



Operating Instructions

LEVELview.BASIC.LPG

Radio transmitter unit (868 MHz)
for fill level monitoring of liquid gas tanks

- Contactless fill level measurement using Hall effect sensors (magnetic field)





ARTICLE INFORMATION

RCT Article-No.	1000079
Name	LEVELview.BASIC.LPG
Included	<ul style="list-style-type: none"> • Transmitter • External antenna with magnetic base • Instruction Manual • Documentation of conformity

ACCESSORIES

Depending on selection	Hall effect sensor
1000516 (Standard)	External antenna with magnetic base 1,2 m
1000528	Standard battery
1001121	Longlife battery
1000924	DATALOGGER
1000384	RF Receiver, internal antenna, LCD display

Welcome

Thank you for deciding for this RCT quality product and the trust that implies. A good choice, because our dedicated team at RCT develops and produces smart, modular remote monitoring systems for a wide range of applications, MADE IN GERMANY.

Our promise: With **RCT. Simplify monitoring.** remote monitoring has become smart, safe, fast and in combination with strong service, very simple for our customers.

If you have any questions about assembly, installation or operation or would like further information about our products, please contact your specialist dealer or contact the manufacturer RCT directly (see address on last page).



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Please read carefully
before use!



Liquid gas fill level measurement

The level measurement on the LPG tank is carried out precisely and contactless using a Hall effect sensor. The transmission of the filling levels is realized wirelessly via radio transmitter on the tank. Within a range of 1.500 m the tank content can be read off in percent or liters on the level display (RF receiver).

LEVELview.BASIC is protected and approved for use in ATEX Zone 1 and 0. The unit may be installed in the manhole chamber of underground tanks, under the protective hood of above-ground tanks or further outside in ATEX Zone 1.



Caution! Opening the tank is not necessary thanks to the contactless measuring method and strictly forbidden to unauthorized persons!

The system can be installed on the tank quickly and without complex wiring. (Fig. 1)

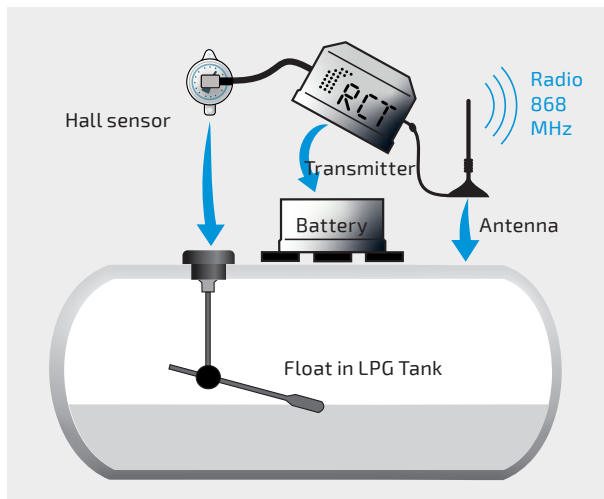


Fig. 1 | Fill level measurement using a Hall effect sensor

Step 1: Sensor and zero adjustment

Note the current fill level and remove the existing dial by removing the two Phillips screws. (Fig. 2)



Caution! Only remove the two screws of the dial. Never loosen the four hexagonal screws on the flange for fastening the float! There is a risk of gas leakage and explosion!

Place the new RCT dial in the holder and compare the new fill level with the old one. A deviation of up to 2 % is within the tolerance.

If there are deviations of around 15 % between the original and the RCT dial, an adapter of the type SRG705 is required. If the RCT dial is significantly smaller, contact RCT and ask for the right adapter.



Fig. 2+3 | Removing original dial and installing RCT sensor





Step 2: Installing the sensor

If the fill-level displayed matches, fasten the RCT electronic dial with the enclosed screws. (Fig. 3)

Step 3: Activating the transmitter

Activate the transmitter by plugging it into the battery pack. (Fig. 4a)

The transmitter starts immediately and automatically with the measurement and level transmission. In the start phase (Fig. 4b) it transmits at short intervals for testing purposes, after 3 minutes it switches to normal operation (Fig. 4c).



Caution! The plugging and unplugging of the transmitter and battery pack during set-up and later battery changes should be carried out outside of ATEX Zone 1.



Caution! To force another start message, separate the transmitter and the battery pack. Then wait around 5 minutes.

Changing the battery: Periodical battery changes can be carried out without waiting time.

Cyclical notifications: The data transfer is carried out every 20 minutes. A message contains the current fill level and the battery level.

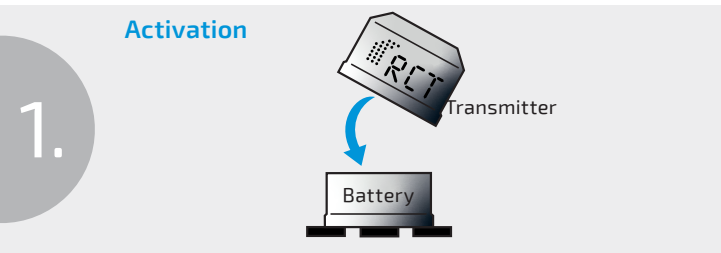


Fig. 4a | Connect transmitter with battery

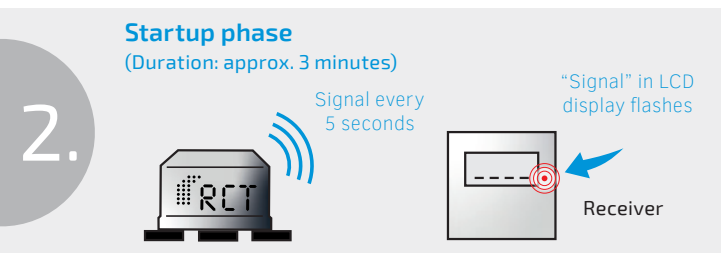


Fig. 4b | Transmit, test signal at receiver location and place the receiver

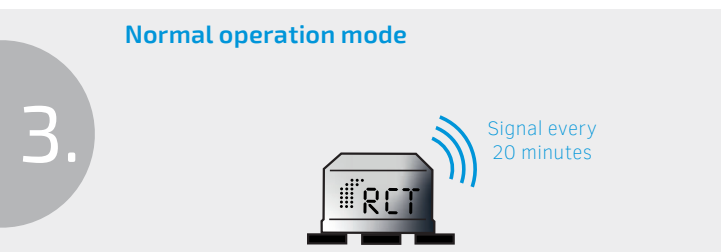


Fig. 4c | Transmitting and receiving

Step 4: Mounting the transmitter

Now proceed with the installation of the transmitter and antenna.

Protect from water: The transmitter unit must be installed in so that it is protected from water. For outdoor systems, place the unit upright to prevent water from entering the battery contacts.

Mounting: Attach the transmitter to the tank or the wall of the manhole chamber using the magnets integrated in the battery pack (see arrows below) (Fig. 5), or with the optional bracket.



Caution! In Ex zone 1, the cable to the sensor must be laid carefully to avoid damage. Make sure that the cable is not kinked or pinched and damaged when the manhole cover is closed.

There should be a distance of at least 20 cm between the device and the signal generator. Otherwise there is a risk that the magnetic field of the sensor system will be affected by the fastening magnets and the measurement result will be distorted. (Fig. 5)

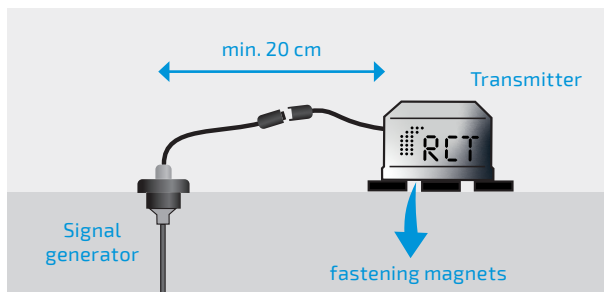


Fig. 5 | Attaching the transmitter

Step 5: Mounting the antenna

Attach the external antenna to a metal surface using the magnetic base (Fig. 6). As a general rule, the larger the metal surface, the better the transmission power.

In order to achieve good transmission power, the antenna should be mounted vertically (upright). Make sure that the connection between the antenna base and the metal surface is clean.

In the case of above-ground tanks, for example, attach the external transmission antenna directly to the container.

In the case of underground tanks, the antenna should be attached outside the manhole chamber e.g. attached to the manhole cover or safely embedded into the ground using the optional drive-over antenna. Inside the chamber, the signal can be significantly restricted by the metal surroundings, thus reducing the transmission range.

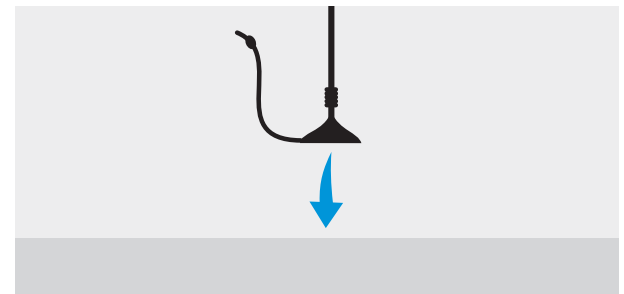


Fig. 6 | Attaching the antenna



Step 6: Putting radio receiver into operation

As soon as the transmitter has been activated (step 3), it starts measuring and data transmission. The coded radio signal (868 MHz) can be received by various radio receivers (LCD display, Interface 4–20 mA, WiFi, Data logger). When delivered as a set, the receiver is programmed to automatically receive the signal of the supplied transmitter.

Example: RF receiver LCD display (Fig. 7)

With LCD display the tank level can be easily read in the living area or office.

It is recommended that the receiver is first put into operation near the transmitter for testing. Insert the plug of the power cable into the socket on the bottom side of the device. Then connect the power supply unit to a socket (230 V). The device is immediately ready for use. When the signal of the transmitter is received, the word "Signal" flashes in the display (Fig. 8). As soon as the transmitter has finished a successful measurement, the tank content is displayed as a percentage value. The level can be displayed either in percent or liters. For further information on setting the liter display, receiving other radio transmitters, solving problems and resetting the device, please refer to the radio receiver manual.

Sending and receiving: A stable radio connection is essential for trouble-free operation. Select the

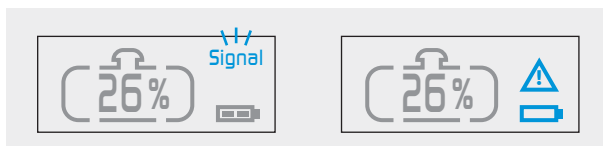


Fig. 8+9 | Indications on LCD display



Fig. 7 | LCD Display Receiver with power supply and wall bracket

mounting position of the receiver so that a reliable reception of the radio signal is permanently guaranteed. During the first 3 minutes after activation of the transmitter (start phase), the signal is transmitted approx. every 5 seconds, then in normal operation only every 20 minutes. Use the "start phase" to test the reliable signal reception at the mounting position of the receiver or to make further adjustments. You can trigger the "start phase" as often as you like by disconnecting the transmitter from the battery, waiting 5 minutes and activate it again. (Fig. 4, page 6)

Mounting: Mount the receiver with the included wall bracket using suitable mounting material (screws/plugs depending on the surface).

Warning symbols: The red LED next to the display, warning triangle and battery symbol warn when the minimum fill level is below 20 percent, the transmitter battery is empty or the radio connection is interrupted (see instructions). (Fig. 9)

Note: Further information can be found in the detailed operating instructions of the corresponding radio receiver.





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Your Contact



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