



ULTRA 5

The ultimate flexibility
in ultrasonic control &
measurement.

Ultra Flexibility with Five Assignable Relays Plus Extra Alarms

Ultra 5 offers ultra flexibility in ultrasonic control and measurement. The unit is user-configurable to measure level or volume, provide advanced pump control, or measure open channel flow to BS ISO 1438 and 4359. Ultra 5 provides five assignable relays with extraalarm options such as pump efficiency, extra pump control functions including pump run on and pump exercising, storm and aeration control, differential control using two transducers, and the addition of further relays in open channel measurement (OCM) applications.

Level Measurement

Ultra 5 is perfect for the wide range of level measurement applications in solids and liquids found in the food, pharmaceutical, chemical, power generation, and many more industries. In level measurement configuration, the Ultra 5 has five control relays and offers an optional 4-20mA input for a pressure transmitter or similar.

Volume Measurement

The unit offers pre-programmed tank shape conversions for a wide variety of standard tank shapes including cylindrical, rectangular, cone base, pyramid base, sloped base, horizontal including parabolic ended tanks, and spherical. Unusual tank shapes are also accommodated through the 32-point linearization function.

Pump Control

Ultra 5 in pump control configuration is a premium specification ultrasonic pump control unit offering many standard features. Including:



THE RIGHT METER FOR

- Solid & Liquid Tank Level Monitoring
- Well Level Measurement
- Pump Control & Exercising
- Open Channel Flow Measurement with Flumes & Weirs

- **Pump Run-on:** allowing the user to set both the run-on interval and the duration, for periodic pumping past the off point to remove solids from pump stations.
- **Pump Exercising:** causes pumps to come on when a period of non-operation has occurred. Idle time and exercise time can be set.
- **Start Point Variation:** reduces material build-up on the walls at the 'normal' level by setting a band in which the switch point varies.
- **Storm Control Feature:** permits the identification of a storm condition and operate any relay with a specific point being set to accommodate needs

during a storm, and the ability to disable other relays during the storm if required.

- **Aeration Control:** activate on elapsed time (since pumps ran), in little-used well. Introduces air to reduce well gases.
- **Flush Valve Control:** activate a re-circulation valve for a specific time based on pump cycle frequency. Prevents solids from settling at the bottom of a tank.

Differential

The Ultra 5 offers further sophistication with the inclusion of differential level capability using two transducers. With one upstream and the other downstream of a screen or penstock, an alarm or control signal is initiated as the difference between the level exceeds a user-defined limit to automatically operate the cleaning mechanism.

Open Channel Flow

In open channel flow mode, the Ultra 5 provides non-contacting, maintenance-free, flow measurement and control in a wide range of flumes and weirs by calculating flow from the measured head preceding a primary element. Flow calculations to BS ISO 1438 and 4359. The unit features five alarm / control relays and has the additional step / time control for use with a penstock.

A data-logging board is an optional extra with an RS485 connection and large data log capability together with Profibus DP V0 and V1 or Modbus RTU communications.



Ultra 5 Wall Unit



Ultra 5 Fascia Unit



Ultra 5 Panel Mount Unit



Ultra 5 Rack Mount Unit



Ultra Wizard on-board, menu-driven software

UltraWizard

The UltraWizard is an onboard, menu-driven software tool that allows the user to quickly and simply set up the Ultra 5 for a specific application.

Simply enter the programming code and UltraWizard will lead you through a setup menu. The user is led into a 'Quick Setup' menu specific to the application type that allows parameters such as empty and full distances and alarm / control relay settings to be entered. The majority of applications will be 'ready to go,' while it is easy to finish off the more demanding installations via further menus, refining the programming to add extra sophistication such as Ultra 5's advanced pump control routines.

Technical Specifications

PHYSICAL: MOUNTING OPTION SPECIFIC

Mounting Option:	Standard Wall Mount:	Fascia Mount:	Rack Mount:	Panel Mount:
Controller Body Dimensions	235 mm x 184 mm x 120 mm (9.3 in x 7.2 in x 4.7 in)	200 mm x 112 mm x 108 mm (7.9 in x 4.4 in x 4.3 in)	10 HP X 160 mm D x 3U 128.5 mm H (6.3 in x 5.06 in)	72 mm W x 144 mm H x 176 mm D (2.8 in x 5.7 in x 6.9 in)
Weight:	1 kg (2.2 lb)	1.3 kg (2.9 lb)	0.8 kg (1.7 lb)	1.4 kg (3 lb)
Enclosure Material / Description:	Polycarbonate, flame resistant to UL91	Stainless steel back, Polycarbonate UL94-V0 front and bezel	Aluminum Frame	ABS
Cable Entry Detail:	10 cable entry knock outs 5x M20, 1 x M16 underside 4 x 18 mm (0.7 in) dia (PG11) at rear	N/A	N/A	N/A
Enclosure Protection:	IP65	IP64	None	IP65 Optional

PHYSICAL: ALL MOUNTING OPTIONS

Transducer Cable Extensions:	2-core screened
Maximum Separation:	Up to 1,000 m (3,280 ft)

ENVIRONMENTAL

Max. And Min. Temperature (Electronics):	-20 °C to +50 °C (-4 °F to +120 °F)
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APPROVALS

CE Approval:	Listed in the Certificate of Conformity within the manual
Flammable Atmosphere Approval:	For installation in non-flammable area only. Most compatible transducers suitable for flammable atmospheres. See sensor / transducer datasheet or brochure.

PERFORMANCE

Accuracy / Repeatability:	0.25% of the measured range or 6 mm (0.2 in), whichever is greater
Resolution:	0.1% of the measured range or 2 mm (0.08 in), whichever is greater
Min. & Max. Range:	0 mm to 40 m (0 in to 131.2 ft). Dependent on sensor used. Ability to measure 50 m (164 ft) with dB50 when modified.
Rate Response:	Fully adjustable
Echo Processing:	DATM (Digital Adaptive Tracking of Echo Movement)

OUTPUTS

Analog Output:	Isolated (floating) output (to 150 V) of 4-20mA or 0-20mA into 500 Ω (user programmable and adjustable) 0.1% resolution
Digital Output:	Full Duplex RS232
Volt Free Contacts, Number & Rating:	5 form "C" (SPDT) rated at 5 A at 240V AC
Display:	6 digits plus 12 character text, plus bar graph with direction indicators, remote communicator identifier and program / run / test mode indicators

INPUTS

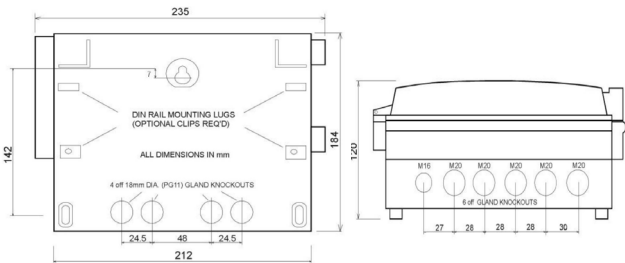
Analog Input (Optional):	Isolated (floating) input (to 150 V) 4-20mA or 0-20mA source, open circuit voltage 33 V, 22 V at 4mA, 14 V at 20mA (user programmable and adjustable) 0.1% resolution
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PROGRAMMING

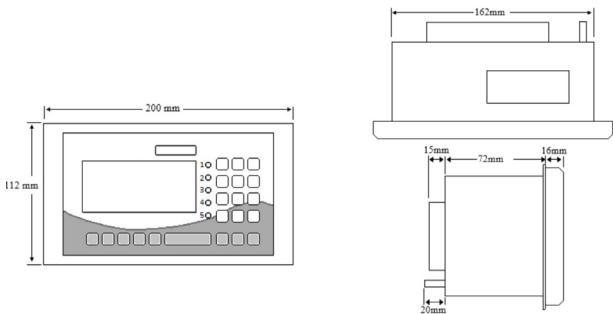
On-Board Programming:	By integral keypad
PC Programming:	Via RS232
Programming Security:	Via passcode (user selectable and adjustable)
Programmed Data Integrity:	Via non-volatile RAM, plus backup
Rack & Panel Remote Programming:	Via optional infra-red communicator (requires 2 x AA alkaline batteries)

SUPPLY

Power Supply:	105 V AC +5% / -10% 50/60Hz, 230 V AC +5% / -10% 50/60Hz, 18-36 V DC, 10W maximum power (typically 6 W)
Fuses:	100mA at 170-240 V AC, 200mA at 85-120 V AC



Ultra 5 Wall Mount and Gland Knockouts



Ultra 5 Fascia Mount Drawings Front, Top, and Side

Delivering the Measure of Possibility.

Pulsar Measurement offers worldwide professional support for all of our products and our network of distributors all offer full support and training. Our facilities in Malvern, UK and Largo, USA are home to technical support teams who are always available to answer your call or attend your site when required. Our global presence, with direct offices in the UK, USA, Canada and Malaysia allow us to create close relationships with our customers and provide service, support, training and information throughout the lifetime of your product.

For more information, please visit our website:

www.pulsarmeasurement.com



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