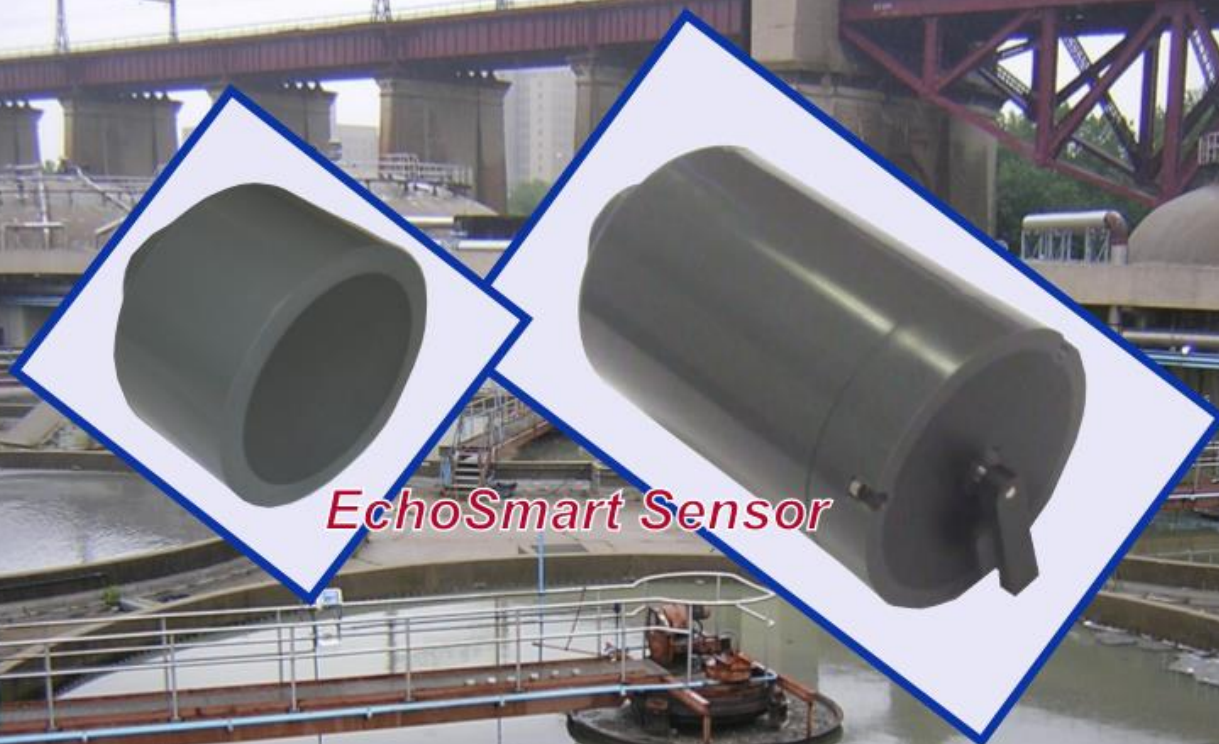




# ***EchoSmart***<sup>TM</sup>

## Interface Level Analyzers



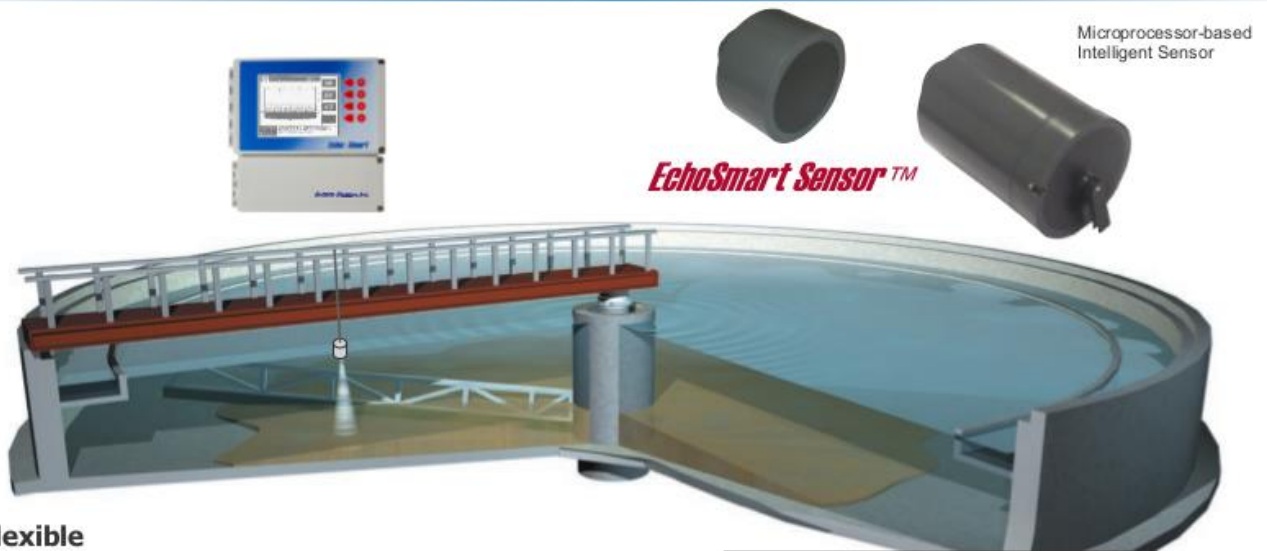
**Clarifiers  
Thickeners  
Liquid-Solid Separation  
Processes**

### Smart

EchoSmart Sensors generate and process the ultrasonic signal for real-time measurement and maximum flexibility. No "big ticket" auxiliary analyzers are required.

EchoSmart Sensors implement superior signal control and

tracking algorithms developed exclusively by Entech, independently field tested and confirmed by performance across the US and around the world.



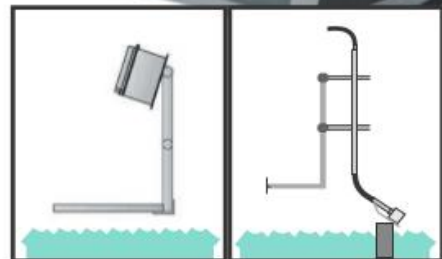
### Flexible

Complete Stand-Alone Instrument Options

- EchoSmart Sensor with full-function EchoSmart Controller
- EchoSmart Sensor with EchoSmart Power Supply Unit (remote programming by EchoSmart Console Program)

EchoSmart Networks (See Opposite Page)

- Field Interconnect up to 128 EchoSmart Sensors
- RS-485 Local Networks
- Integrated ZigBee Compliant RF Network



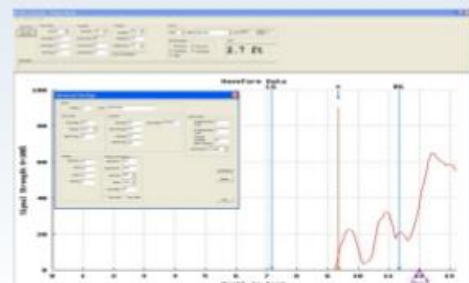
### Friendly

Easy to set-up, easy to operate and easy to secure consistent, reliable, trouble-free measurements - that's user-friendly, and that's EchoSmart!

- Large display with intuitive "Page Fill" screens for quick entry of parameters
- Soft Key operation with Help Prompts for all settings
- Automatic Initialization and Automatic Gain for easy quick start and uninterrupted operation

### EchoSmart Console Program™

The Console Program enables the operation and control of all networked sensors from a PC or laptop computer. With the EchoSmart Console Program, all programming, monitoring and control functions are available at the data acquisition and control console.





# EchoSmart™ Interface Level Analyzer

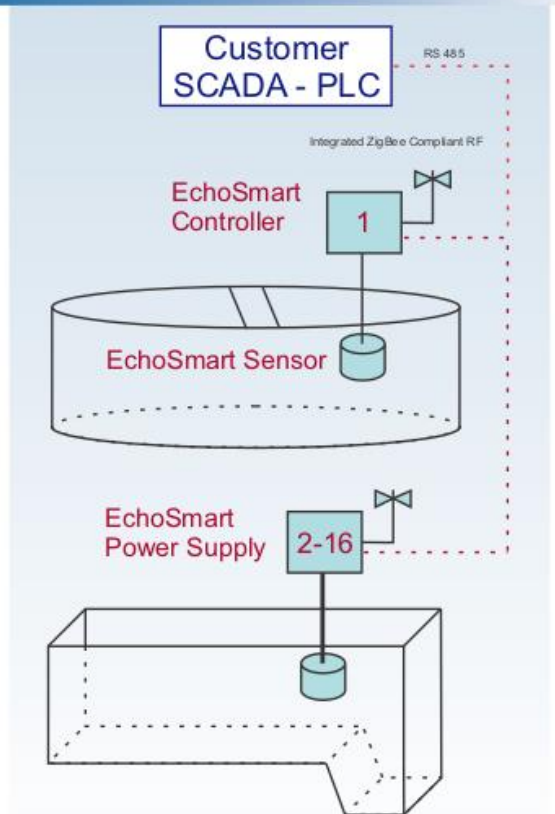
## EchoSmart Network™

An EchoSmart Network consists of 2-128 EchoSmart Sensors interconnected in a wired or wireless field network. Fully integrated ZigBee Compliant RF networking is the clear choice for plants that want to take advantage of tremendous cost savings in reduced cabling and piping costs.

### Features

Up to 16 EchoSmart Sensors can be networked with a single EchoSmart Controller for convenient operation and significant cost reduction.

ZigBee Compliant RF with self-healing mesh technology provides trouble-free communication while eliminating unnecessary piping and cabling costs. (Internal, fully integrated two-way radio with embedded internal antenna. Self-healing mesh technology eliminates most line of sight interference)



Sensor #1 2.8 ft Gain: 35	Sensor #2 1.2 ft Gain: 28	Change Display
Sensor #3 1.8 ft Gain: 25	Sensor #4 3.2 ft Gain: 32	

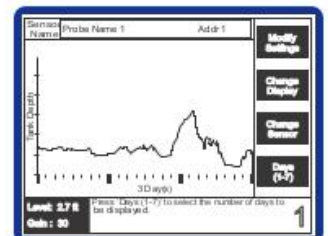
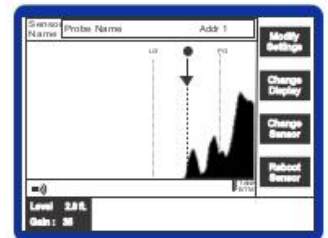
SETTINGS		Change Settings
Tank Configuration	Tasks	
Units	Feet Interface	30 ON
Tank Depth	3.0 Chumpening	ON
Zero Adjust	0.0 Setting Zone	ON
Min Range	3.0	ON
Acquisition	Generic Parameters	ON
Auto Gain	ON Tank Display	ON
Current Gain	35 Trend Display	ON
40 and 40	20 Display Contrast	50
Update Rate	10	ON

Use the arrow keys to select the parameter you wish to modify.  
Press "Change sensor" to select a different sensor.

### User Friendly Informational Screens



**EchoSmart Controller™**



# EchoSmart™ Specifications

## Smart Sensor

**Measuring Principle:**  
Underwater acoustic

**Frequency:** 657 kHz, Beam Angle 6°

**Range:** 0.3 meter to 10.0 meter

**Resolution:** 0.003 meter

**Accuracy:**  
+/- 0.25% of Measuring Range or 10 mm, whichever is greater

**Operating Temperature:**  
34 to 125°F (1 to 52°C)

**Power Requirement:**  
15VDC Standard: 3W - Wiper 6W

**Measurement Interval:** Adjustable

**Sensor Mounting:**  
Fixed location or flexible assembly

**Calibration:** Factory calibrated

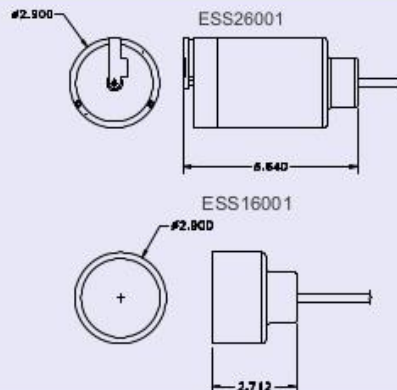
**Sound speed field** adjustable for temperature compensation

**Sensor Construction**  
IP68, ABS and epoxy  
Self-cleaning Wiper Sensor, silicon wiper (Optional)

**Dimensions**  
Standard Sensor: 2.44 x 2.95 in (6.2 x 7.5cm)  
Wiper Sensor: 5.75 x 2.95 in. (14.6 x 7.5 cm)

**Weight**  
Standard Sensor: 2.25 lb (1.02 kg)  
Wiper Sensor: 2.75 lb (1.25 kg)

**Certifications**  
CE



## Controller

**Ambient Conditions**  
Operation: -40° to +140°F (-40° to +60° C)

**Power Requirements**  
100 to 240 VAC, 50/60 Hz - 1A  
Power 65 W (fused)  
Optional: 24VDC

**Display**  
Graphical backlit monochrome screen  
Resolution: 320 x 240 pixels  
Viewing Area: 2.6 x 3.45 in (92 x 122 mm)

**Communications**  
RS-485 Serial -MODBUS RTU  
RS-232  
(2) 4-20mA Output (Screw terminal connector)  
(1) Level Measurement  
(1) Turbidity (Optional)

**Integral ZigBee Compliant RF Module** (Optional)  
Self-healing mesh network  
Embedded F Internal Antenna

**Approvals:** FCC Part 15.247, Industry Canada

**Relays (Optional)**  
Four relays: 10A @ 250 VAC; 10A @ 30VDC, user selectable for high/low fault alarm

**Memory Backup**  
All user settings are retained indefinitely in memory

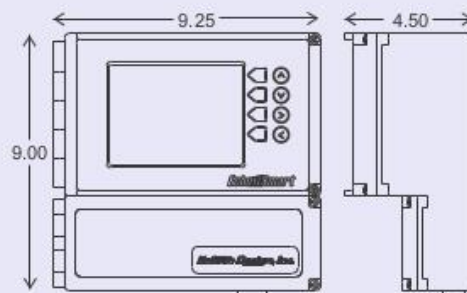
**Mounting Configurations**  
Surface and pipe mounting

**Enclosure**  
NEMA 4X, IP65; Polycarbonate

**Dimensions**  
9.25 x 9.0 x 4.5 in (235 x 229 x 115 mm)

**Weight**  
Approximately 3.0 lb (1.36 kg) depending on configuration

**Certifications**  
CE



## Power Supply Unit

**Ambient Conditions**  
Operation: -40° to +140°F (-40° to +60° C)

**Power Requirements**  
100 to 240 VAC, 50/60 Hz - 1A  
Power 20 W - 1.34A  
Optional: 24VDC

**Communications**  
RS-232 MODBUS RTU  
RS-485  
(2) 4-20mA Output  
(1) Level Measurement  
(1) Turbidity (Optional)

**Integral ZigBee Compliant RF Module** (Optional)  
Self-healing mesh network  
Embedded F Internal Antenna

**Approvals:** FCC Part 15.247, Industry Canada

**Mounting Configurations**  
Surface and pipe mounting

**Enclosure**  
NEMA 4X, IP65; Polycarbonate

**Dimensions**  
7.125 x 7.125 x 2.375 in (181 x 181 x 61 mm)

**Weight**  
Approximately 1.5 lb (0.68 kg) depending on configuration

**Certifications**  
CE

