



Custom-designed and standard Multiconductor (Multicore) Cables



Applications

Tyco Electronics is the leading manufacturer of Raychem custom-designed, small-size, lightweight, high-performance multiconductor (multicore) cables. Applications are found in the aerospace, commercial marine (Sealite), naval, mass transportation, automotive, offshore, military ground vehicle, ground support, high-performance instrumentation, industrial, and commercial markets. Raychem multiconductor (multicore) cables have been approved to many standards demanding high performance criteria in service use.

Multiconductor (Multicore)

Features and benefits

- Temperature capability: -55°C to 200°C .
- Small size, light weight.
- System compatibility with other Raychem products.
- Complete range of components.
- Specially formulated jacket materials.
- Special shielding (screening) to address EMI/EMC problems.
- Custom designed and purpose built.
- Fast response—design, pricing, and delivery.
- Prototype length facility.
- Raychem Dynalink extended flex-life and increased flexibility.
- Fire-resistant: circuit integrity (IEC331, enhanced 950°C , 3 hours).
- Small-size, lightweight, low-fire-hazard for modern high-speed vessels (Sealite).

Multiconductor (Multicore) cables purpose built and designed using Raychem components and technology

Multiconductor cables are used in widely varying applications and environments. Careful consideration must be given to the selection of components with the right combination of physical, chemical, and electrical properties for specific applications.

Fax-on-demand

US only (800) 260-9099

Outside US (650) 257-2301

Visit our website at www.tycoelectronics.com

Tyco Electronics' leadership in the technologies of polymer blending and subsequent radiation crosslinking has led to the development of a particularly broad range of Raychem cables. High-performance component wires and miniature coaxial cables are combined with unique cable jacket materials to meet the requirements of demanding environments.

Established as one of the leading manufacturers of special purpose Raychem cables, Tyco Electronics has continued to develop both its design and manufacturing expertise.

Development of a sophisticated CAD system has allowed increasingly rapid response to any design request, followed by manufacturing to the highest quality standards.

Planar film-bonded cables

Tyco Electronics can custom-design and build a variety of Raychem component wires and cables onto high-performance carrier films. Components and carriers are matched to ensure temperature and environmental stability.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Specifications/approvals			
Agency	Industry	Military	Raychem
Underwriters' Laboratories	Lloyd's Register of Shipping	Def. Stan. 61-12 Pt 25	WCD series
BSENISO9001	Det Norske Veritas	VG 952 18 Pts 27 and 28	
MSV 34410-34413, 34435,34436			



Multiconductor (Multicore) Cables



Design flexibility

Components

- SPEC 44 wire and cable
- SPEC 55 wire and cable
- Type 99 wire and cable
- Zerohal 100 wire and cable
- Coaxial cables
- ElectroLoss Filterline cables
- Flexible power cables
- Optical fibers
- Special components

Wraps and braids

- Fabric and film tapes
- Kevlar or steel strength members
- Full range of electrical screens
(including SuperScreens)

Jacket materials

- Zerohal
 - Low smoke, low toxicity index, low corrosive gases
- FDR 25
 - Fluid resistant, flexible, high temperature
- Thermorad
 - General purpose
- Thermorad HTF/
Fluoroelastomer
 - Very high temperature, fluid resistant
- Raythane C
 - Tough and flexible
- Raythane FR
 - Tough, flexible, flame-retardant
- Rayolin
 - Low moisture transmission
- Neoprene
 - Low-temperature flexibility

Cable jacket materials

Properties and specifications

Specifications and approvals (components and jacket materials)

Specifications

UK designation	FDR 25	Zerohal	Fluoro- elastomer	Thermorad	Rayolin	Raythane C	AFR	Neoprene	44 wire	55 wire	100 wire	99 wire	Hytrel
US designation		Zerohal	Thermorad HTF	Thermorad F		Raythane FR		Thermorad NIFR	44 wire	55 wire	100 wire		
Def Stan 61-12 Part 31, NES 518		X											
NES 525		X							X				
Def Stan 61-12 Part 18 type 1 (issue 4) (Maintenance range)									X				
Def Stan 61-12 Part 18 type 1 (issue 4)		X											X
Def Stan 61-12 Part 25		X											X
Def Stan 61-12 Part 26									X				
MSV 34401									X				
MSV 34410, 34411				X					X				
MSV 34412, 34413, 34430 34435, 34436		X							X				
VG 95218 Part 20, 21, 22 and 23									X	X			
VG 95218 Part 24, 25 and 26	X												
VG 95218 Part 27 and 28	X	X							X		X		
VG 95218 Part 1000									X				
VG 95218 Part 1001 and 1002										X			
MIL-C-24640 (PMS 400)		X							X				
MIL-W-81044/MIL-C-27500									X				
MIL-W-22759/MIL-C-27500										X			
AO14000		X											X
NES 517		X			X				X				

Approvals

Lloyds Register of Shipping/DNV		X		X		X			X				X
Bureau Veritas	X	X	X	X		X	X	X	X	X			
UL				X		X (FR)	X		X	X			
CAA									X	X			
BWB	X			X					X	X			
VDE	X			X					X	X			
Det Norskeveritas													
German Isler Lloyds		X										X	
American Bureau of Shipping		X										X	
Lloyds		X										X	
Bureau Veritas		X										X	

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Country	Cable specification	Specification description	Approved jacket
UK	Def Stan 61-12 Part 25	Royal Navy/Airforce specification covering limited fire hazard thin-wall insulated electric cables using Def-Stan 61-12 Part 18 approved wire. Signal, control and light power circuits.	Zerohal
Germany	VG 95218 (parts 27 and 28)	Military ground systems specification for signal, control and power cables. Wire to VG 95218 Parts 20-23 and 1000.	FDR-25
Netherlands	MSV 34410, 34411	Royal Netherlands Navy specification. Signal, control and light power cables. Wire to MSV 34401.	Thermorad
	MSV 34412, 34413, 34430, 34435, 34436	Royal Netherlands navy specification. Signal, control and light power cables. Wire to MSV 34401.	Zerohal
USA	MIL-C-24640 (PMS 400)	Navy specification covering limited fire hazard thin-wall insulated electric cables for signal, control and light power circuits. Wire to MIL-W-81044.	Zerohal

Summary of typical cable jacket properties

UK designation	US designation	Property			Chemical resistance			
		Temperature range °C*	Abrasion resistance	Flexibility	Flame resistance	Acid	Alkaline	Hydrocarbon
FDR25		-40 to 150	Fair	Very good	Self-exting	Good	Good	Very good
Zerohal	Zerohal UK & US	-30 to 105	Good	Good	Self-exting	Good	Good	Good
Fluoroelastomer	Thermorad HTF	-20 to 200	Good	Good	Nonburning	Excellent	Excellent	Excellent
Thermorad	Thermorad F	-55 to 125	Good	Good	Self-exting	Good	Good	Good
	Raythane C	-25 to 80	Excellent	Excellent	Self-exting	Fair	Fair	Excellent
	Raythane FR	-65 to 90	Excellent	Excellent	Self-exting	Fair	Fair	Excellent
Neoprene	Thermorad NTFR	-55 to 110	Very good	Excellent	Self-exting	Good	Good	Good
Rayolin		-55 to 95	Very good	Fair	–	Good	Good	Good
AFR		-40 to 105	Excellent	Good	Self-exting	Good	Good	Good
	Thermorad LS	-30 to 105	Good	Good	Self-exting	Good	Good	Good
	Thermorad O	-55 to 125	Good	Good	Self-exting	Good	Good	Good
	Thermorad 300	-65 to 200	Very good	Fair	Self-exting	Excellent	Excellent	Excellent
Polyvinylidene Fluoride	Thermorad K	-65 to 150	Very good	Fair	Self-exting	Excellent	Good	Excellent
Modified ETFE	Thermorad HT	-65 to 200	Very good	Fair	Self-exting	Excellent	Excellent	Excellent
Modified Flexible ETFE	Thermorad FL	-55 to 200	Very good	Good	Self-exting	Excellent	Excellent	Excellent

*Operating temperatures for cables are application dependent. Figures shown are for guidance only. In many cases the limits shown may be extended at both ends of the temperature range. Consult your Tyco Electronics product representative for guidance.

Users should independently evaluate the suitability of the product for their application.
Before ordering check with factory for most current data.