HYSF SUBSEA Expands Ultra-Compact Underwater Connector Range for Space-Constrained Systems

Ultra-compact connector options help engineers reduce bulkhead footprint and system weight in ROVs, AUVs, sensors and compact subsea equipment.



Ultra-compact connectors help ROV and AUV engineers integrate more sensors and electronics within limited pressure-housing space.

LANGFANG, SHANDONG, CHINA, September 17, 2026 / EINPresswire.com/ -- LANGFANG, China — HYSF SUBSEA, an underwater connector manufacturer serving marine robotics, oceanographic instrumentation and subsea equipment manufacturers, has expanded its Ultra-Compact underwater connector range for applications where installation space, panel area and system weight are tightly constrained.

The expanded range is designed for compact remotely operated vehicles (ROVs), autonomous underwater vehicles (AUVs), underwater sensors, cameras, scientific instruments and other subsea systems where conventional connector dimensions can occupy valuable space.

> “Reducing connector size and weight gives engineers more freedom to integrate sensors and electronics without unnecessarily increasing pressure-housing dimensions.”
>
> *Rain Wu, Business Development Manager, HYSF SUBSEA*

As underwater platforms become smaller while integrating more sensors and electronics, connector size is becoming an important part of system design. HYSF SUBSEA's ultra-compact underwater connectors are intended to reduce bulkhead footprint and overall weight while providing reliable electrical connectivity for subsea applications.

The Ultra-Small family includes configurations from 2 to 28 contacts, giving engineers compact options for signal, control and low-power circuits without unnecessarily increasing pressure-housing dimensions.

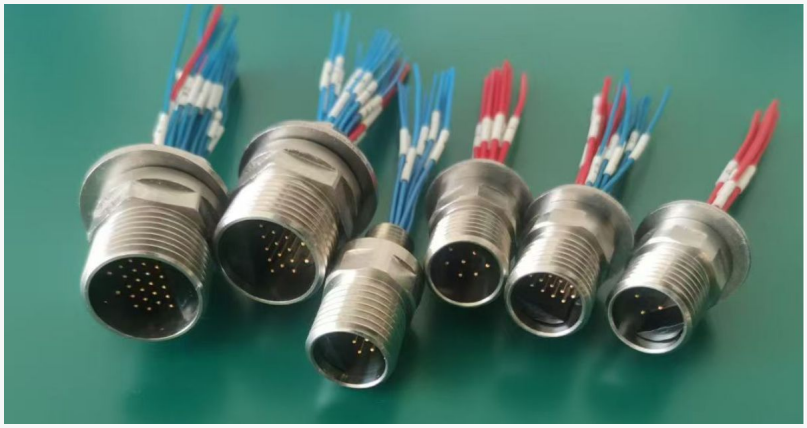
Smaller Footprint for Compact Subsea Systems

Space is one of the most limited resources inside modern underwater vehicles and instruments. ROVs and AUVs may integrate cameras, lighting, navigation sensors, sonar, control electronics and communication modules into relatively small housings.

Each external device requires an electrical interface, and the size of bulkhead connectors can quickly become a mechanical limitation. Selected 2–6 contact Ultra-Small configurations use mounting threads as small as 5/16-24UNF. The range also includes 6–16 contact and 12–28 contact families, allowing designers to choose a connector according to required channel count and available installation space.



Small Footprint • Lightweight • High Contact Density



The HYSF SUBSEA Ultra-Small range helps reduce mounting space requirements in compact underwater equipment.

These compact interfaces can be used in sensor modules, underwater cameras, portable instruments and robotic platforms where panel area is limited.
Supporting Smaller and Lighter ROVs and AUVs

Reducing connector size can also support lower system weight. For small ROVs and AUVs, component mass affects buoyancy, battery capacity, vehicle balance and payload.

A smaller connector can reduce its own weight and the supporting structure required around the mounting interface. Saved space may then be allocated to batteries, sensors, processing hardware or mission payloads.

HYSF SUBSEA's lightweight subsea connectors are intended for applications where reliable connectivity must fit within a limited mechanical envelope.
Typical uses include micro-ROVs, compact AUVs, underwater drones, portable sonar systems, subsea cameras, oceanographic sensors and scientific probes.
Multiple Contact Densities

A simple underwater sensor may require only two or three conductors, while a navigation or multi-sensor module may require many more channels.
The 2–6 contact family supports simple signal, control and low-power circuits. The 6–16 contact family provides additional capacity for multi-sensor systems, while the 12–28 contact family supports higher-density connections for more complex instrumentation.

This approach can help reduce the number of separate penetrations through a pressure housing and simplify cable routing.

Designed for Signal and Control Applications
The Ultra-Compact range is primarily intended for signal transmission, sensors, control circuits and low-power electrical applications where compact dimensions are important.

Depending on configuration, the connectors can be integrated into underwater cameras, navigation systems, scientific sensors, monitoring equipment and robotics control modules.

The Ultra-Small family is designed as a dry-mate connection system. Connections should be mated in a dry environment before deployment rather than connected or disconnected while submerged.

For applications requiring wet-mate capability, HYSF SUBSEA offers other connector families specifically designed for underwater mating and disconnection.

Deepwater Capability in a Compact Format
Selected Ultra-Small configurations are available for applications requiring pressure resistance up to 60 MPa, equivalent to approximately 6,000 meters of seawater depth.

This combination of compact dimensions and deepwater capability can be useful for scientific instruments, deep-sea sensors and robotic platforms operating where size and pressure requirements must be considered together.

Connector selection should account for operating pressure, contact count, electrical load, cable construction, mounting method and mating requirements.
Customization for OEM Integration

Compact equipment often requires project-specific integration. HYSF SUBSEA can review cable length, conductor size, shielding, cable diameter, connector orientation, mounting geometry and housing material.

Right-angle configurations can also be considered where straight cable exits would interfere with internal components or increase enclosure length.
Technical datasheets, dimensional drawings and STEP files are available to support mechanical integration. Samples can also be supplied for dimensional verification and prototype testing

before production quantities are finalized.

Supporting the Miniaturization of Marine Technology
Marine robotics and underwater instrumentation continue to move toward smaller, more integrated platforms. Sensors and embedded electronics are becoming more capable, while manufacturers need to fit more functionality into limited space.

This creates growing demand for compact underwater connectors, miniature subsea interfaces and lightweight cable solutions.
By expanding its Ultra-Compact product range, HYSF SUBSEA aims to provide engineers with more options for designing smaller, lighter and more integrated subsea systems.

About HYSF SUBSEA
HYSF SUBSEA is an underwater connector manufacturer providing electrical, Ethernet, coaxial, fiber-optic, high-current, hybrid and compact connectivity solutions for marine and subsea applications.

The company supports ROVs, AUVs, underwater sensors, oceanographic instruments, offshore equipment and other marine technology platforms. Its portfolio includes underwater connectors, bulkhead receptacles, cable assemblies, penetrators, PBOF solutions and customized connectivity systems.

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