HYDROMETRICS GW50PC SENSOR – PUMP CLEANER

Product details and applications

Introduction
Biological activity in groundwater can create biofilms on the measurement cell of the GW50 sensors. Testing has shown that a water jet can be an effective method for cleaning the sensor resulting in significant reduction in the need for manual cleaning in most cases. We have conducted tests where sensors that required monthly cleaning have been left 12 months with no biofilm build up resulting in significantly reduced labour to maintain the site. Occasional suspended particles whether organic or inorganic may enter the measurement cell and these can be removed, however please note the Pump Cleaner is not designed as a solution for elevated turbidity.

Figure 1: HydroMetrics GW50PC Sensor

Typical operation
The pump is run periodically for a few seconds at a time that does not conflict with a scheduled reading. We have found 10 seconds every 3 hours to work well in most cases. The sensor has a built in timer with a control wire that can be used to switch the pump on and off. Alternatively, if the sensor is connected to a third party data logger or telemetry system which has control capabilities this unit can control the operation.

Power consumption
The pump operates from a nominal 12-volt power supply which is normally shared with the sensor. Current consumption is 4 amps approximately and if operated for 120 seconds per day requires 0.13 amp/hrs per day. The battery and charging system should be sized accordingly but with infrequent operation the additional power requirements as can be seen by these calculations are not large.

Installation
If the GW50PC is being installed in a groundwater well, the internal diameter of the well casing must be 65mm or greater. We do not recommend installing a 50mm casing as any deformation of this casing during installation could result in the sensor become jammed.

When the GW50 is fitted with a Pump Cleaner the sensor control line cannot power the pump directly and a power control module is provided with the sensor which can be triggered by the GW50 sensor or third party device. The pump has a separate power cable that runs to the surface beside the main sensor power and communication cable.

P +64 3 325 3700 / E info@hydrometrics.co.nz / W hydrometrics.co.nz
PO Box 69 133 / Lincoln / Christchurch 7674 / New Zealand

The Pump Cleaner can be retrofitted by a suitably experience technician to an existing GW50 Sensor with serial number 301 or above. Please contact Hydrometrics for details.

Maintenance

Normal cleaning of the probe may be required from time to time, but the pump cleaner will extend this period.

Figure 2: An installation of a HydroMetrics GW50PC on a New Zealand farm to monitor shallow groundwater nitrate levels.