



AUTOMOTIVE

Inventing *the Future* of Wire and Cable

EXRAD 180

Powertrain Cable

-40 - 180°C

EXRAD 180 is a high performance wire built to handle the increasingly brutal environment under the hood and in automatic transmissions. It is an irradiation cross-linked fluoropolymer with impressive properties. EXRAD 180 is extremely fluid resistant even at high temperatures. 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 180 creates opportunities to eliminate unnecessary and expensive convolute tubing, tapes and heat shields that protect inferior wire systems. 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 10,000 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 Cut-Through Resistance
- Thin, uses up to 50% less space
- High Temperature Fluid Resistance
- Passes 1000 hours @150°C in Transmission Fluid
- Lower Weight
- 40°C to 180°C Temperature Range
- Superior Processing
- RoHS Compliant

Applications

- Including but not limited to:
- Automatic Transmissions
- Coil on Plug
- Sensors
- Locations near exhaust manifolds or other high temperature areas
- Power Distribution



Part Number	Standard Conductors Bare Copper	Nom. Dia		Insulation Thickness		Nom. OD		Finished Weight (lbs/mft)	Ampacity
		in.	mm.	in.	mm.	in.	mm.		
EXRAD-XT-24XX	24 (7/32)	.024	.61	.016	.41	.054	1.37	2.91	6
EXRAD-XT-22XX	22 (7/30)	.031	.79	.016	.41	.063	1.60	3.96	11
EXRAD-XT-20XX	20 (7/28)	.038	.97	.016	.41	.070	1.78	5.58	15
EXRAD-XT-18XX	18 (19/.0092)	.047	1.19	.016	.41	.076	1.98	7.34	21
EXRAD-XT-16XX	16 (19/29)	.057	1.45	.016	.41	.089	2.26	10.25	28
EXRAD-XT-14XX	14 (19/27)	.071	1.81	.016	.41	.103	2.62	15.16	46
EXRAD-XT-12XX	12 (105/32)	.095	2.41	.018	.46	.128	3.25	25.06	60
EXRAD-XT-10XX	10 (105/30)	.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.

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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°C	-40°C
Temperature Rating	240 Hours @213°C heat aging	155°C	213°C
Temperature Rating	3000 Hours @180°C	125°C	180°C
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°C saltwater immersion and 48 volts dc, no cracks, no dielectric failure	pass	pass
Ozone Resistance			
Ozone Test	192 Hours @ 65°C 100 pphm no cracks	Pass	Pass
Fluids			
Engine Oil	ASTM D471, IRM-902	115 +/-3 °C	15% Max.
Gasoline	ASTM D471 Ref. Fuel C	23 +/-5 °C	15% Max.
Brake Fluid	SAE-J-1703	50 +/-5 °C	None
Ethanol	85% Ethanol +15% ASTM D471, Ref. Fuel C	23 +/-5 °C	15% Max.
Diesel Fuel	ASTM D471, 90% IRM-903 + 10% p-xylene	23 +/-5 °C	15% Max.
Power Steering	ASTM D471, IRM-903	50 +/-3 °C	30% Max.
Auto Transmission	Citgo #33123 SAE-J311	50 +/-3 °C	25% Max.
Methanol		23 +/-5 °C	25% Max.
Engine Coolant	50% Ethylene Glycol + 50% distilled Water	50 +/-3 °C	15% Max.
Battery Acid	H ₂ SO ₄ Specific Gravity = 1.260 +/- .005	23 +/-5 °C	5% Max.

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