Technical Data

HYTEK TANK MONITOR

Applies to the following models **only:**

- TGE.T5020A -TGE.T5020A1 - TGE.T5020A2

Please read carefully before commencing installation

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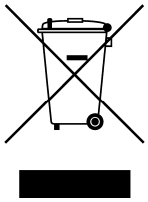
ENVIRONMENTAL INFORMATION



European Directive 2012/19/EU requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product must be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities.

PRODUCT DESCRIPTION

The Hytek Tank Monitor is a simple, electronic gauge for monitoring the fluid level inside fuel storage tanks of any shape or size up to 10m in height. It is designed to be used on diesel, AdBlue®, bio fuels and oils with a specific gravity between 0.6 – 1.4. The System utilises a precision electronic pressure sensor to give a consistent and accurate reading. Optional bund alarm probe and water sensing probe available.

ATEX ZONE RISK ASSESSMENT QUESTIONS:

1. Is the product in this storage vessel likely to ever reach or exceed its flash point?
2. What is the likelihood that there will be a misting leak for more than 10 hours per year in the area that you are considering for zone control?
3. Are there any other stored products that require ATEX control zone areas nearby?

If the answer is **YES** to either question 1, 2 or 3 then the area will require ATEX zone considerations. Please see our range of ATEX certified gauges or contact Hytek GB Ltd for advice.

If the answer is **NO** for **ALL** questions 1, 2 & 3 then your risk assessment results in the area being classified as ZONE 2 or possibly safe area. (Please note that ZONE 2 cannot guarantee leaks cannot occur in this area.)

IMPORTANT WARNING NOTES

1. This gauge must only be used with diesel or other liquids classed as category 3 in accordance with European Regulation No. 1272/2008. It must not be used to dispense petrol or any other liquid with a similar flash point.
2. It must not be sited adjacent to a petrol dispenser or in any other hazardous zone.
3. Installation of this equipment and its associated tank fittings should only be carried out by qualified fuel installation engineers.
4. The installation must conform to the latest relevant electrical and local authority regulations and standards.

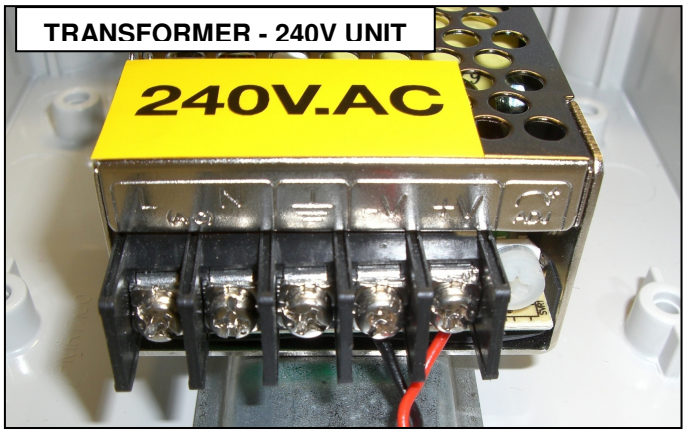
INSTALLATION INSTRUCTIONS

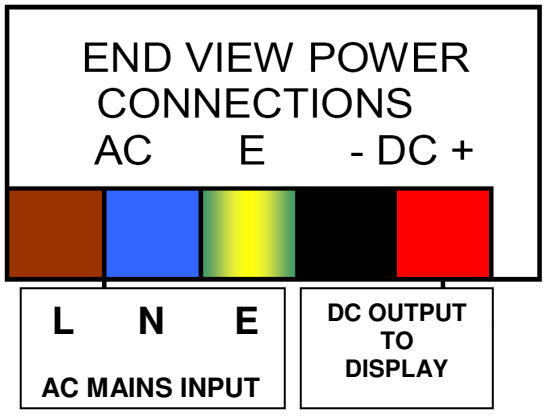
The tank gauge kit comes supplied with the following items:

- Metal tank connector - 1” BSPT fitting.
- Plastic tank connector – 30mm.
- Junction box for extending the cable.

FITTING THE GAUGE

1. The gauge can be mounted outside directly on the tank or in the immediate vicinity. The gauge can be mounted up to 1000m from the tank top if the supplied probe cable is extended using suitable shielded data cable. A junction box is supplied.
2. Remove the casing and mount the gauge onto a suitable surface using the supplied M4 bolts. Mounting-hole positions are shown on the rear of the case. See mounting diagram on page 10.
3. Supply the transformer with a suitable mains power supply. Check model for voltage. See photo and diagram below. The transformer mounting rail can be temporarily removed to allow easier access to the power connection terminals.





FITTING THE PROBE

1. Ensure that there is an opening (with a cap or flange) on the top of the tank wide enough for the probe to go through.
2. The metal tank connector is a 1" BSPT fitting. The optional plastic tank connector is a 30mm compression fitting, which requires a 30mm hole to be cut into the plastic tank.
3. Carefully slide the probe into the tank.
4. **IMPORTANT**: Ensure that the probe is suspended 50mm from the bottom of the tank before tightening the gland on the tank top fitting. This will ensure that water or sludge does not affect the probe sensor.
5. If you need to cut the probe cable to a shorter length then strip back 250 mm of the outer sheathing, and use the nylon cords to tie and support the weight of the probe. Cut the vent tube to around 30 mm long, and cut the cores to 170 mm long.
6. If the junction box assembly is to be used to extend the cable then allow for some height adjustment when the probe is in the tank.
7. Using the terminal block provided, connect the wires to the interconnecting cabling. This should be twisted screened pairs, back to the display. The enclosures glands are such to allow atmospheric pressure equalisation **IMPORTANT**: Ensure that the breather tube for the probe is not obstructed, sealed or kinked in any way as this will affect the accuracy of the tank gauge.

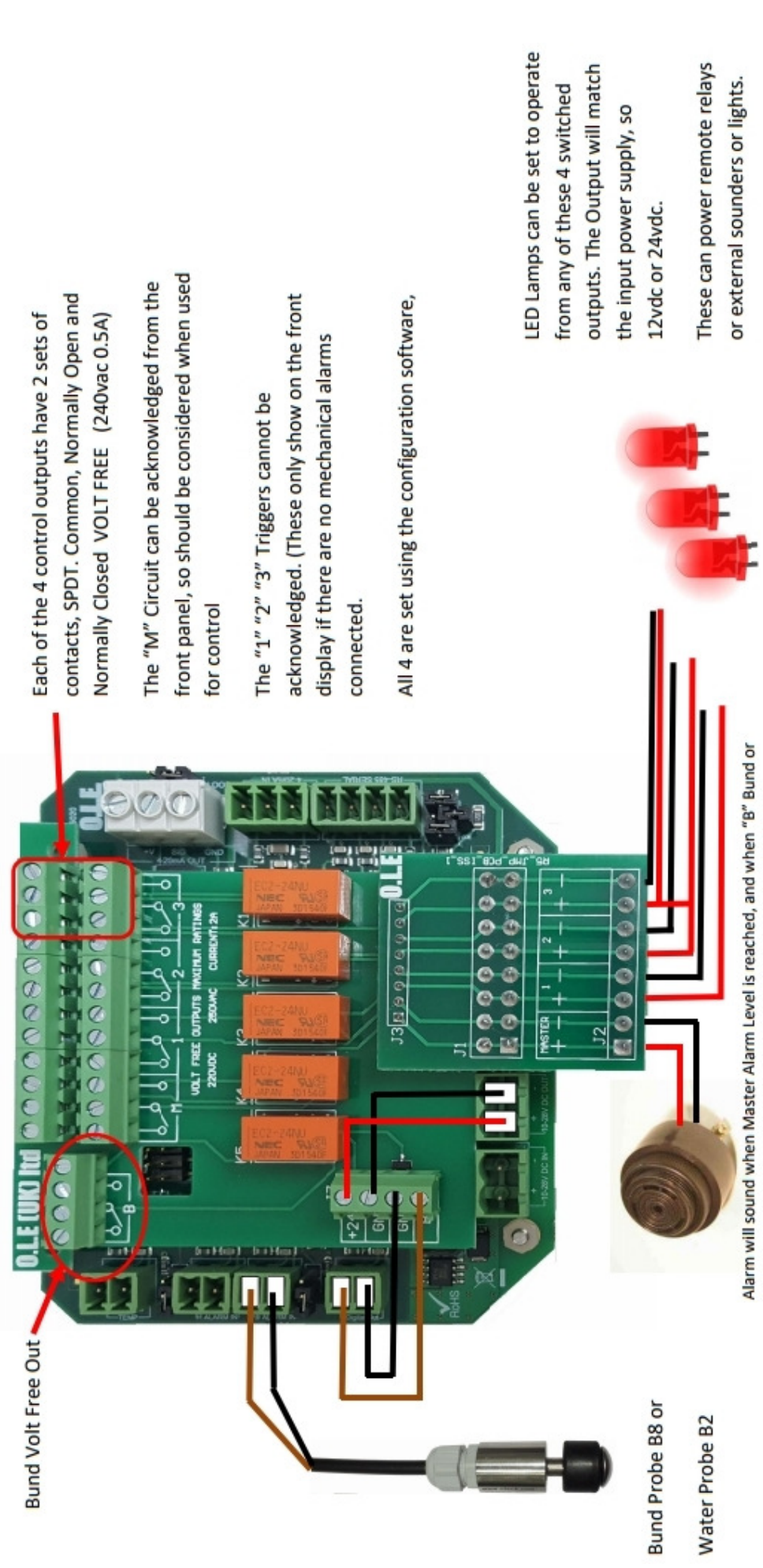
   BROWN = Pressure sensor +24vdc
   GREEN = Pressure sensor –ve
   WHITE = Not used

8. Silica gel packs are fitted to absorb any moisture. (Air flow is minimal)
9. Power up the gauge and ensure that the reading is accurate. The gauge is supplied pre-configured by Hytek so no further calibration or set up is required on site.

FITTING MECHANICAL BUND OR HIGH LEVEL ALARM (OPTIONAL)

1. If a mechanical bund probe is supplied then wire this onto the PCB as shown in the diagram on page 8. Note PCB jumper position.
2. If a mechanical high level probe is supplied then wire this onto the PCB as shown in the diagram on page 8. Note PCB jumper position.

EXTERNAL DEVICE CONNECTION DIAGRAM



EXTERNAL DEVICE CONNECTION

1. If the optional TGE.R relay board is supplied then connect the required external devices to the relay output(s) shown in the diagram below:
2. The pre-set alarm settings can be found on the sticker on the underside of the gauge lid. These alarm settings cannot be adjusted on site.

The default alarm settings are as follows:

MASTER ALARM =	95% High Level Alarm
ALARM 1 =	90% High Level Alarm
ALARM 2 =	20% Low Level Alarm
ALARM 3 =	05% Low Level Alarm

OPERATION

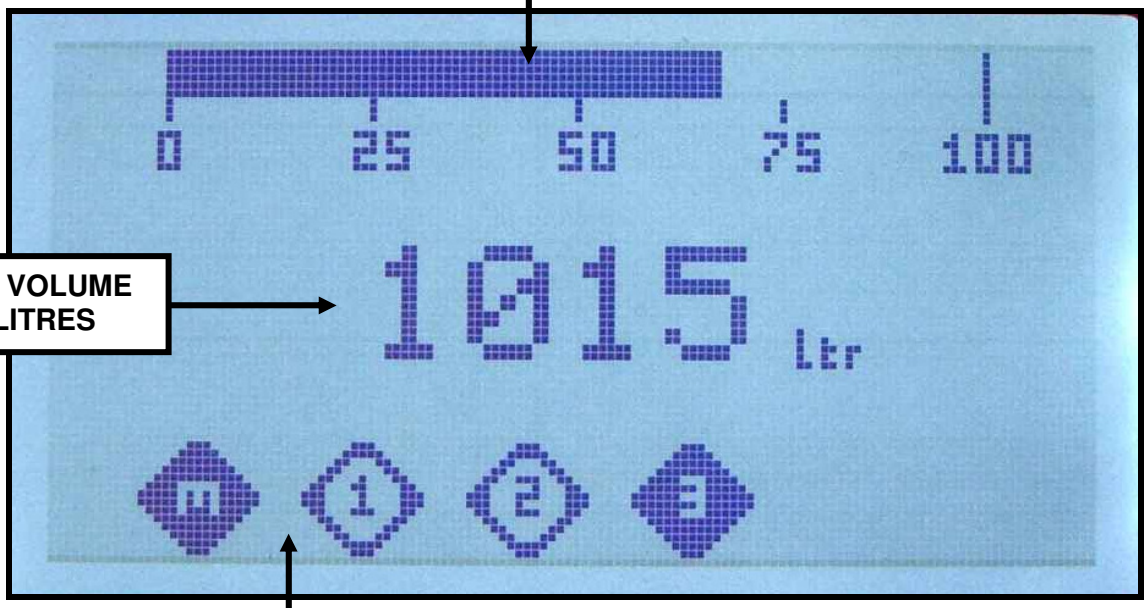
The gauge is very easy to operate and has the following buttons:

TEST BUTTON: This is an Alarm / Test-Mute button. Press and hold for 5 seconds to test the alarm. Press again to mute the alarm. If an alarm has been 'Muted' the Alarm symbol shows a crossed-out image. If a bund alarm is incorporated, this shows as a 'B' on the bottom line of the display.

SCROLL BUTTON: There is a Scroll button, which shows Tank Name, Capacity and Ullage space. This will show for 5 seconds before reverting to the standard display.

DISPLAY

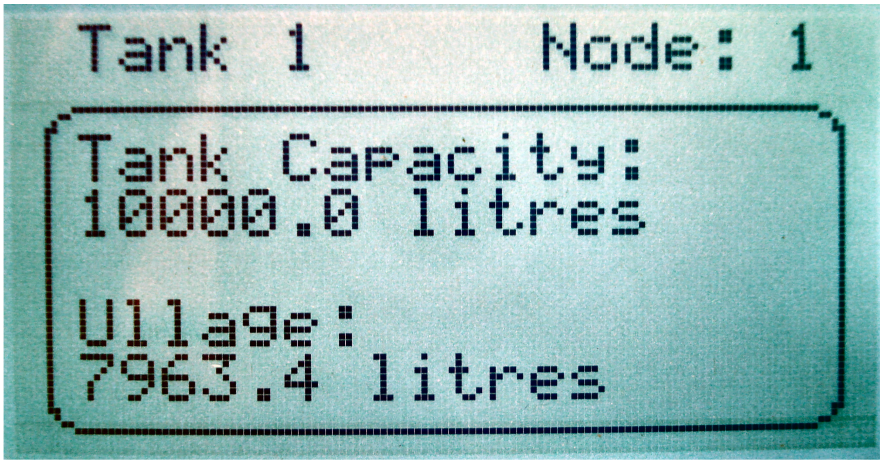
VISUAL TANK CAPACITY GRAPHIC BAR (%)



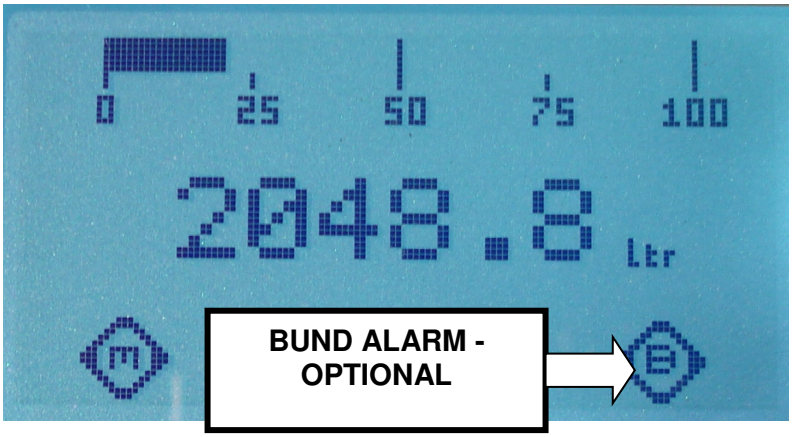
TANK VOLUME IN LITRES

ALARM STATUS ICONS:
BLACK = ACTIVE
TRANSPARENT = NOT ACTIVE

MUTED MASTER ALARM =

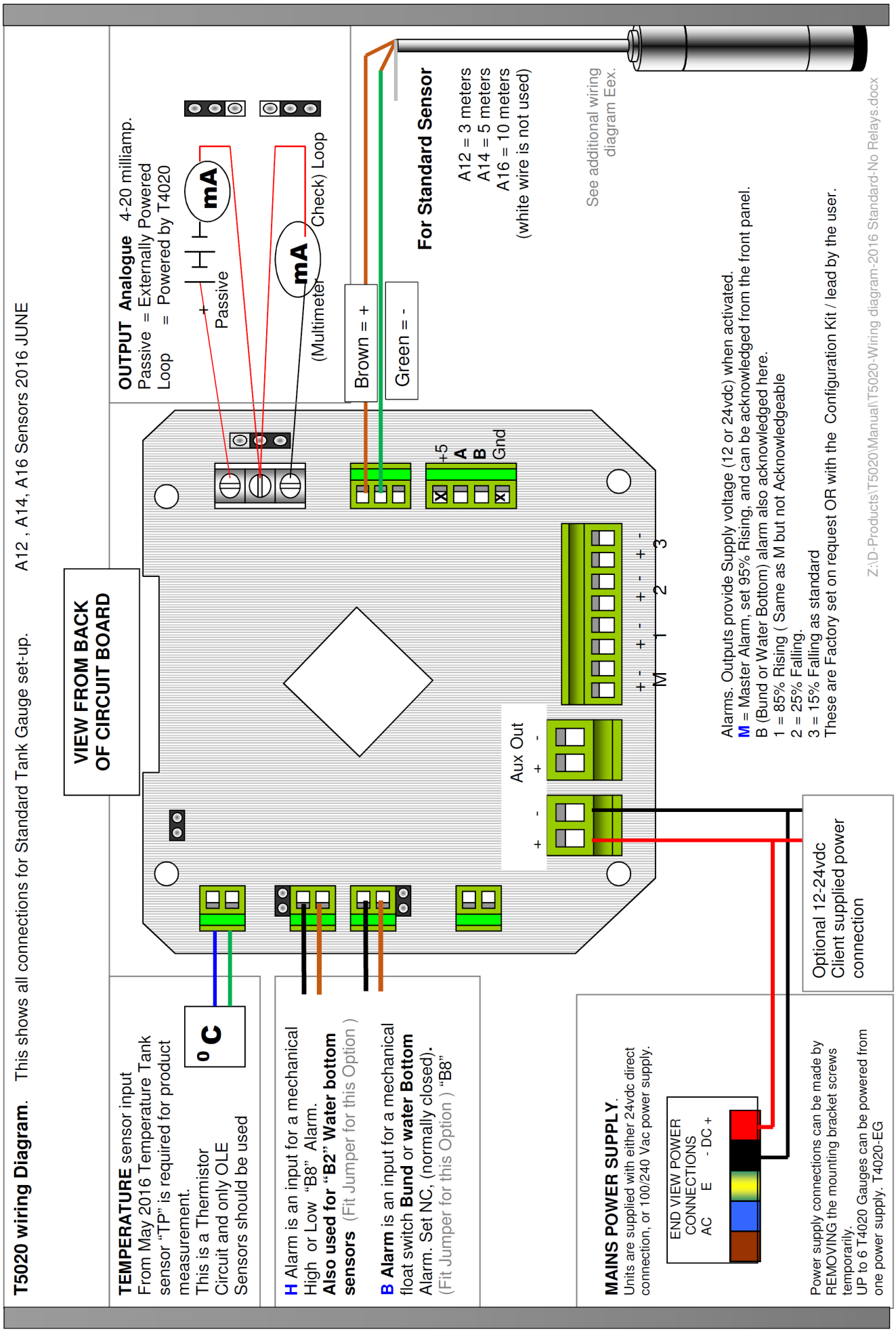


TANK CAPACITY AND ULLAGE SPACE.



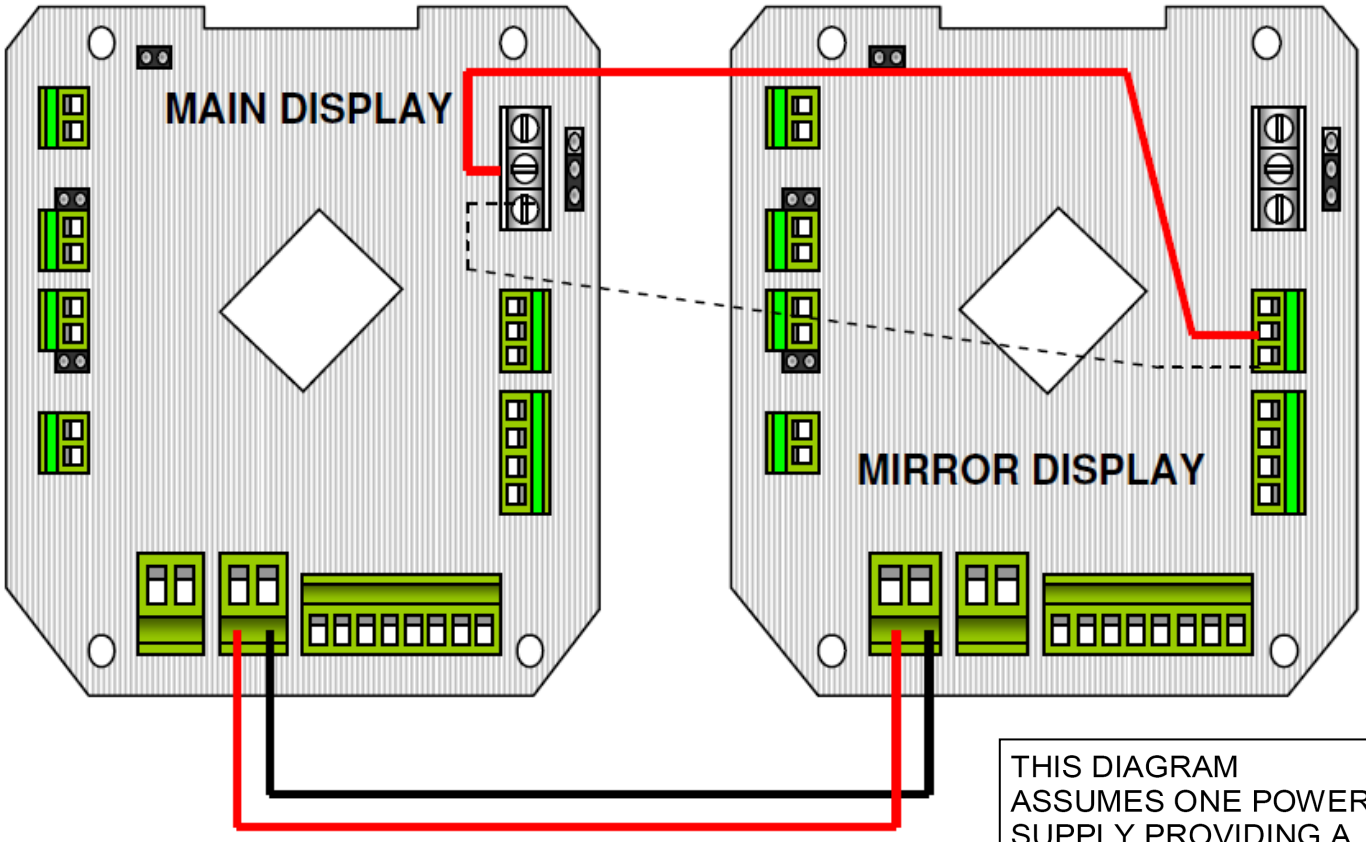
BUND ALARM - OPTIONAL

PROBE WIRING DIAGRAM



MIRRORED SLAVE DISPLAY

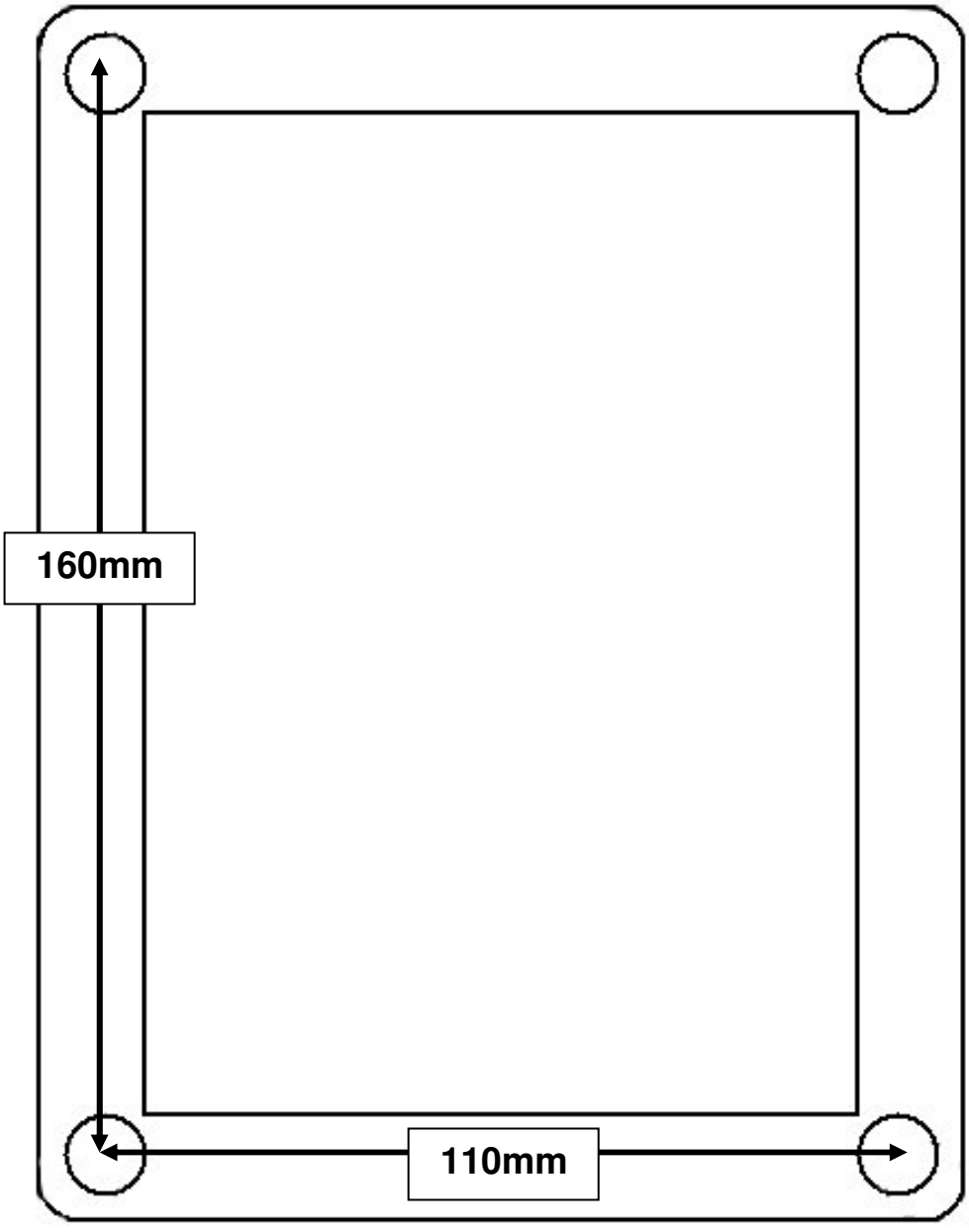
There is an option to fit a slave display that can act as a remote readout. This slave display mirrors the reading from the master display and does not require its own PSU as it takes its power from the master gauge. Please note the master display will need to be re-programmed by Hytek if a slave display is not part of the original installation and is added at a later date. The connection diagram is below.



THIS DIAGRAM ASSUMES ONE POWER SUPPLY PROVIDING A COMMON NEGATIVE TO BOTH BOARDS.
FIT THE DOTTED WIRE IF THE DEVICE DOES NOT OPERATE.

DIMENSIONS

The display may be mounted on walls or panels by utilising the displays own mount holes and using these will retain the IP66 integrity. Allen cap or cross head M4 bolts are ideal for this. The mounting dimensions are shown in the diagram below.



SPECIFICATIONS

- Power supply: 110/230V AC 50/60Hz
- IP66 Fully weatherproof enclosure
- Accuracy: +/- 0.25%
- -5 to +60 Degree operating temperature
- Optional mirrored display output
- Display enclosure is RoHS and CE compliant.
- **Alarm Functions**
  4 x Programmable alarm/ trigger set-points, (see outputs).
  E.g. High Level Local alarm with acknowledge circuit.
  Pump / valve control, Flashing Beacon alarm, Bund Alarm.
  Optional Integrated Bund Alarm with Acknowledge circuit.
- **Cable connections**
  Weatherproof cable glands are provided for power supply and signal inputs. Screw down & plug in Terminal strips are provided within the enclosure
- 4-20 mA output for BMS + Modbus as standard
- M= Master alarm % Settable provides 110 dB at 1 meter, and has a front panel acknowledge button. Test and Mute function supplied as factory standard
- H = Additional Contact Alarm, such as Low level or Mechanical High Switch (NC)
- B = BUND Contact Alarm, for mechanical Switch (NC)

E.U. DECLARATION OF CONFORMITY

Company Name:	**Hytek (GB) Ltd**
Address:	**Delta House, Green Street. Elsenham, Bishops Stortford, Hertfordshire, CM22 6DS, UK**
Date of Issue:	**14th June 2016**

Equipment Details:	**Electronic Tank Gauge Kit (Fuel Monitor)** TGE.T5020A, TGE.T5020A1, TGE.T5020A2
Applicable Directives: & Standards	**2004/108/EC EMC Directive &** **2014/30/EU EMC Directive** (effective date 20th April 2016) EN 61000-6-3:2007 (+A1) Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments **2014/35/EU Low Voltage Directive** **2006/42/EC Machinery Directive** **2012/19/EU Waste Electrical & Electronic Equipment Regulations** **2011/65/EU Restriction of Hazardous Substances Directive (RoHS2)**
Declaration Number:	**EU095/3**

On behalf of the above named company, I declare under our sole responsibility that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

Clive Wellings

Clive Wellings, Technical Manager