

# REFLEX

## SINGLE-POINT NON CONTACT ULTRASONIC LEVEL MEASUREMENT SYSTEM



Incorporating all the latest technological developments, Reflex is the most powerful instrument in the Hycontrol range. It combines reliable non-contact ultrasonic level measurement of liquids and solids with the ability to expand into a 10 point scanning system by simply adding a multiplexor 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 the most difficult of environments.

Five relays, isolated analogue output, dual serial ports, integral keypad and multiline display provide a complete stand-alone instrument capable of taking control of any application.

### MULTIPLE POWER SUPPLIES

Reflex 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.

### MULTI-FUNCTIONAL

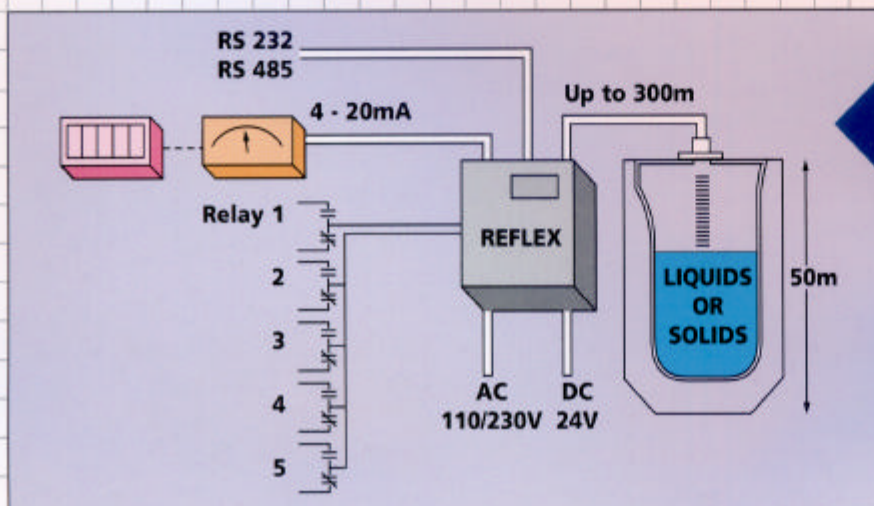
5 programmable relays allow alarms and controls to be set with variable hysteresis anywhere throughout the instrument's span and the analogue output can be configured to go full scale, anywhere within the overall range of the Reflex.

### FEATURES

- Easy installation - reduces cable costs
- Transducers and electronics can be separated by up to 300 metres to bring calibration off the bin top and into the control room
- Fully isolated analogue output allows direct connection to PLC'S, Scada systems or telemetry outstations.
- RS 232 and RS 485 serial ports allow direct connection to process computers and easy commissioning.
- Enhanced echo extraction algorithms provide stable readings under all conditions.
- Integral keypad with security code - no separate programmer required.
- Removable two-part terminals ease installation.

### MULTILINE DISPLAY PROVIDES

- At a glance bargraph showing 0-100% level
- Digital display of level and volume
- Relay status
- System status
- Easy programming /set-up



### SINGLE-POINT

Non Contact Ultrasonic Level  
Measurement System

### MULTI-POINT

Non Contact Ultrasonic Level  
Measurement System up to 10 points

# REFLEX / SCANFLEX

## MULTI-POINT NON CONTACT ULTRASONIC LEVEL MEASUREMENT SCANNING SYSTEM

The Reflex programmable level controller allows you to add additional tanks or silos to the system easily and cost - effectively, either from the beginning or at a later stage.

### REDUCING COST PER POINT

The Multiplexor SM-10, added to the Reflex, provides the opportunity to scan up to 10 separate points of level, considerably reducing the cost per point for each additional tank or silo monitored.

### REDUCES INSTALLATION AND CABLE COSTS

Unlike some other systems the Multiplexor SM-10 can be mounted remotely from the Reflex. On the top of the points to be monitored is the most common location as this reduces the number of cables that have to be routed back to the control room and consequently the cost.

*From this point on the cost of adding another point is limited to the cost of adding another transducer.*

### AUTOMATIC OR MANUAL

Reflex is capable of holding data on ten different tanks or silos and providing level information on all of them, either sequentially or by manual selection.

### MEASUREMENT & CONTROL

Analogue outputs and up to four relays per point can be achieved by the addition of SA-10 analogue and SR-10 relay cards to the system.

Once again these cards, in IP65 polycarbonate enclosures can be located wherever they are required, with a single screened pair cable connecting them to the Reflex, keeping cabling cost to an absolute minimum.

### FAST

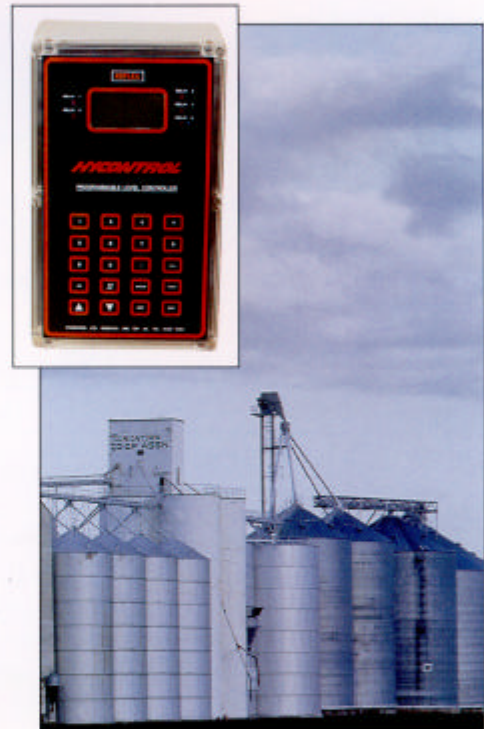
Scanning of ten points can be achieved in under 30 seconds on liquid applications. Scan times are programmable but dependant on the application.

### SERIAL COMMUNICATIONS

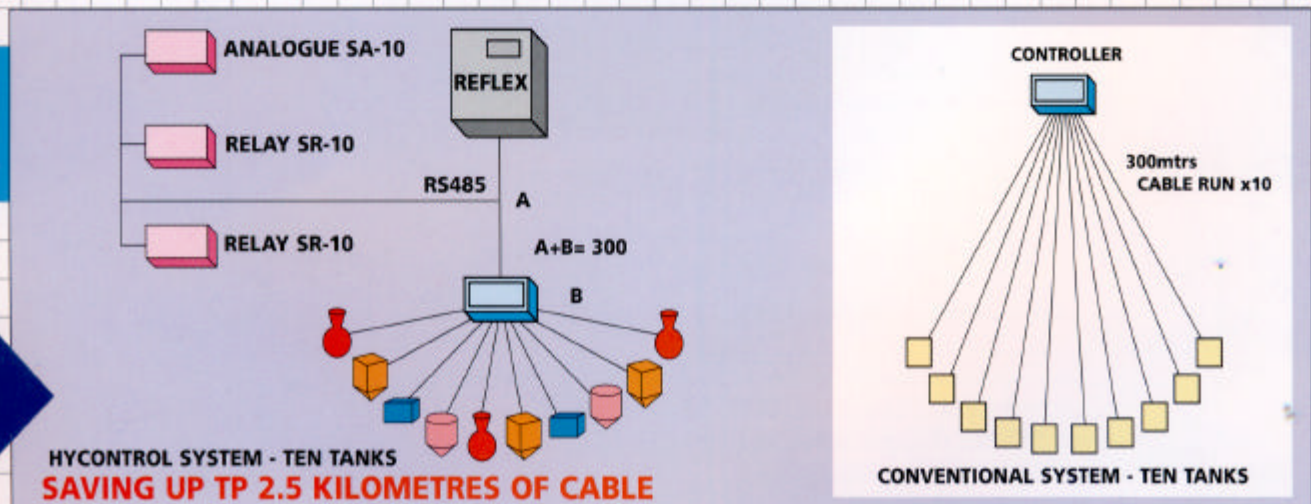
RS232 port allows transfer of data for all 10 points of level, and provides the means for fast easy commissioning when using Vision System software.

## THE MULTI-CHANNEL NON CONTACT ULTRASONIC LEVEL CONTROLLER FOR LIQUIDS, SLURRIES & SOLIDS

- From 1 up to 10 points of level measurement
- Range up to 50 metres
- Multiline display
- Analogue and digital outputs
- Wide choice of transducers
- CE Compliant
- Increase the number of levels - decrease the cost per point



Reflex provides the opportunity to scan up to 10 separate points of level measurement



# REFLEX

## ULTRASONIC TRANSDUCERS

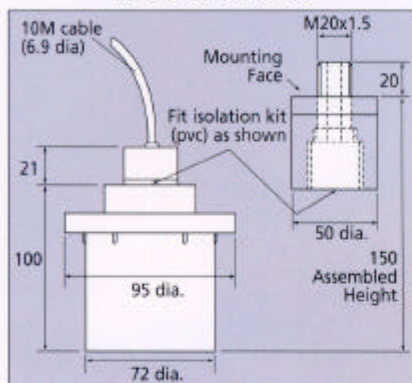
Reflex's ability to operate at different frequencies allows the use of both the RX15 and RX19 series of transducers, providing real flexibility in the field.

The RXV15 and its temperature compensated derivative, RXT15, are probably the smallest long range transducers in the world; achieving reliable measurements up to 20m distance. They are certified for use in Zones 1 & 2 for gases, Z & Y for dusts and submersible to IP68.

A choice of mounting options and face materials are available.

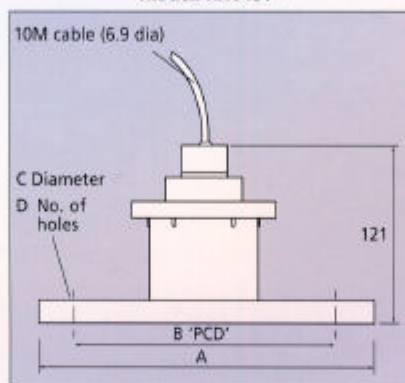
Designed specifically for use on dusty particulate materials the RX19 and RX19ER transducers offer low frequency and high power to penetrate through the heaviest of dust clouds to provide reliable, repeatable measurements of many products ranging from salt to raw coal.

**Model: RXV15 / RXT15**



All dimensions in mm unless stated.

**Model: RXV15T\***



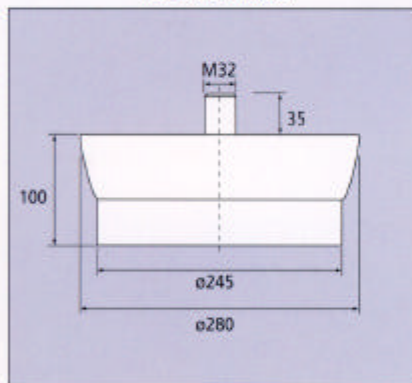
All dimensions in mm unless stated.

Flange Sizes. ANSI 150

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

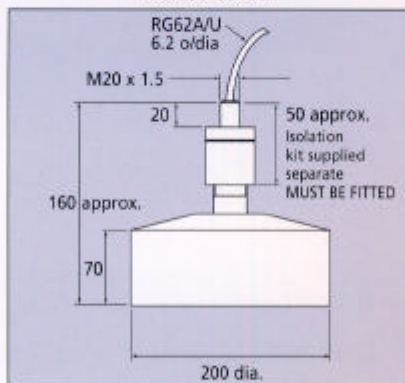
Other sizes on request

**Model: RXM19ER**



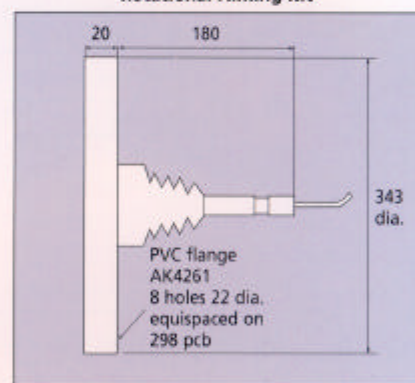
All dimensions in mm unless stated.

**Model: RXM19**



All dimensions in mm unless stated.

**Rotational Aiming Kit**



All dimensions in mm unless stated.

FOR USE WITH REFLEX	Body Material	Face Material	Freq KHz	Beam Angle Inclusive	Max. Range Liquids	Max. Range Solids	Temp Deg C	Haz. Area	Protection	Weight Kg	Mounting
RXV15 RXT15	XENOY	U/thane	41.5	10	15m	8m	-40 to +90	EExMIIT6	IP68	2.0	M20
RXV15T RXT15T	" "	PTFE	41.5	10	15m	-	-40 to +90	EExMIIT6	IP68	2.0	M20
RXV15T*	" "	PTFE	41.5	10	15m	-	-40 to +90	EExMIIT6	IP68	3.0	Flange
RXV15P RXT15P	" "	Poly-propylene	41.5	10	20m	12m	-40 to +90	EExMIIT6	IP68	2.0	M20
RXM19	Poly-propylene	Poly-ethylene	19	10	30m	20m	-20 to +60	NO	IP65	2.8	M20
RXM19ER	" "	" "	17	5	50m	35m	-20 to +60	NO	IP65	4.8	M32

## CONTROLLER SPECIFICATION

Measuring Range:	Up to 50 metres, (dependent on transducers)
Accuracy of change in level	+ / - 0.25% of measured distance @20°C ambient, on liquids
Resolution:	2mm or 0.1% of empty distance whichever is the greater
Output:	Analogue: 4/20mA / 20 - 4mA into 750 ohms 16 bit. Short circuit protected, opto - isolated on A.C . powered units. Relay: 5 x SPCO relays rated 8A/230 V AC Resistive. Fully programmable for: Energise, De-energise operation. Set, Reset & Fail condition. Serial: RS 232/RS 485
Indication:	Multiline
Blanking:	Programmable (min 0.3m dependent on transducer)
Linearisation:	7 x familiar tank shapes or user-definable 16 point curve.
Memory:	Non-volatile EEPROM (without battery)
Ambient Temperature:	-20°C to +50°C
Scan Rate:	Programmable – MIN 30 SECONDS
Transducers:	RXV15 & RXM19 SERIES
Power Supply:	110/230V ~ 50/60Hz, 12VA. 24V DC, 10W
Enclosure:	IP65 Polycarbonate hinged lid
Dimensions:	240h x 160w x 90d (mm)

## MULTIPLEXOR SM 10

	Automatically switches sequentially through the programmed number of transducers.
	Automatically switches appropriate temperature compensation probes if in use.
Power supply:	110/230 V AC 50/60Hz selectable.
Enclosure:	IP65 Polycarbonate
Dimensions:	300h x 230w x 90d (mm)

## RELAY OUTPUT CARD SR10

	2x8A / 250 V AC relays per point. (20 relays) 2xSR-10 can be connected to provide 4 programmable relays per point. LED's indicate relay status
Power supply:	110/230 V AC 50/60 Hz selectable.
Enclosure:	IP65 Polycarbonate
Dimensions:	300h x 230w x 90d (mm)

## ANALOGUE OUTPUT CARD SA10

	Provides 10 analogue outputs, one for each point of measurement. Group isolated - 16 bit resolution.
Power Supply:	110/230 V AC 50/60 Hz selectable.
Enclosure:	IP65 Polycarbonate
Dimensions:	300h x 230w 90d (mm)