

# Effective Sludge Level Detection and Control Through BinMinder 9300™

*Superior signal processing & control features provide maximum performance in Water and Wastewater Treatment applications*

## Clarifier and Thickener Applications

### Successfully Operated In:

- Primary & Secondary Clarifiers
- Round & Rectangular Tanks
- Stationary & Traveling Bridge
- Gravity Thickeners
- Reactor Clarifiers
- DAF Thickeners



### Features:

- 32 bit DSP Microprocessor
- Low cost single & multiple tank configurations
- No moving parts, no maintenance required
- Ease of set-up and operation
- Configure up to four transducers with 4-20mA outputs and four status relays with a single processor
- RS232/485 output to interface with user DCS
- Operator control of critical signal parameters for maximum performance
- Locate transducer(s) up to 1500 ft. from processor
- Multi-flex assembly accommodates passing surface skimmer

**Entech Design, Inc.**

...visit our website at <http://www.sludgelevel.com>

## Convenient Multi-Function Displays

Digital Display provides current tank blanket level



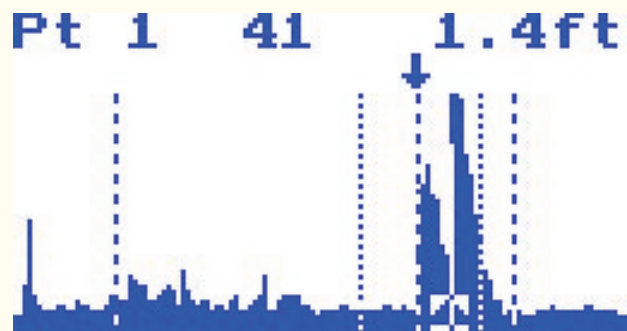
Monitor up to four blanket levels from a single Overview Display



## Unique Tank Profile For Extensive Status Reporting

Includes . . .

- Complete Tank Signal Profile
- Current Blanket Level
- Primary & Secondary Tracking Positions
- Tank Depth Indicator
- Current Adaptive Gain Level
- Multiple System Status Symbols



. . . all on a Single Display!

## Automatic Initialization Simplifies Start-Up

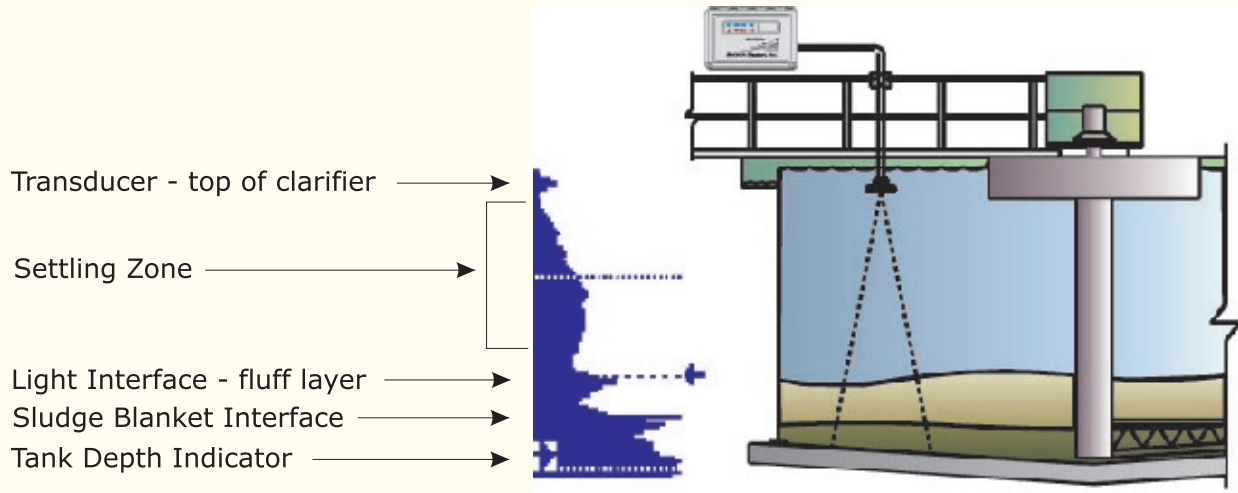
Operator enters valid Tank Depth and Zero Adjust and BinMinder automatically sets the correct system Gain and tracks to the blanket. System outputs are held until the initialization routine is complete and the blanket level has been located.

## Full Complement of System Outputs

- Back-lit LCD and control pad on processor provide easy access to simple, intuitive menu control system and extensive informational displays.
- Independent 4-20mA output isolated to each sensor.
- Four independently assignable Relays with Set Point, Dead-band and Timer function.
- RS 232 and RS 485 Serial Port for single and multiple unit signal to user control system.

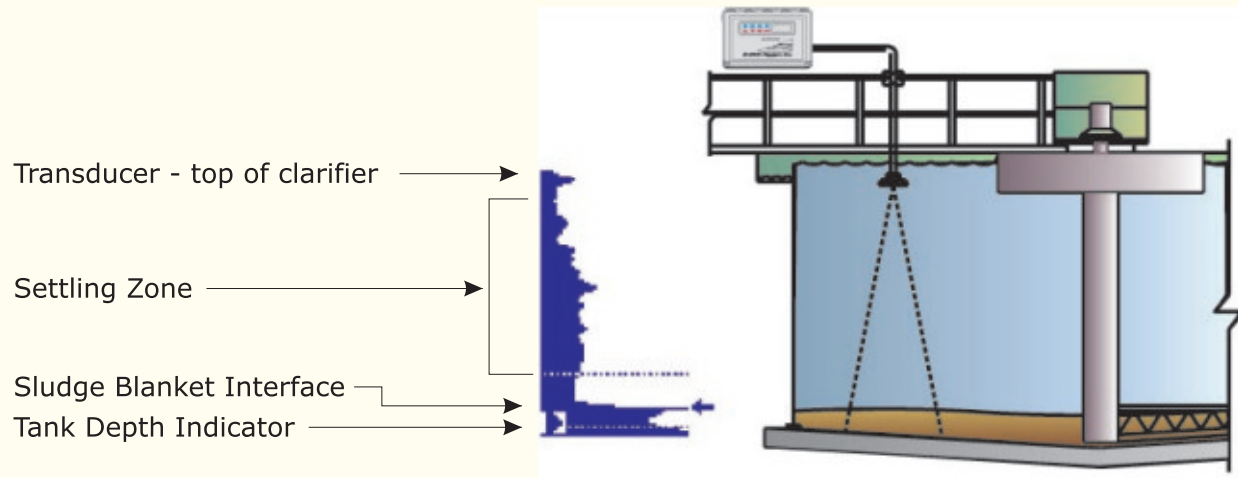
# Primary Clarifier Signal Profile

(Signal graphic is actual recorded signal data from an installed unit)



# Secondary Clarifier Signal Profile

(Signal graphic is actual recorded signal data from an installed unit)



## Additional Features

- Application specific operating frequencies
- Hazardous area, extreme temperature & chemical resistant transducers available

## Municipal Applications

- Primary & Secondary Clarifiers
- Gravity Thickeners
- Dissolved Air Flotation Thickeners
- Reactor / Alum Clarifiers
- Liquid level in storage vessels

... and much, much more!

# BinMinder 9300 Specifications

## Measurement Type:

- Single beam, underwater acoustic sensor

## Measurement Range:

- Minimum range: 1 ft. (0.3m)
- Maximum range: 328 ft. (100m)
- Range accuracy: 0.1 ft. (0.03m)

## Distance of Transducer to Processor:

- 1500 ft. maximum

## Outputs:

- 4-20 mA Current Loop Outputs:
  - Internally powered
  - Transient protection: Protected against transients exceeding 31.4V
  - Isolation: Galvanic isolation up to 1500V AC
  - Reverse polarity protection
- Serial Ports:
  - RS232 Interface for single unit operation
  - RS485 Interface for multiple units connected to the multidrop RS485
  - Transient Protection: Protected against transients exceeding 31.4V
  - Isolation (Optional): Galvanic isolation to withstand 1600 Vrms for 1 minute, or 2000 Vrms for 1 second
- Relays:
  - Four relays, independently assignable sensors
  - Relays are UL, CSA and VDE approved (VDE 0435, VDE 0631, VDE 0700)
  - Relay ratings are:
    - Nominal switching capacity
    - 10A @ 250V AC
    - 10A @ 30V DC

## Beamwidth:

- 6 degree full beam, 3 degree half beam

## Power Requirements:

- AC power requirements are 110/220 VAC, 100 Watts
- AC line voltage transient protection
- Protected against transients that exceed 275V
- Power line noise and interference is filtered by an in line EMI filter, filter has CSA, UL and VDE approvals

## Temperature Range:

- Processor: -40°F to +140°F  
-40°C to + 60°C
- Standard Transducer: -40°F to +120°F  
-40°C to + 50°C
- Hi-Temp Transducer:  
Transducers for operation at temperatures to 250°F (121°C) are available.

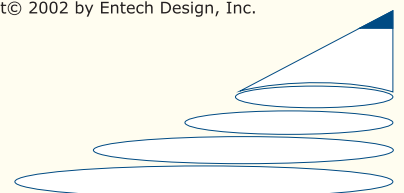
## Mechanical:

- Processor:
  - Housing, molded fiberglass polyester
  - NEMA type 4X
  - Weight - 8 lbs.
  - Size (nominal) - 10" x 8" x 6"
- Standard Transducer:
  - Housing - PVC
  - Encapsulating Material - epoxy
  - Weight - 1 lb.
- Auto Clean Transducers:
  - Optional Water Spray & Wiper Transducers
- Chemical Resistant Transducer:
  - Transducers manufactured of engineered chemical resistant materials are available.
- CE approved systems manufactured to EMC Directives: EN50081-2:1996, EN50082-2:1992 and Low Voltage Directive: EN61010.1 (Pub. IEC 61010-1:1990 with Amendments 1 & 2, and EU Group Differences) are available.
- Transducers manufactured to hazardous area Standard VDE0113u.0100 are available.

## Corporate Headquarters:

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