



# CAN-BUS

## J 1939 Cable

125°C 150°C 60V 120 Ω ROHS Compliant

Champlain Cable combines the expertise of data communications and irradiated cross-linked materials technology to create EXTRAD CAN-bus cables. EXTRAD CAN-bus cables are used as the backbone of the J1939 physical layer. Selected shielded constructions are FLEX-RAY compatible @10 MHz and have been tested to meet 100 MHz requirements. Our CAN-bus cables are designed with materials that meet or exceed TXL requirements and the impedance, return loss and attenuation requirements of the network system. Our shielding reduces the harmful effect of EMI and RFI interference. The combination of controlled impedance and shielding can reduce or eliminate data transfer issues. Our Cell-RAD dielectric primaries are designed and sized to meet your termination needs.

Champlain Cable Corporation offers many standard and custom designed cables that are road tested and have proven reliability. These cables are designed to withstand temperature extremes and physical abuse.



Part Number	Conduct	Cap. pF/ft	Nom. Velocity	Conductor Diameter in mm	Dielectric Diameter In. mm	Dielectric Insulation	Shield	Jacket Insulation	Filler	Overall Diameter in mm
23-00013	.5mm <sup>2</sup> (19/18) TC	12	58%	.035 .89	.094 2.39	150A	Yes	150A	Yes	.325 8.26
23-00028	.5mm <sup>2</sup> (19/18) BC	12	58%	.035 .89	.094 2.39	150A	Yes	150A	No	.325 8.26
23-00036	.5mm <sup>2</sup> (19/18) BC	12	64%	.045 1.14	.094 2.39	150 UT	Yes	150 FX	No	.325 8.26
23-00037	18 AWG (19/23) BC	12	64%	.045 1.14	.126 3.20	150 UT	Yes	150 FX	No	.398 10.11
23-00033	.5mm <sup>2</sup> (19/18) BC	11	72%	.035 .89	.106 2.69	Cell-Rad	Yes	125ZH	Yes	.300 7.62
23-00065	18 AWG (19/23) BC	11	72%	.045 1.14	.137 3.48	Cell-Rad	Yes	125ZH	Yes	.352 8.95
23-00072	.5mm <sup>2</sup> (19/18) BC	10	80%	.035 .89	.092 2.34	Cell-Rad	Yes	150 FX	Yes	.250 6.35
23-00073	.8mm <sup>2</sup> (19/23) BC	11	75%	.042 1.07	.125 3.17	Cell-Rad	Yes	150 FX	Yes	.380 9.65
23-00076	.5mm <sup>2</sup> (19/18) BC	10	80%	.035 .89	.106 2.69	150 FX	Yes	125ZH	Yes	.291 7.39
15-07271	20 AWG (7/28) BC	11	64%	.038 .97	.082 2.08	150 UT	No	125ZH	No	.204 5.18
15-07445	20 AWG (7/28) BC	11	64%	.038 .97	.082 2.08	150 UT	No	150 FX	No	.224 5.64
15-07508	20 AWG (19/32) BC	11	64%	.038 .97	.082 2.08	150 UT	No	150 FX	No	.224 5.64
23-00074	20 AWG (7/28) BC	12	66%	.038 .97	.072 1.83	XLPE	No	125ZH	No	.208 5.28
23-00070	0.8mm <sup>2</sup> (19/23) BC	11	64%	.042 1.07	.084 2.13	150 UT	No	125ZH	No	.204 5.18
15-07272	18 AWG (19/23) BC	11	64%	.045 1.14	.092 2.34	150 UT	No	150 FX	No	.226 5.74
15-07353	18 AWG (19/23) BC	11	64%	.045 1.14	.092 2.34	150 UT	No	125ZH	No	.217 5.51





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Property / Attribute			SAE J-1128 TXL Req.	150A	150 UT	150 FX	125ZH
Dielectric Test	Wet Dielectric after 5 hour soak		1 kV 1 min.	5 kV 30 min	5 kV 30 min	5 kV 30 min.	5 kV 30 min
Flame Test	Maximum time after burn		70 Sec	<1 sec	9 sec	4 sec	10 sec
Cold Bend	4 hours at temperature no cracks / breakdown		-40°C	-55°C	-55°C	-70°C	-55°C
Temperature Rating	240 Hours heat aging		155°C	180°C	180°C	180°C	155°C
Temperature Rating	3000 Hours		125°C	150°C	150°C	150°C	125°C
Tensile	Minimum psi		1500	2350	3000	3300	3000
Elongation	Minimum %		150	300	375	430	220
Abrasion	Sand Paper Resistance Length in. (14 awg)		8.5	12	65	45	31
Abrasion	Scrape Cycles (14 awg)		None	NA	NA	148	250
Pinch	Pounds		9	NA	10.2	18	9
Ozone Test	192 Hours @ 65°C 100 pphm no cracks		Pass	Pass	Pass	Pass	Pass
Engine Oil	ASTM D471, IRM-902	50 +/-3°C	15% Max.	1.8%	1%	1.6%	5%
Gasoline	ASTM D471 Ref. Fuel C	23 +/-5°C	15% Max.	<1%	2%	<1%	3%
Brake Fluid	SAE-J-1703	50 +/-5°C	None	<1.5%	2%	<1%	1%
Ethanol	85% Ethanol + 15% ASTM D471, Ref. Fuel	23 +/-5°C	15% Max.	<1%	1%	<1%	1%
Diesel Fuel	ASTM D471, 90% IRM-903 + 10% p-xylene	23 +/-5°C	None	1.3%	2%	1.8%	1%
Power Steering	ASTM D471, IRM-903	50 +/-3°C	30% Max.	1.5%	1%	1.2%	9%
Auto Transmission	Citgo #33123 SAE-J311	50 +/-3°C	25% Max.	<1%	3%	5.3%	11%
Methanol		23 +/-5°C	15% Max.	<1%	1%	<1%	1%
Engine Coolant	50% Ethylene Glyco + 50% distilled Water	50 +/-3°C	15% Max.	1.4%	<1%	0%	<1%
Battery Acid	H <sub>2</sub> SO <sub>4</sub> Specific Gravity = 1.260 +/- .005	23 +/-5°C	5% Max.	<1%	<1%	<1%	<1%

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### Manufacturing Locations

**Colchester, Vermont**

**El Paso, Texas**

**[www.champcable.com](http://www.champcable.com)**