


























HYCONTROL
LEVEL MEASUREMENT SOLUTIONS

Exceeding your expectations

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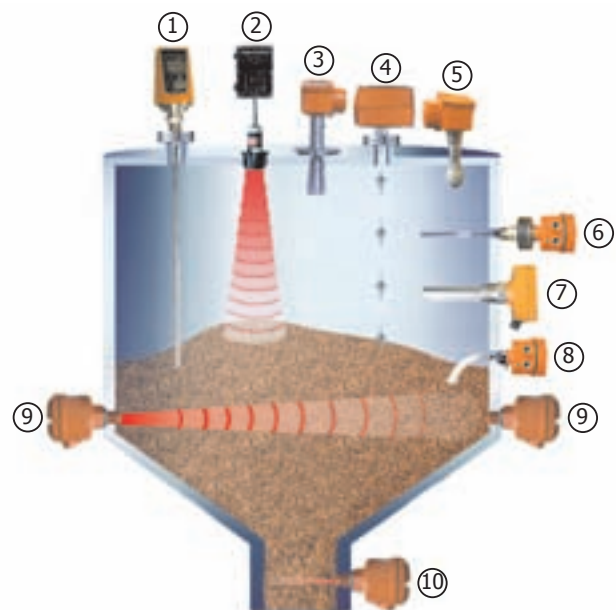
HYCONTROL - Level Measurement Solutions

Hycontrol have over 30 years experience in applying level measurement solutions over a diverse range of industries. We understand the consequences of inaccurate and unreliable level systems. Therefore each Hycontrol installation is tailored precisely to your application, to provide the best engineered solution....*without compromise.*

With our distribution network and regional offices we can supply and support a wide range of instrumentation all around the world. Our varied customer base includes water and waste, food and beverage, chemical, petrochemical, environmental & utilities, quarrying, mining and oil & gas. We are happy to just supply a single level sensor or project manage a complete installation from site survey through to supply, install and commission. We look forward to providing ongoing support through service and maintenance contracts.

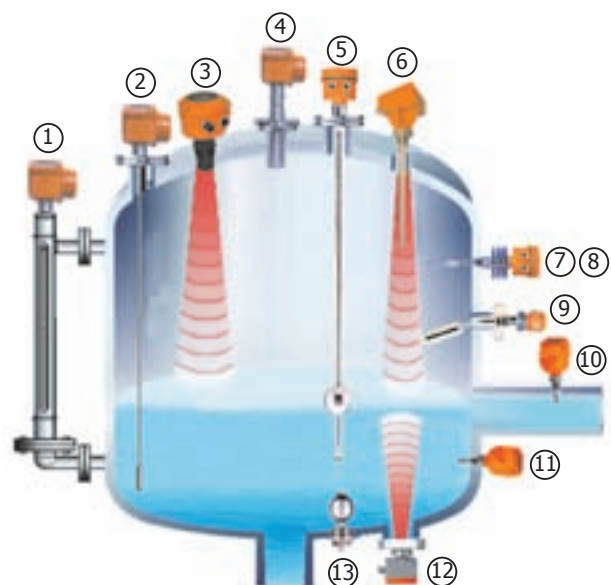
Product Range For Solids :-

- (1) TDR Radar For Solids
- (2) Ultrasonic, 'Through Air'
- (2) 2 Wire Ultrasonic Transmitter
- (3) FMCW 2 Wire Radar
- (4) Continuous 'Servo' Level Indicator
- (5) FMCW 2 Wire Radar
- (6) Capacitance Level Switch
- (7) Vibrating Probe Level Switch
- (8) Rotating Paddle Level switch
- (9) Microwave Level Switch
- (10) Doppler Flow Switch



Product Range For Liquids :-

- (1) By-Pass Level Indicator With Radar
- (2) TDR Radar For Liquids
- (3) 2 Wire Ultrasonic Transmitter
- (4) FMCW 'Horn' Radar 2 Wire
- (5) Magnetic Float Switches
- (6) FMCW 2 Wire Radar
- (7) Capacitance Level Switch
- (8) RF Admittance Level Switch
- (9) Side Mounting 316 SS Float Switch
- (10) Tuning Fork Level Switch
- (11) Tuning Fork Level Switch
- (12) Ultrasonics 'Through Wall'
- (13) Mini Magnetic Float Level Switch



Redditch Facility

Design - Flexibility to adapt to market changes and quickly identify new areas for product innovation are key reasons why Hycontrol's primary products are all designed in house in Redditch. Whether it is an ultrasonic level control system or a special display and alarm panel, the expertise is all within Hycontrol's Redditch facility with our engineers who collectively have over 100 years experience.

Manufacture - Hycontrol's Redditch facility has been extended to provide additional production space to accommodate the increase in production requirements and the additional panel manufacturing area required to keep up with the projects side of the business. The addition of a mezzanine floor over existing production space has added another 2500 sq ft for production in an existing 20,500 sq ft manufacturing facility.

Large stocks - Hycontrol carries in stock at its Redditch facility one of the most extensive level instrumentation ranges available in the UK. Various length probes coupled with our quick manufacturing lead times ensure we can supply many standard products from stock and have the capability to build many items within a short lead time.

Single point of supply - Many customers require a package of instrumentation which may include level transmitters, pressure transmitters, alarm panels, display recorders or indicators. Hycontrol have been supplying complete solutions for many years and not just encompassing instrumentation. Hycontrol's capability extends beyond just a supply basis only and from our UK operation we can supply, install, commission and service a complete range of instrumentation. One company then has total responsibility for the complete level measurement solution.



Alarm and Display Panels

Hycontrol's ability to solve level measurement problems extends way beyond the actual level gauge or probe itself. To reduce or eliminate simple errors such as product shortage, overflows and production loss, requires not only a reliable level gauge but a clear visual indication of what is actually happening in the tank or vessel.

Many errors can be avoided if a simple installation is carried out to increase the visual display of contents or alarm conditions and raise awareness of impending problems.

For many years Hycontrol has been advising customers on what to install and how best to do it. However it is very apparent that trying to involve third party companies in the level measurement equation, who do not totally understand the application, can be a recipe for disaster. Hycontrol engineers understand what needs to be built to meet the objective of clear displays of both tank contents and alarm conditions. Although many panel solutions from Hycontrol are of a 'standard nature', many require custom build and unique logic programming to ensure valves or heaters are turned 'on' or 'off' at the correct time in the right sequence. This knowledge is then passed on to our on site installation and service team who can then fault find, diagnose problems and understand the internal logic, which are all important parameters if you are to provide long term service and support.

SERVICE, INSTALLATION and SUPPORT



Survey

Hycontrol understand the problems associated with level measurement and using our 30 years' experience we will impart this knowledge to our customers, free of charge.

For many customers we advise a free site survey to help us understand exactly what is required to achieve a 'best engineered' solution. We will discuss all the facets of the application including accuracy required, problems in the tank, such as stirrers, agitators, aeration, temperature, fill/empty points and what media is being measured. It is only when we have all the information that we can make an informed decision on what is the best way to meet the customers' needs.

Hycontrol understand level - please use our expertise to help solve your problem.

Supply and Install

Our experience shows that many companies do not have the expertise or resources to install the complete level measurement system. This is often overlooked when making the purchasing decision resulting in unnecessary mistakes. Problems such as incorrect process connections, mounting in the wrong position, use of incorrect cable, can be avoided, simply by letting Hycontrol take care of your complete project.

Hycontrol will survey, supply, install, commission and service their complete range of equipment. All Hycontrol engineers, both sales and service, are Safety Passport approved and carry all the relevant qualifications to provide a professional solution from start to finish.

Service and Technical Support

After sales service and support is a key reason why many customers choose Hycontrol. Our team of UK service engineers are able to respond quickly to urgent service requests and our dedicated internal technical support engineers are always on hand to offer free telephone advice.

When working on sites, it is essential that all personnel are familiar with the potential dangers and this is why all Hycontrol engineers are passport safety trained.

Service contracts for checking calibration and confirming safety systems are fully operational are all part of Hycontrol's day to day activities.

Training

This is often overlooked by many companies and is essential if you want to get the best out of your new level measurement system in the manner it was designed for and maximise the life of the product.

When installing a over-spill safety system it is essential customers are correctly trained in its operation to ensure the long term integrity of the system.

Hycontrol supply training free of charge for any UK installation project carried out. This can be office or site based depending on your requirements.

SAFETY SYSTEMS

Silo Over-Pressurisation

SILO PROTECTION

Many industries such as food, pharmaceutical and quarry, handle and transport millions of tonnes of products every year.

These come in many different shapes and sizes, but a great deal is shipped in powder and particulate form. These products are shipped from site to site, mainly by road tanker, and are then discharged from the tanker to the site's silos by fluidising the powder and blowing it into the silo. This pneumatic conveying operation uses air to carry the product to the silo and this air must then be vented via a suitable filter. Silo protection is necessary to prevent:

Over-pressurisation - If the air is not vented the silo will become pressurised. Only a small increase (such as 1 psi) may be sufficient to either rupture the silo or blow the filter element off the silo roof.

Over-filling - This occurs when either the level probe or level gauge has failed. Both of these conditions necessitate the need for a silo protection system.



Product Highlights

The FLEX-500 is an advance on other pressure sensors currently in use. It is the only one that can carry out the following functions which are essential for a silo protection system:

- **Detect** if the sensor is damaged or blocked.
- **Self-clean** the sensor before and after every delivery.
- **Test** the sensor for integrity and operation over its full working range.

All of the above GLT tests are carried out with the simple press of a button at ground level before delivery takes place.



Without protection the risks are:

- **Damage to the silo:** Resulting in loss of production and expensive repair or replacement of silo or filters, as well as costly clean up operations.
- **Dangerous situation:** Operator is at risk of injury from silo rupture and/or objects ejecting from great heights.
- **Overspill of product:** Emissions to atmosphere could have a serious effect on the environment especially if the product is corrosive or hazardous and may result in large fines.

OVER-FILL PROTECTION



Hycontrol have received industry safety awards for designing and manufacturing level monitoring systems to prevent overspill from tanks or silos. The systems will significantly improve health and safety on site, reduce product wastage and avoid expensive damage to storage vessels.

Typical systems include a level gauge, displaying contents and ullage with an early high level warning, and then additional and totally separate to this system an independent ultimate high level probe. When coupled with clear level information in the form of ultra bright multi LED traffic lights the displays provide the ultimate solution for preventing overspills.

These systems are individually tailored to meet the requirements of the application and provide the 'best engineered solution'. They are used by oil companies such as Total, Shell, Nynas and BP, whilst being designed in collaboration with associations such as the Refined Bitumen Association (RBA).

The systems are available in a wide array of configurations with Hycontrol being one of the only level measurement companies to design, build, supply, install and service the complete system.



Safety Highlights

- Designed in-house by Hycontrol engineers
- ATEX designs available
- Full installation service available
- Hycontrol engineers are cherry picker licenced
- Technical support for the life of equipment
- Service engineers trained in panels and components
- Spares held by service engineers in case of emergency
- All panel spares held at main office in Redditch
- Innovative designs coupled with level gauge benefits
- Very competitive product range
- No third parties involved for maintenance
- Over 30 years' of engineering expertise



RP Series - Solids

This range of switches is used for solid materials such as powders, granules and pellets.

The operating principle for the Hycontrol range of paddle switches is very simple. A unit consists of a motor assembly and a shaft with a paddle attached to the end of it. The paddle is mounted through the bin wall at the top, middle or low level of a bin depending on the application.

During normal operation with no material present, a synchronous motor rotates the paddle at one revolution per minute. When the paddle rotation is impeded, by an in fill of material, that surrounds the paddle blade, the motor will stall and cause a microswitch to change state to indicate an alarm or provide a control function.

This switch has a torque adjusting mechanism based on a spring setting. This provides adjustment for light powders or denser materials. The RP range are all supplied with a triple shaft seal to prevent ingress of dust up the shaft into the housing.

This low cost technology is excellent for solid products such as cement, sand and plastic pellets. The Hycontrol range is available with various extension lengths and paddle shape options.



Measurement

Powders - Pellets - Granules - Flakes

Range

0 - 1.5 m

Application

Stone - Cement - Filler
Plastic Pellets - Grain

Industries

Chemical
Quarry & Aggregate
Process
Animal Feed

Product Highlights

- High temperature options to 200°C
- Stainless steel construction
- Triple shaft seal for long motor life
- Rugged aluminium housing
- Adjustable sensitivity
- Simple installation via 1" BSP PC
- Adjustable insertion length
- Very price competitive
- Multiple paddle designs and materials
- Two year warranty on motor

Specification

Function:	Level switch
Measuring Range:	0-1.5 m
Environmental Protection:	IP65
Process Connection:	1" BSP std (flange options)
Power Supply:	110/230 VAC 24 VAC
Analogue Output:	No
Communication:	None
Relay Outputs:	5A/240 VAC, SPDT
Max. Process Temperature:	200°C
Accuracy:	Typically ± 30 mm

HYCAO3 Series - Liquids



Conductivity level sensors are ideal for the point level detection of liquids, typically water. The Hycontrol conductive level sensors use a low voltage, current-limited power source applied across separate electrodes which are typically two or three probes. A conductive liquid contacting both the longest probe (common) and a shorter probe (return) completes a conductive circuit.

Conductive sensors are extremely safe because they use low voltage and currents and have the additional benefit of being solid-state devices which are very simple to install and use.

The Hycontrol unit is designed for pump control or alarm indication. The electrodes are mounted on the tank top via their holders (EA18) and a stainless steel rod is fitted to suit the required switch points. The electronic level control units, together with resistive probes are suitable for the control and monitoring of the levels of any conductive liquids.

The level is determined by the length of the electrodes linked to the controller and usually these can be modified on site if required.

The HYCAO3M controller is manufactured from shock resistant thermoplastic and is designed for DIN rail mounting

Product Highlights

- Simple technology
- Pressures up to 35 bar
- Controller temp range 10°C- 50°C
- High probe temp up to 250°C
- Probe length adjustable on site
- Manual reset option
- Max cable length 800 m
- Price competitive
- Relay output 5A 230 VAC
- DIN rail mounting

Measurement

Any Conductive Liquid

Range

0 -1 m

Application

Water

Industries

Process
Chemical
Water & Waste
Food

Specification

Function:	Level switch
Range:	0-1 m
Environmental Protection:	IP20
Process Connection:	1/2" BSP
Power Supply:	110-230 VAC
Analogue Output:	N/A
Communication :	N/A
Relay Output:	5A / 230 VAC
Accuracy:	± 2 mm

VIBRATING PROBE

Level Switch

SOLIDS - DP RANGE

The Diamond Point Level Switch is designed specifically for use with dry products ranging from heavy materials such as stone, aggregates and cement, to very low density materials like cornflakes and flour. Its unique principle of operation and shape ensure that it is self-cleaning and because it is only sensitive near its tip, it is not influenced by build-up on the silo walls.

The operating principle is the same for all vibrating probe level switches. A piezo-electric crystal is used to force a blade to oscillate at its fundamental frequency (natural resonance). When the blades come into contact with the process medium the natural frequency of oscillation is damped; the electronics sense the change in frequency which causes the unit to switch.

The single reinforced diamond shaped vibrating blade prevents material build-up or bridging, which are typical problems associated with the dual blade "tuning fork" design. Being very sensitive in the lateral mode the level switch can be used for extremely light materials with densities as low as 10 grams per litre.

The strong stainless steel construction gives the Diamond Point level switch strength in the vertical direction for use with heavy materials such as cement or aggregates. This range of probes also has a ground level test option for testing the switch integrity whilst installed in an application.



Measurement

Solids - Powders - Pellets
Granules - Flakes

Range

0 - 20 m

Application

Grain - Cement - Sawdust - Chalk
Flour - Cornflakes - Lime - Plastics

Industries

Chemical
Food
Process
Quarry
Animal feed

Product Highlights

- No moving parts to wear
- Very strong and robust
- ATEX options
- Pressure up to 10 bar
- Measures products from 10g/litre
- No maintenance required
- Unaffected by environmental changes
- Operating temperature up to 250°C
- Simple to install
- Only sensitive near the probe tip

Specification

Function:	Level Switch
Measuring Range:	0-20 m
Environmental Protection:	IP65
Process Connection:	1" & 1.5" BSP / NPT (other flange options)
Power Supply:	20 - 250 VAC or DC
Analogue Output:	No
Communication:	None
Relay Outputs:	5A/250V SPDT/ DPDT
Display:	LED indication for on/off
Accuracy:	Product dependent



LIQUIDS - TF RANGE



The operating principle is the same for all vibrating probe level switches. A piezo-electric crystal is used to force a blade to oscillate at its fundamental frequency (natural resonance). When the blades come into contact with the process medium, the natural frequency of oscillation is damped; the electronics sense the change in frequency, which causes the unit to switch.

The different electronic outputs to choose from allow the user to switch a load on/off or to interface directly with a computer. The units can be programmed to sense high or low level and failsafe high or low, with adjustable sensitivity to eliminate false switching.

This rugged design of switch is used throughout the process industries. It is available with a wide range of flange or screwed process connections and can have extensions, enabling the probe to reach 3 metres into a tank if required.


The wetted parts of standard switches are 316 stainless steel, but special Halar coated and Hastelloy switches are available for extremely corrosive applications. Hygienic probes are available for the food industry. The switch has visual indication of its on/off status and a test point on the side of the housing to allow an operator to check the function of the switch.

Intrinsically safe and flame proof versions are available for hazardous areas.

Product Highlights

- No moving parts to wear
- No maintenance required
- Operating temperature to 260°C
- Simple to install
- Unaffected by environmental changes
- Pressure up to 100 bar
- ATEX & SIL options
- Hygienic options
- Small insertion length
- Specific frequency avoids false switching

Specification

Function:	Level switch	
Measuring Range:	0-3 m	
Environmental Protection:	IP65	
Process Connection:	3/4", 1" BSP (flange options)	
Power Supply:	24-240 VAC 50/60 Hz 24-60 VDC	
Analogue output	N/A	
Communication:	N/A	
Relay Outputs:	5A/240 VAC/30 VDC, SPDT, DLS, PNP	
Display:	LED indication for on/off failure mode	
Max. Process Temperature:	260°C	
Accuracy:	Hysteresis. 1mm/switch point 13mm from tip	

Measurement

Liquids

Range

0 - 3 m

Application

Oils - Acids - Water - Solvents
Chemicals - Paints

Industries

Chemical - Pharmaceutical
Process
Oil & Gas
Petrochemical
Food & Beverage

ADMITTANCE

Level Switch

MD Series

The Hycontrol range of admittance switches provides a solution for many products which have a tendency to coat the level probe such as bitumen, paint or adhesives. Admittance is suitable for use on liquids, solids, slurries, pastes, granules, powders and pellets in high temperatures, high pressure and corrosive environments.

The main advantage offered by using this admittance range of switches is their ability to totally ignore product build up on the sensing probe.

This unique design utilises a protective insulation electrode between the conventional main electrode and the grounding sleeve which enables the electronics to distinguish between coatings and actual product level. This probe can then differentiate between a thick coating and rising or falling product level without false switching.

This technology also provides an ideal solution for interface detection applications such as oil on water and liquid detection underneath a layer of foam. The MD series also incorporates the ground level test facility for checking probe operation.



Measurement

Slurries - Liquids - Pastes - Solids

Range

0 - 5 m

Application

Adhesives - Glues - Bitumen
Tar - Paints

Industries

Chemical
Quarry
Process
Water & Waste

Product Highlights

- Universal switch for liquids / solids
- Immune to coating & false switching
- Ideal for hot sticky product
- Corrosion and chemical resistant
- Ground level test option
- Simple installation via 1" BSP
- Remote electronics option
- High temperature options to 550 °C
- Interface level detection
- Adjustable sensitivity & time delay

Specification

Function:	Level switch
Measuring Range:	0-5 m
Environmental Protection:	IP65
Process Connection:	1" BSP (flange options)
Power Supply:	24 VDC/110/230 VAC
Analogue Output:	N/A
Communication:	N/A
Relay Outputs:	5A/240V AC, 5A/30VDC SPDT NPN
Display:	LED indication for on/off only
Max Process Temperature:	550°C
Accuracy:	Adjustable from 1 mm



ME Series



Hycontrol capacitive level switches provide accurate and reliable level control for a wide range of applications.

They are suitable for use on liquids, solids, slurries, pastes, granules, powders and pellets in high temperature, high pressure and corrosive environments.

Unlike many other capacitive switches, the Hycontrol unit works independently of the tank walls using an integral grounding sleeve without the need for a reference probe. This enables it to be used in concrete, plastic or other non-metallic tanks.

The Hycontrol solid-state level switch consists of a sensing element and an integral grounding sleeve that is separated by an insulator. There is a fixed capacitance between these two elements and this will change when product comes into the vicinity or contacts the sensing probe. The switch will then detect this change and activate the output relay. This method of detection relies on the dielectric properties of the product and therefore the higher its dielectric, the easier it is to detect.

This technology also provides an ideal solution for interface detection applications such as oil on water and liquid detection underneath a layer of foam.

Product Highlights

- Universal switch for solids and liquids
- High temperature options to 800°C
- Corrosion and chemical resistant
- Competitive price
- Adjustable sensitivity
- Ground level test option
- Simple installation via 1" BSP
- Interface level detection
- Remote electronics option
- Adjustable time delay

Specification

Function:	Level switch
Measuring Range:	0-5 m
Environmental Protection:	IP65
Process Connection:	1" BSP std (flange options)
Power Supply:	24 VDC /110/230 VAC
Analogue Output:	None
Communication:	None
Relay Outputs:	5A/240 VAC, 5A/30 VDC, SPDT, NPN
Display:	LED indication for on/off only
Max. Process Temperature:	800°C
Accuracy:	Adjustable from 1 mm

Measurement

Solids - Liquids - Pastes

Range

0 - 5 m

Application

Oils -Water - Acids -Cement
Chemicals - Stone - Bitumen

Industries

Chemical
Water & Waste
Quarry
Process

BLOCKED CHUTE DETECTION

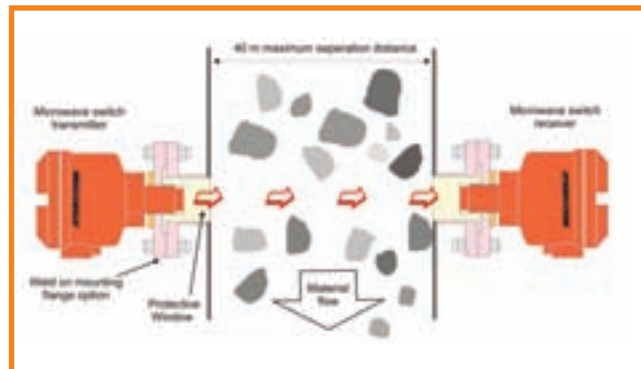
The Hycontrol range of microwave level switches provides a simple non-contact, non-intrusive option suitable for many applications on dry powder or granular product.

An installation comprises of a transmitter and a receiver which are mounted facing one another at distances up to a maximum of 40 m apart. During operation the transmitter emits a continuous, low power, microwave beam to the receiver and an output relay is energised or de-energised when this beam is obstructed by the material being monitored.

The switch trigger point is determined by the amount of microwave energy received and can therefore be adjusted to cater for different products and different sensitivity settings depending upon the application.

Typical applications for detecting presence and non-presence of materials include *flow* and *no-flow* conditions, point level detection, blocked chute detection and also proximity switch detection for reversing vehicles including trucks and rail cars.

The advantage of this technology is that it is able to monitor through product build up on tank or chute walls and can be non-intrusive by utilising protective windows as shown above right.



Measurement

Solid - Powders - Granules - Flakes

Range

0 - 40 m

Application

Crushers - Chutes - Conveyors - Tanks

Industries

Chemical - Animal Feed
Water & Waste
Process - Recycling
Food
Quarry & Mining

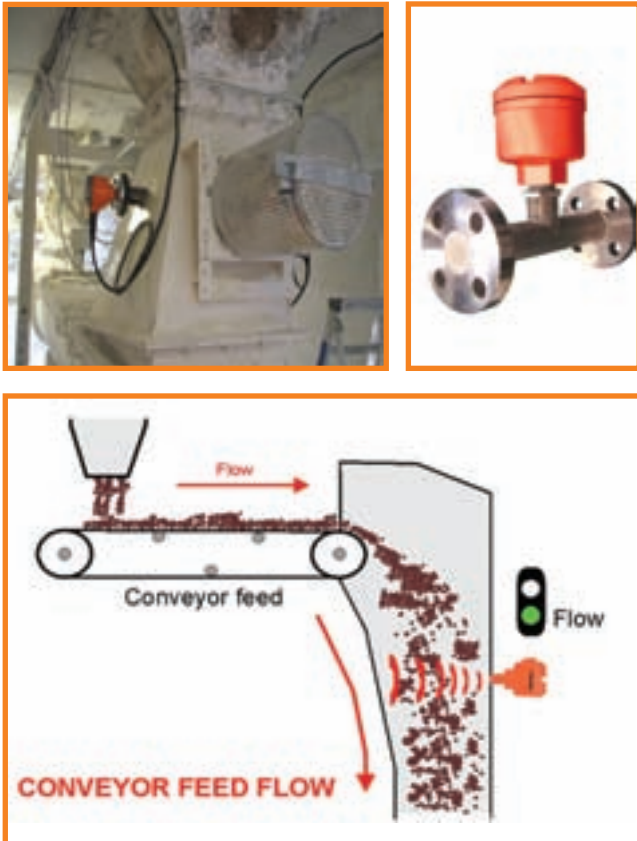
Product Highlights

- High penetration of dust build up
- Non contact measurement
- Measurement range up to 40 m
- Simple to install and commission
- Blocked chute detection
- Total safety for operators
- No maintenance required
- High temperature options
- Retrofit to existing tanks/silos/chutes
- Can detect through windows

Specification

Function:	Level switch
Measuring Range:	0-40 m
Environmental Protection:	IP65
Process Connection:	1" BSP (other flange options)
Power Supply:	24 VDC (110 VAC option)
Analogue Output:	No
Communication:	None
Relay Outputs:	30 VDC, 2 A SPDT
Display:	15 LEDs for power indication & on/off mode
Max. Process Temperature:	180°C
Frequency:	24 Ghz

SOLIDS FLOW SWITCH



The Microwave switch provides an effective way of detecting the *flow* or *no-flow* of a wide range of particulate materials.

The flow switch uses a microwave Doppler effect and is non-invasive. During operation the sensing head transmits a continuous low power, microwave beam towards the flowing product. Some of these microwaves are reflected back to the sensing head and are then analysed as to whether the product particles are moving or stationary objects.

The highly penetrating microwave beam passes through any build-up on the transmitter face and will even detect through pipes of non-conducting materials such as plastic and ceramics.

The switch is best suited for the detection of materials such as dry solids, granules, flakes and powders.

Typical applications include grain, flour, cement, ore, stone coal and animal feed. Flow can be detected in pipelines, chutes, transfer bins or free air.

This technology can be combined with the blocked chute detector to provide a flow or no-flow output and blocked or clear chute indication for maximum plant protection.

Product Highlights

- High penetration of dust build up
- Improves plant efficiency
- Flow detection from outside the chute/ pipe
- Can detect through plastic 'windows'
- 4-20 mA flow output
- Reduces plant wastage
- Non contact measurement
- Simple to install and commission
- No maintenance required
- High temperature options

Specification

Function:	Flow switch
Measuring Range:	0-1.5 m
Environmental Protection:	IP65
Process Connection:	1" BSP (other flange options)
Power Supply:	24 VDC
Analogue Output:	4-20 mA option
Communication:	N/A
Relay Outputs:	1 A 30 VDC, SPDT
Display:	15 LEDs for power indication & on/off mode
Max. Process Temperature:	180° C
Frequency:	24Ghz

Measurement

Solids - Powders - Granules - Flakes

Range

0 - 1.5 m

Application

Wood Pellets - Plastics
Sand - Cement - Lime

Industries

Chemical - Process
Water & Waste
Recycling - Food
Quarry
Paper & Pulp

MICROFLEX C

Microflex C is a low cost unit in the Hycontrol range of non-contact ultrasonic level transmitters which is designed for liquids only.

The principle of operation is often referred to as 'time of flight'. An ultrasonic pulse is emitted from the integral transducer down towards the target and is reflected back from the surface. The time it takes to travel from and to the transducer is directly proportional to the distance travelled. This range is capable of measuring distances up to 11m and can be configured for level, flow, distance and volume output.

The Microflex is available in three configurations all with two wire loop powered technology. The basic version, Microflex C, is an 8 m range low cost unit with an accuracy of 1%. The accuracy increases for the next model Microflex CER, to 0.25% plus it has two additional built in relays for pump or alarm control. The latest version Microflex CIS, has ATEX certification and also an 11 m range.

All units are programmed via an integral keypad or alternatively the extended range models CER and CIS can be programmed via HART.

This range provides a low cost level measurement solution for simple liquid applications



Measurement

Slurries - Liquids - Pastes

Range

0 - 11 m

Application

Oil - Water - Paints - Chemicals - Sludge
Chocolate - Effluent


Industries

Chemical
Water & Waste
Process
Food
Quarry
Petrochemical

Product Highlights

- Range up to 11 m
- Very competitive price
- Two wire advanced technology
- Non-contact measurement principle
- Chemical resistant transducers
- Advanced echo extraction
- ATEX approval
- Simple to install and commission
- 2" BSP/NPT process connection
- Suitable for wide range of liquids

Specification

Function:	Level/Distance/Volume/Flow	
Measuring Range:	0-11 m	
Environmental Protection:	IP65	
Process Connection:	2" (other flange options available)	
Power Supply:	12 - 30 VDC	
Analogue Output:	4-20 mA 2 wire loop	
Communication:	HART	
Relay Outputs:	1A 24 VDC, SPST	
Display:	Integral LCD option	
Max. Process Temperature:	70°C	
Accuracy:	0.25 - 1% of measured distance	

MICROFLEX LR



Microflex LR pushes the boundaries of non-contact ultrasonic level measurement. This new range of Smart Level Transmitters can measure distances up to 60 metres and is suitable for solids and liquids. Using new technology developed with low frequencies, these transmitters can operate in extreme applications, including very dusty and dirty environments, where most traditional ultrasonic units will fail.

Utilising frequencies down to 5 kHz enables level measurement on difficult solids applications up to 60 metres as this frequency can penetrate the dust on filling cycles and has an ability to self clean the transducer face.


Microflex LR is available in two configurations with 2/3/4 wire technology; an integral display (MI) four-button programmable instrument and a SMART blind (MS) version (both shown opposite).

This range can be programmed from a PC using Hycontrol's Vision System software. If necessary by adding the Hycontrol Link any necessary system adjustments can be made from the other side of the world using the internet. Hycontrol Service Engineers can remotely analyse and overcome any commissioning issues which may be experienced in the field, without having to actually visit site, thereby reducing time and costs for the customer.

Product Highlights

- Long range up to 60 m
- Multi-drop and BUS capability
- Two wire advanced technology
- Non-contact measurement principle
- ATEX Hazardous area approvals
- Low power options down to 12 VDC
- Low frequency for dust penetration
- Suitable for liquid and solid products
- Chemical resistant transducers
- Remote connectivity for commissioning

Specification

Function:	Level/Flow/Distance/Switch	
Measuring Range:	0-60 m	
Environmental Protection:	IP65	
Process Connection:	2" BSP (flange options)	
Power Supply:	12-30v DC/90-256 VAC	
Analogue Output:	4-20 mA 2/3/4 wire option	
Communication:	HART / MODBUS / PROFIBUS / GPRS / GSM	
Relay Outputs:	1A 30VDC, SPDT	
Display:	Integral LCD option	
Max. Process Temperature:	150° C	
Accuracy:	0.25% of measured distance	

Measurement

Liquids - Powders - Granules - Slurries

Range

0 - 60 m

Application

Water & Waste - Cement - Sand
Coke & Ore - Coal - Plastics - Chemical

Industries

Chemical - Process
Water & Waste
Petrochemical - Iron & Steel
Power Generation - Quarry
Food

MINIFLEX LR

Non-contact ultrasonic level measurement is one of the most versatile level measuring technologies available today, but the introduction of the new Miniflex LR moves these boundaries even further into the next generation.

Miniflex LR, with its wide range of transducers and advanced PULSE window echo tracking technology, is capable of measuring virtually any liquid or solid and can be used in a wide range of industries including water and waste, chemical and process, quarry and aggregate.

The programming is via a simple button keypad situated behind an IP65 protection front cover. The two-line 16 digit display enables programming without the use of a manual by simply using a flow programming chart, and following an application specific guidance routine therefore reducing set-up times to a minimum.

Miniflex LR utilises automatic gain control to cater for changing vessel characteristics such as foam or agitation and to ensure the instrument always receives stable true echoes.



Measurement

Liquids - Slurries - Pastes - Solids

Range

0 -10 m

Application

Water - Chemicals - Sewage
Acids - Paints - Inks - Oils

Industries

Chemical
Water & Waste
Process
Food
Quarry
Petrochemical

Product Highlights

- Multi programmable
- Advanced echo extraction
- 5 button intuitive programming
- ATEX hazardous area approvals
- Non-contact measurement principle
- Level/Flow/Volume/Pump control
- Chemical resistant transducers
- Distance / Differential control
- 16 digit two line LCD backlit display
- Displays level and ullage

Specification

Function:	Level/Flow/Distance/differential/Pump Control/Volume
Measuring Range:	0 -10 m
Environmental Protection:	IP65
Process Connection:	M20 or flange options
Power Supply:	24 VDC /95/110/230 VAC
Analogue Output:	4-20 mA
Communication:	RS232
Relay Outputs:	3 x 8A 250 VAC, SPDT
Display:	LCD 2 line 16 digit
Max. Process Temperature:	-40 to +90°C
Accuracy:	0.25% of measured distance



REFLEX LR



Reflex LR pushes the boundaries of non-contact ultrasonic level measurement. This range of Smart Level Transmitters is capable of measuring distances in excess of 60 metres and is suitable for solids and liquids. Using new technology developed with low frequencies, these new transmitters are capable of measuring in extremely difficult applications, including very dusty and dirty environments, where most traditional ultrasonics will fail.

Level measurement on difficult solids applications in excess of 60 metres is now possible with two wire technology. This new range can be programmed remotely using Hycontrol's Vision System 11 software.

Using this option, instruments can be connected, via the GSM LINK to a Hycontrol Service Engineer in our UK office to analyse and overcome any commissioning issues which may be experienced in the field, without having to actually visit, (and incur any additional call-out charges).

The Reflex LR is designed to be used with the new range RVT transducers which have a wide range of process connections available to suit most applications.

Product Highlights

- Long range up to 60m
- Multi-drop capability
- Local display and alarm control
- Low frequency for dust penetration
- Non-contact measurement principle
- Hazardous area approvals
- Chemical resistant transducers
- Remote connectivity for fault finding
- Suitable for liquid and solid products
- spurious signal rejection

Specification

Function:	Level/Distance/Flow/ Differential/ Level switch
Measuring Range:	0-60 m
Environmental Protection:	IP65
Process Connection:	2" BSP (flange options)
Power Supply:	12-30 VDC / 90-256 VAC
Analogue Output:	4-20 mA 2/3/4 wire option
Communication:	HART/MODBUS/PROFIBUS/GPRS/GSM
Relay Outputs:	5 X 0.5A 240 VDC, SPDT
Display:	Integral LCD
Max. Process Temperature:	150° C
Accuracy:	0.25% of measured distance



Measurement

Solids - Powders - Granules
Slurries - Liquids

Range

0 - 60 m

Application

Water - Cement - Sand
Chemicals - Grain - Woodchip
Acid - Lime Stone

Industries

Chemical
Water & Waste
Process
Food
Quarry
Petrochemical

ULTRASONIC

Level Measurement

THROUGHWALL

Level measurement using ultrasonic 'through-the-air' principles has been widely used in the process industries for many years, but it has its limitations with regard to the application. Pressurised vessels, varying gas densities and surface foam can cause loss of the echo signal or seriously affect the measurement.

Hycontrol's new non-contact ultrasonic instruments are capable of monitoring levels with novel 'through-the-wall' techniques which overcome these fundamental problems.

This enables level measurement in totally enclosed vessels without the need to enter or cut into the tank or silo. These systems can provide a wide range of control options, from single point level switching to continuous level measurement. They can be installed on a wide range of applications including those involving hazardous and aggressive media.

The principle is simple with an ultrasonic sensor being mounted to the outside of the vessel and 'coupled' to the tank with a transmission gel. This enables the ultrasonic sound to travel from the transducer through the wall of the tank and into the liquid. Using this technology Hycontrol can obtain either a level measurement or a simple switch point depending upon what is required. This is particularly advantageous if the vessel is pressurised or has no process connections. Please note this technology has to be used with clean liquids only with no sidewall contamination such as rust or scale.

A modified version of this non-intrusive technology can be used on cylinders for determining piston positions and pig detection in oil lines.



Measurement

Clean liquids only

Range

0 - 15 m

Application

Water - Oil - Solvents - Chemicals
Food & Beverage

Industries

Chemical
Water
Process
Food
Pharmaceutical

Product Highlights

- Non-contact measurement principle
- Simple to install on outside of vessel
- No process connections into tank
- Will detect under a foam layer
- Ideal for aggressive applications
- Hazardous area options ATEX
- Fixed and portable units available
- Long measuring ranges up to 15 m
- Hygienic mounting available
- No interruption of process

Specification

Function:	Level/Volume/Distance/Level Switch
Measuring Range:	0-15 m
Environmental Protection:	IP65
Process Connection:	3/4-1.5" BSP (other flange options)
Power Supply:	18-30 VDC
Analogue Output:	4-20 mA option
Communication:	RS232, RS485
Relay Outputs:	1A 30 VDC SPDT
Display:	LCD and LEDs for power indication
Max. Process Temperature:	150°C
Accuracy:	0.25% measured distance



REFLEX SCANFLEX



Reflex is one of the most powerful systems in the Hycontrol range. It provides reliable non-contact ultrasonic level measurements of liquids and solids and can be expanded into a multi-point scanning system by simply adding a multi-plexor board and additional transducers.

With an excellent signal-to-noise ratio and a variety of echo extraction algorithms available, Reflex's proven software is capable of tracking the right echo in difficult environments.

Unlike other manufacturers' systems, the multiplexor can be located away from the controller close to the tanks which will reduce cable and installation cost considerably.

A typical system would be used on a multi tank application and the multiplexor would be located at the top of the tanks.

A single transducer cable and a communication cable would then run into the control room, where the Reflex Controller may be fitted along with separate boards for analogue signals and relays if required.

Product Highlights

- Versatile technology for solids & liquids
- Single or multi-point monitoring
- Advanced echo reduction
- Reduced cabling & installation costs
- Multi-programmable for range of
- ATEX hazardous area options
- Long measuring range up to 50 m
- Non-contact measurement principle
- Chemical resistant transducers
- Competitive solution

Specification

Function:	Level/Flow/Distance/Differential/Pump Control
Measuring Range:	0-50 m
Environmental Protection:	IP65
Process Connection:	Various screw/flange options
Power Supply:	24 VDC /95/110/230 VAC
Analogue Output:	4-20 mA
Communication:	RS232 / RS485
Relay Outputs:	Optional output boards
Display:	Integral LCD
Max. Process Temperature:	-40 to 90°C
Accuracy:	0.25% measured distance



Measurement

Solids - Slurries - Liquids - Pastes

Range

0 - 50 m

Application

Animal Feed - Grain - Acids
Aggregate - Chemicals - Paints

Industries

Chemical
Water & Waste
Process - Utilities - Power
Food
Quarry
Petrochemical

SLUDGE BLANKET DETECTION

The Hycontrol Sonarflex sludge blanket and interface controller is a microprocessor based transmitter combined with the appropriate RVS sonar transducer and its associated cleaning mechanism. It is programmed via an easy menu-driven keypad or remotely via a PC. It is used to measure the blanket level in primary sedimentation tanks or the RAS Blanket and FLOC/FLUFF layers in secondary and final clarifiers.

The Sonarflex transmitter initiates a sound pulse from the transducer through the water towards the blanket interface to the bottom of the tank. The pulse is reflected off the blanket back to the Sonarflex where it is compensated for temperature. This provides either a distance reading to the blanket/interface level or a height of blanket/interface from the bottom of the tank.

This unit is capable of tracking multiple bed layers and providing information on temperature, clarity and FLOC level simultaneously via a Profibus output.

This system allows automation and control of underflow pumps and significantly improves plant efficiency. Using the COMMS output option can also provide advanced warning of biological upsets. This important additional information allows operators to reduce chemical dosing and control aeration far more efficiently which reduces energy consumption.



Measurement

Sludge Blanket Layers

Range

0 - 60 m

Application

Clarifiers - Thickeners
DAF Tanks - SBRs
Mining Settlement


Industries

Chemical
Process
Water & Waste
Food
Paper - Wood
Quarry & Mining

Product Highlights

- Advanced warning of biological upsets
- Automate existing installations
- Self cleaning mechanisms
- Outputs for RAS/FLOC/TEMP/CLARITY
- Remote radio link options for setup
- Improved control of process
- Multiple transducer frequencies
- Reduced energy costs
- ATEX options for sludge blanket
- Measures a range of sludge densities

Specification

Function:	Sludge blanket layer measurement	
Measuring Range:	0-60 m	
Environmental Protection:	IP68 (Sensor)	
Process Connection:	Bridge mounting options	
Power Supply:	24 VDC 110/230 VAC	
Analogue Output:	Dual 4-20 mA	
Communication:	HART/RS485/PROFIBUS/MODBUS	
Relay Outputs:	3 SPDT	
Display:	Multi-line integral option	
Max. Process Temperature:	90°C	
Accuracy:	0.25% measured distance	

SONAR APPLICATIONS

Primary / Secondary

In the water and waste process industry, conditions will vary greatly between a primary sedimentation tank, secondary/final clarifier and a gravity thickener.

Thickener bed levels, secondary RAS blankets and flocculent blankets can all have different densities and the water above these levels are subject to different process conditions that change. To optimize performance in each application under all process environments we choose a particular sonar frequency and power level from the 15 different transducer models.

To optimize performance under all process environments in each interface application, we choose the transducer with a frequency and power level that is applicable to the density of the interface and process conditions in the tank. By selecting the correct sonar transducer, we can guarantee performance for controlling pumps and the process, rather than just for monitoring purposes only.

Each Hycontrol transducer is capable of measuring two independent densities simultaneously.

Thickener Tanks

As thickeners are generally used after primary or secondary settlement, the product density measured is in the range of 6000-8000 mg/ltr.

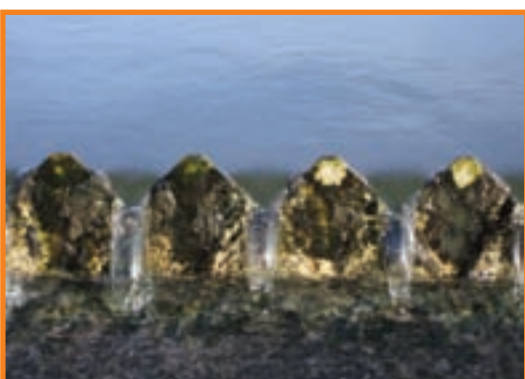
Hycontrol multi-array transducers allow penetration through a high concentration of suspended solids and can therefore be used to optimise the density of sludge which is pumped back to the presses or digesters.

The second output from the Sonarflex can also be used for an indication of water clarity (suspended solids) or to track the hindered layer to provide either a pre-warning of process problems or build-up of scums and debris on the transducer face to maintain optimum performance.

Sequential Batch Reactors (SBR)

SBRs are typically installed where site space is at a premium and combines the primary sedimentation tank, aeration process and the final (secondary) settlement all in the same tank. By the nature of their operation the physical levels in the tank change and a traditional 'fixed' device cannot cater for all level variations.

Hycontrol offer a unique solution for this type of application in the fact that the sonar transducer actually floats on the surface, enabling it to track the settling blanket as decant levels change. This enables the process to work far more efficiently as the settling times can be monitored with greater accuracy and improved batch sequence times can be achieved. The subsequent improved batch sequence times can result in improving the SBR capacity by as much as 10-20%.



TDR GUIDED MICROWAVE

Level Measurement

REFLEX TDR VF03

The Reflex VF range of TDR (Time Domain Reflectometry) products is ideal for the measurement of liquids, powders and granules up to a range of 24 m. They are unaffected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe, the VF Series can measure virtually any product utilising any one of its seven probe types.

Pulses of low power microwaves are sent along the suspended stainless steel wire or rod and where the waves meet the product surface they are reflected back. The intensity of the reflection depends on the dielectric constant of the product. The higher the dielectric constant, the stronger the reflection will be, e.g. up to 80% for water. The instrument measures the time between emission and reception which is proportional to the distance.

TDR guided radar can be used in two different modes for level measurement or interface measurement of two different liquids.

This technology is very flexible providing excellent results not only for industrial silos during fill conditions, but also on liquid applications such as bitumen where the instrument continues to operate even with significant coating around the cable or probe.

These units can be supplied fully calibrated and literally just require fitting into the tank, connecting up and switching on!



Measurement

Slurries - Liquids - Pastes - Solids

Range

0 - 24 m

Application

Oil - Solvents
Acids - Bitumen
Cement - Lime - Paint
Water

Industries

Chemical
Water & Waste
Quarry
Process
Oil & Gas

Product Highlights

- Universal technology for liquids/solids
- 2 wire loop powered 24 VDC
- High temperature option 600°C
- Unaffected by dust during fill
- Corrosion & chemical resistant
- Installation by 1" BSP
- ATEX options
- Interface level detection
- Immune to pressure, foam & dust
- High accuracy ± 5 mm

Specification

Function:	Level/Distance/Volume/Interface
Measuring Range:	0-24 m
Environmental Protection:	IP65
Process Connection:	1" BSP (flange options)
Power Supply:	24 VDC
Analogue Output:	4-20 mA
Communication:	HART
Relay Outputs:	N/A
Display:	Optional plug in module
Max. Process Temperature:	600°C
Accuracy:	± 5 mm



TDR GUIDED MICROWAVE

Level & Interface Measurement

REFLEX TDR VF7



The Reflex VF range of TDR products is ideal for the measurement of liquids, powders and granules up to a range of 35 m. Unaffected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe. The VF Series can measure virtually any product in either Direct or TBF mode, utilising any one of its seven probe types.

Pulses of low power microwaves are sent along conductor at the point where the waves meet the product surface, they are reflected by the product. The intensity of the reflection depends on the dielectric constant of the product. The higher the dielectric constant, the stronger the reflection will be, e.g. up to 80% for water.

The instrument measures the time between emission and reception of the microwave signal which is proportional to the distance. TDR guided radar can be used in two different modes for level measurement or interface measurement of two different liquids.

This model is can measure very low dielectric product down as low as 1.1 and can provide an accuracy of ± 3 mm in liquids as standard. It is suitable for high pressure applications up to 300 bar.

Product Highlights

- Universal technology for liquids/solids
- Integral display and programmer
- Unaffected by dust during fill
- Corrosion & chemical resistant
- Capable of measuring 1.1 dielectric
- 1/2" BSP process connections
- Dual interface outputs for both layers
- Immune to pressure, foam & dust
- High accuracy ± 2 mm
- High pressure options to 300 bar

Measurement

Solids - Liquids - Pastes

Range

0 - 35 m

Application

Chemicals- Oil - Acids - Solvents
Water - Cement - Bitumen

Industries

Pharmaceutical - Chemical
Food - Process
Oil & Gas
Water & Waste
Quarry & Mining
Animal Feed

Specification

Function:	Level/Distance/Volume/Interface	
Measuring Range:	0-35 m	
Environmental Protection:	IP65	
Process Connection:	1" BSP (flange options)	
Power Supply:	24 VDC	
Analogue Output:	Dual 4-20 mA	
Communication:	HART	
Relay Outputs:	N/A	
Display:	Integral LCD option	
Max. Process Temperature:	300°C	
Accuracy:	± 3 mm (2mm option)	

REFLEX VG50/51 Series

The Hycontrol VG50/51 series of radar are designed as basic low cost, two wire transmitters for simple level applications. This technology is an ideal replacement for displacers, capacitive and hydrostatic transmitters and for any vessels without internal structures, stirrers or agitation.

FMCW radar uses a high frequency (10 GHz) signal which increases in frequency during the measurement. The signal is emitted, reflected from the measuring surface and received after a time delay. Further signal processing of the difference between transmit and receive frequencies is carried out and this difference is directly proportional to the level.

The VG50/51 series maintains a high level of accuracy over its range and is unaffected by pressure, temperature, viscosity, vacuum or foam. It can measure a wide range of aggressive liquids including solvents, acids and paints.

For process vessels with difficult internal structures such as pipes, heating coils or agitators. ETS (Empty Tank Spectrum) is required. ETS effectively maps out all unwanted signals by viewing the tank empty and memorising the return signals from internal structures such as pipes, heating coils and agitators. The instrument will then ignore these false signals to provide a reliable level measurement.



Measurement

Slurries - Liquids - Pastes

Range

0-20 m

Application

Oil
Solvents
Acids
Chemicals


Industries

Chemical
Water & Waste
Process
Oil & Gas

Product Highlights

- Suitable for aggressive liquids
- 2 wire loop powered 24 VDC
- High temperature option 250° C
- Ideal for liquid applications
- Corrosion & chemical resistant
- Low cost radar
- FMCW advanced radar
- TBF mode for low dielectric media
- Immune to pressure, foam & dust
- Volume linearization for irregular tanks

Specification

Function:	Level/Distance/Volume	
Measuring Range:	0-20 m	
Environmental Protection:	IP65	
Process Connection:	Various flange & screw options	
Power Supply:	24 VDC	
Analogue Output:	4-20 mA	
Communication:	HART	
Relay Outputs:	N/A	
Display:	Optional plug in module	
Max. Flange Temperature:	250°C	
Accuracy:	0.3% measured distance	

REFLEX VG6 - VG7 Series



The Reflex VG6 & VG7 Series of two wire FMCW (Frequency Modulated Continuous Wave) Radar Products are the most advanced in the Hycontrol range of radar technology products. They are unaffected by pressure, temperature, viscosity, vacuum, foam dust or changes in dielectric constant and can measure virtually any liquid or solid product utilising either Horn or Drop Antenna. This radar gauge can measure distance, level or volume.

The FMCW radar uses a high frequency (26 GHz) signal which increases in frequency during the measurement. The emitted signal is reflected back from the product surface and received after a time delay. Further signal processing of the difference between transmit and receive frequencies is carried out and this difference is directly proportional to the level.


For process vessels with complex internal structures such as pipes, heating coils or agitators/stirrers, then the ETS (Empty Tank Spectrum) is required. ETS effectively maps out all unwanted signals by viewing the tank empty and memorising all the return signals from internal structures such as pipes, heating coils and agitators.

The VG6 range has a unique patented 'drop' antenna to provide unequalled performance on long range solids applications involving dusty powders or granules. This new design can cope with large product build ups on the antenna without degrading performance and does not require any expensive airpurge options which many horn antennae based systems require.

Product Highlights

- Suitable for aggressive liquids
- 2 wire loop powered 24 VDC
- High temperature option 250° c
- Suitable for liquid & solid applications
- Corrosion & chemical resistant
- High accuracy radar ± 2 mm
- FMCW advanced radar
- TBF mode for low dielectric media
- Immune to pressure, foam & dust
- Volume linearization for irregular tanks

Specification

Function:	Level/Distance/Volume	
Measuring Range:	0-80 m	
Environmental Protection:	IP65	
Process Connection:	Various flange/screw options	
Power Supply:	24 VDC	
Analogue Output:	4-20 mA	
Communication:	HART	
Relay Outputs:	N/A	
Display:	Multi-line integral module	
Max. Flange Temperature:	250°C	
Accuracy:	± 3 mm (2mm option)	

Measurement

Solids - Liquids

Range

0 - 80 m

Application

Oils - Acids - Solvents - Chemicals
Cement - Ore - Coal - Coke

Industries

Chemical - Process
Oil & Gas
Pharmaceutical
Water & Waste
Quarry & Mining
Food & Beverage
Shipping

REFLEX VG500 Series

The Reflex VG500 Series is a four wire FMCW device. This range of radar products is unaffected by pressure, temperature, viscosity, vacuum, dust or changes in dielectric constant. It uses a non-contact measurement principle and can measure to a very high accuracy of 1mm on specific liquid applications.

The FMCW radar uses a high frequency (9 GHz) signal which increases in frequency during the measurement. The signal is emitted, reflected from the measuring surface and received after a time delay. Further signal processing of the difference between transmit and receive frequencies is carried out and this is directly proportional to the level.

This unit is manufactured in a modular format and consists of a flange system, horn antenna and electronic module. The advantage of having a detachable system is the ability to maintain the vessel integrity should the electronics module ever fail or need to be replaced. This is advantageous if the vessel is pressurised or contains highly dangerous product. The VG500 also utilises ETS (Empty Tank Spectrum) which maps out all unwanted signals by viewing the tank empty and memorising all the return signals from internal components such as pipes, heating coils and agitators.

This range has a very high accuracy option of 1mm which is an ideal instrument for precision measurements such as custody transfer applications. Programming of this device can be done via an onboard programmer or via HART, Profibus or dedicated software.



Measurement

Solids - Liquids

Range

0 - 40 m

Application

Oils - Acids - Solvents
Chemicals - Cement - Ore

Industries

Chemical - Process
Oil & Gas
Pharmaceutical
Water & Waste
Quarry & Mining
Food & Beverage
Shipping

Product Highlights

- Suitable for aggressive liquids and solids
- FMCW non-contact radar technology
- Profibus/Foundation Fieldbus options
- Corrosion & chemical resistant
- Immune to pressure, vapour dust etc.
- Long range 40 m
- Vessel mapping for difficult shaped bins
- Ultra high accuracy 1 mm
- 4 wire configuration

Specification

Function:	Level/Distance/Volume
Measuring Range:	0-40 m
Environmental Protection:	IP65
Process Connection:	Various flange & screw options
Power Supply:	24 VDC
Analogue Output:	4-20 mA
Communication:	HART
Relay Outputs:	N/A
Display:	optional plug in module
Max. Process Temperature:	250°C
Accuracy:	1mm



4000 Series



This measuring method is very simple. A calibrated Bypass tube is connected to the side of a tank or vessel at the top and bottom so the levels in the tank are replicated in the tube and changes in the tank equal changes in the Bypass tube.

There are then two options for level display utilizing a float inside the chamber with a magnet inside which travels up and down the tube changing magnet flaps on the outside of the tube indicating the height of the liquid in the tank with a clear visual display.

The Bypass tube also offers the option to install a level sensor into it for an electronic output of level or contents. This can be done with either a Radar or TDR level instrument. This provides a clear visual display of contents and an analogue output for retransmission of the signal if required.

Temperatures can be as low as -200°C and as high as +300°C and materials of construction can be provided to cater for corrosive or hazardous media. Pressure ranges are from vacuum to 120 bar.

Product Highlights

- Rugged chemical resistant construction
- Temperature ranges -200 up to 300°C
- Compatible with TDR/Radar technology
- Multiple angle flange options for easy retrofit
- Level and interface options available
- Pressure up to 120 bar
- Simple to read level display
- Operates through foam
- Options for level switch output
- Wide range of materials

Specification

Function:	Level measurement
Measuring Range:	0-5 m
Environmental Protection:	IP67
Process Connection:	Various flange options
Power Supply:	24 VDC
Analogue Output:	4-20 mA
Communication:	HART / PROFIBUS
Relay Outputs:	2/4 optional
Display:	Magnet flaps / Integral LCD option
Max. Process Temperature:	400° C
Accuracy:	±3mm



Measurement

Level

Range

0 - 5 m

Application

Boilers - Chemicals - Oils - Solvents
Hot Water Steam

Industries

Chemical - Power Generation
Process
Water & Waste
Process
Oil & Gas

ELECTROMECHANICAL

Level Measurement

PLUMB BOB 3000 Series

The Hycontrol plumb bob level sensor is an electromechanical level measuring instrument for continuous measurement of the level or contents in tanks and silos.

The Hycontrol control unit is mounted on the top of the silo and a sensor weight is mounted at the end of a rope or tape which is wound around a motor driven roller. The weight is then driven down into the silo until it makes contact with the bulk material. When it detects the product the motor changes the winding direction and the sensor weight is driven back to the upper stop position. During this downwards movement of the sensor weight the distance is electronically measured by the rotations of the internal rope/tape roller. The microcontroller then converts the measured distance into an output signal which can be converted into a volumetric signal based on the dimensions and geometry of the silo. The output signal is updated when the sensor weight touches the bulk material.

This technology has been available for many years and has a number of advantages which other high technology products such as radar or TDR cannot solve. An example of this is on low dielectric pastic products or salt saturators for detecting the granular salt levels beneath the water. In this application the water and salt levels change independently of each other but the plumb bob will measure through the water every time to reach solid product-simple but effective!



Measurement

Solids - Powders - Granules - Flakes

Range

0 - 40 m

Application

Grain - Cement - Plastics - Salt - Sand


Industries

Chemical
Process
Quarry
Plastics

Product Highlights

- Suitable for interface detection
- Independent of material properties
- Operates in dusty atmosphere
- Simple automatic operation
- Long life motors for extended life
- No mechanical load on the silo roof
- High temperature options
- ATEX options for hazardous area
- Accurate level measurement
- Service interval alarm indication

Specification

Function:	Level/Distance/Volume/Interface	
Measuring Range:	0-40 m	
Environmental Protection:	IP66	
Process Connection:	Numerous flange/screw options	
Power Supply:	98-250 VAC 50/60 Hz 20-28 VDC	
Analogue Output:	4-20 mA	
Communication:	HART, PROFIBUS, RS485	
Max. Process Temperature :	250°C	
Relay Outputs:	4 SPDT 2 A 250 VAC	
Display:	Remote option	
Accuracy:	1% measured range	

HYDROSTATIC PRESSURE

Level Measurement

HP Series



The Hycontrol range of Hydrostatic Level sensors are mounted in two different ways, either submersible into the tank or externally on the outside bottom of the tank. These pressure sensors are suitable for measuring the level of corrosive liquids in deep tanks through to simple water in reservoirs or bore holes. These sensors operate by detecting an increase in pressure as the depth in the tank increases. A calibration parameter is then input to compensate for the varying specific gravities of the different liquids being monitored.

This pressure transmitter range has been developed for the highest requirements in the process industry. The basic element is a piezo resistive pressure sensor characterised by high signal stability. Linearisation of the sensor signal and compensation of the thermal error is carried out by intelligent digital electronics.


A wide range process connections and chemical seals for food, chemical and pharmaceutical industries are available with all media wetted parts manufactured in stainless steel (316L).

This range can be delivered optionally with a stainless steel ball housing for chemical or food applications or with a robust powder-coated aluminium die cast case.

Product Highlights

- Integral display and programming module
- Corrosion resistant materials
- ATEX hazardous area options
- Hygienic options for food applications
- Flush welded diaphragm
- High accuracy of 0.05% FSO
- Wide pressure range options
- Multiple housing types

Specification

Function:	Level/Contents Measurement	
Measuring Range:	0-100 bar	
Environmental Protection:	IP67	
Process Connection:	BSP / Hygienic	
Power Supply:	24v VDC	
Analogue Output:	4-20 mA	
Communication:	HART/PROFIBUS	
Relay Outputs:	N/A	
Display:	Integral LCD option	
Max. Process Temperature:	250°C	
Accuracy:	0.05%	

Measurement

Liquids only

Range

0 - 100 bar

Application

Water - Chemicals - Oils - Milk

Industries

Chemical
Water & Waste
Process
Food & Beverage
Pharmaceutical
Oil & Gas

DISPLAY INDICATORS

Instrumentation

HYC3420 / HYC3600

Designed without compromise the Hycontrol HYC 3000 display range uses leading edge technology to accept all commonly used process inputs. Engineering units are displayed on a high efficiency red LED display that provides daylight readability.

The 4 or 6 digit display can be set to show a fixed number of decimal places or to auto-scale to show the maximum resolution. The innovative case design enables option 'Pods' to be installed without need for dismantling or re-calibration. 'Plug and Play' Pods are available for relay outputs and isolated re-transmission (0-10, 0-20, 4-20 mA). MODBUS RS485 is also available

The flexibility of plug-in option pods, combined with the switch mode power supply results in reduced stock holdings and 'low cost of ownership'. The front is sealed to IP65 and the case has a moulded-in rubber gasket to seal to the panel maintaining the IP65 rating, ideal for 'dusty' areas or where low pressure jets of water are used to clean down equipment.

Tension clamp two part connectors are standard and provide for 'fast wiring', enabling installation to be completed in typically half the time it would take using conventional screw terminals. Programming is via the front panel keys following a logical menu.

Options for enclosures for wall mounting are available.



4-Digit



6-Digit



Functionality

Display indicator

Input

Current / Voltage / RTD

Applications

Display of level / flow / volume

Industries

Chemical
Process
Quarry
Water&Waste
Petrochemical
Food
Plastics

Product Highlights

- Plug and Play option pods
- 2 year warranty
- IP65 protection to front panel
- 4 or 6 digit display option
- Wide range power supply
- Front panel programming
- Simple set-up menu
- High intensity LED
- 24 VDC excitation transmitter power
- Current and voltage input signals

Specification

Function:	Universal display indicator
Input Range:	Voltage/Current/Thermocouple/RTD
Sealing to Panel:	IP65
Accuracy:	0.05% FS
Display Digit:	4 to 6 digit options
Digit Size:	14.2mm high intensity LED
Temperature Range:	-30 to +60°C
Relay Pod Rating:	5A / 250 VAC
Output:	24 VDC/4-20 mA/MODBUS/RS485

BAR GRAPH - PB Series



The Hycontrol Bar Graph provides economical, high-visibility 101 segment bar graph displays for most of the popular signals such as 4-20 mA, 0-20 mA, 1-5 V, and 0-10 V. The meter provides a full 144 mm display with exceptional visibility over long distances.

The bar graph housing is made of extruded plastic and is designed to be panel mounted; however, it can be wall mounted with the addition of another enclosure. Installation is such that the bar graph is vertical and when panel mounted, the front of the display is sealed to IP54.

These Hycontrol LED bar graph meters are used as an ideal means to display relative values without having to calculate tank capacities etc. Bar graph displays are ideal for tank contents monitoring as they provide direct visual indication of the level within the vessel.

The PB2471 also has the added benefit of being able to display two bar graphs simultaneously at the same time in two different colours - red and green. Both bar graphs accept multiple inputs and provide multiple relay and analogue outputs.

This display indicator provides a very simple visual display, easy to read at a glance without having to calculate either tank capacities or minimum and maximum values.

Product Highlights

- 24 VDC excitation transmitter power
- Volume conversion menu
- 4 digit numeric display plus bar graph
- 20 point linearisation
- Current and voltage input signals
- Simple set-up menu
- Front panel programming
- High intensity LED
- Wide range power supply
- Clear visual display

Specification

Function:	Universal bar graph / Numeric display indicator
Input Range:	Voltage/Current/Thermocouple/RTD
Sealing to Panel:	IP54
Accuracy:	0.1% FS
Display PB1471:	4 Digit Numeric /101 Bar Graph
Display PB2471:	2x4 Digit Numeric /2 x 101 Bar Graph
Temperature Range:	0 to +50°C
Relay Pod Rating:	3A/250 VAC
Output:	Analogue and Relay options
Programming:	Via Keypad or Software RS485

Functionality

Display Indicator

Range

Current - Voltage - RTD

Applications

Level - Flow - Volume
Distance - Temperature

Industries

Chemical
Process
Quarry & Mining
Water & Waste
Plastics
Food & Beverage
Pharmaceutical

WIRELESS DATA TRANSMISSION

Instrumentation

WIRELESS SYSTEMS

Hycontrol supply a wide range of technologies for many extreme applications in difficult and hostile environments, but Hycontrol's capability does not just end with the measuring instrument itself. Instruments that are installed in areas where data communication cables are either not present, not suitable or just too costly to install, can now be easily accessed.

Wireless technology has been available for many years, albeit at a price, but now Hycontrol have introduced a new generation of low cost systems to satisfy both fixed and mobile applications.

The system consists of a transmitter that can be connected to a maximum of 12 sensors (will accept any 4-20mA input) and one or more receiver stations. The transmitters are mains powered and permanently installed, but the receivers can be either battery operated portable devices or fixed point mains powered versions.

The portable unit can display up to 12 different inputs in either bar graph format or numeric display values.



Functionality

Wireless transfer of level information

Range

500 m

Application

Stone - Chemicals - Grain

Industries

Chemical
Quarry
Process
Animal feed

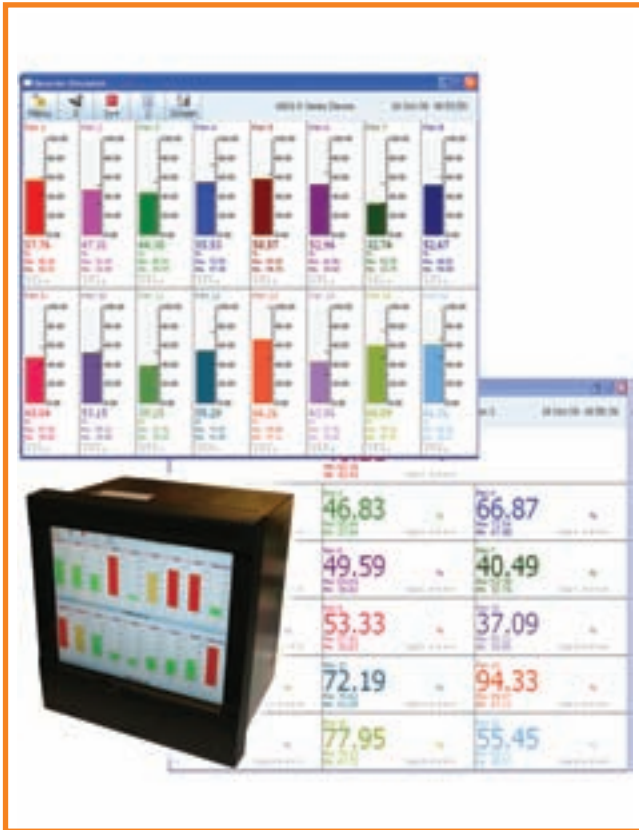
Product Highlights

- Reduce installation time and site costs
- Simplified installation with reduced cabling
- Maximum flexibility with portable information
- Portable and fixed receiver stations
- Industry standard process input
- Licence free data transfer
- Easy to operate and understand
- Clear Bar Graph / Numeric display
- Long range between transmitter & receiver station

Specification

Function:	Wireless data transfer
Measuring Range:	500 m
Environmental Protection:	IP65
Power Supply:	110/230 VAC
Analogue Output:	6/12 station
Analogue Input:	6/12 station
Frequency:	434 MHz

PAPERLESS RECORDERS



Hycontrol's range of paperless recorders provides flexible electronic data acquisition and recording in a high functionality, small or large display format recorder.

The recorders have the capability of monitoring up to 48 analogue inputs with at least 70mB of available on-board memory, plus additional removable storage media.

The Hycontrol display uses a digital colour TFT LCD screen to provide easy to read displays with wide viewing angles for the best all round data viewing. The touch screen operator interface provides fast, easy access to recorder menus making setup and data analysis quick and efficient. Navigation through the menus and text entry is direct and intuitive.

These units are utilized in many applications for providing clear indication of multiple tank contents on typical applications in tank farms, ranging from solvents and chemicals to sands and oils.

These systems can display the information at source or link easily into a network via the Internet Ethernet port which enables multiple users to view the data from multiple locations around the factory or site.

Product Highlights

- Multiple display options
- Multiple screen sizes
- Clear intuitive programming
- Inbuilt USB ports
- Alarm outputs options
- Heavy duty touch screen option
- 10/100 Ethernet/RS485/MODBUS comms
- Password protection
- Rapid review of data
- MATH/totaliser functions

Specification

Function:	Universal display indicator/recorder
Number of Inputs:	4,6,8,12,16,24,40 or 48 input channels
Input Types:	mV, V, mA Thermocouple, RTD, ohms
Minimum Input Span:	Range is fully configurable
Burnout:	(T/C) Active (High/Low), Passive & Health Watch /Maintenance option
Cold Junction Compensation:	Internal Compensation with ability to manually adjust valves
Input Resolution:	0.0015% (16 Bit ADC)
Input Impedance:	Current loop resistance 10 ohm, use±0.1% external resistor
Source Impedance:	T/C and RTD: 10 ohm per lead maximum
Square Root Extraction:	Available as standard on every input type
Sensor Compensation:	Single point and dual point input range: Voltage/Current/Thermocouple/RTD
Voltage:	100-250 VDC
Communications:	TCP/IP, FTP, RS485 MODBUS (slave) 10/100 Ethernet Email and Web

Functionality

Display Indicator / Recorder

Input

mV, mA, Thermocouple, RTD & ohm

Application

Display of Level/Flow/Temperature/
Volume/Pressure

Industries

Chemical
Process
Oil & Gas
Petrochemical
Water & Waste
Quarry & Mining
Food & Beverage

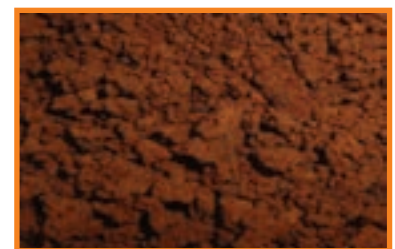
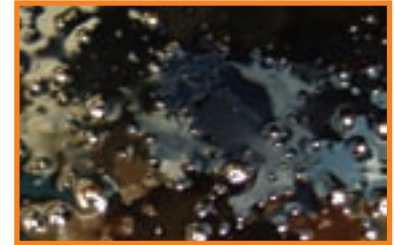
REMOTE MONITORING

Level Measurement & VMI

VENDOR MANAGED INVENTORY

Whether you are a bulk supplier of products or a bulk user of product. Vendor Managed Inventory (often referred to as VMI) can save money if managed through your organisation efficiently and effectively. It offers advantages to both parties by enabling complete transparency between supplier and user without any security risk to either organisation.

The implementation and running costs are extremely low, but the cost savings can be extremely high, with typical savings on haulage costs alone estimated to be between 5 and 20% and that's without the added advantages of improved production planning, reduced inventory and production lost time from product stock shortages.



User Benefits

- Improved response times for deliveries leading to more effective JIT deliveries.
- Minimise product shortage and expensive run out situation.
- Automatic product replenishment.
- Reduction in plant stoppages and down time from stock shortage.
- Reduced cost of bulk product when working with suppliers who can utilise VMI.
- Reduced cost of panic purchase orders incurring additional haulage costs.
- Decrease product stock holding and excess buffer stocks.
- Improve supplier relationships and reliability of supply to provide stable purchase costs.
- Reduce the cost of monitoring stocks, placing orders and checking deliveries.
- Remove possible human error issues in the stock re-order process.

Supplier Benefits

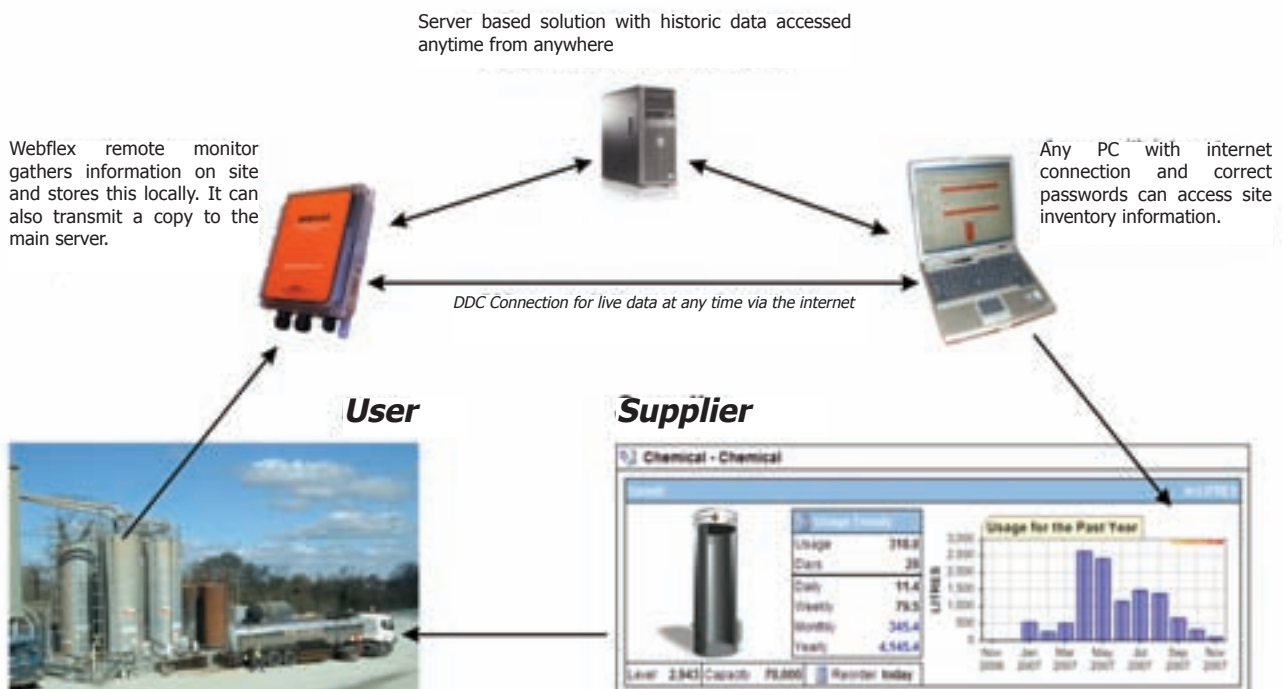
- Improved response times for deliveries.
- Improved delivery logistics with reduced haulage costs.
- Automatic product replenishment.
- Reduction in park delivery times enabling better road tanker utilisation.
- Reduction in peak manufacturing times and higher labour costs.
- Decrease bulk product purchase orders incurring additional haulage costs or outside hire.
- Improve customer/ supplier relationships will produce higher customer retention.
- Decrease the number of partial load deliveries over shipments.
- Improved production planning with forward notice on delivery requirements.
- Reduced people and vehicle idle times on your site and customers'.
- Reduce the additional amount of third party vehicle hire when your fleet is busy.
- Reduction in direct vehicle costs, tyres engine wear and expensive fuel.
- Reduce the number of deliveries to site.
- Improve customer relations by improving the quality and efficiency of supply.

REMOTE STOCK MANAGEMENT

Vendor managed inventory has been around for over two decades but many of these systems rely on traditional technology such as direct PSTN or GSM phone lines being poled for data at set periods and downloading this to dedicated machines to interpret the data. The latest breakthrough is to use the internet and state of the art GPRS data communications which offer fast rates of data transfer with very low usage costs.

The relevant inventory data is collected and stored at each site with a Hycontrol Webflex module and periodically sent over the internet to a dedicated secure server which can then be accessed by anybody, anywhere in the world, at any time! This data is classed as historic data and the upload interval is set by the user depending on the critical usage.

The Hycontrol systems unique feature is the way in which the data collection module, Webflex, operates as it is capable of dual data connection (DDC). DDC offers the advantage that it not only uploads historic data to the internet server to be analysed and displayed. It can also allow users to view real time inventory levels at any stage, a feature not possible with many existing VMI systems today.



Auto Reporting, Alarming, Datalogging and Reports

Two automatic reports are available. The first is a System Summary report which includes information about the site, the variables being monitored and any alarm conditions present at the time of sending. The second is a data log file in a .csv format for loading into a spreadsheet. Both reports can be sent to four different email addresses, on a scheduled basis or by request.

Graphing and Trending Analysis

Stored data stored for more than one year may be viewed in a graphic format on-line without downloading it into a computer first and without having to open a dedicated spreadsheet program. There is also the option to save the graph as a picture file. Analysis of trends and deliveries will help to determine improved efficiency and identify peak delivery times which could have been avoided. The graphs clearly show usage of any particular product and help determine the optimum delivery time. This data is essential for evaluating certain benefits with VMI.

REMOTE MONITORING

Level Measurement

WEBFLEX VMI

Webflex is a stand-alone remote monitoring device that will seamlessly web-enable your installed equipment without having to replace or upgrade it.

Webflex can monitor tank or process information on site over a company network or this data can be viewed anywhere in the world over the internet with a standard web browser.

Webflex has an embedded web server allowing it to basically function as a website, thereby eliminating the need for proprietary software. All you need is a standard web browser and the Webflex on-line when you need it, making it the world's first practical and secure industrial monitoring internet solution.

Any or all of the measuring points being monitored can be data logged and these files can be downloaded manually or automatically on a scheduled time basis. Stored data from 1 hour to 32 days may be viewed in a graphic format on-line without downloading it to a computer first and without having to open a dedicated spreadsheet program.



Monitoring

Pressure - Temperature - Level - Flow

Range

Any Analogue or Digital Input

Application

Pressure - Temperature - Level - Flow

Industries

Chemical
Water & Waste
Process
Oil & Gas
Food
Pharmaceutical
Quarry

Product Highlights

- Up to 96 analogue and 96 digital inputs monitored via internet connection
- No expensive software licences or monthly subscriptions necessary
- Low cost per point with 6 analogue and 6 digital inputs
- 24 VDC integral power supply for transmitter excitation
- Web-enable virtually any 4-20 mA transmitter or switch
- integral PSTN, GSM and GPRS modem options
- Connect directly into new or existing networks
- Simple retrofit to existing instrumentation
- Easy to install and commission
- Multi-level security access

Specification

Function:	Remote process monitoring
Input Power:	100-240 VAC +10%, 1.0A, 50/60Hz
Analogue Inputs (6):	4-20mA, 2 wire or 3 wire, internally powered by 24 VDC
Digital Inputs (6):	Flow Meter: Isolated dry contact (relay, reed switch or Hall effect) (DI 1-4 only): 0-400 Hz, 1.5 msec minimum width
Outputs:	Solid State Relay: Dry Contact, 0-40 VDC, No AC Voltage, 150 mA max load
Communication:	1 x USB-A port (Host) 1 x USB-B port (Slave) 1 x RJ11 Modem connection (PSTN) 1 x RJ45 Ethernet connection (100 metres max)



Bendicks

Client

Food

Industry

Application

Accurate level measurement was required to improve the production process and provide a better inventory control on nine stainless steel chocolate tanks. The chocolate tanks all contain stirrers to continuously mix the products and are also heated to maintain fluidity of the chocolate in the process.

The level information for the 9 tanks needed to be available in two areas. Firstly adjacent to the fill point in production and secondly, at various departments in the plant via the company LAN. The system needed to be simple to install with no special software.

Hycontrol provided a simple yet highly effective solution of nine two wire Microflex CER ultrasonic transmitters.

These units were connected to two Hycontrol Webflex controllers which enabled the tank contents to be put into the company LAN for users to view at any time.

Hycontrol scope of supply:

- 9pcs Microflex CER
- 2pcs Webflex



UKAEA/NUKEM

Client

Nuclear

Industry

Application

To provide level measurement for multiple tanks in a radioactive area.

The access to the tanks was in a confined restricted workplace and would require the electronics to be mounted away from the top of the tanks process connection. The process entry was a narrow small 1" flange through a large lead and concrete protection lining.

The level measurement solution had to be compatible with high radiation and a toxic chemical environment and most importantly, provide a reliable level readout of the tanks contents.

The project was further complicated by the short lead time required.

Hycontrol provided 6 purpose built TDR level gauges with a remote head umbilical option to take the electronics away from the confined space. The level probe was designed in self assembly sections which were assembled on top of the tank to avoid the restricted head room problem and was all completed in an agreed timescale.

Hycontrol scope of supply:

- 6 special Nuclear TDR VF7 Series

APPLICATIONS

Client

Gilbertson and Page

Industry

Animal Feed/Petfood

Application

To improve production processes by providing accurate level measurement and control of various tanks and silos on site containing, powders, liquids, pellets and grains.

Applications included high and low alarms, level measurement, blocked chute detection and overspill protection with display panels. The criteria used for choosing a level measurement company was the capability to provide a wide range of different technologies for the varied applications.

Tanks contained bulk materials of wheat, maize, fines, hypo, soya flakes, fats, acids and various oils.

Hycontrol scope of supply:

- 63 pcs Capacitive Level Switches
- 34 pcs Ultrasonic Level Gauges
- 28 pcs Paddle Switches
- 5 pcs VF7 TDR Level Gauges
- 2 pcs Alarm Panels



Client

Tarmac

Industry

Quarry & Aggregate

Application

To reduce the number of overspill incidents on asphalt coating plants when a delivery of bitumen takes place. Tarmac wanted to fit the latest technology approved by the RBA (Refined Bitumen Association) to eliminate this potential area for a health and safety issue.

The product to measure is hot bitumen, usually stored around 180°C, which is very sticky and coats any level probes in the tank. A belt and braces approach, with an independent high level alarm, is essential for the safety system. This information then has to be displayed clearly and with a traffic light OK to fill display, at the fill point.

Hycontrol's experience in this industry is second to none having completed the majority of the asphalt plants in the UK, including many Tarmac sites.

Hycontrol scope of supply (multiple sites) :

- +40 pcs VF03 Series Level Gauges
- +40 pcs MD20 Series Admittance Probes
- +40 pcs Alarm Panels and Traffic Light Systems





Caldic

Client

Chemical

Industry

Application

To provide accurate inventory measurement of 19 bulk chemical tanks located in a hazardous area. The tanks contain product such as toluene, ethyl acetate and trichloroethylene and are stored in 55,000 litre storage tanks. Accuracy required was 3 mm or better over a 9.5 m range.

Realtime data was required to be displayed on the company LAN to enable production and sales to view simultaneously the control of consignment stocks. An ATEX panel was required at the fill point to alert of a potential tank overflow and a display panel inside the production office was also required. No tank modifications could be made so Hycontrol engineers had to utilise existing process connections.

Hycontrol provided TDR level gauges which were all pre-configured and calibrated for the tank capacity at the Hycontrol factory. This aided installation and kept the commissioning time to a minimum. A display recorder panel was built to display all 19 tanks in bargraph and numerical format containing all barriers for the ATEX level gauges and the output to the alarm beacon and siren at the fill point.

Hycontrol scope of supply:

- 19 pcs VF07 Series TDR
- 2 pcs Display Alarm Panels



Bostik

Client

Adhesives & Chemicals

Industry

Application

Many of the on-site tanks contained potentially hot or dangerous products and it was identified a safety overflow alarm system was required. Some of the tanks contained a latex and bitumen product while others contained solvents in an ATEX hazardous area. The bitumen products would also coat any probe it came into contact with.

The project was to supply, install and commission a reliable system with all appropriate alarm panels located at the fill points for each of the tanks.

Hycontrol have provided a range of technologies to Bostik, including Admittance probes for the bitumen, ATEX tuning forks for the solvents, TDR for level in tanks and a range of special purpose alarm panels with appropriate barriers etc.

Hycontrol scope of supply:

- 8 pcs Admittance level switches
- 3 pcs TDR level gauges
- 2 pcs ATEX tuning fork level gauges
- 3 pcs Alarm panels for different configurations

APPLICATIONS

Client

Morris Lubricants

Industry

Oils & Lubricants

Application

A key requirement for increasing the production within the factory was accurate inventory control of all production, process and storage vessels. These vessels consisted of various shapes and sized tanks including horizontal, cylindrical, vertical, square and irregular tanks with sloping bottoms.

Accurate linearization was essential for the vessel volume conversion, along with high instrument accuracy. 29 of the tanks also had complex internal heater coils fitted, which produced the potential for fumes and vapours. Multiple displays of tank contents were required at fill points and alarms for overfill protection were also included along with a network configuration so all tanks could be viewed on the company LAN.

Hycontrol provided a complete service, from site survey to supply, install and commission of over 80 instruments. The complete project on site now has over 100 Hycontrol level instruments

Hycontrol scope of supply:

- 22 pcs VF03 TDR (guided wave radar)
- 58 pcs Microflex CER (ultrasonic transmitter)
- 4 pcs Hycontrol special display panels.



Client

Beijing Subway BCECCL

Industry

Water & Waste

Application

To reduce the risk of flooding in the new subway network with the anticipated increase in capacity ready for the Beijing Olympics in 2008.

Throughout the subway network are over 350 pumping stations which need to reliably pump water and waste material from the stations to process plants. In the event of these pumping stations failing, the reality is, that the subway could flood in water and sewage.

The units chosen for this key operation were evaluated at great length with trials spanning nearly three years. The level control units had to work in applications which could, potentially become flooded and so therefore had to operate even if submerged in water, whilst controlling multiple pumps to control the outflow from stations.

Hycontrol provided a complete integrated level and pump controller with an IP68 rated transducer in case of submergence. The Miniflex LR multi-pump controller, used extensively in the water industry, was chosen for this application:

Hycontrol scope of supply:

- 350 pcs Miniflex LR
- 350 pcs RYT15 Transducers





Welsh Water

Client

Water & Waste

Industry

Application

Welsh Water is the sixth largest water and waste company in the UK, servicing over three million people with quality water. One of their waste water treatment sites was having issues monitoring and controlling the sludge levels in their primary settling tanks. The existing sludge detection units were unreliable and gave erratic readings which meant the plant could never be run in automatic mode.

A Hycontrol sonar unit was fitted for evaluation to see if it could provide reliable interface bed levels and additional information on FLOC/RAS levels. This unit, with its multiple outputs, also provides an indication of when a biological upset occurs. The unit with its special self-cleaning mechanism has proved to be extremely reliable and a further seven systems have now been fitted

Hycontrol scope of supply:

- 8 pcs Sonar Controller
- 8 pcs RVT Transducers
- 8 pcs Cleaning Mechanism



Hanson Aggregates

Client

Quarry & Aggregates

Industry

Application

Hycontrol have solved multiple applications on one of the largest quarries in the UK including five complete overspill protection systems for the bitumen tanks at the coating plant. These systems provide accurate level measurement with additional safety overspill alarms, all connected to dedicated Hycontrol display panels.

Conforming to environmental regulations is also important for the site and the four oil storage tanks have been fitted with Hycontrol ultrasonic level gauges along with high level overflow switches with test functions. Five dusty filler silos have been fitted with TDR level gauges for accurate contents measurement and the wash plant has three Miniflex LR two part systems installed on liquid sludge tanks.

Hycontrol scope of supply:

- 5 pcs RBA Display Panels
- 5 pcs Bitumen TDR Level Gauges
- 5 pcs Admittance Bitumen Probes
- 4 pcs Microflex CER Ultrasonic Transducers
- 8 pcs Capacitive High Level Probes
- 4 pcs Oil Contents and Ullage Panels
- 3 pcs Miniflex LR Ultrasonic Gauge



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