

APOLLO ULTRASONIC OIL LEVEL MONITOR



THE RIGHT CHOICE

- The Apollo Ultrasonic Oil Level Monitor measures the level of usable oil in your tank in 10 graduations of the tank height.
- Supplied with long life lithium battery (3V-CR2430).
- Suitable for use in tanks for the storage of diesel fuel, kerosene, gas oil types A2, C1, C2, and D as defined by BS 2869. Check with the manufacturer and/or supplier before using with any other fluids.
- The Apollo Ultrasonic will fit easily to most standard oil storage tanks (plastic or steel) that has a 20 mm, 32 mm or 38mm (1½") gauge hole.

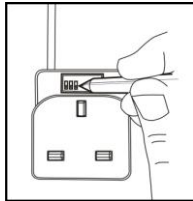
TOOLS REQUIRED

Star/Philips head screwdriver & Tape Measure

INSTALLATION INSTRUCTIONS

1 SETTING RECEIVER

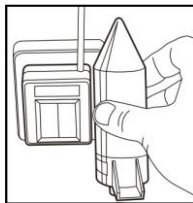
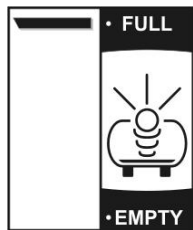
- Accurately measure the height of your tank. Using the tank height chart on **page 2**, read across to the relevant multi switch settings. The multi switches are located in a recess at the back of the receiver above the pins.
- Using a screwdriver or the tip of ball point pen, flip the relevant switch (es) upwards (= **ON**). As an example, if the tank is 850 mm high, set switches **ON (Up)** Number **4 & 8**.
- Set switch 1 on/up to enable the low level audible warning.**
Your **Apollo Ultrasonic receiver** is now programmed to your tank height.



2 MATCHING RECEIVER AND TRANSMITTER

You should match the receiver with the transmitter so that the system code is unique to your tank.
You only need to do this once.

- Plug receiver into a suitable and convenient electrical socket and switch on. The display screen on the front of the receiver will show a flashing top bar as shown in diagram. This indicates that the receiver is awaiting a unique code. The flashing top bar will last for 2 minutes **during which time you can match the transmitter to the receiver.**
- Hold the transmitter against the receiver right hand side, as shown, **so that the black dots are touching each other (important!) for about 20 seconds to allow the unique code to be transferred.** Bars will increase up the display screen. During the matching process you will hear an audible beep to indicate matching is in progress. A change in tone will indicate completion of the matching process. **When all 10 bars are shown they will flash to indicate that the unique code is transferred.**

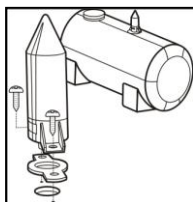


3 FITTING TRANSMITTER

The procedure is the same for fitting to both old and new tanks.

For tanks with pre-drilled 20 mm or 32 mm hole

- Remove cap from hole and insert transmitter, ensuring the weather seal is securely in place.
- Ensure the transmitter is **vertical** on top of the tank.



- Tighten on to the tank using the 2 stainless steel self-tapping screws supplied. **Do not over tighten. Do not use longer screws.**

For tanks with 1½" (38 mm) BSP gauge socket

An optional adapter is available

- Unscrew cap from hole and fit the adapter provided by screwing into gauge socket.
- Fit the transmitter to the adaptor on the tank as described above.

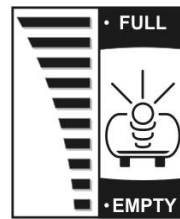
The Apollo Ultrasonic Oil Level Monitor is now fully installed and signals should be received every hour. If the transmitter is installed within 10 minutes of matching, the current level will be displayed otherwise, it may take **one hour** for the correct oil level indication to be displayed on screen.

NOTE:

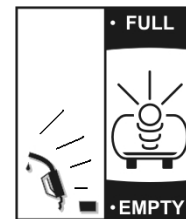
- Please ensure the receiver is plugged into an electrical socket at all times. Do not unplug to reset.
- In the event of a power failure or if the receiver is switched off or moved to a new socket: When power returns again or unit is switched on, the receiver display screen will show the top bar flashing. **There is no need to repeat the matching instruction.** The top bar will continue to flash for 2 minutes, after which time the display screen will be blank, whilst the unique signal is located. This may take up to one hour.

APOLLO ULTRASONIC ON SCREEN DISPLAYS

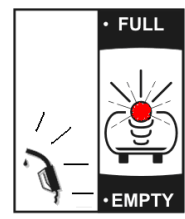
NORMAL MESSAGES (images for illustration purposes)



Full



Early Warning



Almost empty

OTHER MESSAGES:

Blank screen or top bar only after installation or following a power failure

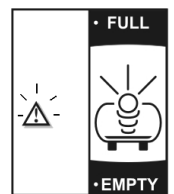
Receiver waiting for signal

- Do Nothing! Signal should be received within one hour.

Flashing triangle, no bars

No radio signal received from transmitter (after waiting for 4 hours)

- Check for correct matching procedure
- location of receiver to transmitter (try repositioning receiver)
- Check the transmitter seal is undamaged.



No Signal

Fixed Triangle only

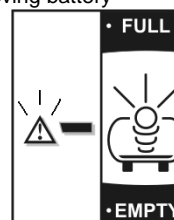
- Low battery warning*, unit will continue to give a reading until the battery is exhausted.

- Replace Lithium CR2430 battery in transmitter
- Please see over for further information on removing battery

Flashing triangle, middle bar only

No ultrasonic echo

- check the transmitter sensor cone is clean
- check that the transmitter is vertical
- check that the transmitter seal is undamaged
- If the message persists, check the transmitter is vertical on the tank.



No Echo

- Note: If the oil level is within 6 inches of the transmitter this message along with other messages may occur. Wait until the oil level drops below 6 inches for accurate reading.**

APOLLO ULTRASONIC RECEIVER MULTI SWITCH SETTING CHART

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 on the chart. **Switch 1 on/up to enable the low level audible warning**

Height of tank in mm.	Set Switches On	Height of tank in mm.	Set Switches On
500	1	1750	1,3,4,5,6,7
550	1,7	1800	1,2,8
600	1,6,8	1850	1,2,7,8
650	1,6,7,8	1900	1,2,6,7
700	1,5,7	1950	1,2,5
750	1,5,6	2000	1,2,5,7,8
800	1,5,6,7,8	2050	1,2,5,6,8
850	1,4,8	2100	1,2,4
900	1,4,6	2150	1,2,4,7
950	1,4,6,7	2200	1,2,4,6,8
1000	1,4,5,8	2250	1,2,4,6,7,8
1050	1,4,5,7,8	2300	1,2,4,5,7
1100	1,4,5,6,7	2350	1,2,4,5,6
1150	1,3	2400	1,2,4,5,6,7,8
1200	1,3,7,8	2450	1,2,3,8
1250	1,3,6,8	2500	1,2,3,6
1300	1,3,5	2550	1,2,3,6,7
1350	1,3,5,7	2600	1,2,3,5,8
1400	1,3,5,6,8	2650	1,2,3,5,7,8
1450	1,3,5,6,7,8	2700	1,2,3,5,6,7
1500	1,3,4,7	2750	1,2,3,4
1550	1,3,4,6	2800	1,2,3,4,7,8
1600	1,3,4,6,7,8	2850	1,2,3,4,6,8
1650	1,3,4,5,8	2900	1,2,3,4,5
1700	1,3,4,5,6	3000	1,2,3,4,5,6,8

Battery removal

Remove the transmitter unit from the tank and take it to a safe location.

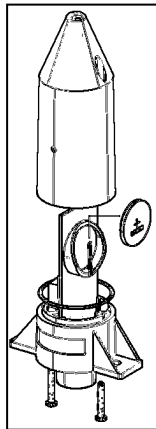
The battery can be accessed by removing 2 self-tapping screws from the base of the unit. See sketch.

Remove the old battery noting the orientation ('+' mark facing outwards), and replace with a new battery. 3V-CR2430.

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

Re-locate the transmitter on the tank.

No Need to Rematch



Specifications

Tank Depth measurement:

Minimum depth: 0.1 m, Maximum depth: 3 m

Max communication distance:

200m in normal 'line of sight' conditions

Power Supply:

Receiver: 150-250V, 50-60Hz, Meets EN60335

Transmitter: 3-volt lithium cell

Battery life:

10 years (estimated life)

Wireless communications:

433 mHz.FM transmission, EN 300-220

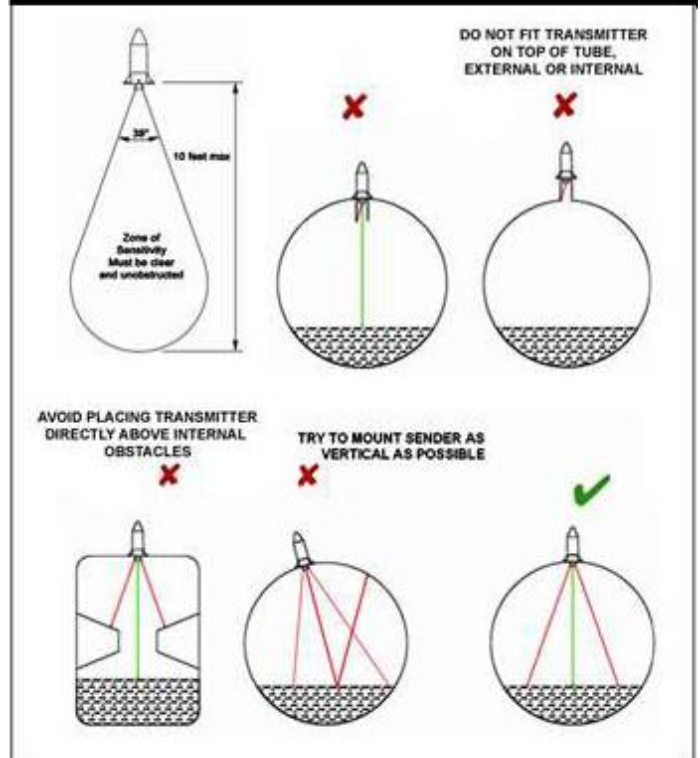
Max and Min Operation Temp (Transmitter):

Operating temperature range -10° - +60°C.

Not Suitable for pressurised containers. Use on tanks vented to Atmosphere.

Installation Help

(Not to Scale)



Dunraven Systems
Innovative Monitoring Solutions

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For additional information or to view installation videos please visit our website www.dunravensystems.com

For Support or assistance please email support@dunravensystems.com

Telephone: 00353 (0) 42 9386505

A. VISUAL BUND INSTRUCTIONS

Please adhere to the following steps before installing your Apollo Visual Bund.

Important - You must read these instructions in conjunction with the full Apollo Visual instructions.

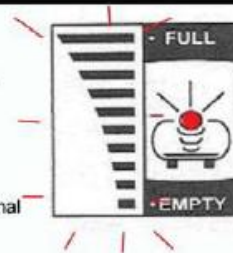
1. Attach the transmitter to the internal tank. The correct fitting procedure is explained in the full Apollo Visual instructions.
2. The float switch/bund sensor at the end of the wire should be suspended vertically between the shells about 100mm from the bottom of the tank
This is to ensure that the float switch/bund alarm does not fall on its side and cause a false bund warning.
3. Place the float switch/bund sensor between the inner and outer tank shells. Suspend vertically as instructed.
4. The excess wire should be secured in such a way as to avoid the float lying on the bottom of the tank. Tie the rest of the wire up securely and ensure that it is not placed somewhere where it may become damaged
(eg. If the tank is regularly dipped, the wire should be kept from this area, as the dipping device may catch on the wire, causing damage.)

B. SCREEN DISPLAYS

Note: The screen displays will be as per Apollo Visual instructions, Section 5.

Leak into bund or sensor not vertical:

- If there is a leak or the sensor is not vertical you may see the reading shown in the diagram. The receiver screen may display a pulse flashing of all 10 bars and the flashing **Red Light** as shown in the diagram. The Apollo Visual transmitter will also give a warning.



To Rectify:

- First ensure that the float switch/ bund sensor is hanging 100mm from the bottom of the tank. If the float is horizontal it may cause a false alarm. Place the float so that it is hanging vertically.
- If float was positioned correctly, there may be a leak in the bund. Have a qualified technician investigate the situation and remedy as soon as possible to avoid any environmental pollution.
- Once the problem has been rectified, the unit will go back to normal. There is no need to rematch. You will receive correct readings after an hour.
- In the event of a power failure or if the receiver is switched off or moved to a new socket, when power returns again the receiver will display levels within 1 hour. **There is no need to repeat the matching procedure.**

C. FITTING DIAGRAM - Diagrams are for illustration purposes only.

The diagrams show an example of how the Apollo Visual Bund is fitted to a rectangular/slimline tank. Same principles apply when fitting to other shaped tanks.

Diagram A and B shows how the Apollo Visual transmitters should be positioned and how the float switch/bund sensor should hang between the inner and outer tank shells.

DO NOT place float switch/ bund sensor into the hole drilled for the Visual transmitter.
DO NOT place unit into the inner storage tank.

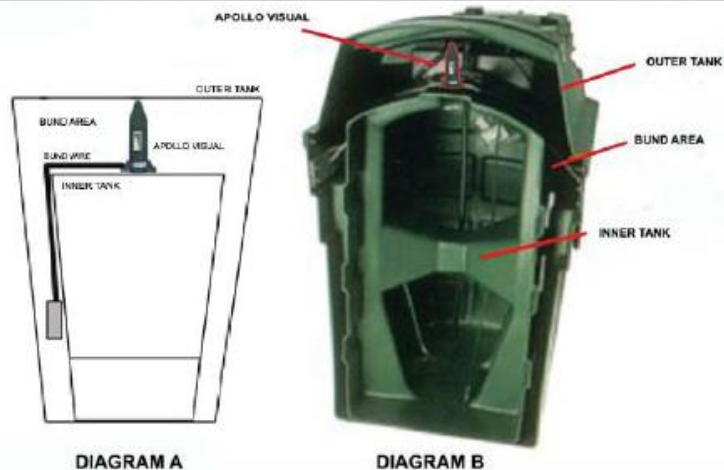


DIAGRAM A

DIAGRAM B

For additional information and assistance regarding this product and other Apollo products, please visit us on;

For Apollo Product Information: www.dunravensystems.com