NEW Self Adjusting "Smart" Radar 2 Wire Measurement Sensors For Special Outdoor Flood Monitoring

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FEATURES

2 Wire Operation
Self Adjusting Tracking Radar
Simple push-button calibration
Output 4 - 20 mA / 20 - 4mA
Communication with "HART 7"

APPLICATIONS

Flood Monitoring (Rivers ,Lakes ,Sea Water)
Water / Wastewater
Chemicals with vapors

MECHANICAL

Conduit Entry : 1/2" NPT x 2
Enclosure : Aluminum or S.S. - 94V0
Ingress Protection : NEMA 6 (IP68)

ENVIRONMENTAL

Temperature :- 40 to 140°F (- 40 to 60°C)
Approvals : FCC Part 15 - Low Power Communication Device

FM(USA)
FM3810 (2005) Electrical Electronic Test, Measuring and Process Control Equipment
ANSI/NEMA 250 (1991) :Enclosures for Electrical Equipment
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
Installation Category: Class II

Catalogue # - On the Web return to Home Page & Refer to Catalogue Number Structure for Ordering information.
In Product Documentation refer to Page 4.

OPERATIONAL

Operation : Pulse Radar
Frequency : 6.3 GHz.&26 GHz
Loss of Echo : 0 min. no loss of echo
: 1 min. to 3 min. loss of echo time
Loss of Echo Current :Default 22mA , or 3.5 mA
Transmit Power :50 uW average
Antenna :Horn 316 S.S. with dust cover

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 : Er > 1.4
Max. Pressure : 5 bar (without De-coupler)

TECHNICAL SPECIFICATIONS

Model	Range	Res.	Accuracy	I P	Operation
ABM200 –017R6 R2CH- ALHR4 (6)	5 m	+/- 1 mm	+/- 5mm	IP68	6.3 GHz 26 GHz
ABM200 –033R6 R2CH- ALHR4 (6)	10 m	+/-1 mm	+/- 5mm	IP68	6.3 GHz 26 GHz
ABM200 –050R6 R2CH- ALHR4 (6)	15 m	+/- 1 mm	+/- 5mm	IP68	6.3 GHz 26 GHz
ABM200 –100R6 R2CH- ALHR4 (6)	30 m	+/- 1 mm	+/- 5mm	IP68	6.3 GHz 26 GHz

Note - * Minimum Range starts at the lower tip of the antenna for high dielectric material (water). For low dielectric materials allow longer Minimum Range.
Note -Only 2" and 3"NPT Mtg. Connection Available on High Temperature Radar.**

ELECTRICAL SPECIFICATIONS

Power	
ABM200 DC	20 to 35 VDC , R load max. = (Vs - 14) / 25 mA
Output	4-20 mA Output 6.1 uA resolution Suitable for transmission up to 1000m Optional Communication with "HART 7"

2 Wire Radar Sensors
User Instruction Manual

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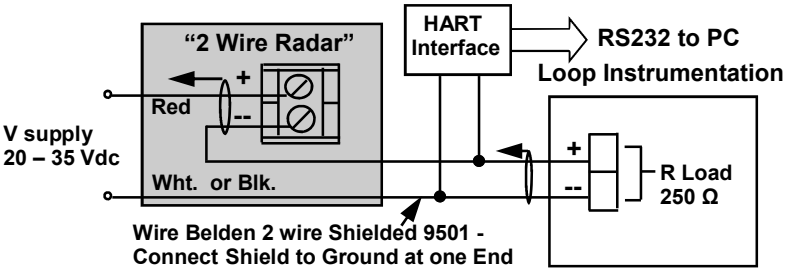
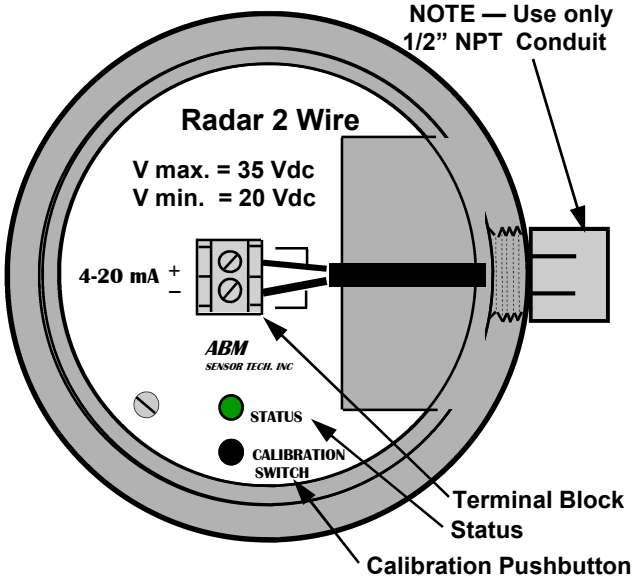
Fig. # 1 - "2 Wire Sensor" Wiring Connection



Top View of Sensor (Access Cover Removed)



FCC INFORMATION TO RADAR USERS

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provided reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING- Changes or Modifications not expressly approved by ABM Sensor Technology Inc. could void the user's authority to operate the equipment.

Wiring Information

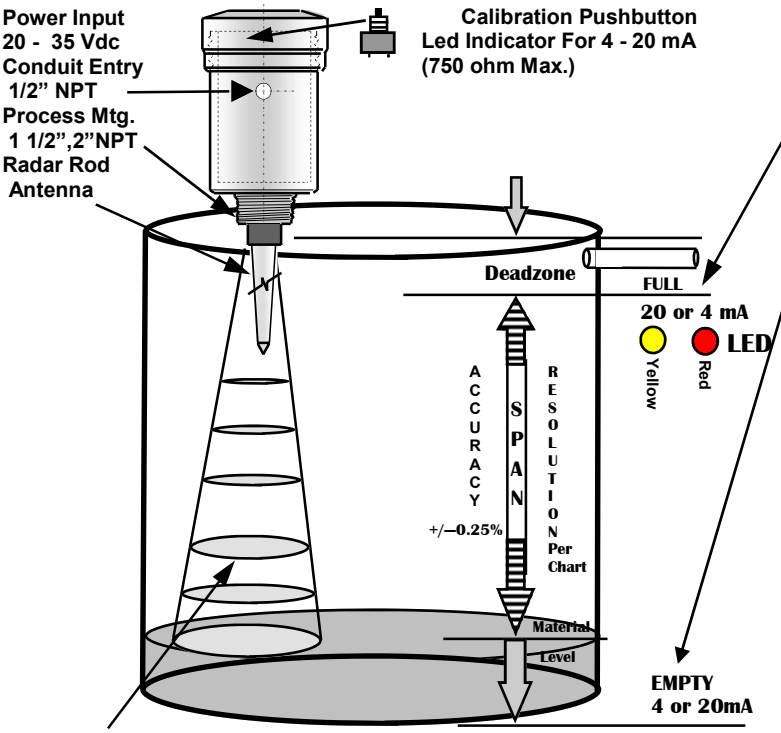
- Ground shield at one end only.
- All terminal block wiring must be rated for 250V.
- Terminal is for use only with equipment which has no live parts which are accessible .
- Terminal is for use with equipment which maintains basic insulation from hazardous voltage under normal and single fault conditions .
- Connection used at the remote end of external circuit .

Recommended Wiring

- 2 Wire shielded 24 AWG , 300 V

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 .

Calibration — 4 -20 or 20 - 4 mA Output

FULL — Calibrate 20 mA or 4mA (Set Near Target)

1. Calibration mode LED color is blinking Green. (for Radar Low Dielectric Materials has to be off)
2. Push button and hold until LED turns Yellow (20 mA) or push button and hold until LED turns Red (4 mA)
3. Release button at Yellow or Red and observe LED flashes to acknowledge the calibration.

EMPTY— Calibrate 4 mA or 20 mA (Set Far Target)

1. Calibration mode LED color is blinking Green (for Radar Low Dielectric Materials has to be off)
2. Push button and hold until LED turns Red (4 mA) or push button and hold until LED turns Yellow (20 mA)
3. Release button at Yellow or Red and observe LED flashes to acknowledge the calibration.

For Radar to turn the Low Dielectric Materials operation mode ON and OFF (this mode is recommended for materials with dielectric constant lower than 4 and also to eliminate multiple reflections in tank.)

1) To turn the Low Dielectric Materials ON. Push button and hold until LED goes OFF after the sequence of Yellow ,Red and turns Off. The Low Dielectric Material operation is On when the LED'S Green light gives two short blinks.
2) To turn the Low Dielectric Materials OFF. Push button and hold until LED goes OFF after the sequence of Yellow , Red and Turns OFF. The Low Dielectric Material operation is OFF when LED is blinking Green.
3) Or use "Hart 7" communication software (Fig. #1).

DWG 10A834R3

2 Wire IP68 Radar Flood Monitoring Sensors Outline Dtl.

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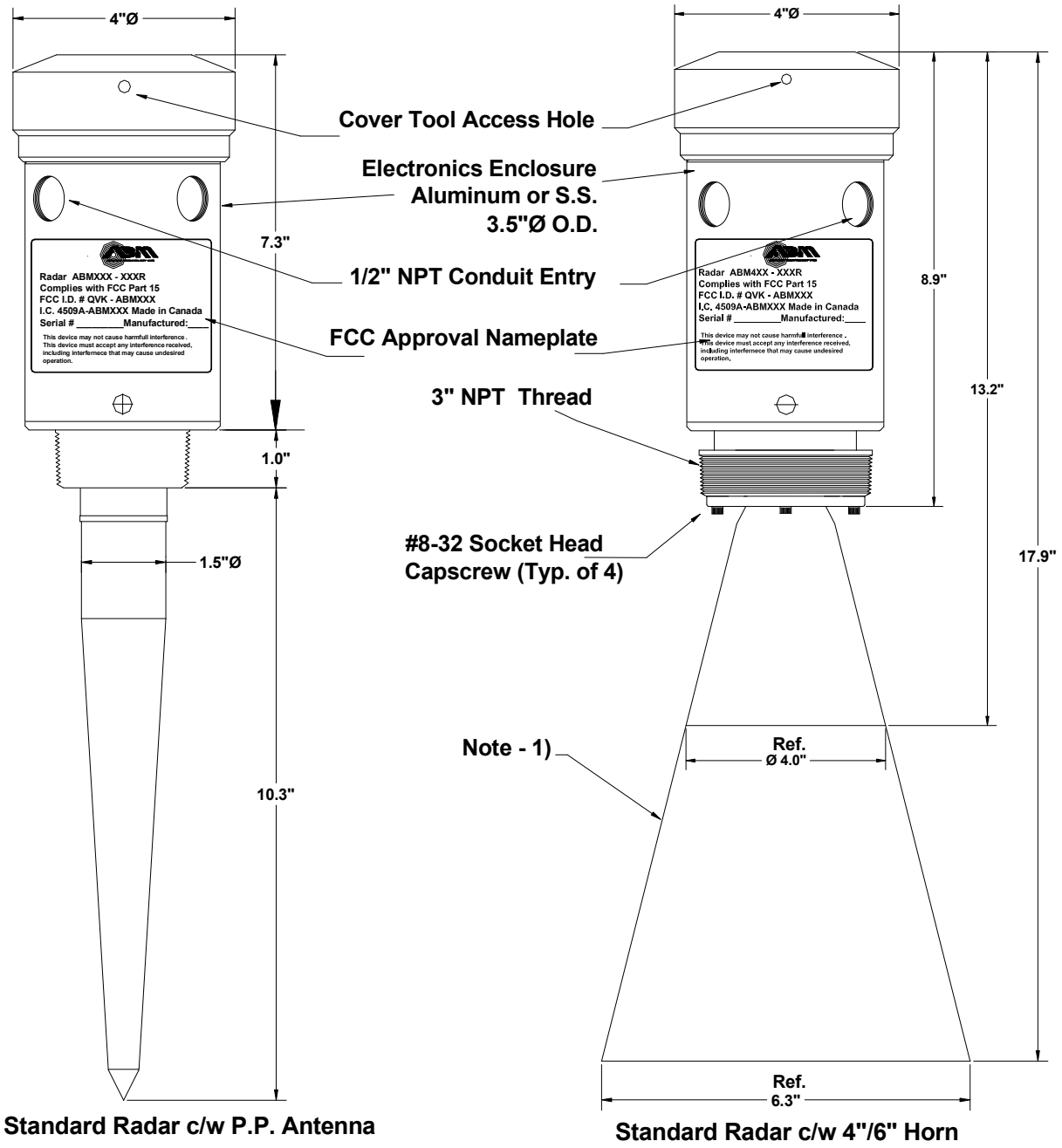

Standard Radar c/w P.P. Antenna

Standard Radar c/w 4"/6" Horn

Notes - 1) Material - S.S. 316 ,21 Gauge Sheet

2 Wire Radar IP68 Level Sensor with Horn Outline Detail

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