SEACON

UNDERWATER SWITCHES

HIGH INTEGRITY UNDERWATER SWITCHES
DUAL POLE PROXIMITY SWITCH

- Uses SEACON MCBH Micro WET-CON connector with plate or bracket mounting
- Offers convenience of replacing the cable, if needed, without replacing the switch
- 316 SST housing
- Rated up to 7,500 psi
- Rated for high shock

**A040-101-X**

- Dual Pole Proximity Switch, 316 SST, currently available in 115VAC/28VDC, 7 amp resistive load micro switch
- Current connector options MCBH4M-DO and MCBH4F-DO, other connectors available
- Depth rating: 4,200m
- Designed to mount onto a plate or mounting bracket
- Custom designs and connector configurations are available at special request

**A040-102-X**

- Dual Pole Proximity Switch, 316 SST, currently available in 115VAC/28VDC, 1 or 7 amp resistive load micro switch
- Current connector option is MCBH3M-DO, other connectors available
- Depth rating: 1,000m
- Designed to mount onto a plate or mounting bracket
- Qualified for high shock
NEWS BULLETIN
NEW SWITCH PRODUCTS NOW AVAILABLE

PROXIMITY MICRO SWITCH
- Uses SEACON’s MC-BH-3M Micro WET-CON connector with hex body modular design, with 3/4-16 UNF-2A mounting thread
- Offers convenience of replacing the cable, if needed, without replacing the switch
- Titanium housing
- Maximum 7 amps current
- Rated 10,000 psi

BULKHEAD/PANEL MOUNT REED SENSOR PRODUCTS
- 3/4” diameter housing with 7/16-20 UNF mounting thread
- Designed for small ROV and diver operated panels
- Utilizes reed sensors - uses no power
- Light weight durable acetal housing, with other housing materials optional
- Used for ROV and shallow water control panels
- Low cost and smaller size

HALL EFFECT SENSORS
- Uses SEACON’s MC-BH-3M Micro WET-CON connector with hex body modular design, with 3/4-16 UNF-2A mounting thread
- Offer long reliable service life, with no moving parts
- Hall effects available are sinking, ratiometric (sourcing), and latching
- Rated 10,000 psi
- Low cost

REED SENSORS
- Developed for an oil and gas customer for use with actuators and valves
- Uses SEACON’s MSXEE-BCR-DO GRE and/or MC-BH connectors for long service life, with hex body modular design
- Offers convenience of replacing the cable if needed without replacing the switch
- Offers greater sensing distance than our micro switch and hall effect proximity switches
- Suited for most proximity applications which do not require current greater than 0.5 amps
- MC-BH sensor rated 10,000 psi
- GRE sensor rated 5,000 psi
WE DEVELOP & CUSTOMIZE...

...UNDERWATER SWITCHES FOR YOUR SPECIFIC NEEDS

CURRENT MARKETS
A variety of markets that use underwater switches come to SEACON for their needs.
Industrial Companies / Military / Oil & Gas Companies / River Dam Companies / Water Parks

APPLICATIONS
Switches may be used for several specific jobs.
- Actuators
- Amusement Rides
- Buoy Systems
- Dam Gates
- Dredging
- Fishery Gates
- Heavy Industrial Equipment
- Oil Well Logging
- ROV’s
- Submarines
- Underwater Christmas Trees
- Well Head Controls

VARIETY
SEACON offers a variety of switches, each capable of handling tough underwater jobs.
- Limit Switches
- Rotary Switches
- Push-Pull Switches
- Modular Proximity Switches: 90° and Straight
  - Proximity Switches
  - Panel/Bulkhead Mountable
  - Molded Cable, Straight or Right Angle

For inquiries please contact sales@seacon-ap.com

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January 2013
HIGH INTEGRITY UNDERWATER SWITCHES

LIMIT SWITCHES
- Hermetically sealed
- Pressure rated up to 6,000 psi
- Rated for > 50,000 cycles
- Load capacities; 1 and 7 amps
- Single pole, double throw
- Stainless Steel or Titanium
- Non-metal options available
- Refer to datasheet SAPL-DS-0202

PLASTIC LIMIT SWITCHES
- Rated for > 50,000 cycles
- Pressure rated up to 500 feet (152 meters)
- Load capacities; 1 and 7 amps
- Single pole, double throw
- Black Acetal
- Refer to datasheet SAPL-DS-0203

POSITIVE ACTION SWITCHES
- Hermetically sealed
- Pressure rated up to 6,000 psi
- Rated for > 50,000 cycles
- Load capacities; 1 and 7 amps
- Single pole, double throw
- Stainless Steel or Titanium
- Refer to datasheet SAPL-DS-0206

PROXIMITY SWITCHES
- Hermetically sealed
- Pressure rated up to 6,000 psi
- Rated for > 50,000 cycles
- Load capacities; 1 and 7 amps
- Standard proximity and hall effect
- Stainless Steel or Titanium
- Proximity switch meets NAVSEA requirements for part number 5162424-101-11
- Magnet retainer meets NAVSEA requirements for part number 5062424-102-11
- Refer to datasheet SAPL-DS-0204
MODULAR PROXIMITY SWITCHES

- Hermetically sealed
- No o-rings or gaskets
- Pressure rated up to 6,000 psi
- Rated for > 50,000 cycles
- Load capacities; 1 and 7 amps
- Standard proximity and hall effect
- Manufactured to NAVSEA requirements
- Incorporates MC-BH-3M connector
- Reinforced Neoprene mold
- Refer to datasheet SAPL-DS-0205

SEACON ADVANCED PRODUCTS, LLC - SWITCHES

SEACON manufacture a full line of hermetically sealed limit switches, proximity switches, potentiometers and magnetic couplings. In addition to this SEACON is able to offer a range of plastic switches and has also developed a proximity switch utilizing it's connector technology.

All switches are qualified for successful deployment on Submarines, ROV's, AUV's, UUV's, hulls, submersibles of all types, buoys, underwater communication systems, surveillance devices, oceanographic equipment, on deck and wherever equipment is exposed to severe marine and other hostile environments. These switches are also used in oil well logging, well head controls, dredging, fishery gates, and underwater Christmas Trees.

SEACON switches are USED ALL OVER THE WORLD and our corporate philosophy emphasizes flexibility, responsiveness, staying ahead of market requirements, quality assurance and service after sale.

The SEACON Group has an extensive and comprehensive agency network able to supply our full range of products which covers every continent or area across the globe. To find a representative in your area please contact our sales department or refer to our catalogue.

QUALITY


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LIMIT SWITCHES

DESCRIPTION
SEACON offers a variety of Limit Switches to meet demanding needs. Limit Switches are designed to give a signal to a control system when a moving component like an overhead door or piece of machinery has reached the end point (or limit) of its travel or just a specific point of its journey.

KEY FEATURES
- Load capacities
  - Light duty (LD - 1 amp)
  - Standard Duty (SD - 7 amps)
- AU series (SST) switches are rated to 6,000 psi (4,000m) and available in LD and SD

MATERIALS
- 316 Stainless steel - AU-LS, AU-LS 10K
- Titanium - AU-LS

QUALITY
CONFIGURATIONS

- AU Series, AU-LS, AU-LS 10K
  - Mounting type:
    - 3/4" - 16 UNF for AU
    - Molded cable available for all series
    - PBOF available for AU series
    - Bulkhead available for AU series

DESIGN RATINGS & TESTING

- Pressure Rating:
  - 6,000 psi - AU, AU-LS
  - 10,000 psi - AU-LS 10K

- Power load:
  - Light Duty = 1 amp (115 VAC/28 VDC)
  - Standard Duty = 7 amps (115 VAC/28 VDC)

- Minimum cycles: All series greater than 50,000

- Button options: Large (1.5 in), Medium (0.65 in), Small (0.375 rad.) - Available for AU-LS

Standard temperature range: -40° to +175°F available for AU-LS and AU-LS 10K

OPERATION

- Full stroke of Plunger:
  - AU series - 0.38 in. max (9.65 mm)

PRINCIPLE OF OPERATION

A Limit Switch uses a mechanism moving against a spring to move a magnet which is then placed either in attraction or repulsion, to open or close an electrical circuit. All switches are single pole double throw.

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DESCRIPTION

SEACON has developed various forms of Switches. This Limit Switch is ideally suited for diver applications. Rated to 500 feet (152 meters), this durable switch fits nicely into a gloved hand. Originally designed as a push to talk button, this switch has a wide variety of uses.

The switch is made of durable Black Acetal (ASTM D4181). It is available in either light (1 amp) or standard duty (up to 7 amps).

KEY FEATURES

- Black Acetal
- Single Pole Double Throw
- Available in Stainless Steel
- Available in light and standard duty
- Load capacities;
  - Light duty (LD - 1 amp)
  - Standard duty (SD - 7 amps)

QUALITY

MATERIALS

- Black Acetal ASTM D4181

CONFIGURATIONS

- Part number AU-PLS-(LD or SD)-C
- Cable molding available

DESIGN RATINGS & TESTING

- Pressure rating: 500 feet (152 meters)
- Power load:
  - Light duty = 1 amps (115 VAC/28 VDC)
  - Standard duty = 7 amps (115 VAC/28 VDC)
- Minimum cycles: Greater than 50,000

OPERATION

- Full Stroke of Plunger: 0.28 in. max (7.11 mm)

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DESCRIPTION

SEACON offers a variety of Switches. The Proximity Switch uses magnets, either in attraction or repulsion, to open or close an electrical circuit. Several types are available to meet customer's needs. All switches are single pole double throw.

KEY FEATURES

- Load capacities
  - Light duty (LD - 1 amp)
  - Standard Duty (SD - 7 amps)
- Hermetically sealed
- No O-rings or Gaskets
- Single Pole Double Throw
- No O-rings or Gaskets
- Proximity Switch meets NAVSEA requirements for part number 5162424-101-11
- Magnet Retainer meets NAVSEA requirements for part number 5062424-102-11

MATERIALS

- 316 Stainless Steel - Available for all series
- Titanium - Available for all series

QUALITY

CONFIGURATIONS

AU-VM Series, AU-VME Series.

Standard Proximity - The switch can be normally open or closed. When a magnet is presented the switch will either open or close the circuit.

Sinking Hall Effect - The sensor is normally closed. When a magnet is present the sensor opens at a very high rate of speed.

Sinking/Sourcing Hall Effect - The switch is normally open and will gradually close as the magnet is brought closer to the switch. This is ideal for lining up two objects.

Latching Hall Effect - The circuit is closed when a South magnet is present and opens when a North magnet is presented.

DESIGN RATINGS & TESTING

- Pressure rating:
  - 6,000 psi - VM-series, VME series.
  - 10,000 psi - VME series.
- Power load:
  - Light duty = 7 amps (115 VAC/28 VDC) - Available for all series
  - Standard Duty = 7 amps (115 VAC/28 VDC) - Available for all series
- Minimum cycles: All series greater than 50,000
- Standard Temperature range: -40° to +175°F Available for VM and VME series

OPERATION

- Magnets in repulsion for AU

QUALIFICATIONS

- Proximity Switch meets NAVSEA requirements for part number 5162424-101-11
- Magnet Retainer meets NAVSEA requirements for part number 5062424-102-11

PRINCIPLE OF OPERATION

A Proximity Switch uses magnets, either in attraction or repulsion, to open or close an electrical circuit. Except for hall effect, all switches are single pole double throw.

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MODULAR PROXIMITY SWITCHES

DESCRIPTION

**SEACON** offers a variety of Switches. This Modular Proximity Switch utilizes many of our proven proximity switches and integrates them with a **SEACON Micro WET-CON**, underwater plugable connector.

Installation has never been easier. Once the switch is mounted the cable can easily be added. Because a wet plugable connector is used, this can be done in any conditions, even submerged.

As a result of this modular design, switches become interchangeable. Simply replace the cable and the switch can be used elsewhere. This is particularly useful when taking spares to sea.

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**KEY FEATURES**

- Hermetically sealed
- No o-rings or gaskets
- Single Pole Double Throw
- Reinforced Neoprene Mold
- Integrated Underwater Plugable connector incorporating MC-BH-3M

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**QUALITY**

CONFIGURATIONS

AU-VM Series, AU-VME Series.

Standard Proximity - The switch can be normally open or closed. When a magnet is presented the switch will either open or close the circuit.

Sinking Hall Effect - The sensor is normally closed. When a magnet is present the sensor opens at a very high rate of speed.

Ratiometric Hall Effect - The switch is normally open and will gradually close as the magnet is brought closer to the switch. This is ideal for lining up two objects.

Latching Hall Effect - The circuit is closed when a South magnet is present and opens when a North magnet is presented.

- Mounting type:
  - Standard 3/4” - 16 UNF
  - Molded available for all series

DESIGN RATINGS & TESTING

- Pressure rating:
  - 6,000 psi - All series
  - 10,000 psi - VME 10k
- Power load:
  - Light duty = 1 amp - Available for all series
  - Standard duty = 7 amps - Available for all series

- Standard Temperature range: -40° to +175°F available for all series

QUALIFICATIONS

- Proximity Switch meets NAVSEA 5162424-102-11
- Micro Switch design to MIL-S-8805

PRINCIPLE OF OPERATION

A Modular Proximity Switch uses magnets, either in attraction or repulsion, to open or close an electrical circuit. Except for hall effect, all switches are single pole double throw.
DESCRIPTION

**SEACON** offers a variety of Switches, including **Positive Action Switches** to meet the demanding needs of our customers.

**Positive Action Switches** are designed to give a continuous signal when the switch is activated. Various configurations are available including Rotary and Push and Pull (Kill Switches).

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**KEY FEATURES**

- Load capacities
  - Light duty (LD - 1 amp)
  - Standard Duty (SD - 7 amps)
- Hermetically sealed
- 316 Stainless Steel or Titanium
- AU series (SST) switches are rated to 6,000 psi (4,000 m) and available in LD and SD Single Pole Double Throw

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**MATERIALS**

- 316 Stainless steel - AU, AU-LS 10K
- Titanium - AU, AU-LS

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**QUALITY**

CONFIGURATIONS

AU Series.
- Mounting type:
  - 3/4" -16 UNF for AU
  - Bulkhead available for AU series
  - Cable molding and PBOF options available

DESIGN RATINGS & TESTING

- Pressure Rating:
  - 6,000 psi - AU-RT and AU-PP
  - 10,000 psi - AU-LS 10K
- Power load:
  - Light Duty = 1 amp (115 VAC/28 VDC) - Available for all series
  - Standard Duty = 7 amps (115 VAC/28 VDC) - Available for all series
- Button options: Large (1.5 in), Medium (.65 in), Small (.375 rad.) available for AU and LS 1.5 and .375.
- Standard temperature range: -40° to +175°F available for AU
- Minimum cycles: All series greater than 50,000

OPERATION

- Switches incorporate Detent features

PRINCIPLE OF OPERATION

A Positive Action Switch uses a mechanism (Rotary or Linear) to move a magnet which is then placed either in attraction or repulsion, to open or close an electrical circuit. All switches are single pole double throw.
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