

Hydro Bond Engineering Ltd

Surface Mateable Electrical Connectors: High Density Metal Keyed













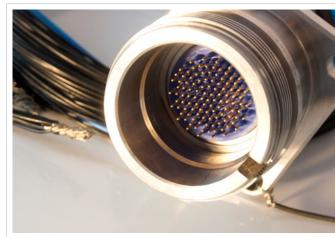


High Density Metal Keyed HDM (Hydro Bond Deck Mate)

Hydro Bond Engineering Ltd offer Surface Mateable Electrical Connectors from its extensive, high integrity range of subsea connectors.

Our in house engineered and developed electrical technology is at the forefront of harsh environment requirements. Our products have been extensively tested both internally and externally and are field proven on major local, national and international projects.

Our Electrical Engineers and Technicians are fully trained and certified on our equipment by City & Guilds.



Features

- · Underwater Mateable, available in 6 shell sizes
- Robust, Compact, High Integrity Design
- Proven shock and vibration tested design
- · High Pin Densities from 3 to 73 ways
- Positive Metal Key Way prevents misalignment and rotation
- Scoop proof design
- Barrel O Ring seals for ease of maintenance and reliability
- · Locking grub screws on coupling ring
- Fully open face pressure sealed
- Non Magnetic versions available
- · Bulkhead Mount and Panel Mount Designs available as standard
- Depth rated to 3,450 MSW standard version. (6,900 MSW on request)
- Mounting O Ring face seals and optional Barrel seals available as standard
- Hard Gold Plated Contacts and Multi Leaved Sprung Sockets for positive connection
- Acetal dust caps included on all connectors (additional lanyards on request)
- Optional cost effective pressure sealing caps are available in a wide variety of materials
- Voltage ratings up to 3,300 Volts RMS
- Current ratings up to 95 Amps with higher ratings on request
- Standard and Reverse gender configurations available
- Available in 316 Stainless Steel as standard, Titanium, Aluminium Silicon Bronze, Nickel Aluminium Bronze etc. on request
- 1 metre conductor tails on all bulkhead connectors as standard
- Optional Earth Bonding
- Termination options include fully water blocked, mechanical strain terminations and oil filled options
- · Moulding options include Polyurethane and Polyethylene

















High Density Metal Keyed HDM (Hydro Bond Deck Mate)

Benefits

- Long life connector with easily maintained O Ring seals.
- · Designed for continual mate and de-mate usage
- · Easy to use pressure sealing caps
- Individual conductor Boot Seals allow mating in adverse conditions.
- Provides the best protection for your expensive electronics.
- · Pins are protected during mating cycle
- Extremely cost effective
- · Space saving high pin density designs require less space
- · Wide variety of pin configurations allows cost effective system design
- Standard and reverse gender configurations allow for safe system design
- · Wide variety of metal options allows for best corrosion resistant design





Specifications

All HDM (Hydro Bond Deck Mate) Surface Mateable Electrical Connectors have been designed, manufactured and field tested. The following chart features the socket / pin (face view) configuration, together with electrical, environmental and standard material specifications.





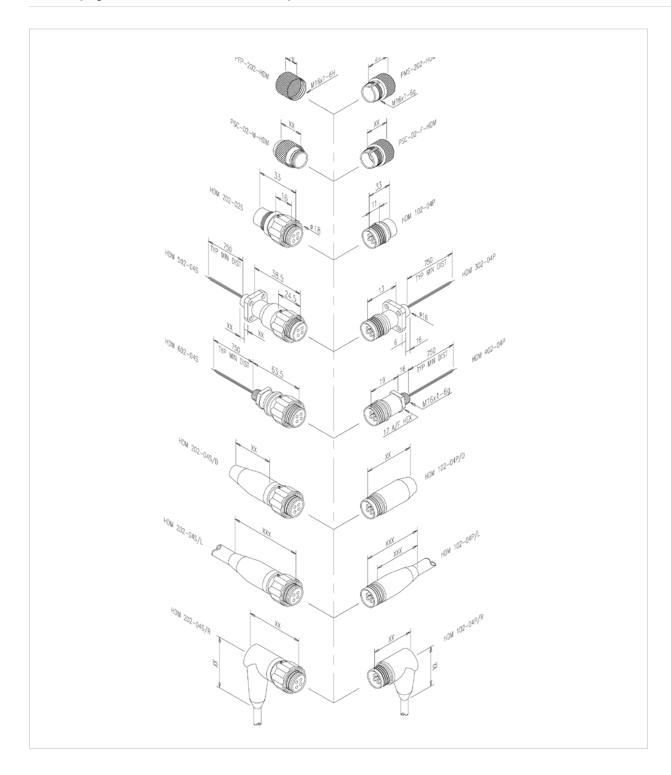








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 2 / Connector Details







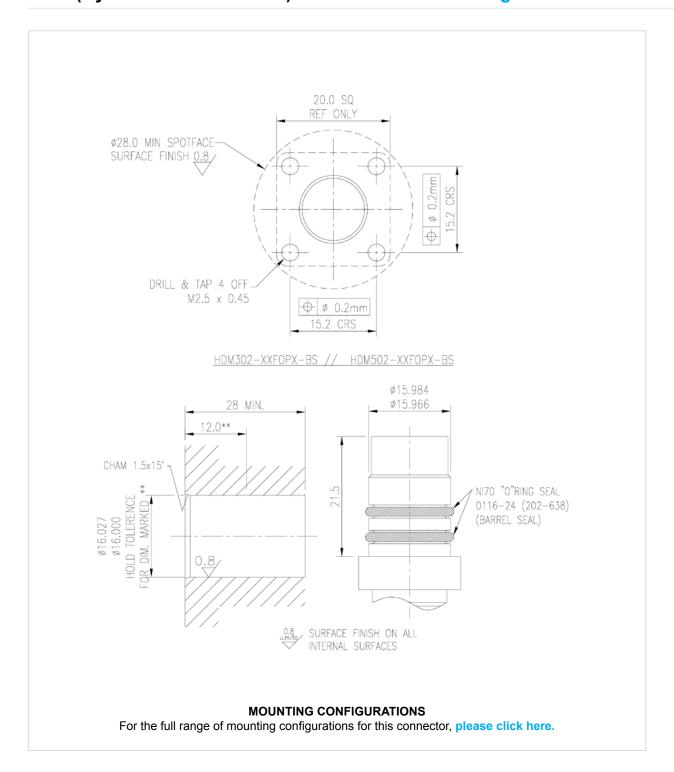








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 2 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate): Shell Size 2 / Specifications

Face Views Electrical and Environmental Standard Material Specification Pin Current Rating: 10 Amps Body. 316 Stainless Steel Socket Pin Pin Voltage Rating: 1,000 V rms Fix Ring: Aluminium Silicon Bronze Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: N/A Contact to Body IR: >1,000 MOhms @ 1,000 V dc Contact Pins: CZ121/Au CZ121/Au Mated Depth Rating: 3,450 MSW Contact Sockets: Temperature Rating: -20 ° C to +60 ° C Peek Insert Material: Conductor Tail Size: 16 AWG Conductor Tails: Spec 44 X 1.0 m Ref: HDM 02-04 Solder Bucket Size: NI70 1.4 mm dia O - Rings:

Custom Product Design

Not found what you are looking for?

Our in house engineers design, develop, manufacture and test new products to customer specifications.



Please view the following pages for the next Shell Size.





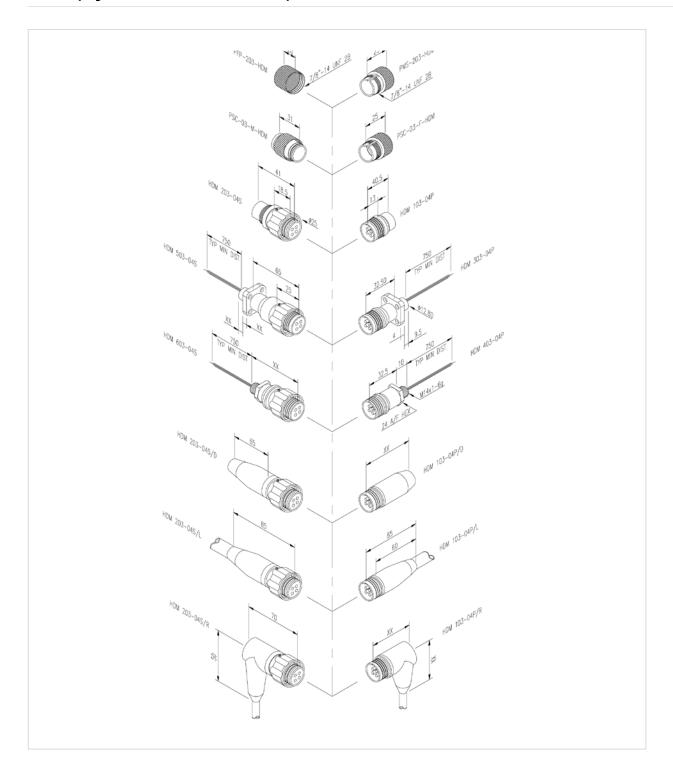








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 3 / Connector Details







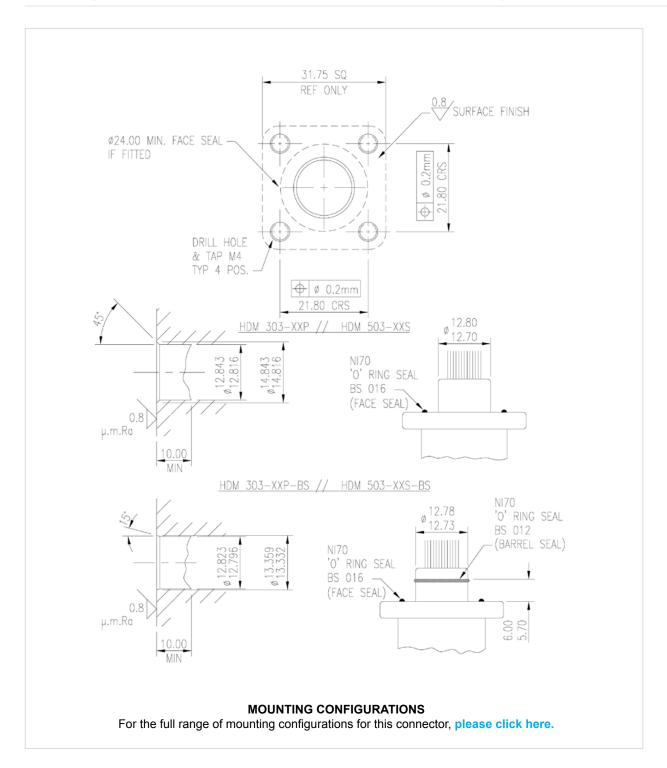








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 3 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 3 / Specifications

Pin Current Rating: 1,000 V rms Contact to Contact IR: >1,000 WOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: 3,450 MSW Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: 16 AWG Solder Bucket Size: 1.4 mm dia	Standard Material Specification		Face Views
	Body: Fix Ring: Back Shell: Contact Pins: Contact Sockets: Insert Material: Conductor Tails: O – Rings:	316 Stainless Steel Aluminium Silicon Bronze N/A CZ121/Au CZ121/Au Peek Spec 44 X 1.0 m NI70	Socket Pin O O O O O O O O O O O O O O O O O O O
Pin Current Rating: 5 Amps Pin Voltage Rating: 1,000 V rms Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: -20 °C to +60 °C Conductor Tail Size: 18 AWG Solder Bucket Size: 1.5 mm dia	Body: Fix Ring: Back Shell: Contact Pins: Contact Sockets: Insert Material: Conductor Tails: O – Rings:	316 Stainless Steel Aluminium Silicon Bronze N/A CZ121/Au CZ121/Au Peek Spec 44 X 1.0 m NI70	Socket Pin

Custom Product Design

Not found what you are looking for?

Our in house engineers design, develop, manufacture and test new products to customer specifications.



Please view the following pages for the next Shell Size.





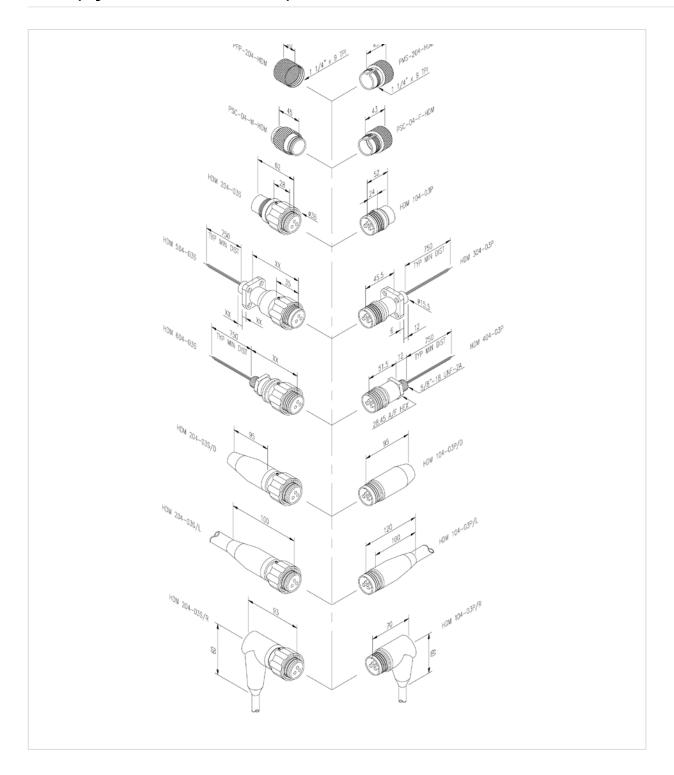








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 4 / Connector Details







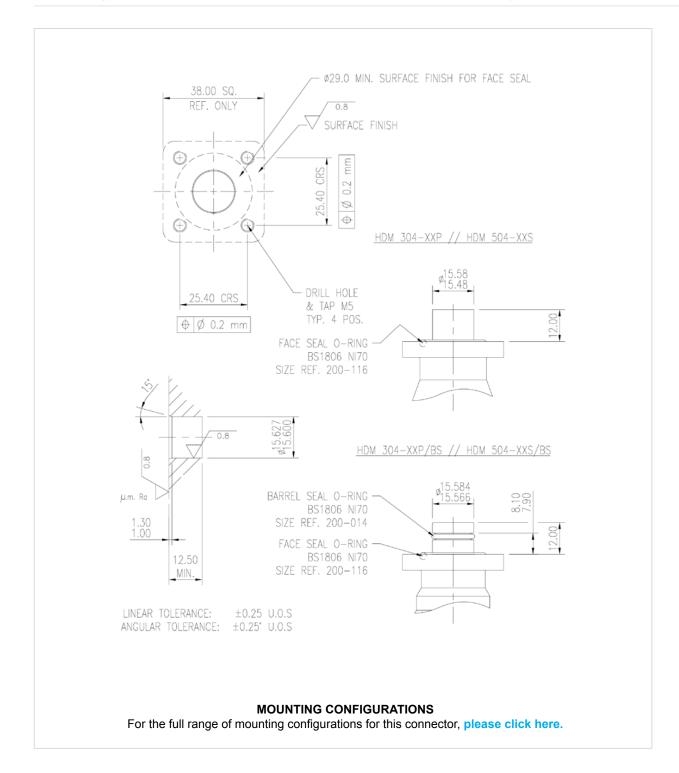








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 4 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate): Shell Size 4 / Specifications

Face Views Electrical and Environmental Standard Material Specification 35 Amps Pin Current Rating: 316 Stainless Steel Socket Pin Body: Pin Voltage Rating: 1,500 V rms Aluminium Silicon Bronze Fix Ring: Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: Contact to Body IR: >1,000 MOhms @ 1,000 V dc Contact Pins: CZ121/Au Mated Depth Rating: 3,450 MSW Contact Sockets: CZ121/Au Temperature Rating: -20 ° C to +60 ° C Insert Material: Peek Conductor Tail Size: 9 AWG Conductor Tails: Spec 44 X 1.0 m Solder Bucket Size: 3.2 mm dia O – Rings: Ni70 Ref: HDM 04-02 Pin Current Rating: 10 Amps Body: 316 Stainless Steel Socket Pin Pin Voltage Rating: 1.500 V rms Fix Ring: Aluminium Silicon Bronze Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: N/A Contact to Body IR: >1,000 MOhms @ 1,000 V dc Contact Pins: CZ121/Au Mated Depth Rating: 3.450 MSW Contact Sockets: CZ121/Au Temperature Rating: -20 ° C to +60 ° C Insert Material: Peek Conductor Tail Size: **16 AWG** Conductor Tails: Spec 44 X 1.0 m Ref: HDM 04-04 Solder Bucket Size: 1.6 mm dia O - Rings: NI70 Pin Current Rating: 316 Stainless Steel Socket Pin 8 Amps Body: Pin Voltage Rating: 1,000 V rms Fix Ring: Aluminium Silicon Bronze Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: N/A Contact to Body IR: >1,000 MOhms @ 1,000 V dc Contact Pins: CZ121/Au **5 7 2** Mated Depth Rating: 3,450 MSW Contact Sockets: CZ121/Au Temperature Rating: -20 ° C to +60 ° C Insert Material: Peek Conductor Tail Size: 16 AWG Conductor Tails: Spec 44 X 1.0 m Ref: HDM 04-07 Solder Bucket Size: 1.4 mm dia O - Rings: NI70 Pin Current Rating: Body: 316 Stainless Steel Socket Pin Pin Voltage Rating: 1.000 V rms Fix Ring: Aluminium Silicon Bronze Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: N/A Contact to Body IR: >1,000 MOhms @ 1,000 V dc Contact Pins: CZ121/Au Mated Depth Rating: 3,450 MSW Contact Sockets: CZ121/Au Temperature Rating: -20 ° C to +60 ° C Insert Material: Peek Conductor Tail Size: **20 AWG** Conductor Tails: Spec 44 X 1.0 m Solder Bucket Size: 1.2 mm dia O - Rings: NI70 Ref: HDM 04-12 Pin Current Rating: 316 Stainless Steel Pin 4 Amps Body: Socket

Fix Řina:

Back Shell:

O - Rings:

Contact Pins:

Insert Material:

Conductor Tails:

Contact Sockets:

Aluminium Silicon Bronze

N/A

Peek

NI70

CZ121/Au

CZ121/Au

Spec 44 X 1.0 m

Custom Product Design

1,000 V rms

3,450 MSW

1.2 mm dia

-20 ° C to +60 ° C

>1,000 MOhms @ 1,000 V dc

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc

18 AWG

Not found what you are looking for?

Our in house engineers design, develop, manufacture and test new products to customer specifications.



Ref: HDM 04-19

Please view the following pages for the next Shell Size.



Pin Voltage Rating:

Contact to Body IR:

Mated Depth Rating:

Temperature Rating:

Conductor Tail Size:

Solder Bucket Size:





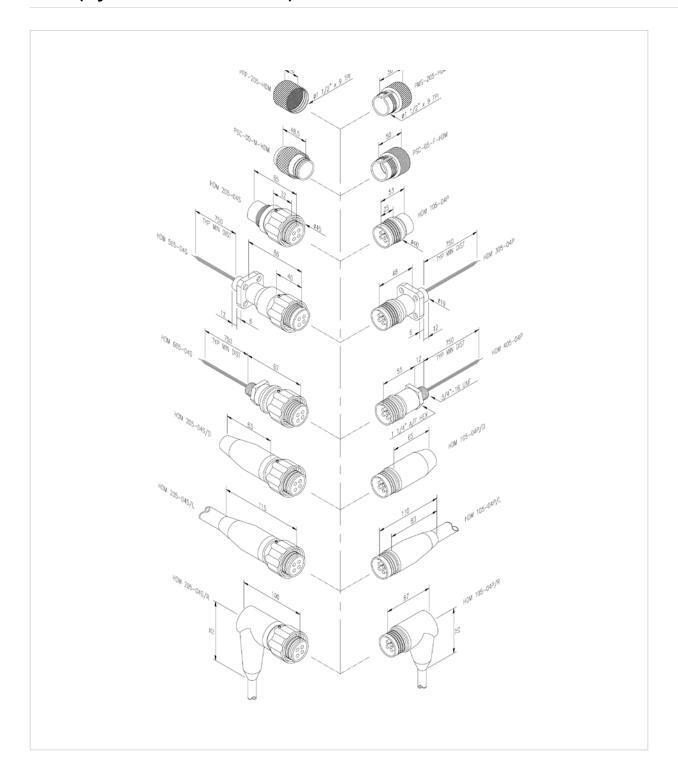








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 5 / Connector Details







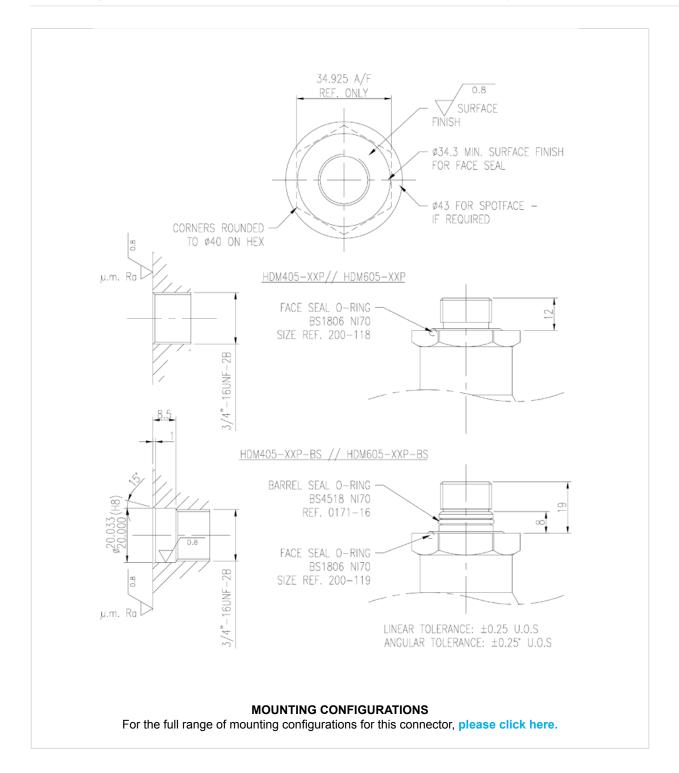








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 5 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate): Shell Size 5 / Specifications

Electrical and Environmental

Standard Material Specification

Face Views

Pin Current Rating: Pin Voltage Rating: 1,500 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: 3,450 MSW Temperature Rating: -20 ° C to +60 ° C

16 AWG Conductor Tail Size: Solder Bucket Size: 1.6 mm dia

316 Stainless Steel Body: Fix Ŕing: Aluminium Silicon Bronze Back Shell:

Contact Pins: Contact Sockets: Insert Material: Peek Conductor Tails: O - Rings: NI70

CZ121/Au CZ121/Au Spec 44 X 1.0 m

Pin

Ref: HDM 05-09

Pin Current Rating: Pin Voltage Rating:

1,000 V rms Contact to Contact IR: >1,000 MOhms @ 1,000 V dc >1,000 MOhms @ 1,000 V dc Contact to Body IR: 3 450 MSW Mated Depth Rating:

6 Amps

-20 ° C to +60 ° C Temperature Rating: 18 AWG Conductor Tail Size: Solder Bucket Size: 1.6 mm dia

Body: Fix Ring: 316 Stainless Steel Aluminium Silicon Bronze Back Shell: N/A

Contact Pins: CZ121/Au CZ121/Au Contact Sockets: Insert Material: Peek Conductor Tails: Spec 44 X 1.0 m O - Rinas: NI70

Socket

Socket

Pin



Ref: HDM 05-13

Pin Current Rating: 3 Amps 1.000 V rms Pin Voltage Rating:

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc >1,000 MOhms @ 1,000 V dc Contact to Body IR:

3 450 MSW Mated Depth Rating: -20 ° C to +60 ° C Temperature Rating: 18 AWG Conductor Tail Size: Solder Bucket Size: 1.2 mm dia

Body: Fix Ring: Back Shell:

CZ121/Au CZ121/Au Contact Pins: Contact Sockets: Insert Material: Peek Conductor Tails:

O - Rings: NI70

Aluminium Silicon Bronze

Spec 44 X 1.0 m

N/A

316 Stainless Steel

Socket



Pin

Ref: HDM 05-19

Pin Current Rating: 2 Amps 1.000 V rms Pin Voltage Rating:

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc >1,000 MOhms @ 1,000 V dc Contact to Body IR: Mated Depth Rating: 3 450 MSW

-20 ° C to +60 ° C Temperature Rating: 18 AWG Conductor Tail Size: Solder Bucket Size: 1.2 mm dia

316 Stainless Steel Body: Fix Rina: Aluminium Silicon Bronze Back Shell: N/A

CZ121/Au Contact Pins: Contact Sockets: CZ121/Au Insert Material: Peek Spec 44 X 1.0 m Conductor Tails: O - Rings: NI70

Socket

Pin

Ref: HDM 05-33

Custom Product Design

Not found what you are looking for ?

Our in house engineers design, develop, manufacture and test new products to customer specifications.



Please view the following pages for the next Shell Size.





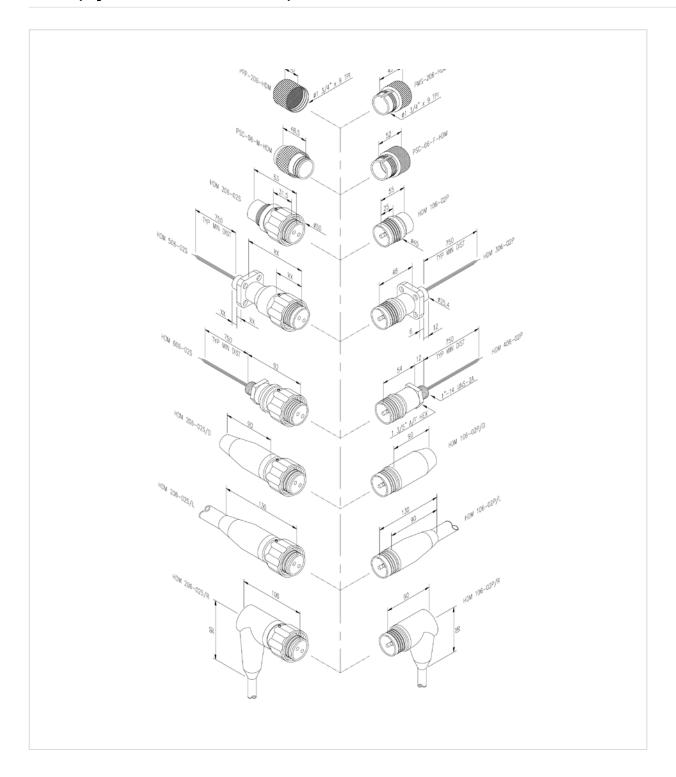








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 6 / Connector Details







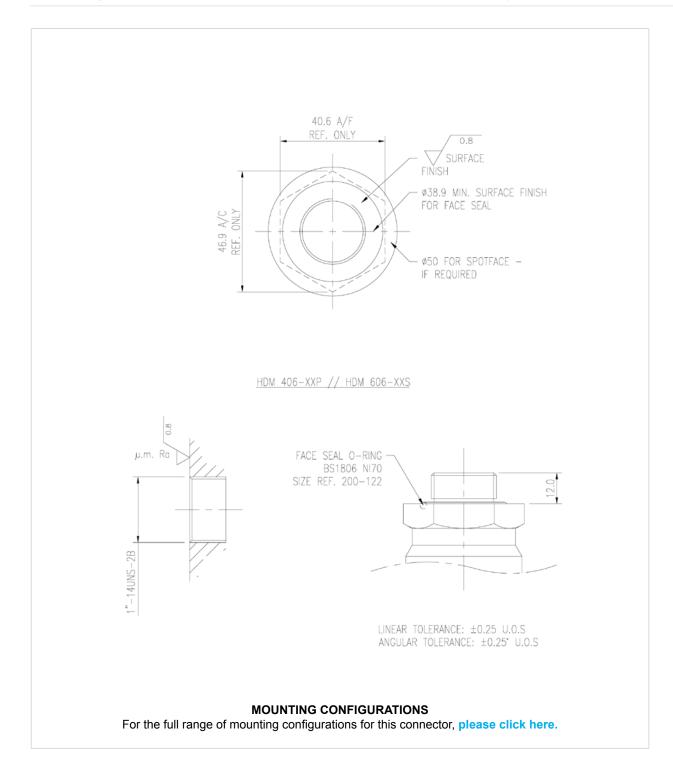








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 6 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate): Shell Size 6 / Specifications

316 Stainless Steel Pin Current Rating: 22 Amps Body: Socket Pin Voltage Rating: 1,500 V rms Fix Ring: Aluminium Silicon Bronze Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: Contact to Body IR: >1,000 MOhms @ 1,000 V dc Contact Pins: CZ121/Au CZ121/Au Mated Depth Rating: 3.450 MSW Contact Sockets: Temperature Rating: -20 ° C to +60 ° C Insert Material: Peek Spec 44 X 1.0 m

Body:

12 AWG Conductor Tail Size: Solder Bucket Size: 2.5 mm dia

3 Amps

1,000 V rms

3,450 MSW

18 AWG

2 Amps

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc

1,000 V rms

3.450 MSW

18 AWG

1.2 mm dia

-20 $^{\circ}$ C to +60 $^{\circ}$ C

>1,000 MOhms @ 1,000 V dc

1.2 mm dia

-20 ° C to +60 ° C

Pin Current Rating:

Pin Voltage Rating:

Contact to Body IR:

Mated Depth Rating:

Temperature Rating:

Conductor Tail Size:

Solder Bucket Size:

Pin Current Rating:

Pin Voltage Rating:

Contact to Body IR:

Mated Depth Rating:

Temperature Rating:

Conductor Tail Size:

Solder Bucket Size:

Electrical and Environmental

Conductor Tails: O - Rings:

Fix Ring: Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Back Shell: >1,000 MOhms @ 1,000 V dc Contact Pins: Contact Sockets:

Insert Material: Conductor Tails: O - Rings: NI70

Body: 316 Stainless Steel Fix Ring:

NI70

N/A

Peek

CZ121/Au

CZ121/Au

Spec 44 X 1.0 m

316 Stainless Steel

Aluminium Silicon Bronze

Standard Material Specification

Back Shell: Contact Pins: CZ121/Au Contact Sockets: CZ121/Au Insert Material: Peek Conductor Tails: O - Rings: NI70

Aluminium Silicon Bronze

Spec 44 X 1.0 m

Ref: HDM 06-37

Socket

Socket

Face Views

Ref: HDM 06-07

Pin

Pin

Pin

Ref: HDM 06-57

Custom Product Design

Not found what you are looking for ?

Our in house engineers design, develop, manufacture and test new products to customer specifications.



Please view the following pages for the next Shell Size.





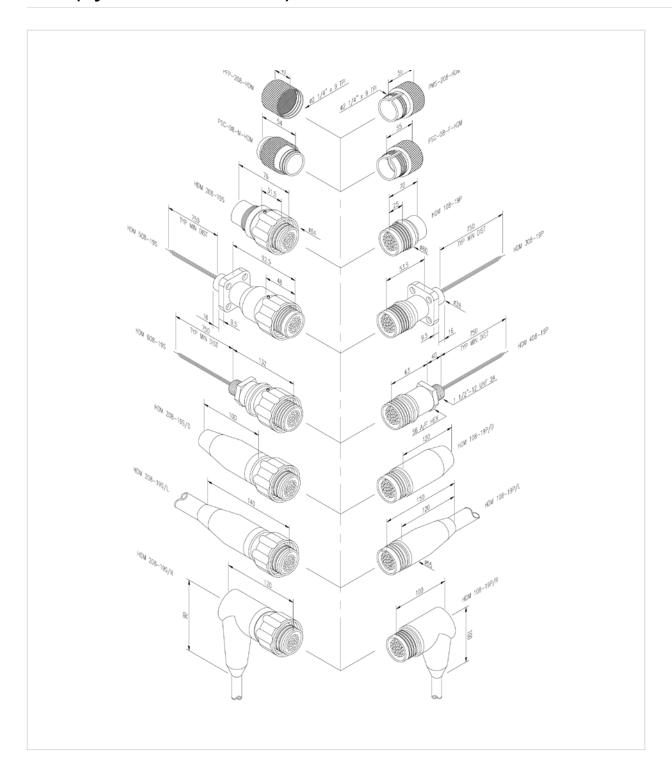








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 8 / Connector Details







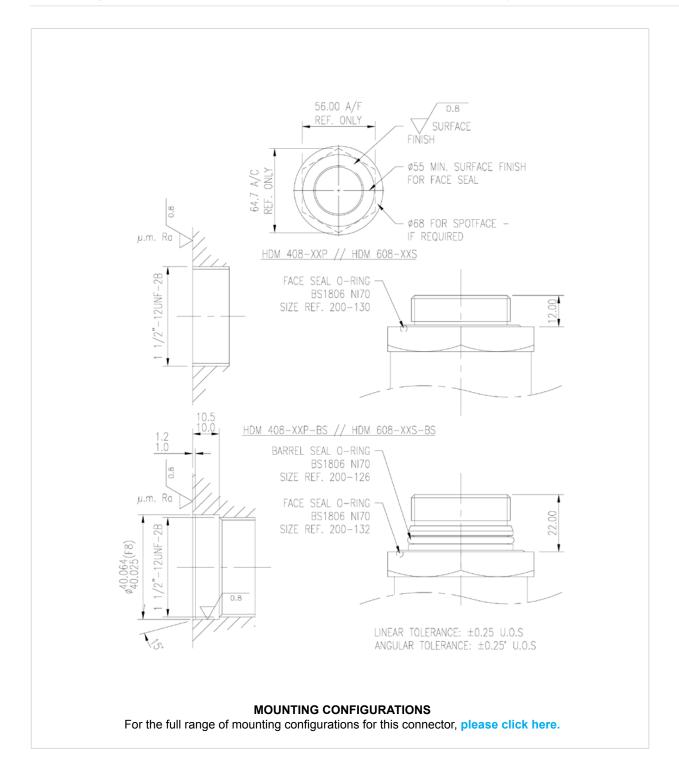








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 8 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate): Shell Size 8 / Specifications

Electrical and Environmental

Standard Material Specification

Face Views

Pin Current Rating: 60 Amps Pin Voltage Rating: 1,500 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: 3.450 MSW

Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: **Details on Application** Solder Bucket Size: **Details on Application**

316 Stainless Steel Body: Fix Ring: Aluminium Silicon Bronze Back Shell:

Contact Pins: CZ121/Au CZ121/Au Contact Sockets: Insert Material: Peek Conductor Tails: Polyrad x 1.0 m

O - Rings: **NI70** Socket



Pin

Ref: HDM 08-04

Pin Current Rating: 20 Amps Pin Voltage Rating: 3,300 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc

Mated Depth Rating: 3.450 MSW Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: 13 AWG Solder Bucket Size: 2.5 mm dia

Body: 316 Stainless Steel Fix Ring: Aluminium Silicon Bronze Back Shell:

N/A CZ121/Au Contact Pins: CZ121/Au Contact Sockets: Insert Material: Peek

Conductor Tails: Reynolds 178-8545 x 1.0 m O - Rings:

NI70

Socket

Pin



Ref: HDM 08-04-HV

Pin Current Rating: **Details on Application** Pin Voltage Rating: **Details on Application** Contact to Contact IR:

>1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: 3 450 MSW

-20 ° C to +60 ° C Temperature Rating: 13 AWG Conductor Tail Size: Solder Bucket Size: 2.5 mm dia

316 Stainless Steel Body: Fix Ring: Aluminium Silicon Bronze Back Shell: N/A Contact Pins: CZ121/Au

Contact Sockets: CZ121/Au Insert Material: Peek

Conductor Tails: Reynolds 178-8545 x 1.0 m O - Rings:

NI70

Socket

Pin





Ref: HDM 08-07

Pin Current Rating: 5 Amps Pin Voltage Rating: 1,500 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc >1,000 MOhms @ 1,000 V dc Contact to Body IR: Mated Depth Rating: 3,450 MSW

Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: 16 AWG Solder Bucket Size: 1.6 mm dia

316 Stainless Steel Body: Fix Ring: Aluminium Silicon Bronze Back Shell: N/A

316 Stainless Steel

Aluminium Silicon Bronze

Contact Pins: CZ121/Au Contact Sockets: CZ121/Au Insert Material: Peek Conductor Tails: Spec 44 X 1.0 m O - Rings: Ni70

Socket

Pin





Ref: HDM 08-19

Pin Current Rating: Pin Voltage Rating:

1,000 V rms Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc

Mated Depth Rating: 3.450 MSW Temperature Rating: -20 ° C to +60 ° C 18 AWG Conductor Tail Size: Solder Bucket Size: 1.2 mm dia

Body: Fix Ring: Back Shell:

N/A Contact Pins: CZ121/Au Contact Sockets: CZ121/Au Insert Material: Peek Spec 44 X 1.0 m Conductor Tails: O - Rings: **NI70**

Socket

Pin





Ref: HDM 08-73

Custom Product Design

Not found what you are looking for ?

Our in house engineers design, develop, manufacture and test new products to customer specifications.









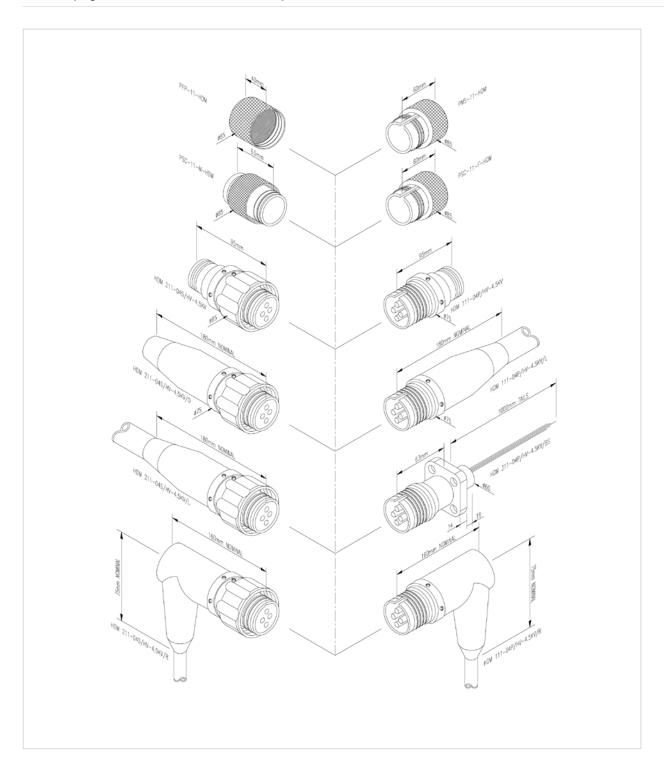








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 11 / Connector Details







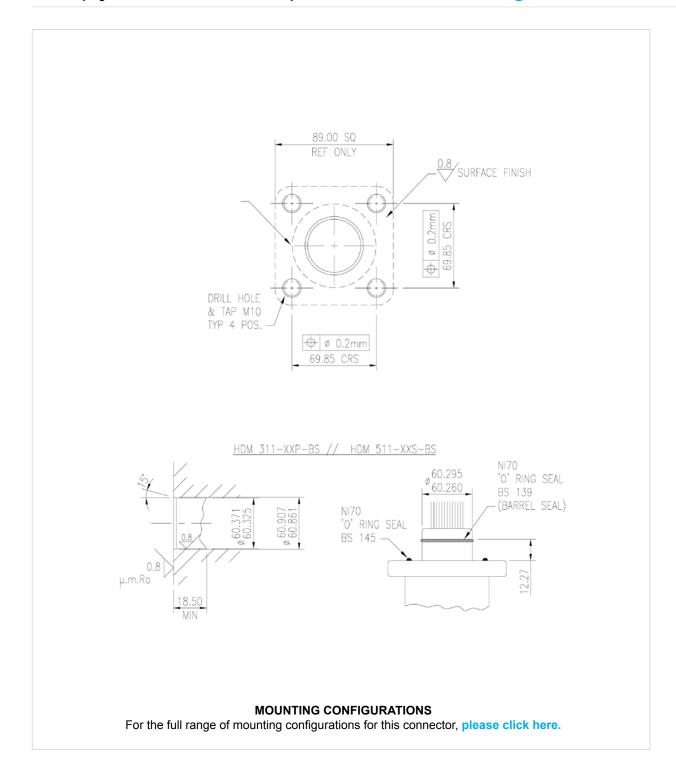








High Density Metal Keyed HDM (Hydro Bond Deck Mate) : Shell Size 11 / Mounting Details















High Density Metal Keyed HDM (Hydro Bond Deck Mate): Shell Size 11 / Specifications

Electrical and Environmental

Standard Material Specification

Face Views

Pin Current Rating: 60 Amps Pin Voltage Rating: 1,500 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: 3.450 MSW

Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: **Details on Application** Solder Bucket Size: **Details on Application**

316 Stainless Steel Body: Fix Ring: Aluminium Silicon Bronze Back Shell:

Contact Pins: CZ121/Au CZ121/Au Contact Sockets: Insert Material: Peek Conductor Tails: Polyrad x 1.0 m O - Rings: **NI70**

Socket



Pin

Ref: HDM 08-04

Pin Current Rating: 20 Amps Pin Voltage Rating: 3,300 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc

Mated Depth Rating: 3.450 MSW Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: 13 AWG Solder Bucket Size: 2.5 mm dia

Body: 316 Stainless Steel Fix Ring: Aluminium Silicon Bronze Back Shell: N/A

CZ121/Au Contact Pins: CZ121/Au Contact Sockets: Insert Material: Peek

Conductor Tails: Reynolds 178-8545 x 1.0 m O - Rings:

NI70

Socket





Ref: HDM 08-04-HV

Pin Current Rating: **Details on Application** Pin Voltage Rating: **Details on Application** Contact to Contact IR:

>1,000 MOhms @ 1,000 V dc Contact to Body IR: >1,000 MOhms @ 1,000 V dc Mated Depth Rating: 3 450 MSW

-20 ° C to +60 ° C Temperature Rating: 13 AWG Conductor Tail Size: Solder Bucket Size: 2.5 mm dia

316 Stainless Steel Body: Fix Ring: Aluminium Silicon Bronze Back Shell: N/A Contact Pins: CZ121/Au

Contact Sockets: CZ121/Au Insert Material: Peek

Conductor Tails: Reynolds 178-8545 x 1.0 m O - Rings:

NI70

Socket

Pin





Ref: HDM 08-07

Pin Current Rating: 5 Amps Pin Voltage Rating: 1,500 V rms

Contact to Contact IR: >1,000 MOhms @ 1,000 V dc >1,000 MOhms @ 1,000 V dc Contact to Body IR:

Mated Depth Rating: 3,450 MSW Temperature Rating: -20 ° C to +60 ° C Conductor Tail Size: 16 AWG Solder Bucket Size: 1.6 mm dia

316 Stainless Steel Body: Fix Ring: Aluminium Silicon Bronze Back Shell: N/A

316 Stainless Steel

Contact Pins: CZ121/Au Contact Sockets: CZ121/Au Insert Material: Peek Conductor Tails: Spec 44 X 1.0 m O - Rings: Ni70

Socket





Ref: HDM 08-19

Pin Current Rating: Pin Voltage Rating:

1,000 V rms Contact to Contact IR: >1,000 MOhms @ 1,000 V dc >1,000 MOhms @ 1,000 V dc

Contact to Body IR: Mated Depth Rating: 3.450 MSW Temperature Rating: -20 ° C to +60 ° C 18 AWG Conductor Tail Size: Solder Bucket Size: 1.2 mm dia

Body: Fix Ring: Back Shell:

Aluminium Silicon Bronze N/A Contact Pins: CZ121/Au Contact Sockets: CZ121/Au Insert Material: Peek Spec 44 X 1.0 m Conductor Tails: O - Rings: **NI70**

Socket

Pin





Ref: HDM 08-73

Custom Product Design

Not found what you are looking for ?

Our in house engineers design, develop, manufacture and test new products to customer specifications.













