The Watermark

The Newsletter From **Automated Water & Effluent Ltd** Autumn 2024

Our Level Best

We are very well known for our pH and redox instruments and electrode systems. We have just produced a new 8 page information sheet on our range of industrial pH and redox electrodes if you did not receive a copy recently please let us know and we can email you a copy.

Many of our regular customers do think about us for level measurement and control, in the last issue of the Watermark we featured our technical tips about the ALC1101 liquid level controller for use with conducting level electrodes.

The level controller is only half of a level control system. The other half is selecting the correct level electrode and holder for your application.

We design and manufacturer a wide range level electrodes holders for industrial use on page 2 of this issue of the Watermark our technical tips are about our LE24 simple level electrode system and our popular LE7 level electrode system and our surface mounting brackets for holding up to 5 off LE7 electrodes

We have manufactured our ALC1101 level controller and level electrodes for many years.

With thousands out there in use in control panels just out there working away controlling pumps and providing low and high liquid level alarms.

On the back of this issue in technical tips is an article to remind you how simple to use our low cost controller is.

As this is a massive market for a cost effective reliable product usually available from stock you need to know it's still available from us.

ALC1101 Liquid Level Controller

Paperless Recorder / Datalogger

Many of our customers are requesting help as they wish to keep records of their processes to prove compliance with the appropriate standards they work to.

This can be the pH, flow and temperature of their waste water discharge to their local water authority.

However other processes require this service pharmaceutical manufacturers have strict quality procedures to follow which must be documented. We recently helped a manufacturer to record the quality of his high purity water. Our system displayed and data logged, towns water conductivity, towns water pH, RO feed water conductivity, RO perminate water conductivity, RO perminate water pH, UV lamp output. This was on one screen which was displayed digitally and graphically and data logged 10 x per hour to memory.

Another customer with a paint line data logged 6 oven temperatures on one screen and process line solution temperatures and conductivities.

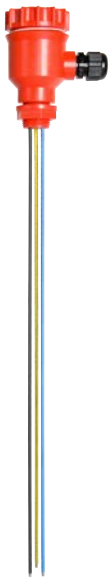
Inputs include 4 - 20 mA signals either powered by the measuring instrument or powered by the AWE96 or AWE141 for two wire 24 VDC loop power supply. We can also include temperature inputs from either RTD Pt100 sensors or a wide range of thermocouples for higher temperature use.

The TFT touch screen may be user configured to display data in groups if a large number of inputs are employed. Options of displaying the data include: analog meter movement displays; bar graphs, which work well for tank level displays, or simple numerical value displays. The screen is also able to display graphical information as an electronic chart recorder with the display either going vertically or horizontally with white or black backgrounds.

Technical Tips

Level Electrodes

Following on from our technical tip in the autumn issue about level controls, in this issue we cover level electrodes. There are many types of level electrodes some are general purpose and others are specific for the application. The simplest and most common applications are the filling or emptying of water tanks with cold clean water.

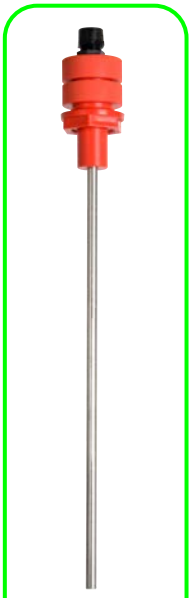


LE24 LEVEL ELECTRODE

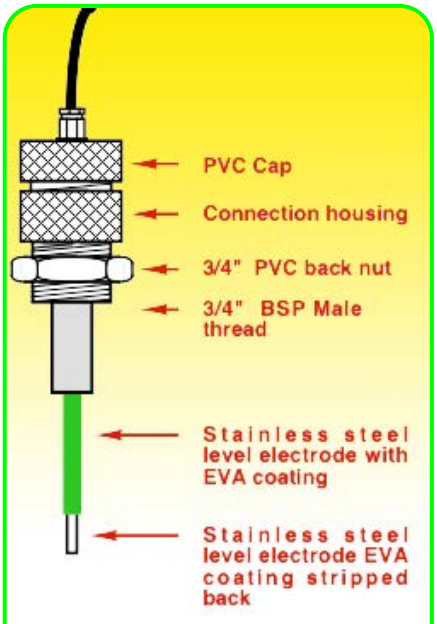
For these applications we manufacture our LE24 electrode holder which has three 316 stainless steel electrodes 900 mm long each with a colour coded PVC sheath. The secret is in the PVC sheath which stops tracking between the electrodes as the resistance path is between the bottom of one electrode up to the mounting boss and down the other electrode to the stainless steel tip.
Electrodes which have no insulation have a short track path either between the electrodes which can be just a few millimeters so easily bridged by scale or solids which form on the electrodes.
The second problem area is on the mounting boss as condensation or moisture easily forms here and will cause erroneous operation of the level controller. So our experience is to avoid level electrode systems with un insulated multiple electrodes.
Our LE24 has a 3/4″ BSP male mounting thread and a connecting head with screw top for easy fitting of the electrode abd removal for maintenance.
The LE24 is suitable for use in water and mild acid or alkali solutions which stainless steel is resistant to.

For level control in sumps and pits where there can be solids, sludge or rags etc single level electrodes are best with some space between them to help prevent bridging between the electrodes.
For these applications we have the LE7 single electrode holder which is designed to hold one single stainless steel electrode of 1/4″ Ø. For EVA coated electrodes the LE7 electrode holder needs to be drilled out to accept the larger diameter of the EVA coated electrode.
We recommend spacing the LE7 electrodes holders 100 to 250 mm apart, for concrete or brick built sumps or pits we are able to supply a mounting bracket in polypropylene which is corrosion resistant to screw to the wall to hold the LE7 electrode holders.
When installing our EVA coated stainless steel electrodes we recommend that on the sensing end of the electrode the EVA coating is stripped back about 1″ (25 mm) to expose the stainless steel which should be all bright and shiny I.E. nice and clean.

The hole in the centre of the LE7 should be opened out to allow the EVA coated electrode to pass through the PVC holder as a tight fit, the EVA coating on the top of the electrode should be stripped back aprox 5/16″ (10mm) so the brass connector makes good electrical contact with the clean stainless steel. The EVA must pass through into the PVC holder so the insulation is not compromised for each electrode. For solutions where stainless steel can not be used we are able to supply titanium or hastelloy electrodes. We also offer other products such as float switches, ultrasonic, hydrostatic, capacitance and radar level instruments.



LE7 LEVEL ELECTRODE



LE7 LEVEL ELECTRODE CABLE CONNECTION

LE7 LEVEL ELECTRODE WALL MOUNTING BRACKET

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