

Ethernet Flying Lead

Qualified 100m Subsea Ethernet jumpers designed for data transmission and real-time situational awareness and monitoring

RELIABLE SUBSEA ETHERNET CONNECTORS

Increases in bandwidth requirements and longer offsets have driven demand for subsea Ethernet transmission. For real-time asset monitoring in flow assurance and sensing and subsea processing, optical sensing and communications, Teledyne Oil and Gas has developed an optimized custom cable qualified for subsea use. Jumpers are offered with power lines for transmission of up to 620 VAC/3A.

Nautilus Ethernet connector harnesses have been engineered to provide a fully wet-mateable connection system for 10/100 Base-TX communication. The typical Ethernet harness system consists of wet-mateable, Nautilus-style connectors, Nautilus penetrators, pressure balanced, oil-filled (PBOF) hose conduits. Internally, the Ethernet signals are transmitted over custom Ethernet cabling sealed to seawater ingress by two independent barriers.

Seven and 12-way configurations are available. Up to eight pins are soldered to the custom Ethernet cable for low power signal communication. The four remaining pins have twisted 16 AWG 1000 V spec 44 wire connections capable of DC or AC power.

Subsea connection of the harnesses may be accomplished by ROV, Diver-Mate or Stab-Plate applications

7-WAY NAUTILUS CONNECTORS

- Single Ethernet channel (100 Mb/s)
- 100 m maximum length (ISO/IEC 11801 compliant)

12-WAY NAUTILUS CONNECTORS

- Single or dual redundant Ethernet channels – not simultaneous (100 Mb/s)
- 100 m maximum length (ISO/IEC 11801 compliant)

All Ethernet jumpers are suited for connectivity on subsea control modules, data transmission systems, umbilical terminations, electrical junction boxes and other subsea structures.



Ethernet Flying Lead 7-Way

PRODUCT FEATURES

- Fully Qualified
- Ethernet Jumpers up to 100 m
- 30 Year Design Life
- Single or Dual Channel Redundant Ethernet
- 7-Way or 12-Way



TELEDYNE MARINE
Everywhere you look™

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TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS		
Max Operational Depth Pressure Balanced		6400 m (10,000 psi)
Max Operational Differential Pressure, bar (psi)	7-way 12-way	Receptacle 259 (3750) – Plug 338 (4900) Receptacle 224 (3250) – Plug 303 (4400)
Operational Temperature	Seawater Air	23°F to +104°F (-5°C to +40°C) 13°F to +122°F (-25°C to +50°C)
Storage Temperature		-40°F to +140°F (-40°C to +60°C)
Subsea Mate/De-mate Cycles		1000 total cycles maximum after factory testing 200 cycles maximum in turbid seawater conditions
Maximum Mate/De-mate Force		< 500N (112 lb-f)
Minimum De-Mate Force		98N (22 lb-f)
Data Transfer Rates Supported		10/100 Mb/sec @ 100MHz Max (Single Channel)
Configuration		ROV
Material	Shell & Latch Fingers Boots & Bladders Slide Shell	Titanium ODI Proprietary Plastic & Rubber Components Titanium & Delrin
Design Life		30 Years
Max Length		100 Meters
OPERATIONAL SPECIFICATIONS		
Number of Circuits		7 (single channel), or 12 (single channel or dual redundant) 12 (Dual Channel Simultaneous or Gigabit)
Ethernet Attenuation		Maximum: 24 dB (@100MHz) Per ISO/IEC 11801:2002
Ethernet Crosstalk		Maximum: 27.1 dB (@100MHz) Per ISO/IEC 11801:2002 For Information Only when IL < 4 dB Per ISO/IEC 11801:2002
Ethernet Return Loss		Minimum: 8 dB (@100MHz) Per ISO/IEC 11801:2002 For Information only when IL < 3 dB (Dual Channel)
Power Wires	Max Operational Current/Circuit Max Operational Voltage Insulation Resistance	3 Amps 620 VAC Phase to Ground ≥ 10 GΩ @ 1 KVDC
Contact Resistance		≤ 10 mΩ per contact
Mated Connector Continuity Resistance		≤ 0.2 Ω per contact
Fully Compatible Materials		Fresh Water, Sea Water, DC 200 Silicone Oil
Intermittently Compatible Materials		MEG, Oceanic HW 443, 50% Citric Acid, 50% Acetic Acid



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www.teledynemarine.com

1026 N. Williamson Boulevard, Daytona Beach, FL 32114 USA

Tel +1-386-255-0780 or 1-888-506-2326 Fax +1-386-255-0966

Email: teledynemarine@teledyne.com

网址 www.ai'boco.com 电话 029-88256270 邮箱 sales@ai'boco.com

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