TANK MONITORING SOLUTIONS

Operating Instructions

TEK – 678
Display Unit with remote and 10 bar display

V1/072017

Contents

1 Introduction

The TEK-678 Tank Alert monitor with remote display, shows the tank level locally and on a remote display. The display shows a 10-bar Liquid Crystal Display (LCD) screen to give an accurate reading of the liquid level in the tank.

Please read or review the installation instructions before fitting to the tank.

2 Contents of Package

Transmitter Display

Remote Display

Adapter Kit

Mounting Screws

Magnet

Weather Seal

3 Fuel and Tank Types

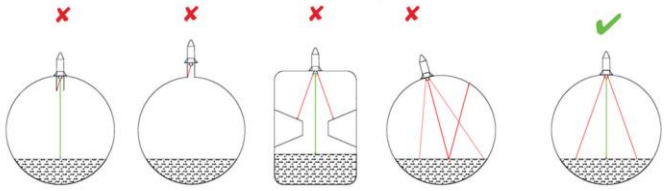
The TEK-678 Tank Alert monitor with remote display can be used on all standard steel tanks. To work optimally, tanks must be placed on a **level surface** and have a maximum **height of 10 feet** and within a 450ft / 150 m line of **sight of the receiver.**

3 Preparing the Tank

a. To avoid errors, the Tank Gauge Transmitter must sit in a vertical position on top of the tank and have a direct perpendicular line of sight to the liquid level in the tank, through the bottom ultrasonic cone, without any interference from i.e. window configurations or tank braces.
b. Install the supplied metal adapter into the pre-drilled 2” NPT opening on the top of the tank. Apply pipe sealant on the adapter thread and tighten

appropriately. For basement tanks, temporarily place a rag/cover over the adapter to minimize fuel odors until transmitter is synchronized. Tanks with 1½" and 1¼ " NPT openings or European style double-wall tanks require adapters (see parts sold separately). Do not use an extension pipe when mounting the adapter; this can cause inaccurate measurement and malfunction.

c. **Installation Help:**
Avoid tanks with braces, as it can reflect the ultrasound and cause wrong readings.

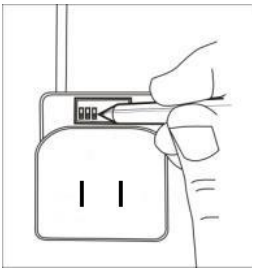


4 Define Tank Height

Accurately measure the height of your tank from the liquid outlet at the bottom of your tank to the bottom of the TankAlert ultrasonic monitor. TankAlert measures the level of usable liquid in the tank in 10 graduations of the tank height. Correct tank height measurement is critical for accurate liquid level display.

5 Setting the Switches on the Receiver

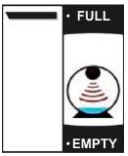
Activate the switch (located at back of receiver) numbers that correlate to your tank size (see chart at Step x) by using a screwdriver or ballpoint pen to move the switches upward to the ON position. Activating switch 1 (the audible ring feature), enables a bleep to indicate a low-level reading (< 5% liquid warning).



6 Matching Receiver and Transmitter for both visual and non-display type sensors.

You can now link/match the receiver to the transmitter, through a unique code for your tank (this need only be done once, at installation).

- Plug receiver into a convenient electrical socket and switch on.
- The display screen on the front of the receiver will show a flashing top bar as shown in the diagram (on the right) for up to 2 minutes indicating that the transmitter can be matched to the receiver during this time.



- Hold the transmitter (left side) against the receiver's right side, so that the black dots are aligned (for 20 seconds). This allows the unique code to be transferred. During the matching process, you will hear an audible beep from the receiver to indicate matching is in progress. The number of bars will increase on the receiver display until all 10 bars are flashing and an audible beep occurs: this indicates that the unique code has been transferred. The setup is now complete **for the non-display type sensor only**. The transmitter sensor is now ready to read liquid levels and must be placed on the tank immediately (Step x).

- If matching visual (LCD display) transmitter sensor, you MUST continue to hold the two units together and proceed to the next stage of the matching process (see Step 7 below).

7 Additional Matching Step To Calibrate Visual Transmitter to Tank Height

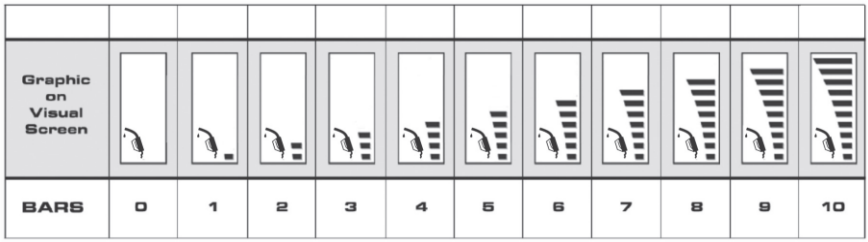
When using the TankAlert Visual, the Transmitter Sensor must also be calibrated to the tank dimensions, so that liquid levels can be read at the tank as well as in your home.

To do this, you MUST continue to hold the transmitter and receiver together until the visual transmitter screen goes blank. A nozzle icon will flash in 10 seconds, indicating that the transmitter is in 'tank height setting' mode. Continue to hold as the black bars increase until the number of black bars, according to the table below, increases to match the height of the tank measured at step 4.

Wait for a double flash of the red light on the transmitter gauge to indicate that the tank height setting has been stored in the transmitter. **The transmitter gauge can now be placed on the tank.**

There may be one bar more or less displayed on the transmitter gauge display to the receiver display indoors when operational. This is due to the smaller number of tank height settings that may be selected with the transmitter screen bars compared with the receiver switches. The bars in both displays will accurately reflect the level in the tank.

Note: if the number of bars displayed overruns the height setting table (below), continue to hold the black dots together until the screen returns to blank and the nozzle flashes; re-start the process again until the correct number of bars appear.



Bars	0	1	2	3	4	5	6	7	8	9	10
Tank Height inches	31	39	43	47	51	55	67	79	91	102	102-116
Tank H. mm	800	1000	1100	1200	1300	1400	1700	2000	2300	2600	2600-3000

Also consult the online video online:

8 Fitting the Transmitting Sensor

For tanks with pre-drilled 32mm holes:

- Remove cap from pre-drilled hole and insert transmitter, ensuring the weather seal is securely in place and that the sensor sits vertically.
- Tighten onto the tank with the supplied 2 stainless steel self-tapping screws provided. **Do not use longer screws or over tighten.**

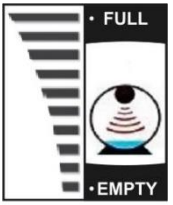
For tanks with a 2", 1½" or 1¼" BSP/NPT gauge aperture (60mm/48mm/42mm):

- Unscrew any caps from hole; fit adapter provided by screwing into gauge socket.
- Fit Sensor to adapter on the tank; ensure weather seal is in place.
- Tighten on the tank using the screws supplied. **Do not over tighten. NOTE: Mounting Adapter supplied must only be used.**

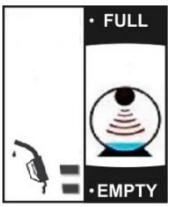
9 Reading the Liquid Level

The 10-level bar graph represents the level of liquid in your tank. The number of bars illuminated denotes the level of liquid in the tank. You will get 2 re-fill warnings as shown in the diagrams below.

(a) Full: Note: It may take 1 hour to get the first accurate reading post installation.



(b) Early Warning (2-bars):



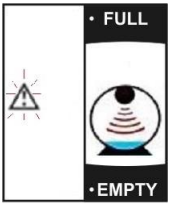
(c) Almost Empty (1-bar).

10 Troubleshooting

Power Failure or Receiver Moved

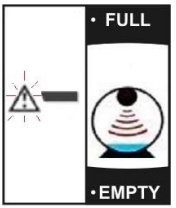
In the event of a power failure or the receiver being switched off, the receiver display screen will show a top bar flashing for 2 minutes when power is restored. The screen will then turn blank until the unique signal is located (there is no need to repeat the 'black dot' matching instruction). This could take up to 1 hour.

No Transmission Signal



Flashing triangle, no bars, indicates no signal being received. This starts approximately 12 hours from the last received good signal. Re-site the receiver closer to the transmitter and wait for a few hours.

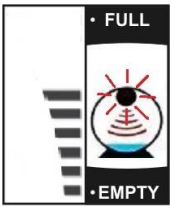
No Ultrasonic Echo



Flashing triangle, middle bar only. Check that the transmitter is fitted vertically on tank, with no interference from a tank wall, corrugation or window.

If matching is not completed in the 2-minute interval on plugging in the receiver for the first time – then turn off the receiver at the power point and then turn it on again to initiate a new matching interval.

Low Battery Signal



Constantly flashing warning light.

1. Remove transmitter from the tank and take it into a clean, dry environment.

2. The battery can be accessed by removing 4 self-tapping screws from the base of the unit.

3. Remove the old battery noting the orientation (+ mark facing upwards) and replace with a new battery (3V-CR2450)

4. Re-assemble, ensuring the O-Ring is undamaged and secured in position.

5. Place the transmitter on the tank.

No need to re-match the sensors.

11 Reading the Liquid Level

Measure the vertical height of the tank from the transmitter position on top of the tank to the bottom of the tank. Read to the nearest measurement of the chart.

Tank height (in/mm)	'On' Switches	Tank height (in/mm)	'On' Switches	Tank height (in/mm)	'On' Switches	Tank height (in/mm)	'On' Switches
20/500	1	45/1150	1,3	71/1800	1,2,8	97/2450	1,2,3,8
22/550	1,7	47/1200	1,3,7,8	73/1850	1,2,7,8	99/2500	1,2,3,6
24/600	1,6,8	49/1250	1,3,6,8	75/1900	1,2,6,7	100/2550	1,2,3,6,7
26/650	1,6,7,8	51/1300	1,3,5,	77/1950	1,2,5	102/2600	1,2,3,5,8
28/700	1,5,7	53/1350	1,3,5,7	79/2000	1,2,5,7,8	104/2650	1,2,3,5,7,8
30/750	1,5,6	55/1400	1,3,5,6,8	81/2050	1,2,5,6,8	106/2700	1,2,3,5,6,7
31/800	1,5,6,7,8	57/1450	1,3,5,6,7,8	83/2100	1,2,4	108/2750	1,2,3,4
33/850	1,4,8	59/1500	1,3,4,7	85/2150	1,2,4,7	110/2800	1,2,3,4,7,8
35/900	1,4,6	61/1550	1,3,4,6	87/2200	1,2,4,6,8	112/2850	1,2,3,4,6,8
37/950	1,4,6,7	63/1600	1,3,4,6,7,8	89/2250	1,2,4,6,7,8	114/2900	1,2,3,4,5
39/1000	1,4,5,8	65/1650	1,3,4,5,8	91/2300	1,2,4,5,7	116/3000	1,2,3,4,5,6,8
41/1050	1,4,5,7,8	67/1700	1,3,4,5,6	93/2350	1,2,4,5,6	-	-
43/1100	1,4,5,6,7	69/1750	1,3,4,5,6,7	95/2400	1,2,4,5,6,7,8	-	-

12 Specifications

Tank depth measurement:	Depth: 4ins./0.1m – 10 ft. (Use on tanks vented to the atmosphere)
Display:	10-bargraph level display: 10% tank height per bar. Early warning indication (flashing tank fill) at a predetermined height above tank bottom; tank empty warning flashing red LED at a predetermined height from tank bottom. Complies with FCC and UL 60335-1.
Max communication distance:	450ft. / 150m in normal "line of sight" conditions.
Power supply:	Receiver: 110V +/- 10%, 60Hz.
Battery / battery life:	3-volt CR2450 lithium cell / up to 10 years.
Wireless communication:	915 MHz FM transmission.
Dimensions:	Receiver: 50 x 55 x 35 mm / 1.9 x 2.1 x 1.4 inch (w/o aerial)

	Sensor: 143 x 70 x 40 mm / 5.6 x 2.7 x 1.5 inch
Max and min operating temp. (transmitter):	Operating temperature range: +14°F to +140°F Operating humidity: 0-100% Sealed airtight unit made from PP3317 UV stabilized
Hole size for tank fitting:	2 ins. Use adapters for tanks with pre-drilled 2”, 1½“ or 1¼” BSP/NPT gauge aperture.

13 Warning

It is the user’s responsibility to avoid exposing the product to aggressive substances e.g. liquids or gases that may attack metals, or solvents that may affect polymeric materials.

- The receiver is for indoor use only (the sensor is OK for outdoor use).
- The receiver is a sealed unit; do not attempt to open it.
- Periodically check that the unit is intact and securely fastened to the tank.
- Do not attempt to repair the product.
- Clean only with a damp cloth.
- Do not replace batteries in a potentially explosive atmosphere.
- Do not discard batteries in a pressurized container.

Warranty Registration

Please register your product for warranty at:
https://www.tankmonitoring.net/warranty-registration.html

Support

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