Table of Contents

- Introduction
- Key Product Features
- Part Numbering System
- Markets / Applications
- Other configurations
- 610 Switch
- Competition
- MARCOM
- Closing / Take Away
- Questions
Interconnect Introduction

Electro Oceanic connectors are Underwater Pluggable type connectors

- **Underwater Pluggable**
  Underwater pluggable connectors can be mated underwater. Power Off. For example by a diver

- **Wet pluggable (Wet mateable)**
  Wet mateable connectors can be mated together in a wet environment but not underwater. Installing instrumentation on an ROV while it is briefly lifted out of the water.

- **Dry Mateable**
  Connectors have to be mated in a dry environment and then they can be submerged. For example on the deck of a ship or in a manufacturing facility. Then submerged.
Interconnect Key Product Features

- **Contact bands instead of pin and sockets:**
  - Multiple contacts per pin
  - Can have 4 pin with 8 contacts
  - Tight tolerances
  - Necessary for “Wet Pluggable” technology

- **Sealing Technology:**
  - Front of the pin is Flared to squeegee the water out of the purge hole
  - As the flared pin enters the socket water is forced out of the back of the connector through the purge holes.
  - Limited number of mate / demate cycles
  - Self wiping / self cleaning
Key Product Features

- Exclusive construction permits plugging and unplugging with electrical power de-energized.

- Pressure rated up to 20,000psi or maximum of 45,000 feet of seawater.

- Pressure balanced for easy engagement and disengagement in high pressure environments.

- Locking sleeves are available for positive plug retention.

- B51 and B53 Series have a flanged body to retain locking sleeve.

- No metal surfaces on the connector body for safe handling.

- Electrical specifications range from 115Volts DC (7.5Amps) to 600 Volts DC (300Amps).
Interconnect Part Numbering System

<table>
<thead>
<tr>
<th>Pin Code</th>
<th>Max. No. Pins</th>
<th>Contacts Per Pin</th>
<th>Max. AC Volts</th>
<th>Max. Amps</th>
<th>Std. AWG Wire Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>1</td>
<td>1</td>
<td>250</td>
<td>15</td>
<td>#16</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>1</td>
<td>250</td>
<td>15</td>
<td>#16</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>1</td>
<td>250</td>
<td>15</td>
<td>#16</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>1</td>
<td>230</td>
<td>15</td>
<td>#16</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>2</td>
<td>115</td>
<td>7.5</td>
<td>#18</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>2</td>
<td>115</td>
<td>7.5</td>
<td>#18</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>2</td>
<td>115</td>
<td>7.5</td>
<td>#18</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>2</td>
<td>110</td>
<td>7.5</td>
<td>#18</td>
</tr>
<tr>
<td>H</td>
<td>1</td>
<td>1</td>
<td>440</td>
<td>60</td>
<td>#8*</td>
</tr>
<tr>
<td>H</td>
<td>3</td>
<td>1</td>
<td>440</td>
<td>60</td>
<td>#8*</td>
</tr>
<tr>
<td>H</td>
<td>4</td>
<td>1</td>
<td>440</td>
<td>60</td>
<td>#8*</td>
</tr>
<tr>
<td>L</td>
<td>1</td>
<td>1</td>
<td>440</td>
<td>175</td>
<td>#1</td>
</tr>
<tr>
<td>L</td>
<td>3</td>
<td>1</td>
<td>440</td>
<td>100</td>
<td>#4</td>
</tr>
<tr>
<td>L</td>
<td>4</td>
<td>1</td>
<td>440</td>
<td>85</td>
<td>#4</td>
</tr>
</tbody>
</table>

Typical Catalog Number

Model Code No. 51 E 1 M- 1

Series No.——

Pin Code — See Table, Page 2——

Number of Circuits——

Male (M)/Female (F)/Universal (U) Contacts——

Dash Number——
Markets / Applications

- **Applications**
  - Underwater Instrumentation
  - Sonar
  - Power Distribution
  - Diving Bells
  - Suits
  - Cameras
  - Lighting
  - Fountains
  - Sewer Inspection Equipment
  - Solenoid Valves
  - Mining Lamps
  - Amusement Parks

- **Markets**
  - Military
  - Mining
  - Industrial
  - Offshore
  - Ocean Sciences
  - ROV
Other Configurations

• 51 / 53 Series “Inline / Bulkhead Connectors”

• B51 / B53 Series “Inline / Bulkhead Connectors”

• Right Angle

• Low Profile

• Junction Boxes

• Miniatures
Magnetically operated Switches

610 Switch:

- Designed for resistance to water and oily environments
- Connection is made through an underwater pluggable connector
- Rated to 10,000 PSI
- Connection is made with single pin Series 51
- Actuating time: 1 Millisecond
- Actuating rate: Depending on drive can follow up to 400 cycles per second.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Contact Rating</th>
<th>Maximum Amperes</th>
<th>Maximum Volts</th>
<th>Maximum Contact Resistance</th>
<th>Voltage Breakdown</th>
<th>Mating Series Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>610F2F-1</td>
<td>10 w dc</td>
<td>0.5 amp</td>
<td>200 vdc</td>
<td>0.100 ohm</td>
<td>400 vdc</td>
<td>51F2M</td>
</tr>
</tbody>
</table>

- Applications:
  - Water-Current meter: activating magnet mounts to propeller blade.
  - Valve-position indicator: activating magnet, mounted on valve triggers switch
Call to Action

- Contact all Diving OEM’s in your area
- Contact Valve manufacturers
- Contact Underwater Light Companies
- Marine Battery pack customers
- Contact pump manufacturers
- Contact fountain manufacturers

- Understand the technology behind wet-pluggable connectors and think outside the box.

Applicable Questions when with a customer:
- What is the application
- Pressure requirements
- Temperature requirements
- Corrosion resistance
- Physical requirements

Product Selection
- Electrical requirements: Volts / Amps
- Number of contacts / conductors
- Cable wire size and jacket material
- Cable length
- Special marking or jacket required
- Male or Female - Plug or Receptacle

CONTACT
Brian Brown, PLM
Brian.Brown@cooperindustries.com
(805) 389-5728