

# **North American Sensors Corp. Pressure Switches Inc.**



**Products that make sense**

## Mission Statement

It is the mission of North American Sensors Corporation to manufacture innovative products for all industries. Our hope is that these products will continually create a benchmark of quality and customer satisfaction. Through these self imposed standards, we will continually strive to surpass industry expectations concerning product and personal performance. All of these pursuits will be conducted with the ultimate goal of becoming the industry leader in sensor manufacturing and technology.

## Manufacturer's Warranty

North American Sensors Corporation warrants its products to be free from defects in material and workmanship when subjected to normal use and service for a period of one year from the date of purchase. This warranty is applicable only to product components that are stationary and not subject to normal wear. This warranty does not apply to products that have been subjected to electrical or chemical damage due to improper use, accident, negligence or abuse. Electrical damage to solid state components, relays, reedswitches or other components will not be covered. Also excluded are products that have been modified or altered, or have electrical cables that have been cut during installation. If anyone other than authorized personnel of NASC attempts to repair the device, this warranty is null and void.

NASC is responsible under this warranty for the repair or replacement of the defective product or components as deemed necessary upon inspection by NASC service personnel. NASC assumes no responsibility for consequential damages to personal or real property, or for injury to any person.

This warranty supersedes all warranties expressed or implied. The suitability of NASC products for a particular application and the implied warranty of merchant ability is excluded from warranty coverage. This warranty may not be expanded or altered other than in writing by an officer of NASC.

Defective products must be shipped to NASC prepaid and insured to the address below within 30 days of the original malfunction. All returned goods must be labelled with a Return Goods Authorization number obtained from NASC customer service. Also include the part number, serial number, name and contact number of someone capable of answering questions regarding the use, operation and liquid contamination of the product, a return shipping address and a description of the problem. All returns will be handled as quickly as possible and the preceding information will help to expedite the return or replacement of the product.





**North American Sensors Corp.**

Quality Pressure, Level, and Temperature Solutions

**BLG Series**

## Bilge/Sump Level Switches

NASC's bilge switches are designed to be installed in ships bilges, tanks and industrial sumps, where it would be bolted to an adjoining structure. Custom configurations are available upon request. Specifications regarding this model may change without notice.

### BLG100/25SSS-X\*



#### Standard Features:

- Clear polycarbonate Slosh Shield
- 316SS Stem, Float and Brackets
- 25 VA Form C Hermetically Sealed Reed Switch
- 4C 18AWG PVC Jacketed Cable
- Water Tight Seal
- Made in the USA

### BLG150/25SSS-X\*



#### BLG150/25SSS

- Manual Lift/Test Mechanism

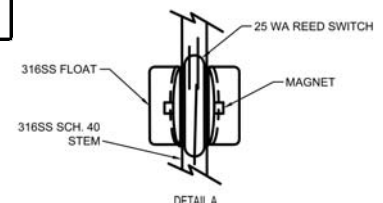
|             |           |
|-------------|-----------|
| Max Temp    | 250F      |
| Max PSIG    | 120       |
| Float SG    | 0.68      |
| Watt Rating | 25 AC/DC  |
| Max Volts   | 120 AC/DC |

### BLG225/25SSS-X\*



#### Standard Features:

- 316SS Slosh Shield
- 316SS Stem, Float and Brackets
- 25 VA Form C Hermetically Sealed Reed Switch
- 4C 18AWG PVC Jacketed Cable
- Water Tight Seal
- Manual Lift/Test Mechanism
- Made in the USA

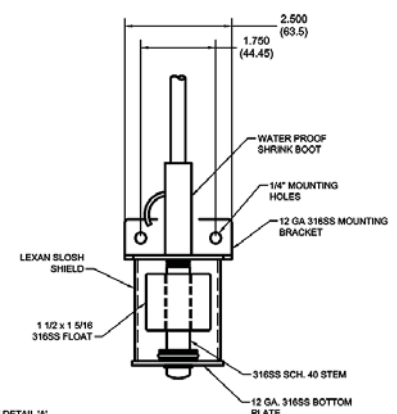
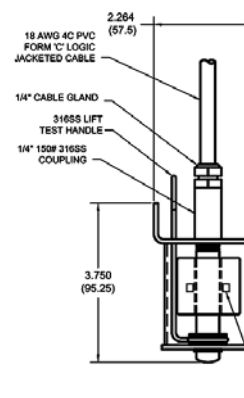


**-X Options**  
 STO Cable 16AWG 4C  
 Custom Lengths of Cable

\*All switches can also be supplied with 100VA form 'C' hermetically sealed reed switch.

#### Note:

The actuation point will vary depending on the temperature and the specific gravity of the individual liquid being detected.





## Bilge/Sump Level Switches

## BLG Series

NASC's ABS Type approved bilge switch is designed to be installed in ships bilges, tanks and industrial sumps, where it would be bolted to an adjoining structure. Custom configurations are available upon request. Specifications regarding this model may change without notice. The **(BLG250/25SSS switch is the only ABS type approved bilge level switch manufactured in the US.)**

### BLG250/25SSS

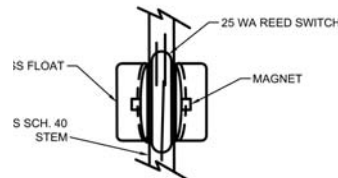
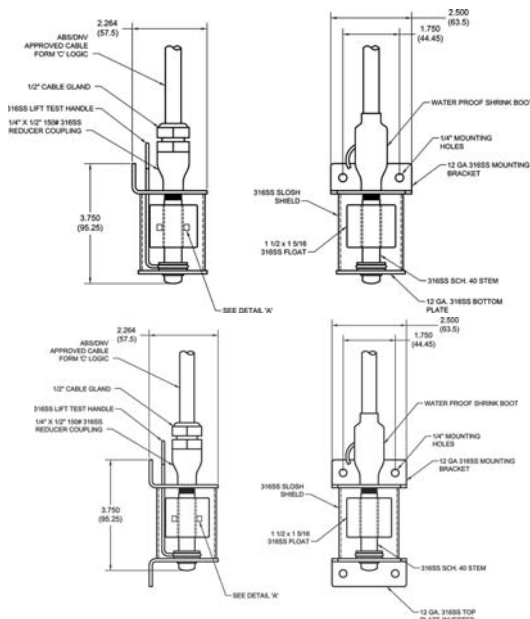


#### Standard Features:

- 316SS Slosh Shield
- 316SS Stem, Float and Brackets
- 25 VA Form C Hermetically Sealed Reed Switch
- ABS Approved Cable, 6 ft. Standard
- Water Tight Seal
- Manual Lift/Test Mechanism
- ABS Type Approved
- Made in the USA



|             |           |
|-------------|-----------|
| Max Temp    | 250F      |
| Max PSIG    | 120       |
| Float SG    | 0.68      |
| Watt Rating | 25 AC/DC  |
| Max Volts   | 120 AC/DC |



|                        |
|------------------------|
| Wiring Logic           |
| Switch Rated SPDT 25VA |
| Red - N.O.             |
| Black - N.C.           |
| White - Common         |
| Green - Ground         |

For a more rugged design, our BLG250/25SSS-B has a double bracketing system and the slosh shield is tig welded to the brackets and stem.

The ground wire on this switch should not be used as part of the circuit and should only be used when a ground is not available to the switch.

\*All switches can also be supplied with 100VA form 'C' hermetically sealed reed switch.

#### Note:

The actuation point will vary depending on the temperature and the specific gravity of the individual liquid being detected.







**North American Sensors Corp.**

Quality Pressure, Level, and Temperature Solutions

## Bottle Switches (External Mount Level Switches)

# BTL Series

NASC's line of brass bottle switches are designed to be installed externally to ship tanks and industrial tanks. It may also be bolted to an adjoining structure. Custom configurations are available upon request. Specifications regarding this model may change without notice.



**BTL100/25BBS**  
**BTL 100/25BBN**

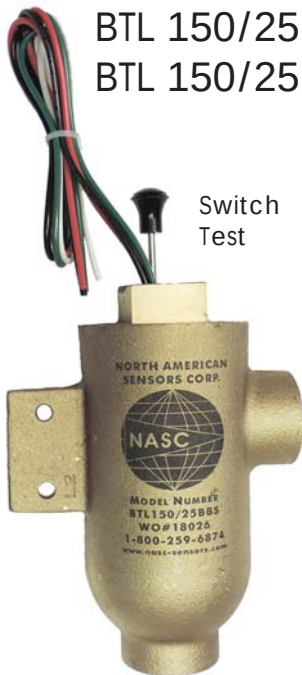
### Standard Features:

- All Brass Bottle
- Brass Pipe Plug and Stem
- 316SS Float or Buna Float
- External Mounting Tab
- 18AWG PVC Jacketed 4C Wire
- Hermetically Sealed SPDT Reed Switch
- Made in the USA



| Wiring Logic           |
|------------------------|
| Switch Rated SPDT 25VA |
| Red - N.O.             |
| Black - N.C.           |
| White - Common         |
| Green - Ground         |

The ground wire on this switch should not be used as part of the circuit and should only be used when a ground is not available to the switch.



**BTL 150/25BBS**  
**BTL 150/25BBN**

Switch  
Test

### Standard Features:

- All Brass Bottle
- Brass Pipe Plug and Stem
- 316SS Float or Buna Float
- External Mounting Tab
- 18AWG PVC Jacketed 4C Wire
- Hermetically Sealed SPDT Reed Switch
- 316SS Lift/Test Mechanism and Rod Wipe
- ABS Type Approved

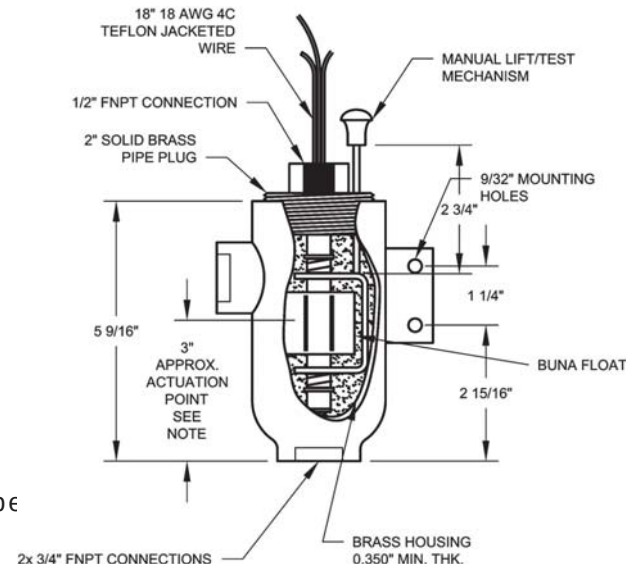
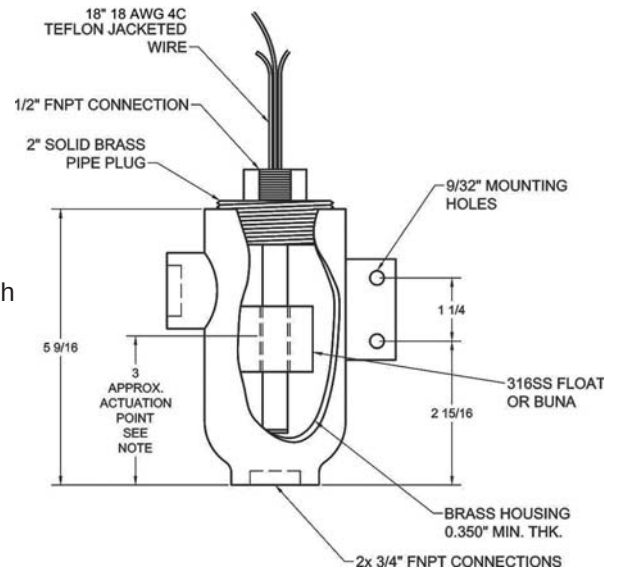


**ABS**  
TYPE APPROVED PRODUCT

BTL100/25BBS or BTL100/BBN can be supplied with a 100VA from 'C' hermetically sealed reed switch.

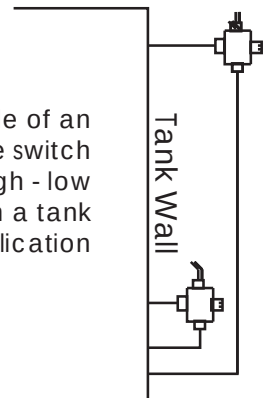
### Note:

The actuation point will vary depending on the temperature and the specific gravity of the individual liquid be detected.



|                |       |
|----------------|-------|
| Max Temp       | 175F  |
| Max PSIG       | 50    |
| 316SS Float SG | 0.64  |
| Buna Float SG  | 0.48  |
| Watt           | 25    |
| Rating*        | AC/DC |

Example of an external bottle switch used as high - low level alarms in a tank gauging application





## Bottle Switches (External Mount Level Switches)

NASC's line of stainless steel bottle switches are designed to be installed externally to ship tanks and industrial tanks. It may also be bolted to an adjoining structure. Custom configurations are available upon request. Specifications regarding this model may change without notice.

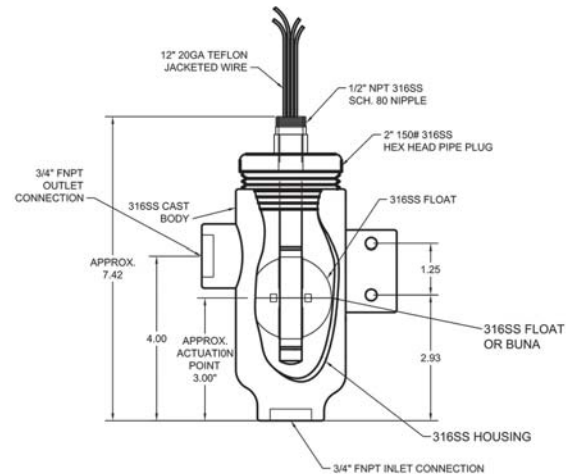
### BTL 400/25SSS



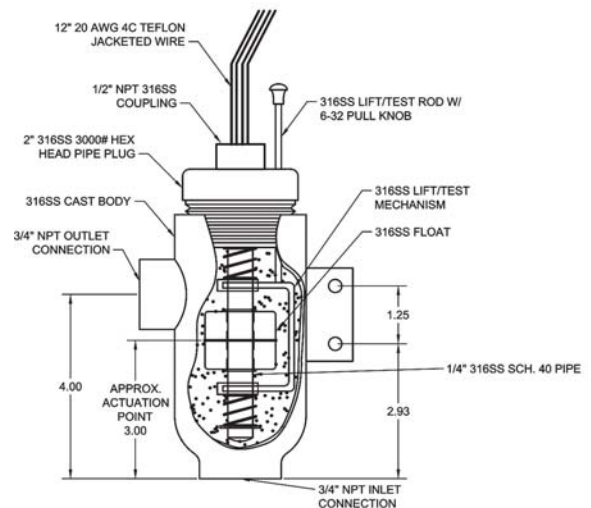
#### Standard Features:

- All 316 Stainless Steel
  - Body
  - Stem & Connections
  - 316SS Float or Buna Float
  - External Mounting Tab
- Interchangeable Parts for Easy Maintenance
- 20 AWG PVC Jacketed 4C Wire
- Hermetically Sealed SPDT Reed Switch
- Made in the USA

|                |             |
|----------------|-------------|
| Max Temp       | 175F        |
| Max PSIG       | 50          |
| 316SS Float SG | 0.60 - 0.69 |
| Watt Rating*   | 25 AC/DC    |



### BTL 450/25SSS BTL 450/25SSN



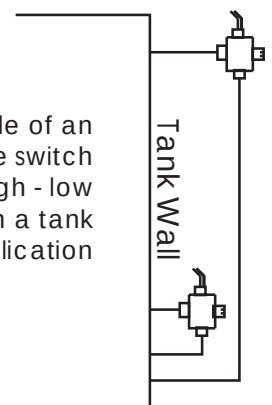
BTL400/25SSS is available with a 100VA from 'C' hermetically sealed reed switch.

#### Note:

The actuation point will vary depending on the temperature and the specific gravity of the individual liquid be detected.

|                |          |
|----------------|----------|
| Max Temp       | 175F     |
| Max PSIG       | 50       |
| 316SS Float SG | 0.64     |
| Buna Float SG  | 0.48     |
| Watt Rating*   | 25 AC/DC |

Example of an external bottle switch used as high - low level alarms in a tank gauging application





## Bottle Switches (External Mount Level Switches)

## BTL Series

Nasc's line of stainless steel bottle switches are designed to be installed external to marine and industrial tanks to provide a level alarm. It may also be bolted to an adjoining structure for remote mounting. Custom configurations are available upon request. Specifications regarding this model may change without notice.

### BTL 500/10SSN

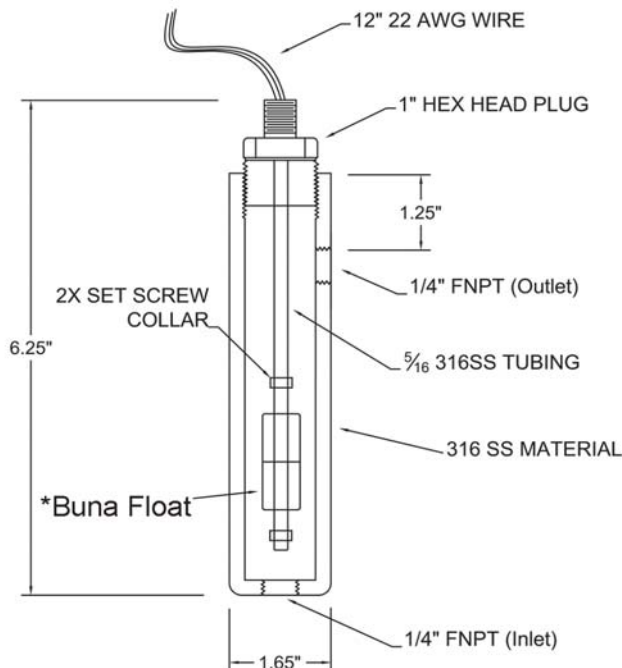


#### Standard Features:

- 316 Stainless Steel Body
- 316 Stainless Steel Stem & Connections
- Buna Float
- Interchangeable Parts for Easy Maintenance
- 3 # 22 AWG PVC Jacketed Wire
- Hermetically Sealed SPST Reed Switch
- Made in the USA



Example of a low and high level alarm on a level gauge.



\*\*N.O. available upon request

| Wiring Logic           |
|------------------------|
| Switch Rated SPST 10VA |
| Black - N.C. **        |
| White - Common         |
| Green - Ground         |

The ground wire on this switch should not be used as part of the circuit and should only be used when a ground is not available to the switch.

|                |          |
|----------------|----------|
| Max Temp       | 175F     |
| Max PSIG       | 50       |
| *Buna Float SG | 0.45     |
| Watt Rating*   | 25 AC/DC |

\*Stainless steel float available.  
BTL500/SSS

#### Note:

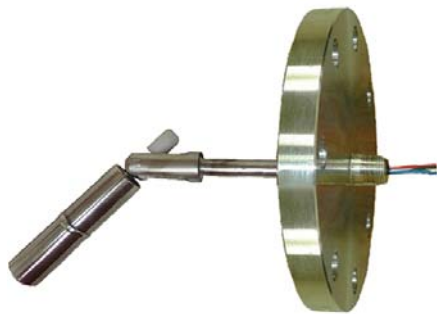
The actuation point will vary depending on the temperature and the specific gravity of the individual liquid be detected.



## Side Mount Level Switches

NASC's SLS300 is a side mount level switch & actuates at the location it is mounted. Designed to be used in tanks where the top of the tank is inaccessible. We offer this switch with either a 25VA or 100VA reed switch. Specifications regarding this model may change without notice. Consult factory for custom configurations.

SLS300/25SS/4SS



SLS300/25SSS



Options Available:

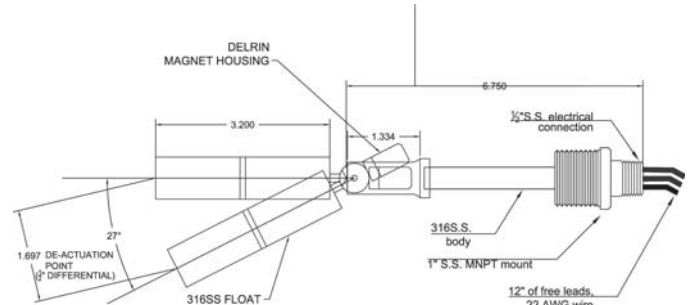
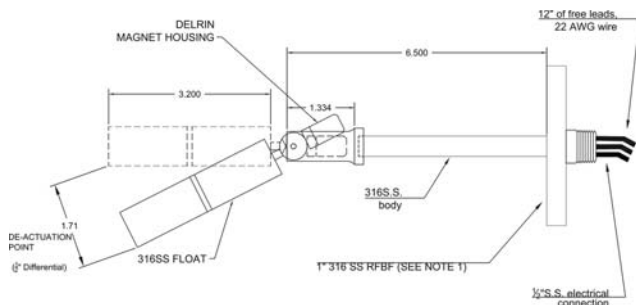
Mounting: 1" - 3" MNPT or 1" - 4" Flanged.

### Note:

1. The actuation point will vary depending on the temperature and the specific gravity of the individual liquid being detected.
2. This product is to be used with an approved NEMA 4X terminal box that is connected to the electrical side of the switch.

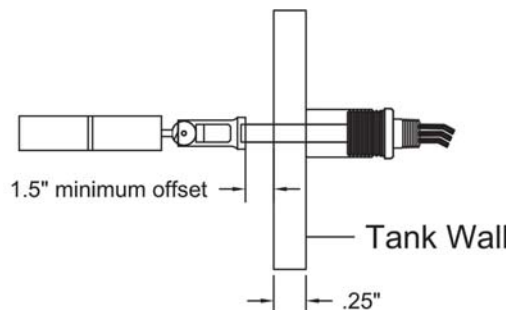
### Standard Features:

- Precision machined body
- 22 AWG PVC jacketed 4C wire
- 316SS Float
- Delrin Magnet Holders
- Hermetically Sealed SPDT Reed Switch
- Made in the USA



| Wiring Logic           |
|------------------------|
| Switch Rated SPDT 25VA |
| Red - N.O.             |
| Blue - N.C.            |
| White - Common         |
| Green - Ground         |

The ground wire on this switch should not be used as part of the circuit and should only be used when a ground is not available to the switch.



SLS300/25SSS can be supplied with a 100VA from 'C' hermetically sealed reed switch.

|                |          |
|----------------|----------|
| Max Temp       | 300F     |
| Max PSIG       | 150      |
| 316SS Float SG | 0.7      |
| Watt Rating*   | 25 AC/DC |





## Side Mount Interface Level Switches

NASC's SLS90 is designed to interface between two different liquids (i.e., oil & water). The 0.95 specific gravity float enables this unique design to sense when heavier liquids collect in the bottom of storage tanks. Custom configurations are available, consult the factory for more information. Specifications regarding this model may change without notice.

SLS90/25SSS



|                |          |
|----------------|----------|
| Max Temp       | 250F     |
| Max PSIG       | 150      |
| 316SS Float SG | 0.95     |
| Watt Rating*   | 25 AC/DC |

SLS90/25SSS can be supplied with a 100VA from 'C' hermetically sealed reed switch.

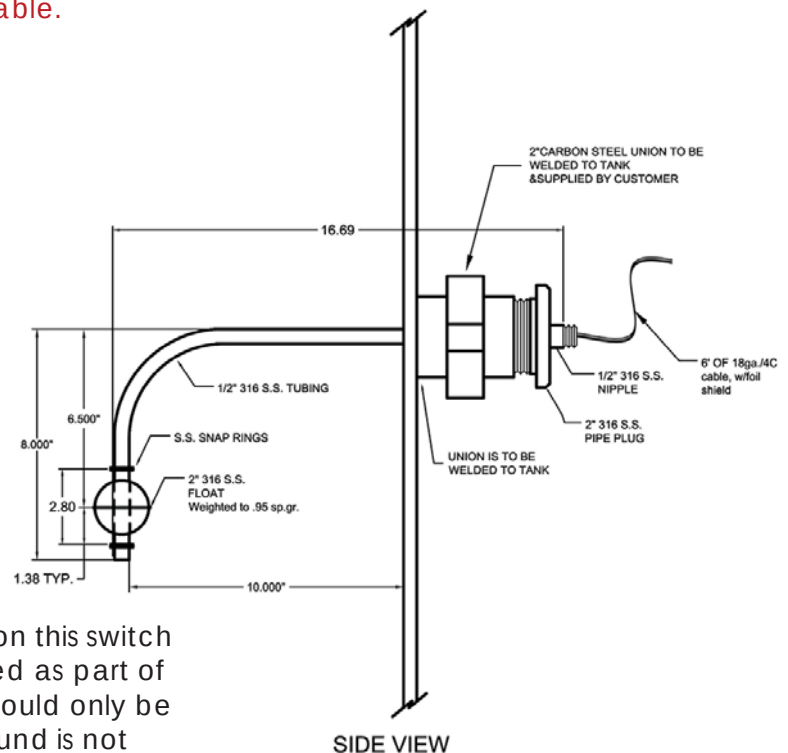
Flange connections from 3" and above available.

### Standard Features:

- All 316 Stainless Steel
  - 1/2" .065 Wall Tubing Stem
  - 2" Hex Head Pipe Plug
  - 316SS Float
- 18 AWG/4C Foil Shielded Cable
- Hermetically Sealed SPDT Reed Switch

### Note:

- The actuation point will vary depending on the temperature and the specific gravity of the individual liquid being detected.
- This product is to be used with an approved NEMA 4X terminal box that is connected to the electrical side of the switch.



The ground wire on this switch should not be used as part of the circuit and should only be used when a ground is not available to the switch.

| Wiring Logic           |
|------------------------|
| Switch Rated SPDT 25VA |
| Red - N.O.             |
| Black - N.C.           |
| White - Common         |
| Green - Ground         |



# Custom Level Switches

## Custom Level Switch Ordering Form

|              |   |   |   |   |   |   |   |   |   |   |   |     |
|--------------|---|---|---|---|---|---|---|---|---|---|---|-----|
| Product P/N: | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | QTY |
|--------------|---|---|---|---|---|---|---|---|---|---|---|-----|

Example P/N: MLS-S50-T1000-SSW-NLT-C50/W18-505-(IL=20", L1=18", L2=4")/O-25-C

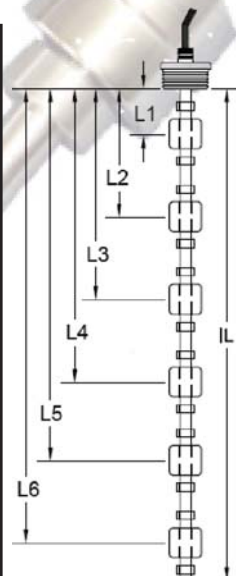
Please fill in all boxes below. A part number will be generated from your selections.

| <b>① Sensor Type:</b><br><b>MLS</b> = Multi-Level Switch<br><b>CLS</b> = Single-Level Switch<br><b>GMLS</b> = Guarded Multi-Level Switch<br><b>GCLS</b> = Guarded Single-Level Switch | <b>② Material of Construction:</b><br><table border="1"> <tr> <th>Material Type</th> <th>Series (Stem Type)</th> </tr> <tr> <td><b>B</b> = Brass</td> <td><b>25</b> = Ø1/4" Piping</td> </tr> <tr> <td><b>S</b> = Stainless Steel</td> <td><b>50</b> = Ø1/2" Tubing</td> </tr> <tr> <td><b>P</b> = PVC</td> <td><b>70</b> = Ø3/4" Tubing</td> </tr> <tr> <td><b>PP</b> = Polypropylene</td> <td><b>100</b> = Ø1" Tubing</td> </tr> </table> | Material Type | Series (Stem Type) | <b>B</b> = Brass | <b>25</b> = Ø1/4" Piping | <b>S</b> = Stainless Steel | <b>50</b> = Ø1/2" Tubing | <b>P</b> = PVC | <b>70</b> = Ø3/4" Tubing | <b>PP</b> = Polypropylene | <b>100</b> = Ø1" Tubing | <b>③ Switch Mounting:</b><br><table border="1"> <tr> <th>Threaded Connection</th> <th>Flanged Connection</th> </tr> <tr> <td><b>T1000</b> = 1" MNPT</td> <td><b>R</b> = Raised Face</td> </tr> <tr> <td><b>T1250</b> = 1-1/4" MNPT</td> <td><b>F</b> = Flat Face</td> </tr> <tr> <td><b>T1500</b> = 1-1/2" MNPT</td> <td><b>CS</b> = Carbon Steel</td> </tr> <tr> <td><b>T2000</b> = 2" MNPT</td> <td><b>SS</b> = Stainless Steel</td> </tr> <tr> <td><b>T3000</b> = 3" MNPT</td> <td><b>F1</b> = 1"    <b>F2</b> = 2"</td> </tr> <tr> <td></td> <td><b>F3</b> = 3"    <b>F4</b> = 4"</td> </tr> <tr> <td></td> <td><b>F5</b> = 5"    <b>F6</b> = 6"</td> </tr> <tr> <td></td> <td><b>F7</b> = 7"    <b>F8</b> = 8"</td> </tr> </table> | Threaded Connection | Flanged Connection | <b>T1000</b> = 1" MNPT | <b>R</b> = Raised Face | <b>T1250</b> = 1-1/4" MNPT | <b>F</b> = Flat Face | <b>T1500</b> = 1-1/2" MNPT | <b>CS</b> = Carbon Steel | <b>T2000</b> = 2" MNPT | <b>SS</b> = Stainless Steel | <b>T3000</b> = 3" MNPT | <b>F1</b> = 1" <b>F2</b> = 2" |  | <b>F3</b> = 3" <b>F4</b> = 4" |  | <b>F5</b> = 5" <b>F6</b> = 6" |  | <b>F7</b> = 7" <b>F8</b> = 8" |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------|--------------------------|----------------------------|--------------------------|----------------|--------------------------|---------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|------------------------|------------------------|----------------------------|----------------------|----------------------------|--------------------------|------------------------|-----------------------------|------------------------|-------------------------------|--|-------------------------------|--|-------------------------------|--|-------------------------------|
| Material Type                                                                                                                                                                         | Series (Stem Type)                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>B</b> = Brass                                                                                                                                                                      | <b>25</b> = Ø1/4" Piping                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>S</b> = Stainless Steel                                                                                                                                                            | <b>50</b> = Ø1/2" Tubing                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>P</b> = PVC                                                                                                                                                                        | <b>70</b> = Ø3/4" Tubing                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>PP</b> = Polypropylene                                                                                                                                                             | <b>100</b> = Ø1" Tubing                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| Threaded Connection                                                                                                                                                                   | Flanged Connection                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>T1000</b> = 1" MNPT                                                                                                                                                                | <b>R</b> = Raised Face                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>T1250</b> = 1-1/4" MNPT                                                                                                                                                            | <b>F</b> = Flat Face                                                                                                                                                                                                                                                                                                                                                                                                                        |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>T1500</b> = 1-1/2" MNPT                                                                                                                                                            | <b>CS</b> = Carbon Steel                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>T2000</b> = 2" MNPT                                                                                                                                                                | <b>SS</b> = Stainless Steel                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>T3000</b> = 3" MNPT                                                                                                                                                                | <b>F1</b> = 1" <b>F2</b> = 2"                                                                                                                                                                                                                                                                                                                                                                                                               |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
|                                                                                                                                                                                       | <b>F3</b> = 3" <b>F4</b> = 4"                                                                                                                                                                                                                                                                                                                                                                                                               |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
|                                                                                                                                                                                       | <b>F5</b> = 5" <b>F6</b> = 6"                                                                                                                                                                                                                                                                                                                                                                                                               |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
|                                                                                                                                                                                       | <b>F7</b> = 7" <b>F8</b> = 8"                                                                                                                                                                                                                                                                                                                                                                                                               |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |
| <b>④ Float Protection:</b><br><b>SSW</b> = S.S. Stilling Well<br><b>PSW</b> = PCV Stilling Well<br><b>NFP</b> = No Float Protection                                                   | <b>⑤ Lift Test:</b><br><b>NLT</b> = No lift test mechanism<br><b>LT</b> = Lift test (only avail. on T3000 & F3-8 connections)                                                                                                                                                                                                                                                                                                               |               |                    |                  |                          |                            |                          |                |                          |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                        |                        |                            |                      |                            |                          |                        |                             |                        |                               |  |                               |  |                               |  |                               |

| ⑦ Float Type: |      |        |          |             |            |           |          |          |        |
|---------------|------|--------|----------|-------------|------------|-----------|----------|----------|--------|
| Float ID #    | Form | Series | Material | S.G. (±.02) | Max Press. | Max Temp. | Float OD | Float ID | Height |
| 302           | Cyl. | 25     | 316 S.S. | .825        | 250psi     | 300°F     | .905"    | .355"    | 1.59"  |
| 501           | Cyl. | 50     | 316 S.S. | .68         | 225psi     | 300°F     | 1.60"    | .58"     | 1.385" |
| 502           | Ball | 25     | 316 S.S. | .76         | 700psi     | 300°F     | 1.19"    | .355"    | 1.115" |
| 503           | Ball | 50     | 316 S.S. | .60         | 750psi     | 300°F     | 2.06"    | .58"     | 2.0"   |
| 701           | Ball | 75     | 316 S.S. | .49         | 300psi     | 300°F     | 3.60"    | .93"     | 3.53"  |
| 505           | Cyl. | 50     | Buna-N   | .48         | 150psi     | 180°F     | 1.88"    | .875"    | 1.75"  |
| 506           | Cyl. | 50     | Buna-N   | .43         | 150psi     | 180°F     | 1.25"    | .60"     | 1.75"  |
| 1001          | Ball | 100    | 316 S.S. | .45         | 75psi      | 300°F     | 7.10"    | 1.12"    | 7.0"   |

Please call for details when ordering speciality floats for interface detection.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>⑨ Number of Switch-points:</b><br><b>*IL</b> = Overall length of unit in inches (bottom of switch mount to end of stem) _____ in<br><b>L1</b> = switch-point 1 at _____ in<br><b>L2</b> = switch-point 2 at _____ in<br><b>L3</b> = switch-point 3 at _____ in<br><b>L4</b> = switch-point 4 at _____ in<br><b>L5</b> = switch-point 5 at _____ in<br><b>L6</b> = switch-point 6 at _____ in<br>*Note: A minimum of 2" is required between IL and L1. |
| <b>Switching Position:</b><br><b>O</b> = Switch open in dry position<br><b>C</b> = Switch closed in dry position<br><b>D</b> = SPDT                                                                                                                                                                                                                                                                                                                      |



|                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------|
| <b>⑧ Float Stops:</b><br><b>1</b> = Setscrew collars (Standard)<br><b>2</b> = E-clips (available only for 1/4" pipe) |
|----------------------------------------------------------------------------------------------------------------------|

| ⑩ Switch ID#: |                   |           |                  |           |          |
|---------------|-------------------|-----------|------------------|-----------|----------|
| Switch ID #   | Switch Watts (VA) | Contact   | Contact Position | Max Volts | Max Amps |
| 25            | 25VA              | SPST/SPDT | N.O./N.C.        | 250AC/DC  | 1.0A     |
| 100           | 100VA             | SPST/SPDT | N.O./N.C.        | 120AC     | 3.0A     |

|                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------|
| <b>⑪ Common Leads:</b><br><b>S</b> = Each switch has an independent common.<br><b>C</b> = Each switch has a shared common |
|---------------------------------------------------------------------------------------------------------------------------|

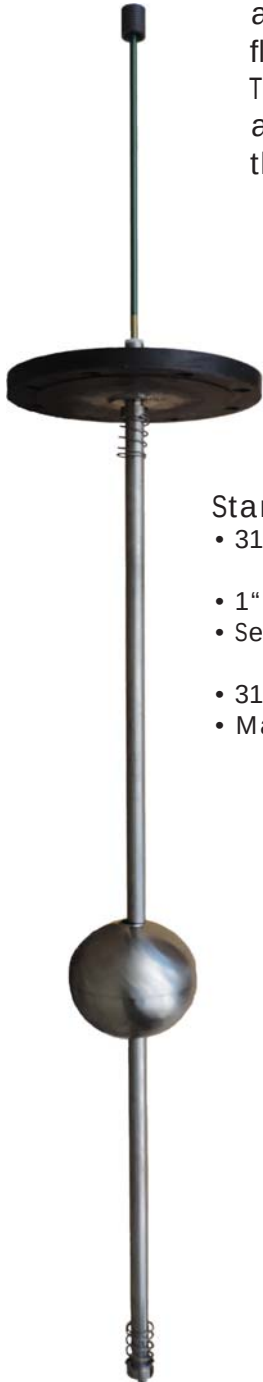
For more information on custom level switches, please call 1-800-259-6874 or send an email to [sales@mepinc.com](mailto:sales@mepinc.com).



### Mechanical-Magnetic Level Indicator

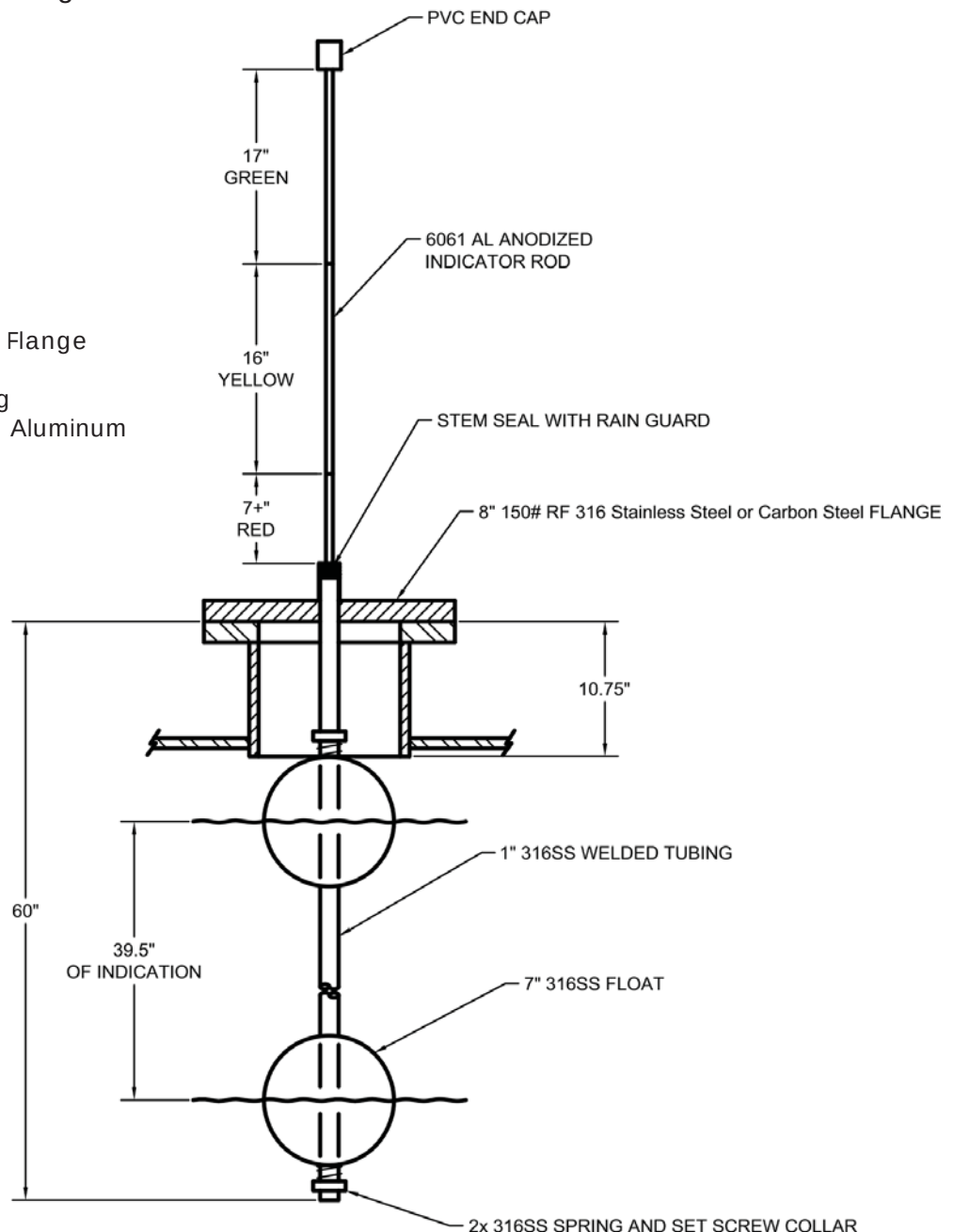
#### DS150

The model DS150 'dipstick' gauge is a mechanical-magnetic level gauge that is designed for high level indicating applications where a non-electrical gauge is required. This gauge works by lifting the internal stock, which has a magnet housing on the bottom, that interlocks with the magnet inside the float. Stick is assembled in different colored (red, yellow, and green) sections. The integral rain cap on top of stick is PVC. Custom configurations are available, consult the factory for more information. Specifications regarding this model may change without notice.



#### Standard Features:

- 316SS or Carbon Steel Flange (8" Standard)
- 1" 316SS Stem/Housing
- Segmented Anodized Aluminum Stick/Indicator
- 316SS 7" Float
- Made in the USA



Model Code (Example: DS150/L39-M8FSS-F7SS-1SS)  
Specify DS150/L(Length in inches)/M(Mounting type)



## Pressure Switches

### Series 1 Pressure Switch



#### Key Features

- Field Adjustable
- High, Low, Differential & Vacuum Pressure Switch options available
- All Anodized Aluminum Construction
- 316SS Pressure Ports Available
- All Markings Laser Engraved into body for long lasting durability and visibility
- Multiple Electrical Connections Available
- 11amp UL recognized micro switch standard, gold plated contacts and 5amp micro switch also available
- UL & cUL Approved
- NEMA 4, 4x, 13

#### How to Order

(Example: Part Number 1G10N1.43)

**1 G 10 N1 . 43**

#### Range

- 01** 2 - 15 psi
- 03** 5 - 75 psi
- 43** 15 - 200 psi
- 53** 50 - 450 psi
- 62** 50 - 1000 psi
- 63** 100 - 1750 psi
- 71\*** 100 - 1800 psi
- 72\*** 200 - 2500 psi
- 73\*** 350 - 3250 psi
- 74\*** 350 - 4250 psi
- 83\*\*** 400 - 4000 psi
- 84\*\*** 500 - 5000 psi

#### Diaphragm

- N1** Nitrile Polyamide
- F1** Viton Polyamide
- F2** Viton Stainless Steel
- F6\*\*** Viton Polyamide
- N9\*** Nitrile SST Piston Teflon

#### Electrical Connection

- 10** 18" Free leads
- 11** DIN 43650/IP65
- 42** Terminal Strip for Wiring

#### Pressure Connection

- A** AL 1/2"-14 NPT
- C** 316SS 1/4"-18 NPT
- D** AL 1/4"-18 NPT
- G** AL 1/4"-18 NPT
- H\*\*** 316SS 1/4"-18 NPT
- P\*** AL 1/4"-18 NPT
- Z** 316SS 1/2"-14 NPT

#### Options:

(Example: Part Number 1G10N1.43.5)

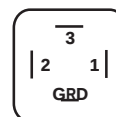
**.5** 5A Micro Switch

**\*** Available only for model 1P (Piston Pressure Switch)

**\*\*** Available only for model 1H (S.S. Piston Pressure Switch)

#### Wiring Diagram

##### DIN43650



PIN 1 = N.O.  
PIN 2 = N.C.  
PIN 3 = COM

#### 18" Free leads

BLUE = N.O.  
RED = N.C.  
BROWN = COM  
GREEN = GRD

#### Operating Specifications

**Adjustment Range:** See Table Below for Options

**Circuit Form:** SPDT

**Electrical Ratings:** 11A (RES/IND) - 1/4 HP @125 OR 250VAC

5A RES, 3A IND @ 28VDC

.5A RES @ 28VDC

Optional: 100mA @125VAC, 0.25A @ 6VDC

**Pressure Connection:** See Ordering Chart Adjacent

**Temperature Range:** -30°F to 160°F (-34°C to 71°C)

**Diaphragm Material:** See Ordering Chart Adjacent

**Electrical Connection:** See Ordering Chart Adjacent

**Multi-Conductor** UL 22464, CSA T1 18AWG PVC insulated per UL

**Cable:** 1007, secured with a nylon liquid tight connector

**Cycle Life:** Model 1A, 1C, 1G, 1Z, 1H for moderate to low cycling, Model 1P for high cycling applications

| Model                  | Range ID Number | Switch Adjustment Range |                | Dead Band Approx. |               | Max System |       | Proof Test |       |
|------------------------|-----------------|-------------------------|----------------|-------------------|---------------|------------|-------|------------|-------|
|                        |                 | psi                     | bar            | psi               | bar           | psi        | bar   | psi        | bar   |
| <b>1A 1C<br/>1G 1Z</b> | .01             | 2 - 15                  | 0.138 - 1.03   | 0.2 - 2           | 0.014 - 0.138 | 500        | 34.5  | 1000       | 68.9  |
|                        | .03             | 5 - 75                  | 0.34 - 5.17    | 0.5 - 6           | 0.034 - 0.414 | 750        | 51.7  | 1000       | 68.9  |
|                        | .43             | 15 - 200                | 1.03 - 13.79   | 2 - 15            | 0.138 - 1.03  | 1000       | 68.9  | 1250       | 86.2  |
|                        | .53             | 50 - 450                | 3.45 - 31.03   | 5 - 30            | 0.345 - 2.07  | 1500       | 103.4 | 3000       | 206.8 |
| <b>1C 1G<br/>1Z</b>    | .62             | 50 - 1000               | 3.45 - 68.95   | 10 - 50           | 0.69 - 3.45   | 2000       | 137.9 | 5000       | 344.7 |
|                        | .63             | 100 - 1750              | 6.89 - 120.66  | 15 - 100          | 1.03 - 6.89   | 3000       | 206.8 | 5000       | 344.7 |
| <b>1C 1Z</b>           | .64             | 200 - 2500              | 13.79 - 172.37 | 20 - 175          | 1.38 - 12.06  | 3000       | 206.8 | 5000       | 344.7 |
| <b>1P</b>              | .71             | 100 - 1800              | 6.89 - 124.11  | 25 - 125          | 1.72 - 8.62   | 5000       | 344.7 | 10000      | 689.5 |
|                        | .72             | 200 - 2500              | 13.79 - 172.37 | 30 - 150          | 2.07 - 10.34  | 5000       | 344.7 | 10000      | 689.5 |
|                        | .73             | 350 - 3250              | 24.13 - 224.09 | 50 - 350          | 3.45 - 24.13  | 7500       | 517.1 | 10000      | 689.5 |
|                        | .74             | 400 - 4250              | 27.58 - 310.27 | 80 - 350          | 5.52 - 24.13  | 7500       | 517.1 | 10000      | 689.5 |
| <b>1H</b>              | .83             | 400-4000                | 27.58 - 275.79 | 75 - 450          | 5.17 - 31.03  | 5000       | 344.7 | 10000      | 689.5 |
|                        | .84             | 500-5000                | 34.47 - 344.74 | 75 - 500          | 5.17 - 34.74  | 7500       | 517.1 | 10000      | 689.5 |





## Pressure Switches

### Series 1 Pressure Switch

#### Low Pressure Switch

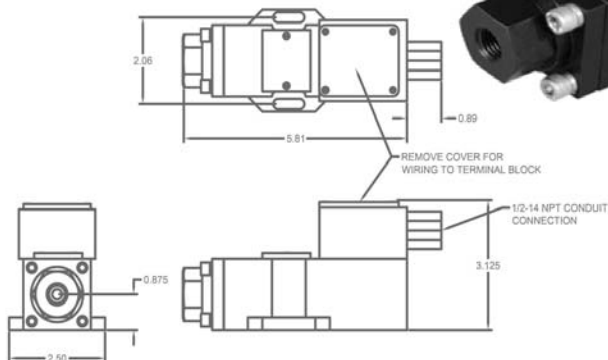
| Part Number       | 1G10N1.12                          | 1G10N1.14                       |
|-------------------|------------------------------------|---------------------------------|
| <b>Adj. Range</b> | 0.36 - 3.61 psi<br>(10" - 100" WC) | 2 - 16 psi<br>(55" - 443" WC)   |
| <b>Deadband</b>   | 0.018- 0.108 psi<br>(0.5" - 3" WC) | 0.072- 0.25 psi<br>(2" - 7" WC) |
| <b>Proof Test</b> | 250 psi                            | 250 psi                         |



#### Terminal Strip

**Part Number** 1X42XX.XX

Anodized aluminum terminal strip is for wiring a 1/2-14 FNPT conduit fitting. This option is available for any pressure ranges including the differential, vacuum, and high pressure switches.



#### How to Order

(Example: Part Number 1G10N1.43)

**1 G 10 N1 . 43**

##### Range

|             |                |
|-------------|----------------|
| <b>01</b>   | 2 - 15 psi     |
| <b>03</b>   | 5 - 75 psi     |
| <b>43</b>   | 15 - 200 psi   |
| <b>53</b>   | 50 - 450 psi   |
| <b>62</b>   | 50 - 1000 psi  |
| <b>63</b>   | 100 - 1750 psi |
| <b>71*</b>  | 100 - 1800 psi |
| <b>72*</b>  | 200 - 2500 psi |
| <b>73*</b>  | 350 - 3250 psi |
| <b>74*</b>  | 350 - 4250 psi |
| <b>83**</b> | 400 - 4000 psi |
| <b>84**</b> | 500 - 5000 psi |

##### Diaphragm

|             |                           |
|-------------|---------------------------|
| <b>N1</b>   | Nitrile Polyamide         |
| <b>F1</b>   | Viton Polyamide           |
| <b>F2</b>   | Viton Stainless Steel     |
| <b>F6**</b> | Viton Polyamide           |
| <b>N9*</b>  | Nitrile SST Piston Teflon |

##### Electrical Connection

|           |                           |
|-----------|---------------------------|
| <b>10</b> | 18" Free leads            |
| <b>11</b> | DIN 43650/IP65            |
| <b>42</b> | Terminal Strip for Wiring |

##### Pressure Connection

|            |       |             |
|------------|-------|-------------|
| <b>A</b>   | AL    | 1/2"-14 NPT |
| <b>C</b>   | 316SS | 1/4"-18 NPT |
| <b>D</b>   | AL    | 1/4"-18 NPT |
| <b>G</b>   | AL    | 1/4"-18 NPT |
| <b>H**</b> | 316SS | 1/4"-18 NPT |
| <b>P*</b>  | AL    | 1/4"-18 NPT |
| <b>Z</b>   | 316SS | 1/2"-14 NPT |

#### Options:

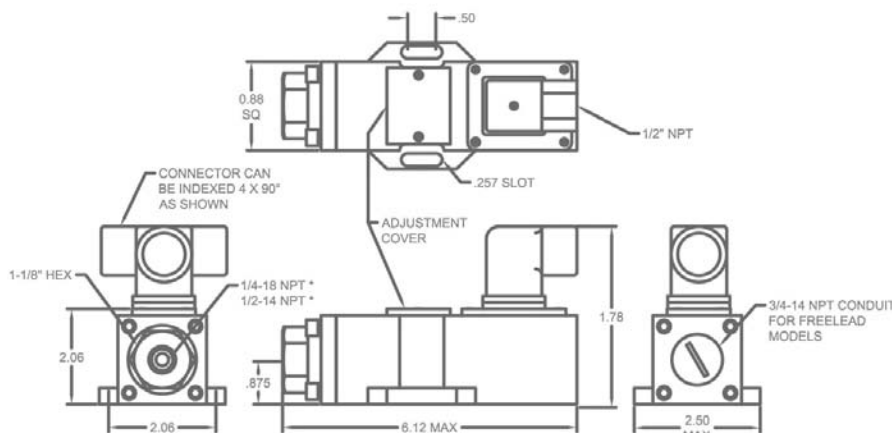
(Example: Part Number 1G10N1.43.5)

**.5** 5A Micro Switch

**\*** Available only for model 1P (Piston Pressure Switch)

**\*\*** Available only for model 1H (S.S. Piston Pressure Switch)

#### Dimensional Specifications





**Pressure Switches**

# **Series 1 Pressure Switch**

## **Differential Pressure Switch**

| Part Number   | 1DXXF1.02      | 1DXXF1.04      |
|---------------|----------------|----------------|
| Adj. Range    | 2 - 20 psi     | 5 - 95 psi     |
| Max System    | 400 psi        | 400 psi        |
| Proof Hi/Lo   | 1000 psi       | 1000 psi       |
| Proof Lo/Hi   | 1000 psi       | 1000 psi       |
| Pressure Port | AL 1/4-18 FNPT | AL 1/4-18 FNPT |

\*\*Also available in 316SS 1/4-18 FNPT process fittings  
(P/N: 1DCXXX.XX)

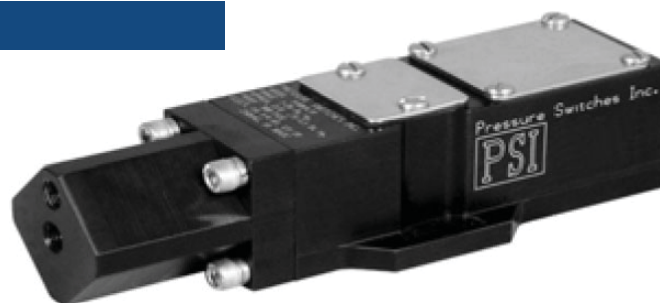
### **Electrical Connection**

10 - 18" Free leads 11 - DIN 43650/IP65



## **Vacuum Switch**

| Part Number    | 1VXXN9.91       |
|----------------|-----------------|
| Vacuum Range   | 1 - 28 inHg     |
| Deadband       | 0.75- 1.50 inHg |
| Proof Test     | 300 psi         |
| Pressure Port: | AL 1/8-27 FNPT  |



## **Operating Specifications**

|                               |                                                                                                                             |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Adjustment Range:</b>      | See Table on Page 1 for Options                                                                                             |
| <b>Circuit Form:</b>          | SPDT                                                                                                                        |
| <b>Electrical Ratings:</b>    | 11A (RES/IND) - 1/4 HP @125 OR 250VAC<br>5A RES, 3A IND @ 28VDC<br>.5A RES @ 28VDC<br>Optional: 100mA @125VAC, 0.25A @ 6VDC |
| <b>Pressure Connection:</b>   | See Ordering Chart on Page 1 for Options                                                                                    |
| <b>Temperature Range:</b>     | -30°F to 160°F (-34°C to 71°C)                                                                                              |
| <b>Diaphragm Material:</b>    | See Ordering Chart on Page 1 for Options                                                                                    |
| <b>Electrical Connection:</b> | See Ordering Chart on Page 1 for Options                                                                                    |
| <b>Multi-Conductor Cable:</b> | UL 22464, CSA T1 18AWG PVC insulated per UL 1007, secured with a nylon liquid tight connector                               |
| <b>Cycle Life:</b>            | Model 1A, 1C, 1G, 1Z, 1H for moderate to low cycling, Model 1P for high cycling applications                                |

## **Key Features**

- Field Adjustable
- High, Low, Differential & Vacuum Pressure Switch options available
- All Anodized Aluminum Construction
- 316SS Pressure Ports Available
- All Markings Laser Engraved into body for long lasting durability and visibility
- Multiple Electrical Connections Available
- 11amp UL recognized micro switch standard, gold plated contacts and 5amp micro switch also available
- UL & cUL Approved
- NEMA 4, 4x, 13



**Pressure Switches Inc.**  
Quality Pressure Solutions

## Pressure Switches

## Series 2

# Series 2 Pressure Switch



### Key Features

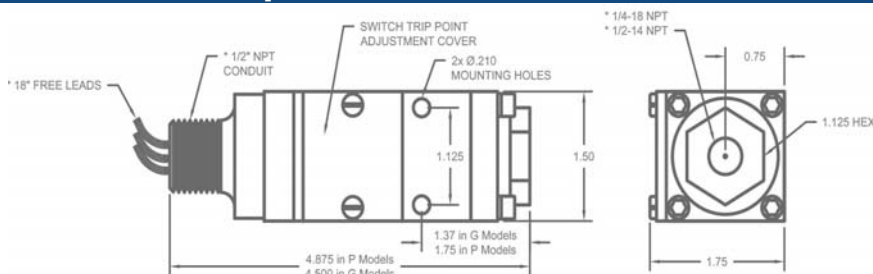
- Field Adjustable
- Compact Design
- All Anodized Aluminum Construction
- 316SS Pressure Ports Available
- All Markings Laser Engraved into body for long lasting durability and visibility
- Multiple Electrical Connections Available
- 11amp UL recognized micro switch standard, gold plated contacts and 5amp micro switch also available
- UL & cUL Approved
- NEMA 4, 4x, 13

### Operating Specifications

|                              |                                                                                                                             |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Adjustment Range</b>      | See Table Below for Options                                                                                                 |
| <b>Circuit Form</b>          | SPDT                                                                                                                        |
| <b>Electrical Ratings</b>    | 11A (RES/IND) - 1/4 HP @125 OR 250VAC<br>5A RES, 3A IND @ 28VDC<br>.5A RES @ 28VDC<br>Optional: 100mA @125VAC, 0.25A @ 6VDC |
| <b>Pressure Connection</b>   | See Ordering Chart Adjacent for Options                                                                                     |
| <b>Temperature Range</b>     | -30°F to 160°F (-34°C to 71°C)                                                                                              |
| <b>Diaphragm Material</b>    | See Ordering Chart Adjacent for Options                                                                                     |
| <b>Electrical Connection</b> | See Ordering Chart Adjacent for Options                                                                                     |
| <b>Multi-Conductor Cable</b> | UL 22464, CSA T1 18AWG PVC insulated per UL 1007, secured with a nylon liquid tight connector                               |
| <b>Cycle Life</b>            | Model 2A, 2C, 2G, 2Z for moderate to low cycling<br>Model 2P for high cycling applications                                  |

| Model           | Range ID Number | Switch Adjustment Range |                | Dead Band Approx. |               | Max System |       | Proof Test |       |
|-----------------|-----------------|-------------------------|----------------|-------------------|---------------|------------|-------|------------|-------|
|                 |                 | psi                     | bar            | psi               | bar           | psi        | bar   | psi        | bar   |
| <b>2A 2Z</b>    | .01             | 2 - 20                  | 0.138 - 1.38   | 0.2 - 2           | 0.014 - 0.138 | 500        | 34.5  | 1000       | 68.9  |
|                 | .03             | 5 - 95                  | 0.34 - 6.55    | 1 - 6             | 0.069 - 0.414 | 750        | 51.7  | 1000       | 68.9  |
| <b>2C 2G</b>    | .43             | 15 - 200                | 1.03 - 13.79   | 2 - 15            | 0.138 - 1.03  | 1000       | 68.9  | 1250       | 86.2  |
|                 | .53             | 50 - 450                | 3.45 - 31.03   | 5 - 30            | 0.345 - 2.07  | 1500       | 103.4 | 3000       | 206.8 |
| <b>2C 2G 2Z</b> | .62             | 50 - 1000               | 3.45 - 68.95   | 10 - 50           | 0.69 - 3.45   | 2000       | 137.9 | 5000       | 344.7 |
|                 | .63             | 100 - 1750              | 6.89 - 120.66  | 20 - 100          | 1.38 - 6.89   | 3000       | 206.8 | 5000       | 344.7 |
| <b>2P</b>       | .71             | 100 - 1800              | 6.89 - 124.11  | 25 - 125          | 1.72 - 8.62   | 5000       | 344.7 | 10000      | 689.5 |
|                 | .72             | 200 - 2500              | 13.79 - 172.37 | 30 - 150          | 2.07 - 10.34  | 5000       | 344.7 | 10000      | 689.5 |
|                 | .73             | 350 - 3250              | 24.13 - 224.09 | 50 - 350          | 3.45 - 24.13  | 7500       | 517.1 | 10000      | 689.5 |
|                 | .74             | 400 - 4500              | 27.58 - 310.27 | 80 - 350          | 5.52 - 24.13  | 7500       | 517.1 | 10000      | 689.5 |

### Dimensional Specifications



### How to Order

(Example: Part Number 2G11N1.63)

**2 G 11 N1 . 63**

#### Range

- 01** 2 - 20 psi
- 03** 5 - 95 psi
- 43** 15 - 200 psi
- 53** 50 - 450 psi
- 62** 50 - 1000 psi
- 63** 100 - 1800 psi
- 71\*** 100 - 1800 psi
- 72\*** 200 - 2500 psi
- 73\*** 350 - 3250 psi
- 74\*** 400 - 4500 psi

#### Diaphragm

- N1** Nitrile Polyamide
- F1** Viton Polyamide
- F2** Viton Stainless Steel
- N9\*** Nitrile SST Piston Teflon

#### Electrical Connection

- 10** 18" Free leads
- 11** DIN 43650/IP65
- 16** Liquid tight Connector
- 52** MS 3102R 12S-3P (2PIN)
- 53** MS 3102R 14S-7P (3PIN)

#### Pressure Connection

- A** AL 1/2"-14 NPT
- C** 316SS 1/4"-18 NPT
- G** AL 1/4"-18 NPT
- P\*** AL 1/4"-18 NPT
- Z** 316SS 1/2"-14 NPT

### Options:

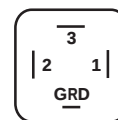
(Example: Part Number 2G11N1.63.B)

- .1** MS33649-4 Pressure Fitting
- .2** Gold Contact Switch
- .5** 5A Micro Switch
- .B** Base bracket for mounting

\* Available only for model 2P (Piston Pressure Switch)

### Wiring Diagram

#### DIN43650



- PIN 1 = N.O.
- PIN 2 = N.C.
- PIN 3 = COM

#### 18" Free leads

- BLUE = N.O.
- RED = N.C.
- BROWN = COM
- GREEN = GRD



## Series 6 Pressure Switch



### Key Features

- Explosion Proof, Rated for Hazardous Areas
- Field Adjustable
- Low Pressure Switch Available
- All precision machined Anodized aluminum Construction
- 316SS Pressure Ports Available
- All Markings Laser Engraved into body for long lasting durability and visibility
- 11amp UL recognized micro switch standard, gold plated contacts and 5amp micro switch also available
- UL Approved
- NEMA 4, 4x, 7, 9

### Operating Specifications

|                              |                                                                                                                 |
|------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Adjustment Range</b>      | See Table Below for Options                                                                                     |
| <b>Circuit Form</b>          | SPDT (12)                                                                                                       |
| <b>Electrical Ratings</b>    | 11A (RES/IND) - 1/4 HP @125/250VAC<br>5A RES @ 30VDC<br>2x 11A (RES/IND) - 1/4 HP @125/250VAC<br>5A RES @ 30VDC |
| <b>Pressure Connection</b>   | See Ordering Chart Adjacent for Options                                                                         |
| <b>Temperature Range</b>     | -30°F to 160°F (-34°C to 71°C)                                                                                  |
| <b>Diaphragm Material</b>    | See Ordering Chart Adjacent for Options                                                                         |
| <b>Electrical Connection</b> | See Ordering Chart Adjacent for Options                                                                         |

| Model | Range ID Number | Switch Adjustment Range |                | Dead Band Approx. |               | Max System |       | Proof Test |       |
|-------|-----------------|-------------------------|----------------|-------------------|---------------|------------|-------|------------|-------|
|       |                 | psi                     | bar            | psi               | bar           | psi        | bar   | psi        | bar   |
| 6A 6Z | .01             | 2 - 15                  | 0.138 - 1.03   | 0.2 - 4           | 0.014 - 0.275 | 500        | 34.5  | 1000       | 68.9  |
|       | .03             | 5 - 75                  | 0.34 - 5.17    | 0.5 - 8           | 0.034 - 0.551 | 750        | 51.7  | 1000       | 68.9  |
| 6C 6G | .43             | 15 - 200                | 1.03 - 13.79   | 2 - 18            | 0.138 - 1.24  | 1000       | 68.9  | 1250       | 86.2  |
|       | .53             | 50 - 450                | 3.45 - 31.03   | 5 - 33            | 0.345 - 2.27  | 1500       | 103.4 | 3000       | 206.8 |
| 6C 6G | .62             | 50 - 1000               | 3.45 - 68.95   | 10 - 55           | 0.69 - 3.79   | 2000       | 137.9 | 5000       | 344.7 |
|       | .63             | 100 - 1750              | 6.89 - 120.66  | 15 - 110          | 1.03 - 7.58   | 3000       | 206.8 | 5000       | 344.7 |
| 6C 6Z | .64             | 200 - 2500              | 13.79 - 172.37 | 20 - 175          | 1.38 - 12.06  | 3000       | 206.8 | 5000       | 344.7 |
| 6P    | .73             | 350 - 3250              | 24.13 - 224.09 | 50 - 400          | 3.45 - 27.58  | 7500       | 517.1 | 10000      | 689.5 |
| 6H    | .83             | 400 - 4000              | 27.58 - 275.29 | 75 - 500          | 5.17 - 34.74  | 5000       | 344.7 | 10000      | 689.5 |
|       | .84             | 500 - 5000              | 34.47 - 344.74 | 75 - 500          | 5.17 - 34.74  | 7500       | 517.1 | 10000      | 689.5 |

### Low Pressure Switch

| Part Number       | 6G12N1.12                           | 6G12N1.14                       |
|-------------------|-------------------------------------|---------------------------------|
| <b>Adj. Range</b> | 0.36 - 3.61 psi<br>(10" - 100" WC)  | 2 - 16 psi<br>(55" - 443" WC)   |
| <b>Deadband</b>   | 0.027- 0.144 psi<br>(0.75" - 4" WC) | 0.072- 0.25 psi<br>(2" - 7" WC) |
| <b>Proof Test</b> | 250 psi                             | 250 psi                         |

### How to Order

(Example: Part Number 6G12F1.03)

**6** **G** **12** **F1** **.03**

#### Range

|      |                |
|------|----------------|
| 01   | 2 - 15 psi     |
| 03   | 5 - 75 psi     |
| 43   | 15 - 200 psi   |
| 53   | 50 - 450 psi   |
| 62   | 50 - 1000 psi  |
| 63   | 100 - 1750 psi |
| 64   | 200 - 2500 psi |
| 73*  | 350 - 3250 psi |
| 83** | 400 - 4000 psi |
| 84** | 500 - 5000 psi |

#### Diaphragm

|      |                           |
|------|---------------------------|
| N1   | Nitrile Polyamide         |
| F1   | Viton Polyamide           |
| F2   | Viton Stainless Steel     |
| F6** | Viton Polyamide           |
| N9*  | Nitrile SST Piston Teflon |

#### Electrical Connection

12 SPDT (Silver)

#### Pressure Connection

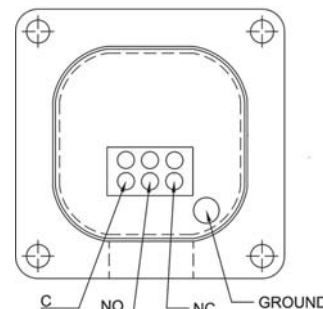
|     |                   |
|-----|-------------------|
| A   | AL 1/2"-14 NPT    |
| C   | 316SS 1/4"-18 NPT |
| D   | AL 1/4"-18 NPT    |
| G   | AL 1/4"-18 NPT    |
| H** | 316SS 1/4"-18 NPT |
| P*  | AL 1/4"-18 NPT    |
| Z   | 316SS 1/2"-14 NPT |

\* Available only for model 6P (Piston Pressure Switch)

\*\* Available only for model 6H (High Pressure Switch)

• Listed by: Underwriters Laboratories Inc.  
(File No. E123884) Suitable for Class 1, Groups A, B, C, D; Class II, Groups E, F, G.

### Wiring Diagram

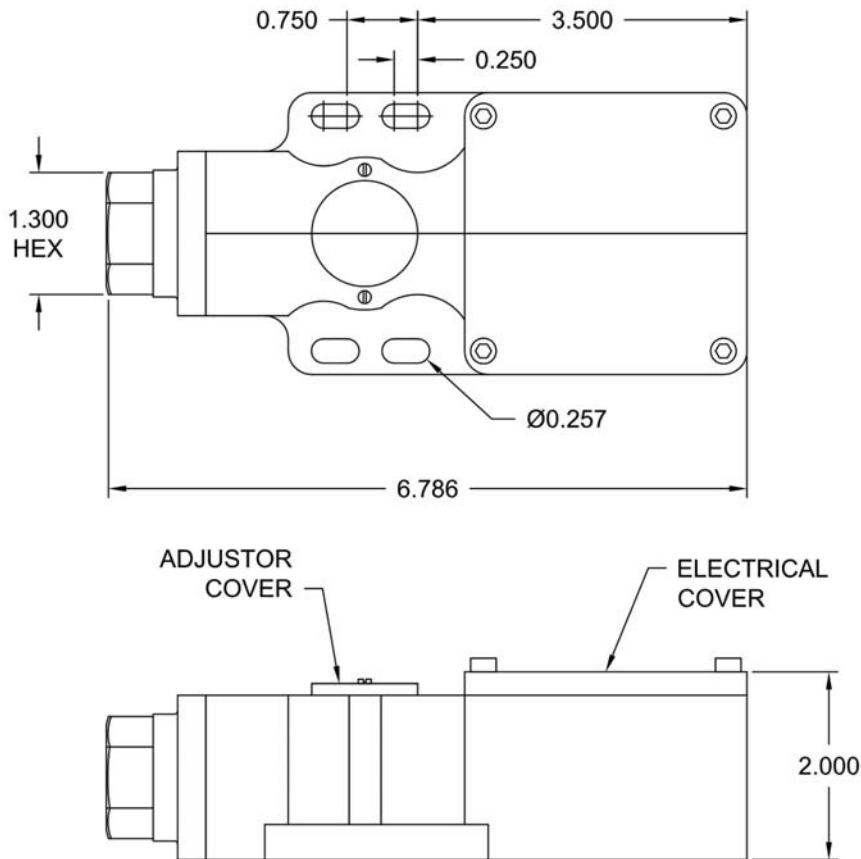






## Series 6 Pressure Switch

### Dimensional Specifications



### How to Order

(Example: Part Number 6G12F1.03)

**6 G 12 F1 . 03**

#### Range

|             |                |
|-------------|----------------|
| <b>01</b>   | 2 - 15 psi     |
| <b>03</b>   | 5 - 75 psi     |
| <b>43</b>   | 15 - 200 psi   |
| <b>53</b>   | 50 - 450 psi   |
| <b>62</b>   | 50 - 1000 psi  |
| <b>63</b>   | 100 - 1750 psi |
| <b>64</b>   | 200 - 2500 psi |
| <b>73*</b>  | 350 - 3250 psi |
| <b>83**</b> | 400 - 4000 psi |
| <b>84**</b> | 500 - 5000 psi |

#### Diaphragm

|             |                           |
|-------------|---------------------------|
| <b>N1</b>   | Nitrile Polyamide         |
| <b>F1</b>   | Viton Polyamide           |
| <b>F2</b>   | Viton Stainless Steel     |
| <b>F6**</b> | Viton Polyamide           |
| <b>N9*</b>  | Nitrile SST Piston Teflon |

#### Electrical Connection

**12** SPDT (Silver)

#### Pressure Connection

|            |       |             |
|------------|-------|-------------|
| <b>A</b>   | AL    | 1/2"-14 NPT |
| <b>C</b>   | 316SS | 1/4"-18 NPT |
| <b>D</b>   | AL    | 1/4"-18 NPT |
| <b>G</b>   | AL    | 1/4"-18 NPT |
| <b>H**</b> | 316SS | 1/4"-18 NPT |
| <b>P*</b>  | AL    | 1/4"-18 NPT |
| <b>Z</b>   | 316SS | 1/2"-14 NPT |

\* Available only for model 6P (Piston Pressure Switch)

\*\* Available only for model 6H (High Pressure Switch)



## Series 575 Pressure Transmitter

Two wire 4-20mA output transmitters offering superb chemical and corrosion resistance. Gauge or Absolute pressure is detected using a four active arm strain gauge bridge sensor, fuse to a high-purity ceramic diaphragm. Ranges from 100mbar to 600 bar or scaled to customers requirements.



### Operating Specifications

|                                                      |                                        |
|------------------------------------------------------|----------------------------------------|
| <b>Wetted Materials</b>                              | 316L S.S., Alumina ceramic & Viton     |
| <b>Standard Ranges</b>                               | See Ordering Chart for Options         |
| <b>Safe over-range pressure</b>                      | 1.5 x rated range                      |
| <b>Burst Pressure</b>                                | 3 x rated range minimum                |
| <b>Output—span</b>                                   | 16mA +/- 1% span                       |
| <b>Output—zero</b>                                   | 4mA +/- 1% span                        |
| <b>Non-linearity, hysteresis &amp; Repeatability</b> | 0.25% of span (best fit straight line) |
| <b>Compensated Operating Temp.</b>                   | -0 to +80 deg C                        |
| <b>Thermal zero shift</b>                            | -20 to +125 deg C                      |
| <b>Thermal Span</b>                                  | +/- 0.04% span per deg C               |
| <b>Long Term Stability</b>                           | +/- 0.015% reading per deg C           |
| <b>Supply</b>                                        | 0.1% per 12 month typical              |
| <b>Loop Resistance</b>                               | 10 to 32VDC                            |
|                                                      | 1.1kΩ max @ 32VDC supply               |

### Key Features

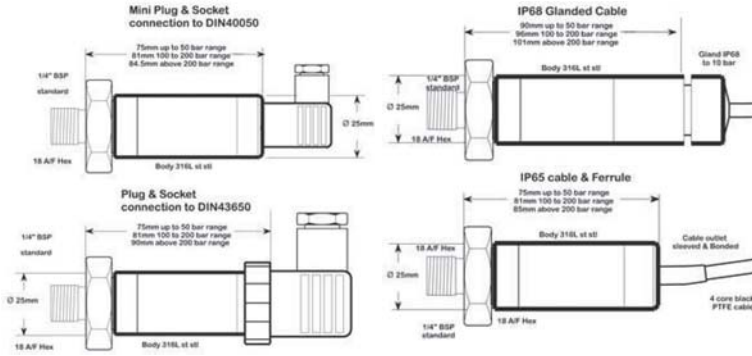
- All Stainless Steel Housing
- Rugged Construction
- Wide Pressure Ranges Available
- 4 - 20mA Output
- Excellent Linearity
- Long Term Stability
- Wide Temperature Range
- Excellent Corrosion Resistance
- Units can be factory scaled
- ABS Type Approved





## Series 575 Pressure Transmitter

### Dimensional Specifications



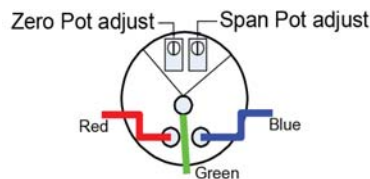
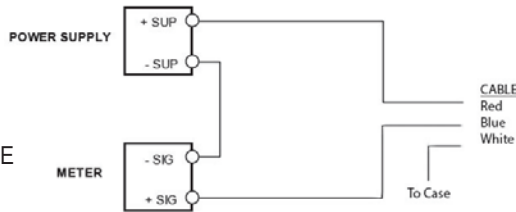
### Wiring Diagram

#### DIN43650

PIN 1 = -/BLUE

PIN 3 = +/RED

FLAT PIN: TO CASE



North American Sensors Corp



IIIG



YOM

0518

INTRINSICALLY SAFE PRESSURE TRANSDUCER

EEx ia IIC T4 (Tambient max = +90°C) Sira 02ATEX2386X

Type: PTR575

Serial No:

Ui = 28V

Ci = 60nF

Pi = 0.84W

Ii = 120mA

Li = 0

### How to Order

(Example: Part Number PTR575G/T7/20B/Q/C/V/300)

**PTR575\*G / T7 / 20B / Q / C / V /** Set \* Range

#### Process Connection

|     |                               |
|-----|-------------------------------|
| T1  | Submersible (flush diaphragm) |
| T2  | 1/4" BSP w/ Delrin Nose Cone  |
| T7  | 1/2" NPT (male)               |
| T29 | 3/4" BSP (flush diaphragm)    |
| T40 | 1/4" NPT (female)             |
| T41 | 1/4" NPT (male)               |
| T42 | 1/4" BSP (male)               |
| T44 | 1/2" BSP (female)             |
| T45 | 1/2" BSP (male)               |

| Range | 10B     | 10bar |
|-------|---------|-------|
| 0.1B  | 0.1 bar | 20B   |
| 0.4B  | 0.4 bar | 50B   |
| 1B    | 1 bar   | 100B  |
| 2B    | 2 bar   | 200B  |
| 3B    | 3 bar   | 400B  |
| 5B    | 5 bar   | 500B  |

#### Cable Outlet

|   |                                                |
|---|------------------------------------------------|
| C | IP65 crimped cable & length (ft.)              |
| D | IP65 mini DIN40050 plug & socket               |
| H | IP65 DIN43650 plug & socket                    |
| I | IP68 glanded cable & length (ft.)              |
| Q | Cable outlet DIN43650 w/4-20mA adjustable pots |

#### Accuracy Class

|   |                                   |
|---|-----------------------------------|
| A | NL&H $\leq \pm 0.1\%$ /span BFSL  |
| B | NL&H $\leq \pm 0.15\%$ /span BFSL |
| C | NL&H $\leq \pm 0.25\%$ /span BFSL |

#### O-ring Material

|   |        |
|---|--------|
| V | Viton  |
| E | EPDM   |
| H | HNBR   |
| K | Kalrez |

\* PTR575A (Atmospheric, Zero offset ranges available.)



## Series 525 Pressure Transmitter

Two wire 4-20mA output transmitters offering superb chemical and corrosion resistance. Gauge or Absolute pressure is detected using a four active arm strain gauge bridge sensor, fuse to a high-purity ceramic diaphragm. Ranges from 100mbar to 50 bar or scaled to customers requirements. Standard cable length is 10', custom cable lengths available.



### Operating Specifications

|                                                      |                                        |
|------------------------------------------------------|----------------------------------------|
| <b>Wetted Materials</b>                              | 316L S.S., Alumina ceramic & Viton     |
| <b>Standard Ranges</b>                               | See Ordering Chart for Options         |
| <b>Safe over-range pressure</b>                      | 1.5 x rated range                      |
| <b>Burst Pressure</b>                                | 3 x rated range minimum                |
| <b>Output—span</b>                                   | 16mA +/- 1% span                       |
| <b>Output—zero</b>                                   | 4mA +/- 1% span                        |
| <b>Non-linearity, hysteresis &amp; Repeatability</b> | 0.25% of span (best fit straight line) |
| <b>Compensated Operating Temp.</b>                   | -0 to +80 deg C (32 to 176F)           |
| <b>Thermal zero shift</b>                            | -20 to +125 deg C (-4 - 257F)          |
| <b>Thermal Span</b>                                  | +/- 0.04% span per deg C               |
| <b>Long Term Stability</b>                           | +/- 0.015% reading per deg C           |
| <b>Supply</b>                                        | 0.1% per 12 month typical              |
| <b>Loop Resistance</b>                               | 10 to 32VDC                            |
|                                                      | 1.1kΩ max @ 32VDC supply               |

### Key Features

- All Stainless Steel Housing
- Rugged Construction
- Wide Pressure Ranges Available
- 4 - 20mA Output
- Excellent Linearity
- Long Term Stability
- Wide Temperature Range
- Excellent Corrosion Resistance
- Units can be factory scaled
- ABS Type Approved

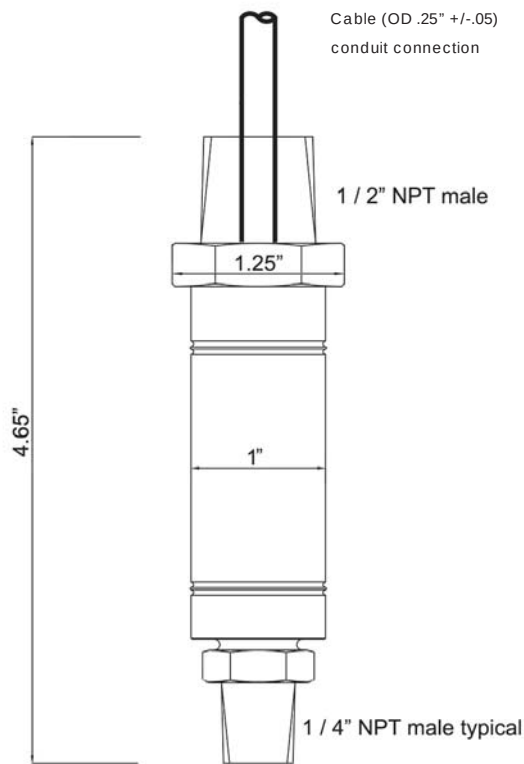






## Series 525 Pressure Transmitter

### Dimensional Specifications



### How to Order

(Example: Part Number PTR525G/T7/20B/I30/C/V/300)

**PTR525\*G / T7 / 20B / I30 / C / V /** Set \* Range

| Process Connection |                               |
|--------------------|-------------------------------|
| T1                 | Submersible (flush diaphragm) |
| T2                 | 1/4" BSP w/ Delrin Nose Cone  |
| T7                 | 1/2" NPT (male)               |
| T29                | 3/4" BSP (flush diaphragm)    |
| T40                | 1/4" NPT (female)             |
| T41                | 1/4" NPT (male)               |
| T42                | 1/4" BSP (male)               |
| T44                | 1/2" BSP (female)             |
| T45                | 1/2" BSP (male)               |

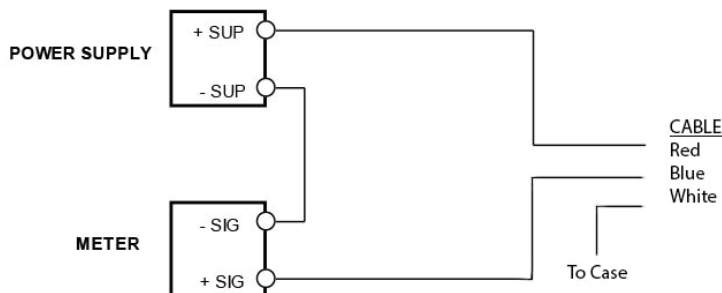
| Range |         | 3B  | 3 bar  |
|-------|---------|-----|--------|
| 0.1B  | 0.1 bar | 5B  | 5 bar  |
| 0.4B  | 0.4 bar | 10B | 10bar  |
| 1B    | 1 bar   | 20B | 20bar  |
| 2B    | 2 bar   | 50B | 50 bar |

| Cable Outlet |                                                         |
|--------------|---------------------------------------------------------|
| C            | IP65 crimped cable & length (ft.)                       |
| I            | IP68 glanded cable & length (ft.) or conduit connection |

| Accuracy Class |                          |
|----------------|--------------------------|
| A              | NL&H < ± 0.1%/span BFSL  |
| B              | NL&H < ± 0.15%/span BFSL |
| C              | NL&H < ± 0.25%/span BFSL |

| O-ring Material |        |
|-----------------|--------|
| V               | Viton  |
| E               | EPDM   |
| H               | HNBR   |
| K               | Kalrez |

### Wiring Diagram



North American Sensors Corp



IICG



16

0518

INTRINSICALLY SAFE PRESSURE TRANSDUCER  
EEx ia IIC T4 (Tambient max = +90°C) Sira 02ATEX2386X  
Type: PTR525

Serial No:

Ui = 28V

Ci = 60nF

Pi = 0.84W

Ii = 120mA

Li = 0

\* PTR525A (Atmospheric, Zero offset ranges available.)



## Series 150 Pressure Transmitter

The PTR150 is a compact & robust transmitter, providing pressure measurement in the range of 1 to 200 bar. All ranges are available in gauge or absolute format to suit customer requirements. An all laser welded stainless steel construction ensures media isolation. The product is designed to meet the tough environmental conditions experienced by modern day applications.



### Key Features

- Compact and rugged construction
- Cost effective
- 1% total error band (-40°C to 105°C)
- High immunity to EMC: 100V/m
- 5V supply: 0.5 to 4.5V ratiometric output
- 8 to 30V supply: 4-20mA or 1 to 5V output
- Packard, M12 or Mini DIN connectors

### Operating Specifications

| Output Type                               |                            | 0.5 to 4.5V                  | 4-20mA | 1 - 5V |
|-------------------------------------------|----------------------------|------------------------------|--------|--------|
| Non-linearity, Hysteresis & Repeatability | 5 bar - 200 bar<br>< 5 bar | V0.5% FS<br><1.00% FS        |        |        |
| Thermal Error                             | 5 bar - 200 bar<br>< 5 bar | V0.5% FS<br><1.00% FS        |        |        |
| Stability                                 |                            | <0.25% / Year                |        |        |
| Operating Temperature                     |                            | -40°C to +105°C              |        |        |
| Proof Pressure                            |                            | 3 x FS                       |        |        |
| Burst Pressure (absolute)                 |                            | Lesser of 10 x FS or 100 bar |        |        |
| Burst Pressure (gauge)                    |                            | 5 x FS                       |        |        |

|                             |                                                                |
|-----------------------------|----------------------------------------------------------------|
| Wetted Materials            | 304L & 316L SS, AL <sub>2</sub> O <sub>3</sub>                 |
| Pressure/Temperature Cycles | >1.8*10 <sup>6</sup> Cycles (0 to FS at 8Hz; -40°C to + 105°C) |
| Thermal Shock               | 250 Cycles (105°C to -40°C, 0.5hr soaks at temp)               |
| Vibration                   | 144 hours (10 to 50Hz, 0g sinusoidal, 3 axes)                  |
| EMC Compatibility           | 100 V/m (80MHz to 1 GHz)                                       |
| Humidity                    | 250 hours (85°C and 90% to 95% RH)                             |
| Weight                      | <100g                                                          |

| Output Type                 | 0.5 to 4.5V                    | 4-20mA   | 1 - 5V                         |
|-----------------------------|--------------------------------|----------|--------------------------------|
| Supply Voltage              | 5 ± 0.5V                       | 8 to 30V | 8 to 30V                       |
| Supply Current              | <5mA                           | N/A      | <5mA                           |
| Output current              | 0.45mA Max<br>(Sink of Source) | N/A      | 0.45mA Max<br>(Sink of Source) |
| Response Time               | <1mS                           | <1mS     | <1mS                           |
| Reverse Polarity Protection | N/A                            | Yes      | Yes                            |

### How to Order

(Example: Part Number PTR150G/T41/20B/MD/MA/300psi)

**PTR150G / T41 / 20B / MD / MA / <sup>Set</sup>Range**

| Pressure Datum |          |
|----------------|----------|
| G              | Gauge    |
| A              | Absolute |
| S              | Sealed   |

| Process Connection |                   |
|--------------------|-------------------|
| T40                | 1/4" NPT (female) |
| T41                | 1/4" NPT (male)   |
| T42                | 1/4" BSP (male)   |

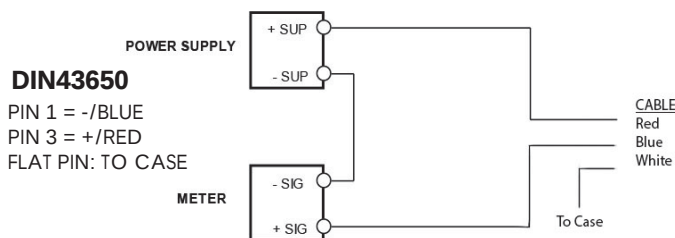
| Range | 10B     | 10bar |
|-------|---------|-------|
| 0.1B  | 0.1 bar | 20B   |
| 0.4B  | 0.4 bar | 50B   |
| 1B    | 1 bar   | 100B  |
| 2B    | 2 bar   | 200B  |
| 3B    | 3 bar   | 400B  |
| 5B    | 5 bar   | 500B  |

| Electrical Connection |                         |
|-----------------------|-------------------------|
| P                     | Packard Metripak        |
| MD                    | DIN40050                |
| M12                   | 4 pin                   |
| 16                    | 150mm Integral Harness  |
| 122                   | 300mm Integral Harness  |
| 175                   | 1800mm Integral Harness |

| Output Type |                              |
|-------------|------------------------------|
| 45          | 0.5-4.5V (5V Excitation)     |
| 5V          | 1.5V (8 to 30V Excitation)   |
| mA          | 4-20mA (8 to 30V Excitation) |

\* Other process connections available

### Wiring Diagram





## Pressure Transmitters

# Hammer Union Pressure Transmitter

This is a 4-20mA output Hammer-Lug Union pressure transmitter. It is ATEX certified for use in Hazardous areas. IP68 rated and is EMC compliant to CE standards. It is available in the 1502 and 2202 union. The option of secondary containment for users that may experience high velocity pressure spikes is available upon request please contact us if you require this additional feature.



### Key Features

- Ranges to 15,000psi (1000 bar)
- 0.25% accuracy
- 4-20mA two wire output
- IS - ATEX certified
- Full RFI/EMC immunity compliance
- Sour service standard -  
Materials comply with NACE MR-DI-75 Revision 03
- Fused ceramic technology
- Shock and vibration tested

### Applications

- Drilling instrumentation
- Mud logging systems
- MWD surface sensing
- Wellhead monitoring
- BOP control systems
- Subsea control systems
- Production testing
- Process systems
- Well Cementing

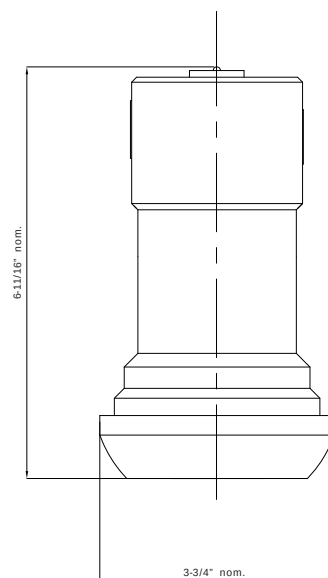
#### Input Specifications

|                             |                                                                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pressure Range              | 0 - 15,000psi (1000bar)                                                                                                                              |
| Over Pressure               | x1.5 of calibration pressure                                                                                                                         |
| Burst Pressure              | x2.5 for 15,000 psi (1000 bar) range, > x3 on all other ranges                                                                                       |
| Reverse Polarity Protection | Yes                                                                                                                                                  |
| Electrical Excitation       | 12 to 28Vdc                                                                                                                                          |
| Pressure Media              | Fluids compatible with Duplex Stainless Steel UNS 32205/<br>UNS31803 (SAF2205) to EN 1.4462,<br>Ceramic (AL2O3), Inconel X750 and Perfluoroelastomer |

#### Output Specifications (@ Ambient Temperature)

|                        |                        |
|------------------------|------------------------|
| Span                   | 16 mA                  |
| Residual Unbalance     | 4mA                    |
| Zero Setting Error     | ± 1%/Span              |
| Span Set               | ±1%                    |
| Lead Driving           | 800 ohm @ 28Vdc supply |
| Long Term Stability    | ±0.1%/Span             |
| Non-linearity          | See NLH                |
| Hysteresis             | See NLH                |
| Repeatability          | See NLH                |
| Combined NLH (+repeat) | <±0.25%/Span BFSL      |

### Dimensional Specifications



Manufactured for NASC by RM&C



## Pressure Transmitters

# Hammer Union Pressure Transmitter

| Environmental Performance |                        |
|---------------------------|------------------------|
| Operating Temperature     | -22°F to +194°F        |
| Compensated Temperature   | 14°F to +194 °F        |
| Storage Temperature       | -22°F to 212°F         |
| Process Temperature       | 194°F max              |
| Thermal Zero Shift (TZS)  | ±0.01%/Span/°F typical |
| Thermal Span Shift (TSS)  | ±0.01%/°F typical      |
| IP Rating                 | 68                     |



| Physical Characteristics  |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| Pressure Port             | 1502 Male sub hammer Lug Union<br>Units are directly compatible with WECO® 2"-1502 and 2202 |
| Materials of Construction | Duplex Stainless Steel UNS 32205/UNS31803 (SAF2205) to EN 1.4462                            |
| Method of Installation    | Hammer Lug Union                                                                            |
| Electrical Connection     | 500Vac                                                                                      |
| Electrical Connection     | 6-Pin connector to MIL-C-24682 (10-6 POL)                                                   |



| Physical Characteristics  |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| Pressure Port             | 1502 Male sub hammer Lug Union<br>Units are directly compatible with WECO® 2"-1502 and 2202 |
| Materials of Construction | Duplex Stainless Steel UNS 32205/UNS31803 (SAF2205) to EN 1.4462                            |
| Method of Installation    | Hammer Lug Union                                                                            |
| Electrical Connection     | 500Vac                                                                                      |
| Electrical Connection     | 6-Pin connector to MIL-C-24682 (10-6 POL)                                                   |

| Approvals        |                                         |
|------------------|-----------------------------------------|
| Intrinsic Safety | EEx ia IIC T4 (max temperature = 194°F) |
| EMC              | Compliant to latest EMC standards.      |

## Model Code Logic

W / 9 / 420 / 8 / X / X / XXXXP

| Position                          | Code  | Description                                      |
|-----------------------------------|-------|--------------------------------------------------|
| 1: Pressure Ref. (Sealed Gauge)   | W     | Hammer Union Pressure Transmitter                |
| 2: Series                         | 9     | Basic submersible sensor with drain wire adaptor |
| 3: Output                         | 420   | 4-20mA                                           |
| 4: Pressure Port                  | 8     | 2" Hammer Union Male-Sub                         |
| 5: Secondary Pressure Containment | 0     | None                                             |
| 6: Electrical Connector           | 0     | MIL C 24682                                      |
| 7: Pressure Range (psi)           | 350P  | 0-5,000 PSI                                      |
|                                   | 400P  | 0-6,000 PSI                                      |
|                                   | 700P  | 0-10,000 PSI                                     |
|                                   | 1000P | 0-15,000 PSI                                     |



Manufactured for NASC by RM&C





## Hydrostatic Level Transmitter

# 460 Hydrostatic Level Transmitter

With thousands of marine liquid level transmitters installed on all classes of ships, from military vessels to tankers, the design of the Series 460 marine level transmitter draws on NASC's comprehensive marine application experience. Fully compliant with the latest IEC and marine industry standards, the Series 460 rugged construction provides reliable and accurate monitoring of liquids in the harsh environments of shipboard tanks. The Measuring principle of pressure in the Series 460 hydrostatic level transmitter is a diaphragm and L.V.D.T. sensor with power and signal linearization via a remote mounted transmitter. This combines excellent responsiveness and long term stability. The liquid level transmitter has the sensitivity needed to accurately measure shallow tanks but will resist a five times nominal range overload without damage. The all welded level sensor is manufactured from high grade alloys specifically selected for their stability and corrosion resistance. A wide choice of fittings and the remotely mounted amplifier maximizes installation flexibility and serviceability. The Series 460 is maintenance free and contains no active electronic components. A factory sealed cable is supplied with a heavy-duty outer sheath of cross linked polymers, suitable for continuous immersion in sea water, fuels and hydrocarbons. An optional performance cable permits use of the sensor with extreme temperatures limits of -50°C to -148°C.



### Key Features

- Designed and constructed specifically for marine applications with relevant industry body and type application and approvals.
- Full range of connections and sensor mounting options for side-of-tank or IP68 submersible installation.
- Compatible with all common marine liquids and cargo applications: seawater, fuel and lubricating oil, bilge water etc.
- Wide span with a high measurement accuracy, long term stability and exceptional pressure overload resistance.
- Remote transmitter provides ease of access for routine calibrations checks
- Robust construction gives reliable operation and low maintenance cost.

| Specifications   |                                                              |                                   |                                                            |
|------------------|--------------------------------------------------------------|-----------------------------------|------------------------------------------------------------|
| Calibrated Spans | From 0 - 300 H <sub>2</sub> O<br>to 0 - 50m H <sub>2</sub> O | Diaphragms                        | Hastelloy C276                                             |
| Range Adjustment | 3:1 turndown of normal range                                 | Sensor Cable                      | Heavy duty TPE vented                                      |
| Zero Adjustment  | ± 10% of calibrated span                                     | Sensors Operating Temperature     | -40°C to 105°C (-40°C to +55°C for IS models)              |
| Overload         | Minimum of 50 meters<br>or 5 x nominal range                 | Electronics Housing               | IP65 GRP (NEMA 4) with internal RFI screen (IP67 optional) |
| Nominal Ranges   | 1, 2, 4, 8, 16, 32 and 50 meters H <sub>2</sub> O            | Electronics Operating Temperature | -40°C to +55°C                                             |
| Signal Output    | 4-20mA DC2 wire                                              | Accuracy                          | Better than ± 0.25% FRO                                    |
| Power Supply     | 12- 35 DC                                                    | Temperature Coefficient           | Less than 0.02@ per °C shift zero and range                |
| Maximum Load     | 1000 ohms at 30V                                             | Sensor Body                       | 316L stainless steel                                       |



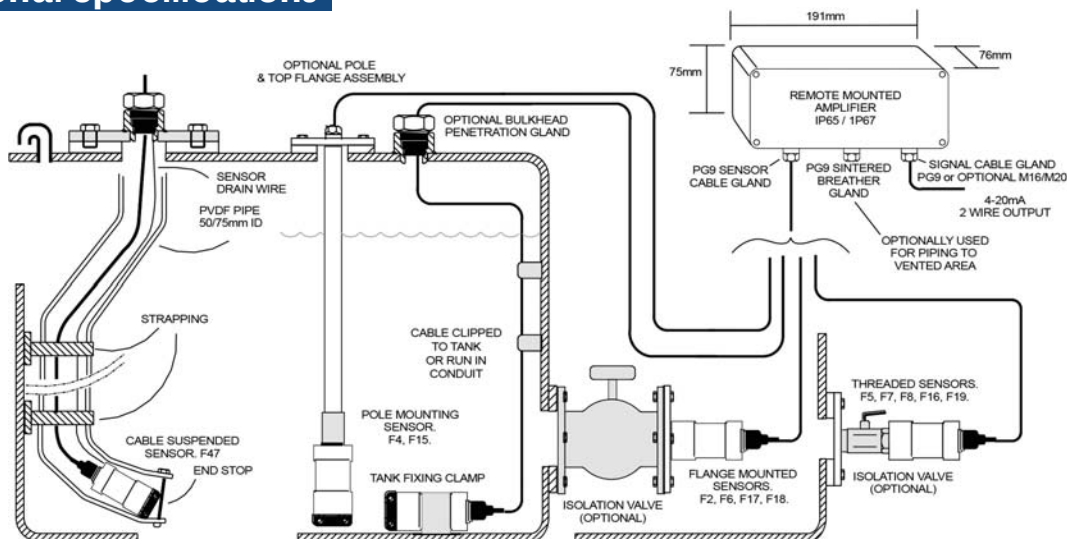
### Hydrostatic Level Transmitter

#### Model Code Logic

#### 460 / F47 / H8 / P / DW 3 / 7.5 / M20 / IS

| Position                          | Code | Description                                                 |
|-----------------------------------|------|-------------------------------------------------------------|
| 1: Transmitter                    | 460  | Sensor with RT168 remote transmitter 4-20mA output          |
| 2: Process Connection             | F47  | Basic submersible sensor with drain wire adaptor            |
|                                   | F2   | DN25 PN16 flanged mounting                                  |
|                                   | F3   | Tank fixing clamp                                           |
|                                   | F4   | Pole adaptor fitting threaded 1/2" BSP female               |
|                                   | F5   | Threaded process connection 1/2" BSP Male                   |
|                                   | F6   | 1" ANSI 150lb flanged mounting to BS1560                    |
|                                   | F7   | 1/2" NPT male                                               |
|                                   | F8   | 3/4" BSP female running nut                                 |
|                                   | F15  | Welded pole assembly                                        |
|                                   | F16  | 3/4" BSP female running nut NRV plunger                     |
| 3: Transmitter Maximum Pressure   | F17  | DN40 PN16 flanged mounting                                  |
|                                   | F18  | DN50 PN16 flanged mounting                                  |
|                                   | F19  | Fixing clamp @ 1/2" BSP female pole adaptor                 |
|                                   | H1   | 1m H <sub>2</sub> O                                         |
|                                   | H2   | 2m H <sub>2</sub> O                                         |
|                                   | H4   | 4m H <sub>2</sub> O                                         |
|                                   | H8   | 8m H <sub>2</sub> O                                         |
| 4: Cable                          | H16  | 16m H <sub>2</sub> O                                        |
|                                   | H32  | 32m H <sub>2</sub> O                                        |
|                                   | H50  | 50m H <sub>2</sub> O                                        |
| 5: Cable Length                   | P    | Standard 3m cable length                                    |
|                                   | X    | Custom cable length on request (specify length X meters)    |
| 6: Range                          | DW X | Drain wire length in meters (F47 model only)                |
| 7: Remote Electronics Cable Gland | X    | Transmitter 4-20mA configured range in X m H <sub>2</sub> O |
|                                   | 9    | PG9 cable gland for signal cable (standard)                 |
|                                   | M16  | M16 cable gland for signal cable (optional)                 |
| 8: Approvals                      | M20  | M20 cable gland for signal cable (optional)                 |
|                                   | IS   | Hazardous area installation (ATEX IS approved)              |
|                                   | NA   | Safe area installation                                      |

#### Dimensional Specifications





## Density Transmitter

# 290 Density Transmitter

NASC has designed and developed the Series 290 as a density transmitter specifically for use in the onshore and offshore oil and gas market. It is the first fluid density transmitter that is fully submersible for use on drilling mud, slurry, cement and completion fluids. This density transmitter is rugged yet accurate, providing reliable measurement in the mixing or holding tanks and return sumps. The Series 290 transmitter measures density as a function of differential pressure. Each unit has two pressure sensitive diaphragms mechanically separated by a fixed distance on a mounting pole. The distance between the transmitters two diaphragms provide a value of the liquids specific gravity. The diaphragms are protected by enclosure cages to prevent damage from the mechanical impact or debris. These are easily removable for cleaning. The density measurement is made online in real time and is fully compensated for changes in fluid temperature.



### Specifications

Construction: Body assembly 316L Stainless steel with diaphragms Hastelloy C276.

Mounting: Submersed in tank.

Measuring range (Factory calibration)

- 6.67 to 20 pounds / US Gallon
- 0.8 to 2.4 SG / 0.8 to 2.4 kg/l

Customer specific calibration within this range on request.

Minimum density measurement:

- 6.25 Pounds / US Gallons
- 0.75 SG / 0.75 kg/l

Sensor capillary fill fluid: Silicon oil

Operating temperature -10° to 80° C

Hazardous area rating (option) EEx ia IIC T6

### Key Features

- Density transmitter for drilling mud, slurry, cement and completion fluids.
- Designed to be installed in mixing recirculation and storage tanks.
- Simple and flexible pole mounting installation from the top of the tank.
- Remote transmitter suitable for installation in hazardous area.
- Robust and reliable construction for arduous duty and extended service.
- Sensors protected by stainless steel cage easily removed for cleaning.
- Temperature compensated measurement with low thermal sensitivity.
- 2 Wire 4-20mA output signal calibrated to suit the application.

### Amplifier Module

Construction: Wall mount GRP enclosure

Enclosure rating: IP65 (IP67 option) / NEMA 4X

Power supply: 12 to 35 Vdc

Signal output: 4 to 20mA dc. 2 wire

### Performance

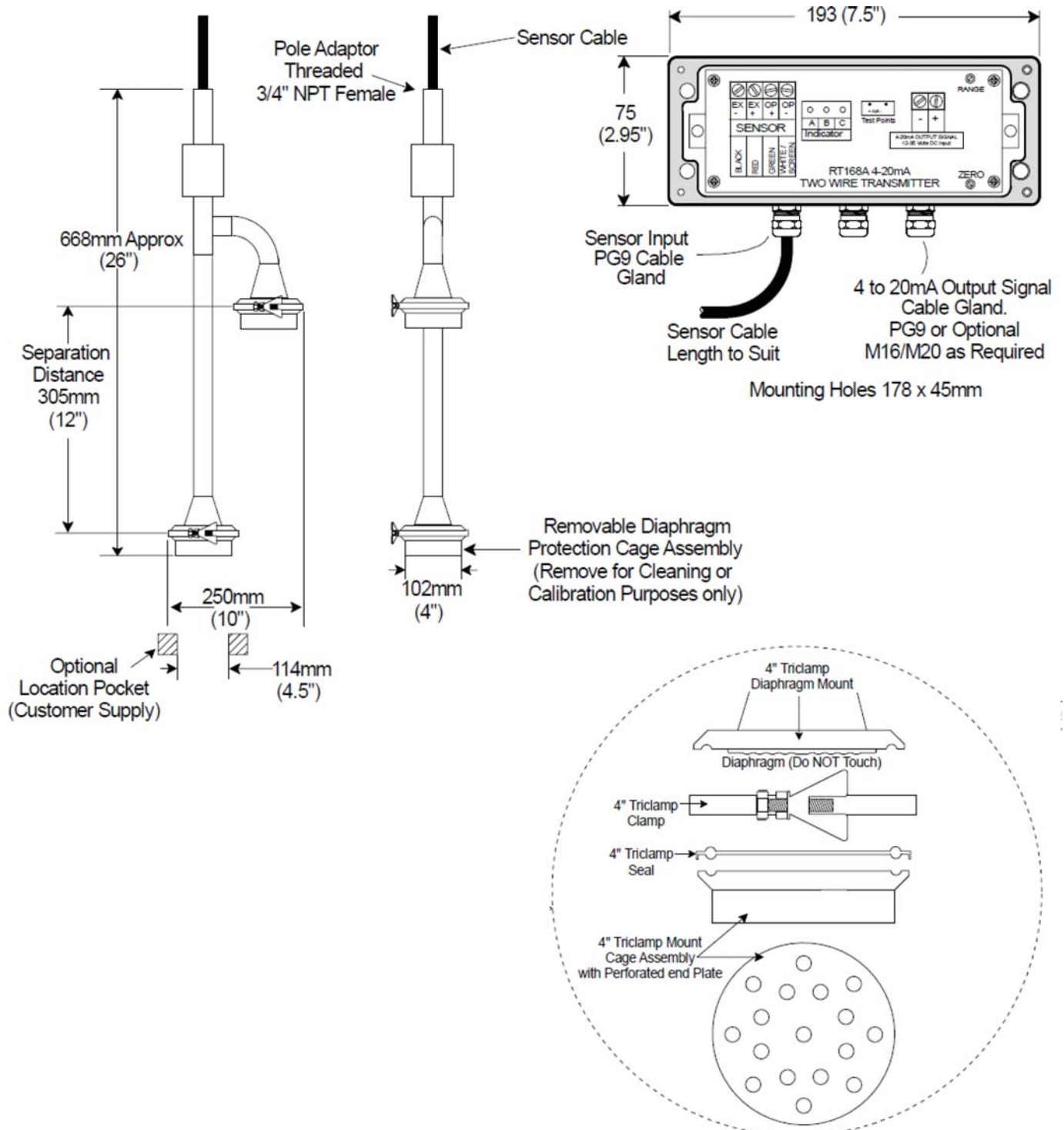
Accuracy  $\pm 0.25\%$  of set span

Temperature coefficient:  $\pm 0.02\%$  set span / °C



## Density Transmitter

### Dimensional Specifications







North American Sensors Corp.

Quality Pressure, Level, and Temperature Solutions

## Resistance Temperature Detectors

## RTD Series



These RTDs are specifically designed for use in two different process temperature ranges and they provide accurate and repeatable temperature measurement through a range of -328° to 1112°F (-200° to 600°C). Low range wire wound RTDs -328° to 400°F (-200° to 204°C) and low range thin film RTDs -40° to 400°F (-40° to 204°C) are constructed using silver plated copper internal leads, teflon, and other suitable wire insulations with potting compounds to resist moisture penetration. High range RTDs -328° to 1112°F (-200° to 600°C) are constructed with nickel internal leads inside swaged MgO insulated cable to allow higher temperature measurements at the RTD element and to provide higher temperature lead protection along the sheath.

- 1) RTD type (low temp/high temp, accuracy and element type)
- 2) Sheath diameter
- 3) Element connection (2, 3 or 4 wire)
- 4) Sheath length (insertion length)
- 5) Fittings/no fittings/sheath bend options
- 6) Electrical connections and terminations
- 7) Wire type and terminations

View our detailed literature online on how to order, email or call for customer support. Custom built assemblies with non-standard specifications are available upon request.

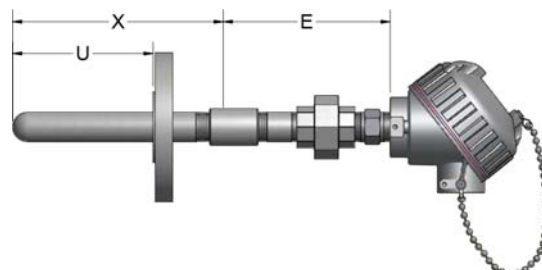
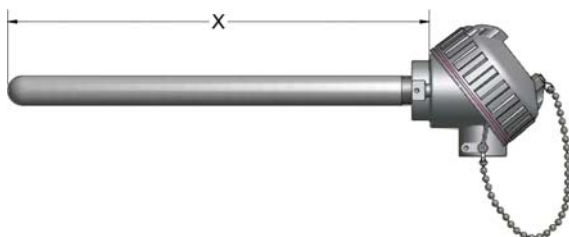
Sensing element materials and temperature limits:

Platinum : -450°F to 1200°F

Nickel : -150°F to 600°F

Copper : -100°F to 300°F

Nickel/Iron : 32°F to 400°F



**\*Please call for complete model code and description.**



## Thermocouples



The millivolt potential that is created in the thermocouple conductors differs depending on the materials used. Some materials make better thermocouples than others because the millivolt potentials created by these materials are more repeatable and well established. These thermocouples have been given specific type designations such as Type E, J, K, N, T, B, R and S. The type of T/C used also depends on temperature monitored and environment.

As a general rule, industrial thermocouples can be made to withstand higher temperatures and come in a wider variety of thermocouple types. MgO thermocouples are flexible and have a wider selection of measurement junction configurations.

An MgO thermocouple consists of a thermocouple element encased in a metal sheath and hard-packed with magnesium oxide mineral insulation. Thermocouple sheaths are fully annealed and can be formed into different configurations (minimum bend radius is twice the outer diameter of the sheath).

The measuring junction can also be sealed from the environment, reducing the potential for contamination issues.

### **How to Order** (see order form on line, email or call for application assistance)

- 1) Type of thermocouple (J, K, T, etc.) and single or duplex element
- 2) Sheath diameter
- 3) Sheath material
- 4) Measuring junction (grounded, ungrounded, etc.)
- 5) Fittings/ no fittings/ sheath bends
- 6) Sheath terminations
- 7) Electrical transitions
- 8) Lead wire materials, transitions and length

| Type  | Application Information                                                                                                                                                                                                                                                                                                                          |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E     | Recommended for continuously oxidizing or inert atmospheres. Sub-zero limits of error not established. Highest thermoelectric output of the common thermocouple types.                                                                                                                                                                           |
| J     | Suitable for vacuum, reducing or inert atmospheres, oxidizing atmospheres with reduced life. Iron oxidizes rapidly above 1000°F so only heavy gauge wire is recommended for high temperature.                                                                                                                                                    |
| K     | Recommended for continuous oxidizing or neutral atmospheres. Mostly used above 1000°F (538°C). Subject to failure if exposed to sulfur. Preferential oxidation of chromium in positive leg at certain low oxygen concentrations causes "green rot" and large negative calibration drifts most serious in the 1500 - 1900°F (816 - 1038°C) range. |
| N     | Can be used in applications where Type K elements have shorter life and stability problems due to oxidation and the development of "green rot".                                                                                                                                                                                                  |
| T     | Usable in oxidizing, reducing, or inert atmospheres as well as vacuum. Not subject to corrosion in moist atmospheres.                                                                                                                                                                                                                            |
| R & S | Recommended for high temperature. Must be protected in a non-metallic protection tube and ceramic insulators. Type R is used in industry, Type S in the laboratory                                                                                                                                                                               |
| B     | Same as R & S but has a lower output. Also, has a higher maximum temperature and less susceptible to grain growth.                                                                                                                                                                                                                               |

**\*Please call for complete model code and description.**



## Thermocouples

Table 1: Thermocouple Types, Temperature Ranges, Limits of Error

| Standard |                                |                               |                 | Special                      |                 |
|----------|--------------------------------|-------------------------------|-----------------|------------------------------|-----------------|
| Type     | Materials                      | Temperature Range             | Limits Of Error | Temperature Range            | Limits Of Error |
| J        | Iron/Constantan                | 32 to 559F (0 to 293C)        | 4F (2.2C)       | 32 to 527F (0 to 275C)       | 2F (1.1C)       |
|          |                                | 550 to 1400F (293 to 760C)    | 0.75%           | 527 to 1400F (275 to 760C)   | 0.40%           |
|          |                                | -328 to -166F (-200 to -110C) | 2%              |                              |                 |
| K        | Chromel/Alumel                 | -166 to 32F (-110 to 0C)      | 4F (2.2C)       | 32 to 527F (0 to 275C)       | 2F (1.1C)       |
|          |                                | 32 to 559F (0 to 293C)        | 4F (2.2C)       | 527 to 2282F (275 to 1250C)  | 0.40%           |
|          |                                | 559 to 2282F (293 to 1250C)   | 0.75%           |                              |                 |
| T        | Copper/Constantan              | -328 to -89F (-200 to -67C)   | 1.50%           |                              |                 |
|          |                                | -89 To 32F (-67 to 0C)        | 1.8F (1C)       |                              |                 |
|          |                                | 32 to 271F (0 to 133C)        | 1.8F (1C)       | 32 to 257F (0 to 125C)       | 0.9F (.05C)     |
|          |                                | 271 to 662F (133 to 350C)     | 0.75%           | 257 to 662F (125 to 350C)    | 0.40%           |
| E        | Chromel/Constantan             | -328 to -89F (-200 To -67C)   | 1%              |                              |                 |
|          |                                | -274 to 32F (-170 to 0C)      | 3.1F (1.7C)     |                              |                 |
|          |                                | 32 to 644F (0 to 340C)        | 3.1F (1.7C)     | 32 to 482F (0 to 250C)       | 1.8F (1C)       |
|          |                                | 644 to 1652F (340 to 900C)    | 0.50%           | 482 to 1652F (250 to 900C)   | 0.40%           |
| N        | Nicrosil/Nisil                 | 32 to 559F (0 to 293C)        | 4F (2.2C)       |                              |                 |
|          |                                | 559 to 2300F (293 to 1260C)   | 0.75%           |                              |                 |
| R        | Platinum/Platinum- 13% Rhodium | 32 to 1112F (0 to 600C)       | 2.7F (1.5C)     | 32 to 1112F (0 to 600C)      | 1.1F (0.6C)     |
|          |                                | 1112F to 2642F (600 to 1450C) | 0.25%           | 112F to 2642F (600 to 1450C) | 0.10%           |
| S        | Platinum/Platinum-10% Rhodium  | 32 to 1112F (0 to 600C)       | 2.7F (1.5C)     | 32 to 1112F (0 to 600C)      | 1.1F (0.6C)     |
|          |                                | 1112F to 2642F (600 to 1450C) | 0.25%           | 112F to 2642F (600 to 1450C) | 0.10%           |
| B        | Platinum/Platinum-30% Rhodium  | 1472 to 3092F (800 to 1700C)  | 0.50%           | 1472 to 3092F (800 to 1700C) |                 |



## Thermowells

## TW Series



A thermowell acts as a barrier between a process medium and the sensing element of a temperature measuring device. It protects against corrosive process media, as well as media contained under pressure or flowing at a high velocity. A thermowell also allows the sensing element to be removed from the application while maintaining a closed system.

Our thermowells are available in 316S.S. and 304S.S.. Other materials available upon request.

### How to Order

- 1) Process connection: Flanged, threaded, limited space, socket-weld or weld-in type.
- 2) Style: Stepped, straight, tapered, lag, lag straight or lag tapered.
- 3) Bore(inches): .260, .375, .385, .390, .515, .702 or special.
- 4) Material: Brass, C.S., 304 S.S., 316 S.S., Monel, titanium, hastelloy C, etc.
- 5) Stem length (inches): L or U dimension

View our detailed literature on line on how to order, email or call for customer support.

