**DESCRIPTION**

Echotel® Model 335 is a high performance, non-contact ultrasonic transmitter for liquid level, volume, and open channel flow measurement. The extremely powerful and flexible software incorporated in the Echotel 335 results in virtually unsurpassed measurement performance. Advanced digital signal processing enables the 335 to perform in applications involving in-tank obstructions, light foam and agitation.

**FEATURES**

- Custom graphics LCD display module with operational status icons.
- Advanced digital signal processing assures reliable measurement in difficult applications
- Dual function bar graph displays echo signal strength or tank level
- 50 kHz transducer with 26 ft (8 meter) range
- Narrow, 7-degree beam angle for excellent focus
- 4–20 mA output and SPDT relay for level control, alarm, diagnostics or remote flow totalization
- Fixed target suppression to eliminate interference from in-tank obstructions
- Common tank shapes and 32-point linearization table for volume calculations
- Extensive support of flume and weir calculations for open channel flow
- Two totalizers for flow, one resettable, and one non-resettable
- Temperature compensation over full range of transducer

**APPLICATIONS**

- Sump, well, tank and open channel measurement
- Water and wastewater treatment facilities
- General industrial applications
- Chemical storage tanks
- Vessels with highly viscous media
- Paint, ink and solvent tanks
- Food and beverage vessels
- Batch and day tanks
Non-contact ultrasonic level technology is a proven method for accurate liquid level measurement. This technology features the ability to measure the level or volume of the fluid without making physical contact with the material. This is especially important in applications containing corrosive materials, suspended solids or coating media.

The level measurement is made by emitting an ultrasonic pulse from the transducer and measuring the time required for the echo to reflect from the liquid surface and return to the transducer. The powerful electronics measure the time of the round trip pulse and, by knowing the speed of sound, calculates the distance. Since speed of sound is temperature dependent, the transducer also measures the temperature in the vessel to provide compensation for changing temperature.

By inputting the type and geometry of the vessel, the intelligent electronics can calculate the liquid volume in the vessel. In a similar operation, the Model 335 can perform open channel flow measurement by converting the level reading into units of volume per time. Common tank shapes, flumes, and weirs are stored in the 335 software. A 32-point linearization table is also available for unusual tanks or primary flow elements.
### TRANSMITTER

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>85 to 255 VAC (2 VA) for 335-AA1A-G5P</td>
</tr>
<tr>
<td>Output signal</td>
<td>4–20 mA isolated, 600 Ω load</td>
</tr>
<tr>
<td>Fault detection</td>
<td>Configurable 3-amp SPDT relay, and 3.6 or 22 mA (NAMUR NE 43)</td>
</tr>
<tr>
<td>Relays</td>
<td>One 3-amp SPDT, 250 VAC, and one 1-amp SPDT, 30 VDC</td>
</tr>
<tr>
<td>Failsafe</td>
<td>Software selectable</td>
</tr>
</tbody>
</table>

### USER INTERFACE:

- **Keypad**: 4-button menu-driven data entry
- **Display**: Removable 6-digit LCD module with dual-function bar graph
- **LED status indication**: Echo strength

### AMBIENT TEMPERATURE

-22 to +160 °F (-30 to +70 °C)

### ENCLOSURE

Cast aluminum (IP 67)

### CABLE ENTRY

Two – ½” NPT and two M20 x 1.5 entries

### TRANSDUCER

- **Maximum range**: 26 feet (8 meters)
- **Dead zone**: 14 inches (350 mm)
- **Frequency**: 50 kHz
- **Process connection**: 2-inch NPT (flanges optionally available)
- **Process temperature**: -22 to +195 °F (-30 to +90 °C)
- **Process pressure**: Atmospheric to 44 psi (3 bar)
- **Ultrasonic beam angle**: 7 degrees conical
- **Temperature compensation**: Automatic over the operating temperature range of the transducer
- **Material**: Polypropylene (IP 68)

### PERFORMANCE

- **Accuracy**: ± 0.2% of the measured distance, plus 0.05% of the range
- **Resolution**: 1 mm for up to 6.5 feet (2 meters), 2 mm for 6.5 to 16.4 feet (2 to 5 meters), 5 mm for 16.4 to 26 feet (5 to 8 meters)

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**MODEL NUMBER**

**BASIC MODEL NUMBER**

- **335**: Integrady mounted transmitter with 50 kHz transducer

**ELECTRONICS HOUSING / INPUT POWER**

- **AA1A**: Cast aluminum housing, 85 to 255 VAC

**TRANSUCER**

- **G5P**: 2” NPT polypropylene transducer
The quality assurance system in place at Magnetrol guarantees the highest level of quality throughout the company. Magnetrol is committed to providing full customer satisfaction both in quality products and quality service.

The Magnetrol quality assurance system is registered to ISO 9001 affirming its commitment to known international quality standards providing the strongest assurance of product/service quality available.

WARRANTY

All Magnetrol electronic level and flow controls are warranted free of defects in materials or workmanship for eighteen months from the date of original factory shipment.

If returned within the warranty period; and, upon factory inspection of the control, the cause of the claim is determined to be covered under the warranty; then, Magnetrol will repair or replace the control at no cost to the purchaser (or owner) other than transportation.

Magnetrol shall not be liable for misapplication, labor claims, direct or consequential damage or expense arising from the installation or use of equipment. There are no other warranties expressed or implied, except special written warranties covering some Magnetrol products.