



EXRAD[®] 150 FX

Thin Wall Battery Cable

Irradiation Cross-Linked Polymeric Insulation

ISO 6722-1 Class D Thin Wall 150°C 600V ROHS and CE Compliant

EXRAD FX ISO 6722-1 battery cable is designed specifically to handle the higher voltage and electrical currents required by today's hybrid and battery power vehicles. Our thin wall and high temperature insulations allow for lower weight and less space.

EXRAD FX ISO 6722-1 metric battery cables have an irradiated cross-linked polyolefin insulation able to withstand temperatures of 240°C and higher. The EXRAD high flex conductor and insulation are designed to be thinner and lighter than other high voltage cables. It is extremely flexible for easy routing in the tight confined areas of the car platform, yet tough enough to withstand the roughest environments. EXRAD FX can be routed through twists and turns where other cables can not. Save money and reduce weight by shortening the cable length.

The end result is the EXRAD FX wire is ideally suited to applications, especially conventional, hybrid and electric vehicles where a combination of flexibility, long life and performance is required.



| Product Number | Standard Conductors** Bare Copper | Nom. Dia of Conductor | | Insulation Thickness | | Nom. OD | | Min. Bend Radius Non flex | | Finished Weight (kg/KM) | Conductor Resistance Ω per KM * |
|----------------|--------------------------------------|-----------------------|------|----------------------|-------|---------|------|---------------------------|-----|-------------------------|---------------------------------|
| | | mm. | in. | mm. | in. | mm. | in. | mm. | in. | | |
| EXRAD--FXT-5 | 5mm ² (37/.40) | 2.69 | .106 | 0.66 | .026 | 4.01 | .158 | 20 | .79 | 48 | 3.94 |
| EXRAD--FXT-6 | 6mm ² (84/.30) | 2.92 | .115 | 0.61 | .024 | 4.15 | .163 | 20 | 0.8 | 61 | 3.01 |
| EXRAD--FXT-8 | 8mm ² (98/.312) | 3.66 | .144 | 0.57 | .0225 | 4.80 | .189 | 24 | .95 | 77 | 2.38 |
| EXRAD--FXT-10 | 10mm ² (63/.46) | 4.36 | .172 | 0.61 | .024 | 5.65 | .222 | 28 | 1.1 | 105 | 1.78 |
| EXRAD--FXT-12 | 12mm ² (154/.32) | 4.88 | .192 | 0.61 | .024 | 6.15 | .242 | 30 | 1.2 | 126 | 1.47 |
| EXRAD--FXT-16 | 16mm ² (105/.46) | 5.21 | .205 | 0.76 | .030 | 6.80 | .267 | 34 | 1.4 | 193 | 1.13 |
| EXRAD--FXT-20 | 20mm ² (247/.32) | 6.17 | .243 | 0.76 | .030 | 7.40 | .291 | 37 | 1.5 | 201 | 0.91 |
| EXRAD--FXT-25 | 25mm ² (154/.46) | 6.98 | .270 | 0.76 | .030 | 8.30 | .326 | 42 | 1.6 | 243 | 0.72 |
| EXRAD--FXT-35 | 35mm ² (551/.28) | 8.12 | .320 | 0.86 | .034 | 9.90 | .390 | 59 | 2.3 | 343 | 0.52 |
| EXRAD--FXT-40 | 40mm ² (494/.32) | 8.89 | .350 | 0.86 | .034 | 10.55 | .415 | 63 | 2.5 | 395 | 0.47 |
| EXRAD--FXT-50 | 50mm ² (798/.28) | 9.91 | .390 | 1.00 | .040 | 11.90 | .457 | 71 | 2.9 | 487 | 0.36 |
| EXRAD--FXT-70 | 70mm ² (1140/.28) | 11.83 | .466 | 1.10 | .043 | 14.10 | .555 | 85 | 3.4 | 699 | 0.26 |
| EXRAD--FXT-95 | 95mm ² (1957/.25) | 13.20 | .521 | 1.60 | .054 | 16.40 | .646 | 99 | 3.9 | 1170 | 0.19 |

** Other conductor stranding options as well as Tinned Copper conductors are available



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



EXRAD[®] 150 FX

Thin Wall Battery Cable

Irradiation Cross-Linked Polymeric Insulation

| Section | Description | Requirement | Typical Results (35mm ² Sample) |
|----------|----------------------------------|--|--|
| 5.1 | Outside Cable Diameter | 10.40 max. | 9.98mm Pass |
| 5.2 | Insulation Thickness | 0.64mm min. | 0.84mm Pass |
| 5.3 | Conductor Diameter | 8.50mm max. | 8.08mm Pass |
| 5.4 | Conductor Resistance | 0.527 mohms/m @20°C max. | 0.521 mohms/m Pass |
| 5.5 | Withstand Voltage | 600V 5kV for 5 minutes | no dielectric breakdown Pass |
| 5.6 | Insulation Faults | Sparktest @ 12.5kV | no faults Pass |
| 5.7 | Insulation Volume Resistivity | 10 ⁹ Ω /mm min. | 1.66 10 ¹⁶ Ω /mm Pass |
| 5.8 | Pressure at High Temperature | 0.8N @ 150°C no dielectric breakdown | no breakdown Pass |
| 5.9 | Strip Force / Adhesion | Per customer agreement | NA Pass |
| 5.10 | Low Temperature Winding | 3 tns 2.5kg - 40°C no dielectric breakdown | no dielectric breakdown, no cracking, Pass |
| 5.11 | Impact | 300gm @-40°C no breakdown | no breakdown, Pass |
| 5.12.4.1 | Sandpaper Abrasion | NA | NA Pass |
| 5.12.4.2 | Scrape Abrasion | NA | NA Pass |
| 5.13 | Long-Term Heat Aging | 150°C 3000 hours | no breakdown, no cracks Pass |
| 5.15 | Thermal Overload | 200°C 6 hours | no breakdown, no cracks, Pass |
| 5.16 | Shrinkage by heat | 2mm max. 150°C | no shrinkage, Pass |
| 5.17 | Fluid Compatibility | Gasoline 15% max. | 7.5% Pass |
| | | Diesel Fuel 15% max. | 2.7% Pass |
| | | Engine Oil 15% max. | 3.2% Pass |
| | | Ethanol 15% max. | 4.7% Pass |
| | | Power Steering 30% max | 4.1% Pass |
| | | Automatic Transmission 25% max | 3.2% Pass |
| | | Engine Coolant 15% max | 0.4% Pass |
| | | Battery Acid no breakdown | no breakdown, Pass |
| 5.19 | Ozone Resistance | 45°C 85% Relative Humidity 70 hours, Ozone 50 +/- 5 pphm 1kV 1 min. (no breakdown) | no breakdown, Pass |
| 5.20 | Resistance to hot water | not less than 10-5 ohm-mm | 10-14 ohm-mm Pass |
| 5.21 | Temperature and Humidity Cycling | 40 - 8 hours cycles -40°C and 125°C 80 -100% relative humidity | no dielectric breakdown, no cracking, Pass |
| 5.22 | Resistance to Flame | 70 sec. max. 50mm unburned | 1 sec. after burn Pass |

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:

