EXRAD 180B

Powertrain Cable
-40 - 180°C

EXRAD 180B is a high performance fluid blocking wire built to handle the high temperature fluid environments in engines and transmissions. It is an irradiation cross-linked fluoropolymer with impressive properties. EXRAD 180 is extremely fluid resistant even at temperatures up to 150°C. It significantly reduces wire and routing headaches because it is more heat resistant and tough than TXL. It is an excellent, cost effective replacement for TFE, FEP or Tefzel insulated wire. EXRAD is rated at 180° C, but it survives temperatures to 270° C and higher for short periods of time. It is safer in overload conditions, because it will not melt. EXRAD 180B has silicone blocked conductor to prevent moisture and other fluids to wick through the wiring system.

Given today's longer warranties, you need a wire that will last longer than ever before. New standards are now requiring 10,000 hour heat age test. EXRAD has a life expectancy over 12,000 hours at 160° C. For commercial vehicle and heavy duty equipment EXRAD has an expected life of 24,000 hours at 150° C

EXRAD process very well on automated high speed cut and strip equipment. The end result is an automotive wire ideally suited in applications where heat protection, high temperature fluid resistance, fluid blocking, long life and less expensive wiring harness are required.

Benefits and Features

Excellent anti-capillary properties
Excellent Cut-Though Resistance
High Temperature Fluid Resistance
Passes 1000 hours @150 ° C in Transmission Fluid
–40° C to 180° C Temperature Range
Superior Processing
RoHS Compliant

Applications

Including but not limited to:
Automatic Transmissions
Diesel Fuel Injectors
Sensors
Locations inside Diesel and Gasoline engines

Part Number	Standard Conductors Bare Copper	Nom. Dia Conductor in.	mm.	Insulation Thickness in.	mm.	Nom. OD in.	mm.	Finished Weight (lbs/mft)	Ampacity
EXRAD-XBT-24XX	24 (7/32)	.024	.61	.016	.41	.054	1.37	2.91	6
EXRAD-XBT-22XX	22 (7/30)	.031	.79	.016	.41	.063	1.60	3.96	11
EXRAD-XBT-20XX	20 (7/28)	.038	.97	.016	.41	.070	1.78	5.58	15
EXRAD-XBT-18XX	18 (19/30)	.049	1.19	.016	.41	.081	1.98	7.34	21
EXRAD-XBT-16XX	16 (19/29)	.057	1.45	.016	.41	.089	2.26	10.25	28
EXRAD-XBT-14XX	14 (19/27)	.071	1.81	.016	.41	.103	2.62	15.16	46
EXRAD-XBT-12XX	12 (19/32)	.095	2.41	.018	.46	.128	3.25	25.06	60
EXRAD-XBT-10XX	10 (19/30)	.112	2.84	.018	.46	.156	3.96	38.65	80

*Ampacity 150°C rated single-insulated conductor in free air at 40°C ambient air temperature.

CHAMPLAIN CABLE
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EXRAD 180 Powertrain

Property / Attribute			SAE J-1128 TXL Req.	EXRAD 180 18 AWG Typical Performance
Flex Life				
Flex Test	Per Modified ISO 14572		NA	NA
Dielectric Strength				
Dielectric Test	Wet Dielectric after 5 hour soak		1 kV 1 min.	5 kV 30 min.
Flame Resistance				
Flame Test	Burn time after removal of gas burner		70 sec max.	1 sec
Thermal Performance				
Cold Bend	4 hours at temperature no cracks / breakdown		-40^0C	-40^0C
Temperature Rating	240 Hours @213^0C heat aging		155^0C	213^0C
Temperature Rating	3000 Hours @180^0C		125^0C	180^0C
Mechanical Properties				
Tensile	psi		1500 min.	3800
Elongation	%		150 min.	320
Abrasion	Sand Paper Resistance Length in.		10 min.	31
Abrasion	Scrape Cycles		None	1400
Pinch	Pounds		5.5 min.	26
Hydrolysis Resistance				
Hydrolysis Resistance	168 Hours @ 75^0C saltwater immersion and 48 volts dc, no cracks, no dielectric failure		pass	pass
Ozone Resistance				
Ozone Test	192 Hours @ 65^0C 100 pphm no cracks		Pass	Pass
Fluids				
Engine Oil	ASTM D471, IRM-902	115 +/-3 ^{0}C	15% Max.	0%
Gasoline	ASTM D471 Ref. Fuel C	23 +/-5 ^{0}C	15% Max.	0%
Brake Fluid	SAE-J-1703	50 +/-5 ^{0}C	None	0%
Ethanol	85% Ethanol +15% ASTM D471, Ref. Fuel C	23 +/-5 ^{0}C	15% Max.	0%
Diesel Fuel	ASTM D471, 90% IRM-903 + 10% p-xylene	23 +/-5 ^{0}C	15% Max.	0%
Power Steering	ASTM D471, IRM-903	50 +/-3 ^{0}C	30% Max.	0%
Auto Transmission	Citgo #33123 SAE-J311	50 +/-3 ^{0}C	25% Max.	<2%
Methanol		23 +/-5 ^{0}C	25% Max.	0%
Engine Coolant	50% Ethylene Glycol + 50% distilled Water	50 +/-3 ^{0}C	15% Max.	0%
Battery Acid	H_2SO_4 Specific Gravity = 1.260 +/- .005	23 +/-5 ^{0}C	5% Max.	<0%

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