

Cobalt Series

Underwater Connectors and Cables

Features

- Compact, high-quality system of dry-mate underwater connectors and cables
- Ideal for autonomous vehicles, underwater instruments, and other extreme-environment applications
- Submersible up to 600 meters
- Compatible with Blue Robotics ROV enclosures, thrusters, grippers, and lights.
- Simple, proven O-ring provides more reliable seal than wet-mate connectors
- Corrosion-resistant, durable 316 stainless steel, PEEK, and polyurethane materials
- Cables available with connectors on both ends or one end only, locking sleeves included
- 3-pin version for thruster and servo applications
- 4-pin, 20-amp version for power applications
- 6-pin version for general data applications
- 8-pin version with Cat 5e twisted pairs for Ethernet applications

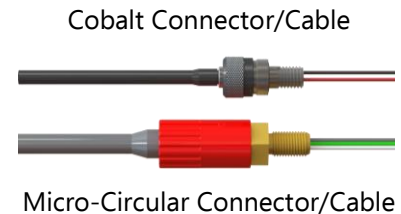


Description

The Cobalt Series of dry-mate underwater connectors and cables from Blue Trail Engineering sets a new standard for miniature waterproof connectors. Cobalt connectors offer the same reliability as larger subsea connectors, but at a fraction of the cost. With 316 stainless steel shells and PEEK inserts, they withstand long-term use in seawater at depths up to 600 meters. In spite of their compact size, Cobalt connectors can handle high currents (up to 20 amps on the 4-conductor version). Connector shells are keyed and feature a scoop-proof design, allowing them to be mated blind with no possibility of pin damage.

Advantages

Cobalt Series cables feature a simple, robust seal between the cable jacket and connector shell that eliminates the need for overmolding. A second hermetic seal between the connector pins and the connector shell provides redundancy. Because Cobalt connectors do not require overmolding, they cost less than traditional molded cables and connectors and eliminate the 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. Perfect for space-limited applications, Cobalt connectors take up a fraction of the volume of the industry-standard Micro-Circular connectors.



Options

Cobalt cables and bulkhead connectors are available in 3, 4, 6, and 8-conductor versions, with a standard cable length of 1 meter or custom lengths up to 2 meters. Cables are available in various end termination configurations:

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

Compatibility

The Cobalt bulkhead connector fits in the same 10-mm hole as Blue Robotics penetrators, making quick-connect and quick-disconnect possible with Blue Robotics thrusters, tethers, enclosures, lights, grippers, and other accessories. Cable termination kits allow the user to retrofit existing cables, including Blue Robotics thruster and tether cables, with a Cobalt connector.

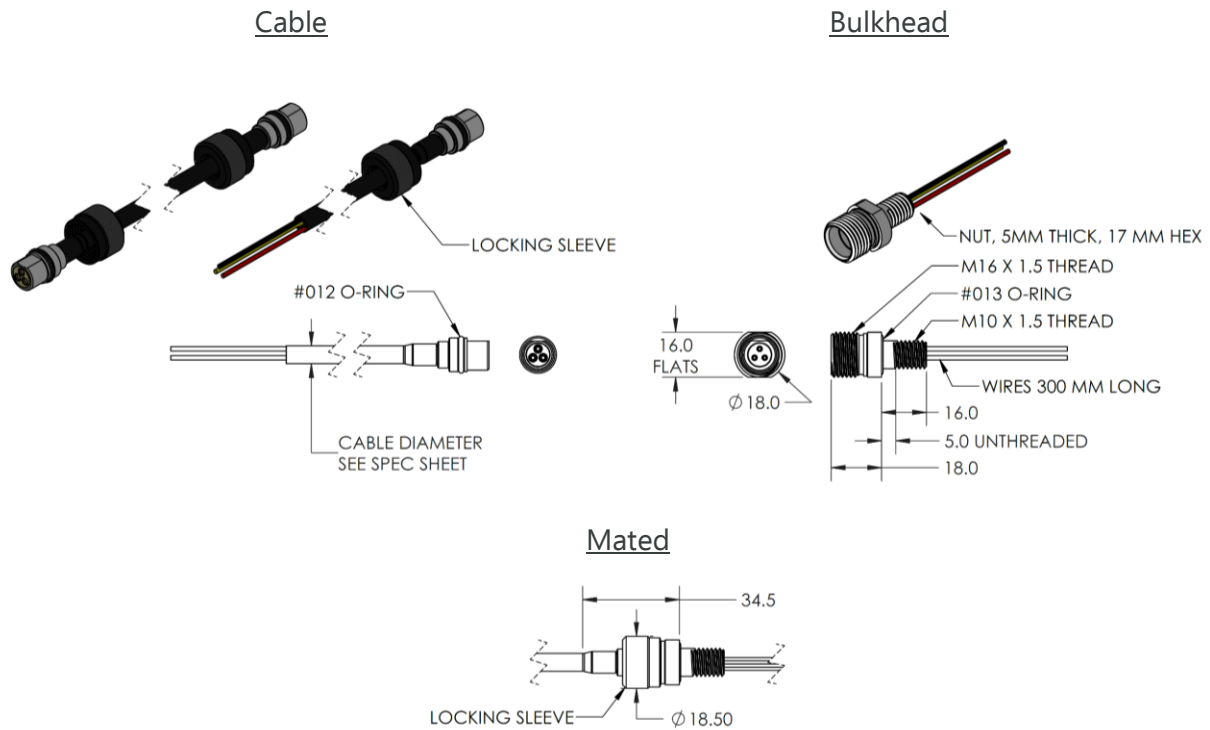
Custom Products

Contact Blue Trail Engineering for custom needs such as USB-compatible cables or installation of Cobalt connectors on customer-supplied cables.

Specifications

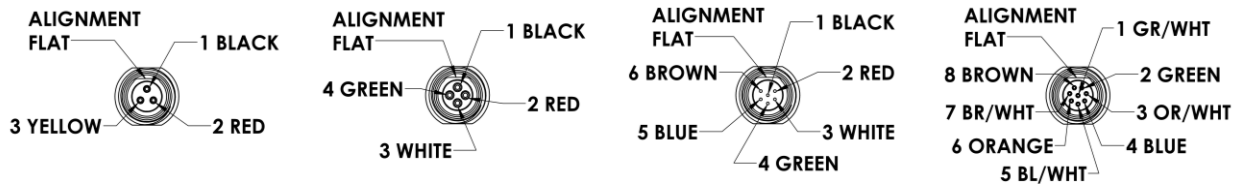
Environmental	
Depth Rating	600 meters
Operating Temperature	0° C to +50° C
Electrical	
Maximum voltage	300 V
Rated current	3-conductor version: 12 amps 4-conductor version: 20 amps 6-conductor version: 5 amps 8-conductor version: 0.5 amps
Wire size	3-conductor version: 18 AWG 4-conductor version: 16 AWG 6-conductor version: 22 AWG 8-conductor version: 24 AWG
Wire stranding	3-conductor version: 19/30 4-conductor version: 19/29 6-conductor version: 19/34 8-conductor version: 7/32
Wire configuration	3, 4, and 6-conductor versions: unshielded, untwisted 8-conductor version: unshielded, twisted pairs (Cat 5e)
Materials	
Bulkhead connector shell	316 stainless steel
Bulkhead connector insert	PEEK
Bulkhead connector pins	gold-plated
Cable connector shell	316 stainless steel
Cable connector insert	PEEK
Cable sockets	gold-plated
Cable jacket	95A UV-stabilized polyurethane
wire insulation	3, 4, and 6-conductor versions: ETFE 8-conductor version: PVC
O ring	nitrile
Locking sleeve	acetal
Dimensions	
Bulkhead connector threads	M10 X 1.5
Bulkhead connector hex	16 mm
Locking sleeve threads	M16 X 1.5
Cable outer diameter	3 and 6-conductor version: 6.4 mm 4 and 8-conductor version: 8.0 mm

Dimensions

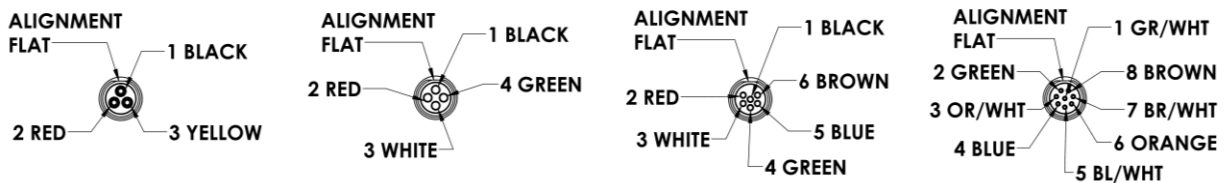


Pinouts

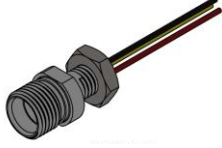
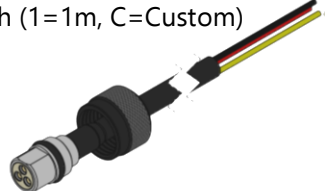
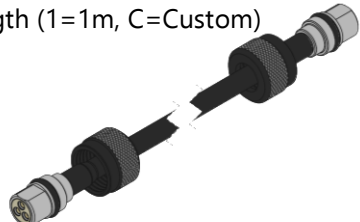


Bulkhead connector pinouts (looking at mating face of connector)



Cable connector pinouts (looking at mating face of connector)



Configurations and Part Numbers

<p>Bulkhead Connector: COB-11<u>N</u>0- <u>N</u>: number of conductors (3, 4, 6, or 8)</p> 	<ul style="list-style-type: none"> • Corrosion-resistant 316 stainless steel bulkhead connector • Partially threaded M10 X 1.5 • Includes stainless steel nut
<p>Single-ended Cable: COB-12<u>N</u>L <u>N</u>: number of conductors (3, 4, 6, or 8) <u>L</u>: cable length (1=1m, C=Custom)</p> 	<ul style="list-style-type: none"> • Single-ended cable compatible with Cobalt bulkhead connector • Corrosion-free 316 stainless steel connector shell and acetal locking sleeve (included) • Unterminated end of polyurethane cable can be bonded or potted with urethane adhesives • Standard 1-meter or custom length
<p>Double-ended Cable: COB-13<u>N</u>L <u>N</u>: number of conductors (3, 4, 6, or 8) <u>L</u>: cable length (1=1m, C=Custom)</p> 	<ul style="list-style-type: none"> • Double-ended cable compatible with Cobalt bulkhead connectors • Corrosion-free 316 stainless steel connector bodies and acetal locking sleeves (included) • Standard 1-meter or custom length
<p>Cable with Simple Penetrator: COB-1<u>P</u>NL <u>P</u>: Simple Penetrator type (4: M6*, 5: M10) <u>N</u>: number of conductors (3, 4, 6, or 8) <u>L</u>: cable length (1=1m, C=Custom) *M6 Simple Penetrator not available on 4-conductor or 8-conductor cables</p> 	<ul style="list-style-type: none"> • 1-meter cable compatible with Cobalt bulkhead connector on one end, with M6 or M10 Simple Penetrator on other end • Standard 1-meter or custom length
<p>Accessories Spare Locking Sleeve: COB-1001 Bulkhead Dummy Plug: COB-1002</p> 	<ul style="list-style-type: none"> • Dummy plug protects an unused bulkhead connector • Dummy plug must be retained by a locking sleeve