General

It is designed to automatically transfer water from the well to the tank according to the water requirement of the tank by communicating with radio frequency in long distance (up to 5 km.) well storage systems.

RF-MOD-RC (Receiver): It enables the motor to start/stop by activate/de-activate the relay contact according to the water status (full/empty) information coming from the device in the tank (RF-MOD-TR).
RF-MOD-TR (Transmitter): It informs the device in the well (RF-MOD-RC) according to the full/empty tank information it receives from the floater connected to it.

Usage and Working Principle of the Device

Receiver Device: RF-MOD-RC should be connected to the well side.
Transmitter Device: RF-MOD-TR should be connected to the tank side.

After the device connections are made, "PWR" leds turn on continuously when energized. The transmitting device (RF-MOD-TR) tries to communicate with the receiving device (RF-MOD-RC) every 1 minute. In the meantime, the "TX" led of the transmitter device flashes 3 times. If the communication is successful, the "RX" led of the receiving device will flash 3 times. According to the full/empty information of the tank in the transmitting device, the relay contact of the receiving device activate or de-activate.

How to Control Communication?

The transmitting device (RF-MOD-TR) tries to communicate with the receiving device (RF-MOD-RC) every 1 minute. In the meantime, the "TX" led of the transmitter device flashes 3 times. If the communication is successful, the "RX" led of the receiving device will flash 3 times. If the "RX" led of the receiving device is not flashing, there is a communication problem. In this case, it should be checked that the antennas of both devices can see each other, that the antenna connections are made in correctly, that they do not go out of the 5 km (bird flight) communication range and that they are on the same communication channel.

"IN Connection" and "IN LED" on the Transmitter Device

No external energy should be applied to the "IN" terminal on the transmitter device (RF-MOD-TR). This terminal is used for the connection of dry contact switches (floaters, relays, contactors, etc.). When this terminal is short-circuited, the device receives the empty tank information and the "IN" led on the device turns on. Then in the next communication, the transmitter sends this information to the receiver and the motor is energized by the receiver.

"OUT Connection" and "OUT LED" on the Receiver Device

The "OUT" terminal on the receiving device (RF-MOD-RC) is used to energize the motor. Energizing the motor must be provided via a contactor of suitable value as in the connection diagram. According to the empty tank information from the transmitting device, the "OUT" led on the receiving device turns on and the relay acitivates. According to the full tank information from the transmitting device, the "OUT" led on the receiving device turns off and the relay de-acitvates.

"ERR LED" on Receiver and Transmitter Device

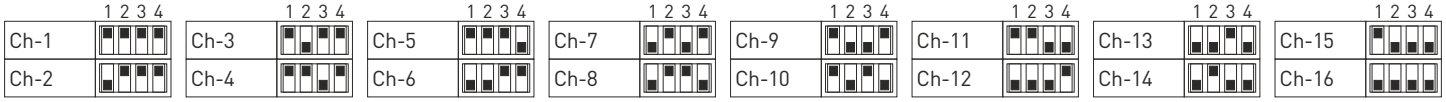
When the devices cannot communicate with each other for 5 minutes, the "ERR" leds on both devices turns on. In case of communication error, the receiving device de-activates the relay and the motor is stopped. In this case, it should be checked that the antennas of both devices can see each other, that the antenna connections are made in correctly, that they do not go out of the 5 km communication range and that they are on the same communication channel. When the communication between both devices is restored, the "ERR" leds turn off.

Making Communication Channel Setting

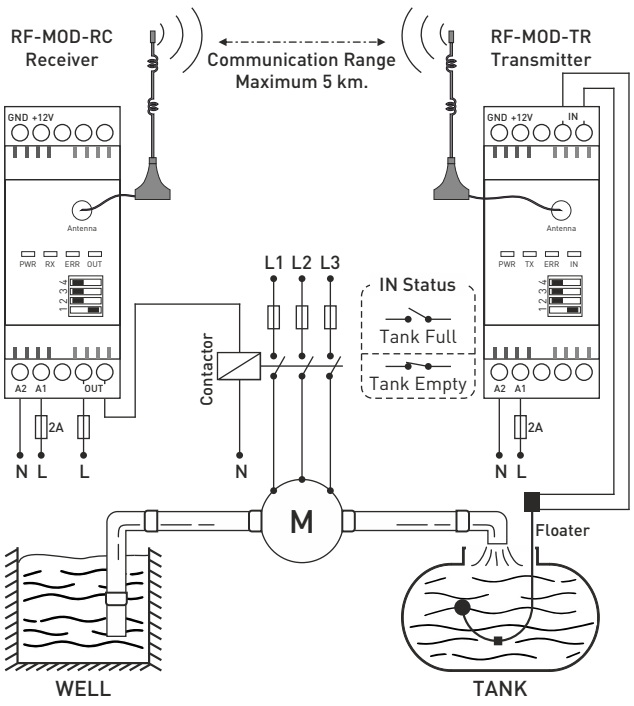
In order for the devices to communicate with each other, both devices must be on the same channel. If the antennas of both devices see each other, the antenna connections are made in correctly, the communication range is not exceeded, and the devices do not communicate with each other and they have a communication error, although they are set to the same communication channel, there may be signal pollution at the location of the devices and different devices broadcasting / communicating on the same channel. In this case, both devices can be transferred to a different communication channel and communication can be realized.

Channel List

By using the dip switches on the device, 16 different channel settings can be made according to the channel list below. In order for the devices to communicate with each other, both devices must be on the same channel.



Connection Diagram



Supply with 12V

By using the "GND" and "+12V" terminals on the devices, the device can be supplied via a 12V power supply.

NOTE: The device must be powered only as 230V AC (A1 and A2) or only 12V AC/DC (GND and +12V).

NOTE: Providing energy directly from the solar panel without the battery and charging circuit may damage the devices.

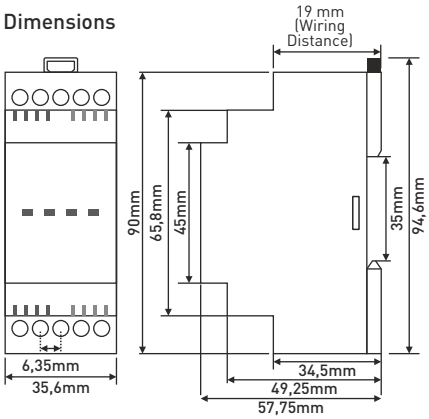
Warnings

-Use the device in accordance with the instructions given by us.
-Do not operate the device in a wet environment.
-Include a switch or circuit breaker in the assembly.
- Keep the switch and circuit breaker close to the device and within easy reach of the operator.
-Mark the switch and circuit breaker as disconnection element for the device.

Device Maintenance

Power off the device and disconnect it from the connections. Clean the body of the device with a slightly damp cloth. Do not use conductive or other chemicals that could damage the device as a cleaning agent. After cleaning the device, make the connections and make sure that the device is energized and working.

Dimensions



Technical Specifications

Operating Volt.	:	230V AC 50/60Hz. or 12V DC
Operating Power	:	<1VA (Standby), <5VA (Communication)
Operating Temp.	:	-20°C.....+55°C
Antenna	:	9dBi SMA (Replaceable)
Comm. Freq.	:	868MHz
Comm. Range	:	5 km. (According to environmental conditions)
Display	:	4x LEDs
Connection Type	:	Mounted on terminal rail.
Weight	:	<110gr. (RF-MOD-RC), <110gr. (RF-MOD-TR)
Contact	:	3A, 250V AC (Resistive Load) (RF-MOD-RC)
Operating Altitude	:	<2000m
Protectiton Class	:	IP20
Cable Diameter	:	2,5mm²