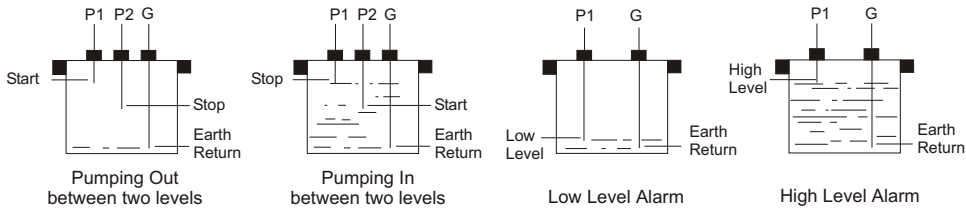




# HAWKER LEVEL CONTROL SYSTEMS

## Level Control for Conducting Liquids



### Applications

Aqueous solutions such as water, sewage, most acids, milk, beer, etc.

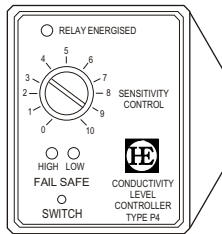
- \* Double probe operation for control between two levels.
- \* Single probe operation for alarms.
- \* Very accurate - Relay switches at the exact tip of the probe.
- \* Easily set up and very stable.
- \* Fail Safe Switch.  
Fail Safe High for Pumping In  
Fail Safe for Pumping Out

### Uses

Controls between 2 levels, High Level Alarm, Low Level Alarm, Borehole Level Control.

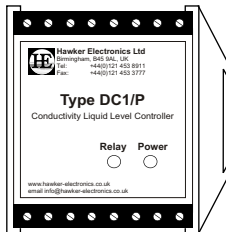
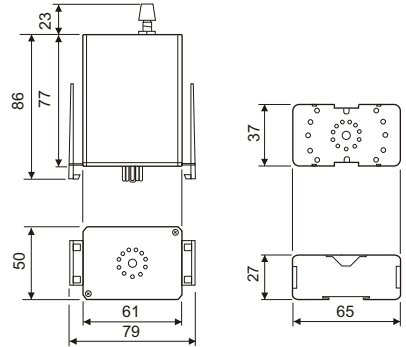
- \* Adjustable sensitivity and close switching differential to ignore electrode fouling and save electric power.
- \* Intrinsically safe models available (Data Sheet No 307 )
- \* A.C. current at the probes to prevent possible electrolytic action between them.
- \* Full range of hardware available for easy site operation.

The following Controllers are available with all the above facilities

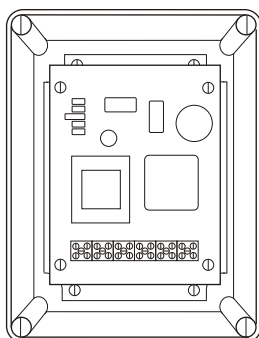
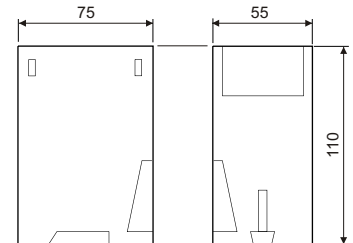


**Plug-in Level Controller** for control between two levels or High or Low alarm.  
P4 - 11 pin Base 2 C/O contact  
P3 - 8 pin Base 1 C/O contact  
Plug-in Module & Base for P2,P3,P4,P5

Note: External transformer required for P2 only.

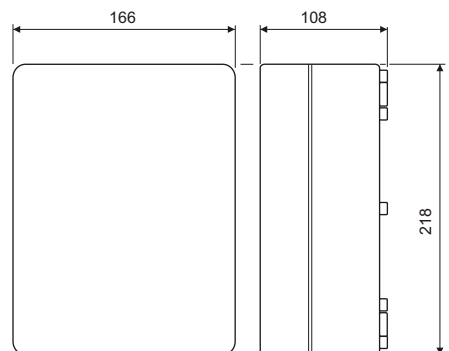


**DIN Mounted Level Controller**  
With DC supply and timer 20-27V dc.  
AC on Electrodes.  
Auto resetting anti splash  
ON/OFF delay timer.



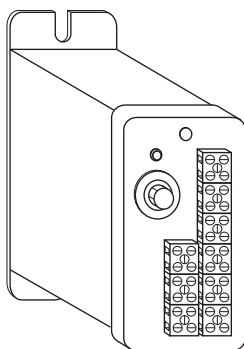
**Wall Mounting Level Controller**  
AC1 & AC3 in plastic enclosure to IP66 for AC2 to IP55.

- AC1 Control between levels or High or Low Alarm
- AC2 For borehole applications with reset button.
- AC1/12 for 12V DC operation
- AC2/12 for 12V DC operation
- Also available as 2 chassis in a plastic enclosure 278 x 218 x114 as AC3 for controlling 2 pumps



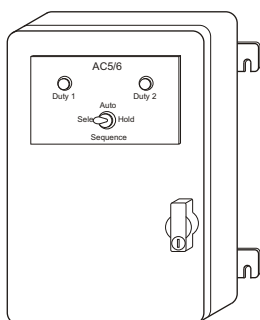
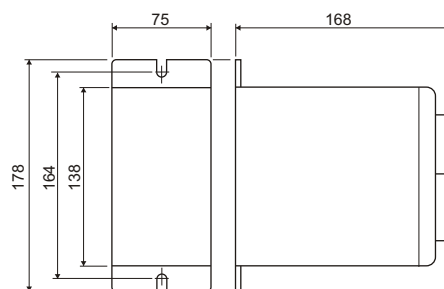


# HAWKER TECHNICAL SPECIFICATION



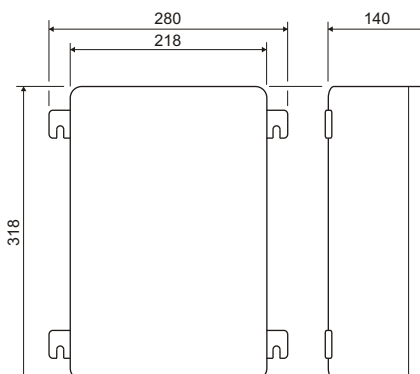
**Panel Mounting Level Controller** for control between two levels or High or Low alarm. Supply, earth and electrode terminals are duplicated to facilitate wiring

AC1/P Electrode wiring length to 150m  
 ACJ/P For electrode wiring length up to 1000m with AC current at the electrode. For greater lengths, use DC current at the electrodes by simple link selection.  
 /T Timer adjustable 0-10secs



**Dual Pump Controller Varies Starting Order**

AC5/6 Mode change by internal links  
 AC5 Duty and Standby pumps run together  
 AC6 When Standby pump starts, duty pump stops.  
 AC5/6/AS Pump starting order automatically reversed at end of cycle. An override switch is fitted



## Operating Principle

The conducting properties of the liquid enable an electrical circuit to be completed between electrodes fixed at the levels to be controlled. Low voltage alternating current is used to avoid electrolysis.

## Sensitivity

In dirty applications such as sewage which may contain debris such as rags, paper, etc, spurious operation of the controller may occur. It can cause the pump to stop not at the tip of the lower electrode, but at the end of the rag clinging to it. The controller may operate at the top of the foam and not at the liquid below it. Both these occurrences can cause the pump to dry run, with the consequent damage and excess use of electricity.

To overcome this, the A.C. DC1/P and P range of controllers operate with close switching differential between switching on and switching off of better than 5% to obtain optimum results, therefore, it is necessary to adjust the sensitivity of the controller to suit the ohmic resistance of the liquid. This is easily carried out by means of a graduated knob and LED indicating the relay state. Full information is given in the operating manual.

## Specification

Sensitivity:	Adjustable from 100 to approx 18,000 ohms	
Switching Differential:	Better than 5% of sensitivity setting e.g. Better than 5 ohms@ 100ohms	
Ambient Temperature:	-10°C to 50°C	
Relay Contact Rating:	P2,P3,P4 AC1, AC1/P, AC2, AC5/6, DC1/P All at 250V, 50Hz 80% PF	4 Amps 5 Amps
Supply Voltage:	AC1, AC1/P, AC2, AC3, AC5/6, P3, P4 AC1/12, AC2/12 P2 DC1/P	110V or 240V, 50Hz 12V dc 12-0-12V ac 20-27V dc
Supply Variation:	AC1, AC1/P, AC2, AC3, AC5/6, P3, P4	+10% to -12%
Fail Safe:	Selectable e.g. FSL for pumping out, FSH for pumping in AC1, AC1/P, AC2, AC3, P3, P4 AC5/6 P2 DC1/P	Internal Switch Set at Works By Base Connections DIL Switch on Facia
Relay Energised Indication:	AC1, AC1/P, AC2, AC3, AC5/6, P2, P3, P4, DC1/P	L.E.D.

*Because of continuing development we reserve the right to change the specifications without notice*

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FM 10000



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