

## High Performance News

### Revolutionary New Coax Contacts



SMA connector.

We are very proud to have launched a new range of coaxial subsea connector contacts with unheard of performance characteristics. The BIRNS Millennium™ series connectors developed with the new contacts have had groundbreaking testing results, including a maximum insertion loss of 0.7 dB at signal frequencies to 3GHz, with an associated maximum SWR (Standing Wave Ratio) of 1.7:1. Even more remarkable, the new coax contacts withstand open face hydrostatic pressure to depths of 1433m so far in initial testing protocols, with more testing currently under way. Additionally, the new design provides incredible ease of assembly and connects directly to a standard MIL-STD-348

RF contacts in the subsea connectivity market are typically unable to withstand any open face pressure resistance whatsoever (or offer poor signal performance), due to the design demands of controlling electrical impedance and the challenges found affecting characteristic performance of dielectric materials. "The geometry of a typical 50 ohm coax contact consists of a center conductor, outer conductor and a dielectric between. The ratio of the distance between the center conductor and outer conductor must be maintained to prevent impedance discontinuity," said Jeff Hager, BIRNS Mechanical Design Engineer. "Preventing the dielectric and or center conductor from being extruded from the outer conductor or creating a leak path under pressure would have to include radial transitions, seals, and compression resistant materials-however, coax contact designers in the marine industry have historically avoided such features to control impedance."

Our engineering team achieved its new pressure resistant coax line with a proprietary design, optimizing transitions to prevent extrusion and minimize impedance discontinuities. Plus, the team incorporated seals made of low dielectric constant materials to prevent leakage under pressure and utilized a high compression strength dielectric material, which also has a low dielectric constant.

### Exciting New Additions to the Millennium Line

For decades, our popular 6km-rated BIRNS Millennium™ connector line has been providing high performance solutions for a vast array of marine systems. This 3rd generation high density series continues to expand as we develop new designs to meet our customers' needs. The BIRNS Millennium series is used across the globe for applications from manned submersibles, AUVs, and ROVs to towed arrays and current profilers--while serving the demands of subsea scientific, environmental, oceanographic, military and offshore markets.



In fact, we've recently introduced a number of new pin configurations across the series to provide even more options than ever before. From options with tight dimensions and multiple sizes of electrical contacts like the new 3M -16, and electro-coax hybrids like the 3P-2C-6 to robust high voltage configurations like the 3R-12 with 12 10 AWG high voltage pins--there are exciting new choices available. You can see the available pin configurations in the series in our new [BIRNS Millennium brochure](#), and on our [website](#), and as always, feel free to

contact our sales team to discuss existing iterations or request a bespoke connector or cable assembly design.

## ISO Recertification

We are happy to announce that our Quality Management System (QMS) recently had its successful ISO 9001:2008 [recertification](#) audit carried out by DNV-GL, an international certification body and classification society created as a result of a merger between Det Norske Veritas and Germanischer Lloyd. ISO 9001:2008 is a globally recognized standard for QMS implementation from the International Organization for Standardization (ISO). During the audit, BIRNS' QMS was thoroughly reviewed across all applicable company departments and all standard elements to ensure proper implementation, procedure compliance and proof of continuous process improvements, as required by the Standard.

We first received ISO certification in 2009 and have maintained it ever since, identifying ways to improve our processes and concomitant productivity each year. DNV-GL has its own requirements for maintaining the certification, requiring internal audits and a surveillance audit each year, in addition to the 3-year recertification audit. Adhering to the rigorous Standard demonstrates our commitment not only to continual improvement, but to sustainable business performance and a high level of customer satisfaction.



1720 Fiske Place Oxnard, CA 93033-1863  
Phone: 805.487.5393 | Fax: 805.407.0427 | Toll-Free 1.888.BIRNS.88  
[service@birns.com](mailto:service@birns.com) | [www.birns.com](http://www.birns.com)

BIRNS' Quality Management System is  
ISO 9001:2008 Certified;  
NRC 10CFR50, App. B Compliant

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