WASTEWATER LEVEL
Keeping it underground

KEEP IT SIMPLE WITH THE FOGROD®

- 10% of the maintenance of floats
- 10x easier than ultrasonics
- Unbreakable – 10 year warranty

This failsafe lift station level device is almost as simple as floats, but with much less maintenance; way simpler than ultrasonics; and can't fail like pressure transducers.

Why not free up some of your valuable time with the FOGRod®?

- No moving parts, sensors or electronics in the wetwell
- Failsafe
- Simple and quick to install
- No rewiring of your control system
- No configuration or calibration
- As easy to understand as floats
- Class I Division 2 with no barrier, Division 1 with barrier

FOGROD
SEES THROUGH FOG LIKE NO FLOATS CAN

REPLACE YOUR FLOATS IN A HALF DAY OR LESS – WITH NO REWIRING OF YOUR CONTROL SYSTEM

How It Works

The FOGRod works by conductivity. The FOGRod hangs in the lift station and connects to an electronic device in the control panel - the Level Indicator Transmitter (LIT).

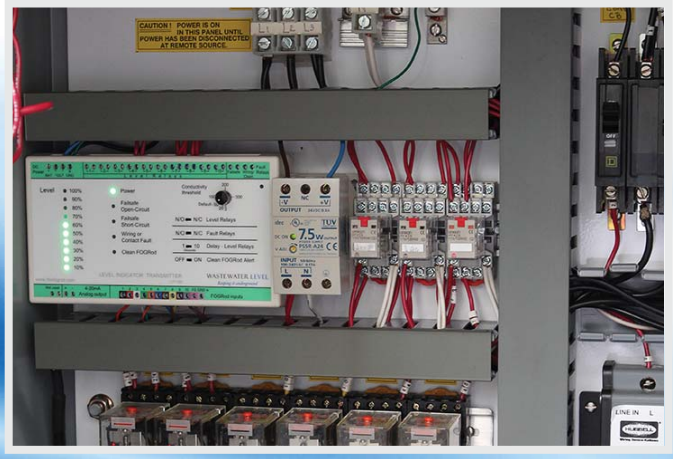
The FOGRod is a slim CPVC rod with 10 metal contacts spaced down its length. Each contact represents a different level.

Water is conductive. The LIT applies a very low voltage signal to each contact and tests for current flow to ground. When current flows it means that the contact is covered with liquid.

The LIT has 12 relay outputs – one for each of the 10 FOGRod metal contacts and 2 fault relays. When liquid covers a contact on the FOGRod, the relay corresponding to that contact closes. You can wire any of the 10 relays into the start, stop and alarms inputs for your control system (e.g. a PLC). This also means you can change the start, stop or alarm points without changing the position of the level device.

Alternatively you can use the analog output on the LIT which changes by 1mA for each FOGRod contact that is covered.

LIT installed in control panel



FOGRod hanging in wetwell

Simple To Install

FOGRod - *The FOGRod must hang in the turbulent part of the well, but not directly under the inflow. Turbulence keeps the FOGRod relatively clean. Screw the mounting bracket into the wetwell wall just below the hatch and hang the FOGRod from the S-hook.*

LIT - *The LIT clips onto DIN rail in the panel. The FOGRod cable is wired into the color coded terminals.*

The simplest approach - disconnect the float wires and connect the LIT relays into those same connections. This means that you won't have to change anything at all in your PLC or control system. So if you currently have four floats wired into lead start, lag start, stop and high level you can simply wire the relevant LIT relay outputs into the same electrical connections in your control panel.

Nothing more to do!

What About Build Up?

Fats, Oils, and Grease – **FOG** – builds up on everything in the well. That's why floats need so much cleaning. But the FOGRod sees through the FOG!

It has no moving parts, no electronics, and when FOG builds up on the FOGRod it keeps working – until eventually the buildup gets **so bad** that ***it tells you*** it needs cleaning. So you only have to clean it occasionally. Perhaps once a month with a bad well, or once every three months with a typical well.

Cleaning the FOGRod is much easier than floats. Simply pull it up through the supplied mounting bracket with integral cleaning pad and all the fats, oils and grease get cleaned off. Hang it from the bracket once again and you are good to go.

More Benefits

As well as much lower maintenance, the FOGRod has a number of additional benefits that you don't get with floats.

- **More reliable solution** – there is a failsafe feature where faults in the FOGRod or the cable cause an alert (unlike floats)
- **Better cleaning of the well** - the FOGRod can be positioned much lower in the well than a float - which allows a much lower pump stop point
- **Safety** - you can see the well level on the unit without opening the well cover, making a much safer working environment
- **Remote monitoring of level and faults** - the well level is indicated and communicated in 10 steps – allowing your PLC or RTU to communicate the level to your SCADA/telemetry system

The Level Device that Keeps on Working

The LIT can detect breaks in the cable, loose wiring and problem buildup of FOG (fats, oils and grease) on the FOGRod. In most cases the system will keep on operating the wetwell as normal despite these problems.

Fault LEDs show operators on site the specific problem, and fault relays allow you to find out about the problems remotely (by wiring the relays into your telemetry system).

For extra protection you can set the fault relays to be normally closed (just change the DIP switch position). That way, if power fails to the LIT the fault relays will open and your telemetry system can notify you of a power fail. (Of course, if this is the telemetry power supply then you will probably get a Comms Fail alarm from your telemetry system and send someone to site).

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HOW TO ORDER

phone: (406) 545-3023
e-mail: sales@wastewater-level.com
(if you are a city, town, county or parish ask for your free 35-day trial)

The FOGRod comes in three lengths – 7.5 ft, 5ft and a special 3ft (with only 6 contacts, 6" apart). If you need a 10ft Fogrod we supply 2x 5ft FOGRods (and 1 LIT). Each FOGRod has the option of two cable lengths – 50 ft or 100 ft. If you don't already have D.C power in the panel (e.g. powering a PLC or telemetry supply) you will need a mains to D.C. power supply.

*Kits**

**See website for other kits*

Part Number	Description	Part Numbers in Kit
Level-5-50	5 ft FOGRod with 50 ft of cable, cleaning bracket + LIT	FOG-5-50 | LIT-100
Level-7.5-50	7.5 ft FOGRod with 50 ft of cable, cleaning bracket + LIT	FOG-7.5-50 | LIT-100
Level-5-100	5 ft FOGRod with 100 ft of cable, cleaning bracket + LIT	FOG-5-100 | LIT-100
Level-7.5-100	7.5 ft FOGRod with 100 ft of cable, cleaning bracket + LIT	FOG-7.5-100 | LIT-100

Options

PSU-24-NB	Mains to 24v power supply | PSU-12-NB: Mains to 12v power supply | FOG-ISB: Intrinsically Safe Barrier

FOGRod 10 year warranty

What is it made of to have such a long life?

- *Main body - CPVC plastic*
- *Metal contacts - AL6XN stainless steel*

PVC is very resistant to corrosion and has been used for decades for municipal sewage. CPVC has the same corrosion resistance as PVC but is stronger and even more resistant to cracking.

LIT Specifications

Environmental		
Power supply	10v-30v d.c., 4W maximum consumption	
Temperature rating	Operating: -40 °F to 158 °F (-40 °C to +70 °C) | Storage: -40 °F to 185 °F (-40 °C to +85 °C)	
Enclosure	High impact ABS with DIN rail clip | 7" (W) x 4" (H) x 1.5" (D) (178mm x 102mm x 38mm)	
Approvals	UL approved for USA, Canada & Europe	
Warranty	Two years, extendable to five years	
I/O and Indication		
Relay Outputs – Level	10 relays, rated at 250VAC / 30VDC 6A (resistive load), configurable as normally open or normally closed (N/O or N/C)	
Relay Outputs - Faults	2 relays, rated at 250VAC / 30VDC 6A (resistive load), configurable as normally open or normally closed (N/O or N/C) - 1 relay for failsafe open circuit or short circuit (cable problem) | - 1 relay for contact dry below wet or FOG (fats, oils, grease) buildup	
LEDs – Level	10 green LEDs	
LEDs – Fault & Power	1 green LED for power | 4 red LEDs for faults — Failsafe open circuit; Failsafe short circuit; Wiring or Contact; Clean FOGRod	
Analog Output – Level	4-20mA output, 4mA = zero level, 5mA = 10%, 6mA = 20%, etc. to 14mA = 100% | Load 200-300 Ω | Accuracy better than 1%	
FOGRod I/O	11 FOGRod I/O - 8 VAC, low frequency: 10 level, 1 failsafe (plus ground)	
Terminals	All terminals standard screw type	
Setting		
Conductivity	Default conductivity threshold = 50kOhms, range from 3k – 300kΩ	
DIP switches	1. Level relays – Normally Open / Normally Closed 2. Fault relays - Normally Open / Normally Closed	3. Level relays and LEDs – 1 sec / 10 sec activation 4. Clean FOGRod alert - On/Off

FOGRod Specifications

Construction	CPVC (a stronger and more corrosion resistant form of PVC)	
Metal contacts	AL6XN (super-austenitic steel for very high corrosion resistance)	
Dimensions	Diameter – 1⅜ in (35mm)	FOG-5 – Length 5ft (1525mm), Separation between contacts 6 in (152mm) FOG-7.5 – Length 7ft 3in (2217mm), Separation between contacts 9 in (229mm)
Weight	FOG-5: 5.5 lbs (2.5kg), excluding cable | FOG-7.5: 7.7 lbs (3.5kg), excluding cable	
Rating	Nema 6P / IP68	
Temperature rating	Operating: -40 °F to 158 °F (-40 °C to +70 °C) | Storage: -40 °F to 185 °F (-40 °C to +85 °C)	
Cable	Custom 11-core cable with braided shield | PVC insulation & outer jacket | Conductor size 20 AWG or greater	
Mounting bracket	Aluminum (powder coated) with polyurethane cleaning pad (anchors, S-hook and cable tie included)	

Specifications subject to change without notice

v1.6