pulsar
MEASUREMENT

All Products Measurement Solutions

Delivering the Measure of Possibility

Clamp-on, Ultrasonic Flow Meters

- Measures flow from outside the pipe
- No shutdown or downtime to install
- Easy to install & configure
- No contact with process fluids

- No wear & tear
- Price of meter is independent of pipe size
- Certificate of calibration included
- Permanent or portable versions available

TTFM 6.1
Greyline TTFM 6.1 Transit-Time Flow Meter

Key Features

- Non-invasive flow measurement of "clean" fluids like water & chemicals
- Three sizes of transducers to measure 15 mm to 1,200 mm (0.5 in to 48 in) pipes, intuitive 5 button interface for easy installation & set-up
- 4-20mA, relays, HART, Modbus outputs

Common Applications

- Treated water
- Raw water
- Cooling water
- Chemicals
- DI/RO water

DFM 6.1
Greyline DFM 6.1 Doppler Flow Meter

Key Features

- Non-invasive flow measurement of "complex" fluids with suspended solids or entrained air
- Single transducer; no flow meter is easier to install and set up
- 4-20 mA, relays, HART, Modbus outputs

Common Applications

- Sewage
- Sludge – RAS & WAS
- Slurries
- Oil production
- Pulp stock & liquors

PTFM 1.0
Greyline PTFM 1.0 Portable, Transit-Time Flow Meter

Key Features

- Portable non-invasive flow measurement of "clean" fluids like water & chemicals
- Flow verification is easy and inexpensive with three transducers that cover wide range of pipe sizes and materials
- Deploy as a logger for weeks or as continuous meter while inline flow meter is out of service

Common Applications

- Treated water
- Raw water
- Cooling water
- Chemicals
- RO/DI water

PDFM 5.1
Greyline PDFM 5.1 Portable Doppler Flow Meter

Key Features

- Portable non-invasive flow measurement of "complex" fluids
- Flow verification is easy and inexpensive with one transducer that covers wide range of pipe sizes and materials
- Deploy as a logger for weeks or as continuous meter while inline flow meter is out of service

Common Applications

- Sewage
- Sludge – RAS & WAS
- Slurries
- Oil production
- Pulp stock & liquors

Differential level	Level	Partially filled pipe flow	Sand in oil
Flow	MCERT Certified	Process protection	Sludge blanket
Flow with PMD	Open channel flow	Pump control	Volume

Area-Velocity Flow Meters for Partial Pipe or Open Channel

- Accurately measure flow in partially filled pipe & channels without a flume or weir
- Easy to install & configure

- Non-contacting & contacting solutions
- Permanent or portable versions available
- Solutions for small, large channels & streams

AVFM 6.1
Greyline AVFM 6.1 Area-Velocity Flow Meter

Key Features

- Measure flow in partially filled pipes or channels without a flume or weir
- Multivariable sensing of velocity, level and temperature
- Easily configured for common channel shapes & sizes
- No moving parts and little to no maintenance
- Three 4-20 mA outputs, relays and Modbus

Common Applications
- Municipal wastewater
- Industrial wastewater
- Stormwater
- Combined sewers
- Natural streams
- Irrigation

MANTARAY
Greyline MantaRay Portable, Area-Velocity Flow Meter

Key Features

- Portable flow measurement of partially filled pipes & channels without a flume or weir
- Deploy as a logger to gather data over weeks
- Extend logging sessions with external battery connection
- Rechargeable battery for continuous use without external power source

Common Applications
- Municipal sewers
- Industrial sewers
- Stormwater
- Infiltration & Inflow studies
- Natural streams
- Irrigation

FLOWCERT, MICROFLOW, & dBMACH3
Non-contacting, Area-Velocity Flow Monitoring

Key Features

- 1-year log at 10-minute intervals
- Modbus RTU & Profibus options
- Can be used stand-alone or as part of a complete flow meter system
- Non-contacting so no interruption to process
- Minimal installation costs & maintenance-free
- Accuracy maximized at zero blanking distance
- Solar radiation protection for utilization of internal temperature & enhanced reliability
- For channels over 1.2 m (3.9 ft) wide use multiple MicroFlow sensors with the Ultimate Controller
- ATEX approval

Common Applications
- Open channels with no PMD
- Influent / effluent flow monitoring
- Water & wastewater
- Quarry & mining
- Stormwater
- Irrigation
- Pipe flow & open channel flow monitoring
- Groundwater monitoring
- Streams, rivers level, velocity, & flow

Open Channel Flow Meters for PMD

- Standard flumes, weirs, & custom PMD
- Easy to install & configure
- World leading accuracy independently certified
- Maintenance-free

ULTRA 4 & dBMACH3 OR dB3 WITH DOUBLE SUN SHIELD
Advanced Flow, Level, Volume, & Pump Control

Key Features

- Multi-function display for easy setup & configuration
- On-screen monitoring with echo profiles & trend graphs
- Built-in volume calculations from standard tank shapes or calibration curves
- Onboard Micro SD card extends data logging
- Operates with all dB & dBR transducers
- Accuracy maximized at zero blanking distance
- Solar radiation protection for utilization of internal temperature & enhanced reliability
- ATEX, cFMus approvals
- MCERTs *pending*

Common Applications

- Open channel flow & level
- Wastewater & industrial effluent
- Stormwater
- Irrigation
- Flow monitoring
- Groundwater monitoring

OCF 6.1
Greyline OCF 6.1 Open Channel Flow & Tank Level Meter

Key Features

- Accurate, reliable, non-contacting flow measurement in partially filled pipes & channels where a flume or weir is installed
- Ultrasonic level is easy to install above the fluid, & free of maintenance
- Get the data you need with standard analog output, & a 26 million point data logger with free software for easy report generation

Common Applications

- Municipal influent & effluent
- Industrial effluent
- Stormwater
- Natural streams
- Irrigation

Sludge Blanket Interface

- Continuous sludge blanket level
- Easy to install
- Maintenance-free
- Replaces unreliable manual techniques
- Detect sludge in clarifiers, primary, secondary, & tertiary settlement tanks
- For use with stationary or traveling bridges
- Used for compliance & process efficiency

SLUDGE FINDER 2 & VIPER TRANSDUCER
Sludge Blanket Level Detector

Key Features

- Continuous single or dual-channel level control
- High frequency gives high-reliability long term
- Self-cleaning transducer; no need for regular inspection
- Easy set up with drop-down menu on large, clear display
- High level FLOC alarm available
- Optional ultrasonic transducer can be added

Common Applications

- Primary & secondary settlement tanks
- DAF thickeners
- Gravity thickeners
- Stationary & traveling bridges

Level, Volume Measurement & Pump Control

- From loop powered level control through to intelligent pump control
- Non-contacting

- Maintenance-free
- Low power level solutions

dBi HART & PROFIBUS ULTRASONIC
Non-contacting Intelligent Transducers

Key Features

- 2 wire, loop-powered, 4-20mA output
- Strong signal to noise ratio & excellent resolution
- Proprietary echo processing technology (DATEM) for greater measurement accuracy
- Communicates with FDT framework applications via Device Type Manager (DTM)
- Narrow beam angle for tight line of sight
- Range up to 15 m (49.2 ft)
- ATEX & cFMus approvals

Common Applications

- Liquids & solids measurement
- Level & volume measurement
- Remote level monitoring
- Tank level monitoring
- Event duration management
- Combined sewer overflows

dB TRANSDUCER SERIES
Non-contacting Ultrasonics Sensors

Key Features

- Proprietary echo processing technology (DATEM) for greater measurement accuracy
- Strong signal to noise ratio & excellent resolution
- Integral temperature compensation
- Narrow beam angle for tight line of sight
- Cable extensions up to 1,000 m (3,281 ft)
- Range up to 40 m (131.2 ft)
- ATEX & cFMus approvals

Common Applications

- Wet well level measurement
- Tank level measurement
- Silo level measurement
- Pump control applications
- Shaft tank monitoring
- Digester levels

IMP RANGE
Compact, Loop-powered Ultrasonic Measurement

Key Features

- Combined transducer & controller
- Range up to 10 m (32.8 ft)
- Calibrate without compromising the IP67 rating
- Simple, menu-led setup using built-in display & keypad
- High power & narrow beam angles for accurate & reliable level measurement
- ATEX option

Common Applications

- Tank level applications
- Chemical dosing
- Simple level indication
- Open & closed vessel level requirements
- Solids level indication

dBR RADAR SERIES
Non-contacting Radar Sensors

Key Features

- Perfect for applications with changing atmospheric conditions or heavy vapors or fumes
- Strong signal to noise ratio & excellent resolution
- Extremely low power consumption
- Minimal installation costs with no interruption to service
- Narrow beam angle
- Dynamically tracks level with proprietary echo processing technology (DATEM)
- Range up to 16 m (52.5 ft)
- Maintenance-free
- ATEX approved

Common Applications

- Foamy applications
- Application's subject to high electrical noise
- Atmospherically volatile applications
- Chemical dosing plants & IBCs
- Digester level monitoring

Level, Volume Measurement & Pump Control (cont.)

- Controllers work with all dB & dBR transducers
- From loop powered level control through to intelligent pump control

- Low power level solutions
- Ease of use
- Various mounting options available

ULTRA 4
Advanced Ultrasonic Level, Flow, Volume, & Pump Control

Key Features

- Multi-function display for easy setup & configuration
- On screen monitoring with echo profiles and trend graphs
- Built-in volume calculations from standard tank shapes or calibration curves
- On-board Micro SD card extends data logging
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Pump control
- Open channel flow & level
- Chemical dosing
- IBC tank level
- Storage tank levels
- CSO & sewer network monitoring

ULTRA 5
Non-contacting Level, Flow, Volume, Differential, & Pump Control

Key Features

- Quick & easy set-up with onboard, menu driven software tool
- Pre-programmed tank shapes
- 5 assignable relays with extra alarm options such as pump efficiency
- Optional data logging board to enable the user to log data for the lifetime of the product
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Solid & liquid tank level monitoring
- Differential level control
- Well level measurement
- Pump control & exercising
- Open channel flow measurement with flumes & weirs

ULTRATWIN
Twin-Channel, Ultrasonic Measurement

Key Features

- Dual display for two measurements
- Easy prompt-led setup
- Data logging option which records & charts data & trends in an easily accessible form
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Effluent discharge monitoring
- Shaft tank dual-chamber measurement
- Dual channel monitoring
- Screen house monitoring
- Sophisticated pump control

BLACKBOX 130
Simple Level Measurement

Key Features

- Compact, low-cost, intelligent controller
- Integrated keypad & display for complete flexibility
- Local programming provides instant level indication
- Solids, powders, & liquid applications
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Tank level monitoring
- Silo level monitoring
- Simple level indication
- Stock control
- Compliance with health & safety
- Process automation

Level, Volume Measurement & Pump Control (cont.)

- From loop powered level control through to intelligent pump control
- Low power level solutions

- Ease of use
- Various mounting options available
- Additional sensor inputs

ZENITH
Intelligent Pumping Station Controller

Key Features

- Advanced pump control features as standard
- Reduce capital costs by eliminating PLC's on small sites
- Reduce power costs by intelligent use of lower tariff periods for pumping
- Monitoring of pumps or controls via the 7 digital inputs
- Totalizer volume throughput of well or station
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Small pump station control
- Tariff change monitoring
- Energy savings
- Well monitoring
- Pump control & monitoring
- Well capacity & performance

QUANTUM 3
Pumping Station Controller

Key Features

- 'Time to spill' alarm used in high-risk areas, to aid site management
- Able to supply power to 4 FlowPulse units so all flow-rate based alarms & control are based on real measurements
- Pump efficiency alarm function & peak power tariff avoidance
- Totalizer sums real throughput rather than deriving from level measurement
- Storm detection & NRV leakage alarms
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Pump control
- 'Time to Spill' warning requirements
- Reduction in power costs
- Pump monitoring & control
- Pump station control

PSL 5.0
Greyline PSL 5.0 Hybrid, Pump Station Level Controller

Key Features

- Hybrid pump control with accurate & reliable ultrasonic level sensor plus redundant level input from submersible sensor
- Six relay outputs programmable for pump alternation
- Pump run-time reports

Common Applications

- Pump stations
- Tank level control

ULTIMATE CONTROLLER
Combines Ultrasonic Level & Flow Measurement

Key Features

- Modular & expandable controller platform
- Provides cost savings through:
  - High-energy cost avoidance
  - Pre-blockage detection
  - Automatic resets
  - Selection of the most efficient pump
- Camera port for real-time viewing of your application
- Touchscreen display
- Operates with all dB & dBR transducers up to 40 m (131.2 ft) range

Common Applications

- Advanced pump control
- Level measurement
- Flow monitoring
- Pump performance monitoring
- Asset management

Process Protection Solutions

- Save cost: through shutdown prevention & equipment protection
- Solid & liquid flow indication

- Non-invasive
- Maintenance-free
- Trend analysis

DFS 5.1
Greyline DFS 5.1 Doppler Flow Switch

Key Features

- Inexpensive & non-invasive flow switch for "difficult" to measure fluids like sewage, sludge, & slurries
- Protect expensive equipment from failure or damage
- Clamp-on ultrasonic sensor installs in minutes without system shutdown & is maintenance-free

Common Applications

- Sewage
- Sludge – RAS & WAS
- Slurries
- Oil production
- Pulp stock & liquors

FLOWPULSE SENSOR
Non-invasive, Clamp-on, Flow Sensor

Key Features

- Non-invasive for simple & cost-effective installation
- Onboard digital signal processing for exceptional repeatability
- Ultrasound can be fired through a variety of pipe walls
- Digital platform offers robust performance, repeatability & flexibility

Common Applications

- Pipe flow monitoring
- Influent pipe flow
- Process effluent
- Leachate pipe monitoring
- Pump / process efficiency & asset monitoring

PULSARGUARD 2010
Acoustic Sensor for Non-invasive Solids Flow Detection

Key Features

- Non-invasive, therefore, no interruption to service
- Highly resistant to interference from machinery or process noise
- Compact design for fitting in the tightest of positions or environments
- No moving parts & vibration resistant
- Highly reliable in low or high temperature
- Hazardous options available

Common Applications

- Burst filter bag detection
- Blockage detection
- Pump cavitation
- Valve leakage detection
- Bearing failures
- Bridging or rat-holing in silos
- Pig Detection

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MEASUREMENT

Delivering the Measure of Possibility

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