

A large offshore oil rig is shown in the middle of the ocean under a blue sky with some clouds. The rig is a complex of yellow and white metal structures, including a crane on the left and several tall smokestacks in the center. A rainbow is superimposed over the top half of the image, arching from the left towards the right. The water is a deep blue, and the overall scene is industrial and maritime.

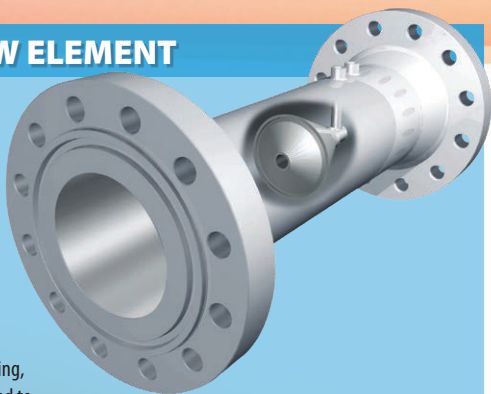
GENERAL PRODUCT OVERVIEW

able
instruments & controls

V-CONE FLOW ELEMENT

The McCrometer V-Cone Flow Meter is an advanced differential pressure instrument for use with liquids, steam or gas in harsh environments where accuracy, low maintenance and minimal pressure loss are paramount.

With built-in flow conditioning, the V-Cone is especially suited to applications where space is at a premium and where the long, straight pipe runs required by alternate flow technologies are either impractical or unavailable.



- Primary DP flow meter
- Accuracy +/- 0.5% with wide turndown ratio
- Minimal straight run requirement (3 OD upstream/1 OD downstream)
- Negligible pressure loss
- Preconditions flow
- No recalibration

THERMAL MASS FLOW METER

Magnetrol's Thematel® TA2 is an easy-to-use, economical, continuous gas flow meter that is often utilized to manage energy costs or to meet environmental regulations in Oil & Gas applications such as hydrocarbon gas flaring, wellstream separation and vapour recovery. Cost of ownership is reduced through ease of installation, field calibration verification and minimum maintenance. Since the measurement is based on heat transfer, the TA2 provides reliable performance at low gas flows and pressures where other technologies have difficulties.

- Direct mass flow measurement of air & gas
- Excellent low flow sensitivity with high turndown (rangeability)
- Process temperatures to +400 °F (+200 °C)



ATEX ULTRASONIC CLAMP-ON FLOW METER

The Micronics UX5000 is designed for heavy duty, cost effective flow metering in hazardous environments.

Applications for the UX5000 are numerous throughout the oil and chemical industries, addressing virtually any heavy industry process liquid application with Intrinsically Safe measurement. Factory calibration of matched, wet transducers ensures reliable measurement accuracy via cross correlation transit time methodology.

The non-invasive design of the UX5000 facilitates easy installation with no process downtime. The separate display and measurement unit provide the meter with additional flexibility.



- Non-invasive, efficient, and easy installation, no process downtime
- Certified for use in hazardous areas (Zone 1 & Zone 2)
- Intrinsically Safe Measurement System including matched, wet calibrated transducers
- High accuracy
- Cost effective metering for aggressive, heavy-duty applications

ABLE FLAREMASTER™

The FlareMaster Flare Metering Enhancement Tool radically improves the performance of ultrasonic flare gas flow meters (FGM) and ensures good practice in emissions monitoring requirements and legislative compliance.

Able's groundbreaking approach to mass flow calculations addresses inherent errors in conventional flare metering measurement due to unknown gas composition.

With the N2GEN version the two main components of methane and nitrogen are determined thus, meeting 2025 EU regulatory requirements and significantly reducing uncertainty.



- Provides full gas density inputs to flare meter to negate density distorting compositions
- Significant reduction in flare gas measurement uncertainty
- Real-time display of mass and standard volume flow, totalized flow, velocity, process temperature and pressure

ABLE SLUGMASTER™ INTELLIGENT FLOW METER

The Able SlugMaster uses two ultrasonic flow metering technologies and a smart PLC to make an intelligent selection as to which technology to apply, based on the prevailing process conditions. Constant metering is achieved regardless of solids and/or gas contamination. The changeover between the metering technologies is calculated with unique mathematical software so as to appear seamless and ensures exceptional measurement accuracy.

The core, patented technology at the heart of the Able Master series of instruments is a dual measurement, intelligent algorithm which is used to resolve demanding application challenges that would typically defeat conventional meters.

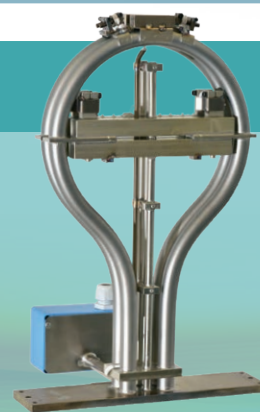


- Bespoke engineered non-contact flow metering system
- Highly aerated and contaminated liquid flow measurement
- Two-phase and multi-phase versions available

CORIOLIS MASS FLOW METERS

Able offer a wide range of Coriolis mass flow meters, capable of withstanding vibration, abrasion and corrosive media. The unique Omega tube design with full pipe wall thickness can also withstand maximum design pressure without the need for secondary containment.

With flow rates from as low as 0.03kg/hr and meter sizes up to 12" diameter, all mass flow applications on liquid, gas or sludge can be achieved. In addition to heavy industrial applications, the small bore meters are particularly suited to monitoring high pressure, high precision blending procedures associated with food and beverage production as they are unaffected by changes in conductivity, pressure, temperature and viscosity.

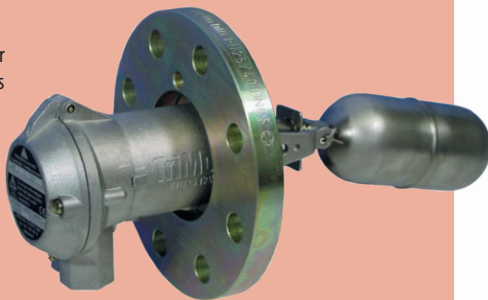


- Unique Omega tube design
- Full design pressure capability up to 900 Bar without secondary containment
- Temperature from -200°C to +400°C
- Line sizes up to 12" diameter
- Direct mass flow rates from 0.03kg/hr to 1,500,000kg/hr
- Available in exotic materials

FLOAT LEVEL SWITCHES

The Besta range of float level switches offers a unique modular construction, providing solutions over many years in an extremely wide range of industries and applications. The modular design – switch, flange & float, can be supplied in numerous interchangeable variants with electric or pneumatic outputs.

The glandless design of the flange module permits online maintenance of all dry side components under full process conditions.



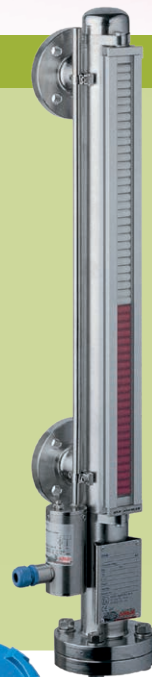
- Glandless construction, no leak paths
- Horizontal, vertical or external mounting options
- Extensive modular combination of switch types, process connection flanges and floats
- SIL 2 rated versions available for safety overfill protection
- Electric or pneumatic outputs
- Plastic range available for aggressive media

MAGNETIC LEVEL GAUGES

Able's range of magnetic level gauges offers clear indication of liquid level in any chamber configuration to suit the available process connections.

Standard chamber designs or customised configurations can be fabricated on short delivery times to suit any requirement. Exotic construction materials or economic "mini" chamber designs are also available.

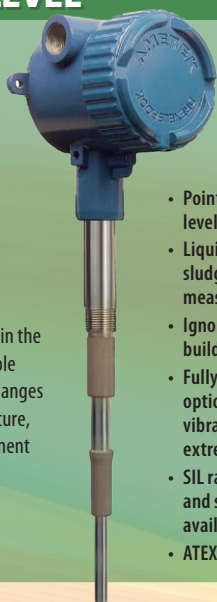
- Clean non-powered visual indication of clean, dirty or translucent liquid level
- Made to suit any measuring range & vessel construction requirement
- Pressure up to 400 bar/temperature up to 450°C
- Switch & transmitter versions available
- Range of construction materials available to ensure process compatibility



RF ADMITTANCE LEVEL

Able Instruments are distributors for Drexelbrook RF Admittance level measurement technology, including continuous level transmitters & point level switches. RF Admittance is a measurement technology used for determining the level of liquids, granulars, slurries & interface in almost any containment and process environment.

RF Admittance will continue to operate in the presence of undefined and uncontrollable variables – despite coating build-up, changes in process density, pressure or temperature, level switching or continuous measurement will continue unaffected.



- Point switch & continuous level measurement
- Liquid, granular, slurry, sludge & interface measurement
- Ignores product coating & build-up on level sensor
- Fully remote electronic options – immune to vibration and temperature extremes
- SIL rated high level alarm and self-checking versions available
- ATEX Exia or Exd available

RADAR LEVEL

Radar and guided wave radar (GWR) can be used for level measurement on almost any liquid or solid. Both technologies are extremely reliable and virtually unaffected by changes to any media or process condition, such as temperature, pressure, density, conductivity or the presence of vapours or dust. The technology has no moving parts or recalibration requirements.

The Able Fusion Level Gauge is a combination of a GWR & a magnetic level gauge (see separate entry).

- High accuracy, repeatability and reliability
- Wide spectrum of applications from storage to reaction process vessels
- Unaffected by changes in density, conductivity & dielectric constant
- Comprehensive diagnostic possibilities ensure a maintenance-free operation and hence a high plant availability
- Safety rated SIL2 versions available



GENESIS – MULTIPHASE LEVEL DETECTOR

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. Encompassing a number of developments from Magnetrol's progressive engineering team, this innovative level detector can deliver a full interface profile of a vessel with performance that surpasses many of the more traditional technologies.

Utilizing patented "Top-Down" and "Bottom-Up" signals, along with advanced level detection algorithms, Genesis can be used in a wide variety of interface applications ranging from very light hydrocarbons to water-based media.



- 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 +200°C / 70 bar

AUXILIARY ATEX EQUIPMENT

Able supply a wide range of ATEX certified mobile equipment for surveying, data-logging and communicating in hazardous areas.

Our scope of supply includes intrinsically safe tablets, mobile phones and high-resolution cameras, all suitable for use in Zone 1/Zone 2 environments. We offer the Aegex 100M Windows Tablet, the Ecom Tab-Ex 03 DZ1 Android Tablet and Atexxo iPad (iOS) range, covering all major operating systems in hazardous areas.

We also stock the Best-in-Class Bartec PIXAVI Cam, the Cordex Extreme and the Armadex OZC digital cameras as well as the Cordex Digitherm Thermal Imaging Camera.

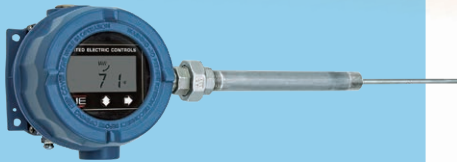
To complete our ATEX asset management portfolio, we supply the Bartec PIXAVI Phone and the Zone 1/Zone 2 rated Ecom Smart-Ex 02 intrinsically safe smart phones.



TEMPERATURE MEASUREMENT

Our range of temperature products are available in numerous configurations to match virtually any application and include the United Electric Controls series of electronic and mechanical temperature switches, which are designed for use in rugged, industrial environments. We are able to measure and control temperature in safe or hazardous areas with a wide choice of outputs and offer a full selection of sensors and hardware.

With an integral digital display and 4-20 mA output, the United Electric Safety Transmitter can effectively do the job of three – replacing a switch, a gauge and a transmitter. "I Am Working" sensor diagnostics with redundant data processing detect open, shorted, and plugged sensing elements.



- Mechanical, electronic switches, gauges & transmitters
- Multiple sensor types, output configurations and approvals including SIL rating
- Digital display
- 100% adjustable set point and dead-band
- All solid state design
- Safety Transmitter 4-20 mA analog (NAMUR NE 43 standard, accuracy tested in real time)

DEW POINT ANALYSIS

Able are the exclusive UK sales and service partner for the Xentaur range of dew point sensors & transmitters.

Xentaur offer a reliable solution for the measurement of moisture and dew point in liquids and gases, based on their proprietary HTF aluminium oxide sensor technology. The sensors have increased sensitivity, typically twice that of conventional sensors. Advantages of HTF also include no drift, extremely low temperature coefficient and fast response.

In addition to an extensive range of fixed sensors and transmitters, designed to address applications across the process & research industries, a portable meter, the XPDM, is also available and intended for use where quick and accurate measurements are required.



For extremely high accuracy, critical dew point and relative humidity measurements in calibration laboratories and industrial processes, Able also offer Chilled Mirror Optical Condensation Hygrometers.

- HTF™ Sensor Technology
- Multiple housing configurations
- Long sensor life
- Capable of liquid hydrocarbon measurements
- Digital communications (HART) & analog communications (4-20mA)
- ATEX versions

VANGUARD WIRELESS GAS DETECTOR

The Vanguard WirelessHART gas detector is ideal for the monitoring of toxic and combustible gases without the need for costly and fixed wiring. With a five-year battery life and one button field calibration, the Vanguard detector is easy to operate and maintain.

Each Vanguard has a WirelessHART transceiver, an antenna, a display, a long-life power module, a gas sensor and a signal processor. Vanguard's trademarked 'Flexsense' sensor architecture allows the sensor to identify its target gas and self-configure to a Vanguard transmitter upon connection.



- Available with NDIR methane sensor (0-100% LEL) or an electrochemical hydrogen sulphide sensor (0-100ppm)
- Field interchangeable sensors
- Interoperable with existing WirelessHART® networks and asset management systems (AMS)
- Explosion-proof & intrinsically safe (ATEX)
- Easy calibration and operation

GAS ANALYSERS

Using unique, patented gold film technology and low dilution atomic fluorescence, Arizona Instrument's field proven Jeromes combine high specificity and accuracy with true portability. Their rugged design and low level detection capabilities (Hydrogen Sulphide 3ppb, Mercury 50ng/m3) are ideally suited to applications in the waste water treatment and oil & gas industries. Automated sampling, on-board data-logging and USB connectivity enable simple data retrieval and analysis. A programmable auto-sampling mode facilitates unattended monitoring.

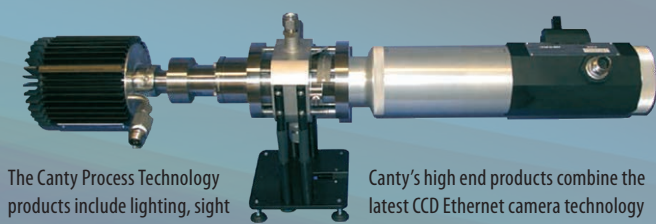
Able are Arizona Instrument's European Service Centre for the renowned Jerome Hydrogen Sulphide Analyser. Fundamental to this arrangement is a dedicated Jerome



calibration laboratory at Able's headquarters in Reading, UK. The rig derives its traceability from a certified gas reference standard and calibrated mass flow controllers.

- Specialist, patented gold film and AF detector technologies
- Low level detection capabilities
- On-board data logging (20,000 data points)
- Automated sampling options
- Portable and fixed installation variants
- SCADA interface capabilities via 4-20ma

PROCESS VISION TECHNOLOGY



The Canty Process Technology products include lighting, sight glasses, cameras, sight flow indicators, quick opening closures, glass to metal seals, vision-based process control systems, and particles sizing systems for a variety of industries including the Biotech, Pharmaceutical, Cement, Oil & Gas, Chemical, Food & Beverage, Glass and Mining Industries.

Canty's high end products combine the latest CCD Ethernet camera technology and high intensity LED lighting systems to provide microscopic, non-destructive viewing and particle size analysis in two dimensions.

- Robust FuseView sight glasses
- Fibre optic LED lighting solutions
- Intelligent process camera systems
- Liquid & solid particle analysis
- Bespoke image analysis software
- ATEX versions available

PRESSURE SAFETY TRANSMITTER

By way of our long-term relationship with United Electric Controls, Able supply an extensive range of high quality electronic and mechanical pressure and differential pressure switches, as well as a selection of high pressure transmitters.

The series includes the UE Safety Transmitter, (inset) with an analogue output that meets the NAMUR NE 43 standard and provides process variable and detected-fault info. Discrete outputs provide a fail-safe emergency shut-down when faults are detected. Set point and dead-band are fully programmable.

Designed for rugged, industrial environments, in safe or hazardous areas, to suit virtually all pressure and differential pressure applications, the United Electric products are complimented by the Mid West range of DP gauges.



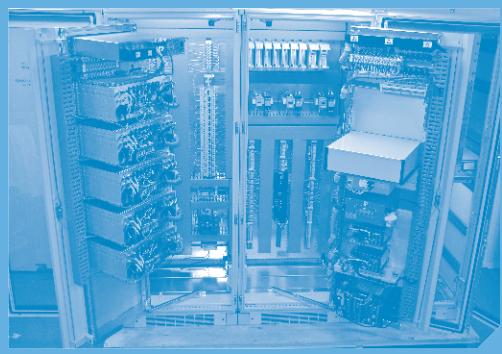
- Mechanical & electronic switches, gauges & transmitters
- Multiple sensor types, output configurations and approvals including SIL compliant models
- Digital display
- 100% adjustable set-point and dead-band
- Solid state design
- NAMUR NE43 standard



METERING SYSTEMS



CABINET DESIGN & BUILD



SPOOL DESIGN & FABRICATION



PANEL DESIGN & ASSEMBLY



Established in 1985, Able Instruments & Controls Ltd is a UK based independently owned instrumentation supplier headquartered in Reading.

With an emphasis and history founded on supply to the Oil & Gas Industry, Able has significant experience and expertise in providing measurement solutions to this sector, as well as unrivalled global support utilising our team of fully offshore trained technical engineers.

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