

# Series 7330

# B|W Controls

## Liquid Level Sensors

### 7330 Series Pro-Stik II Magnetostrictive Sensor with Field Programmable Span

The 7330 Series Pro-Stik II design takes field proven technology and incorporates features including field programmable span. A variety of floats and mounting accessories is also available to fit many applications.

The construction of the sensor has all of the electronics integrated into the 5/8" diameter sensing tube. This breakthrough in package design eliminates the bulky electronics enclosure at the top of the sensor.

#### 7330X

The 7330X Pro-Stik II is ideal for level monitoring in a variety of liquids and tanks.

- Mini connector or 3/4" NPT fitting
- Totally welded construction optional
- Cathodic protection optional
- Security feature uses a timing sequence to unlock the probe for programming.

#### 7330V

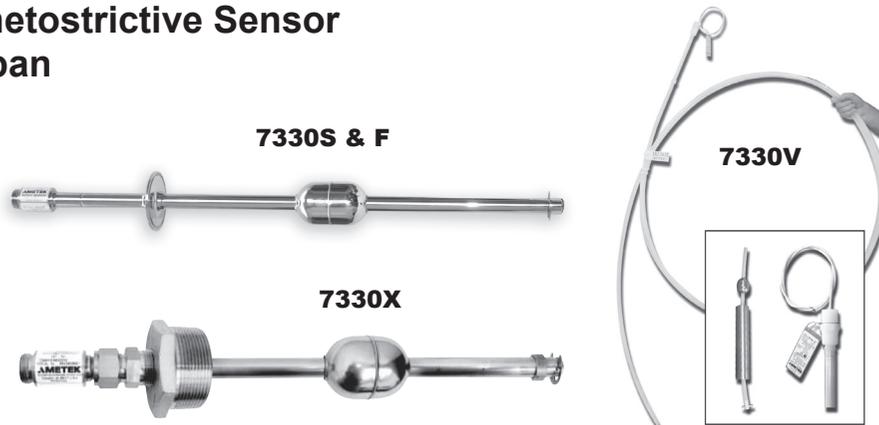
The 7330V Pro-Stik II is ideal for level monitoring in a variety of liquids and tank designs especially when overhead room is limited. Diagnostic output provides continuous information about the float's position.

Available in flexible and semi-flexible PVDF (polyvinylidene fluoride) in lengths up to 40 ft. PVDF material provides an excellent option for monitoring chemicals not compatible with stainless steel.

#### 7330S & F

The 7330 S & F probes are effective in demanding applications such as underground leak detection and inventory management. The rugged, 316 stainless steel construction is ideal for food processing, pharmaceutical and other sanitary environments.

- Provides continuous absolute position data.
- No calibration required.
- Finish is welded, ground and polished
- Installed with a standard Tri-clamp fitting. Can also be ordered without a Tri-clamp.
- "Timing sequence" unlocks probe, preventing accidental re-programming.
- Diagnostic outputs



| Specifications                    |   |   |                                    |
|-----------------------------------|---|---|------------------------------------|
| <b>Operating Voltage</b>          | 13.5 to 30 VDC  | <b>Probe Length</b>                     | 18" to 120"                        |
| <b>Output</b>                     |   | (7330 S & F) Stainless Steel M, R, D, S |                                    |
| Operating Output                  | 4 to 20mA   | (7330X) Stainless Steel R               | 19" to 128"                        |
| Diagnostic Output                 | 3.9mA and 20.1mA, float outside of span<br>3.8mA, no signal received<br>(Note: Diagnostic Tolerance +/- 0.02mA) | (7330X) Stainless Steel M, D, S         | 18" to 288"                        |
|                                   |   | (7330V) PVDF Style C                    | 20" to 192"                        |
|                                   |   | (7330V) PVDF Style X                    | 25" to 480"                        |
|                                   |   |   | Consult Factory for longer lengths |
| <b>Operating Temperature</b>      |   | <b>Hazardous Areas Approvals</b>        | <b>Other Approvals</b>             |
| Sensing Area (7330X, S & F)       | -20° to 100° C (No Hazardous Location)  | <b>FM, CSA</b>                          | 3A Approval for 7330S ONLY.        |
| Electronics Area (7330X, S & F)   | -20° to 70° C   | -20° Tamb O 70° C                       | <b>Sanitary</b>                    |
| All (7330V)                       | -20° to 70° C   | Class I, II, III, Div. 1                | 3A (74-02)                         |
| <b>Pressure Rating</b>            |   | Groups C, D, E, F, G, T4                |                                    |
| (7330X, S & F)                    | 316SS Probe: 1000 psi max.<br>Floats: Depend. Call Factory.   | Class I, Div. 2                         |                                    |
| (7330V)                           | PVDF Probe: 150 psi max.  | Groups A, B, C, D, T4                   |                                    |
| <b>Resolution</b>                 | 0.025% of span or 0.014", (Whichever is Greater)  | Class I, Zone 0, AEx ia IIB T4          |                                    |
| <b>Repeatability</b>              | 0.014" + 0.05% of span typical,<br>0.014" + 0.4% of span maximum  | <b>ATEX</b>                             |                                    |
| <b>Accuracy</b>                   | 0.1% of span or 0.050" (Whichever is Greater)   | EEx ia IIB T4                           |                                    |
| <b>Null Zone</b>                  |   | NEMKO 04 ATEX 1357X                     |                                    |
| (7330X, S & F)                    | 8"  | CE 0344 Ex II 1G                        |                                    |
| (7330V)                           | C Mounting Style : 9"<br>X Mounting Style : 12"   |   |                                    |
| <b>Dead Band</b>                  |   |   |                                    |
| (7330X, S & F)                    | 2"  |   |                                    |
| (7330V)                           | C Mounting Style : 3"<br>X Mounting Style : 6 to 14" (Depends on OAL)   |   |                                    |
| <b>Intrinsically Safe Barrier</b> | See Installation Drawing E0240200   |   |                                    |
| <b>Enclosure Material Rating</b>  |   |   |                                    |
| (7330X, S & F)                    | 316SS IP68  |   |                                    |
| (7330V)                           | PVDF IP68   |   |                                    |

Specifications are subject to change without notice. Patented.

| Accessories  |           |   |           |
|--|-----------|---|-----------|
| Item   | P/N       | Item  | P/N       |
| <b>7330 V Style</b>  |           | <b>7330 X Style</b>   |           |
| Float: 316 Stainless Steel, 2.05" dia., 0.56s.g.   | 14020002  | Float Kit, 316 SS, 2.05" Diameter w/ E Clip and Spacer 0.54s.g.         | SD0515000 |
| Weight Kit: for use with PVDF probes with OAL of 146" to 288" 316 Stainless Steel components, 2"d x 7"h weight and retaining pin. (For use with "X" style mounting). | SD0517408 | Float Kit, Nitrophyll, 2.02" Diameter w/ E Clip and Spacer 0.40s.g.     | SD0536500 |
| Weight Kit: for use with PVDF probes with OAL of 289" to 432" 316 Stainless Steel components, 2"d x 7"h weight and retaining pin. (For use with "X" style mounting). | SD0517411 | Cable Assembly, 4 pin, 6 feet long (M style only)                       | 01533141  |
| Weight Kit: for use with PVDF probes with OAL of 433" to 480" 316 Stainless Steel components, 2"d x 7"h weight and retaining pin. (For use with "X" style mounting). | SD0517413 | Adjustable Tube Coupling 5/8" x 3/4" NPT                                | 04283800  |
| Float Spacer: PVDF split ring spacer and screws. (For use with "C" style mounting).  | SD0511000 | Junction Box, side mount, explosion proof with zero & span push buttons | SD0536101 |
| <b>7330 S &amp; F Styles</b>   |           | Safety Barrier Single Channel   | 04517238  |
| Cable/Connector Assy, 6 ft., M Style   | 01533141  | Safety Barrier Dual Channel   | 04517248  |
| Meter, 4.5 Digital Display, Panel Mount, 2 Output Relays   | 04541069  | Meter, 4 1/2 digit display, panel mount, 2 output relays                | 04541069  |
| Sanitary Float Kit, 316SS, 1.83" dia., .61s.g., F Style Only   | SD0529100 | Bushing, 3/4" x 2" NPT 316SS  | 04587241  |

**733** — **O** — **S** — **M** — **E** — **072** — **F1** — **XXX** — **X** — **XX**

**7330 Pro-Stik II**

**Output**  
**0** = 4 to 20mA  
**1** = 20 to 4mA

**Connector Style**  
**For 7330 S & F**  
**M** = 4 Pin Mini  
**S** = 3/4" NPT Single

**For 7330 X**  
**M** = 4 Pin Mini  
**R** = 1/2" NPT Right Angle  
**D** = 3/4" NPT Dual  
**S** = 3/4" NPT Single

**For 7330 V**  
**S** = 1/2" NPT Single for housing mounting (For "C" mounting style only)  
**D** = 3/4" NPT Dual for housing and vessel mounting (For "X" mounting style only)

**Fittings**  
**E** = English  
**M** = Metric

**# of Floats**  
**F1** = 1 Float

**Overall Length**  
**For 7330 S & F**  
 ie. 072 = 72" Min 18" Max 120"

**For 7330 X**  
 ie. 072 = 72" Min 18" Max 288"

**For 7330 V**  
 ie. 072 = 72" Min 20" Max 480"

**Options**

**For 7330 S & F**  
**20** = 2" Tri-Clamp  
**25** = 2.5" Tri-Clamp  
**30** = 3" Tri-Clamp  
**40** = 4" Tri-Clamp

**For 7330 X**  
**XX** = None

**For 7330 V**  
**XX** = None

**Style**  
**For 7330 S & F**  
**S** = Sanitary 240 Grit  
**F** = Food Grade 180 Grit

**For 7330 X**  
**X** = 316 Stainless Steel

**For 7330 V**  
**V** = PVDF (polyvinylidene fluoride)

Consult factory for other options.

**Max Span**  
**For 7330 S & F**  
 ie. 072 = 72" (Min 8" Max 110". Max span is equal to overall length -10)

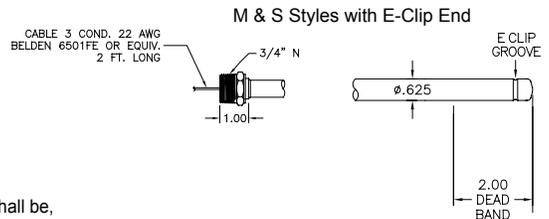
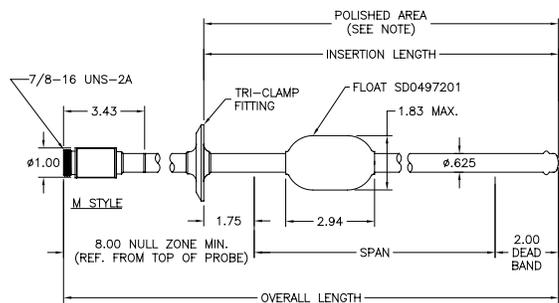
**For 7330 X**  
 ie. 072 = 72" (Min 8" Max 278". Max span is equal to overall length -10)

**For 7330 V**  
 ie. 072 = 72" (Min 7" Max 454". Max span is equal to overall length minus the Null Zone and Dead Band)

**Mounting Style**  
**For 7330 S & F**  
**P** = Tri-Clamp with CIP End 3A (float included)  
**T** = Tri-Clamp with E-Clip End (float kit purchased separately)

**For 7330 X**      **For 7330 V**  
**X** = None            **X** = None  
**C** = Temperature Constrained (0-40°C) Version

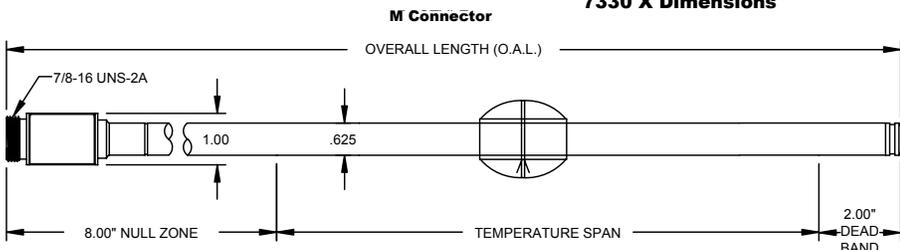
### 7330 S & F Dimensions



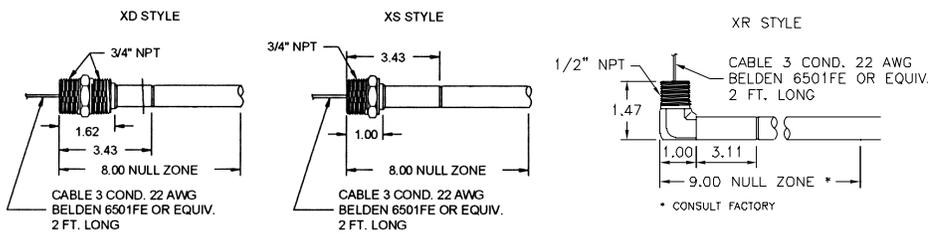
### M & S Styles with CIP End

**Note:** All polished area surfaces shall be,  
a) 180 grit or better for 3A Food Grade,  
b) 240 grit or better for 3A Sanitary.

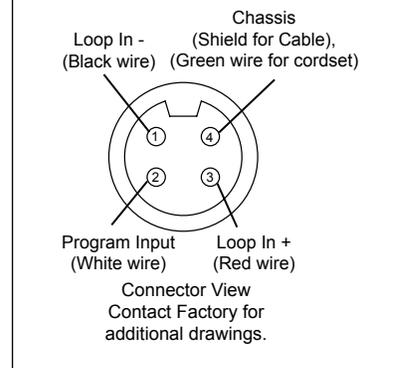
### 7330 X Dimensions



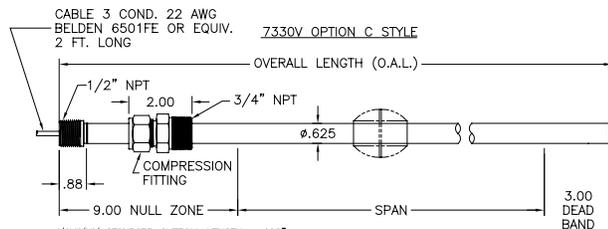
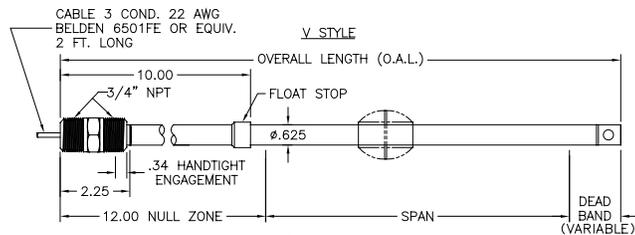
#### M Connector



### Wiring Diagram For 7330 X, S & F



### 7330 V Dimensions



MAXIMUM STANDARD OVERALL LENGTH = 480"  
MINIMUM STANDARD OVERALL LENGTH = 25"

EXPANSION CLEARANCE REQ'D AT BOTTOM OF TANK (V STYLE):  
MIN. CLEARANCE = (O.A.L.) X (MAX. OPERATING TEMP(°C) - 20) X (.00014)  
OVERALL LENGTH = INSERTION LENGTH - CLEARANCE + 1"

| O.A.L. (in) | DEAD BAND(in) | CLEARANCE(in) |
|-------------|---------------|---------------|
| 25-144      | 6.00          | 1.00          |
| 145-288     | 8.00          | 2.00          |
| 289-432     | 12.00         | 3.00          |
| 433-480     | 14.00         | 4.00          |

**NOTES:** UNLESS OTHERWISE SPECIFIED:  
1. OPERATING TEMPERATURE OF V-C STYLE PROBE IS 0-40°C (32-104°F)  
2. ALL DIMENSIONS ARE FOR REFERENCE ONLY.

### Wiring Diagram For 7330 V

| Signal Name | Pigtail Cable |
|-------------|---------------|
| Loop (-)    | Black         |
| Prgm Input  | White         |
| Loop (+)    | Red           |