

## ABM 2 Wire "Smart" Radar Level Transmitter

### HIGHLIGHTS

- 2 Wire Operation
- Power: 20 to 30 VDC
- Self Adjusting Tracking Radar
- Simple push-button calibration
- Output 4 - 20 mA / 20 - 4mA
- Communication with —HART 7

### OPERATIONAL

**Operation:** Pulse Radar

**Accuracy:** +/- 0.1% of max. range

**Frequency:** 5.8 GHz or 6.3 GHz.

**Loss of Echo**

**Current:** Default 22mA , or 3.5 mA

**Transmit Power:** 50 uW average

**Antenna:**

Dielectric rod PP, & Optional rod PTFE

Horn 316 S.S. for very low dielectric

constant materials and short blanking

**Ambient Temperature:-** 40 to 140°F (- 40 to 60°C)

**Process Temperature:**

**PP Rod:** - 40 to 176°F (- 40 to 80°C)

**De-coupler & PTFE Rod** - 40 to 350°F (- 40 to 177°C)

**High Temperature Unit :**

- Teflon De-coupler threads on to

1 1/2" NPT Mtg. Adaptor with a 2" NPT Mtg. Process Connection.

**Enclosure:** Aluminum or S.S. : NEMA 6 (IP68)

**Conduit Entry:** 1/2" NPT x 2

**Approvals:**

**FM(CAN.):**

CSA C22.2 No. 1010.1 (2004) Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use

- Part 1: General Requirements

CSA C22.2 No. 94 (2011) Special Purpose Enclosures



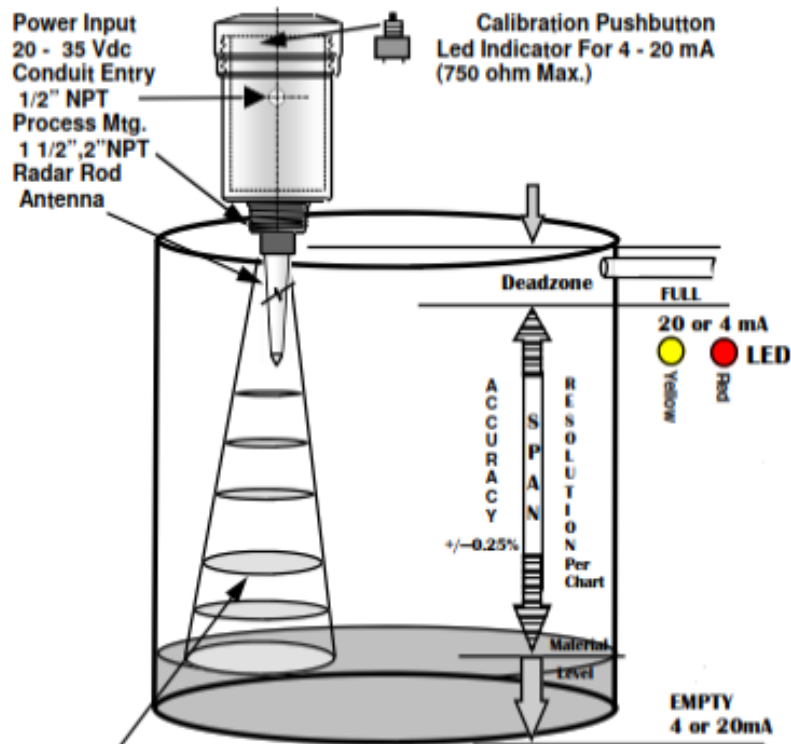
| Radar Range Code | RANGE In Liquids        | RESOLUTION       | MOUNTING               |
|------------------|-------------------------|------------------|------------------------|
| 017              | * - 17 ft.<br>* - 5 m   | 0.08"<br>2.0 mm  | 2.0", 1 1/2" NPT<br>** |
| 033              | * - 33 ft.<br>* - 10 m  | 0.15"<br>3.9 mm  | 2.0", 1 1/2" NPT<br>** |
| 050              | * - 50 ft.<br>* - 15 m  | 0.22"<br>5.7 mm  | 2.0", 1 1/2" NPT<br>** |
| 100              | * - 100 ft.<br>* - 30 m | 0.44"<br>11 mm   | 2.0", 1 1/2" NPT<br>** |
| 140              | * - 140 ft.<br>* - 42 m | 0.62"<br>15.7 mm | 2.0", 1 1/2" NPT<br>** |
| 240              | * - 240 ft.<br>* - 73 m | 1.06"<br>26 mm   | 2.0", 1 1/2" NPT<br>** |

### PROCESS

Temperature PP Rod: - 40 to 176°F (- 40 to 80°C)  
De-coupler & PTFE Rod - 40 to 350°F (- 40 to 177°C)  
Material Dielectric:  $\epsilon_r > 2$   
Max. Pressure : 5 bar (without De-coupler)

### Typical Installation

1) Radar unit must be installed into metal fitting with the antenna pointing downward.



Operation - electromagnetic pulse is transmitted from the ABM sensor . The pulse travels to the surface being monitored and is reflected off this surface back to the sensor . The time of flight is divided by 2 and converted to an output signal directly proportional to the material level .

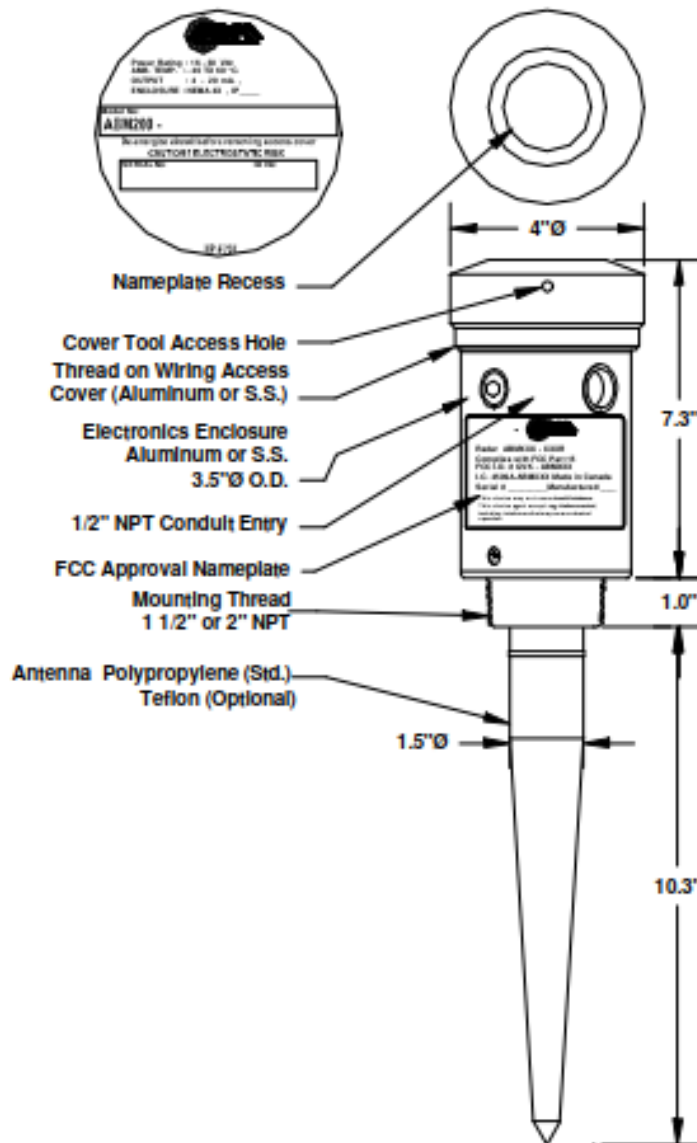
### Optional Display

Code LPD-PM

Display - 4 1/2 Digit LCD 1/2" (12.7mm)



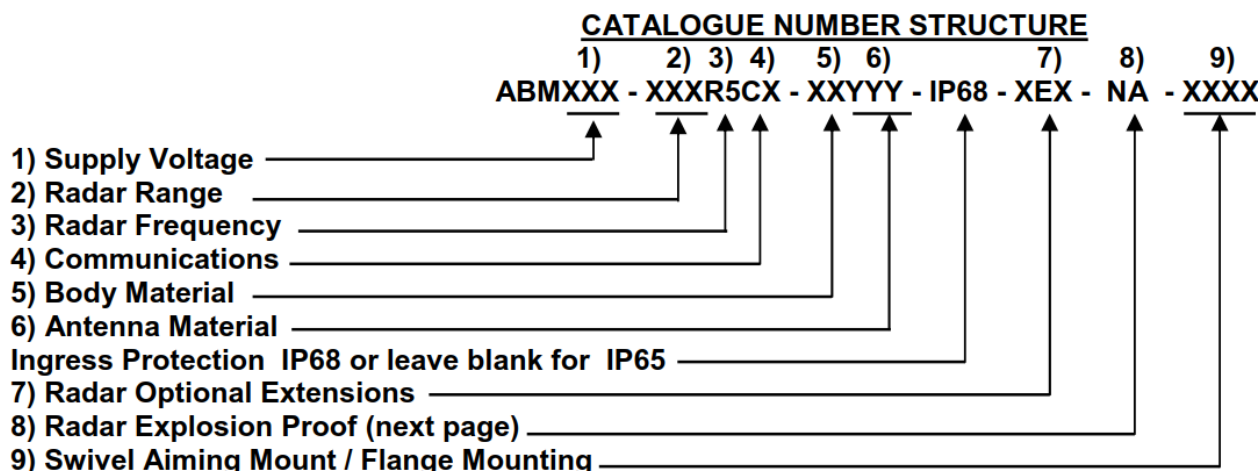
## DIMENSIONS



**2 Wire Radar Level Sensor Outline Detail**

## Catalogue Numbering Structure

### - Standard "Smart" Radar Sensors



**ABM Code**

|                    |           |       |
|--------------------|-----------|-------|
| 1) Supply Voltage: | AC 115V   | - 400 |
|                    | AC 230V   | - 430 |
|                    | DC 12-30V | - 300 |
| Loop Powered       | DC 16-30V | - 200 |

2) Range:

| Radar Range | ABM Code |
|-------------|----------|
| * - 17 Ft   |          |
| * - 5 m     | 017      |
| * - 33 Ft   |          |
| * - 10 m    | 033      |
| * - 50 Ft.  |          |
| * - 15 m    | 050      |
| * - 100 Ft. |          |
| * - 30 m    | 100      |
| * - 140 Ft. |          |
| * - 42 m    | 140      |
| * - 240 Ft. |          |
| * - 73 m    | 240      |

**ABM Code**

|                      |         |      |
|----------------------|---------|------|
| 3) Radar Frequency : | 6.3 GHz | - R6 |
|                      | 5.8 GHz | - R5 |
|                      | 26 GHz  | - R2 |
| Mini radar           | 26 GHz  | - M2 |

**ABM Code**

|                     |        |     |
|---------------------|--------|-----|
| 4) Communications : | RS485  | - 4 |
|                     | RS232  | - 2 |
|                     | HART 7 | - H |

**ABM Code**

|                          |   |      |
|--------------------------|---|------|
| 5) Body Material :       |   |      |
| Radar Std. Aluminum      | - | - AL |
| Radar Anodized Al.       | - | - AN |
| Radar Optional 316 S.S.- |   | - SS |

### 6) Antenna Material Radar :

|                   |                              | <u>ABM Code</u>                                                                           |
|-------------------|------------------------------|-------------------------------------------------------------------------------------------|
| Standard          | - Antenna Polypropylene      | - APP                                                                                     |
| Optional          | - Antenna Teflon             | - ATE                                                                                     |
|                   | - High Temp. Teflon          | - HTE (c/w De-coupler) Includes Teflon antenna and 1 1/2" - 2" NPT Teflon De-coupler.     |
| Sanitary Mtg.-    | 2" Tri clamp                 | - S20 <i>PTFE Teflon Material</i>                                                         |
| Horn              | - 2" Dia. Horn               | - HR2 (26GHz Only)                                                                        |
| Horn              | - 4" Dia. Horn               | - HR4 ( used for 6 GHz & 26 GHz flood monitoring)                                         |
| Horn              | - 5" Dia. Horn               | - HR5 (used for 26 GHz as extension for HR2)                                              |
| Horn              | - 6" Dia. Horn               | - HR6 (used for 6 GHz radar)                                                              |
| Horn              | - 6" Dia. High Temp.         | - HT6 (used for 6 GHz radar ,see note below )                                             |
| Horn              | - 2" Dia. ,5"Dia. High Temp. | - HT2,HT5 (used for 26 GHz ,see note below )                                              |
|                   |                              | <b>Note</b> - High temperature radar units with horns use 2" to 3" NPT Teflon De-coupler. |
| Mounting Adaptors |                              | - TD2 1.5" to 2" Teflon De-coupler                                                        |
|                   |                              | - TD3 2" to 3" Teflon De-coupler                                                          |

Process Connection: 2" NPT Code H20

|                           |                                 |       |                                 |
|---------------------------|---------------------------------|-------|---------------------------------|
| 7) <u>Radar Optional:</u> | Antenna Built in Extension 1.5" | - ATL | } use with Teflon antennas only |
|                           | Antenna Extension Teflon 6"     | - AE6 |                                 |
|                           | Antenna Extension Teflon 8"     | - AE8 |                                 |
|                           | Radar Interface Detector        | - RID |                                 |

8) Explosion Proof : Radar Explosion Proof Class 1 Div. 1 ABM300 - XXXYYCX- XYYYY - AEX - EXP