Cobalt 14
Underwater Connectors and Cables

Features

- Larger version of the highly popular Cobalt series of dry-mate underwater connectors and cables
- Bulkhead connector fits in 14-mm hole
- Ideal for autonomous vehicles, underwater instruments, and other extreme-environment applications
- Submersible up to 600 meters
- Corrosion-resistant, durable 316 stainless steel and PEEK materials
- 3-pin and 4-pin versions for power applications
- 10-pin Hybrid version for combined power and signal applications
- 19-pin version for signal applications
- 3-pin version compatible with Blue Robotics T500 thruster
- Cable Termination Kit allows users to install Cobalt 14 connectors on their own cables
- Stocked and ready to ship in 2-3 days

Description

The Cobalt 14 series of underwater connectors expands the Cobalt line with a larger shell size, offering higher current-carrying capability and pin count while delivering the same reliability and affordability that has made the Cobalt line so popular.

Featuring 316 stainless steel shells and PEEK inserts, Cobalt 14 connectors withstand long-term use in seawater at depths up to 600 meters. Connector shells are keyed and feature a scoop-proof design, allowing them to be mated blind with no possibility of pin damage.

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Advantages

Cost

Cobalt 14 connectors achieve a hermetic seal without the need for potting or overmolding. The electrical contacts are pressed into a machined PEEK insert, which is in turn pressed into the stainless steel connector shell. This simple design makes Cobalt 14 connectors more affordable than traditional molded connectors.

Reliability

In addition to reducing cost, the unique design of Cobalt 14 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 14 connectors both easier to use and more reliable than wet-mate connectors.

Availability

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

Options

Cables are supplied with a standard cable length of 1 meter or custom lengths up to 2 meters. Various end termination configurations are available:

- Both ends terminated with Cobalt 14 connectors
- One end terminated with a Cobalt 14 connector, the other end unterminated
- One end terminated with a Cobalt 14 connector, the other end terminated with Blue Trail Engineering Simple Penetrator

Bulkhead connectors have male pins and cables typically have female sockets. However, cables are also available with male pins for making an inline connection between two cables.

For users who wish to install a Cobalt connector on their own cable, Blue Trail Engineering offers Cobalt 14 Cable Termination Kits. These kits include a connector shell, PEEK insert with pre-installed sockets, and locking sleeve. The user solders the cable wires to the insert, presses the insert into the connector shell, and pots the back of the connector shell with epoxy (unlike standard Cobalt 14 cables, the Termination Kits *do* require a potting operation).

Compatibility

The Cobalt 14 bulkhead connector fits in the same hole as the 14-mm Blue Robotics WetLink penetrator, making quick-connect and quick-disconnect possible with the Blue Robotics T500 thruster.

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Specifications

Environmental	
Depth Rating	600 meters
Operating Temperature	0° C to +50° C
Mate/De-mate Cycles	500
Electrical	
Rated voltage and current	3-pin: 400 VDC, 35 amps per pin 4-pin: 400 VDC, 35 amps per pin 10-pin Hybrid: 150 VDC, 2x 35 amps per pin, 8x 3 amps per pin 19-pin: 150 VDC, 3 amps per pin
Wire size and stranding	3-pin: 12 AWG, 37/28 4-pin: 12 AWG, 37/28 10-pin Hybrid: 2x 12 AWG, 37/28; 8x 24 AWG, 7/32 19-pin: 11x 22 AWG, 19/34; 8x 24 AWG, 7/32
Wire configuration	3-pin: unshielded, untwisted 4-pin: unshielded, untwisted 10-pin Hybrid: 2x unshielded, untwisted; 8x Cat 5e 19-pin: 11x unshielded, untwisted; 8x Cat 5e
Materials	
Bulkhead connector shell	316 stainless steel
Bulkhead connector insert	PEEK
Bulkhead connector pins	gold-plated brass
Cable connector shell	316 stainless steel
Cable connector insert	PEEK
Cable connector sockets	gold-plated brass
Wire insulation	3-pin: ETFE 4-pin: ETFE 10-pin Hybrid: ETFE, polyolefin 19-pin: ETFE, polyolefin
O-rings	nitrile
Locking sleeve	acetal
Dimensions	
Bulkhead connector threads	M14 X 1.5
Bulkhead connector hex	20 mm
Locking sleeve threads	M20 X 1.5
Cable outer diameter	3-pin, 4-pin: 10.0 mm 10-pin Hybrid, 19-pin: 12.0 mm

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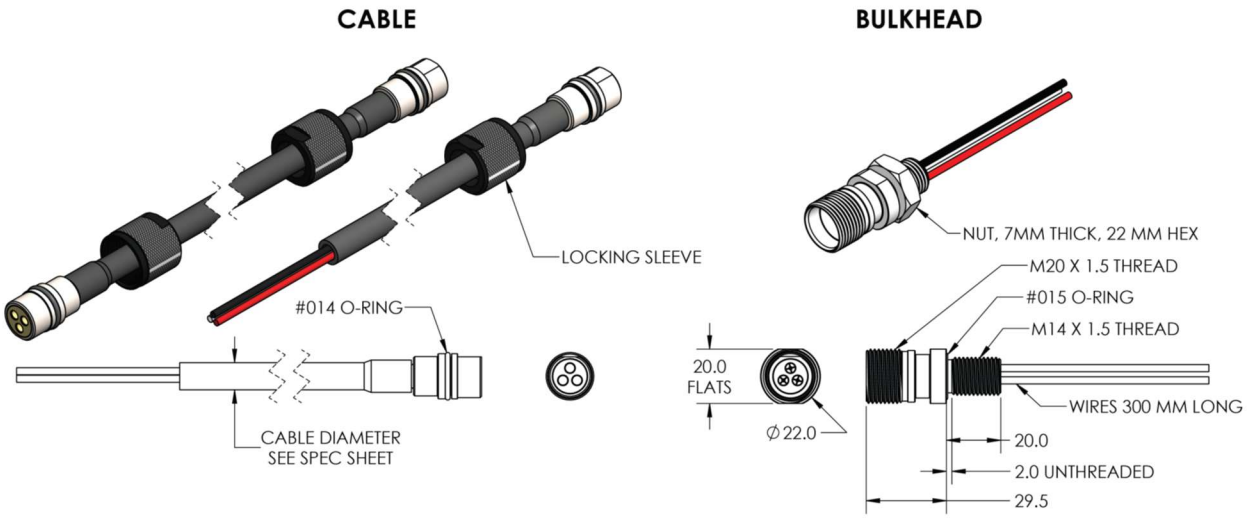
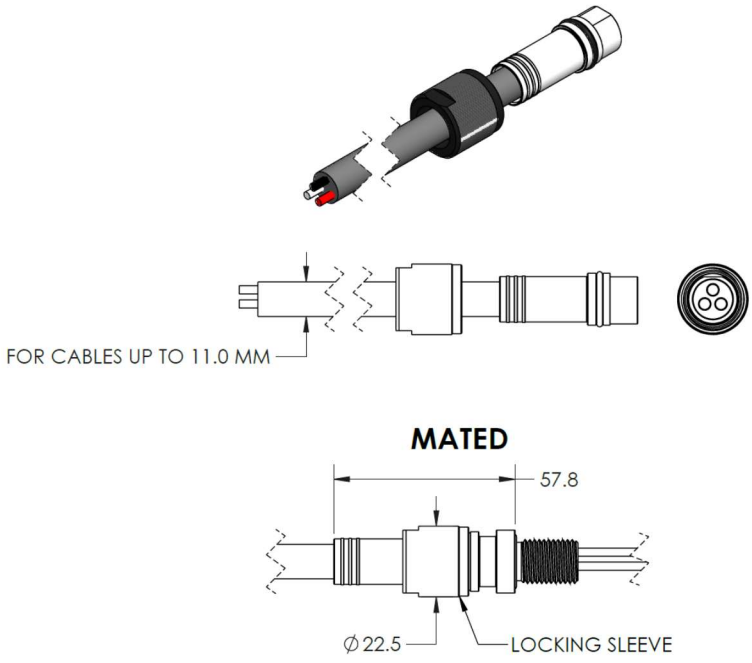
Dimensions*

Cable and Bulkhead dimensions



Cable Termination Kit dimensions



*Contact Blue Trail Engineering for CAD models

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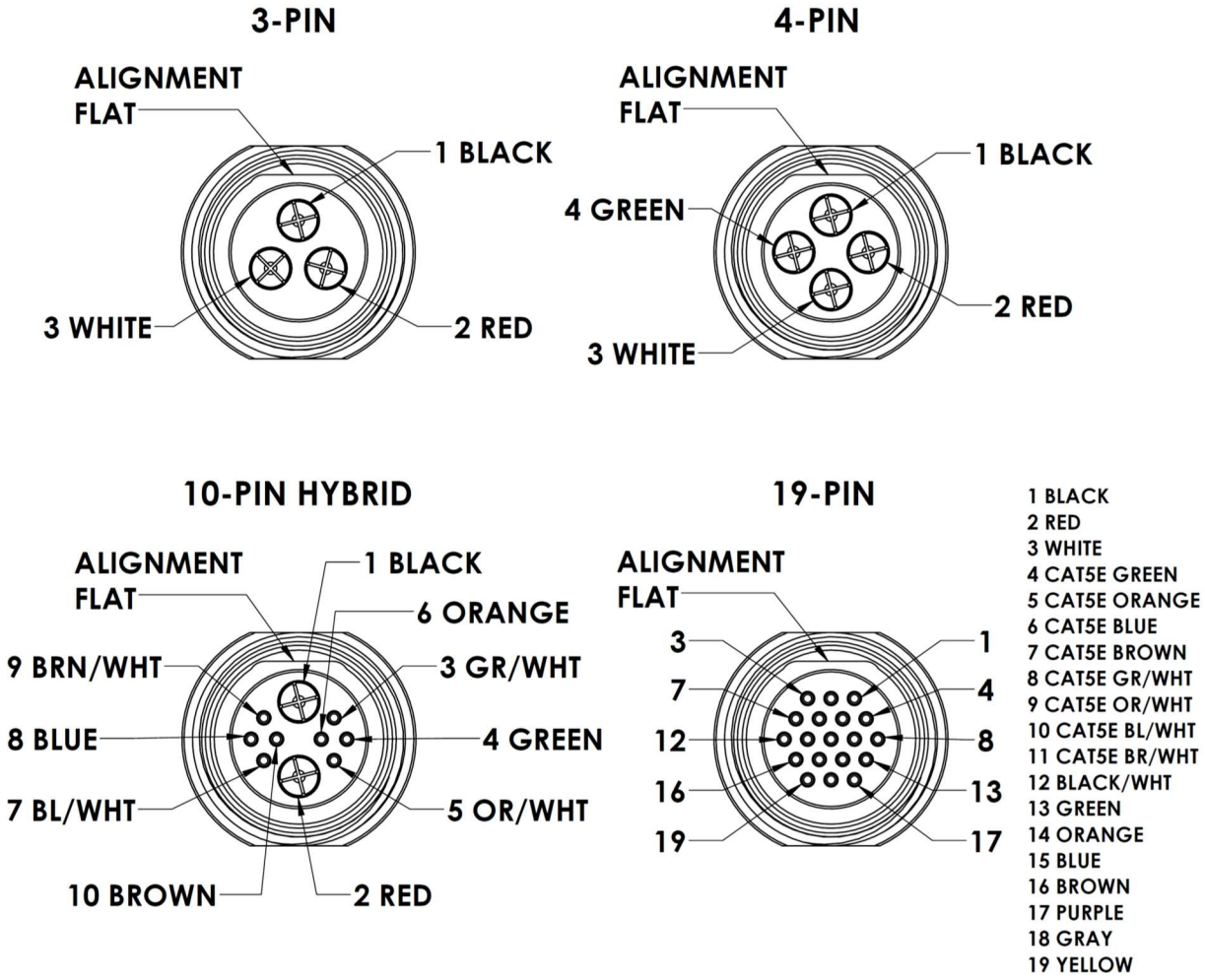
Pinouts

Bulkhead connector pinouts (looking at mating face of connector)



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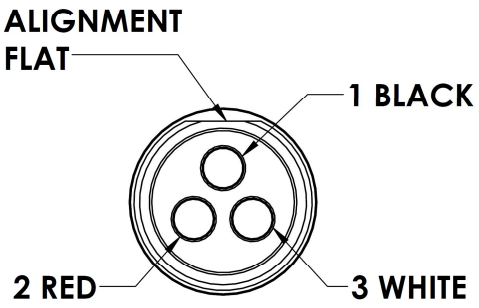
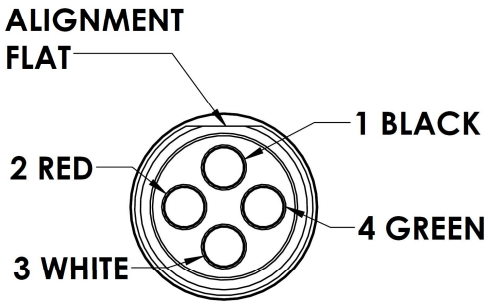
Cable connector pinouts (looking at mating face of connector)

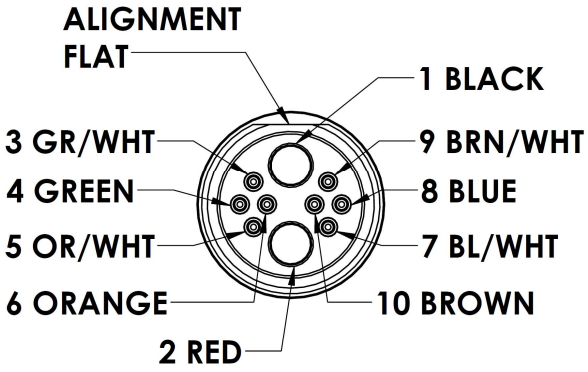
3-PIN



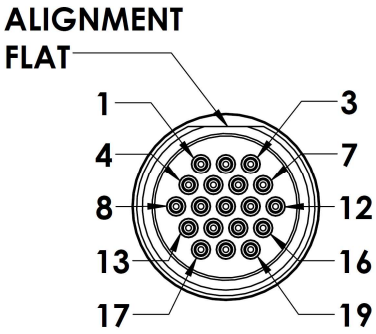
4-PIN



10-PIN HYBRID



19-PIN



1 BLACK
2 RED
3 WHITE
4 CAT5E GREEN
5 CAT5E ORANGE
6 CAT5E BLUE
7 CAT5E BROWN
8 CAT5E GR/WHT
9 CAT5E OR/WHT
10 CAT5E BL/WHT
11 CAT5E BR/WHT
12 BLACK/WHT
13 GREEN
14 ORANGE
15 BLUE
16 BROWN
17 PURPLE
18 GRAY
19 YELLOW

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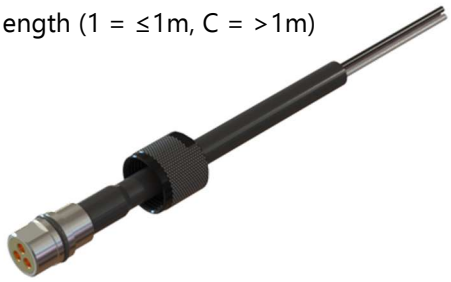
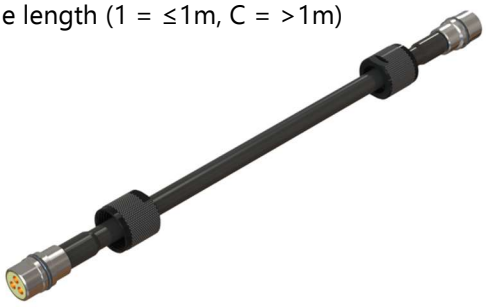
Configurations and Part Numbers

Bulkhead Connector: C14-11N0 N: number of pins (3, 4, 10H, or 19) 	• Corrosion-resistant 316 stainless steel bulkhead connector • Threaded shank M14 X 1.5 • Includes stainless steel nut
Single-ended Cable: C14-12NL N: number of pins (3, 4, 10H, or 19) L: cable length (1 = ≤1m, C = >1m) 	• Single-ended cable compatible with Cobalt 14 bulkhead connector • Corrosion-free 316 stainless steel connector shell and acetal locking sleeve • Unterminated end of polyurethane cable can be bonded or potted with urethane adhesives • Standard 1-meter or custom length
Double-ended Cable: C14-13NL N: number of pins (3, 4, 10H, or 19) L: cable length (1 = ≤1m, C = >1m) 	• Double-ended cable compatible with Cobalt 14 bulkhead connectors • Corrosion-free 316 stainless steel connector bodies and acetal locking sleeves • Standard 1-meter or custom length
Cable with Simple Penetrator: C14-15NL N: number of pins (3, 4, 10H, or 19) L: cable length (1 = ≤1m, C = >1m) 	• Cable compatible with Cobalt 14 bulkhead connector on one end, with M14 Simple Penetrator on other end • Standard 1-meter or custom length

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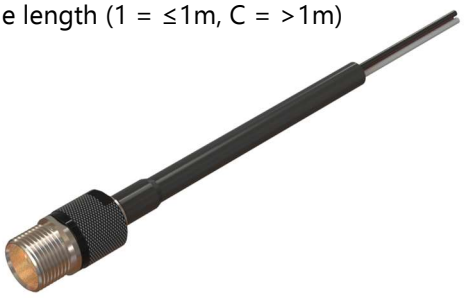
Single-ended Male Cable: C14-16NL N: number of pins (3, 4, 10H, or 19) L: cable length (1 = ≤1m, C = >1m) 	• Single-ended cable with male pins and coupler for making inline connection to standard single-ended cable • Pinout same as bulkhead connector • Corrosion-free 316 stainless steel connector shell and coupler, acetal locking sleeve • Unterminated end of polyurethane cable can be bonded or potted with urethane adhesives • Standard 1-meter or custom length
Cable Termination Kit: C14-31N0 N: number of pins (3, 4, 10H, or 19) 	• Used to terminate an existing cable with a Cobalt 14 connector • Requires potting connector shell with epoxy • Corrosion-free 316 stainless steel connector shell, PEEK insert with pre-installed sockets, acetal locking sleeve, and O-ring

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Accessories	
Locking Sleeve: **C14-1001** 	• Locking sleeve used to hold dummy plug in place • Dummy plug seals and protects an unused bulkhead connector • Dummy cap seals and protects an unused cable connector • Coupler used for making inline connection between two cables
Dummy Plug: **C14-1002** 	
Dummy Cap: **C14-1003** 	
Coupler: **C14-1005** 	

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