Digital Wireless Fully Automatic Water Level Controller

Model: DWFAWLC - 044

User Manual

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1. INTRODUCTION

RMG automation introduces a brand new product which is remarkably convenient for the users, which is Digital Wireless Water Level Controller with Indicator. This is “All in One” product. It has combined features of timer, water level controller and wireless in communication with digital display.

Wireless water level controller helps to switch on the motor automatically when tank is empty and to stop the motor when tank is full thereby helps avoiding brawls with neighbors due to water overflow. Helps avoid wall damping, water wastage, and excess electricity bill.

It consists of Transmitter Module and Receiver Module. The transmitter module has to be installed near the overhead tank and the Receiver Module can be fixed near motor switch location. It does not require any wiring or cabling between the transmitter and receiver. The distance covers upto 1000 meters in line of sight and supports for 10 storey building/apartments.

2. DESCRIPTION

2.1 CONTROLLER

- **Power ON/OFF switch**: Used to turn ON /OFF the controller unit.
- **Power ON LED**: It indicates the power supply to the unit.
- **Low/High Voltage LED**: It indicates Low/High Voltage power supply. Motor pump gets turned off and is protected from such condition.
- **Over Load LED**: It indicates Over Load. Motor pump gets switched off and is protected from such condition.
- **Motor ON LED**: It indicates the motor ON condition.
- **Dry Run LED**: It indicates the dry run of the motor pump. If there is no water flow in the inline pipe of the overhead tank for 90 seconds, motor gets switched OFF preventing it from Dry Run.
- **ON TIMER LED**: It blinks while ON timer is running and gets OFF when set time is over.
- **OFF TIMER LED**: It blinks while OFF timer is running and gets OFF when set time is over.
- **OH Tank Level Indication LEDs (L1, L2, L3 and L4)**: It indicates water levels in the tank. 25%, 50%, 75% and 100% level indications are available.
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- **Seven Segment Display**: Displays settings/status of the controller.
- **SET/Pairing button**: Used to enter into the menu, save settings, view status and to pair the transmitter with controller.
- **NEXT button**: Used to select menus from top to bottom or segments from left to right. By pressing on this key you can reset the settings.
- **INC button**: Used to increment value from 0 to 9.
- **Signal LED**: shows the RF Transmit or Receive signal status. When it blinks 16 seconds once, the communication between transmitter & controller is good. When it is continuously glowing, it means there is no communication.
Caution: Switch off the main power while doing the Power Connection.

**Step 1:** Wall mount the Controller unit nearby motor pump switch/starter location. The location chosen should be near the window or in open space to ensure good signal strength.

**Step 2:** As per the model purchased, check the label and connect AC supply (230V/440V) to red and black wires refer figure 1 and figure 2.

**Step 3:** For switch or MCB, Connect blue pair wire of the controller to the switch/MCB of the motor in parallel as shown in figure1.

**Step 4:** For starter, Connect blue pair wire of the controller to ON button of starter in parallel and black pair wire to OFF button in series (Refer to figure 2 and figure 3)

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**3. TOOLS REQUIRED**

- Drill gun
- Simple hammer
- Wooden gattas
- Screws for mounting units on wall
- Line tester
- Wire stripper
- 1.5Sq.mm Wire for power & control wiring
- Insulation tape
- Cable

**4. INSTALLATION PROCEDURE**

CT COIL: It helps to sense the current consumption of the motor.

**Manual/Auto mode switch:**

**Auto mode:** In AUTO mode, motor will automatically switch ON when the water level in the tank is low and automatically switch OFF when the tank becomes full.

**Manual Mode:** Helps to switch ON the motor manually. In this mode, the motor will be constantly running.

**Semi-Automatic** (Manual ON and Auto OFF) function is achieved by changing this switch position from Manual mode to Auto mode.

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**2.2 TRANSMITTER**

- **Power ON/OFF switch** – used to on/off the transmitter.
- **POWER ON LED** – shows the on/off status of transmitter.
- **Signal LED** – shows the RF signal status.
- **Pairing soft key** – used to pair the transmitter with controller.

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**Figure 1: 1Φ SWITCH/MCB**

**Figure 2: 3Φ Starter**
Step 8: Remove the Phase wire from switch/MCB or output ‘R’ wire from starter & insert into the CT coil, and connect it back to the switch/starter. (refer figure 1)

Note: In case of doubts please call 044 - 43180017 or What's App 9940594413 from Monday to Saturday 10 am to 6 pm.

Step 5: Take the transmitters near the Under ground and Over head tanks and place it where good signal strength is available. Connect Phase and Neutral (230V) to red and black wire of transmitter units.

Step 6: Turn ON the controller and transmitter units. Now, Power ON LED in both transmitters and controller will glow. Wait until RF Signal LED in transmitters and controller blinks every 16 seconds once. This ensures the perfect communication between them.

Step 7: Now power off the controller and transmitter units. **Contact type sensor connection:** Take the sensors and cut them according to the levels of tank and join them with the 6 core cable as per label coded. (Refer figure. 4) **Magnetic float sensor connections:** These Sensor has 2 wires, Use any one wire in each sensor as common. Other wires left in each can be used for levels. Join them with the 6 core cable as per label coded. (Refer figure. 5).

Step 9: Immerse the sensors in both Over head tank and Under ground tank at Common, 25%, 50%, 75%, 100% level.

This completes the installation procedure.
4. OPERATING PROCEDURE

• Keep the Manual/Auto mode switch in Auto mode for automatic operation.
• Turn on the Power On/OFF switch. Power ON LED will glow.
• Depending upon the water level in tank, level indicator LEDs will be ON.
• Using the input keys (SET key, NEXT key and INC key), program the device as per your choice. (Refer Programming methods).
• When Over Head Tank (OHT) goes low, the controller turns ON the motor. The motor ON LED will glow. This operation occurs only when water is present in the Under Ground Tank (UGT).
• When Over Head Tank is full and reaches 100% or when UGT level becomes empty, the controller turns OFF the motor and Motor ON LED will be OFF.
• In manual mode, the motor will be constantly running. MOTOR ON LED will be ON.
• In Semi-automatic Mode: Just keep the controller in MANUAL mode for the motor to get switched ON and then change it to AUTO mode for Automatic OFF.
• Dry Run Operation: It works only when the Low Current and Dry Run Reset Time is set.
• Operation of Over Load: Motor will be in ON condition for the set values. In any condition, the values goes low or high with set values, motor trips and will be OFF. If any of these setting are not needed or To Disable Operations – Set the Values as 0.
• Timer Operation: This controller can be also used as a cyclic timer. ON time and OFF time can be set and the motor will be ON for the set time and will be OFF for the set time and the cycle repeats. In case if the tank is full, the cycle stops and motor is Off and the display shows the voltage. The motor starts again only when tank is low. The product can also be used as a Stop Timer. ON time can be set and motor is ON for the SET time and will be continuously OFF after the SET time is over. ON time and OFF time can be set as per Programming Methods.
• The product is password protected and can be changed if required. (Refer Programming methods).

PAIRING PROCEDURE: The units are generally paired and dispatched. In case of any trouble at the time of installation, users can pair the units once again.
• Enter into the device address menu.
• By using NXT you can see Over Head tank transmitter address (0 followed by 3digit address).
• In Over head tank transmitter there is a yellow PAIRING soft key. Press the key and without taking out the finger from it, power ON the transmitter. Address on the controller will be changed now.
• To pair Under ground tank with controller, go to device address menu.
• By using NXT you can see Under Ground tank transmitter address (1 followed by 3digit address).
- In Under Ground tank transmitter, do the same procedure for Over head tank transmitter. Address on the controller will be changed now.
- Thus pairing is completed
- Repeater Address: This denotes the repeater device address. The repeater is required only if there is signal strength is poor / to enhance the coverage distance. The settings for pairing are as same as done with the transmitter.

**NOTE:** Do not cover the transmitter and controller with metal enclosure. It may disturb / loss the RF communication.

### 5. TROUBLE SHOOTING METHODS

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<thead>
<tr>
<th>Sl. No</th>
<th>Error</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Device dead / Not Powered ON</td>
<td><strong>a.</strong> Check the power connection wires for loose contacts. <strong>b.</strong> If problem continues, contact RMG Automation for support</td>
</tr>
<tr>
<td>2</td>
<td>Tank level indicator LEDs are off</td>
<td><strong>a.</strong> In the controller unit, join common terminal with a small wire to other terminals one by one and verify the tank LEDs are glowing. This means the controller unit is fine. <strong>b.</strong> Check the cables between controller and tank for cable breakage. If so correct it. <strong>c.</strong> Check common sensor and other sensor connections are correctly made. If any loose contacts correct it.</td>
</tr>
<tr>
<td>3</td>
<td>Dry run LED is ON continuously</td>
<td>If dry run occurs, <strong>a.</strong> Check whether water is coming in the inlet of the tank <strong>b.</strong> Check if any loose contacts present in the dry run connection and correct it. <strong>c.</strong> Check the cable between the controller and tank for cable breakage. If so, correct it. <strong>d.</strong> Normally Dry Run LED will reset after dry run reset time,</td>
</tr>
<tr>
<td>4</td>
<td>RF Signal LED glows continuously</td>
<td><strong>a.</strong> Check whether any obstructions are there in between transmitter and receiver units like large trees, buildings etc (repeaters can be added if necessary)</td>
</tr>
<tr>
<td>5</td>
<td>L/H Voltage LED is ON continuously</td>
<td><strong>a.</strong> Check whether voltage fluctuations are there in the input lines. <strong>b.</strong> L/H voltage LED resets after 1 minute, if the input lines becomes normal.</td>
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Here You have to give the correct password to Enter in to the Menu.

DEFAULT LOW VOLTAGE - 180V
When the Input Voltage is lower than the Set Value, the L/H voltage LED glows and it will Turn OFF the motor pump and protects from running in low voltage.
This feature applies only for AUTO MODE.

DEFAULT HIGH VOLTAGE - 260V
When the Input Voltage crosses the Set Value, the L/H voltage LED glows and it will Turn OFF the motor pump and protects from running in high voltage.
This feature applies only for AUTO MODE.

DEFAULT LOW CURRENT - 0.0A
When the motor pump consumes CURRENT lower than the Set value then the DRY RUN LED glows and it will Turn OFF the motor pump and protects from running in dry run.
This feature applies only for AUTO MODE.

DEFAULT HIGH CURRENT - 0.0A
When the motor pump consumes CURRENT greater than the Set value then the OVER LOAD LED glows and it will Turn OFF the motor pump and protects from OVER LOAD.
This feature applies only for AUTO MODE.

* The normal operation will resume only when the controller is switched OFF and switched ON.

DEFAULT ON TIME - 00:00 (Hours : Minutes)
When tank becomes low, the motor pump will start and run for the set time. Once the set time is over / tank is full, motor pump gets off.
This feature applies only for AUTO MODE.

DEFAULT OFF TIME - 00:00 (Hours : Minutes)
The motor pump will be in OFF condition for the set time.
When both ON & OFF time is set, the motor pump will run in a cyclic pattern until tank is full.
This feature applies only for AUTO MODE.

DEFAULT POWER ON DELAY TIME - 010Seconds
Whenever controller gets power, it starts doing the normal operation after the POWER ON DELAY TIME is over.
Display will blink RMG for the set time.

DEFAULT DRY RUN RESET TIME - 01:00(Hours:Minutes)
The motor pump will be OFF during this SET TIME due to dry run. The controller thus resumes the auto operation after this set time is over.

DEFAULT PASSWORD - 0000
Here you can change the new password.

DEFAULT DEVICE ADDRESS - 0.000
The .” before 0 denotes OH tank and after “.” denotes address of the transmitter unit.

DEFAULT REPEATER ADDRESS - 0.000
The.” before 0 denotes OH tank and after “.” denotes address of the Repeater unit.