



# AUTOMOTIVE

Inventing *the Future* of Wire and Cable



## EXRAD FXD

### Door / Hatch Cable

-70 - 150°C

EXRAD FXD is a high performance wire designed specifically for flexibility and long flex life. Do not be fooled by wires that bend easily at ambient temperatures. The temperature performance range of FXD is -70°C to 150°C. FXD exceeds SAE J1128 TXL requirements. Standard connectors match exactly and seal well with FXD because it is the same size as other common automotive conductors. Even though it is flexible, FXD has enough column strength to allow easy insertion through the seals of water-resistant connectors. The high temperature performance and fluid resistance of FXD means it can be routed throughout the vehicle including the engine compartment. Superior abrasion and pinch resistance ensures durability and helps keep the wire harness safe and free from defect even with hundreds of thousands of flexes.

Given today's longer warranties you need a wire that will perform more bends and twists than ever before. EXRAD FXD will perform up to 9 times more flexing than conventional wire. FXD processes very well on automated high speed cut and strip equipment. The end result is an automotive wire ideally suited to applications where a combination of flexibility, long flex life and performance is required.

#### Benefits and Features

- Much Longer Flex Life
- Ultra Flexible
- Standard Dimensions of SAE J1128 TXL
- Fluid Resistant
- 70°C to 150°C Temperature Range
- Superior Processing

#### Applications

- Including but not limited to:
- Conventional Doors      Sliding Doors
  - Hatches                      Hood
  - Joy Stick Controls

Part Number	Standard Conductors Bare Copper	Nom. Dia of Conductor		Insulation Thickness		Nom. OD		Finished Weight (lbs/mft)	Ampacity
		in.	mm.	in.	mm.	in.	mm.		
EXRAD-FX22-XX	22 (37/37)	.031	.79	.016	.41	.063	1.60	3.56	11
EXRAD-FX20-XX	20 (41/36)	.035	.89	.016	.41	.070	1.78	4.73	15
EXRAD-FX18-XX	18 (41/34)	.047	1.19	.016	.41	.078	1.98	6.67	21
EXRAD-FX16-XX	16 (41/32)	.057	1.83	.016	.41	.089	2.26	9.99	28
EXRAD-FX14-XX	14 (105/34)	.071	1.85	.016	.41	.103	2.62	15.08	46
EXRAD-FX12-XX	12 (105/32)	.095	2.41	.018	.46	.128	3.25	23.96	60
EXRAD-FX10-XX	10 (105/30)	.112	2.84	.018	.46	.156	3.96	38.40	80

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

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## EXRAD FXD

Property / Attribute			SAE J-1128 TXL Req.	EXRAD 20 FXD Typical Performance
<b>Flex Life</b>				
Flex Test	Per Modified ISO 14572		NA	160,000
<b>Dielectric Strength</b>				
Dielectric Test	Wet Dielectric after 5 hour soak		1 kV 1 min.	5 kV 30 min.
<b>Flame Resistance</b>				
Flame Test	Maximum time after burn		70 Sec	4 sec
<b>Thermal Performance</b>				
Cold Bend	4 hours at temperature no cracks / breakdown		-40°C	-70°C
Temperature Rating	240 Hours @ 180°C heat aging		155°C	180°C
Temperature Rating	3000 Hours @ 150°C		125°C	150°C
<b>Mechanical Properties</b>				
Tensile	Minimum psi		1500	3300
Elongation	Minimum %		150	430
Abrasion	Sand Paper Resistance Length in. (14 awg)		18	45
Abrasion	Scrape Cycles (14 awg)		None	148
Pinch	Pounds		9	18
<b>Ozone Resistance</b>				
Ozone Test	192 Hours @ 65°C 100 pphm no cracks		Pass	Pass
<b>Fluids</b>				
Engine Oil	ASTM D471, IRM-902	50 +/-3 °C	15% Max.	1.6%
Gasoline	ASTM D471 Ref. Fuel C	23 +/-5 °C	15% Max.	<1%
Brake Fluid	SAE-J-1703	50 +/-5 °C	None	<1%
Ethanol	85% Ethanol +15% ASTM D471, Ref. Fuel C	23 +/-5 °C	15% Max.	<1%
Diesel Fuel	ASTM D471, 90% IRM-903 + 10% p-xylene	23 +/-5 °C	15% Max.	1.8%
Power Steering	ASTM D471, IRM-903	50 +/-3 °C	30% Max.	1.2%
Auto Transmission	Citgo #33123 SAE-J311	50 +/-3 °C	25% Max.	5.3%
Methanol			25% Max.	<1%
Engine Coolant	50% Ethylene Glyco + 50% distilled Water	50 +/-3 °C	15% Max.	0%
Battery Acid	H <sub>2</sub> SO <sub>4</sub> Specific Gravity = 1.260 +/- .005	23 +/-5 °C	5% Max.	<1%

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