HYCONTROL
LEVEL MEASUREMENT SPECIALISTS

HYCONTROL has been designing, specifying and recommending non-contact Ultrasonic Level Measurement Systems since 1979. Starting life in 1963 as the industrial controls division of an aircraft and aerospace controls manufacturer, Hycontrol became a privately owned company in 1983, and began manufacturing Ultrasonic Level Systems in 1988. The management of Hycontrol has over 130 years of combined experience in instrumentation and, in particular, ultrasonics.

Through close liaison with customers, Hycontrol has perfected the use of Ultrasonics for level measurement and control. Instrumentation based upon this firmly established principle is currently employed on an ever increasing range of liquid and solid materials.

Hycontrol has the expertise to select the correct system for the application ensuring reliable trouble free performance with the minimum of maintenance. The in-built flexibility of each software package means that the level measurement system can be matched to the individual needs of the customer.

Ease of installation and low capital outlay are additional benefits of Ultrasonic Level Measurement.

For further information on the system detailed within this literature – or other systems within Hycontrol's range of Ultrasonic Programmable Level Controllers – contact one of our qualified engineers who are available to help wherever you are in the world.

Hycontrol's distribution network operates through centres located in Europe, Scandinavia, the Middle East, Australia, South Africa, North and South America, supplying products, technical back-up and service to companies throughout the world.

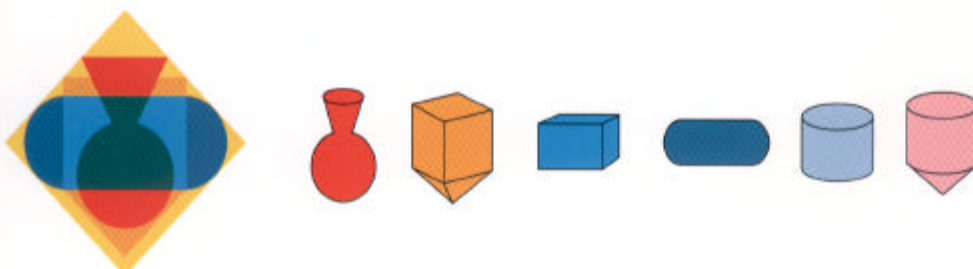Bulk storage levels.
Animal feedstuffs.

Proven software programs ensure optimum performance.

Tank farm inventory.
Resins and solvents.

Quarry screen house.
Roadstone.

MULTIFLEX
MULTI-FUNCTIONAL
PROGRAMMABLE LEVEL CONTROLLER

The new CE marked Multiflex instrument from Hycontrol is the first low-cost, general-purpose, level controller capable of monitoring the level of solids in hoppers and silos as well as providing all the functionality of dedicated liquid level controllers.

SURFACE MOUNT TECHNOLOGY
Multiflex uses the latest H8 surface mount micro-processor technology to give the user control of powerful software algorithms which can be selected to meet the different demands of solid and liquid applications.

SOLIDS AND LIQUIDS
In applications on solids, Multiflex has to operate in dirty, dusty environments and be able to analyse the profile of the solid surface within the beam of the ultrasonic transducer.
For liquids, which always provide a flat surface, the need is to offer a high degree of resolution and functionality. Multiflex is capable of satisfying both these requirements for liquid or solid applications in one instrument, in either a panel or wall mount enclosure.

THE SINGLE SOLUTION
Multiflex offers maximum flexibility of use from one instrument enabling distributors and users alike to obtain savings on stock and spares holding and simplifying maintenance.
Suitable for use in process works, effluent treatment plants, waste water, quarries, food manufacture etc, Multiflex is truly the single solution.
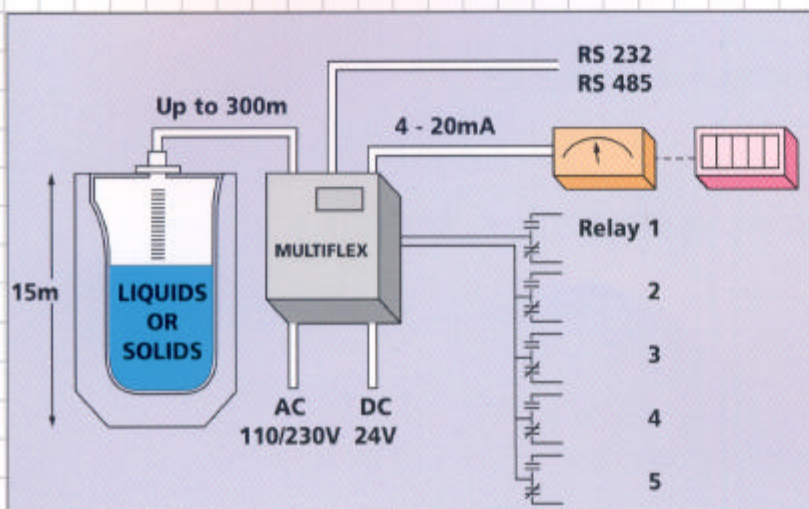
NO SEPARATE PROGRAMMERS
No complex codes or programming language are used and there is no need for separate programmers or computers to set up a Multiflex. Simply enter the appropriate values for your empty distance, span and relay settings in metres and Multiflex will do the rest.

IMMEDIATE ACCESS
Immediate access to authorised users is provided by the integral keypad. Single button retrieval of stored data for 18 different process parameters is available without interruption of normal running.

SECURITY
Multiflex has a real 4 digit user-definable access code to prevent any unauthorised person changing the program. We know of no other competitive system that offers the same level of security and attendant "peace of mind".

MULTIPLE POWER SUPPLIES
Multiflex accepts power supplies of 110 or 230 volt AC and will automatically detect which one is being used. A separate 24 volt DC input is provided on every unit for those who want to operate on a safe DC voltage or provide back-up in case of power failure.

EASE OF CONNECTION
All terminations are via two part connectors to facilitate easy wiring.

4 DIGIT LCD
The 4 digit LCD can display level, distance, volume or percentage in real time.
It can also display relay history and totaliser stores at the touch of a key.

MULTI-FUNCTIONAL
5 programmable relays allow alarms and controls to be set with variable hysteresis anywhere throughout the instrument's 15 metre span and the analogue output can be configured to go full scale, anywhere within the overall range of the Multiflex.

LEVEL TRACKING
Powerful echo processing routines and windowing techniques ensure the instrument identifies and tracks the correct level.

THE SINGLE SOLUTION FOR LEVEL CONTROL OF LIQUIDS AND SOLIDS

APPLICATION

Multiflex provides ultrasonic level measurement and control for a wide range of materials, solids and liquids, including stone, sand, powder, cereals, effluent, acids, water and food products.

VOLUME CONVERSION

Linearisation for 7 different vessel shapes held in memory.
16 point linearisation facility for non standard shapes.

PUMP CONTROL

9 software routines, developed for the water industry are built in to Multiflex and are capable of controlling up to five pumps or alarms in a wet well or tank.

DIFFERENTIAL CONTROL

By using one Multiflex and two transducers the instrument will monitor differential level allowing relays to be set for upstream and downstream alarm purposes as well as differential control on inlet screens to treatment works.

OPEN CHANNEL FLOW

Flow indication, totalisation, alarms and sampler control on any open channel with a defined flow curve.

ALARM MONITORING

Multiflex will also monitor and record the number of times that any programmed pump or alarm has been initiated and how long they were active. This history is available with a single key press and without interrupting the instrument's operation.

SERIAL COMMUNICATIONS

RS232 and RS485 ports allow level, temperature and alarm status to be transmitted. Up to 31 Multiflex can be connected on a single pair of wires using the RS485 port.

VISION SYSTEM

The on-board RS 232 port can be used, with a PC and Vision System software, to view the profile of the level in a bin and allow all echoes present within the bin to be seen during commissioning.

TYPICAL EXAMPLE OF ECHOES VIEWED ON VISION SYSTEM
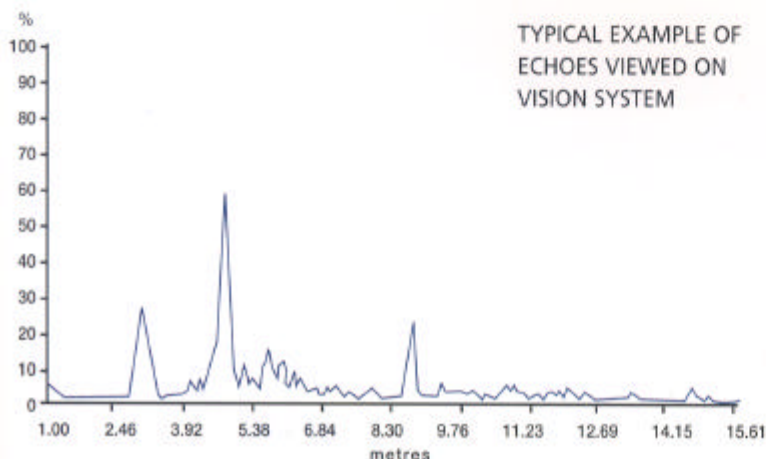
SINGLE SOLUTION

Multiflex provides the single solution for level measurement of liquids, solids and slurries.
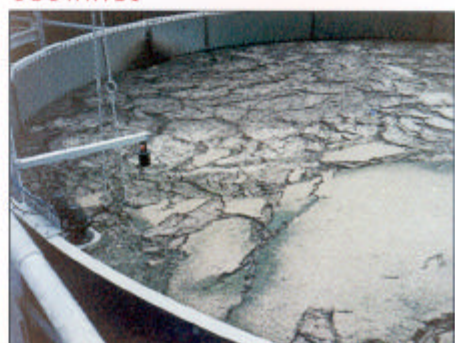
LIQUIDS

Vegetable oil storage at food manufacturing plant.

SOLIDS

Aggregate levels in hoppers and open air stockpiles.

SLURRIES

Sludge settlement in sewage treatment works.

MULTIFLEX
ULTRASONIC TRANSDUCERS

Multiflex uses the high power RX series of 41.5 KHz transducers.
These transducers when fitted with a polyethylene foam face will operate
successfully in extremely dusty conditions.
CENELEC approved for use in Zone 1& 2 gases and Zone Z & Y dusts, the
range is safe to mount almost anywhere.
300 metre separation is possible between transducer and the Multiflex when
wired in accordance with the instruction manual.

TECHNICAL DATA

Model:	RXV15 RXV15T RXV15P RXT15 RXT15T RXT15P
Frequency:	41.5 kHz
Beam Angle:	10° at 3dB
Body Material:	Xenoy thermoplastic alloy
Face Material:	RXV15 - Polyurethane general purpose RXV15T - PTFE for chemical applications RXV15P - Polyethylene for high dust

Model: RXV15 / RXT15

All dimensions in mm unless stated.

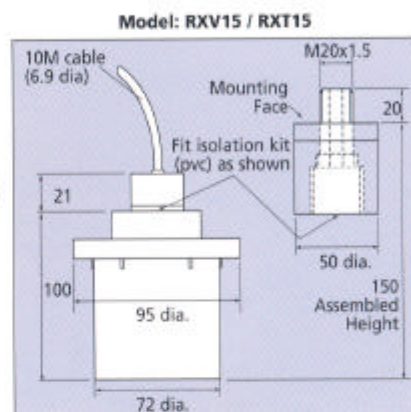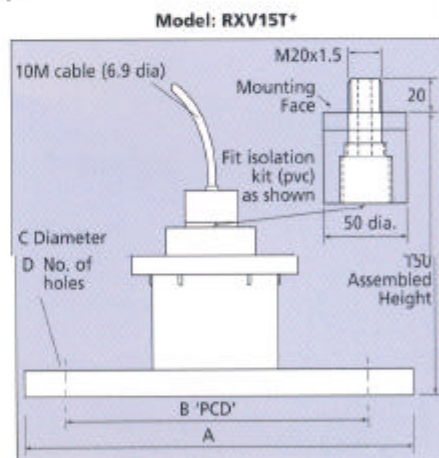|	
Temperature Compensation:	Integral in RXT transducers or separate sensor RTS 2 / 2B
Operating Temperature:	- 40°C to + 90°C
Protection:	IP68
Hazardous Area:	CENELEC EExmIIT6 for zone 1 & 2, Z & Y
Operating Pressure:	2 bar g max
Mounting:	M20 x 1.5mm

Model: RXV15T *(* = Nominal flange size).

MODEL	A	B	C	D
RXV15T3	190	152	19	4
RXV15T4	229	190	19	8
RXV15T6	279	241	22	8

Other sizes available on request.

Face Material:	PTFE
Operating Pressure flanged models:	0.5 bar g max
	All other details as RXV15T

Model: RXV15T*

All dimensions in mm unless stated.

ROTATIONAL AIMING KIT

Recommended when measuring levels of solids

Necessary to ensure correct level measurement in tanks or silos containing
solids, rotational aiming kits allow the transducer to be angled towards the
low level draw point.

Mounted off-centre, with angle adjustment implemented from outside the
vessel, the kits are constructed from corrosion resistant PVC and easily installed,
the aiming kits allow transducer aiming up to 20°off axis.
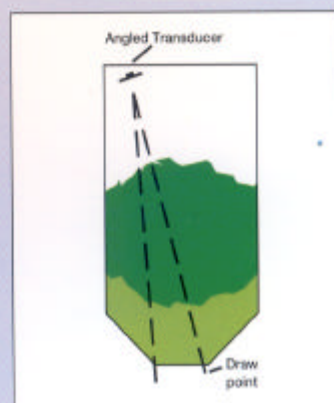
PERFORMANCE SPECIFICATION

Measuring Range:	Up to 15m depending on product
Measuring Modes:	Level, distance, differential level, open channel flow
Accuracy of change in level:	+/- 0.25% of measured distance at ambient of 20°C on liquid
Resolution:	2mm or 0.1% of empty distance whichever is the greater
Failsafe:	High, low or hold
Damping:	Fully adjustable
Blanking:	Fully adjustable
Functions:	7 standard tank shapes for volume conversion 10 Parshall flume curves 2 Flow laws + penstock control 16 point linearisation 9 separate pump control functions

HARDWARE SPECIFICATION

Power Supply:	110 / 230V a.c. ±10% 50 / 60Hz 12VA, selected automatically. 24V d.c. ± 10%, 9W separate terminals
Relay Outputs:	5 SPDT relays rated 5A / 230V a.c. resistive. Gold contacts for low power switching
Analogue Output:	4-20mA / 20-4mA into 750 ohms 16 bit, Short circuit protected Opto-isolated on a.c. powered units
Serial Output:	RS 232 & RS 485 wall mount only.
Ambient Temperature:	-40°C to +70°C
Indication:	4 digit 12mm LCD, 5 red LED's for relay status
Interface:	5 x 4 keypad, integral membrane 4 digit security coded
Temperature Compensation:	Separate sensor RTS 2/RTS 2B or integral in RXT transducers
Approvals:	CE Compliant to EN 50081 EN 50082 Approved for driving RX series transducers certified EExmIIT6 for Zones 1 & 2, Z & Y

WALL MOUNT INSTRUMENT

Enclosure:	IP65 Polycarbonate, hinged lid
Dimensions:	240h x 160w x 90d (mm)
Weight:	1.75kg

PANEL MOUNT INSTRUMENT

Enclosure:	Noryl DIN 43700 panel mount enclosure. IP55 to front of panel, IP20 behind
Dimensions:	144h x 96w x 140d (mm)
Weight:	1.75kg.