



TFRWi

Microwave radar level gauge

ELECTRONIC EQUIPMENT

ACOUSTIC

WEIGHING

ANTI-TILTING

VALVES

TEMPERATURE

DETECT A FIRE®

FLOW/RATE

DENSITY

INTERFACE

PRESSURE

LEVEL



- Two-wire current loop operation
- ATEX Intrinsically Safe Certificate
- Intrinsically safe circuit
- Process connections 1" Gas Cil-M, 1 1/2" Gas Cil-M (BSP)

TFRWi provides accurate monitoring of liquids even in sensitive measurement applications, providing complete peace of mind with a product that requires minimal expertise and human intervention, thus minimising costs.

The TFRWi rises above products that, until now, have needed frequent and expensive maintenance.

FMCW radar technology

Using FMCW radar technology, the TFRWi transmits continuously, constantly varying the frequency of the signal. The frequency of the return signal is compared with the emitted signal.

FMCW technology compared to pulsed radar is more accurate due to the narrower firing angle and in most cases this results in a stronger signal.

Easy installation

In 'Installation' mode, TFRWi -TILT ensures accurate installation by using the integrated LEDs to signal when the sensor is correctly installed.

In 'Measurement' mode, the LEDs are used as an alarm indication for an unexpected level change.

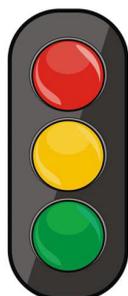
This will increase the accuracy of the collected data.

TFRWi - TILT uses a traffic light system:

Red LED indicates a problem requiring human intervention

Yellow LED indicates a warning that some problem may distort the measurement

Green LED indicates normal operation



Problem

Warning

OK



An ally of ultrasound technology

The TFRWi radar level sensor is designed to be an ally of ultrasonic technology. Both technologies have their place in the world and Terry Ferraris & C. has chosen both, combined with customer service and technical knowledge.

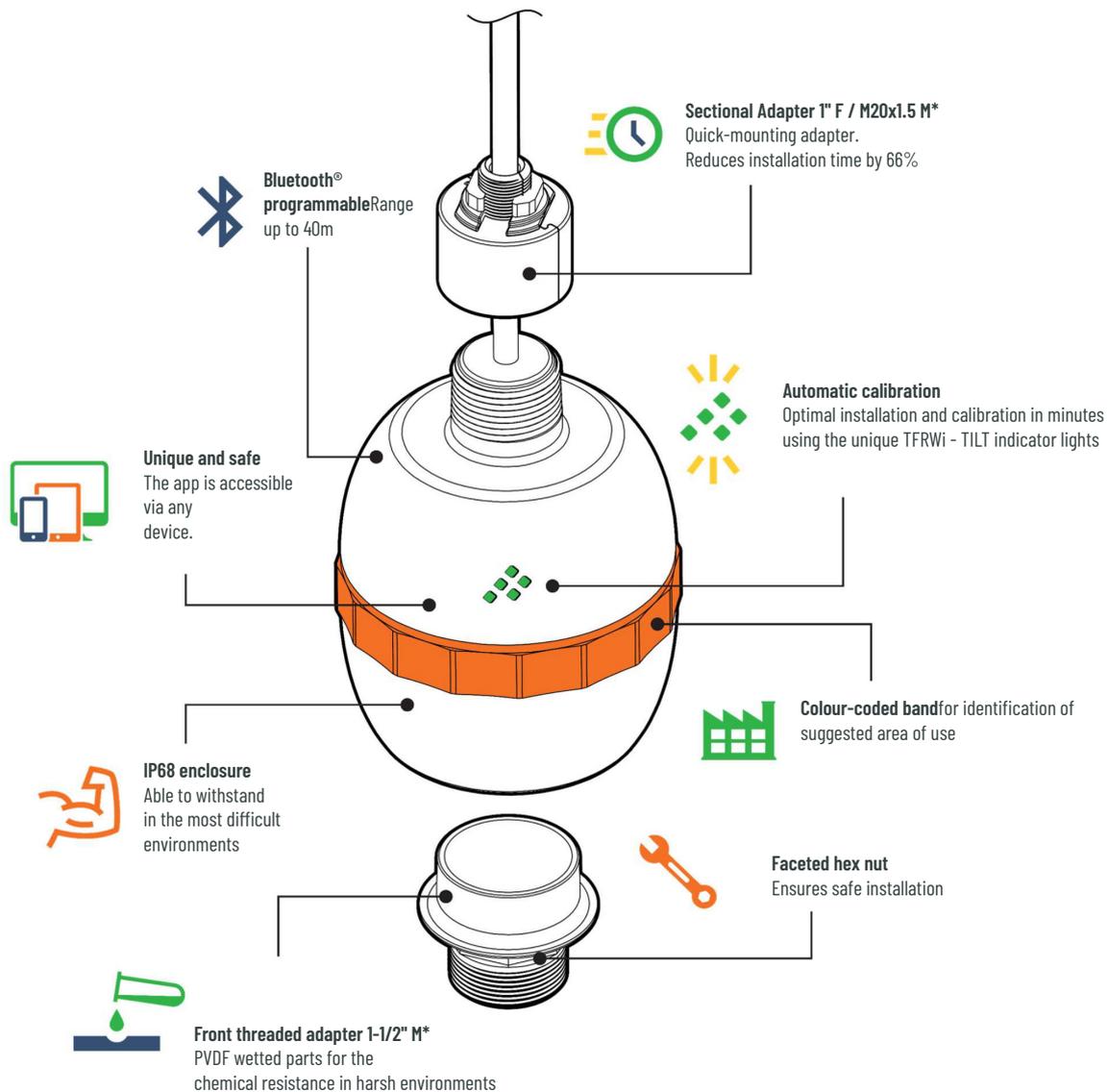
Easy Installation

To further facilitate installation, TFRWi includes a new, unique patented adapter for Terry Ferraris. Instead of inserting the adapter through metres and metres of cable, the adapter can simply be dissected and reassembled with the cable inside, making installation 3 times faster than before!

Precise, reliable and sturdy

TFRWi hermetically sealed level sensors require no routine maintenance and can withstand the harshest environments while maintaining accuracy in the presence of dust, high temperature and humidity, pressures up to 3 bar and extreme chemicals. TFRWi level sensors operate reliably even on turbulent surfaces, making it the ideal choice in the most challenging applications.

The sensors also benefit from Terry Ferraris' worldwide reputation for precision and reliability thanks to the integrated DATEM software. TFRWi is also compatible with the HART communication protocol and DTM drivers.



Web-based app

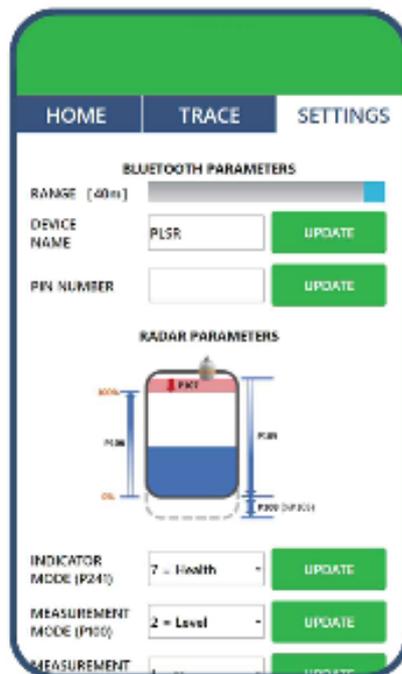
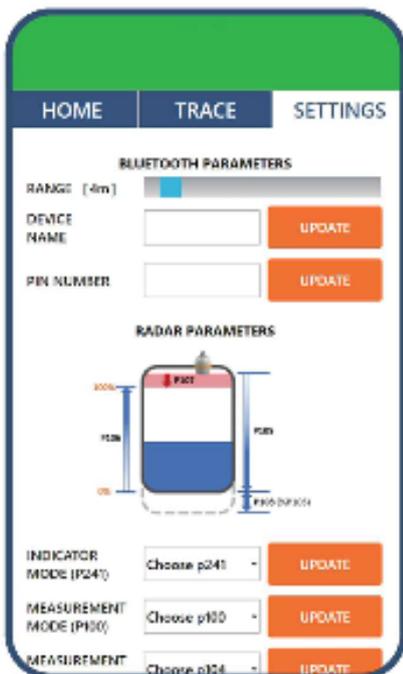
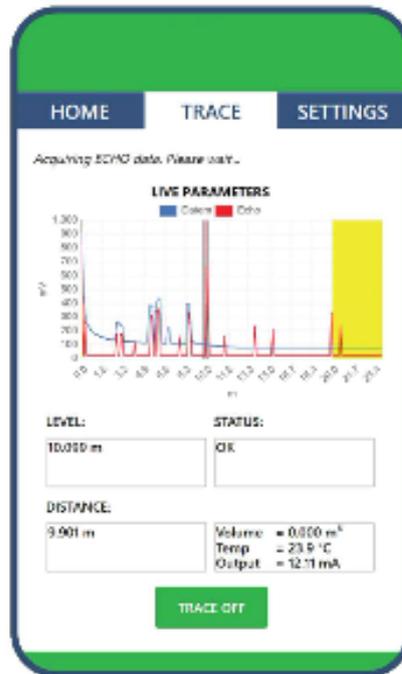
TFRWi uses a web-based app to provide an easy and convenient way to change parameters, access trend reports and view echo traces.

The web-based app is accessible via any browser on any device (PC, Android or iOS). Once the browser has been loaded on your device, you do not have to worry about the signal. Using a web-based app means there are no regular updates to install, just scan the QR code and you're ready to go!

Bluetooth enabled

TFRWi not only comes with integrated Bluetooth as standard, but for added security that only authorised users can access the device, its range is user-definable.

The maximum wireless range of each TFRWi can easily be set to between 4 and 40m depending on the size of the site. Users also have the option to disable the Bluetooth function if necessary.



Technical specifications

Features

Dimensions & Weight	135x102 (HxD) 1.5Kg
Technology & Frequency	FMCW 63GHz
Material & IP Protection	Valox IP68 / NEMA 6P
STD assembly	Rear threaded 1" GAS-CIL (BSP)
Vibration protection	Fully protected
Cables length	Standard: 5m, 10m, 20m or 30m; Optional: 50m or 100m

Performance

Measuring range / Firing angle	8m (for model TFRWi8); 20m (for model TFRWi20) / 6°
Solution	1mm
Accuracy	2mm
Repeatability	1mm
Near Dead Zone	75mm from transducer base
Response time	First start-up: 10 seconds / Warm start: 5 seconds
Maximum start-up current	20mA
Consumption	3.8mA±22mA, Resolution 1µA
Power supply	12÷28Vcc

Environmental characteristics

Operating temperature	+40°C ÷ +80°C
Humidity / Pressure	0÷99% / -1 ÷ +3 bar

Outputs

Connections	Loop-powered 2-wire connection
Analogue output	4÷20mA
Digital output	HART con DTM
Wireless communication	Bluetooth encrypted with mobile interface (can be disabled), Range 4÷40m
Visual indicators	Four-colour lights with tilt sensor (Green, Yellow, Red, Blue)

Certifications

Regulatory approvals	FCC, RED, CE, UKCA, IECEx, ATEX, UKEx
Explosive atmosphere	Area 0, 1, 2: Ex II 1G Exia IIC T4 Ga, Tamb.= -40°C ÷ +80°C Area 20, 21, 22 : Ex II 1D Exia IIIC T100°C Da, Tamb.= -40°C ÷ +80°C
WEEE and ROHS	Conform

Accessories

Optional Mounting	Sectional adapter 1" BSP - F / M20x1.5 M Front mounting with 1-1/2" BSP - M adapter in PVDF (chemical equipment applications) ANSI or DIN plastic flange or Steel Carbon or Stainless Steel with threaded connection
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