

# Diesel Locomotive Cable 2000 Volts (EPR/XL-CPE)

**SPEC 5310**  
May, 2012

UL RHH/RHW-2 2000 V and c(UL) RW90 1000 V

Flexible, Oil-, Sunlight- and Ozone-Resistant, Flame-Retardant, -40°C to 90°C

**Product Construction:**

**Conductor:**

- 14 AWG (2.08 mm) thru 1111.1 kcmil (562 mm) Class I fully annealed flexible stranded tin coated copper per AAR 589

**Insulation:**

- Flame-retardant, lead-free cross-linked Ethylene Propylene (EP) with separator tape over the conductor to facilitate stripping

**Jacket:**

- Black, flame-retardant, sunlight-, ozone- and oil-resistant, lead-free Cross-linked Chlorinated Polyethylene (XL-CPE)

**Print:**

- GENERAL CABLE® (MFG LOCATION) DIESEL LOCOMOTIVE 2000 V P-07-KA120005-MSHA C(UL)US TYPE RHH OR RHW-2 VW-1 (SIZE) AWG/kcmil (MM<sup>2</sup>) EP FOR CT USE\* SR -40°C FT4 OR RW90 EP 1000 V ROHS MONTH/YEAR OF MFG SEQUENTIAL FOOTAGE MARK

\*Applicable for sizes 1/0 AWG and larger only

**Options:**

- Fully annealed, flexible bare copper stranding per AAR 589
- Other jacket colors available upon request

**Applications:**

- For use up to 2000 V as power cables in wind turbine generator applications per UL Subject 6140
- Diesel electric locomotives
- Mining and earth-moving equipment
- General purpose use as flexible power leads



**Applications (cont'd.):**

- Flexible power leads in cable trays in sizes 1/0 AWG and larger
- Accepted for listing as flame-resistant by MSHA

**Features:**

- Rated 90°C wet or dry per UL 44/CSA C.22.2-38
- Flexible tinned copper stranding
- Excellent resistance to oils, gear lubricants, ozone, sunlight, heat and flame
- Designed to withstand continuous flexing

**Minimum Bend Radius:**

- 8X O.D. for fixed installations or mobile applications

**Torsion Requirements:**

- +/-180° twists per meter for 5,000 cycles at -40°C with cable weight compensated to 18 meters

**Compliances:**

**Industry Compliances:**

- Type RHH/RHW-2 per UL 44, UL File # E90494
- c(UL)US Type RW90 per CSA C.22.2-38, UL File # E90494

**Compliances (cont'd.):**

- National Electrical Code (NEC)
- ICEA S-95-658/NEMA WC70
- "For CT Use" on 1/0 AWG and larger in accordance with NEC®
- Accepted for listing as flame resistant by MSHA
- RoHS Compliant

**Flame Test Compliances:**

- UL 2556 VW-1
- IEEE 1202/CSA FT4 for sizes 1/0 AWG and larger

**AC Withstand Voltage Testing requirements per UL 44:**

14 - 10 AWG	6000 V
8 - 2 AWG	7500 V
1 - 4/0 AWG	9000 V
262.6 kcmil - 444 kcmil	10000 V
535.3 kcmil - 929.9 kcmil	11000 V
1111.1 kcmil	13500 V

CATALOG NUMBER	COND. SIZE		COND. STRAND	NOMINAL COND. O.D.		NOM. INS. THICKNESS		JACKET THICKNESS		NOMINAL O.D.		APPROX. NET WEIGHT	
	AWG/kcmil	mm <sup>2</sup>		INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	LBS/1000 FT	kg/km
5310.01014	14	2.08	19/.0147	0.070	1.8	0.045	1.1	0.015	0.4	0.20	5.1	30	45
5310.01012	12	3.31	19/.0185	0.088	2.2	0.045	1.1	0.015	0.4	0.22	5.6	39	58
5310.01010	10	5.26	27/24	0.117	3.0	0.045	1.1	0.015	0.4	0.25	6.4	56	83
5310.01008	8	8.36	37/24	0.144	3.7	0.055	1.4	0.030	0.8	0.33	8.3	87	129
5310.01006	6	13.3	61/24	0.190	4.8	0.060	1.5	0.030	0.8	0.38	9.7	131	195
5310.01004	4	21.1	105/24	0.262	6.7	0.060	1.5	0.030	0.8	0.46	11.7	202	301
5310.01002	2	33.6	158/24	0.315	8.0	0.060	1.5	0.030	0.8	0.51	13.0	285	424
5310.01001	1	42.4	224/24	0.375	9.5	0.080	2.0	0.045	1.1	0.64	16.3	417	621
5310.01110	1/0	53.5	280/24	0.435	11.0	0.080	2.0	0.045	1.1	0.70	17.8	494	735
5310.01210	2/0	67.4	329/24	0.465	11.8	0.080	2.0	0.045	1.1	0.73	18.5	587	874
5310.01310	3/0	85	456/24	0.535	13.6	0.080	2.0	0.045	1.1	0.80	20.3	718	1069
5310.01410	4/0	107	551/24	0.581	14.8	0.080	2.0	0.045	1.1	0.84	21.3	845	1258
5310.01262	262.6	133	650/24	0.617	15.7	0.090	2.3	0.065	1.7	0.94	23.9	1050	1563
5310.01313	313.3	158	777/24	0.671	17.0	0.090	2.3	0.065	1.7	1.00	25.3	1195	1778
5310.01373	373.7	189	925/24	0.735	18.7	0.090	2.3	0.065	1.7	1.06	26.9	1384	2060
5310.01444	444.4	225	1110/24	0.786	20.0	0.090	2.3	0.065	1.7	1.11	28.2	1634	2432
5310.01535	535.3	271	1332/24	0.877	22.3	0.090	2.3	0.065	1.7	1.20	30.5	1925	2865
5310.01646	646.4	327	1609/24	0.960	24.4	0.090	2.3	0.065	1.7	1.29	32.8	2307	3433
5310.01777	777.7	394	1924/24	1.054	26.8	0.090	2.3	0.065	1.7	1.38	35.1	2728	4060
5310.01929*	929.9	475	2318/24	1.230	31.2	0.090	2.3	0.065	1.7	1.56	39.6	3570	5313
5310.01111*	1111.1	562	2745/24	1.328	33.7	0.115	2.9	0.095	2.4	1.77	44.9	4232	6298

\* Non-stock item; minimum runs apply. Please consult Customer Service for price and delivery.

# Electronically Controlled Pneumatic (ECP) Brake Cable

600 V, Two Conductor, Unarmored and Armored



ECP BRAKE CABLE

CATALOG NUMBER	NUMBER OF CONDUCTORS	CONDUCTOR (AWG) SIZE AND STRANDING		NOMINAL INSULATION THICKNESS		NOMINAL JACKET THICKNESS		NOMINAL CABLE DIAMETER		NET CABLE WEIGHT		AMPACITY (FREE AIR 40°C AMBIENT)
				MILS	mm	MILS	mm	INCHES	mm	LBS./1000'	kg/km	
282400	2	8	37/24	40	1.02	100	2.54	0.725	18.42	405	603	69
287940 (ARMORED)	2	8	37/24	40	1.02	100	2.54	0.960	24.38	730	1086	69

**Product Construction:**

**Conductor:**

- 8 AWG soft annealed tinned copper per ASTM B33

**Insulation:**

- Cross-linked Polyolefin (XLPO) - 125°C

**Shield:**

- 34 AWG tinned copper braid with drain wire

**Jacket:**

- Arctic-grade, heavy-duty reinforced Neoprene

**Optional Armor:**

- Galvanized steel or aluminum

**Print:**

- AAR ECP BRAKE CABLE S-4210 GENERAL CABLE® (WC) T-75128 2/C 8 AWG 600 V QUARTER/YEAR

**Applications:**

- Designed specifically for installation both under and between freight cars
- Meets all AAR specification S-4210 requirements

**Features:**

- 125°C rated Cross-linked Polyolefin (XLPO) insulation allows for routing through higher temperature areas. Insulation is also flexible and free stripping
- Tinned copper braided shield designed for significant EMI/RFI reduction
- Arctic-grade, heavy-duty reinforced neoprene jacket offers the lowest diameter for easier conduit pull and can be used in a 3/4" conduit in lieu of 1". Excellent low-temperature performance suitable for installation in sub-zero conditions. Tough mechanical properties
- Optional galvanized or aluminum armor over the cable jacket allows for conduit-free installations providing significant installed cost savings
- Temperature range of -45°C to +100°C

**Compliances:**

**Industry:**

- AAR S-4210

**Flame Test:**

- IEEE 1202 (70,000 BTU/hr)
- IEEE 383 (70,000 BTU/hr)
- VW-1

# TRANSPOWER Head-End Power (HEP) 600 V Cables

Single-Conductor, 4/0 AWG or Three Conductor, 10 AWG



**Product Construction**

**Single-Conductor:**  
 • 4/0 AWG 5320/34 Rope Bare Copper

**Insulation:**  
 • Thermoplastic Elastomer (TPE)

**Jacket:**  
 • Reinforced Neoprene – Black

**Ampacity:**

• 400 amps @ 30°C

**Print:**

• GENERAL CABLE® (WC) 600 VOLT 4/0 AWG

**Applications:**

- Head-End Power cable used in jumper assemblies locomotive-to-locomotive, locomotive-to-car and car-to-car for transmission of 480 V, 3 phase 50/60 Hz
- Designed for heavy-duty service where severe flexing is encountered

**Features:**

- Rated at 600 V
- Normal operating temperature: -55°C to +90°C
- Extreme temperature resistance during molding operation: 375°F
- Excellent flexibility; withstands continuous vibrations
- Outstanding resistance to moisture, oils and fluids, abrasion, tearing, compression, ozone, sunlight, flame, and heat
- Bend radius:  
 1/C 4/0 AWG: 3.5" minimum  
 3/C 10 AWG: 2.75" minimum

**Industry Compliances:**

- Amtrak Specification: D-77-24
- ASTM B3
- ASTM B172
- UL Standard 62
- ICEA S-95-658/NEMA WC70



**Product Construction**

**Three Conductors:**  
 • 10 AWG 259/34 Tinned Copper

**Insulation:**  
 • Thermoplastic Elastomer (TPE)

**Jacket:**  
 • Neoprene – Black

**Color Code:**

• Black, White, Red

**Print:**

• GENERAL CABLE® (WC) 600 VOLT  
 TRANSPOWER 3/C 10 AWG

**TRANSPOWER HEAD-END POWER (HEP) 600 V CABLES**

CATALOG NUMBER	NUMBER OF CONDUCTORS	CONDUCTOR (AWG) SIZE AND STRANDING		NOMINAL INSULATION THICKNESS		NOMINAL JACKET THICKNESS		NOMINAL CABLE DIAMETER		NET CABLE WEIGHT		AMPACITY (FREE AIR 30°C AMBIENT)
				MILS	mm	MILS	mm	INCHES	mm	LBS./1000'	kg/km	
650870.00.77	1	4/0	5320/34	60	1,52	85	2,16	0,885	22,5	872	1298	400
696420.00.77	3	10	259/34	47	1,19	93	2,36	0,685	17,4	338	503	40



Phone: 866.248.7060  
 www.generalcable.com