

Stay in Touch With Your Level

Non-contact radar level transmitter type 2290



Pressure



Temperature



Fumes

Foaming¹

Tank level measurement – simply with the right sensor. The wide range of tanks, process liquids and conditions requires appropriate technologies to provide consistent filling level information. The radar level transmitter type 2290 combines all advantages of a radar level transmitter in one non-contacting, compact and economical unit. Type 2290 is available in a variety of different materials to resist even the most corrosive environments.

+ Applications

- **General** – Challenging tank applications where other non-contacting principles fail e.g. ultrasonic
- **Chemical Process Industry** – Storage of solvents, chlorine or ammonia. Level detection in reaction vessels or buffer tanks
- **Water Treatment** – Pumping stations, sludge handling, drain level monitoring, drink water conditioning vessels

Process media

- For most liquids, including flammable² and fuming fluids
- Suitable for hydrocarbons, acids and aggressive media
- Liquids which tend to foam e.g. in acid neutralization applications

Tanks

- Bulk storage tanks
- Day tanks
- Process vessels for mixing and batching
- Plastic or metal

+ Benefits

- Most advanced non-contact technology to detect filling level
- Robust against most interfering factors such as fumes, light, foaming, temperature or pressure fluctuations and build-up
- Easy setup and onsite configuration
- Adaptable thanks to smart setting options
- Full plastic versions available to provide great chemical resistance

+ Features

- Non-contact TDR radar
- 19° beam angle, 25 GHz K-band
- Tank mapping function to ignore internal obstructions
- Short dead band of 0.2m (7.8 inch)
- Large graphical LCD display
- Minimum dielectric constant of process media $\epsilon_r 1.9$
- Distance, volume or mass measurements
- Predefined tank shapes
- 99 point customizable linearization

Approvals



¹ Application-dependent

² See EX approvals at specification on next page.

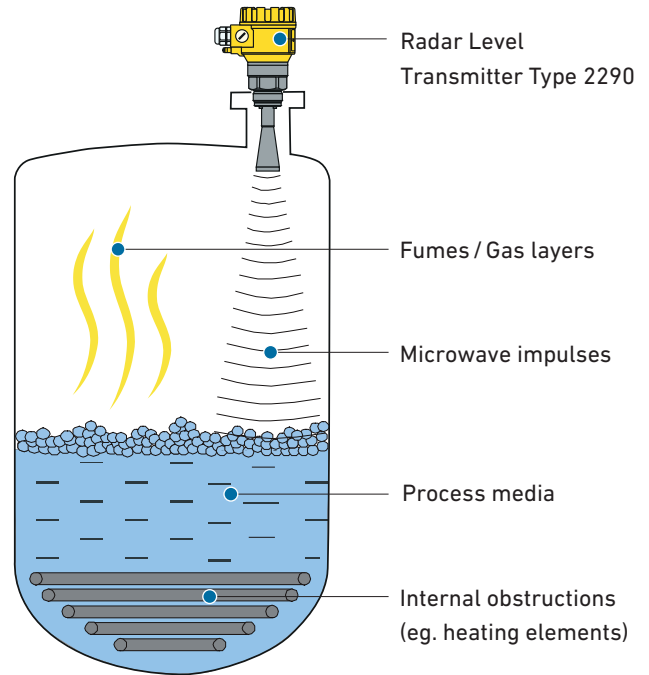
+ Technical features

Principle

Time domain reflectometry (TDR) – electronics produce billions of microwave impulses per second emitting from the antenna with a 19° focus. This energy is reflected by the process media. The time distance between emission and reception gives a domain value. The principle allows accuracies within +/- 3mm (+/- 0.1 inch). The technology is not affected by changes of temperature, pressure or gas layers.

Specifications

Measured values	Level, Distance; Calculated dimensions: Volume, Mass
Measuring range	0.2 m – 18 m (depending on dielectric constant ϵ_r of the process liquid)
Resolution	1 mm (0.04 inch)
Power supply voltage	20 V ...36 V DC, 24 V DC nominal
Antenna diameter	38 mm (stainless steel), 44mm (PP, PTFE)
Process connection	DN40 / 1½" BSP, 1½" NPT" thread
EX approvals	ATEX (ia): II 1/2 G Ex ia IIB T6...T5 Ga/Gb ICEX (ia): EX ia IIB T6...T5 Ga/Gb
Accuracy	+/- 3mm (+/- 0.1 inch)
Frequency	25 GHz (K-Band)
Communication certifications	R&TTE, FCC



Display



- 64 x 128 dot matrix LCD plugin display
- Comprehensive, text based configuration menu
- Graphical illustration of reflection bar graph to ease onsite setup

Outputs

2 wire 4-20mA /

HART Communication Protocol



Housing

PBT plastic housing IP67

Wetted part PP (Polypropylene)

Further wetted part options:



Stainless steel
SS316 Ti,
DIN 1.4571



PTFE
All units come with FPM sealings



Radar level transmitter is also available as **guided radar level transmitter type 2291**

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