Alarum

Operating Principle

The Alarum supplies a small electrical pulsed current to the electrodes, and detects a change in the current when an electrically conductive liquid touches the measuring electrodes. A small pulsed current is used to prevent electrolytic action between electrodes. When the presence of a liquid is detected the Alarum either de-energises or energises its internal relay dependent on the internal factory programmed fail-safe setting, providing the user with a set of volt free S.P.C.O contacts. The internal relay is de-energised in alarm and energised when the alarm is reset. The unit has 2 electrodes, the active referred to as the 'P1' and the common 'G'.

The electrical connections are made to the terminal connectors located under the screw on cap. Always check to ensure the controller specifications are suited to the supply and its application before installing. The 2-way terminal block is for the connection for the incoming DC power supply this is marked +V and –V.
The 3-way terminal block provides the volt free relay output changeover contacts for control or alarm indication.

Mounting the Alarum

The Alarum should preferably be mounted vertically in the vessel. Spacing between the electrodes and their distance from the side of the vessel is dependent on the likelihood of bridging due to floating matter and the degree of turbulence.
Using plastic coated electrodes (which can be specified on ordering), can eliminate bridging, always bare at least 50mm of the coating. The Alarum is mounted using either a fixing collar or BSP thread depending on the diameter of factory fitted electrodes. A full range of mounting hardware is available from Hawker Electronics Ltd. The installer must fit a cable gland suitable for its intended environment.
When mounting ensure that the electrode holder insulators protrude through the surrounding material e.g. concrete floors, this is to prevent the electrodes finding a conductive path through the concrete and not the liquid in the vessel. It is advisable to clean electrode rods and insulators at periodic intervals.

The fail safe setting is factory set and is specified on order. This will be indicated in its internal label as either FS**H** (**H**igh) or FS**L** (**L**ow). Removing the screw on cap will reveal the power and volt free contact terminals.
The Alarum can be tested initially for basic operation by placing a short circuit and open circuit across its electrodes. The relay contacts can be checked with an ohmmeter or similar.

Fail Safe	**Electrodes**	**Relay contacts**
High	Open circuit	C & NO should be closed (short circuit) C & NC should be open (open circuit)
	Short circuit	C & NO should be open (open circuit) C & NC should be closed (short circuit)

Fail Safe	**Electrodes**	**Relay contacts**
Low	Open circuit	C & NC should be closed (short circuit) C & NO should be open (open circuit)
	Short circuit	C & NC should be open (open circuit) C & NO should be closed (short circuit)

After basic testing the unit should be fully checked to ensure the liquid is detected by the controller. This is achieved by covering the electrodes with a sample of the liquid it is to detect in normal operation; this has a similar effect as shorting the electrodes as in the basic testing.
It is always recommended that full testing and commissioning of the final installation is performed.

SPECIFICATION

Supply Voltage: 12V ± 10% factory set or 24V ± 10% factory set

Earthing: Negative earth system if more than 1 unit in a tank, maintain the same earth electrodes on each Alarum.

Power Consumption: 0.2 Watts

Inter-electrode Voltage: 2.5V AC

Sensitivity: Fixed 10.000 ohms (others to order)

Output: S.P.C.O. volt free relay contacts rated 0.5A @ 30V DC.

Ambient Temperature: -10^{0}C to +60^{0}C

Housing: Polypropylene, IP66 rated. Containing PCB

Process Connection: ¾" BSP

Electrical Connection: Via screw terminals 4mm

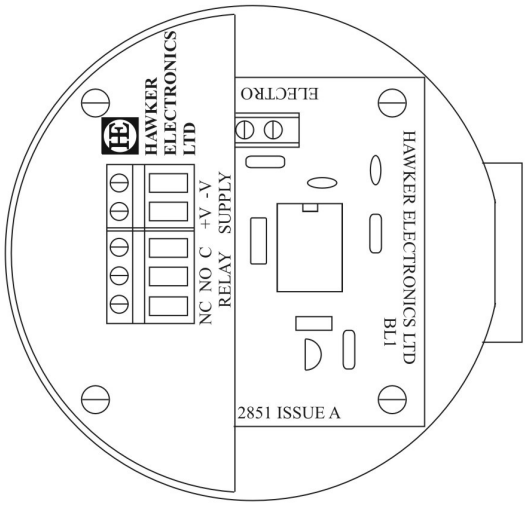
Electrodes:

Materials	Max Length
316 SS	970mm
Titanium	970mm
Hastelloy C	880mm

These can be cut to any required length

ALARUM TERMINATION CONNECTION WHEN USING E22 HOUSING

PLAN VIEW



RELAY

NC = NORMALLY CLOSED VOLT FREE CONTACT

NO = NORMALLY OPEN VOLT FREE CONTACT

C = COMMON VOLT FREE CONTACT

SUPPLY

+V = POSITIVE DC SUPPLY (12V or 24V DC)

-V = NEGATIVE DC SUPPLY

This product has been designed and complies to the relevant standards as listed in its certificate of conformity the installer/user must ensure compliance.
The crossed-out bin symbol, placed on the product, reminds you of the need to dispose of the product correctly at the end of its life.
Because of continuing development we reserve the right to change the specifications without notice

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