Technical Data

HYTEK Fuel Transfer Solutions

FC20i FUEL CONTROL SYSTEM + TANK MONITOR

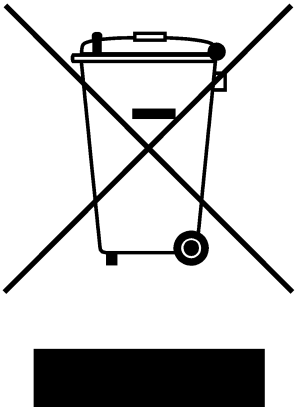
(WALL MOUNT VERSION)

Applies to the following models ONLY:
FC20.WM.IT

Please read carefully BEFORE commencing installation.

Registered Office: HYTEK (GB) LIMITED,
Delta House, Green Street, Elsenham, Bishop's Stortford,
CM22 6DS UK.
Registered in England No. 1915382
Tel: +44 (0) 1279 815 600
Email: info@hytekgb.com

ENVIRONMENTAL INFORMATION



UK Regulation SI 2013 3113 requires that the equipment bearing this symbol on the product an/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 FC20.I is an integrated Fuel management system, Tank Monitor and Tank Gauge Interface.
This enables the management of up to 2 Fuel Pumps and well as data logging using the Hytek FMO System.
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®, biofuels 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 available.

IMPORTANT WARNING NOTES

1. This system must not be sited adjacent to a petrol dispenser or in any other hazardous zone.

2. Installation of this equipment should only be carried out by qualified fuel installation engineers.

3. The installation must conform to all relevant electrical and local authority regulations and standards.

4. The Tank gauge must only be used with diesel or other liquids classed as category 3 in accordance with GB CLP Regulation. It must not be used to dispense petrol or any other liquid with a similar flash point.

INSTALLATION INSTRUCTIONS

1. Check you have the following items:

   FC20.I

   FC20.I fuel control system
   2 off door keys

2. Open the front doors using the keys provided.

MOUNTING

3. Mount the FC20.I to a suitable wall using the provided mounting holes in the rear of the enclosure.

ELECTRICAL

4. Remove the steel cover from the mains input supply terminals and the pulse input connection junction boxes.

5. Connect a constant 220/240V AC 50 Hz supply, fused at 13 amps, to the 220/240V terminal block as shown on the wiring details diagram.

   NB: The FC20.I must have a continual 220/240V AC supply, even when not in use.

6. The FC20.I can switch the live supply of up to two external pumps (220/240V AC, maximum 10 amps). Connections are provided for this on the 220/240V terminal block as shown in the wiring details diagram.

7. Connect the external pulse supply, from up to two pumps, inside the pulse connections junction box as shown in the wiring details diagram. In the case of the FC20.I the pulse connection terminal block is located inside the cabinet.

8. The FC20.I is designed to be used 12v powered or passive pulsers, any pulser required outside of this range please contact the Hytek Technical Team

9. Ensure all the terminal screws are tight and replace the junction box covers.

FITTING THE TANK SENSOR 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.

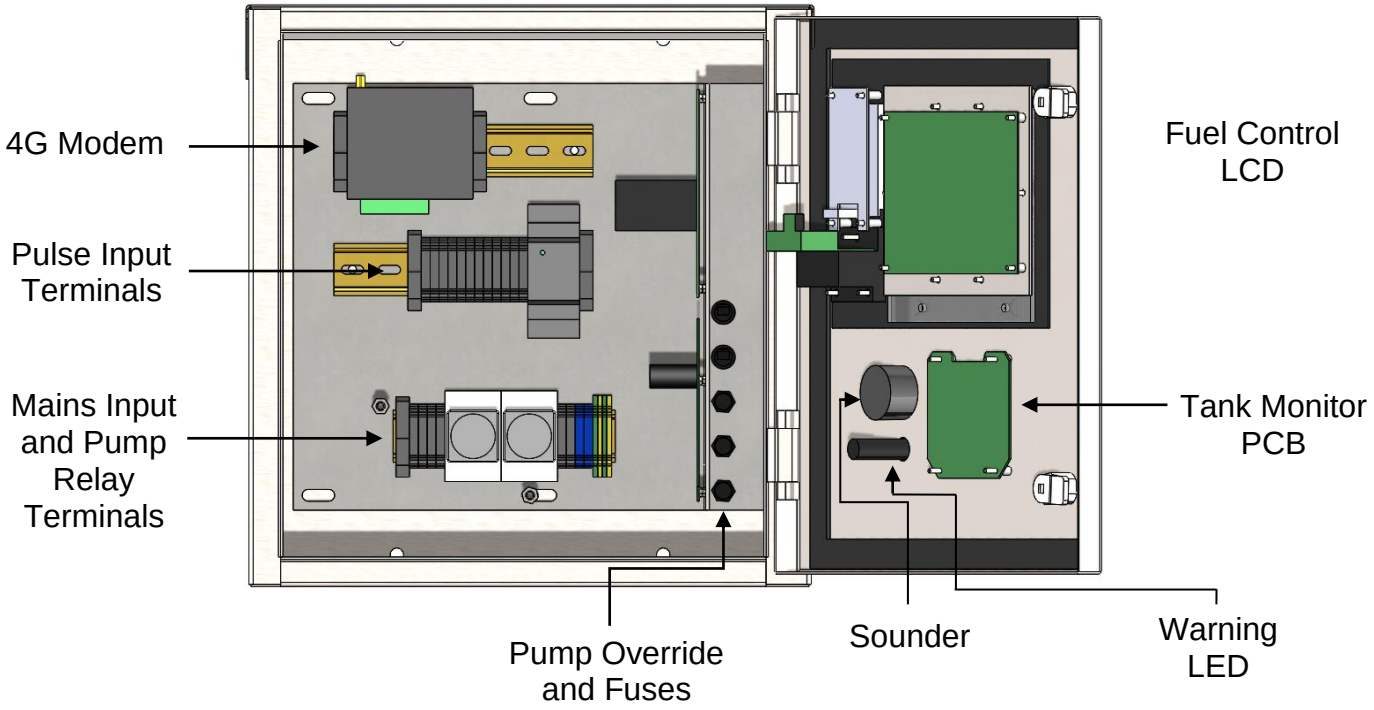
5. If you need to cut the probe cable to a shorter length, then strip back 250 mm of the outer sheathing and use the nylon cords to tie and support the weight of the probe. Cut the vent tube to around 30 mm long and cut the cores to 170 mm long.
   IMPORTANT: Ensure that the breather tube for the probe is not obstructed, sealed or kinked in any way as this will affect the accuracy of the tank gauge.

   BROWN = Pressure sensor – +v
   GREEN = Pressure sensor – GND
   WHITE = Not used

FITTING MECHANICAL BUND

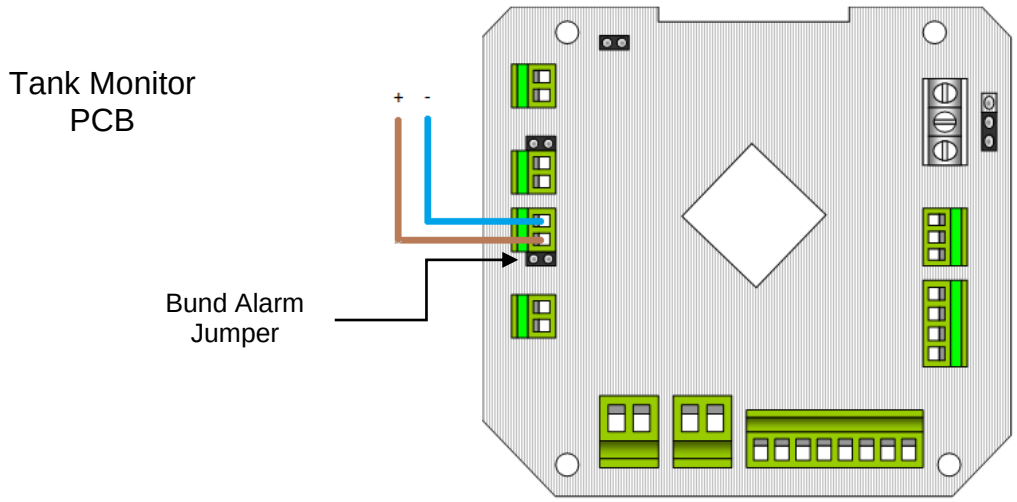
1. If a mechanical bund probe is to be fitted, Wire the Terminals as per the Wiring Diagram. Note PCB jumper position (See Jumper Diagram)

FC20.I INTERNAL LOCATIONS

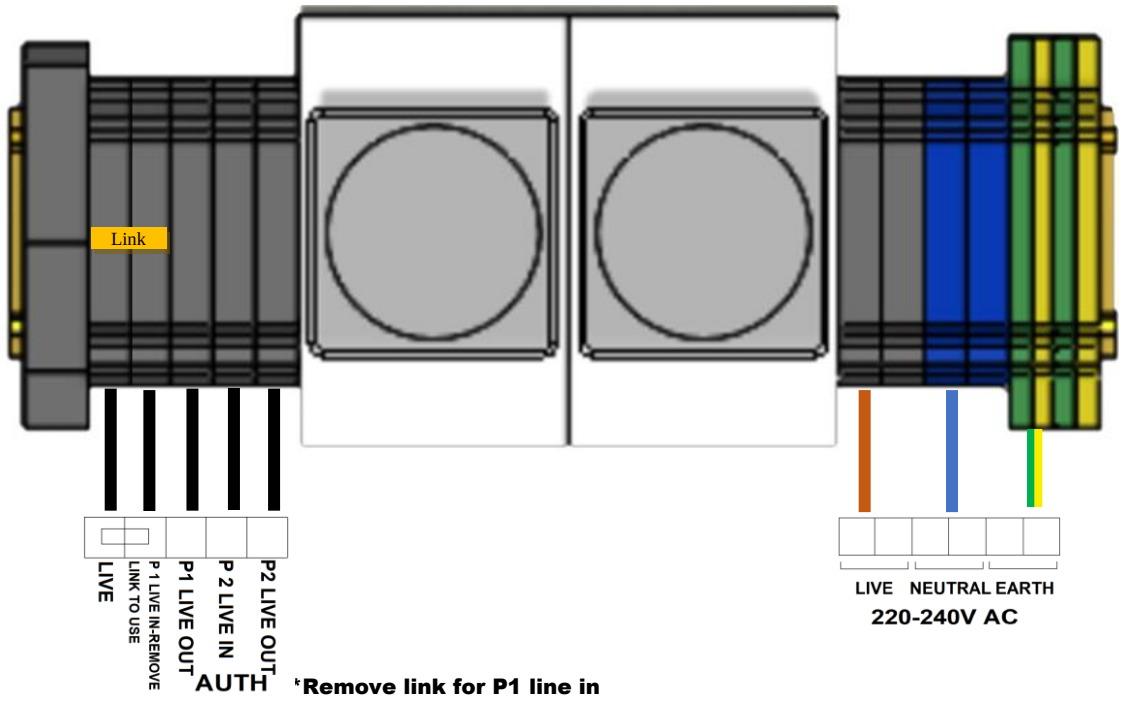


FC20.I ELECTRICAL CONNECTION DETAILS

JUMPER DIAGRAM

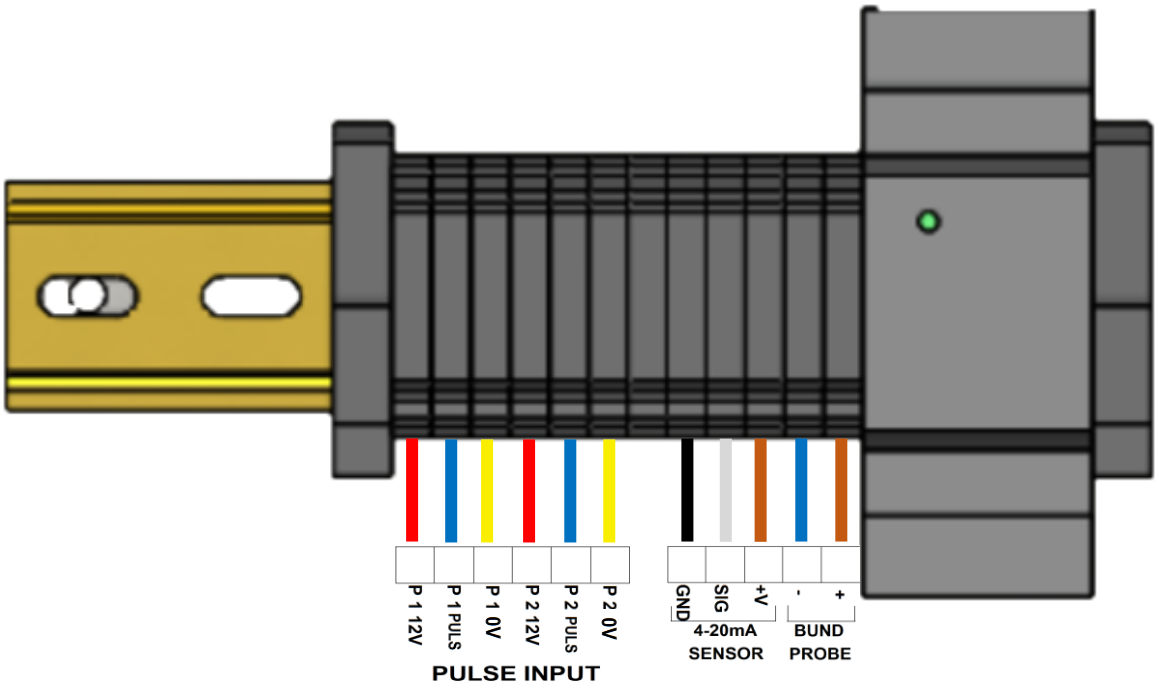


MAINS INPUT AND PUMP 1 & 2 RELAY CONNECTIONS

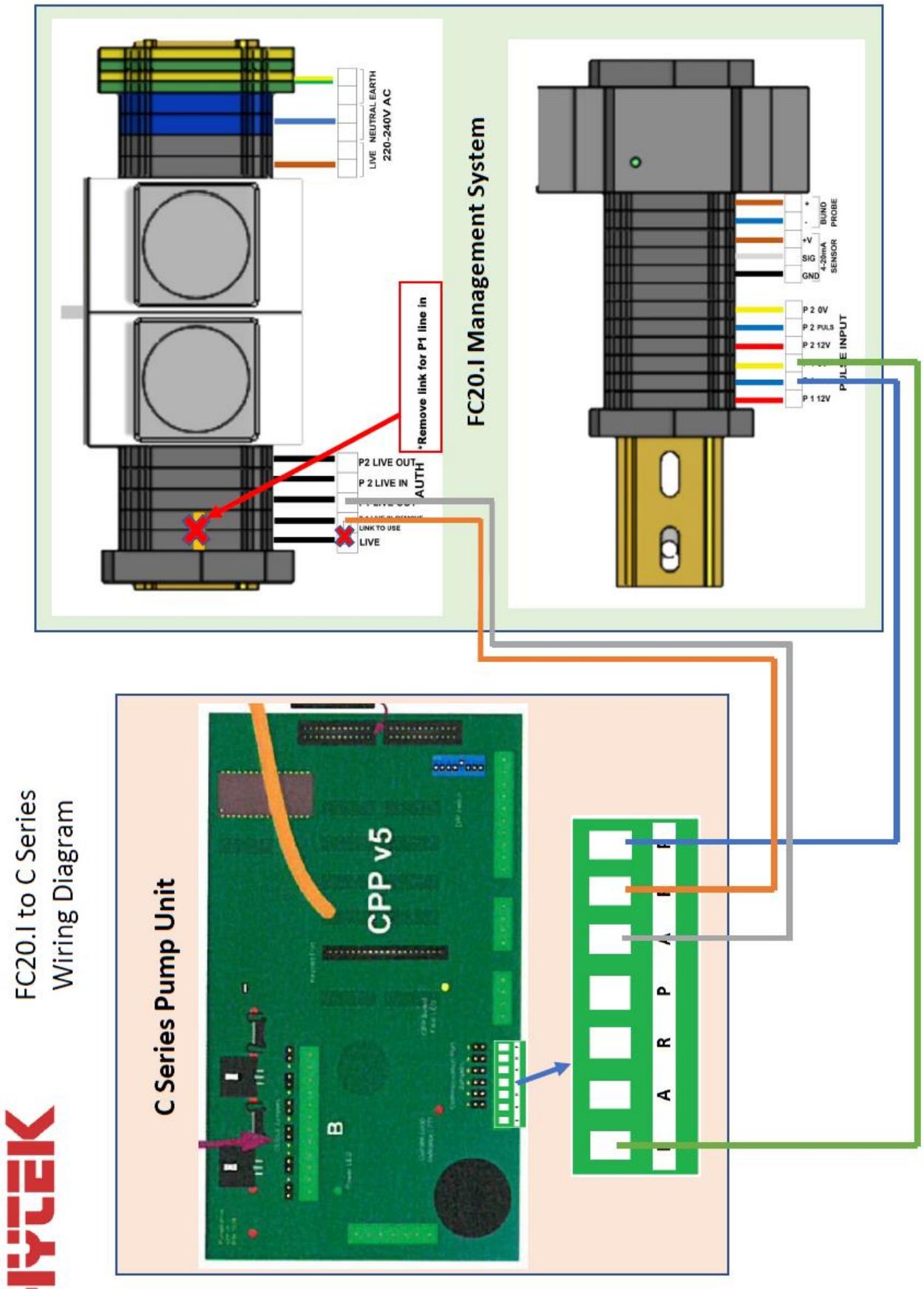


*Remove link for P1 line in

PULSED INPUT CONNECTIONS



Pump Specific Wiring



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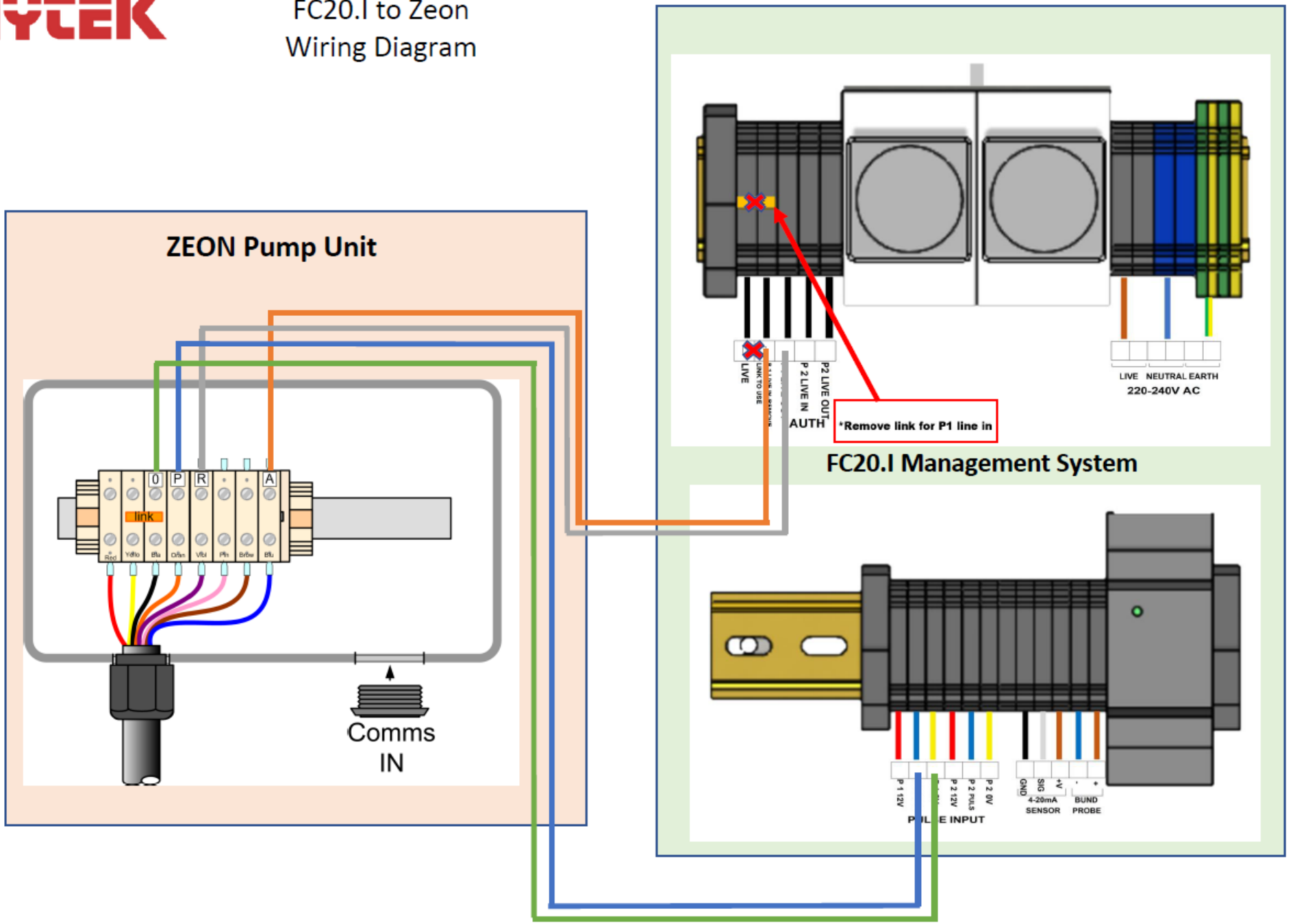
FC20.I to Zeon Wiring Diagram



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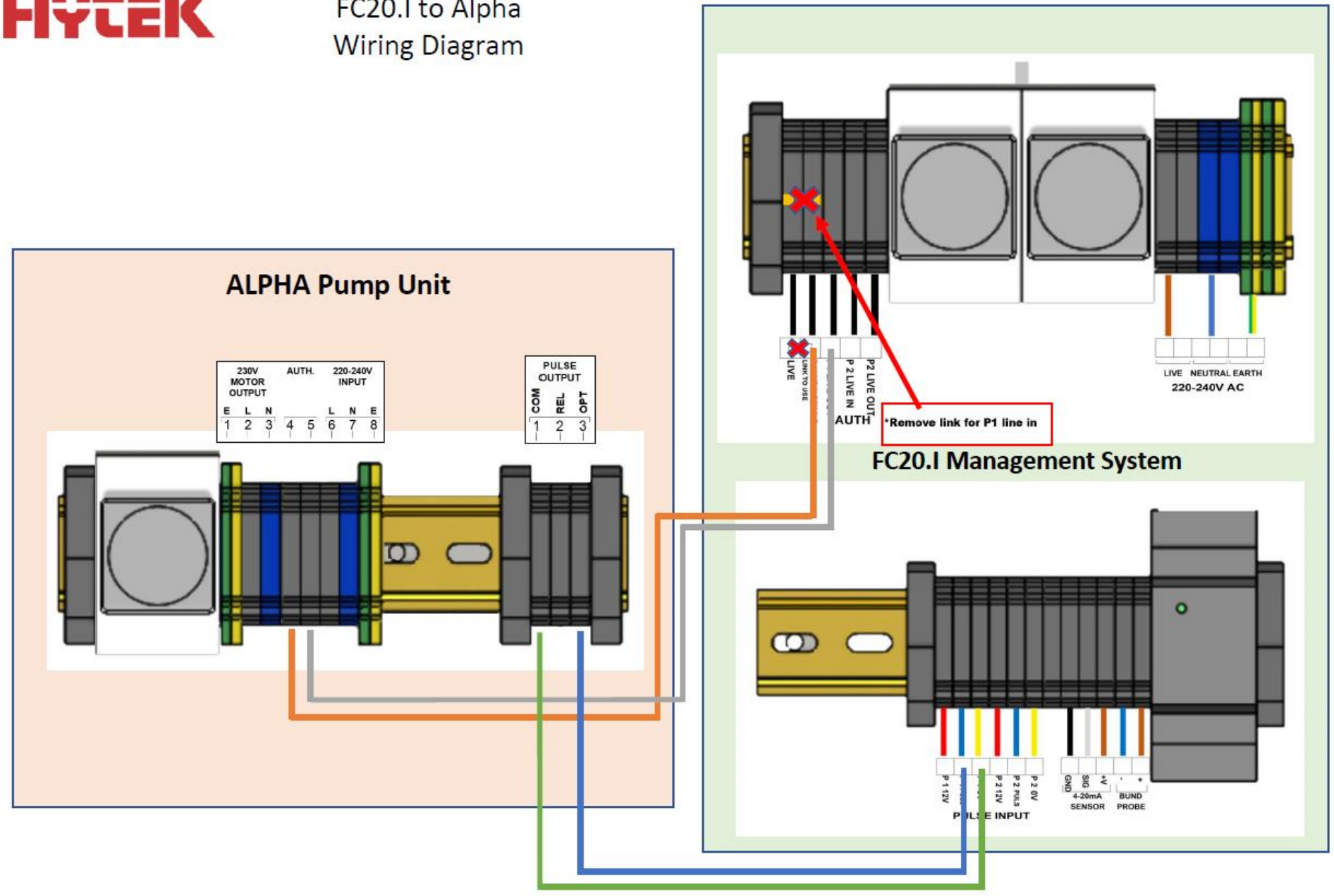
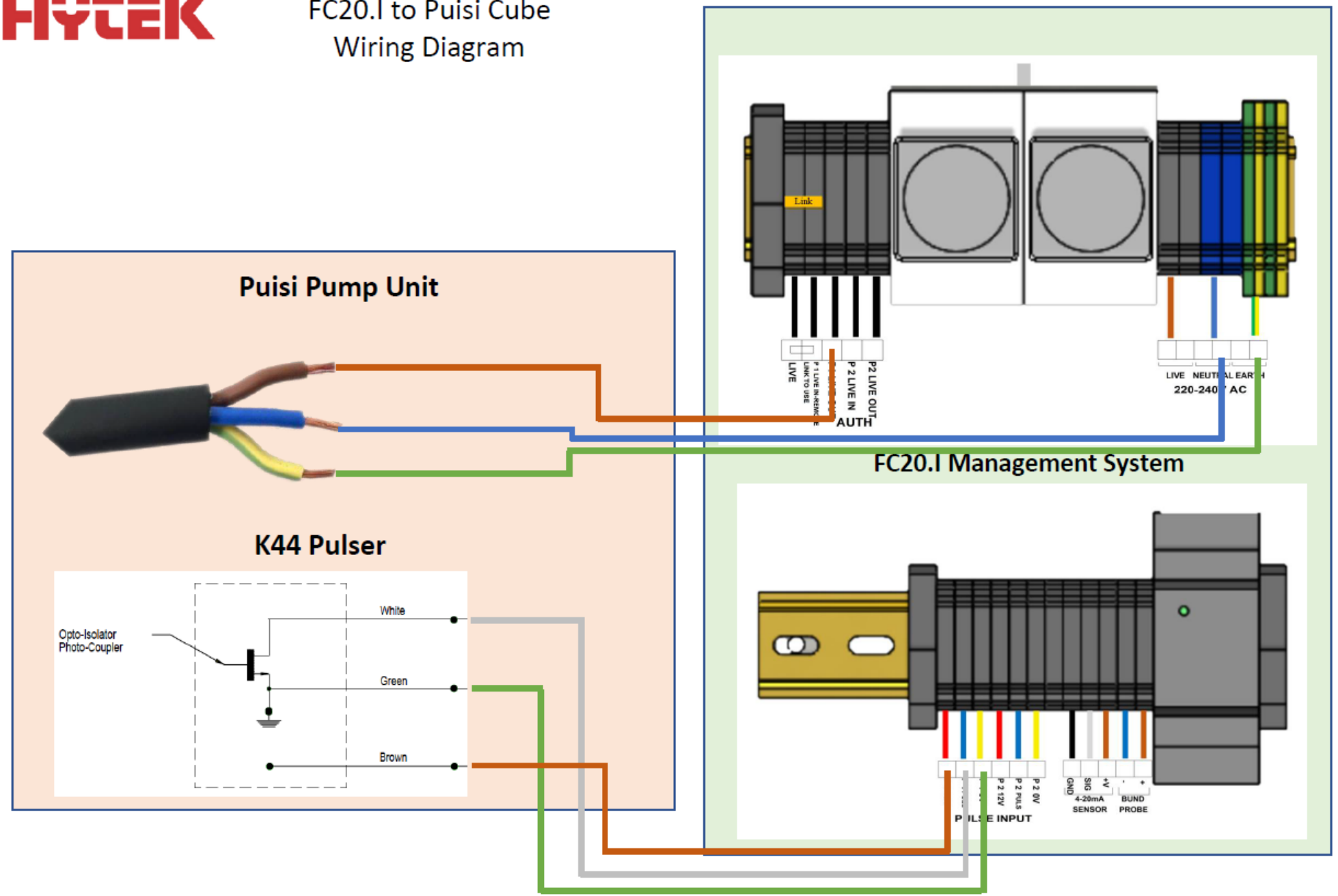
FC20.I to Alpha Wiring Diagram



FC20.I to Puisi Cube Wiring Diagram



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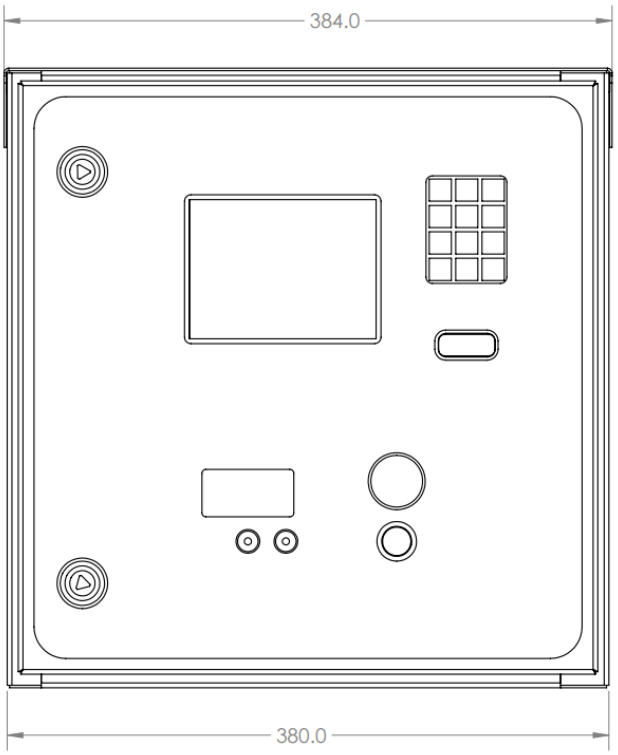
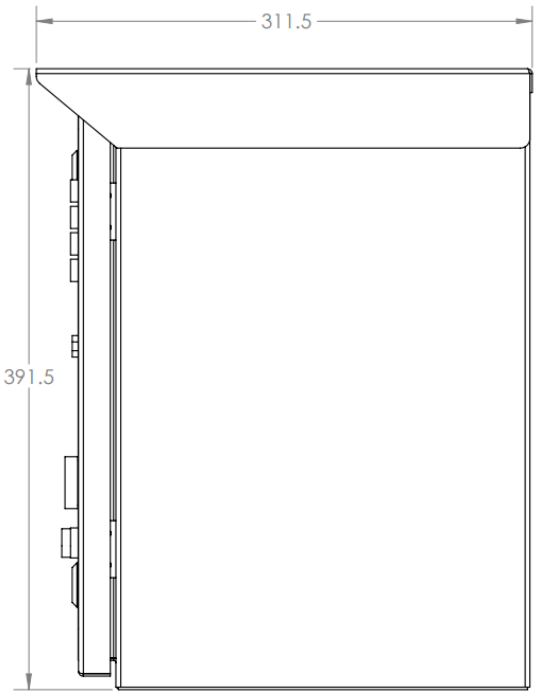
FC20.I WALL MOUNTING DIMENSIONS

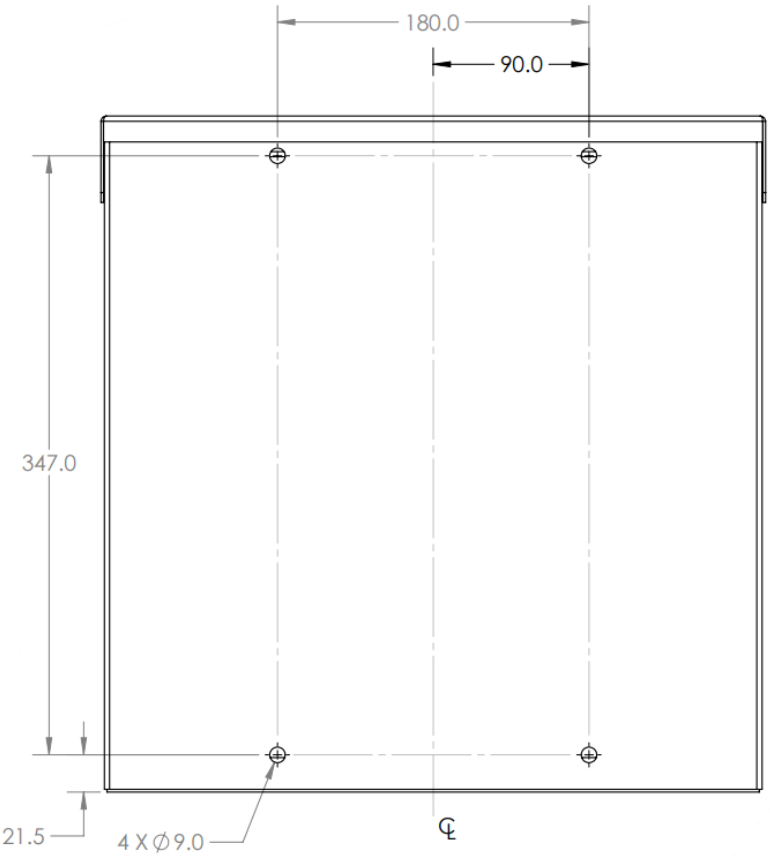
Front View



Side View



Rear View with Mounting Holes



OPERATION OF FUEL CONTROL SYSTEM

PLEASE NOTE:
This guide for using the FC20.I terminal.
All registered software users will have been emailed a link to authenticate their account for the Hytek FMO online cloud software. If you have not received this email, then please contact Hytek at technical@hytekgb.com, or call 01279 815600.

STANDBY DISPLAY

THE FC20.I TERMINAL IN STANDBY MODE

This is when the FC20.I Terminal is powered up, with the display illuminated, but not in use.

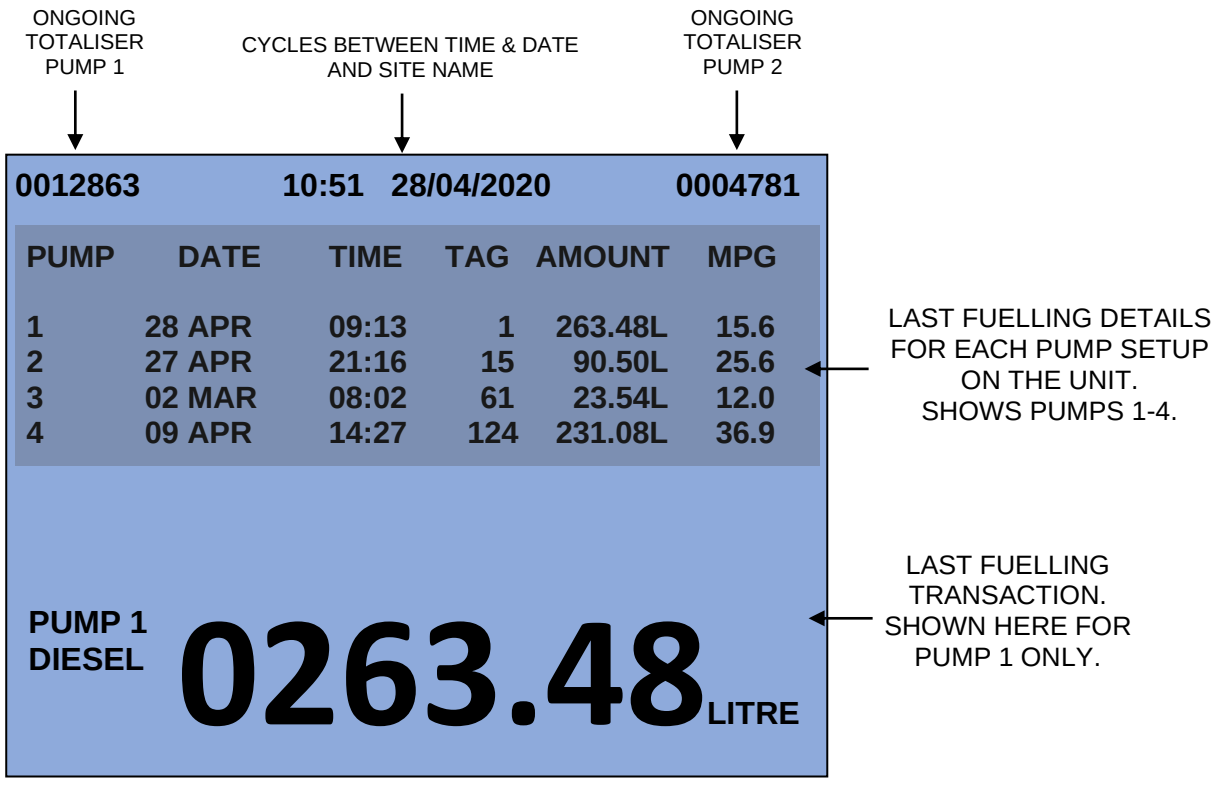
DISPLAY INFORMATION:

Ongoing Totaliser Pump 1: This is the number shown in the top left-hand corner of the display screen. It is the total amount of fuel dispensed by pump 1 since installation. This cannot be reset.
Ongoing Totaliser Pump 2: This is the number shown in the top right-hand corner of the display screen. It is the total amount of fuel dispensed by pump 2 since installation. This cannot be reset.
NOTE: Totalisers for pumps 3 & 4 are not shown on the display and are available via the FMO online software.

Time & Date/Site name: This is shown in the centre at the top of the display screen.

Last Transaction Details: These are shown in the dark coloured box in the centre of the display screen.
They include the pump number (1-4), Data Tag ID number, time & date of the last transaction, quantity of fuel delivered and the vehicles MPG calculation (if odometer input is requested).

Last Amount Dispensed: This is shown in large text at the bottom of the display screen and is for PUMP 1 only.



FUELLING FROM PUMPS CONNECTED TO THE FC20.I TERMINAL

THE FUELLING PROCEDURE:

1. INSERT TAG

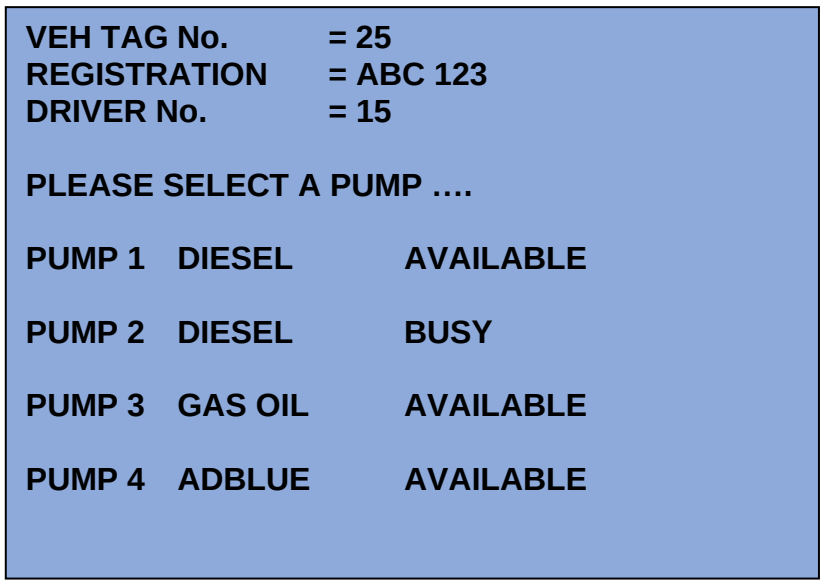
Insert Data Tag into the Data Tag Reader Slot. The display will show the Data Tag ID number and the registration number of the vehicle the Data Tag is allocated to.

If a message for the vehicle user is stored on the system, it will be displayed now. The **ENT** key on the keypad will have to be pressed to acknowledge the message before fuel can be drawn.

If a driver **PIN CODE** is requested for this vehicle tag, then it will need to be inputted now. Enter the PIN CODE and then press **ENT** on the keypad.

2. SELECT PUMP

If the FC20.I unit is configured to for more than a single pump, then you will now be prompted to select the pump required for fuelling the vehicle. Pumps numbered 1-4 with fuel type will be displayed.
If a pump is currently in operation, then **BUSY** will be displayed. Any pump marked as **AVAILABLE** can be selected.
If a vehicle is restricted to only certain a fuel or fuels, then only those pumps will be available for selection.



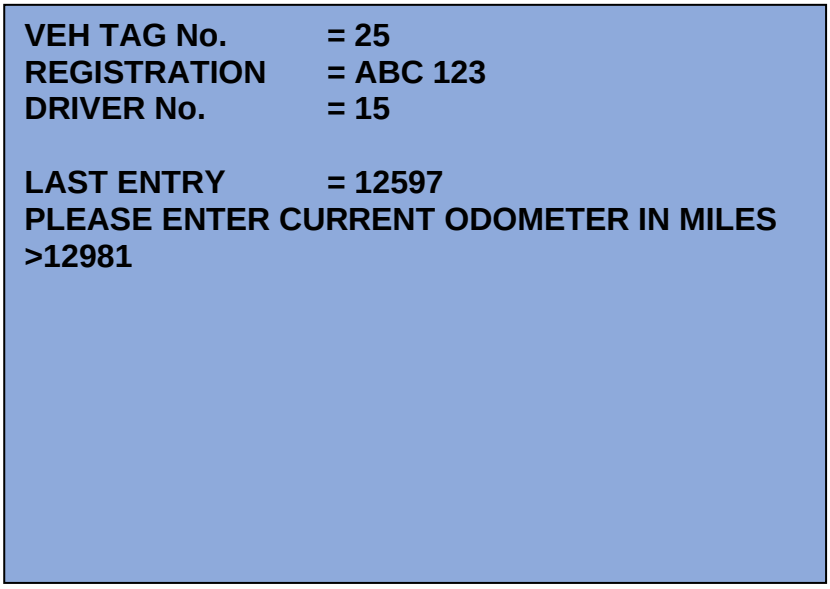
3. ODOMETER INPUT

If entry of the vehicle's odometer reading is required, the display will show **PLEASE ENTER CURRENT ODOMETER** along with the odometer type in **MILES, KM or HOURS**.

The last odometer reading entered for this vehicle will also be shown if this feature has been enabled in the Fuel Manager software.

Input in the current vehicle odometer reading on the keypad, followed by pressing the **ENT** key.

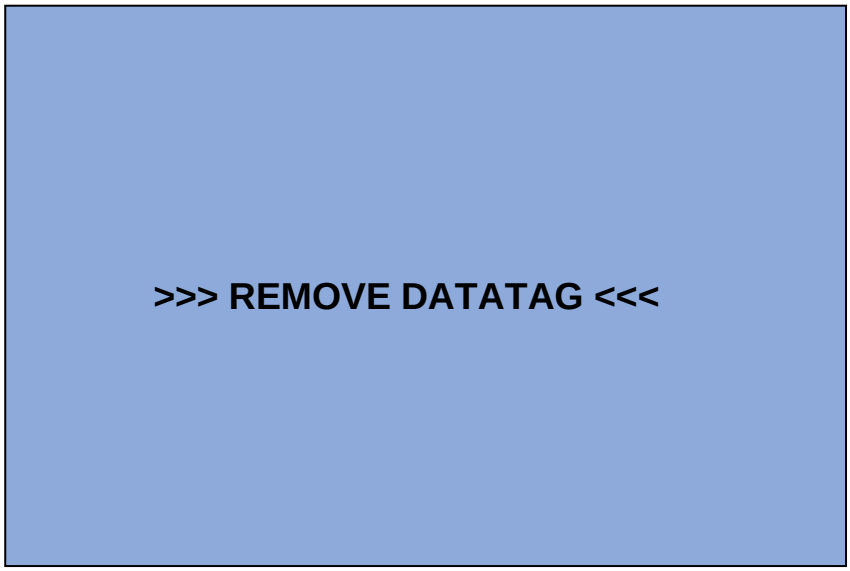
If an invalid odometer is inputted, then the system may prompt you re-enter the odometer again.

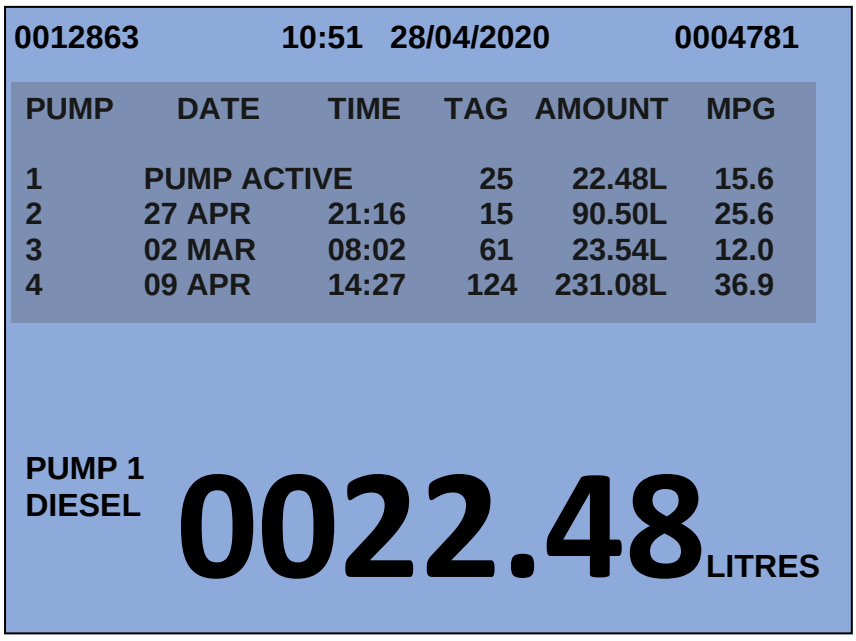


4. FUELLING IN PROGRESS

REMOVE DATATAG will now been displayed on the screen. Once the tag is removed the display will show the pump selected as **PUMP ACTIVE**.

You may now remove the nozzle from the pump selected and fuel your vehicle. The litres being delivered will now register on the FC20.I display.

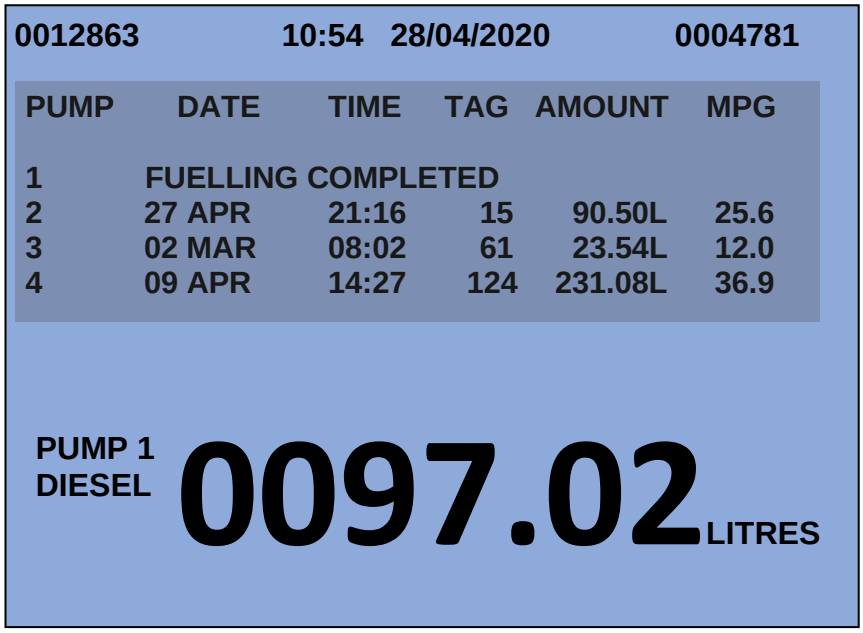


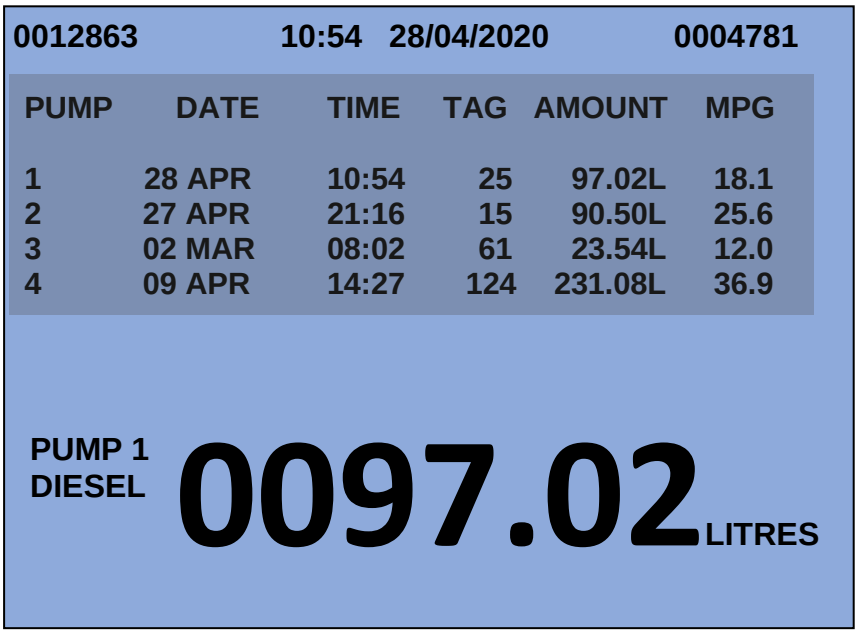


5. FUELLING COMPLETE

On completion of the fuel delivery replace the nozzle in the pump nozzle holster. You will hear a series of beeps from the FC20.I indicating the system is timing out and ending the transaction. **FUELLING COMPLETED** will now be shown.

The amount of fuel delivered will be retained on the FC20.I display screen until a Data Tag is inserted into the Data Tag Reader Slot.





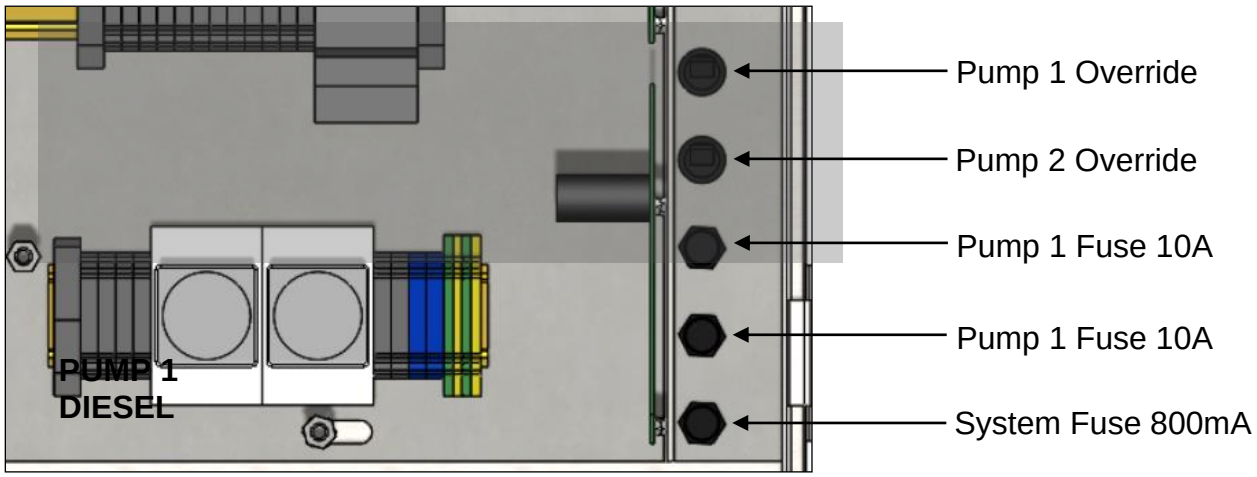
6. OVERRIDE FUELLING:

If the FC20.I Fuel Control System features an OVERRIDE function which can be used in an emergency. This function will enable the pump(s) to be authorised without a Data Tag being inserted.

CAUTION: This function will still register fuel delivered but it will not be assigned to any vehicle or user. The override switch will override any motor timeout
functions, so it must be used with caution.

The FC20.I **MUST NOT** be left in OVERRIDE whilst unattended. The override key must be kept in a secure location to prevent unauthorised access.

To activate the override function:
Toggle the switch linked to the required pump (located inside on the right of the FC20.I cabinet). This will allow the pump to be used in “stand alone/override” mode. Remove the nozzle from the pump nozzle holster, place in the vehicle fuel tank filler and draw fuel.
On completion of the fuel delivery replace the nozzle in the pump nozzle holster and turn off the Toggle switch.



OPERATION OF TANK MONITOR

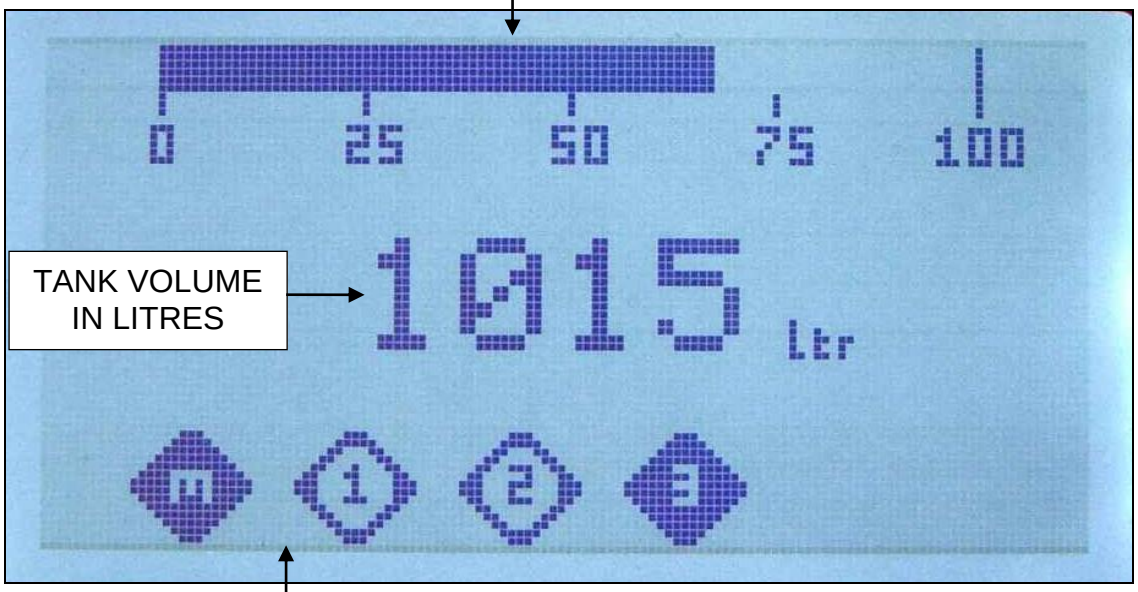
The gauge is very easy to operate and has the following buttons:

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

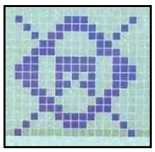
VISUAL TANK CAPACITY GRAPHIC BAR

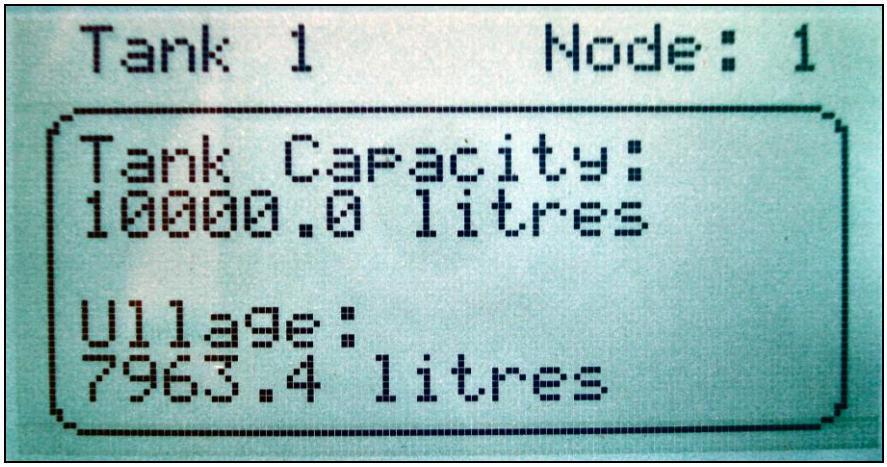


TANK VOLUME IN LITRES

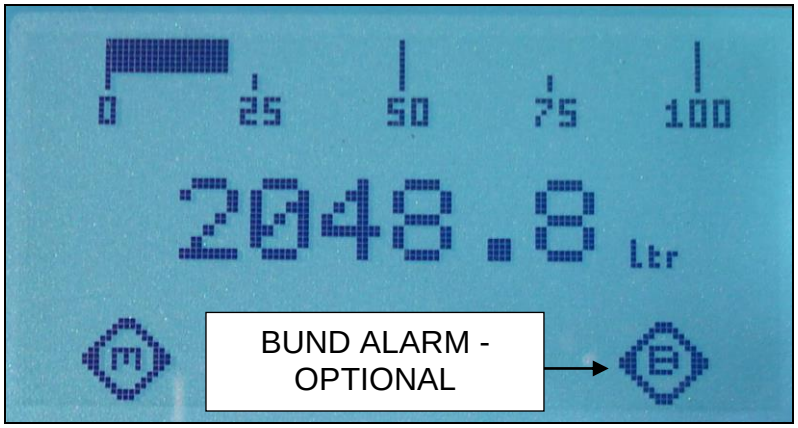
ALARM STATUS ICONS:
BLACK = ACTIVE
TRANSPARENT = NOT ACTIVE

MUTED MASTER ALARM =





TANK CAPACITY AND ULLAGE



BUND ALARM - OPTIONAL

SPECIFICATIONS – Tank Monitor

- Power supply: 110/230V AC 50/60Hz
- Accuracy: +/- 0.25%
- -5 to +60 Degree operating temperature
- **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**
  See Wiring Diagram
- 4-20 mA output for BMS + Modbus as standard
- B = BUND Contact Alarm, for mechanical Switch (NC)

DECLARATION OF CONFORMITY

Company Name:	**Hytek (GB) Ltd**
Address:	**Delta House** **Green Street** **Elsenham** **Bishops Stortford** **Hertfordshire** **CM22 6DS**
Date of Issue:	**26th April 2022**
Equipment Details:	**FC20i Fuel Control System with Integrated Tank Gauge**
Applicable Directives & Standards	**SI 2016 1091 Electromagnetic Compatibility Regulations** **SI 2016 1101 Electrical Equipment Safety Regulations** **SI 2008 1597 Supply of Machinery Safety Regulations** **SI 2013 3113 Waste Electrical & Electronic Equipment Regulations** **SI 2012 3032 Restriction of Use of Certain Hazardous Substances Regulations**
Declaration Number:	**UK153 Issue 1**

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 1st January 2021, Bishops Stortford, Herts