



Irradiation Cross-Linked Polymeric Insulation

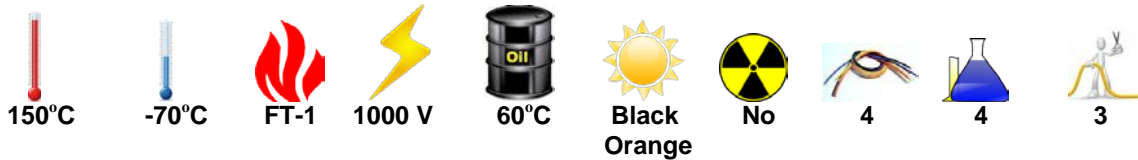
# EXRAD<sup>®</sup> FX Shielded High Voltage Cable

## EXRAD FX 1000 VOLT SHIELDED CABLE

EXRAD FX 1000 volt shielded battery cable designed specifically to handle the higher voltage and current required by today's hybrid and electric power vehicles. These cables significantly reduce the effects of EMI and RFI. The jacket insulation isolates any stray currents making this cable very safe. Our thin wall and high temperature insulations allow for lower weight and less space.

EXRAD FX 1000 volt shielded battery cable has an irradiated cross-linked polyolefin insulation able to withstand temperatures of 240°C and higher. Thinner and lighter than other shielded battery cables, it is flexible enough for easy routing yet tough enough to withstand the roughest environments.

The end result is an automotive wire ideally suited to applications where a combination of flexibility, long life and performance is required. Save money and reduce weight by shortening the cable length. EXTRAD FX 1000 volt shielded battery cable can be routed through twists and turns where other battery cables fail.



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

| Product Number | Standard Conductors Bare Copper | Nom. Dia. Conductor |       | Nom. Dia. Primary insulation |       | Nom. Dia. Shield |       | Nom. Dia. Outside |       | Shield Coverage | Min. Static Bend Radius | Weight lbs/mft | Ampacity |
|----------------|---------------------------------|---------------------|-------|------------------------------|-------|------------------|-------|-------------------|-------|-----------------|-------------------------|----------------|----------|
|                |                                 | in.                 | mm.   | in.                          | mm.   | in.              | mm.   | in.               | mm.   |                 |                         |                |          |
| EXRAD-FSX16X   | 16 (19/29)                      | .055                | 1.40  | .087                         | 2.21  | .105             | 2.67  | .145              | 3.68  | 95%             | 22mm                    | 17.8           | 31       |
| EXRAD-FSX14X   | 14 (105/34)                     | .070                | 1.78  | .100                         | 2.54  | .118             | 3.00  | .168              | 4.27  | 95%             | 27mm                    | 26.1           | 46       |
| EXRAD-FSX12X   | 12 (105/32)                     | .095                | 2.40  | .127                         | 3.22  | .150             | 3.80  | .190              | 4.83  | 95%             | 29mm                    | 41.0           | 60       |
| EXRAD-FSX10X   | 10 (105/30)                     | .114                | 2.89  | .156                         | 3.96  | .178             | 4.52  | .218              | 5.54  | 95%             | 33mm                    | 58.0           | 80       |
| EXRAD-FSX8X    | 8 (133/29)                      | .166                | 4.22  | .224                         | 5.69  | .252             | 6.40  | .303              | 7.70  | 95%             | 55mm                    | 92.0           | 106      |
| EXRAD-FSX6X    | 6 (133/27)                      | .195                | 4.95  | .252                         | 6.40  | .280             | 7.11  | .330              | 8.37  | 95%             | 60mm                    | 126.0          | 155      |
| EXRAD-FSX4X    | 4 (133/25)                      | .242                | 6.15  | .302                         | 7.67  | .326             | 8.28  | .386              | 9.80  | 95%             | 70mm                    | 187.0          | 190      |
| EXRAD-FSX2X    | 2 (665/30)                      | .318                | 8.08  | .393                         | 9.98  | .421             | 10.69 | .481              | 12.21 | 95%             | 85mm                    | 295.0          | 255      |
| EXRAD-FSX1X    | 1 (779/30)                      | .346                | 8.79  | .440                         | 11.18 | .468             | 11.89 | .528              | 13.41 | 95%             | 94mm                    | 334.0          | 293      |
| EXRAD-FSX1/0X  | 1/0 (1007/30)                   | .390                | 9.91  | .490                         | 12.45 | .518             | 13.57 | .598              | 15.19 | 95%             | 105mm                   | 412.0          | 339      |
| EXRAD-FSX2/0X  | 2/0 (1254/30)                   | .438                | 11.13 | .548                         | 13.92 | .571             | 14.50 | .651              | 16.54 | 95%             | 115mm                   | 523.0          | 390      |
| EXRAD-FSX3/0X  | 3/0 (1615/30)                   | .475                | 12.07 | .585                         | 14.86 | .613             | 15.57 | .693              | 17.60 | 95%             | 125mm                   | 620.0          | 451      |
| EXRAD-FSX4/0X  | 4/0 (2107/30)                   | .602                | 15.29 | .712                         | 18.08 | .748             | 19.00 | .828              | 21.03 | 95%             | 150mm                   | 876.0          | 529      |



Manufacturing Locations:  
Colchester, Vermont  
El Paso, TX  
Leeds, Massachusetts



# EXRAD<sup>®</sup> FX Shielded High Voltage Cable

Irradiation Cross-Linked Polymeric Insulation

| EXRAD FX 1000 Volt Cable     |  |                        |                           |   |
|------------------------------|--|------------------------|---------------------------|---|
| Property / Attribute         |  |                        | SAE<br>J-1127 STX<br>Req. | EXRAD FX<br>6 AWG<br>Typical<br>Performance |
| <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                    | 1 sec                                       |
| <b>Thermal Performance</b>   |  |                        |                           |   |
| Cold Bend                    | 4 hours at temperature no cracks / breakdown                     |                        | -40 <sup>0</sup> C        | -40 <sup>0</sup> C                          |
| Temperature Rating           | 240 Hours @ 180 <sup>0</sup> C heat aging                        |                        | 155 <sup>0</sup> C        | 180 <sup>0</sup> C                          |
| Temperature Rating           | 3000 Hours @ 150 <sup>0</sup> C                                  |                        | 125 <sup>0</sup> C        | 150 <sup>0</sup> C                          |
| <b>Mechanical Properties</b> |  |                        |                           |   |
| Tensile                      | Minimum psi  |                        | 1500                      | 3300  |
| Elongation                   | Minimum %  |                        | 150                       | 570   |
| Abrasion                     | Sand Paper Resistance Length in.                                 |                        | 10                        | 21  |
| Abrasion                     | Scrape Cycles  |                        | None                      | NA  |
| Pinch                        | Pounds   |                        | None                      | NA  |
| <b>Ozone Resistance</b>      |  |                        |                           |   |
| Ozone Test                   | 192 Hours @ 65 <sup>0</sup> C 100 pphm no cracks                 |                        | Pass                      | Pass  |
| <b>Fluids</b>                |  |                        |                           |   |
| Engine Oil                   | ASTM D471, IRM-902   | 50 +/-3 <sup>0</sup> C | 15% Max.                  | 1.60%                                       |
| Gasoline                     | ASTM D471 Ref. Fuel C  | 23 +/-5 <sup>0</sup> C | 15% Max.                  | <1%   |
| Brake Fluid                  | SAE-J-1703   | 50 +/-5 <sup>0</sup> C | None                      | <1%   |
| Ethanol                      | 85% Ethanol + 15% ASTM D471, Ref. Fuel C                         | 23 +/-5 <sup>0</sup> C | 15% Max.                  | <1%   |
| Diesel Fuel                  | ASTM D471, 90% IRM-903 + 10% p-xylene                            | 23 +/-5 <sup>0</sup> C | 15% Max.                  | 1.80%                                       |
| Power Steering               | ASTM D471, IRM-903   | 50 +/-3 <sup>0</sup> C | 30% Max.                  | 1.20%                                       |
| Auto Transmission            | Citgo #33123 SAE-J311  | 50 +/-3 <sup>0</sup> C | 25% Max.                  | 5.30%                                       |
| Methanol                     |  |                        | 25% Max.                  | <1%   |
| Engine Coolant               | 50% Ethylene Glyco + 50% distilled Water                         | 50 +/-3 <sup>0</sup> C | 15% Max.                  | 0%  |
| Battery Acid                 | H <sub>2</sub> SO <sub>4</sub> Specific Gravity = 1.260 +/- .005 | 23 +/-5 <sup>0</sup> C | 5% Max.                   | <1%   |

We cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product combination for their own purpose. Unless otherwise agreed in writing, we sell the products without warranty, and buyers and users assume all responsibility and liability for loss and damage arising from the handling and use of our products whether used alone or in combination with other products.

## Sales Offices:

