



PRODUCT LINE
QUICK REFERENCE

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GUIDED WAVE RADAR

RADAR



Eclipse®

Model 700 GWR Transmitter

Description:
24 VDC loop powered transmitter with proactive diagnostics and superior signal strength. Not affected by foam, turbulence, and varying media conditions.

Measurement Principle:
Guided Wave Radar Time Domain Reflectometry (TDR)

Applications:
Liquids and slurries, hydrocarbon to water-based media. Process and storage vessels to +200 °C (+400 °F).

- Features:**
- No calibration necessary
 - General Purpose, Intrinsically Safe and Non-Incendive approvals
 - Increased signal strength
 - Superior Signal-to-Noise Ratio
 - Proactive Diagnostics
 - Full vacuum to 430 bar (6250 psi); -196 to +200 °C (-320 to +400 °F)
 - SIL 2/3 Certified with SFF = 93% (FMEDA available on request)

Options:
Graphic LCD allows the viewing of waveforms; HART® digital communications

Eclipse®

Model 706 GWR Transmitter

Description:
An advanced 24 VDC loop powered transmitter with proactive diagnostics and superior signal strength. Not affected by foam, turbulence, and varying media conditions.

Measurement Principle:
Guided Wave Radar Time Domain Reflectometry (TDR)

Applications:
Ideal for difficult, low dielectric, high temperature process applications, high pressure steam, or simple storage applications.

- Features:**
- No calibration necessary
 - General Purpose, Intrinsically Safe, Explosion Proof and Non-Incendive approvals
 - Increased signal strength
 - Superior Signal-to-Noise Ratio
 - Proactive Diagnostics
 - Broad offering of Overfillcapable probes
 - Full vacuum to 6250 psi (430 bar); -320 to +850 °F (-196 to +450 °C)
 - SIL 2/3 Certified with SFF = 93% (FMEDA available upon request)

Options:
Graphic LCD allows the viewing of waveforms; HART®, Foundation fieldbus™, Profibus PA and Modbus digital communications; broad probe offering with numerous process connections

Pulsar®

Model R86 Radar Transmitter

Description:
An advanced loop-powered 4–20 mA level transmitter with proactive diagnostics provides accurate measurement even in shifting dielectric and varying media.

Measurement Principle:
Pulse Burst Radar

Applications:
Liquids and slurries, hydrocarbons to water-based media, high temperature/high pressure process or storage vessels

- Features:**
- 26 GHz frequency offers smaller beam angle and improved resolution
 - Full vacuum to 2320 psi (160 bar); -100 to +750 °F (-70 to +400 °C)
 - Quick connect/disconnect antenna coupling allows vessel to remain sealed
 - Wide range of HTHP antennas, with extensions
 - Coated Isolation antennas for corrosive applications
 - Intuitive false target setup
 - Unique Commissioning and Optimization Wizards
 - Proactive Diagnostics

Options:
Graphic LCD; HART®, Foundation fieldbus™ and Profibus PA digital communications; Wide variety of horn antenna configurations, all-plastic antenna, antenna extensions

Pulsar®

Model R96 Radar Transmitter

Description:
An advanced loop-powered 4–20 mA level transmitter with proactive diagnostics provides accurate measurement even in shifting dielectric and varying media.

Measurement Principle:
Pulse Burst Radar

Applications:
Liquids and slurries, hydrocarbons to water-based media, process or storage vessels

- Features:**
- 6 GHz frequency
 - 24 VDC, loop-powered
 - 4–20 mA with HART®
 - 130' (40 m) measurement range
 - Full vacuum to 750 psi (52 bar); -40 to +400 °F (-40 to +200 °C)
 - Quick connect/disconnect antenna coupling allows vessel to remain sealed
 - Intuitive false target setup
 - General purpose, Intrinsically Safe, Explosion Proof, Intrinsically Safe, Explosion Proof and Non-Incendive approvals
 - Proactive diagnostics

Options:
Graphic LCD allows the viewing of waveforms; HART® and Foundation fieldbus™ digital communications; horn or dielectric rod antenna configuration, all-plastic antenna, antenna extensions

Pulsar®

Model R80 - FMCW Radar Transmitter

Description:
The latest generation of Magnetrol® 24 VDC, loop-powered, non-contact radar transmitters, utilizing Frequency Modulated Continuous Wave (FMCW) radar technology.

Measurement Principle:
Pulse Burst Radar

Applications:
Liquids and slurries, Containment & drainage sumps, Deionization tanks, Process & field storage tanks, Mixing & blending systems

- Features:**
- Multivariable two-wire, 24 VDC loop-powered transmitter for level, volume, or flow
 - Performance not process dependent
 - 80 GHz operating frequency offers superior performance, smaller antennas, better accuracy and enhanced resolution
 - Antenna designs up to 200°C (+400 °F), -1 to 70 bar (-14.5 to 1000 psi)
 - 4-button keypad and graphic LCD
 - Proactive diagnostics

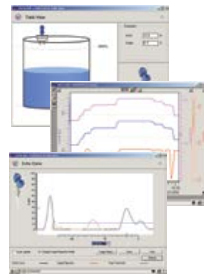
Options:
SIL 2 suitable (92.3% SFF, with full FMEDA report available) PACTware PC Program and enhanced DTMs for advanced configuration and troubleshooting Available with HART® digital output

Click on red product description to view full specifications and datasheet online

RADAR

SOFTWARE

THERMAL DISPERSION



Genesis®

Multiphase Level Detector

Description:
Magnetrol's Genesis Multiphase Detector is a Time Domain Reflectometry (TDR)-based, 24 VDC level detector designed to accurately define and quantify the various layers in multiple interface level measurement applications.

Measurement Principle:
Patented "Top-Down" and "Bottom-Up" Signal Generation Time Domain Reflectometry

Applications:
Desalters / Electrostatic Coalescers / Separators Interface measurement applications including process conditions exhibiting thick/dynamic emulsion layers

Features:

- 24VDC input with four 4-20mA outputs (including HART)
- Changing media has no effect on level measurement
- 4-button keypad and graphic LCD display
- Proactive diagnostics for scheduling maintenance
- Probe designs up to +400F / 1000psi (+200C / 70 bar)
- Electronics can be remote mounted up to 100 feet (30 meters) away

Options:
Remote Electronics
Flushing Connection
Two Probe Styles Available: Enlarged Coaxial for most clean applications and a 5-Conductor Pentarod with an open design for reduced susceptibility to build-up and bridging.

Radar

Model R82 Radar Transmitter

Description:
An economical loop-powered 4–20 mA level transmitter in a compact single compartment housing.

Measurement Principle:
Pulse Burst Radar

Applications:
Liquids and slurries, hydrocarbons to water-based media, process or storage vessels

Features:

- 26 GHz frequency
- 24 VDC, loop-powered
- 4–20 mA with HART®
- 40' (12 m) measurement range
- Full vacuum to 200 psi (14 bar); -40 to +200 °F (-40 to +95 °C)
- Configure with 2-line x 16-character display, 4-push-button keypad
- Adjustable beam pattern without removing the transmitter from vessel
- General Purpose and Intrinsically Safe

Options:
Cast aluminum or Lexan enclosure, 2" or 8" (50 or 200 cm) antenna extension, polypropylene or Tefzel® antenna material

PACTware™

Process Automation PC Software

Description:
PACTware™ (Process Automation Configuration Tool) is a device-independent software program that communicates with all approved DTMs (Device Type Managers).

Measurement Principle:
N/A (Software)

Applications:
Use with device specific software drivers – DTMs

Features:

- Device diagnosis, configuration, and troubleshooting
- Online/offline parameterization
- Multiple languages supported, including English, Spanish, Chinese, Portuguese, German, French and Russian

Options:
HART® or Foundation fieldbus™ interface

Thermatel®

Models TD1/TD2 Flow/Level Switch

Description:
Reliable flow/ level/interface switch detects changes in heat transfer due to changes in media or flow rate.

Measurement Principle:
Thermal dispersion

Applications:
Flow switch for liquids and gases. Popular for pump protection to detect low flow rates. Also used for level/interface detection

Features:

- Continuous diagnostics with fault detection
- Temperature compensation
- mA output signal on TD2 permits flow monitoring and diagnostics
- Temperatures to +850 °F (+450 °C), pressure to 6000 psi (410 bar)
- Adjustable set point and time delay

Options:
Relay type, input voltage, integral or remote mounting, window to view LEDs, probe types and probe process connections

Thermatel®

Model TA2 Mass Flow Transmitter

Description:
An easy-to-use, economical, continuous gas flow meter to manage energy costs or meet environmental regulations.

Measurement Principle:
Thermal mass/dispersion

Applications:
Combustion air, compressed air, natural gas, flare gas, aeration lines, digester/biogas/LFG, low flow/low pressure

Features:

- Direct mass flow measurement
- Calibration verification in the field prevents sending unit back to the factory
- Strong signal at low flows and low pressures
- High turndown ratio
- Rotatable head and display for ease of viewing and proper installation

Options:
2-line x 16-character display, HART® and Foundation fieldbus™ digital communications, probe length, process connection, Hot Tap, temperature output and pulse output, remote electronics

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ULTRASONIC

BUOYANCY



Echotel®

Model 910 Level Switch

Description:
Integral mount, low cost ultrasonic level switch with worldwide safety approvals.

Measurement Principle:
Ultrasonic

Applications:
Clean liquids, wastewater, hydrocarbons, foods and pharmaceuticals, solvents, seal pot level

- Features:**
- Tip sensitive gap style
 - Integral mount unit with dual conduit hubs
 - Field selectable high or low level fail-safe
 - 8-amp DPDT gold flash or 5-amp DPDT hermetically sealed relay
 - Vertical or horizontal mount
 - No calibration required
 - Two-year warranty

Options:
Housings, process connections, input power, relay type, and actuation length

Echotel®

Models 961/962 Level Switches

Description:
Universally applied liquid level switch with advanced self-test capabilities, time delay and pulsed signal technology for superior performance in difficult applications.

Measurement Principle:
Ultrasonic

Applications:
Water-based liquids, hydrocarbons, chemicals, low/high level detection, overflow protection, seal pot level

- Features:**
- Suitable for use in Safety Integrity Level (SIL) 2 loops
 - Adjustable time delay for turbulent aerated liquids
 - Tip-sensitive transducer
 - Advanced self-test technology with malfunction alarm output
 - Integral or remote mount electronics
 - Pulsed signal technology
 - Available for single (961) or dual point (962) liquid level detection.
 - Plastic probes available

Options:
Housing materials, input power, output signal, integral or remote mounting and actuation length

Echotel®

Model 355 Transmitter

Description:
Loop-powered, integral mount, ultrasonic transmitter for level, volume, or open channel flow.

Measurement Principle:
Non-Contact 60 kHz ultrasonic

Applications:
Open channel flow, simpler level measurement with less vapors, foam and agitation

- Features:**
- Two-wire, loop-powered
 - 4–20 mA with HART®
 - PACTware PC program
 - 20' (6 m) measurement range
 - Temperature compensated echo rejection profile
 - Dynamic baseline noise compensation
 - Open channel flow equations
 - Resettable and non-resettable flow totalizers

Options:
Cast aluminum or Lexan enclosure, polypropylene or Kynar® Flex transducer

Float Type

Top Mount Level Switch

Description:
A simple and reliable float switch designed for top mounting on virtually any process or storage vessel.

Measurement Principle:
Buoyancy

Applications:
Virtually any tank or vessel; condensate receivers, cooling towers, interface detection

- Features:**
- Single or tandem float configurations
 - Rugged reliability
 - Wide selection of switches
 - Actuating depths of up to 48" (1219 mm)
 - Simple operation
 - Maintenance-free
 - Variety of process connections

Options:
Single or tandem units, tank connection type and float size, NACE construction, electric or pneumatic switch mechanisms, guide cages

External Cage

Float Type Level Switch

Description:
A highly reliable level switch in an external cage and designed to be mounted outside the process vessel.

Measurement Principle:
Buoyancy

Applications:
Clean liquids or interface in scrubbers, feedwater heater, flair pots, day tanks, accumulators, knockout drums, etc.

- Features:**
- Sealed or flanged float cages
 - Pressures to 3700 psi (255 bar) and temperatures over +1000 °F (+540 °C)
 - Single or multiple actuation levels
 - Carbon steel or stainless steel cage materials
 - Floats for SGs as low as 0.32

Options:
Electric or pneumatic switches, ASME B31.1, B31.3 or NACE construction, exotic materials of construction, wide variety of process connections

Click on red product description to view full specifications and datasheet online

BUOYANCY

VISUAL INDICATION



Tuffy®
Float Type
Level Switch

Description:
A compact, highly reliable level switch designed for horizontal mounting into a process vessel or an external cage.

Measurement Principle:
Buoyancy

Applications:
Clean liquids or interface in virtually any tank or vessel, including storage tanks and process vessels

- Features:**
- Available in narrow and wide adjustable differential models
 - Float and trim parts in 316 SS or Hastelloy C
 - Pressures to 2630 psi (181 bar) and temperatures to +750 °F (+400 °C)
 - Explosion proof enclosure with variety of agency approvals
 - Ease of wiring in enlarged switch housing

Options:
Pneumatic switch model, ASME B31.3 or NACE construction, wide variety of process connections, cast iron and aluminum switch housings

Modulevel®
Model E4 Liquid Level Displacer Transmitter

Description:
State-of-the-art 24 VDC, loop-powered, displacer liquid level transmitter with advanced diagnostic.

Measurement Principle:
Buoyancy / liquid level change acting on spring-supported displacer.

Applications:
Catalysis vessels, distillation columns, distillation towers, heat recovery steam generator HRSG-power, utilities, reboiler, reflux drum, scrubber vessels, flare knock-out drum, natural gas separators, NGL recovery storage

- Features:**
- Safety Integrity Level (SIL) 2 with FMEDA available
 - A graphical DTM with increased diagnostics
 - No calibration required; configuration only
 - Available with 4–20 mA and HART® 7 with PACTware™ PC software and the Field Device Tool (FDT); AMS ready
 - NAMUR NE 107 diagnostic coverage
 - Full range of hazardous location approvals with international certifications
 - Order entire Modulevel or retrofit the latest transmitter onto existing displacer assemblies

Options:
Pneumatic models, ASME B31.1, B31.3 or NACE construction PACTware for enhanced configuration and trending capabilities

Top Mount
Displacer Type Level
Switch

Description:
Highly reliable one-, two- or three-stage level switches offering wide and narrow level differentials.

Measurement Principle:
Buoyancy

Applications:
Foaming, surging or agitated liquids, dirty or clean liquids, heavy oils or slurries in sumps, storage tanks or process vessels, overflow prevention

- Features:**
- Field-adjustable levels and differential
 - Variety of displacer, cable and wetted parts materials
 - Ease of installation
 - Variety of narrow and wide level differential combinations
 - Suitable for use in liquids with SG from 0.40 to 2.40

Options:
Proof-er® ground-checker, floating rooftop/liquid dual detection, extended displacer cable, customer specific levels and differential arrangements, pneumatic or electric switches

Atlas™
Magnetic Level
Indicator

Description:
The standard, high-performance magnetic level indicator suitable for a wide range of process conditions.

Measurement Principle:
Buoyancy, magnetic coupling

Applications:
Feedwater heaters, boilers, oil-water separators, flash drums, surge tanks, gas chillers

- Features:**
- Broad range of chamber configurations
 - Fabricated non-magnetic chambers
 - ASME and EN flanges
 - Precision manufactured float
 - Flag or shuttle type indicator
 - Reveal™ wide view indicator

Options:
Custom span, process connections, scale units of measure, high temperature and cryogenic insulation, clamp-on reed, micro and pneumatic switches

Aurora®
Magnetic Level
Indicator

Description:
Unique combination of magnetic level indication with guided wave radar results in a truly redundant level control instrument.

Measurement Principle:
Buoyancy, magnetic coupling and micropower impulse radar

Applications:
Feedwater heaters, vacuum tower bottoms, alkylation units, oil-water separators, deaerators, boiler drums

- Features:**
- True redundancy through use of two independent technologies
 - Reveal™ wide view indicator
 - Built to ASME B31.1, B31.3, PED, ASME U, UM, S Stamp, NACE construction available
 - All metallic pressure boundary materials
 - Pressures to 4500 psi (310 bar)
 - SGs as low as 0.25
 - Temperatures to +800 °F (+425 °C)

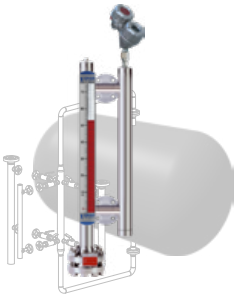
Options:
Remote mounted electronics, custom span, process connections, scale units of measure, high temperature and cryogenic insulation, clamp-on reed, micro and pneumatic switches

Click on red product description to view full specifications and datasheet online

VISUAL INDICATION

MAGNETOSTRICTIVE

REAL WORLD SOLUTIONS



Gemini™

MLI with Modulevel Instrumentation Bridle

Description:

Unique, fully customized design of Modular Instrumentation Bridle (MIB) designed to best incorporate different instrumentation packages and maximize performance to reduce total cost of ownership (TOC).

Applications:

Feedwater heaters, boilers, oil-water separators, flash drums, surge tanks, gas chillers, etc.

Features:

- Refer to ORI-210 brochure for details.
- True redundancy through use of two independent technologies

Options:

Full customization



Jupiter®

Model JM4 Magnetostrictive Transmitter

Description:

Highly accurate level measurement device that can be directly inserted into a tank or externally mounted to any one of our MLIs.

Measurement Principle:

Time-of-flight measurement utilizing a magnetostrictive wire which interacts with a float

Applications:

Separators, surge tanks, gas chillers, bio-therapeutics, pharmaceuticals, process vessels and more

Features:

- Full graphic local user interface and local waveform capture
- 4-20 mA output
- Rotatable and Removable transmitter head
- Ergonomic dual compartment enclosure
- Simple set-up and configuration
- Smart Probe technology
- Easy attachment to an MLI or modular bridle instrumentation
- Direct insertion for a wide variety of vessels and applications

Options:

HART® or Foundation fieldbus™ communications; Hastelloy® or Monel® materials of construction; Threaded or flanged process connections; External Jupiter® models can be top- or bottom-mounted to an MLI

ABLE designs, manufactures, markets and services level and flow instrumentation for the process industries worldwide.



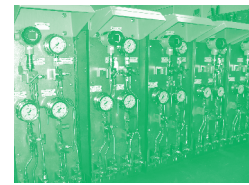
Oil & Gas



Chemical



Pharmaceutical



O.E.M.



Power



H.V.A.C.



Automotive



Paper



Food & Beverage



Water

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