



Greyline  
**PSL 5.0**

Automatic, hybrid pump station level controller with a non-contacting, ultrasonic sensor.

**Pump Station Level Control, Monitoring & Reporting**

***Ideal for Level Control***

Designed for pump stations, wet wells, and tank level control – the Greyline PSL 5.0 Pump Station Level Controller has six independently programmable control relays for pump or valve control, level alarms, autodialers, temperature, or fault alarms.

***No Contact, No Maintenance***

Mount the non-contacting, ultrasonic sensor in the tank or wet well and install the watertight electronics in the control room or any location within 152.4 m (500 ft). Use the simple menu system and built-in keypad to set up measurement range, relay set points, and pump alternation sequence. A relay/pump run time report is updated and stored automatically for viewing on the instrument's backlit LCD display.

***Dual-Technology Sensor Feature: Redundant Level Sensing***

Connect a submersible pressure sensor or another 4-20mA level transmitter to the PSL 5.0 for fail-safe hybrid sensing. The PSL 5.0 will auto-calibrate the redundant sensor and if the signal is lost to the ultrasonic sensor, the redundant sensor will seamlessly



**THE RIGHT METER FOR**

- Pump Stations
- Tank Level Control

take over monitoring until the signal resumes from the ultrasonic. The redundant sensor is continuously monitored to ensure availability during primary sensor failure.

**Easy to Install with Non-Contacting Sensor**

The Greyline PSL 5.0 Pump Station Level Controller is designed for pump station and tank level control applications with the non-contacting sensors mounting just above the well or at the top of a tank. Calibration is simple and easy, use the built-in keypad to calibrate

measurement span, relay set points, pump alternation sequence, and level alarms. Assign the six built-in control relays for ON / OFF pump control, high- or low-level alarms, autodialer activation, air temperature alarm, or sensor echo loss alarm. Connect the isolated 4-20mA output to your SCADA system, PLC's, or recorders, for easy integration with existing plant control systems.

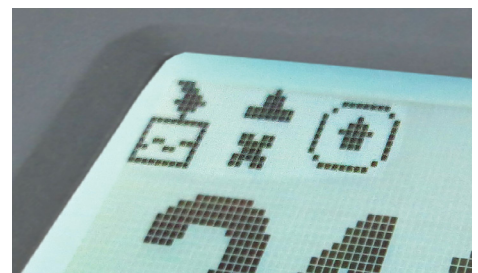
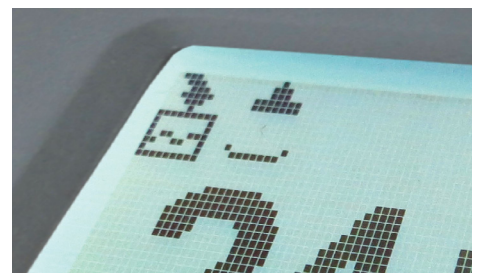
### Redundant Sensor Level Control

The PSL 5.0 sets a new level of reliability. It operates with an ultrasonic level transducer as its primary sensor but also accepts connections from 4-20mA level sensors for redundancy. If the ultrasonic transducer loses signal from foam on the water surface, for example, the redundant sensor will take over reading instantly. As soon as the ultrasonic sensor receives new echoes, it will resume function as the primary sensor.

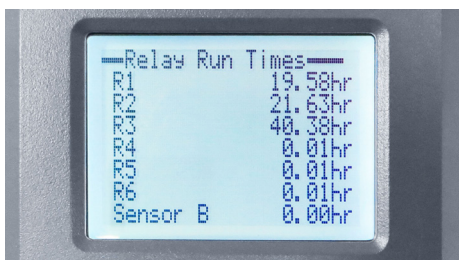
An animated icon on the PSL 5.0 digital display indicates that the ultrasonic sensor is active. The icon indicates if the system automatically switches to the redundant sensor.

#### Calibration of the Redundant Sensor is Automatic

You can use hydrostatic pressure sensors, radar, or any 4-20mA transmitter for redundant level sensing. The PSL 5.0 automatically scales and calibrates the redundant sensor during each pump cycle. Once the PSL has operated through at least one pump cycle, the redundant sensor will be calibrated and ready to function.



Animated icons indicate active sensors



### Relay Run Time Reporting System

View the PSL 5.0 relay run time report directly on the backlit digital display. You can identify "lazy" pumps before pump failures occur and plan pump maintenance to reduce call-outs and down-time. If a redundant level sensor is connected its operation time is also indicated.

### Ideal for Water, Wastewater, and Process Automation

Use the Greyline PSL 5.0 Pump Station Level Controller for pump or level control and automatic pump alternation / sequencing. It is designed for the harsh operating conditions in wet well or tank level control applications. The non-contacting, ultrasonic sensor mounts at the top of a wet well or tank, and you can connect a redundant 4-20mA level sensor for added reliability in challenging pump station applications.

# Technical Specifications

## GENERAL SPECIFICATIONS

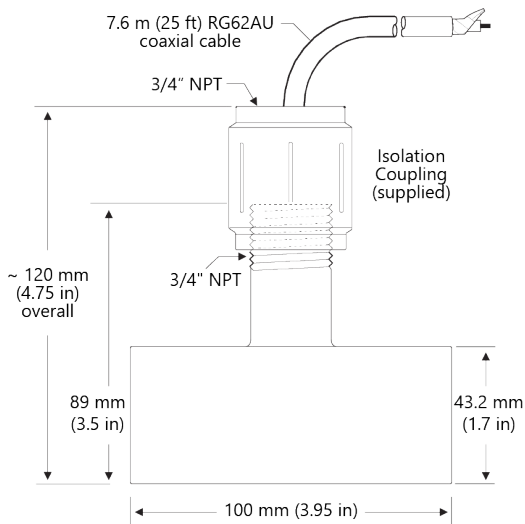
<b>Accuracy:</b>	±0.25% of Range or 2 mm (0.08 in), whichever is greater
<b>Electronics Enclosure:</b>	NEMA4X (IP66) polycarbonate with clear, shatterproof cover
<b>Operating Temp. (Electronics):</b>	-20 °C to +60 °C (-5 °F to +140 °F)
<b>Power Input:</b>	100-240 V AC 50-60 Hz (see Options), 2.4-5.6 W depending on options
<b>Analog Output:</b>	Isolated 4-20mA (1 kΩ)
<b>Control Relays:</b>	6 form 'C' dry contact Relays rated 5 A SPDT; programmable level alarm and/or pump control modes, pump alternation / sequencing, failsafe / echo-loss, air temperature alarm
<b>Display:</b>	White, backlit matrix - displays calibration menu, relay status, runtime reports and sensor status
<b>Calibration:</b>	Level or Range mode in selectable units
<b>Programming:</b>	Built-in, 5-button keypad, password-protected
<b>Approximate Shipping Weight:</b>	5 kg (11 lb)

## TRANSDUCER SPECIFICATIONS

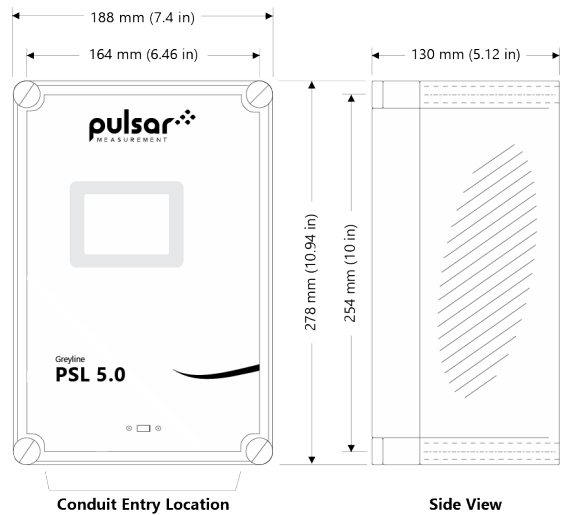
<b>Standard Sensor:</b>	PZ34 ultrasonic sensor
<b>Maximum Range:</b>	9.8 m (32 ft), optional sensors for longer ranges
<b>Deadband (Blanking):</b>	Programmable, minimum 406.4 mm (16 in)
<b>Beam Angle:</b>	8° - Install 304.8 mm (12 in) from tank sidewall for every 3 m (10 ft) depth
<b>Operating Frequency:</b>	42 kHz
<b>Exposed Materials:</b>	PVC
<b>Operating Temperature:</b>	-40 °C to 65 °C (-40 °F to 150 °F)
<b>Operating Pressure:</b>	0 bar to 1.4 bar (0 psi to 20 psi) maximum
<b>Sensor Cable:</b>	RG62AU coaxial, 7.6 m (25 ft) standard length (See Options)

## POPULAR OPTIONS

<b>Sensors:</b>	Long and short-range models / all Teflon construction / Intrinsically safe / Pressure
<b>Sensor Cable:</b>	15.2 m (50 ft) or 30.5 m (100 ft) RG62AU coaxial continuous from ultrasonic sensor, or splice up to 152.4 m (500 ft)
<b>Sensor Cable Junction Box:</b>	Watertight NEMA4 steel with connection terminal strip
<b>Power Input:</b>	9-32 V DC, 2.1-4.95 W depending on options
<b>Data Logger:</b>	20 million point data logger with output to USB flash drive. Windows software.
<b>Enclosure Heater:</b>	Thermostatically controlled - recommended for temperatures below 0 °C (32 °F)
<b>Enclosure Panel Mount:</b>	Flange and bracket assembly mounts enclosure in panel face
<b>Hazardous Locations:</b>	Intrinsic Safety Barrier for ultrasonic Sensor mounting in hazardous areas. NEMA7 explosion-proof enclosure for electronics mounting in hazardous locations.



PZ34 ultrasonic sensor



PSL 5.0 enclosure dimensions

## Reliable, Accurate, Simple Calibration:

- Built-in, 5-button keypad
- Easy calibration with 6 control relays for simplex pump stations, duplex, triplex, quadruplex, or more...
- Non-Contacting, no-maintenance, ultrasonic sensor
- Redundant level sensor connection – use any 4-20mA transmitter for fail-safe level sensing
- Independently programmable Pump Up and Pump Down modes
- Programmable “forced alternation” to prevent pump damage
- Isolated 4-20mA output for connection to Variable Speed Drives, SCADA systems, PLC’s, or Recorders
- Plug and Play options including a 20 million point data logger



Plug & Play data logger



INFO@PULSARMEASUREMENT.COM

*Pulsar Measurement is a trading name of Pulsar Process Measurement, Ltd.*

*Copyright © 2021 Pulsar Measurement  
Registered Address: 1 Chamberlain Square CS, Birmingham B3 3AX  
Registered No.: 3345604 England & Wales*

## Delivering the Measure of Possibility

**United States**  
+1 888-473-9546

**Asia**  
+60 102 591 332

**Canada**  
+1 855-300-9151

**Oceania**  
+61 428 692 274

**United Kingdom**  
+44 (0) 1684 891371

**pulsarmeasurement.com**