# HMA-S Series connector

## Description:

The OPTOKON HMA-S connector series, a large size „Expanded Beam“ connector is designed for connection of the nodes of harsh environmental network by the help of cables with optical fibers. The used expanded beam technology preservers all advantages of signals transmission through the optical lines in field harsh environmental conditions. Additionally to ruggedized optical networks the HMA-S is suited for a vast array of applications, like heavy industry connections, petrochemical application, broadcasting temporary optical lines. The innovative designs ensure its ability for deployment in the toughest environments where high performance and total reliability are critical. Benefiting from expanded beam technology the precision optical alignment system creates immunity from water, mud, dust oil and other contaminants. The HMA-S Hermaphroditic coupling eliminates the need for adaptors and male and female mating halves. Hermaphroditic housings allow for rapid deployment, creating low loss Single mode and Multimode daisy chained links in a variety of planforms ranging from simplex fiber to a four fibers. The OPTOKON HMA-S is ideally suited for environmental extremities where low maintenance and quick repairability is necessary.

## Features:

- Advanced expanded beam technology
- Hermaphroditic interconnection
- 1 to 8 fiber channels Single mode or Multimode
- Low insertion loss / high return loss
- Hybrid electrical & fiber channel options available
- Rugged field repairable connector design

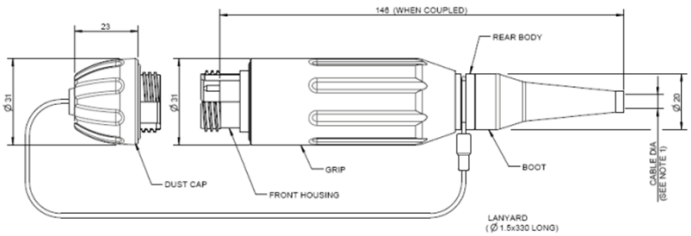
## Specifications:

| | |
|---|---|
| Insertion Loss | 50/125 @ 850/1300 nm: 1 to 4 channels: 1.0 dB max; 6 & 8 channels: 1.5 dB max<br>9/125 @ 1310/1550 nm: 1 to 4 channels: 1.5 dB max; 6 & 8 channels: 2.0 dB max |
| Return Loss | 9/125 @ 1310/1550 nm > 32 dB (typ. 40 dB), >20 dB multimode |
| Electrical power contacts | Size 20 & size 16 MIL-C-39029. Contact resistance <4 mΩ. Operating voltage 1000 VAC. Operating current 5 A (short term 15 A) |
| Electrical: Test Voltage | Between contacts and contact / housing: 3000V / 50Hz, 1 minute EN61984 |
| Durability | 3000 Matings minimum |
| Operating temperature | -40 to +85 °C |
| Storage temperature | -55 to +85 °C |
| Water immersion | up to 15 m depth |
| Vibration Sinusoidal | 10-500 Hz, 0.75 mm amplitude @ 10 g acceleration |

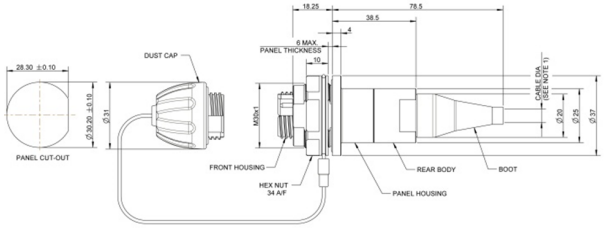
| | |
|---|---|
| Free fall resistance | 500 falls from 1.2 m height |
| Bump resistance | 4000 bumps @ 40 g acceleration |
| Tensile Strength | Tensile of 1500 N, cable dependent |
| Crush resistance | 6.7 kN |
| Corrosion resistance | 500 Hours Salt Spray |
| Cable retention | 1500 N (cable dependant) |
| Cable Variations | Compatible with tactical cable: Plug < 6 mm o/d , Bulkhead < 3 mm o/d<br>Other cable sizes available on request |
| Color | black anodized, green RAL 6014[1] |

## Technical drawings:

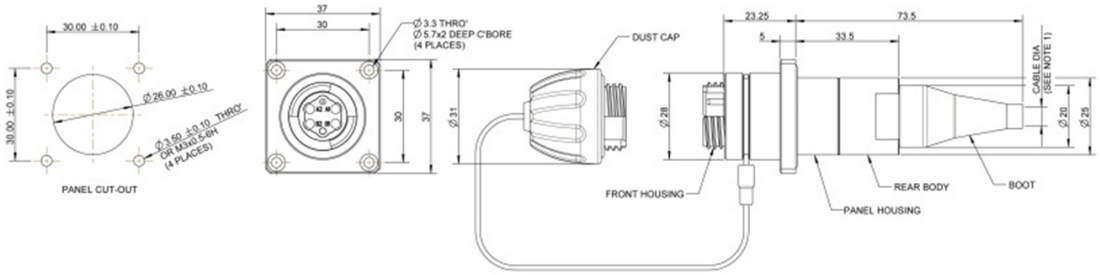
### Plug Connector



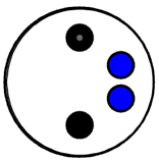

### Bulkhead Jam-Nut



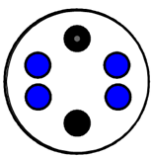

### Bulkhead Flange



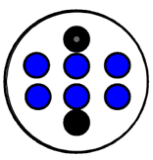

### Optical insert arrangement:



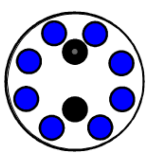
2CH OPTICAL



4CH OPTICAL



6CH OPTICAL

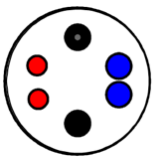


8CH OPTICAL

Bulkhead Jam-Nut

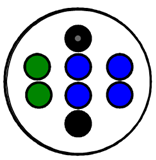
### Hybrid insert arrangement:

2CH OPTICAL
2 POWER (#16)



2CH OPTICAL
2 SIGNAL (#20)

2CH OPTICAL
2 POWER (#16)
2 SIGNAL (#20)



4CH OPTICAL
2 POWER (#16)

## Application:

- Broadcast
- Harsh environmental communications
- Industrial
- Petrochemical

## Benefits:

- Best optical performance available
- No adaptors necessary
- Combined fiber and electrical channels
- Inexpensive, low downtime field repair
- Easy clean, no special tools

## Materials:

- Anodized high grade lightweight alloy
- Neoprene BR568 Grip ring

## Ordering code:

**HMA -S - (XX) - X(SM, M5, M6) - Y(D,P)**

| (XX) | |
|---|---|
| - | plug |
| BN | bulkhead jam nut |
| BF | bulkhead flange |
| BFL | bulkhead low profile |

| X(SM, M5, M6) - Y(D,P) | |
|---|---|
| X | fiber number |
| Y | contact number |
| YD | data, size 20 |
| YP | power, size 16 |

**Typical configuration:**
HMA-S – 6SM HMA plug connector, 6 SM fiber channels
HMA-S – 4SM-2P HMA plug connector, 4 SM fiber channels, 2 electrical power contacts