

Innovative Connection Technology For Harsh Environment



CONEC – SolidBody IP67 D-sub

IP 67
Environmentally
Sealed
D-sub
with
**Solid-Body
Construction**

This presentation is the second in the series of the IP67 D-sub family. Here we focus on the new and innovative Solid-Body construction as an enhanced extension of a broad product offering from our IP67 D-sub product family. Our many years of engineering excellence provides harsh environment solutions for many industries.

Harsh and Rugged Sealed D-sub:



*Applications: any requirement for a I/O that will be subject to harsh environments, specifically the need for **Sealing** against Liquids & Dusts.*

Typical Applications:

- those that are occasionally or accidentally wet
- those that are expected to be wet often, if not continuously



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Outside the usual 'office' environment, there are many industrial electronics products that require a robust, sealed connector system, to protect it from the environmental elements of processed liquids, accidental soakings or wash-down procedures.

Just How SEALED is Sealed?



> Ingress Protection rating of “IP 67” means:

Solid Objects

- 0 no protection
- 2 no fingers
- 4 1.0 mm object
- **6 not even dust**
- ref. IEC 529

Liquids

- 0 no protection
- 3 rain at 60 degrees
- 5 water jets
- 6 ship deck scenario
- **7 immersion, defined**
- 8 submersion, indefinite

Industry accepted test: 1 meter depth for 30 minutes.

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Since the environment can cause an infinite number of water hazards, the industry rates Degree of Protection on a scale, and Conec Solid-Body Sealed D-sub are rated to IP67.. This is a very harsh environment for electronic devices, and only continuous submersion could be worse, and fortunately, unlikely for the target market. The industry agreed-upon test is immersion in water for 30 minutes, at a depth of 1 meter, with no air/water leakage.

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Examples of Applications using Sealed D-sub:

INDOORS:

- industrial machinery, CNC machines
- food and chemical process equip
- industrial process control
- test equipment
- medical equipment
- factory automation, robotics



OUTDOORS:

- outdoor communication equipment
- outdoor displays / signs
- ruggedized computers
- GPS & Survey equipment
- surveillance systems, X-ray screening
- utilities
- chemical plants



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While there can be many Indoor applications that involve the presence of liquids for washing or cooling, you will also realize that there are many Outdoor electronics applications that can use Conec solid-body sealed D-sub. Applications for IP67 protection exist in many markets and until now, options were limited and often much more expensive MIL class connectors were used in these applications. Now there is a choice that is cost effective for commercial/industrial applications.

WATER RESISTANT D-SUB CONNECTORS



- IP 67 Environmentally Sealed
- Nickel plated Zinc DieCast housing
- Materials resist most common chemicals, not just water
- Seals are flexible over broad temperature range
- Available in D-sub shell-sizes 1 to 5 in
 - Standard
 - High-Density
 - Mixed-layout configurations
 - with Filter options available...
- **CONEC** seals them **ALL**



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The enhanced solid-body construction is a rugged design to prevent liquid, dirt and dust ingress as well as protection from many other fluids such as automotive liquids, and cleaning solutions as might be used in food processing. The rugged one-piece construction replaces the common steel shells, frames and 4-40 inserts using a one piece zinc diecast body, which is nickel plated. Conec offers the broadest line of sealed D-sub and expands the solid-body to all shell sizes in standard, high-density, mixed layout with Filter options.

Sealing Construction



- Frame with O-ring to ensure panel-connector seal
- Interfacial Seal to ensure function even when immersed
- Internal potting to prevent liquid ingress to the device
- Blind threaded holes, to eliminate a leak path

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The solid-body construction reduces the ingress points that must be sealed, and reduces the sealant material required at the rear of the pin field. This quality engineered product provides the user with a ready-to-install connector, which : a) seals the connector-to-panel joint, b) seals connector-to-connector when mated to make it electrically functional even when wet, and c) seals the path thru the connector in the event of liquid exposure when not mated.

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Product features

- Machined contacts for high reliability
- Various plating options to 50 microinch gold plated contacts for long life stability
- corrosion resistant materials, no ferrous materials to rust
- IP 67 protection even when NOT mated
- variety of mounting styles
- ALL D-sub sizes available, including High Density, Combination, and EMI Filtered
- UL & CSA certified



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The result of a quality engineered solid-body product is a high end industrial connector, featuring machined contacts with various plating options up to 50 microinches gold. The Solid-Body design with enhanced sealing methods and corrosion resistant components provides a Rugged UL / CSA certified product for the harshest environments at a much lower cost than other industrial and Mil-spec connectors.

Solid Body Construction:

One-Piece Zinc diecast body.

Blind mounting holes eliminate a leak path.

All internal paths are Potted.

Contacts are solid, not hollow.



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The 'Solid-Body' design uses a zinc diecast body instead of the usual stamped components. This eliminates several potential leak paths, and provides sealing performance even beyond the industry IP67 standards for time and pressure.

Termination Types

- Solder Cup
- Straight PC Tail
- Right Angle PC



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Conec Sealed D-sub connectors are available in all the needed termination types, including: Solder Cup, straight PC tails, and right angle PC tails available in several offsets.

HIGH Density Arrangements

- High Density, from 15 to 78 positions



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In addition to the Standard Density 9 through 50 positions the Solid Body family is also available in shell-size 1 through 5 in all High-Density 15, 26, 44, 62, and 78 positions.

Sealed Combination D-sub



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Conec has also added the “mixed-layout or combination D-sub configurations to the solid-body line-up and allows mixtures of Signal and Power contacts and/or coaxial 50 and 75 Ohm contacts. Coax contacts can be rear-sealed to prevent ingress even if unmated or uncapped. There are 21 industry standard arrangements, combined with the various termination types and contact types, Conec offers the largest selection of IP67 D-sub Solid Body Connectors in the industry.

Sealed Connector Caps

- Protect Unused ports, from liquids, physical damage, and EMI
- Includes rubber seal and hardware
- Available with Lanyard to prevent loss
- Corrosion resistant materials



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Since not all I/O ports are always connected, a useful accessory especially in harsh environments, is a Protective Cap. These caps include an internal rubber seal to positively keep out liquids. Caps with simple screws can be used during the shipment of equipment. For ports subject to connect/disconnect in the field, Caps with Lanyards are suggested so that they don't get lost.

Water-Sealed Hood for Mating Cable Connector



- Seals the connector to the Panel
- IP 67
- fits wide range of cable diameters

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Completing the Sealed Connector system, is a Sealed Hood designed to protect the mating connector on the cable-side. Conec offers mating cable-side connectors in a variety of termination types and the sealed hood adds an additional protective barrier at the panel surface, preventing liquids from reaching the connectors. The detail photos show the included Panel Seal, and the size-variable cable seal. The jackscrews are also sealed with o-rings.

“Solid-Body”

Engineered by Conec

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Thank you for taking the time to learn about the innovative new “solid-body” Sealed D-sub from Conec .