Raychem Custom Multiconductor (Multicore) Cables

Tyco Electronics

Our commitment. Your advantage.

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KEY FEATURES

Up to 40% smaller than comparable products

Improved electrical, mechanical, and/or thermal performance

Enhanced chemical and fluid resistance

Ultra flexible cables and components available

Ability to include data, signal, and power in the same bundle

KEY BENEFITS

Cost savings over hand-building point-to-point harnesses

Available in small order quantities

Special testing available upon request

Cable design services provided free-of-charge

DESCRIPTION

Custom Multi-Core Cables are unique combinations of Raychem brand products built specifically to suit the customer's needs for size and performance.

Try out this cost-effective system solution today!

APPLICATIONS

Military Ground Systems:
- Rotating turret applications
- Engine bay wiring
- Bulk wiring for signal and power
- Back-up camera video feeds for large vehicles

Military Marine:
- Auxiliary equipment such as weapon systems and radar
- Below deck zero halogen cabling, including water-blocked cables that meet MIL-DTL-24640 and MIL-DTL-24643 requirements

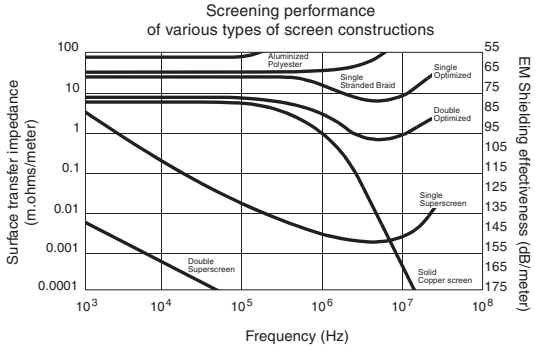
Missile Technology:
- Launch and control systems, including integration into fire control systems in Aerospace, Marine and Ground Vehicles
- Missile internal wiring where small size and flexibility are needed due to tight space restrictions

Commercial/Military Aerospace - Fixed & Rotary Wings
- Open airframe wiring communication systems and specialty applications such as in-flight entertainment systems

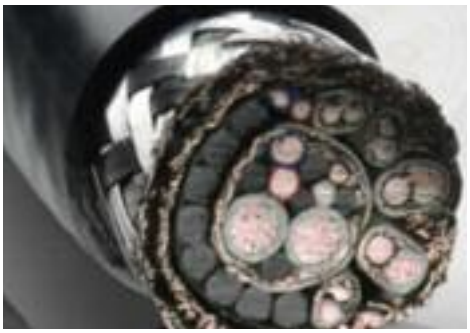
SCREENING EFFICIENCY

To assess the effectiveness of a shield, Tyco Electronics has adopted the line injection method as described in IEC 1196-1 to measure the surface transfer impedance (Zt) of a cable shield.

To determine the surface transfer impedance across a range of frequencies, a drive signal is generated by the internal tracking generator of a spectrum analyzer. The voltage is induced on the center conductor of the sample which is amplified and returned to the signal generator for measurement.



Custom Multiconductor Cables



DESIGN FLEXIBILITY

- CAD for quick response
- High product performance
- Optimum layout
- Rapid quotations
- Size and weight details

COMPONENTS

- Aramid strength members
- Armor in steel / Alloy & Tin
- Coaxial cables
- Fabric and film tapes
- Full range of electrical screens
- Primary wires, pairs, triples, screened and unscreened
- Optical fibers (FIST)
- Special components
- Wraps and braids

JACKET MATERIALS

Full range of custom formulated jacket materials:

- AFR - Abrasion & Fluid resistant
- FDR 25 - Fluid resistant, flexible, high temperature
- Modified ETFE (Thermorad HT) - Thin wall, tough, fluid resistant & high temperature
- Modified PVDF (Thermorad K) - Thin wall, tough and fluid resistant
- NT/Thermorad NTFR - Low-temperature flexibility
- Raythane C - Tough and flexible
- Raythane FR - Tough, flexible, flame-retardant
- Rayolin - Low moisture transmission
- Thermorad/Thermorad F - General purpose
- Thermorad HTF/Fluoroelastomer - Very high temperature, fluid resistant
- Zerohal - LFH (Low Fire Hazard) Low Smoke, Zero Halogen

Custom Multiconductor Cables

COMPUTER AIDED DESIGN

APPLICATIONS

Every year, Tyco Electronics designs and builds several thousand custom, high-performance, multiconductor cables that meet unique product needs. Design staff can draw on an extensive range of high-performance cable components and jacket materials, while incorporating both color-coding and alphanumeric marking techniques for component identification. These options, combined with a full range of EMI shields, lead to a huge variety of construction possibilities.

Tyco Electronics developed computer-aided design tools to provide a fast response to design requests. The software, used by factory engineers and product specialists in the field, can generate cable design proposals with drawings and quotations in minutes. A design drawing details all the cable data and can be used as the input to harness or cable splice (joint) design. The resulting cable is tailored to customers' exact needs in an efficient design.

QUALITY ASSURANCE

Raychem WCD and WSD cable specifications ensure that performance and quality standards are maintained to the highest level. Tyco Electronics manufacturing sites have obtained the highest available quality system approvals, including ISO 9000 and QS9000. Raychem cables are manufactured to meet industry standards.

ELECTRICAL SHIELDING

APPLICATIONS

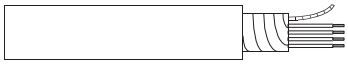
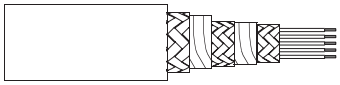
In many applications, shielding of cables is important, whether it be to minimize cross-talk within the cable, to prevent interference from external sources, or to eliminate radiation from the cable itself.

The design of cables to provide effective shielding over a broad frequency spectrum is complex, and cables must be tailored to specific electromagnetic environments. From simple aluminized polyester film that provides electro-static shielding to progressively more complex shielding that can be designed incorporating plated copper braids and Mu metal wraps.

OPTIMIZATION

Performance of conventional braiding can be significantly improved by computer optimization. This tightly controlled process can give many times the shielding performance of a basic braided shield with minimal weight penalty or increase in optical coverage. Supershielded cables combine Mu metal wraps with optimized braids to provide even further enhanced performance, especially at low frequencies.

Available Shields

Shield type	Construction	Typical Application
Aluminized Polyester		Electrostatic shielding
Single Braid		Low level EMI Low sensitivity
Single Optimized Braid		Sensitive lines High EMI
Double Optimized Braid		Highly sensitive lines Severe EMI
Supershielded		EMP/Tempest
Double Supershielded		Highest level of shielding

FOR MORE INFORMATION

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