

FOGRod Retrofit-4 Box

Easy Ball Float Replacement

Applications

- Water and wastewater
- Empty or fill applications

Features

- Modular design for easy retro-fit
- Easily replaces 3 or 4 ball floats systems
- No changes to existing electrical panel internal wiring
- Configurable off delay eg. to pump below off point in wastewater to keep the wet well cleaner
- Up to 10 electrodes for wide selection set point range, redundant pump start / high level electrodes etc.
- Wide relay sensitivity range to operate in very clean water or dirty effluent
- Supplied with 1.5m x 0.5mm 2 core + earth voltage supply cable and 1.5m x 0.75mm 8 core ball float replacement cable (if longer length required please contact us on contact@waterauto.co.uk)

Technical Specs

- Voltage Supply 24 to 240V AC/DC. Max Power 1.4W
- Fuse size 2A
- Electrode voltage max 5VAC, <0.1mA
- Relay outputs max 230V 10A AC1
- Pump(s) stop configurable time delay
- IP65 Rating
- Dimensions W 165mm x H 140mm x D 85mm

INSTALLATION:

Mount box near the pump control panel, power the box with 24V to 230V AC or DC, **the box MUST be connected to earth to operate.** If 110V-230V AC is used please attach a voltage warning label to the box.

Important referring to **FOGRod INSTALLATION GUIDE V2.7** remove the ball floats and replace with FOGRod. The installation guide can be downloaded from our website www.waterauto.co.uk click on the FOGRod menu and scroll down to the bottom of the 1st paragraph.

Replace each ball float pair of wires connected into the pump panel terminal strip with the outputs from the FOGRod box in the following order. This system is for switching pump control circuits only, not for switching pumps direct.

	PAIR A	PAIR B	PAIR C	PAIR D
3 BALL FLOAT SYSTEM	STOP FLOAT		START FLOAT	HIGH LEVEL
4 BALL FLOAT SYSTEM	STOP FLOAT	DUTY START	ASSIST/ STANDBY	HIGH LEVEL

The default sensitivity of the 3 x 310-GRL8-02 IO-PRO relays is set at 20K Ohms for wastewater. To set the sensitivity for low conductivity clean water applications immerse electrodes in the water and turn the middle red sensitivity potentiometer of each relay fully anti-clockwise (to 5), slowly turn potentiometer clockwise until the red LED activates, move the pot 1 segment further clockwise, this is now set.

In troublesome wet wells (rags, fat etc, no space near the pumps, cluttered wet well bottom etc) it's possible to position the FOGRod higher in the wet well to a more suitable position with better FOGRod clearance and run the pump(s) on past the bottom of the FOGRod to the preferred stop level via T1 off delay timer. Set the top dial on T1 to the time range required (eg 1m) then the next dial down to the % of that range eg. 50% = 30 seconds. When LLR1 de-activates the pump(s) will now run on 30 seconds.

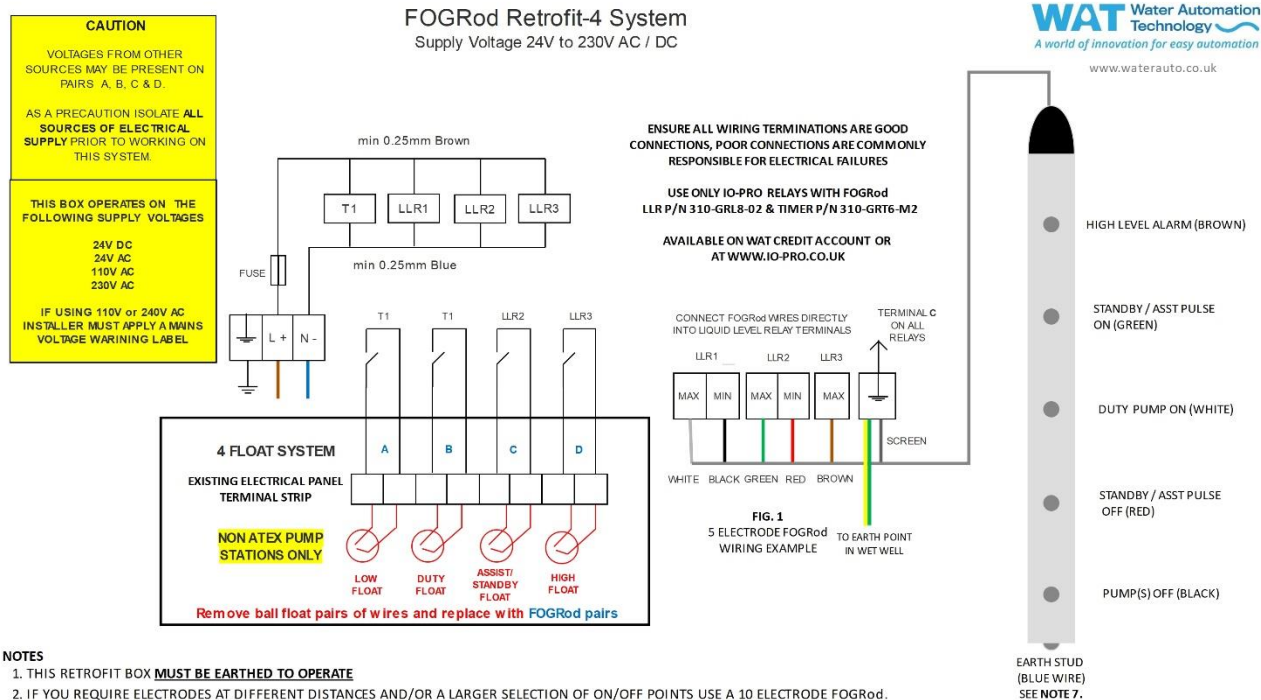
Only the IO-PRO relay 310-GRL8-02 is fully tested and guaranteed to work with FOGRod, to order relays separately please refer to the Water Automation Price List or for non-account holders order direct from B2C online shop IO-PRO UK at <https://www.io-pro.co.uk/product-page/level-control-relay>

RELAY OPERATION DEFAULT SET-UP

LLR1 – Switches on T1 when liquid reaches the MAX electrode and latches until MIN electrode is cleared, this switches off T1 which then starts the T1 off delay timer to delay pump(s) off time if required. A & B pairs are directly switched from T1 replacing the duty start and off floats.

LLR2 – Switches on when liquid reaches the MAX electrode and latches until MIN electrode is cleared. C pair is closed by this relay replacing the standby/assist start float. When LLR2 turns off the electrical panel latches the pump on until LLR1 switches off.

LLR3 – Switches on when liquid reaches MAX electrode and switches off when MAX electrode has been clear of liquid for ten seconds. D pair is closed by this relay replacing the high float.



NOTES

1. THIS RETROFIT BOX **MUST BE EARTHED TO OPERATE**
2. IF YOU REQUIRE ELECTRODES AT DIFFERENT DISTANCES AND/OR A LARGER SELECTION OF ON/OFF POINTS USE A 10 ELECTRODE FOGRod.
3. IN VERY, VERY FATTY SUMPS eg. MAC DONALDS RESTAURANTS etc - USE THE (LIQUID INDICATOR TRANSMITTER) **LT-RETROFIT BOX** WITH A TEN ELECTRODE FOGRod
4. IN WASTEWATER USE LOWEST SIDE MOUNT ELECTRODE (BLACK WIRE) AS PUMP(S) OFF POINT (LLR1 MIN), CONNECT STANDBY PUMP START PULSE OFF POINT (LLR2 MIN) TO A DIFFERENT STOP ELECTRODE **DO NOT SHARE MIN ELECTRODE BETWEEN LLR RELAYS**, THEY MUST HAVE THEIR OWN STOP ELECTRODE CONNECTED INTO MIN.
5. WHEN REPLACING FLOAT WIRES THE POLARITY OF THE BLACK PAIRS A,B,C & D DOESN'T MATTER
6. IF USING A 3 or 5 ELECTRODE FOGRod THE EARTH STUD WIRE (GREEN WIRE - 3 ELECTRODE FOGRod. BLUE WIRE - 5 ELECTRODE FOGRod) SHOULD ONLY BE CONNECTED IN **GREY OR RAW WATER** APPLICATIONS, **DO NOT CONNECT IN WASTEWATER** APPLICATIONS.
7. RELAY OUTPUTS **NOT FOR DIRECTLY SWITCHING PUMPS**, FOR SWITCHING CONTROL CIRCUIT PUMP CONTACTORS. 230VAC MAX 10A RESISTIVE LOAD, MAX 3A INDUCTIVE LOAD.

OTHER RETROFIT BOXES

LT RETROFIT-4 4 FLOAT REPLACEMENT IN LARGER PUMP STATIONS

LT RETROFIT-AL ANALOGUE LEVEL DEVICE REPLACEMENT SYSTEM (RADAR, Ultrasonic etc)

FOR USE IN WATER, WASTEWATER AND OTHER AQUEOUS SOLUTIONS. **NOT** FOR USE WITH INFLAMMABLE LIQUIDS OR GASES.
FOR INTRINSICALLY SAFE APPLICATIONS PLEASE ENSURE THE ELECTRICAL INSTALLATION FULLY COMPLIES WITH LOCAL REGULATIONS