

Cobalt Series

Coaxial Connectors and Cables



Features

- Compact, high-quality system of coaxial underwater connectors and cables
- Based on MCX 50-ohm coaxial connectors
- Stocked and ready to ship in 2-3 days
- Ideal for autonomous vehicles, underwater instruments, and other extreme-environment applications
- Submersible up to 600 meters
- Compatible with Blue Robotics ROV enclosures
- Corrosion-resistant, durable 316 stainless steel, PEEK, and polyurethane materials

Description

Cobalt Series coaxial underwater connectors and cables from Blue Trail Engineering combine the proven reliability and compact size of the Cobalt connector series with the high-bandwidth performance only possible with coaxial connections, all at a fraction of the cost of other coaxial subsea connectors. With 316 stainless steel shells and PEEK inserts, they withstand long-term use in seawater at depths up to 600 meters.

Advantages

Cost

Cobalt connectors achieve a hermetic seal without the need for potting or overmolding, making them more affordable than traditional molded connectors.

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 easy to use and robust.

Size

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

Availability

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

Options

Cables are supplied in lengths up to 2 meters. Two end termination configurations are available:

- One end terminated with a Cobalt connector, the other end unterminated
- One end terminated with a Cobalt connector, the other end terminated with a Blue Trail Engineering Simple Penetrator

For users who wish to install a Cobalt coaxial connector on their own cable, Blue Trail Engineering offers Cobalt Series Coaxial Cable Termination Kits. These kits include a connector shell, PEEK insert, MCX connector, and locking sleeve. The user terminates the coaxial cable with the MCX connector, presses the PEEK insert and MCX connector into the connector shell, and pots the back of the connector shell with epoxy or urethane (unlike standard Cobalt cables, the Termination Kits *do* require a potting operation).



Compatibility

Cobalt Series coaxial connectors use the same connector shells as other Cobalt connectors. The Cobalt bulkhead connector fits in the same 10-mm hole as Blue Robotics penetrators.

Custom Products

Contact Blue Trail Engineering for custom needs, such as:

- Bulkhead connectors with female jack (male plug is standard)
- Cables with male plug (female jack is standard)
- custom cable jacket colors

Specifications

Environmental	
Depth rating (when mated or with a dummy plug/cap installed*)	600 meters
Operating temperature	0° C to +50° C
Electrical	
Coaxial connector type	MCX
Impedance	50 ohms
Maximum frequency	3 GHz
Coaxial cable type used on cables made by Blue Trail Engineering	RG-316
Coaxial cable types compatible with Cable Termination Kit	RG-174, RG-316, RG-188A, LMR-100
Materials	
Connector shell	316 stainless steel
Connector insert	PEEK
MCX connector body	gold-plated brass
Cable jacket	95A UV-stabilized polyurethane
O ring	nitrile
Locking sleeve	acetal
Dimensions	
Bulkhead connector threads	M10 X 1.5
Bulkhead connector hex	16 mm
Cable outer diameter	6.4 mm

*Cobalt Series coaxial connectors are not suitable for open-face operation, as the hermetic seal is only achieved when mated with another connector or with a dummy plug/cap installed.

Configurations and Part Numbers

Bulkhead Connector: COB-11C0	<ul style="list-style-type: none"> • MCX male plug integrated into Cobalt bulkhead connector shell • 500-mm RG-316 pigtail • Partially threaded M10 X 1.5 shank • Includes stainless steel nut
Single-ended Cable: COB-12CC	<ul style="list-style-type: none"> • Single-ended cable with MCX female jack integrated into Cobalt connector shell • RG-316 coaxial cable inside 6.4-mm OD polyurethane cable jacket • Unterminated end of cable can be bonded or potted with urethane or epoxy adhesives • Lengths between 0.1 and 2.0 meters
Cable with Simple Penetrator: COB-1PCC <u>P</u> : Simple Penetrator size (4: M6, 5: M10)	<ul style="list-style-type: none"> • Cable with MCX female jack integrated into Cobalt connector shell on one end and M6 or M10 Simple Penetrator on other end • RG-316 coaxial cable inside 6.4-mm OD polyurethane cable jacket • Lengths between 0.1 and 2.0 meters
Cable Termination Kit: COB-31C0	<ul style="list-style-type: none"> • Used to terminate an existing coaxial cable with a Cobalt connector • Requires potting connector shell with epoxy
<p style="text-align: center;">Accessories</p> Locking Sleeve: COB-1001 (standard) COB-1004 (removable) Dummy Plug: COB-1002 Dummy Cap: COB-1003 Coupler: COB-1005	<ul style="list-style-type: none"> • Locking Sleeve available in standard (captive on cable) or removable versions • Dummy plug seals and protects an unused bulkhead connector • Dummy cap seals and protects an unused cable • Coupler used for making inline connection between two cables (contact BTE for details)