

# “Mini Sonic” Ultrasonic Transmitters- Standard Mtg.



730 The Kingsway Peterborough , Ont. K9J6W6 Canada  
Tel: (705) 740 – 2010 Web: www.abmsensor.com  
Fax: (705) 740 – 2563 E-mail: info@abmsensor.com

## FEATURES

- Standard 5 feet of interconnection cable
- Simple push-button calibration
- Output 4- 20 mA / 20- 4 mA
- Built-in temperature compensation
- Optional High Level Alarm relay dual pole output 5A/230 Vac
- Optional RS485 communications with calibration, diagnostics and data logging software
- PLC compatible
- Three Wire Operation

## APPLICATIONS

- Food and Beverages
- Water
- Pharmaceutical

## Mounting Options

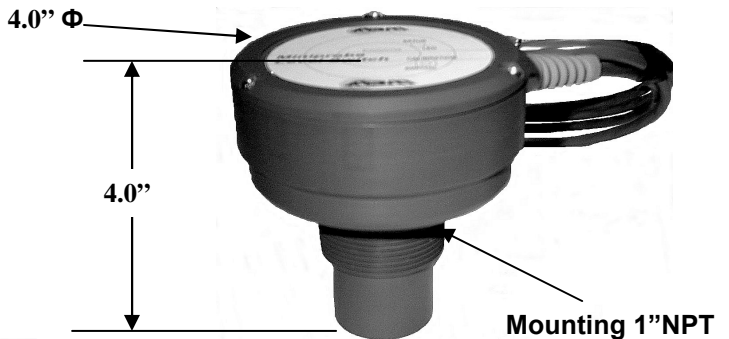
Mounting Adaptors Available:  
1”- 3/4” NPT or 1”- 1/2” NPT



## ENVIRONMENTAL

Temperature : - 40 to 140°F(- 40 to 60°C) PVC Body  
Pressure : 1 –10 bar  
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 3.



## OPERATIONAL

- Accuracy : +/-0.10% of max. range  
(in lab using 4-20 Ma current output)  
+/-0.25% of max. range (typically in field)
- Beam Angle : 10 - 12 degree at -3dB
- Loss of Echo: Programmable from 1 min. to 4 min.  
(Default = 1 min.) 22mA or 2 mA output
- Temp. Comp.: In transducer
- Calibration : Push-button or programmable  
via optional communications port
- Diagnostics :(Echo Profile) via communications port
- High Level Alarm 5A. Relay has hysteresis and delay of 5% of the tank height, this can be adjusted using Communications software. Relay’s state changes at 20mA calibration point or at 4 mA calibration point. To switch the above “push-button” or “communication software” can be used . Using push-button press and hold until the light goes off. Continuous green light indicates alarm at 20mA. ,blinking green indicates alarm at 4 mA. Relay “ON” set point is adjustable using communications software.

## MECHANICAL

### Std. Interconnection Cable :

- 5’- Belden #9503 : 3 Pair-24AWG
- 1) Supply : 12 - 30 Vdc 1 pair shielded (Red/Blk.)
- 2) Output : 4 - 20 mA 1 Pair shielded (Blk./Green)
- 3) Comm.:RS485 (optional) 1 Pair Shielded (Blk./Wht.)

### Optional Relay Cable :

- 5’- Belden #9493 : 3-18 AWG unshielded
- 1) Relay (optional) DPST 5A /230Vac

### Enclosure : PVC-94V0

Ingress Protection : NEMA 4X (IP65)

## ELECTRICAL SPECIFICATIONS

<b>Power DC</b> ABM300	12 to 30 VDC , 0.07 A max @ 24 Vdc R load = (Vs — 6) / 24 mA
<b>Output</b>	4-20 mA Output 6.1 uA resolution
<b>Optional</b>	- communications port RS485 - Relay DPST 5A / 230 Vac

## TECHNICAL SPECIFICATIONS

Range Code	Operating Range in Liquids	Resolution	Mounting NPT
148	0.33 - 6 ft. 0.10 - 1.8 m	0.03” 0.7 mm	1”

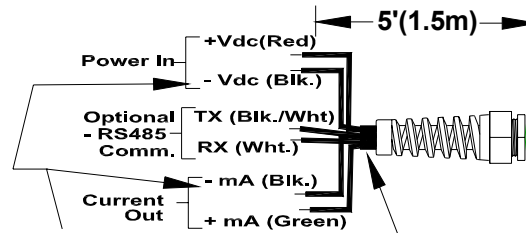
# "Mini Sonic" Ultrasonic Transmitters Interconnection Diagram



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## Interconnection Diag.

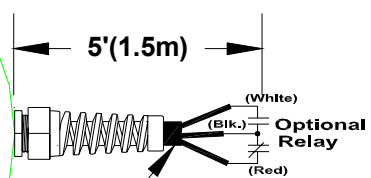
### Standard Cable



Note: -Vdc (blk.) and -mA (blk.) are internally connected

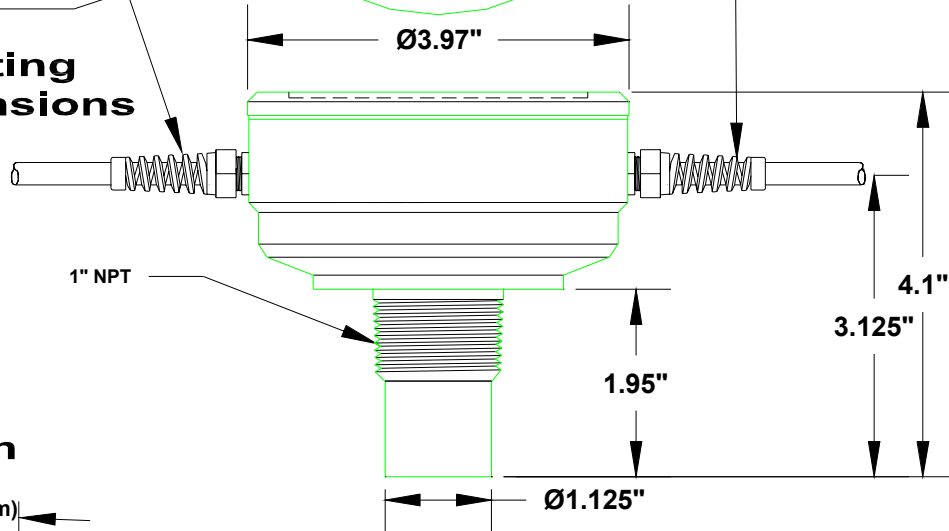
3 standard Belden #9503  
3 Pair #24 AWG  
Shielded

### Optional Cable

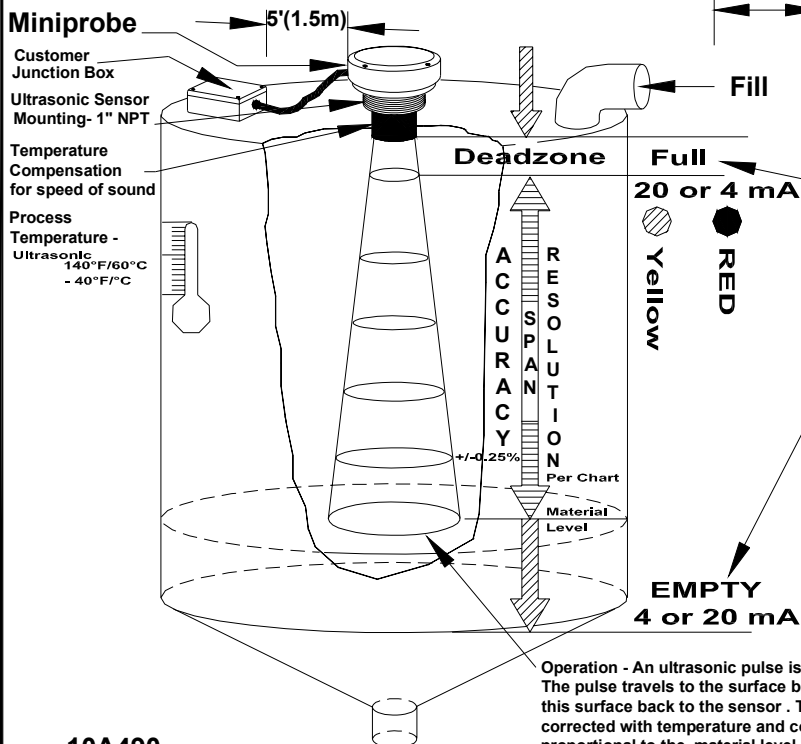


Optional Belden #9493  
3 - #18 AWG Unshielded

### Mounting Dimensions



### Installation & Calibration



#### Calibration - 4-20 or 20-4 mA Output

#### FULL - Calibration 20 mA or 4 mA (Set Near Target)

1. Calibration mode LED colour is Green.
2. Push button and hold until LED turns Yellow (20mA) or push button and hold until LED turns Red (4 mA).
3. Release button, observe LED flashes to acknowledge the calibration.

#### EMPTY - Calibrate 4mA or 20mA (Set Far Target)

1. Calibration mode LED colour is Green.
2. Push button and hold until LED turns Red (4mA) or push button and hold until LED turns Yellow (20ma).
3. Release button, observe LED flashes to acknowledge the calibration.

Operation - An ultrasonic 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, corrected with temperature and converted to an output signal directly proportional to the material level.

# Catalogue Numbering Structure

## - Ultrasonic Sensors



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### CATALOGUE NUMBER STRUCTURE

1) 2) 3) 4) 5) 6) 7)  
**ABMXXX - XXXYYCX - XXYYY - IP68 - XXXX**

- 1) Supply Voltage
- 2) Ultrasonic Frequency
- 3) Operating Mode
- 4) Communications
- 5) Body Material
- 6) Transducer Sensor Material
- Ingress Protection IP68 or leave blank for IP65
- 7) Swivel Aiming Mount / Flange Mounting

ABM Code Eg. **ABM400-148ULC0-PVS15**

- 1) Supply Voltage: AC 115V - 400 ABM 115volt 148KHz ultrasonic probe no communications
- AC 230V - 430 PVC body & Sanitary Nozzle 1.5" Tri clamp mounting
- DC 12-30V - 300
- Loop Powered DC 12-28V - 200

2) Frequency/Range:

Freq.	Ultrasonic Range	ABM Code
25KHz	1.4' - 90 ft.	025
	0.40 - 27.4 m	
45KHz	1.0' - 60 ft.	045
	0.30 - 18.2 m	
52KHz	0.9' - 50 ft.	052
	0.27 - 15.2 m	
70KHz	0.8' - 30 ft.	070
	0.24 - 9.1 m	
80KHz	0.7' - 20 ft.	080
	0.21 - 6.1 m	
81KHz	0.6' - 16 ft.	081
	0.18 - 4.9 m	
148KHz	0.4' - 9 ft.	148
	0.12 - 2.7 m	

Sanitary Mounting Option Available

ABM Code

- 3) Operating Mode : Ultrasonic Probe - UL
- Miniprobe UM - UM

ABM Code

- 4) Communications : RS485 - 4
- RS232 - 2
- None - 0

5) Body Material :

ABM Code

- Ultrasonic Standard PVC - PV
- Ultrasonic High Temperature CPVC - CP
- Optional Ultrasonic Aluminum - AL

ABM Code

- 6) Sensor Material Ultrasonic: Standard - Sensor PVC - PVC
- Optional - High Temp. Teflon - TEF
- Sanitary Mtg. Std. Temp. - 2" Tri clamp PVC - S20 For High Temp. / Pressure Sanitary Mtg. add - HTP
- 1.5" Tri clamp PVC - S15 For High Temp. / Pressure Sanitary Mtg. add - HTP

- Miniprobe Mounting Adaptor: Optional PVC 1" - 3/4" NPT - A34
- Optional PVC 1" - 1/2" NPT - A12

ABM Code

- Miniprobe Optional: Relay Ultrasonic - REL
- Ultrasonic Optional: Sensor High Temp. & Pressure - HTP

- 7) Swivel Aiming Mount : 8" O.D., 7.0" Bolt Circle - 6 @ 1/4" Dia. Holes C/W 3" Sensor Mtg. Hole - AIM3
- Flange Mount : 9" O.D., 7.5" Bolt Circle - 6 @ 3/4" Dia. Holes C/W 6" Sensor Mtg. Hole - FLA6
- 9" O.D., 7.5" Bolt Circle - 6 @ 3/4" Dia. Holes C/W 3" Sensor Mtg. Hole - FLA3

A) Relay Controller : ABM XXX XRCON - TST — 33 Point "Tank Strapping Table"

- 3 Three Relays
- 6 Six Relays
- AC/DC Power Code per #1 above.

- Loop Powered Display : LPD - XX - 02
- Code: Probe Mount - PM or Wall Mount - WM

B) For special custom orders please call directly Tel. (705) 740-2010