

EOFL-C

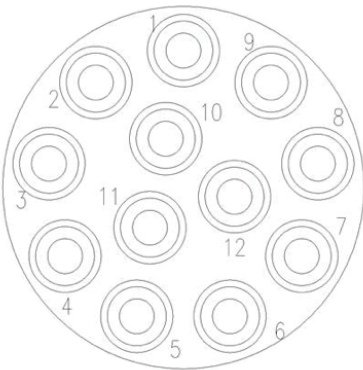


Optical Extended CAN Bus Jumper, using fault tolerant to Optical conversion to extend the range.

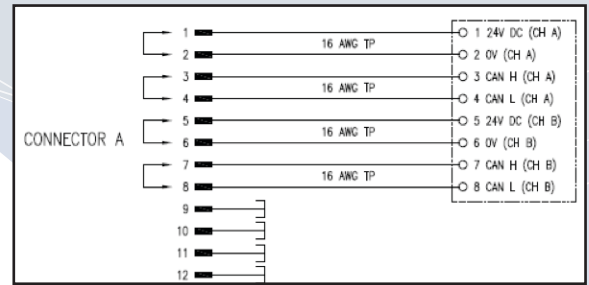
TECHNOLOGY OVERVIEW

CAN bus refers to multiple versions of a Controlled Area Network bus. The Oil and Gas industry has standardized on the Fault tolerant version of CAN as described by ISO11898-3. This technology converts the Fault tolerant signal to Optical Can, allowing for distances up to and above 5 KM. The Optical signal is then converted back to Fault tolerant on the far side.

PIN LAYOUT



ODI Pin	Description
1	Power + (CH A)
2	Power {GND} (CH A)
3	CAN H (CH A)
4	CAN L (CH A)
5	Power + (CH B)
6	Power {GND} (CH B)
7	CAN H (CH B)
8	CAN L (CH B)
9	Option
10	Option
11	Option
12	Option



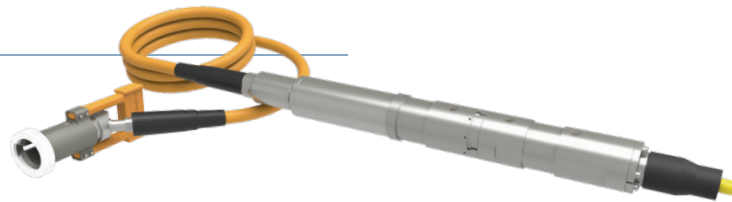
CONVERTER HOUSING

The housing is a 1 ATM enclosure and will be back filled with dry Nitrogen to facilitate heat transfer for the circuit boards. The circuit boards are protected on one side by a glass to metal seal penetrator. These penetrators have a use history of over fifty years and show a very high reliability. The other side uses a hermetically-sealed Optical penetrator and FACT pins. Both have also proven reliability.

CIRCUIT BOARDS

The converter boards are made to class 3 specifications per IPC 6012, requiring the tightest tolerances to ensure the highest reliability. The EOFL-C Can Bus Flying Lead contains two circuit boards. A power conversion board converts 24 VDC to 5 VDC. The DC to DC converter board is set up for two independent circuits and can handle an input range of 8 to 36 VDC. The EOFL-C CAN board is laid out to run a single channel. Running two channels requires an additional CAN board which fits inside the housing and has been tested.





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DESIGN SPECIFICATIONS

PARAMETERS	Max Operational Depth Pressure Balanced	
	Receptacle	Plug
	4000 m (6,000 psi)	
Max Operational Differential Pressure – 12-way Nautilus	224bar (3250psi)	303bar (4400psi)
Operational Temperature	Seawater	-5°C to +40°C (23°F to 104°F)
	Air	-20°C to +50°C (-4°F to 122°F)
Storage Temperature	-30°C to +60° C (-22°F to 140°F)	
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 Force Needed to De-mate	98N (22 lb-f)	
Configurations	ROV, Stab & Diver-Mate	
Material	Shell & Latch Fingers: Titanium & High Strength Stainless Steel Boots & Bladders: Teledyne Proprietary Plastic & Rubber Components Slides (ROV Only): Titanium, Acetal, or Delrin Repeater Housing: Titanium	
Design Life	30 Years (Assuming Operational Temperature of 4°C)	
Number of Circuits	4,7,12	
POWER WIRES (PASS THROUGH)	Maximum Operational Current per Circuit	3 Amps
	Maximum Operational Voltage	620 VAC Phase to Ground
	Insulation Resistance	≥ 10 GΩ @ 1 KVDC
POWER WIRES (REQUIRED TO RUN REPEATER)	Operating Power	5 watts
	Operating Voltages	24 Volts +12/-16 Volts
	Max In Rush Power	10 watts
	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
	Max Length	2 Housings
	(Dependent on customer equipment)	*5 KM (Dependent on Power loss)



TELEDYNE MARINE
ODI
Everywhereyoulook™

www.teledynemarine.com

1026 N. Williamson Boulevard, Daytona Beach, FL 32114 USA
Tel +1-386-236-0780 or 1-888-506-2326 • Fax +1-386-236-0906
Email: teledynemarine@teledyne.com