

CONTINUOUS LIQUID LEVEL MEASURING SYSTEM

Installation & Setting Up Instructions

MINI BUBBLER

CONNECTION DETAILS

Fig 1 below shows the basic connections for the MINI BUBBLER, extra cable glands can be added if required to accommodate the volt free relay and current loop wiring if being used.

IMPORTANT

1. Mount the unit in its final position.
2. Connect the air tubes to the balance chamber as shown avoiding U-bends and vertical rises.
3. Connect a suitable mains supply to the unit preferably via an isolator. Once powered up and calibrated we can see the system state immediately by looking at the fascia.
4. The dip tube should be mounted in such a way that it does not move with turbulence.
5. The maximum length between the dip tube and the controller should not exceed 30 metres.
6. A breather tube is located on the controller in-between the air couplings, DO NOT OBSTRUCT THIS ORIFICE.
7. In the unlikely event of the dip tube becoming blocked provision has been made for manual cleaning. This is achieved by unscrewing the bolt on the top of the balance chamber and "rodding" the tube see fig 2.
8. In order to establish an even flow, it is usually to shape the dip tube end to allow small bubble release rather than leave it plain which leads to larger bubble formation and release and gives fluctuations in readings as bubbles break away, see fig 3.

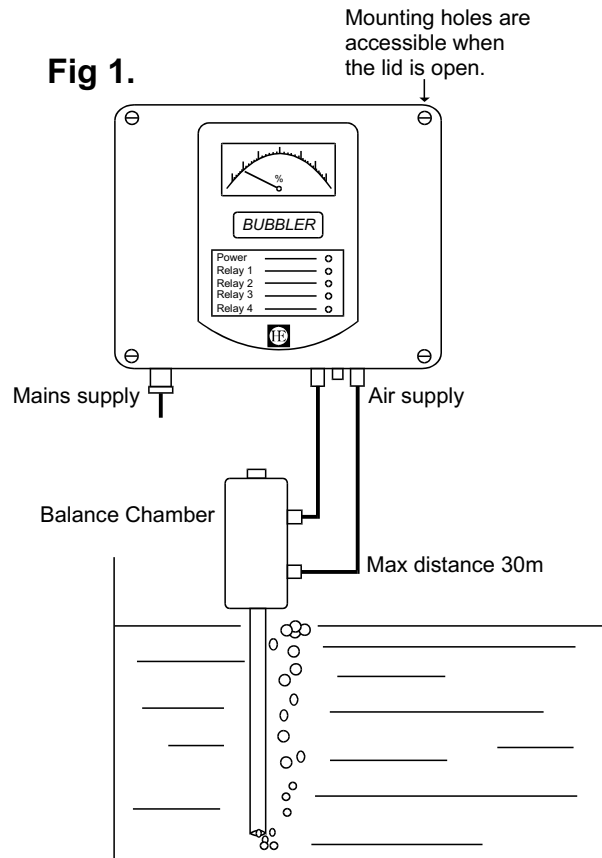


Fig 2.

Dip Tube Assembly

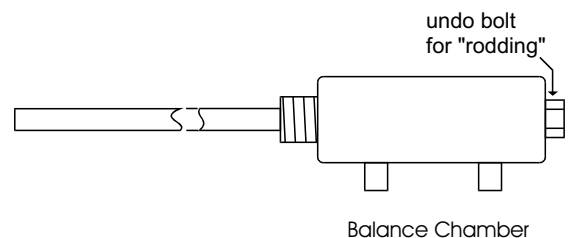
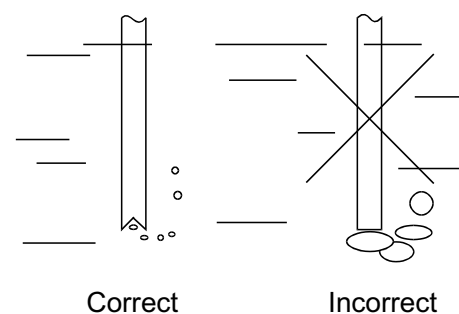


Fig 3.



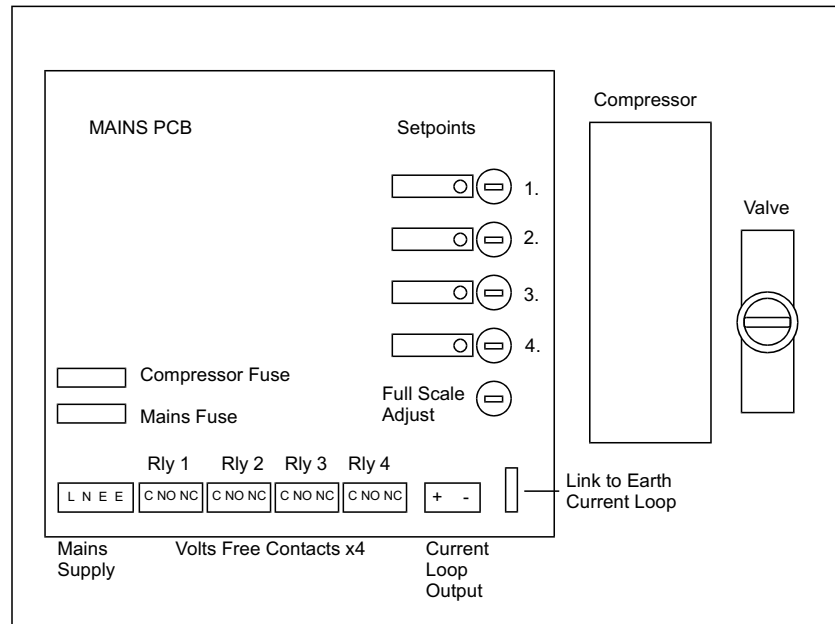
INTERNAL CONNECTIONS AND SETTING UP

Take care at this point as the compressor is of the vibrating armature type and is in close proximity to other components.

PROCEDURE

Tank Full Condition

1. Open the valve by turning it anticlockwise until bubbles can be seen coming out of the dip tube. This may take several seconds depending on the length of the airhose. Reset the valve so the unit just bubbles enough to overcome the head of water.
2. Adjust the fail safe pot so that the meter on the front of the unit reads 100%, clockwise increases the reading, alternatively connect an ammeter to the current loop output and adjust the full scale pot to obtain the maximum mA setting.



The Tank Empty Condition is preset at the factory. The system is now calibrated. This can be checked by filling the tank at the appropriate levels, or for a general check temporarily disconnecting an airline will give a empty reading.

SETTING THE TRIP POINTS

The bubbler unit contains four individually adjustable trip points which can operate anywhere over the spanned range. The trip points are adjustable via the pots labelled set Rly 1, 2, 3 & 4 each one operating the corresponding relay. The actual value the points are set at can be monitored by depressing the micro switch to the left hand side of its potentiometer. The relay status can be checked by looking at the facia L.E.D's

As an example we will set relay 1 trip point at half tank contents (50%).

Turn the set relay 1 pot fully clockwise,

Depress and hold in micro switch 1, turn set relay pot 1 anticlockwise until the indication meter on the facia reads 50% release micro switch 1, relay 1 is now set at 50%.

RESULT

With the tank empty relay 1 will be de-energised as the tank fills the relay will remain de-energised until it reaches 50% at which point relay 1 will energise and remain energised unless the tank is emptied to less than 50% contents again.

Trip points 2, 3 & 4 can be set in a similar manner.

The trip points provide the user with four independent volt free S.P.C.O. contacts, these can be used for control, alarm etc. Please ensure their maximum ratings are observed.

Any unused trip points should have their associated potentiometers rotated fully clockwise.

This product has been designed and complies to the relevant standards as listed in its certificate of conformity. The installer/user must ensure system compliance

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

HAWKER ELECTRONICS LTD.

57, The Avenue,
Rubery Industrial Estate,
Birmingham, B45 9AL, ENGLAND
Telephone : 0121-453-8911 Fax : 0121-453-3777
e mail: info @ hawker- electronics.co.uk



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