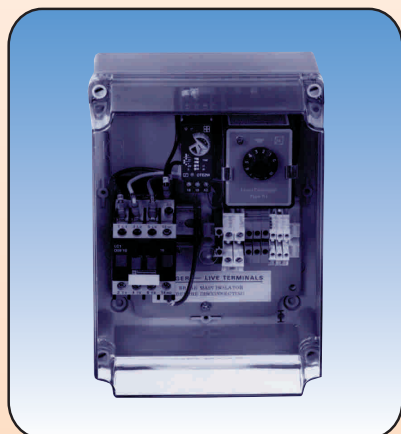
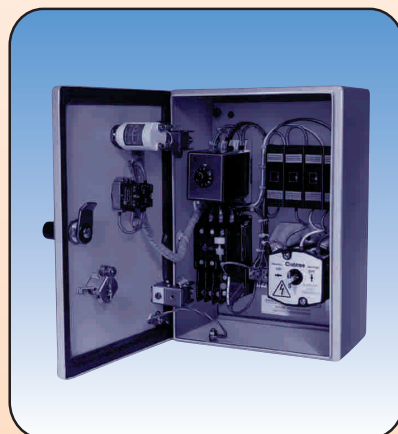


AC Plus Level Controller with an Integral Pump Starter

Standard production items. Other Control Panels designed and built



MMO for single phase
pumps up to
2.2KW
Data Sheet 232



MM1 for single phase
pumps up to 4KW
MM1/3 3ph 4 wire pumps
up to 7.5KW
Data Sheet 232



MM3 for 3 wire pumps
up to 7.5KW
Data Sheet 232

For more information on Conductivity Operated Systems see the following Data Sheets

241 Electrode Holders & Brackets

282 Multi Electrode Holders E13(a)

233 Application & Connection Diagrams

261 Operational details

Other Hawker Level Control Systems

CAPACITANCE for non Conducting liquids and powders, on/off (**Magiflex**) and Continuous Indication and Control (**Flexilevel**)

HYDROSTATIC for all liquids including aggressive ones using Pressure Transmitter and Transducers to give Continuous Indication and Control.

ULTRASONIC Non-contact for non foaming liquids to give Continuous Indication & Control.

BUILDING SERVICES Control and Alarms.

INSTRUMENTATION SYSTEMS designed and built to your specification.

Because of continuing development we reserve the right to change the specification without notice.

For a full list of HAWKER products and application notes visit our web site at www.hawker-electronics.co.uk

Hawker Electronics Ltd

57 The Avenue, Rubery Industrial Estate, Birmingham B45 9AL, UK.

Tel. +44(0) 121 453 8911 Fax +44(0) 121 453 3777

Email info@hawker-electronics.co.uk Leaflet No. 294



FM 10000



BRITISH MADE

Hawker Electronics

DISCRETE
LEVEL CONTROL FOR

CONDUCTING LIQUIDS

A.C.& P. Series & Alarms

- Accurate & Stable
- Long Term Reliability
- Low Maintenance
- Wide Range
- Weatherproof
- Simple Calibration

LOW COST *of* OWNERSHIP



Applications

Aqueous Solutions such as Water, Sewage, Alkali, Acids, Milk, Water based Paints - in fact any conducting liquid.

Uses

- **Control between two levels**
- **High Level Alarm**
- **Low Level Alarm**
- **Borehole Pump control**
- **River Alarms**
- **Penstock**
- **Bund Alarms**

Features

1. Designed to ignore electrode fouling and foam layers in 'dirty' applications.
2. Operates at the exact tip of the electrode, thus saving electricity.
3. Low AC voltage on the electrodes to prevent electrolysis between electrodes.
4. Built to last many years and give trouble free operation.
5. Economic to purchase, easy to set up and inherently stable.
6. ATEX and EICEx models available for hazardous areas.
7. Full range of electrode holders to suit all applications.
8. Electrodes available in 316L Stainless Steel. Hastelloy C, Titanium, Monel® etc.
9. Brackets and ancillary equipment for complete site installation.

Operating Principle

The **conducting** property of the liquid enables an electrical circuit to be completed between probes fixed at the levels to be controlled or alarmed. The completion of the circuit switches a relay that has voltage free contacts. To comply with Health and Safety regulations only low voltage AC current is present on the probes.

Sensitivity Setting

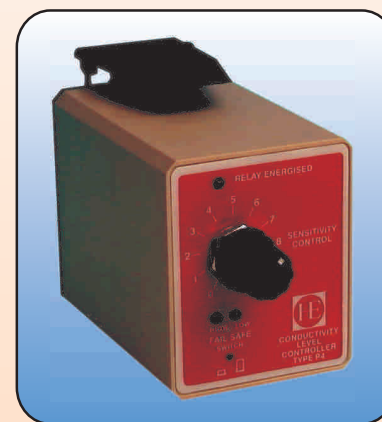
All Hawker controllers have the unique 'close switching differential' (CSD) set via the adjustable sensitivity switch. This is invaluable in dirty water and chemical applications. Raw sewage often contains rags, paper, and suspended solids that cling to the electrodes creating false signals. Foam, high humidity and earthy chemical environments fool the electrodes into thinking that the liquid is present. The Hawker circuit is so precise that it ignores the false signals and operates in the liquid only. Thus saving valuable pumps from dry running and expensive pumping time.

Availability

Level controllers are available to suit your particular application. Wall mounted versions for outdoor applications. Panel mounted tropicalised type for high humidity environments. Plug in versions for panel mounting. Flameproof and intrinsically safe versions for hazardous area applications. All available with the unique CSD switching.

Availability

Different applications require different electrode holders. small chemical holding tanks can use light duty multi holders; sludge tanks need heavy duty single holders. Slimline pencil shapes for boreholes. We offer brackets, bolts, Rawbolts® etc.



Plug in Level Controller for Panel Mounting

11-pin base.
Twin c/o contacts.
Adjustable sensitivity & LED.
Auto-clip fitting.
AC Powered

Data Sheet 250



Level Controller for Wall Mounting

in IP66 enclosure.
Twin c/o contacts.
Adjustable sensitivity & LED
AC Powered.

Data Sheet 225



DIN mounted Level Controller for Hazardous Area

Galvanically Isolated.
single c/o contact.
Adjustable Sensitivity.
Zone O Approved
AC Powered

Data Sheet 329



Wall Mounted Level Controller to IP66

10-27 volts DC supply
10 second timer
Master/slave function
Adjustable sensitivity
Single C/O contact

Data Sheet 313



DIN Mounted Level Controller

10-27 volts DC supply
10 second timer
Master/slave function
Adjustable sensitivity
Single C/O contact

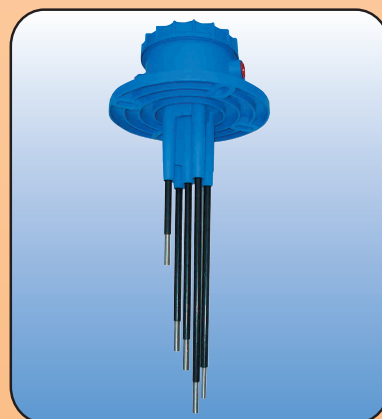
Data Sheet 313



Dual Level Pump Controller

with facility to vary starting order. Operates in duty/assist mode or duty/standby. Pump run. LED.
AC Powered

Data Sheet 225



E13A Multiprobe holder

for use with up to 5 electrodes
8mm dia.
ATEX/EICEx versions
Pressure tight version available.

Data Sheet 282



Level Controller for Panel mounting

ideal for tropical use, twin c/o contacts.
Adjustable sensitivity and LED.
AC Powered.
Also ACJ for long distance between Probes and Controllers.

Data Sheet 225