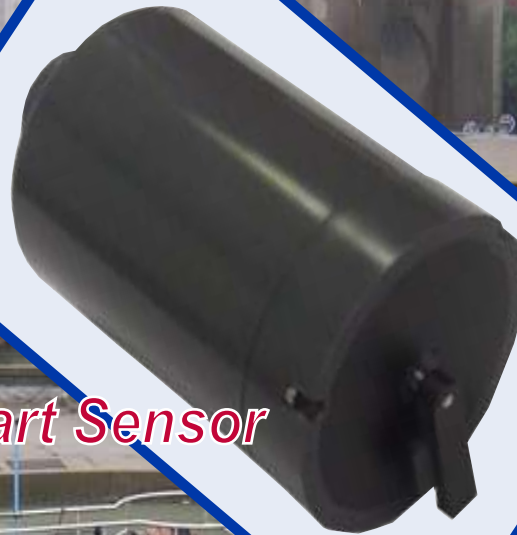
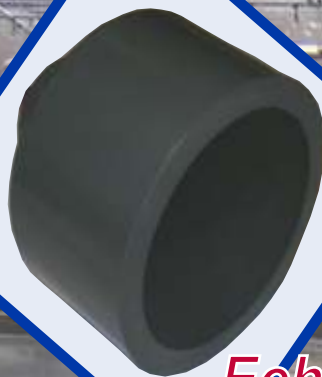


EchoSmartTM

Interface Level Analyzers



EchoSmart Sensor

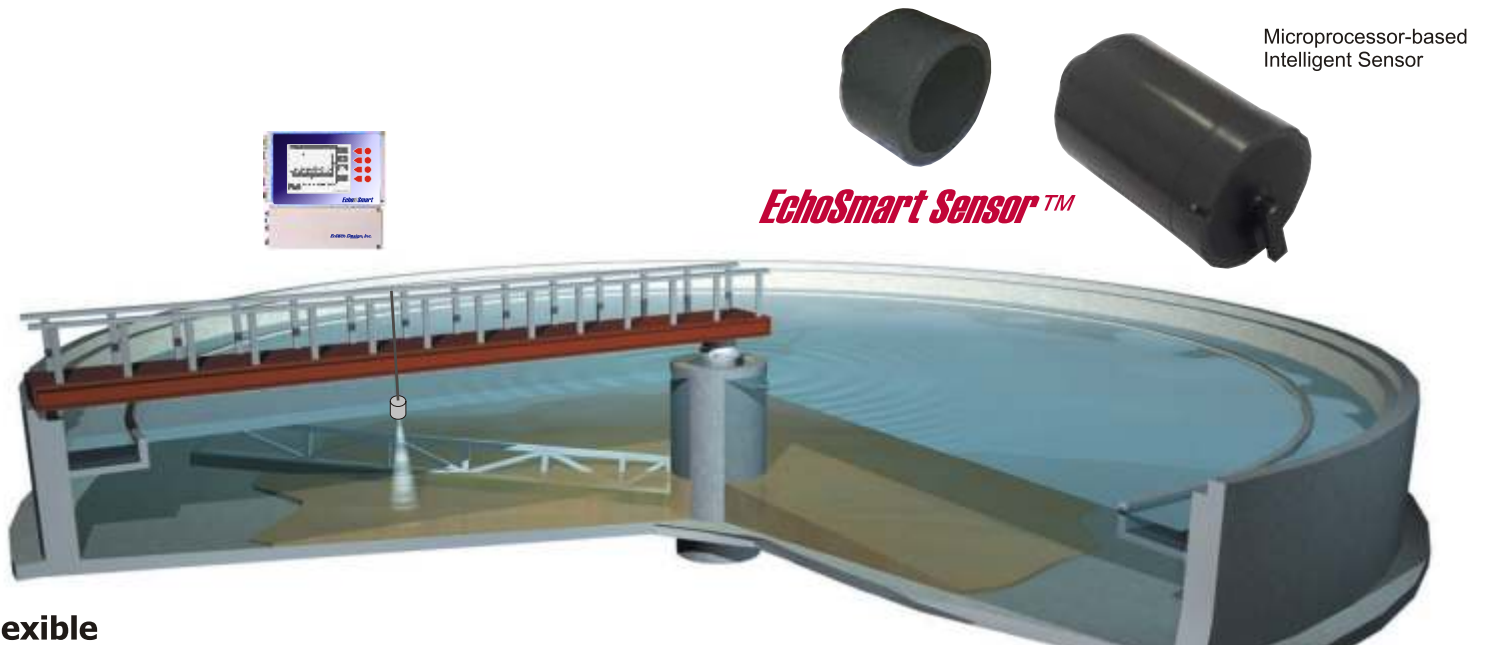
**Clarifiers
Thickeners
Liquid-Solid
Separation Processes**

www.sludgelevel.com

Smart

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

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



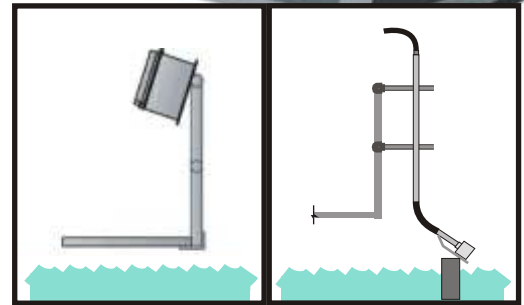
Flexible

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 or Ethernet Local Networks
- Integrated ZigBee Compliant RF Network



Friendly

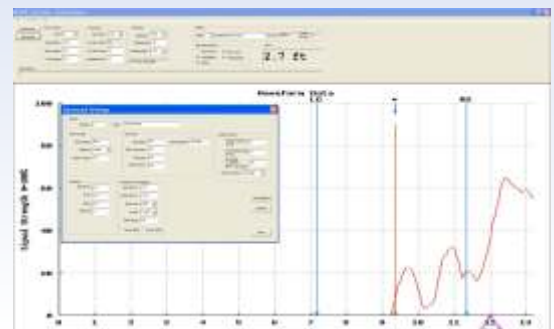
Easy to set-up, easy to operate and easy to secure consistent, reliable, trouble-free measurements - that's user-friendly, and that's EchoSmart!

- 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
- Easily accessible USB port for quick download of measurement trends to standard flash memory

Operate any EchoSmart Sensor with any Controller on the Network, so you don't have to run all over the plant to check measurements or verify the status of instruments.

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 Network™

An EchoSmart Network consists of 2-128 EchoSmart Sensors interconnected in a wired or wireless field network. RS-485 and Ethernet options are available for wired networks. However, 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

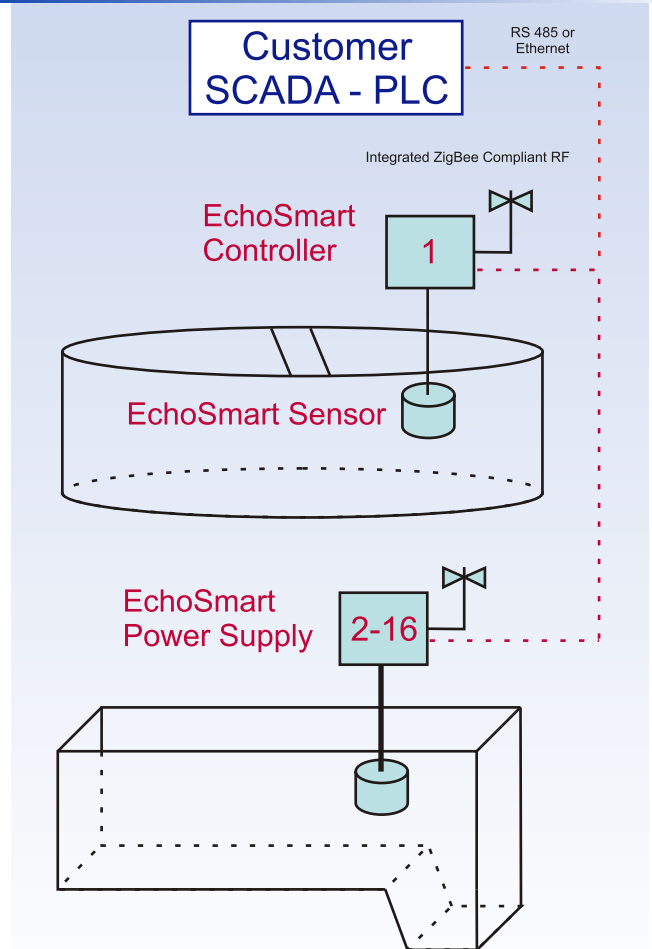
Up to 16 EchoSmart Sensors can be networked with a single EchoSmart Controller for convenient operation and significant cost reduction.

EchoSmart Networks allow plant personnel to take full control of all EchoSmart Sensors from any Controller.

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 line of sight interference)

No special programming is required to put an EchoSmart Network in operation. (Integrating the field network to the customer data acquisition and controls is via RS-485, Ethernet, or 4-20mA Analog, including HART Protocol)

EchoSmart Console Program allows complete operation of the network by the plant's data acquisition PC or a laptop computer.



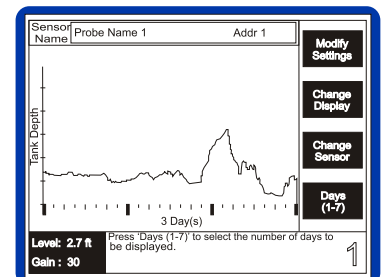
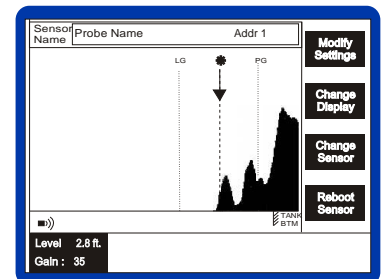
Sensor #1	Sensor #2	Change Display
2.8 ft	1.2 ft	
Gain: 35	Gain: 28	Change Display
Sensor #3	Sensor #4	
1.8 ft	3.2 ft	Change Display
Gain: 25	Gain: 32	

Sensor Name	SETTINGS		Change Sensor
	Tank Configuration	Tracking	
Units	Feet	Interface	30
Tank Depth	12.0	Dampening	ON
Zero Adjust	0.0	Settling Zone	3.0
Min Range	3.0		
Acoustics	Graphic Parameters		Back to Display
Auto Gain	ON	Tank Display	
Current Gain	35	Trend Display	ON
AG Set Point	20	Display Contrast	56
Update Rate	10		
Use the arrow keys to select the parameter you wish to modify.			
Level	2.8 ft.	Press 'Change Sensor' to select a different sensor.	
Gain	35		

User Friendly Informational Screens



EchoSmart Controller™



Smart Sensor

Measuring Principle

Underwater acoustic

Range

1.0 to 32 ft. (0.305 to 10.0 m)

Resolution

0.12 in. at 10.0 ft. (3.05 mm at 3.05 m)

Accuracy

0.1 ft at 10.0 ft. (0.35 m at 3.05 m)

Operating Temperature

34 to 125°F (1 to 52°C)

Power Requirement

15VDC, 20W

Measurement Interval

Adjustable

Sensor Mounting

Fixed location or flexible assembly

Calibration

Factory calibrated
Sound speed field adjustable

Sensor Construction

PVC 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 45 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 Port (Screw terminal connector)
RS-232 DTE Serial Port (Male DB9 connector)
Ethernet - RJ45 connector (Optional)
USB Port (Type A Host)
USB Service Port (Type B Device)

(2) 4-20mA Output (Screw terminal connector)
HART Communication (Optional)
(1) Level Measurement
(1) Turbidity (Optional)

Integral ZigBee Compliant RF Module (Optional)
Outdoor LOS Range: up to 3.0 miles
Self-healing mesh network
Embedded F Internal Antenna
Approvals: FCC Part 15.247, Industry Canada

Relays (Optional)

Four relays: 10A @ 250 VAC; 10A @ 30VDC

Network Communication

RS-485, Ethernet, or Integral ZigBee Compliant
RF (Optional), Network up to 128 sensors in a
local area network

Memory Backup

All user settings are retained indefinitely in
memory (non-volatile, EEPROM)

Mounting Configurations

Surface and pipe mounting

Enclosure

NEMA 4X, IP65; Polycarbonate ABS enclosure

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 - 0.5A
Optional: 24VDC

Communications

RS-232 DCE Serial Port (Male DB9 connector)
RS-485 Serial Port (Screw terminal connector)
(2) 4-20mA Output (Screw terminal connector)
(1) Level Measurement
(1) Turbidity (Optional)

Integral ZigBee Compliant RF Module (Optional)
Outdoor LOS Range: up to 3.0 miles
Self-healing mesh network
Embedded F Internal Antenna
Approvals: FCC Part 15.247, Industry Canada

Network Communication

RS-485 or Integral ZigBee Compliant RF
(Optional)

Mounting Configurations

Surface and pipe mounting

Enclosure

NEMA 4X, IP65; Polycarbonate ABS

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

Represented by:

Entech Design, Inc.
315 S. Locust St.
Denton, TX 76201
(940) 898-1173

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