

pumppro 6150 advanced liquid level sensor



Features

- accuracy better than +/-0.05% of full scale
- excellent temperature stability
- fully self contained precision piston air compressor
- compact, robust design
- simultaneous analogue or digital data output
- integrated LCD display and keypad
- low cost of ownership
- ranges 0-5m to 0-70m
- stage - discharge conversion
- stage - volume conversion
- over-pressure protection
- low energy measurement cycle
- modular design using levelpro 6100

Applications

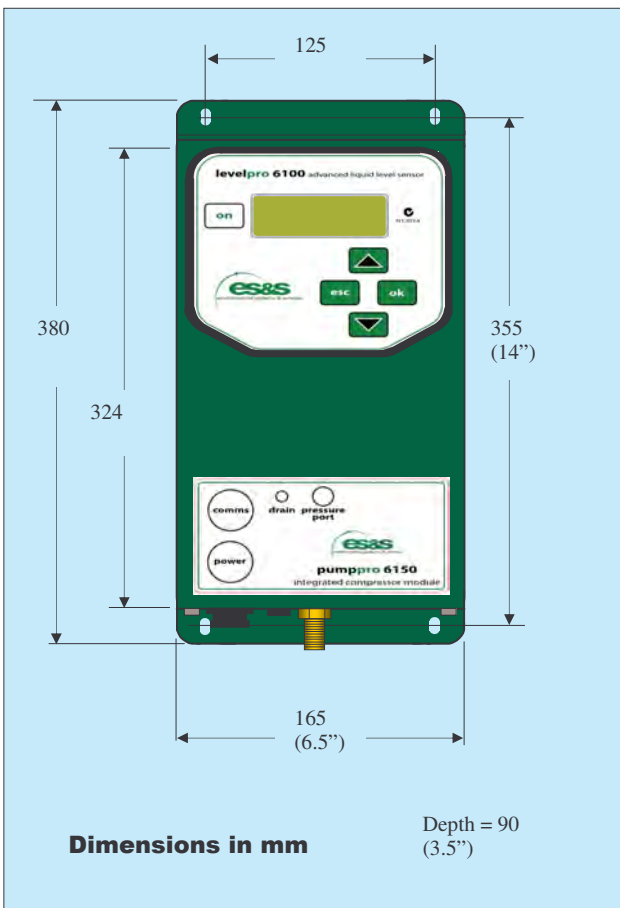
- river, irrigation channel water level and discharge monitoring
- groundwater level and landfill monitoring
- dam, tank and reservoir levels
- tidal monitoring
- waste water monitoring
- flood warning systems
- process industry liquid level

The pumppro 6150 combines an integrated air compressor module and levelpro 6100 advanced liquid level sensor to form a fully self contained hydrostatic pressure sensor designed to measure water and liquid levels reliably and accurately. Featuring a Teflon lubricated precision piston air compressor, the 6150 contains all other components required for self generation of compressed air. The pumppro is a stand alone instrument that does not require compressed gas bottles, regulators or ancillary pneumatic items.



Technical Specifications

Range	5, 10, 20, 35, 70 meters freshwater—non standard ranges available	Units	kPa, psi, feet, inches, meters, centimetres, flow and volume units based on above ranges.
Accuracy	Combined linearity / hysteresis / temperature compensation error over 0-50°C range; Sensor: ±0.05% of full scale System: ±0.08% of full scale With over pressure less than 300% or 150m water	Resolution	Analogue: 12 bit Digital: 16 bit Display: 0.1mm water (using metric units)
Temperature Range	Operating: -20°C to 70°C non freezing Storage: -40°C to + 85°C	Response Time	Dependent on tube length and internal diameter. Typically 30 seconds—for tube lengths up to 100 meters. Can be configured for continuous output.
Power Supply	8-26 Volts DC unregulated 6100 9-14 Volts compressor Standby: <10mA Active: Pumping up to 16A Dwell <60mA Read <300mA	Output Options	Analogue: <ul style="list-style-type: none"> 4-20mA current, 3 wire loop (up to 600 ohm load) 0-1 Volt or 0-2.5 Volts Digital: <ul style="list-style-type: none"> SDI-12 data, power from controller not required RS232C data, activated using DTR input. Simultaneous analogue and digital output.
Airline Connection	¼" or ⅜" outside diameter quick-connect or swage type fitting. Tools required for swage fitting.	Compressor	Precision piston, 120psi, maximum duty cycle 10%
Type	Piezo resistive silicone pressure sensor vented to atmosphere (gauge type sensor)	Surge Protection	Inputs / outputs protected against transients by a secondary protection circuit that can absorb up to 1.5kW for 1ms.
Enclosure	6100: IP67 rated machined delrin plastic 6150: IP54 rated epoxy coated aluminium	Display	20 character x 4 line LCD with backlight—suitable for sub zero temperatures
Weight	5.5 kg including data and power cables		



Operating Principle

Water or liquid levels are determined by measuring hydrostatic backpressure in a bubbler system. A low cost plastic tube is submerged in the fluid to be measured and purged with gas. The pressure of the "head" of water above the tube orifice is the same as can be measured up at the "dry" end where the pressure is measured and converted to head of liquid. The key advantage of this technique of level measurement is that the electronics are remote from the fluid, ensuring long term reliability and low risk during flood events in rivers and streams or level measurement of volatile liquids.

The 6150 pumppro provides a purge of compressed air into the capillary just before a reading is taken. When activated by the host system (or manually using the keypad), the internal compressor will purge air into the line for several seconds. Following a settling time (to allow the surplus air to escape the capillary tube end), a static pressure condition is achieved. The 6150 takes a pressure and temperature reading and applies a correction algorithm to produce an accurate pressure or water level measurement on the display or to the host system.

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