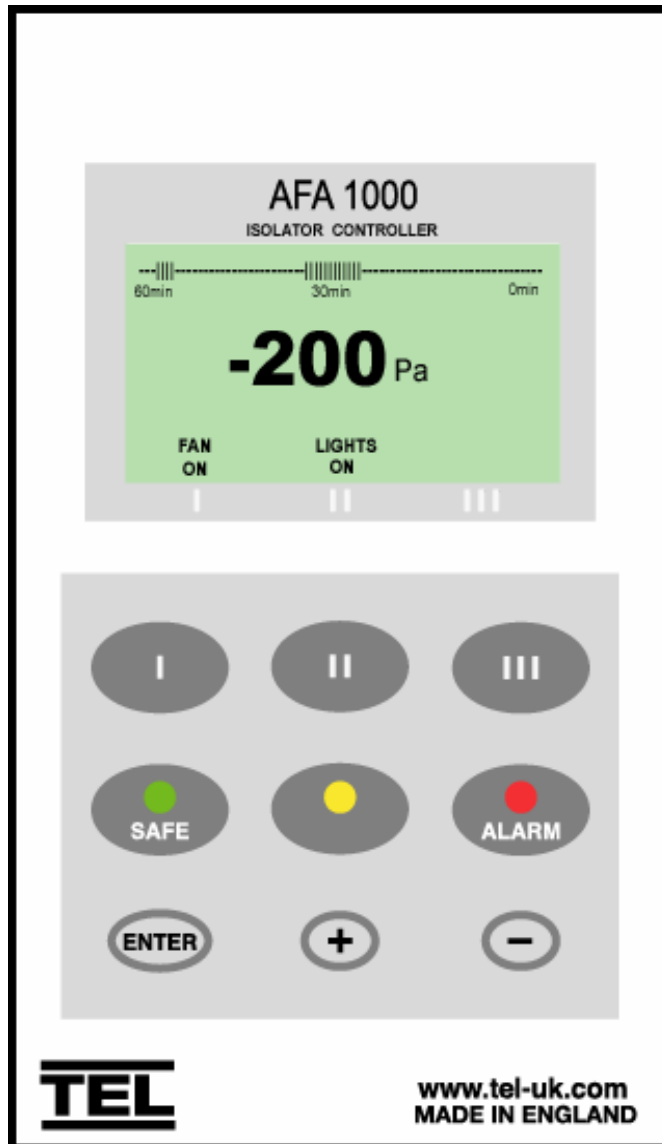


AFA 1000/2/PR

Isolator Pressure Monitor

Operating and Instruction Manual



Model AFA1000 / 2 / PR

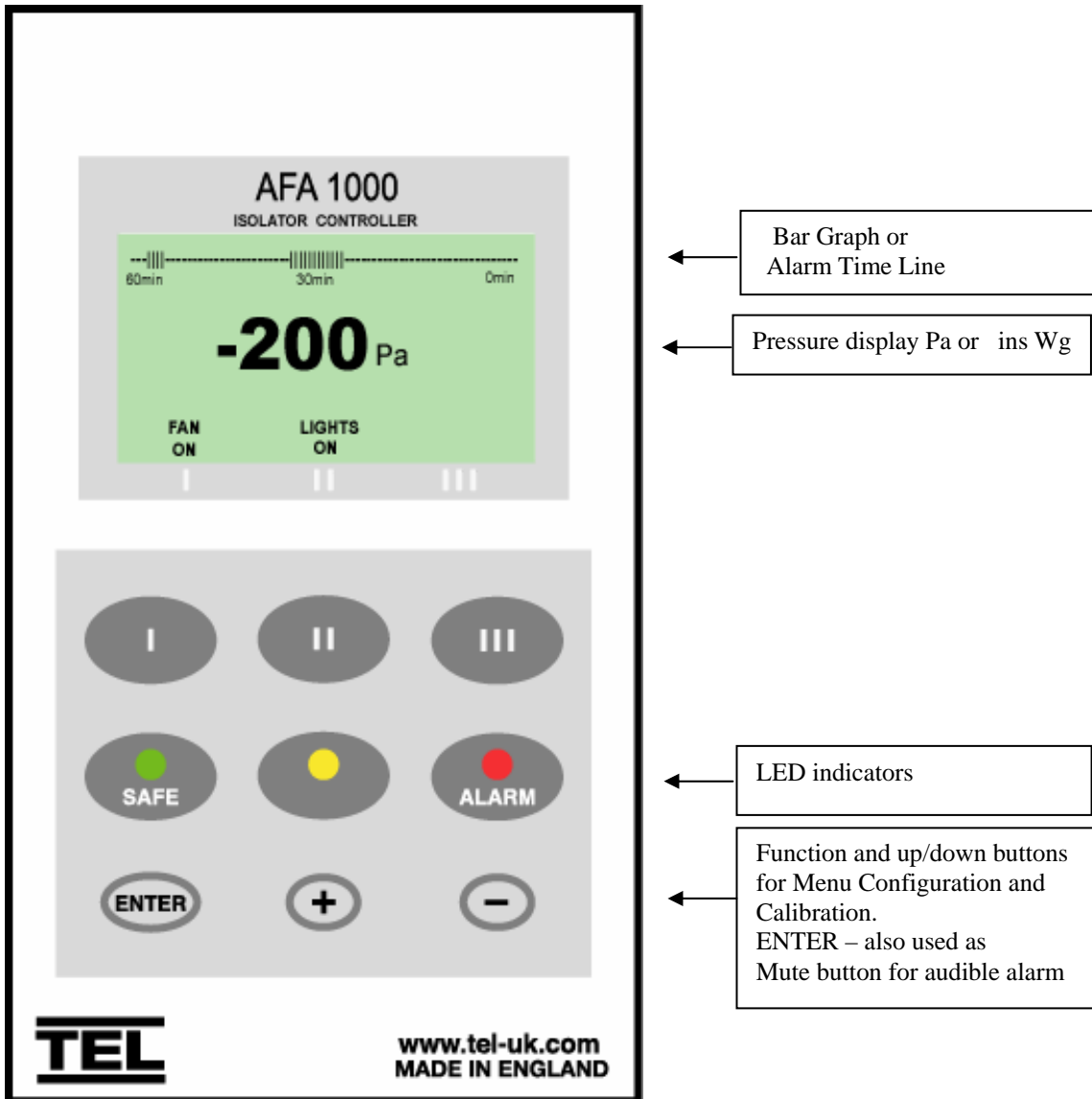
- Digital display
- 3 Relay inputs
- 3 Relay outputs
- 3 Pushbuttons
- Com port

Used for alarm indication of pressure system for :-

Isolators / Safety Cabinets

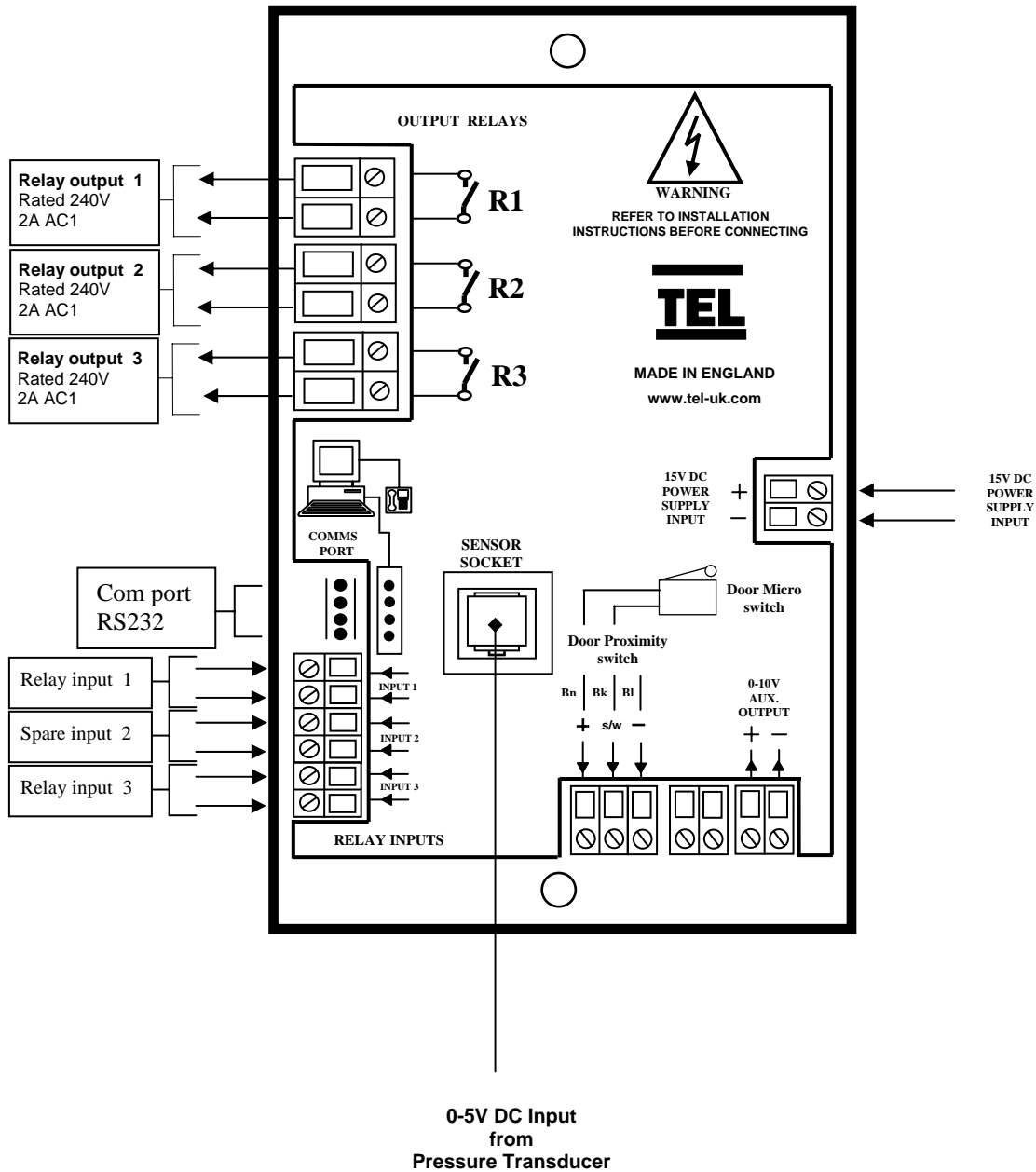
25/05/04

OPERATOR DISPLAY PANEL



Note :- Access to the Calibration and Configuration menus is password protected and is factory set. To access and or change the password contact the supplier for the Engineers Password and enter the Passwords in the Main Menu or alternatively use a Laptop connected to the Com port and the Upload/Download software provided

Connection details :-



1.1 General Description

All systems comprise of the following components :-

- 1 – Pressure Transducer (Pressure range to suit the application)
- 1 – AFA1000 / 2 / Pr Alarm unit,
- 1 – Power supply unit

Operator Features --- the controller / alarm has the following operator features :-

Digital Display

The digital display is a back-lit, full graphic unit with a visual display of approx 56 x 27 mm. The display operates through the software allowing the generation of figures, wording and icons.

The display shows the extract system pressure in **Pa** or **ins Wg** when enabled or the alternative with no velocity reading but showing **PR FAIL / PR SAFE** as continuous display. All of the above are configurable via the alarm key pad.

An ' **event time line** ' segmented into 20 x 3 minute segments will scroll across the display (when enabled) .This takes the form of a graphical ' blip' that will progress from the right hand side to the left hand side – representing events that have occurred during the past hour.

Using the diagnostics software and an associated computer via the **com port** on the alarm the event data can be transferred to a data logger.

The display shows a **Horn** icon (with line through it) when the audible alarm is in the Muted condition

Low Pressure – will be displayed when the Extract system pressure falls below the alarm point. This display will alternate on/off with the pressure reading.

High Pressure – will be displayed when the Extract system pressure rises above the alarm point. This display will alternate on/off with the pressure reading.

Set-back - will be displayed if the night set-back function is activated (when enabled)
This display will alternate on/off with the pressure reading

Visor Open - will be displayed if the visor open function is activated (when enabled)
This display will alternate on/off with the pressure reading

Filter - will be displayed if the Filter function is activated (when enabled)
This display will alternate on/off with the pressure reading

LED Indicators ---- the alarm unit has three LED indicators :-

Red -- Alarm
Amber -- Caution
Green -- Safe

Audible Alarm sounder -- the alarm has an audible alarm sounder with local or remote Mute facility

Enter --- the controller / alarm has an Enter button -- this is multi-functional as follows :-

Press **Enter** momentarily when alarm is sounding will mute the alarm

Press **Enter** for 5 secs will gain access to **Calibration** and **Configuration** menus (both menus password protected)

+ / - -- the alarm has + / - buttons that can be used to scroll through the calibration and configuration menu or to select options or values

External Connections -- the alarm unit will have the following connection points :-

Input 1 --- volt free relay input configurable for normally closed or normally open relays

This input is configured as :-

Night set-back

Input 2 --- volt free relay input configurable for normally closed or normally open relays

This input is configured as :-

Filter

Input 3 --- volt free relay input configurable for normally closed or normally open relays

This input can be configured as :-

Visor

Com Port --- to enable connection to Laptop or PC for full diagnostics , logging or setting up and for communications to building computer system (BMS)

Power supply --- low voltage DC power supply

Pressure Transducer --- connection socket for the pressure sensor

Relay Connections -- the alarm unit will have the following relay settings :-

Relay 1 --- volt free relay output configurable for normally closed or normally open relays

This output is configured as :-

Fan On/Off

Relay 2 --- volt free relay output configurable for normally closed or normally open relays

This output is configured as :-

Lights On/Off

Relay 3 --- volt free relay output configurable for normally closed or normally open relays

This output can be configured as :-

Pressure Fail

The following Pushbutton controls apply to the AFA1000 / 2 only :-

Pushbutton 1 -- This button can be configured to act as a Fan stop / start button for the Isolator fans fan

Pushbutton 2 --This button can be configured to act as a Lights ON / OFF for the Isolator.
(Can be interlocked with Pushbutton 1)

Pushbutton 3 -- This button can be configured to act as a Panic button or a Purge button.

Fan ON / OFF -- will be displayed if the Fan button is operated (when enabled).

Lights ON / OFF -- will be displayed if the Lights button is operated (when enabled).

UV Lights ON / OFF -- will be displayed if the UV Lights button is operated
(when enabled).

Purge ON / OFF -- will be displayed if the Purge button is operated (when enabled)

1.2 Pr Alarm Configuration and Calibration

The alarm can be configured via a Laptop or PC using a variety of 'set up' programs each designed for a particular application with a combination of inputs and outputs. This configuration can be changed via the alarm key pad using the menu system if required or re-configured by re-connection of the laptop or PC.

This allows the extract system manufacturer to stock standard units and configure the controller / alarms to suit the application.

The configuration of the various functions and the calibration of the controller / alarm display is menu driven. Access to the menu will be via password (4 digit number) and will be two level. The first level will be for calibration of the unit and the second level will be for 'engineers' to set up the configuration of the alarm.

**NOTE:- If you enter the Calibration or Configure Menu by accident :-
press the + & - buttons at the same time to escape back to the Main Menu**

The menus and sub-menus are in ' plain language ' and incorporate brief instructions where appropriate.

See menu operation document

1.3 Start up

When unit is powered up the following sequence of events occur :-

1. The DC power is applied to the pressure transducer and a delay is initiated.
2. The alarm then performs a self test on the display and all indicators etc (approx 5 sec)
3. At the end of the delay time the unit performs one of two options :-
 - a. If the alarm calibration has been previously complete – the unit goes to normal operating mode (Run)
 - b. If the unit has not been calibrated the unit displays
“ Unit requires Set up -- press Enter to access Set up menu “
The set up menu allows calibration or configuration via the password protection

During the set-up all alarms and output relays are inhibited.

1.4 Events / actions

Safe Pressure

- Display reading above Low pressure alarm level and below High pressure alarm level
- Green LED on

Warning Pressure

- Display reading below Warning level and above Low pressure alarm level
- Amber LED on

Low Pressure

- Meter reads below Low pressure alarm level for longer than the delay time
- **LOW PRES.** toggles on / off with display
- Red LED on (Flashing)
- Audible alarm sounds -- can be muted via Enter pushbutton
- Low pressure relay operates (if configured)

Reset :- when pressure rises above Low pressure alarm level (including pre-set hysteresis)
the Low pressure alarm resets automatically

High Pressure (if configured)

- Meter reads above high pressure alarm level for longer than the delay time
- **HIGH PRES.** toggles on / off with display
- Audible alarm sounds – can be muted via Enter pushbutton.

Reset :- when pressure falls below High pressure alarm level (including pre-set hysteresis)
the High pressure alarm resets automatically

Night set-back

- When input configured as Night set-back is activated
- Night **SETBACK** Icon toggles on / off with display
- Unit is driven to the pre-determined **MIN** position depending on **Control function** selected (see below)
- Audible alarm muted Mute Icon shown on display

Filter

- When input configured as Filter is activated
- Red LED on (Flashing) – (if configured)
- **FILTER** toggles on /off with display -- (if configured)
- Audible alarm sounds – can be muted via Enter pushbutton
- Filter alarm relay operates (if configured)

Visor

- When input configured as Visor is activated
- Red LED on (Flashing) – (if configured)
- **VISOR** toggles on /off with display -- (if configured)
- Audible alarm sounds – can be muted via Enter pushbutton
- Filter alarm relay operates (if configured)

Audible alarm Mute

When the audible alarm is muted via the Enter button - an Icon (horn with forward slash) is shown on the display.

2.1 Quick Start Installation

Follow the instructions below for installing and commissioning the unit. :-

1. Mount the AFA1000/Pr unit in a clean dry environment using the mounting details provided with the unit --- see page 11
2. Mount the duct Pressure transducer and connect to the extract measuring point using the tube and adapter provided--- see page 12
3. Connect the Mains supply and pressure transducer to the controls --- see typical connection diagram on page 13
4. Power up the unit and wait at least 30 secs while the system stabilises.
5. If the unit has not been calibrated the unit will display 'Requires setup' – press ENTER to continue and in the 'Main Menu' use the +/- buttons on the alarm facia to select 'SETUP' and then press the ENTER button.
6. In the Setup Menu select 'CONFIGURE' and press the ENTER button
7. At this stage you will be requested to enter the PASSWORD. Use the +/- buttons to select the individual digits in turn and then press ENTER. If the password is correct the unit will go to the 'Configure Menu'. If the password is not correct you will be requested to try again --- on the third wrong password entry the calibration menu will lock out for 10 mins
8. In the 'Configure Menu' select 'CAL Configure' and go to 'Pressure Range' and select the pressure range to suit the pressure transducer being used . This menu also allows the Low ,Warning and High pressure alarms to be set When completed select 'Done' to return to the Main menu.

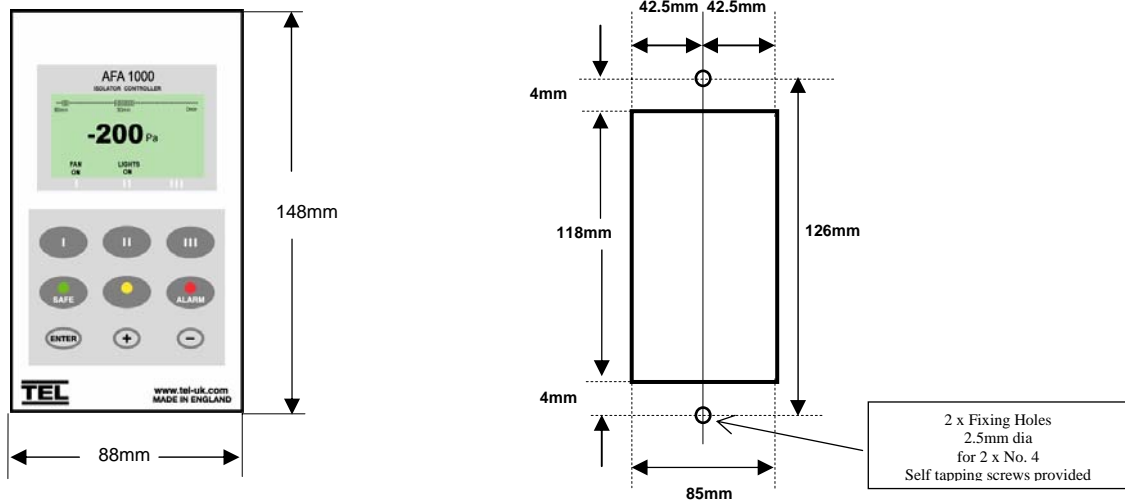
Note:- The pressure transducer is a fully calibrated unit and selecting the appropriate transducer automatically calibrates the AFA1000/2/Pr. However since we use a multi-range transducer it will be necessary to ZERO the controller pressure.

In the Setup Menu select 'CALIBRATION' and press the ENTER button

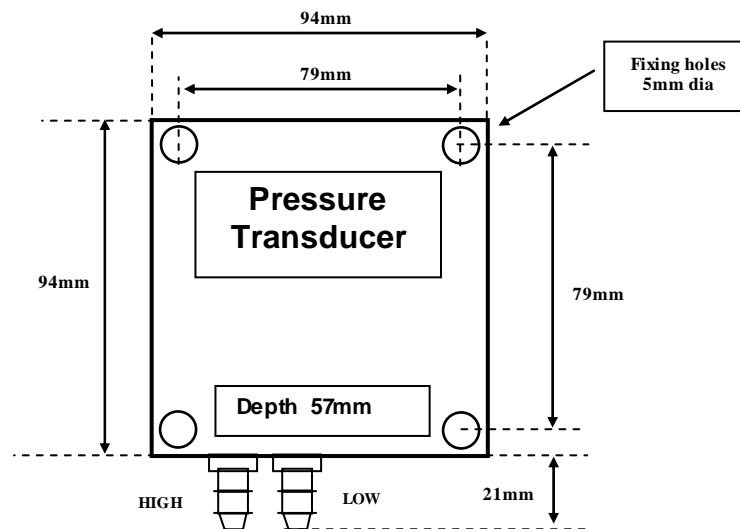
At this stage you will be requested to enter the PASSWORD. Use the +/- buttons to select the individual digits in turn and then press ENTER. If the password is correct the unit will go to the 'Calibration Menu'. If the password is not correct you will be requested to try again --- on the third wrong password entry the calibration menu will lock out for 10 mins

If the password is OK the display will instruct you how to ZERO the controller – (Remove the tubes from the Pressure Transducer and press ENTER – the controller will then sample the Zero point and return to the Main Menu)

3.0 Dimensions



Alarm Panel Dimensions

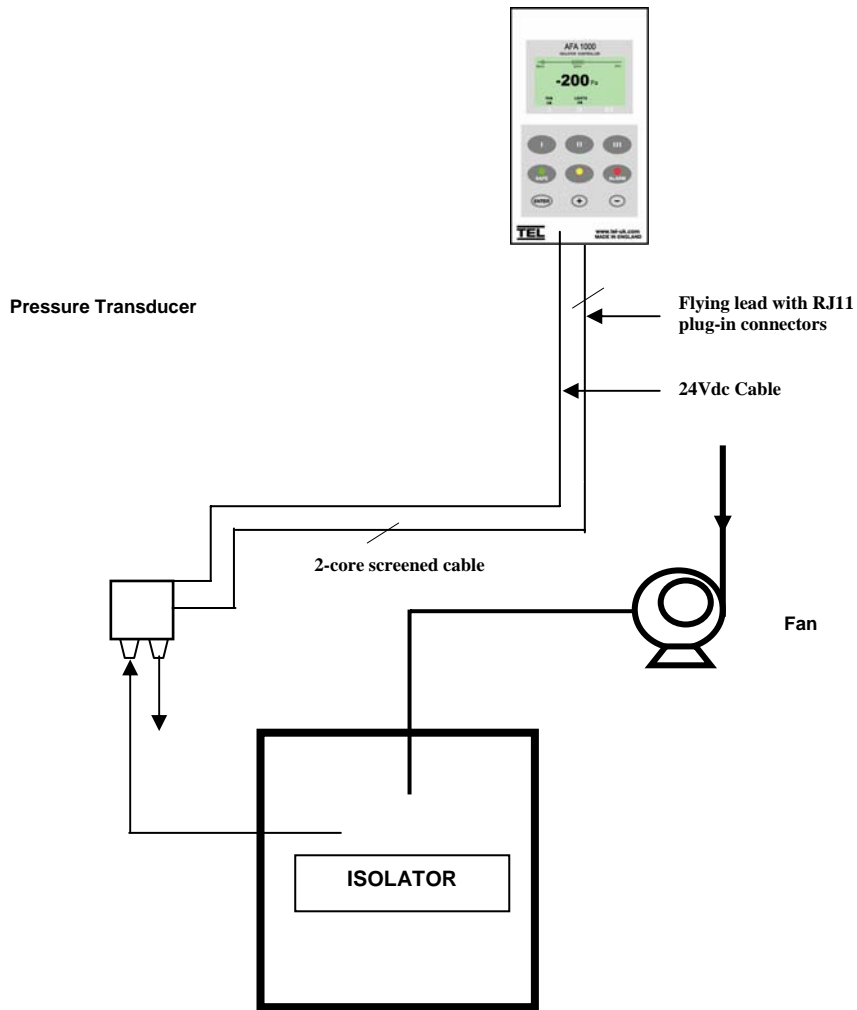


Pressure Transducer Notes :-

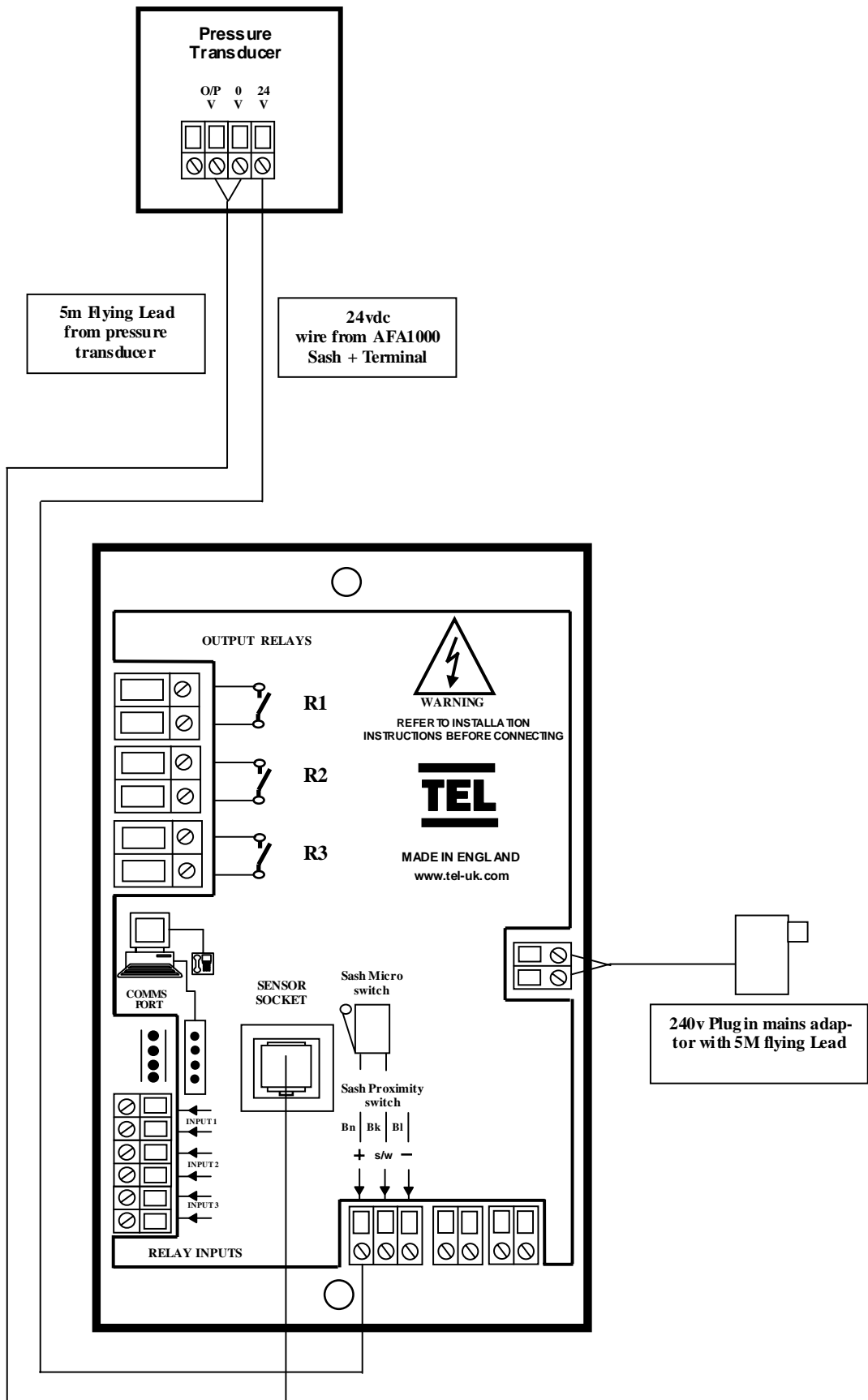
1. The transducer should be mounted vertically using the fixing lugs with the tube and cable connections at the bottom.
2. The transducer is rated to IP66 and is suitable for installation outside providing that the cable connection gland is weather proof

NOT TO SCALE

4.0 Isolator Pressure Monitor Typical installation



5.0 Typical Wiring Diagram



6.0 Limitation of Warranty and Liability

Seller warrants that this product, under normal use and service as described in the operator's manual shall be free from defects in workmanship and material for a period of twelve (12) months, or the length of time specified in the operator's manual, from the date of shipment to the customer. This limited warranty is subject to the following exclusion :-

- a. Batteries and certain other components when indicated in specifications are warranted for a period of 90 days from the date of shipment to the customer.
- b. With respect to any repair services rendered, Seller warrants that the parts repaired or replaced will be free from defects in workmanship and material, under normal use, for a period of 90 days from the date of shipment to the customer
- c. Seller does not provide any warranty on finished goods manufactured by others. Only the original manufacturer's warranty applies.
- d. Unless specifically authorised in a separate writing by Seller, Seller makes no warranty with respect to, and shall have no liability in connection with, any goods which are incorporated into other products or equipment by the Buyer. All goods returned under warranty shall be at the Buyer's risk of loss, Seller's factory prepaid, and will be returned at Seller's risk of loss, Buyer's factory prepaid.

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7.0 Contact us :-

For further information on our range of airflow alarms and controls please contact us at :-



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