50	15	0.13	0.22	0.30	5.65	5.85	76.5
100G1131-2.00-*/*/*-*	2.00	14	0.13	0.22	0.30	6.22	6.41	92.8
100G1131-2.50-*/*/*-*	2.50	13	0.13	0.22	0.30	6.70	6.85	111
100G1131-3.00-*/*/*-*	3.00	12	0.13	0.22	0.30	7.15	7.31	131
100G1131-4.00-*/*/*-*	4.00	-	0.13	0.22	0.30	7.83	7.98	173

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## FOUR CORE 100G1141-xx (Issue 10)



- Four conductor cable with zero halogen insulation, shielded and zero halogen jacketed
- 750/1300V AC and continuous Temperature rating -30°C to +105°C

1. Component wire - 100G0111
2. Shield - Tin Coated Copper, Optimised
3. Jacket - Zerohal®

The full requirements for procuring 100G cable are included in this document.

Part Description	Nominal Cross Sectional Area (mm <sup>2</sup> )	Equivalent AWG Size	Shield Size (mm)	Jacket Thickness (mm)		Overall Diameter (mm)		Maximum Weight (kg/km)
				Min.	Nom.	Nom.	Max.	
100G1141-0.15-*/*/*/*-*	0.15	26	0.13	0.22	0.30	3.65	3.79	27.0
100G1141-0.25-*/*/*/*-*	0.25	24	0.13	0.22	0.30	3.89	4.04	32.6
100G1141-0.40-*/*/*/*-*	0.40	22	0.13	0.22	0.30	4.38	4.53	41.6
100G1141-0.50-*/*/*/*-*	0.50	-	0.13	0.22	0.30	4.58	4.73	48.7
100G1141-0.60-*/*/*/*-*	0.60	20	0.13	0.22	0.30	4.82	4.99	54.0
100G1141-0.75-*/*/*/*-*	0.75	-	0.13	0.22	0.30	5.12	5.29	61.3
100G1141-1.00-*/*/*/*-*	1.00	18	0.13	0.22	0.30	5.36	5.51	70.3
100G1141-1.20-*/*/*/*-*	1.20	16	0.13	0.22	0.30	5.81	5.96	84.7
100G1141-1.50-*/*/*/*-*	1.50	15	0.13	0.22	0.30	6.17	6.32	96.7
100G1141-2.00-*/*/*/*-*	2.00	14	0.13	0.35	0.48	7.21	7.36	127
100G1141-2.50-*/*/*/*-*	2.50	13	0.13	0.35	0.48	7.70	7.85	152
100G1141-3.00-*/*/*/*-*	3.00	12	0.13	0.35	0.48	8.22	8.37	178
100G1141-4.00-*/*/*/*-*	4.00	-	0.13	0.35	0.48	8.97	9.12	235

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### Approvals & Declarations:

- EN 50306-2
- EN 45545-2
- DIN 5510-2
- TE WSD 912

### Continuous Operating Temperature Wire

- -55°C to +125°C

### Continuous Operating Temperature Cable

- -30°C to +105°C

### Halogens

- Halogen free, low smoke, highly flame retarded

### Voltage Rating

- 100G 750/1300V
- 100E 300/500V
- 100F 250V

### Conductor Size Range

- 0.15mm<sup>2</sup> to 4.0mm<sup>2</sup>

### Construction

- Single core and multi core

### Colours

- Single core insulation available in all colour codes 0-9
- Standard insulation colours black & white

### Conductors

- Tin plated copper stranded



Test	Method	Result
Flammability - small scale	(IEC 60332-1-2)	Charring confined to between 50mm and 540mm
Flammability - large scale	(Clause 9.1.2 EN50305)	Max. burn length 1.5m
Smoke - large scale	(EN 61034-2)	3m cube box 90% min. transmittance
Current Overload	(VG 95 218)	No visible smoke
Toxicity	(Clause 9.2 EN50305)	Index max. 6
Halogen Content	(IEC 60684-2)	< 0.2% Cl +Br +I. < 0.1% F
Acid Gas Emission	(EN 50267-2-2)	pH > 4.3, conductivity < 10 µS/mm

**DIN 5510-2 (SEE TEST REPORT WT2387)**

Test	Method	Result
Flammability - small scale	EN60332-1-2	PASS
Flammability - large scale	EN50305	PASS
Smoke - 3m cube	EN61034-2	PASS
PH & Conductivity	EN50267-2-2	PASS
Evolution of HCl	EN50267-2-1	PASS
Fluorine Content	EN60684-2	PASS
Toxicity	Clause 9.2 EN50305	PASS

**GENERAL PROPERTIES (SEE WSD 912 FOR FULL DETAILS)**

Test	Method	Requirement
Concentricity	IEC 60811-1-1	70% Minimum
Mark Durability	Clause 10.1 EN50305	Legible after rubbing with wet cloth
Tensile Strength	IEC 60811-1-1	>20 M Pa
Elongation at Break	IEC 60811-1-1	>200%
Scrape Abrasion	Clause 5.2 EN50305	>150 cycles load 7N to 11N
Dynamic Cut-through	Clause 5.6 EN50305	Minimum load 70N to 120N
Notch Propagation	Clause 5.3 EN50305	No cracking to conductor, no dielectric breakdown
Strip Ability	Clause 5.5.1/2 EN50305	Easily stripped
Thermal Endurance	Clause 7.2 EN50305	20,000 hours at 125°C
Accelerated Aging (168 hours at 180°C)	IEC 60811-1-2	No cracks, flow, or dielectric breakdown
Stress Cracking (168 hours at 180°C)	Clause 7.7 EN50305	No cracking, or dielectric breakdown
Hot Set (15 min 200°C)	IEC 60811-2-1	Max elongation 100% under load,25% after unloading
Shrinkage	Clause 7.6 EN50305	Max 0.5%
Cold Blend (4 hours at -55°C)	IEC 60811-1-4	No cracking, or dielectric breakdown
Conductor Resistance	Clause 6.1 EN50305	See SCD
AC Voltage Test	Clause 6.2.1 EN50305	No dielectric breakdown (2kV AC for 5 min 20°C)
DC Voltage Test	Clause 6.2.1 EN50305	No dielectric breakdown (4.8kV DC 5 min 20°C)
Dielectric Strength	Clause 6.8 EN50305	>4.0 kV AC after 1 hour water immersion 20°C
DC Stability	Clause 6.7 EN50305	No dielectric breakdown
Insulation Resistance	6.4.1 and 6.4.2 of EN 50305	Table 2 of EN 50306-2
IRM 902 Oil 24 hours at 100°C	Clause 8.1 EN50305	<5% diameter change, no dielectric breakdown
IRM 903 Oil 168 hours at 70°C	Clause 8.1 EN50305	<5% diameter change, no dielectric breakdown
MEK 1 hour at 23°C	Clause 8.1 EN50305	<5% diameter change, no dielectric breakdown
0.5M-Oxalic Acid 168 hours 23°C	Clause 8.2 EN50305	<5% diameter change, no dielectric breakdown
1M Sodium Hydroxide 168 hours 23°C	Clause 8.2 EN50305	<5% diameter change, no dielectric breakdown

## Business locations

Asia:	86.213.398.0184
Australia:	1.800.144.078
Eire:	800.557.810
Germany:	49.173.316.9004
New Zealand	0800.TYCO.HELP
N America:	1.800.430.7226 X4 (East Coast)
N America:	1.800.430.7226 X5 (West Coast)
UK:	44.800.988.9177

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