

Cobalt Fiber-Optic Underwater Connectors

Features



- High-quality waterproof fiber-optic Bulkhead Connector and Cable Termination Kit
- Submersible up to 600 meters
- Low cost and compact size
- Corrosion-resistant 316 stainless steel and PEEK materials
- Compatible with Blue Robotics ROV enclosures
- Stocked and ready to ship in 2-3 days
- Cable Termination Kits require proficiency with fiber cleaving and polishing techniques

Description

The Cobalt Fiber underwater connectors are the lowest-cost depth-rated fiber connectors on the market. Based on the proven design of the Cobalt series of underwater electrical connectors, Cobalt Fiber connectors enable high-bandwidth, single-mode fiber data connections to small ROVs and other underwater equipment.

The Cobalt Fiber Bulkhead Connector comes as a fully-assembled and tested unit. Inside the bulkhead connector is a 2.5-mm SC ferrule. On the end of its pigtail is a standard 1.25-mm LC fiber connector which is small enough to fit through its 10-mm mounting hole.

The Cobalt Fiber Cable Termination Kit can be used to terminate an underwater fiber tether or cable so that it can be plugged into the bulkhead connector. The cable must have the following characteristics:

- outer diameter of 6.4 mm or less
- bondable jacket material (polyurethane is recommended)
- single-mode 9/125 micrometer fiber

The termination process should only be attempted by a technician proficient with fiber cleaving and polishing techniques.

Currently, pre-assembled cables are not available.



Advantages

Cost

Cobalt Fiber connectors combine the proven Cobalt connector architecture with off-the-shelf fiber-optic components to produce a high-quality fiber connector at low cost.

Reliability

In addition to reducing cost, the unique design of Cobalt connectors increases their reliability. Without a bonded rubber overmold, there is no danger of leakage due to cathodic delamination. A simple, proven O-ring seal between the male and female connectors makes Cobalt connectors both easier to use and more reliable than wet-mate connectors.

Size

Perfect for space-limited applications, Cobalt connectors take up a fraction of the volume of legacy underwater connectors.

Availability

Stock connectors and cables typically ship in 2-3 days. Custom items or large orders ship in 1-2 weeks.

Compatibility

The Cobalt Fiber Bulkhead Connector fits in the same 10-mm hole as Blue Robotics penetrators, making it compatible with many Blue Robotics enclosures.

Usage

The Locking Sleeve on the cable must be fully screwed onto the Bulkhead for proper signal transmission.

The Cobalt Fiber Cable Termination Kit does not include a method for positively connecting the Kevlar strength members in the cable to the body of the connector. Therefore, a strain relief device is required in cases where the cable will experience tensile loads.

As with all fiber connectors, cleanliness is extremely important:

- Always put dust caps on fiber ferrules when they are exposed.
- A fiber cleaning pen suitable for SC ferrules is required for cleaning the ferrule inside the Bulkhead Connector.

Specifications

Environmental	
Depth Rating	600 meters
Operating Temperature	0° C to +50° C
Mate/De-mate Cycles	250
Fiber Parameters	
Fiber Type	Single mode 9/125 micrometer core
Bulkhead Connector Insertion Loss	0.75 dB maximum @ 1310 nm
Bulkhead Pigtail	LC UPC 1.25 mm ferrule Single Mode Tight-Buffered G.657.A1 bend insensitive fiber, 10 mm bend radius 0.75 m length
Ferrule Type, internal to connectors	SC UPC 2.5 mm ferrule Single-mode
Materials	
Bulkhead connector shell	316 stainless steel
Bulkhead connector insert	PEEK, nitrile O-ring, steel spring
Ferrules	Ceramic, nickel-plated brass flange
Cable connector shell	316 stainless steel
Cable connector insert	PEEK
O-ring	nitrile
Locking sleeve	acetal
Dimensions	
Bulkhead connector threads	M10 X 1.5
Bulkhead connector hex	16 mm



Configurations and Part Numbers

Bulkhead Connector: COB-11F0-SS 	• Corrosion-resistant 316 stainless steel bulkhead connector • Partially threaded M10 X 1.5 • Includes stainless steel nut
Cable Termination Kit: COB-31F0-SS 	• Used to terminate an existing cable with a Cobalt Fiber connector • Requires potting connector shell with epoxy • Corrosion-free 316 stainless steel connector shell, PEEK insert with pre-installed ferrule, acetal locking sleeve, and nitrile O-ring
Accessories Polishing and Pressing Kit: ACC-0200  Locking Sleeve: COB-1001  Dummy Plug: COB-1002  Dummy Cap: COB-1003 	• Polishing and Pressing Kit includes Polishing Puck and Pressing Tool which are necessary for the cable termination procedure • Dummy Plug seals and protects an unused Bulkhead Connector • Locking Sleeve used to hold Dummy Plug in place on Bulkhead Connector • Dummy Cap seals and protects an unused cable