

HYTEK Z2000 EX CERTIFIED TANK GAUGE



Applies to the following models **ONLY**:

Z2000-A-ATEX-A12

Please read carefully **BEFORE** commencing installation.

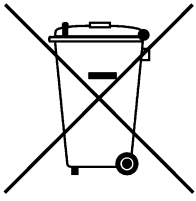
Registered Office: HYTEK (GB) LIMITED,
Delta House, Green Street, Elsenham, Bishop's Stortford,
CM22 6DS UK.

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 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 Z2000 tank gauge is an ATEX & UKEX certified electronic gauge for monitoring the fluid level inside fuel storage tanks of any shape or size up to 3m in height. It is designed to be used on petrol, kerosene, diesel, biodiesel up to B100, AdBlue® and antifreeze. The system utilises a precision electronic pressure sensor to give a consistent and accurate reading. It bears the following marking:

Certificates: HYT-23ATEX0101X, HYT-23UKEX0100X



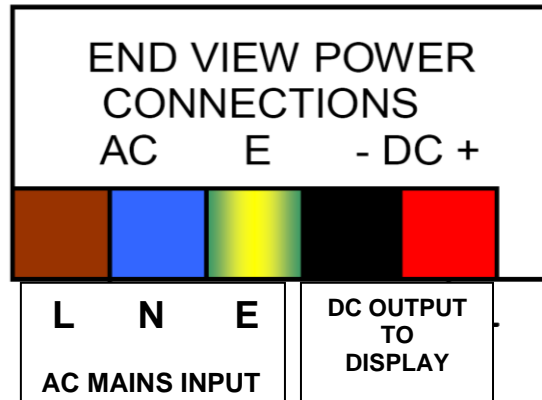
0/- IIC T4 Ga

IMPORTANT WARNING NOTES

1. Display is IP 65 weatherproof, for safe area. Intrinsically safe probe sensors must be used for Zone 0/1 installation. Connection to zone 0/1 must be by way of a suitable Ex certified internal barrier for volume measurement sensors and mechanical level alarm sensors.
2. Probe is suitable for use in zone 0/1 but the equipment monitoring/display and control units along with the barrier housings must be located in safe/non-hazardous area.
3. The float switch incorporates an isolated metal part which could become either charged in use or be a discharge point for charged liquids upon filling or emptying. The float switch shall only be used in applications where static generated via contact liquids are controlled so as not to be considered an ignition source.
4. Mains power must be 50mm minimum from intrinsically safe circuits.
5. The tank probe must be installed in a vented tank.
6. Any cable junctions in a hazardous zone must be by way of suitable Ex certified enclosures.
7. Installation of this equipment and its associated tank fittings should only be carried out by qualified fuel installation engineers and must conform to the latest relevant electrical and local authority regulations and standards.

INSTALLATION INSTRUCTIONS

1. **The display & barrier must be located in safe zone only.** The gauge can be mounted outside directly on the tank or in the immediate vicinity. The gauge can be mounted up to 100m from the tank top if the supplied probe cable is extended using suitable shielded data cable. An ATEX certified tank mount probe junction box will be required and is available from Hytek.
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 6.
3. Supply the transformer with a suitable mains power supply. **Mains power supply shall be installed in such a way that the Zone 0/1 cable entries do not come closer than 50 mm to AC Power Cables.** 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.



4. 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.
5. The supplied plastic tank connector is a 1" BSPT fitting. The optional plastic tank connector (T4020-OJ) is a 30mm compression fitting, which requires a 30mm hole to be cut into the plastic tank.
6. Carefully slide the probe into the tank.
7. **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.
8. 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 should be required on site.
9. **IMPORTANT**: Any bund or water sensing float switches connected **MUST** be ATEX approved and connected via a barrier.

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. See photo below showing the breather tube inside the gauge enclosure.



SPECIFICATIONS

- ATEX & UKEX certified.
- Power supply: 110/230V AC 50/60Hz.
- Backlit display (Turns off after 1 hour)
- IP65 Fully weatherproof enclosure.
- Accuracy: +/- 0.1% of Tank Capacity.
- -5 to +50 Degree operating temperature.
- Humidity: 5 to 95%.
- Display enclosure is RoHS and CE compliant.
- 2 x Programmable alarm/ trigger set-point.
- High Level / Low Level Local alarm with acknowledge circuit.
- Weatherproof cable glands provided for power supply and tank sensor input.
- One (1) Control output providing dc supply voltage output to the siren (if fitted) or other external device.
- 4 – 20 mA output for connection to BMS system.

OPERATION

The Z2000 gauge is very simple to operate. 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. There is an Alarm/Test-Mute button. Press to test the alarm (if fitted). This self-resets in 5 seconds. The backlight will turn off after 1 hour. Pressing any button will turn the backlight back on. 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 screen.

ALARM SETTINGS

The default alarm settings are as follows:

ALARM 1 =	95% High Level Alarm
ALARM 2 =	0% Low Level Alarm

The display will flash when an alarm is activated. L= Low H = High Alarm settings can be customised in the tank gauge setup menu. See separate calibration set-up sheet.

CALIBRATION

Please refer to the separate calibration set-up sheet supplied in the box. A switch on the PCB needs to be moved into the “CAL” position and then the various settings screens can be adjusted.

- Tank Type
- Tank Height, Length, Width, all in meters.
- Hi and Low-level alarms are set as tank volume percentages.
The default is: Hi = 95%, Low = 0%.
- Specific gravity.

ADVANCE SENSOR SETTINGS:

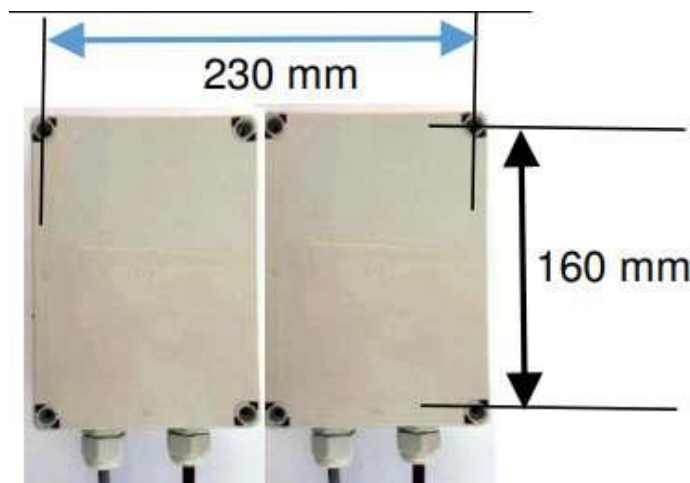
WARNING - The sensor settings screens are factory set and should not need changing unless advised by one of our engineers.

All settings below based on **A12** type probe.

- Sensor Type: **Current**
- Zero Value: **4.000 mA** for A series probe.
- Max Value: **20.00 mA** for A series probe.
- Offset: **+0.050 M**. This is the height that the probe sits from the bottom of the tank.
- Span: **3.000 M**. This is the max height the probe (**A12**) can read.

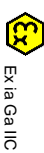
DIMENSIONS

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



Barrier supplied is a Truck Banner IM1 Range.

IM1-12EX-R is a single channel unit
IM1-22EX-R is a dual channel unit.



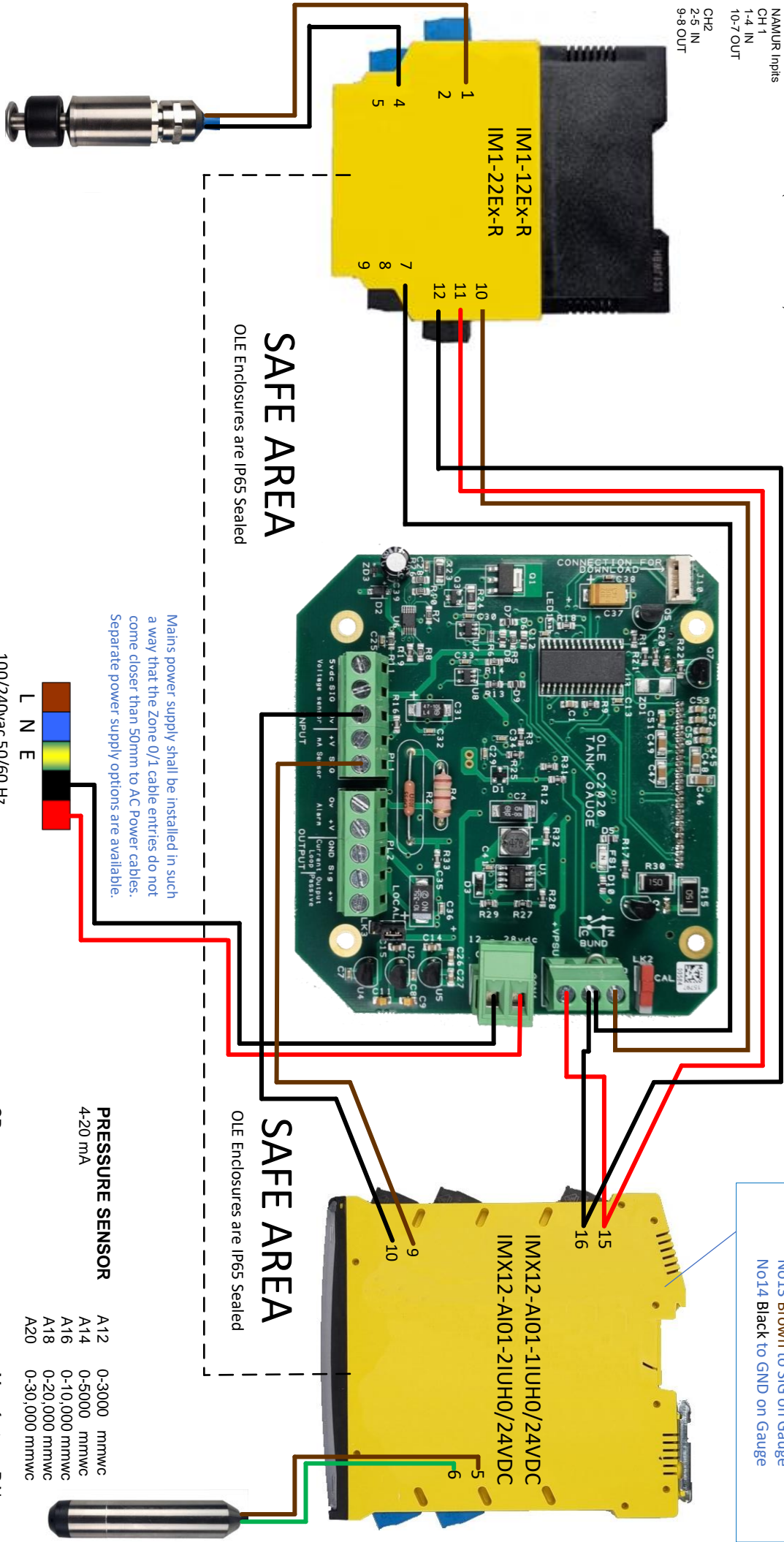
IM1-12EX-R Single OLE Bund Probe B8 or Water B2 or B6
IM1-22EX-R Dual OLE Probes as above.

These are for Reed Switch devices (SIMPLE APPARATUS)
NAMUR Inputs

CH 1
1-4 IN
10-7 OUT

CH2
2-5 IN
9-8 OUT

Z2000 ATEX WIRING DIAGRAM

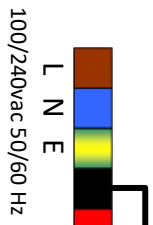


- 1U1 Version is for one sensor/display
- No5 Brown from sensor-No6 Green from sensor
 - No9 Brown to SIG on Gauge INPUT
 - No10 Black to 0v on Gauge INPUT
 - 2IU Version is for two Sensors/Displays
 - No7 Brown from sensor-No8 Green from sensor
 - No13 Brown to SIG on Gauge
 - No14 Black to GND on Gauge

SAFE AREA
OLE Enclosures are IP65 Sealed

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Mains power supply shall be installed in such a way that the Zone 0/1 cable entries do not come closer than 50mm to AC Power cables. Separate power supply options are available.



PRESSURE SENSOR

4-20 mA	A12	0-3000	mmwc
	A14	0-5000	mmwc
	A16	0-10,000	mmwc
	A18	0-20,000	mmwc
	A20	0-30,000	mmwc

+ Manufactures P. No.

DRAWING No: S950 Iss 3

Date: 13/06/2023

OR
Differential Pressure Sensor
FD11 & DP12 0-3000 mmwc which is for Vapour recovery Tanks
OR
DPES Special, which is for High Pressure CO2 and similar tank.

Barrier supplied is a Turck Banner IM1 Range.

IM1-12Ex-R is a single channel unit
 IM1-22Ex-R is a dual channel unit.

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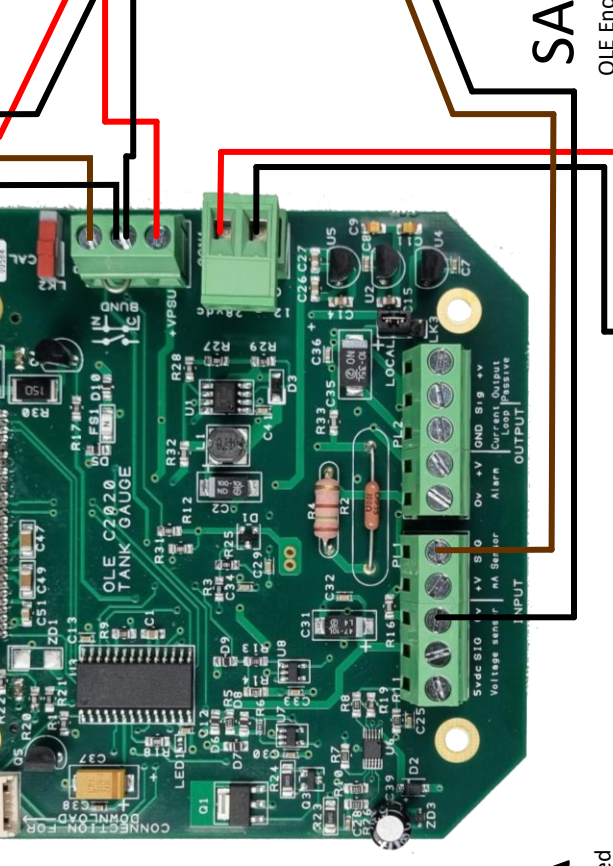
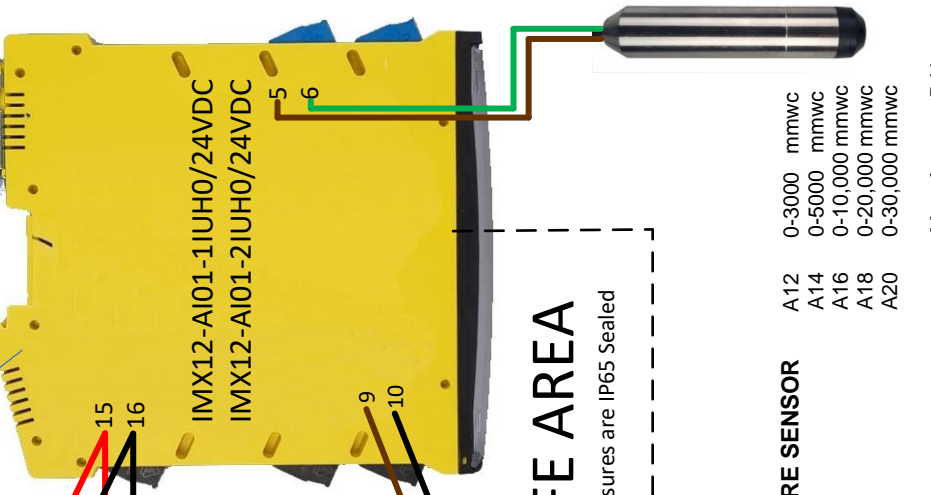
IM1-12Ex-R Single OLE Bund Probe B6 or Water B2 or B6
 IM1-22Ex-R Dual OLE Probes as above.

These are for Reed Switch devices (SIMPLE APARATUS)

NAWUR Inputs
 CH1
 1-4 IN
 10-7 OUT

CH2
 2-5 IN
 9-8 OUT

Z2000 ATEX WIRING DIAGRAM



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 OLE Enclosures are IP65 Sealed

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PRESSURE SENSOR	A12	0-3000	mmwc
	A14	0-5000	mmwc
	A16	0-10,000	mmwc
	A18	0-20,000	mmwc
	A20	0-30,000	mmwc

OR + Manufacturers P.No.

Mains power supply shall be installed in such a way that the Zone 0/1 cable entries do not come closer than 50mm to AC Power cables. Separate power supply options are available.



100/240vac 50/60 Hz

Differential Pressure Sensor
 FD11 & DP12 0-3000 mmwc which is for Vapour recovery Tanks

OR
 DPE5 Special, which is for High Pressure CO2 and similar tank.

DRAWING No: S950 Iss 3
Date: 13/06/2023

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DECLARATION OF CONFORMITY



Company Name: Hytek (GB) Ltd

Address: Delta House, Green Street, Elsenham
Bishop's Stortford, Hertfordshire, CM22 6DS

Date of Issue: 21st August 2023

Equipment Details: **Z2000, Z5020 Tank Gauge Systems and Z4000 Pump Controller**
Z2000-A-ATEX-xxx, Z5020-1A-ATEX-xxx, Z4000-1A-ATEX-xxx

Applicable Directives: **SI 2016 1091 Electromagnetic Compatibility Regulations**
& Standards **2014/30/EU EMC Directive**

SI 2016 1101 Electrical Equipment Safety Regulations
2014/35/EU Low Voltage Directive

SI 2008 1597 Supply of Machinery Safety Regulations
2006/42/EC Machinery Directive

SI 2013 3113 Waste Electrical & Electronic Equipment Regulations
2012/19/EU Waste Electrical & Electronic Equipment Regulations

SI 2012 3032 Restriction of Use of Certain Hazardous Substances Regulations
2011/65/EU Restriction of Hazardous Substances Directive (RoHS2)

SI 2016 No. 1107 Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations
EN 60079-0

UKEX Self Certification Certificate

Number: HYT-23UKEX0100X Issue 1
Issued by: Hytek (GB) Ltd
Delta House, Green Street, Elsenham
Bishops Stortford, Hertfordshire, CM22 6DS

Marking:  0/- IIC T4 Ga

2014/34/EU ATEX Directive
EN 60079-0:2018

ATEX Self Certification Certificate

Number: HYT-23ATEX0101X Issue 1
Issued by: Hytek (GB) Ltd
Delta House, Green Street, Elsenham
Bishops Stortford, Hertfordshire, CM22 6DS

Marking:  0/- IIC T4 Ga

Declaration Number: **UK156 Issue 2**

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, Process Co-ordinator
21st August 2023,
Bishop's Stortford, Herts

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