



Process Automation

Level Sensors | Level Switches | Overfill Prevention
Pressure Sensors | Temperature Sensors

Sensors and Systems: www.fafnir.com



Accurate



Flexible



Reliable

FAFNIR Sensors and Systems

Reliable, Universal Solutions for Your Level, Pressure and Temperature Measurement Requirements

FAFNIR prides itself on providing the highest-quality measurement solutions to all its customers, regardless of application complexity and size. After trading for approximately 45 years, driving industry innovation, and listening to our customers and their requirements, we are pleased to present FAFNIR's German-made, high-precision level, pressure and temperature measurement devices for the petroleum, pharmaceutical, chemical and food industries to you, our customers.

Why Buy FAFNIR Sensors and Systems?



Reliability, Accuracy and Ease of Installation as Standard

- + All our sensors are calibrated and stringently tested before they reach you, ensuring you receive only the best
- + With FAFNIR's "plug-and-play" sensors, installation is quick and easy
- + With pre-calibration, once installed, no adaptation to the liquid is required
- + Our sensor lifespan and failure rate is second to none. FAFNIR's field-proven sensors are installed globally



With 45 Years' Engineering and Manufacturing Experience, Customer Service is Key

- + Regardless of order complexity or size, we will find a solution for your business
- + We have listened to the market and we know you need the full solution from one supplier
- + We have extended our product portfolio to include pressure and temperature measurement so FAFNIR is at the forefront of your measurement needs
- + The FAFNIR team are experts. We design, manufacture and calibrate all of our products to the highest quality

The logo for FAFNIR, featuring the company name in a bold, sans-serif font with a trademark symbol, positioned above three horizontal lines. The logo is contained within a white circular graphic.

FAFNIR™

Difficult Installation Conditions Are No Challenge for FAFNIR.

- + Designed to meet every requirement, our sensors fit the smallest to the largest openings
- + Our extensive range of sensors means we will have a solution for you, even when other suppliers don't

Extreme Process Conditions?

- + Our sensors are proven in temperatures of up to 450 °C or with up to 200 bar of pressure
- + With a response time of less than 0.2 s and information regarding the filling levels with an accuracy of ± 0.3 mm, you have constant visibility of your liquid stock
- + Reliability assured in corrosive, toxic and viscous substances

TORRIX

Highly Versatile, Magnetostrictive Level Sensor Solution

The most adaptable level sensor in our range, TORRIX can be used across a multitude of the most complicated level measurements applications. Users benefit from quick and easy installation, proven reliability and simple troubleshooting. With its highly precise magnetostrictive measuring principle, TORRIX achieves outstanding accuracy of up to $\pm 0.3\text{mm}$, among the very best in its class.

Why Choose TORRIX?

Quick and Precise

- + Easy to install; easy to use. TORRIX provides accurate level measurement across all stored liquids, saving you time and enabling you to plan ahead for even the most challenging application
- + Simple to field-calibrate and field-test; no additional calibration equipment required

A Solution for the Most Complex installation

- + The solution for interface layer measurement; equipped with two floats, the sensor measures both the filling and the interface layer precisely, even when an emulsion layer is present at the interface or when there is only a small difference of the DC value
- + TORRIX can be installed almost anywhere with its small sensor head and tube with a diameter of just 6mm

Installed and Tested in Multiple Industries

- + Chemical, petrochemical, liquid gas, pharmaceutical, laboratory, off-shore, ship building, power plants, energy systems, mechanical engineering, process and drinking water treatment

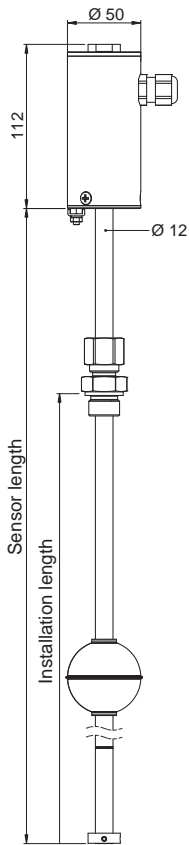
Main Features and Benefits

- + Easy to install and configure
- + Measurement of the interface layer and the filling level via HART®
- + 2-wire terminal (4 to 20 mA/HART®)
- + Robust long-life design
- + Versions available from 100 mm to 10,000 mm
- + Resistant to shock and vibration (OIML D11)
- + Use in Ex zone 0 (ATEX and IECEx approval)
- + Qualified for SIL2 applications

TORRIX Applications

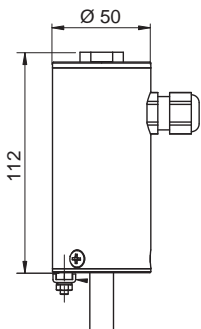
- + Storage tanks and containers
 - + Interface layer measurements with emulsions
 - + Pilot plant and prototype systems
 - + Manufacturing plants
-

TORRIX – Technical Data

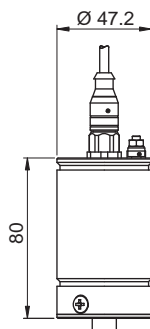


Probe head	
Protection class	IP68
Material	Stainless steel 303
Cable terminal	M16 x 1.5 cable gland for cable diameter 5 to 10 mm ½" NPT threads for conduit cabling; M12 Connector
Ambient temperature	- 40 °C to + 85 °C
Probe tube	
Material	Stainless steel 316 Ti; Hastelloy® C4/C22
Accuracy	
Filling level	up to ±0.3 mm or ±0.01 %
Resolution (HART®)	0.1 mm
Electrical connection	
Connection	2-wire
Voltage	8 to 30 V _{DC} , Ex version 10 to 30 V _{DC}
Signal	Power output: 4 to 20 mA/HART®; Failure mode confirmed with NAMUR NE43 Serial Protocol to connect to LOGI-X
HART® functions	Float position in mm, cm, m, inches or feet; positioning of second float; separation layer (difference between floats); sensor status information; Remote Configuration
Process conditions	
Temperature	Up to 450 °C
Pressure	Up to 200 bar
Options	
	Vibration-resistant design (to OIML D11) ATEX and IECEx approval Qualified for SIL 2 (IEC 61508)

Sensor Head Options



Standard design for all sensors with 4 to 20 mA/HART® output

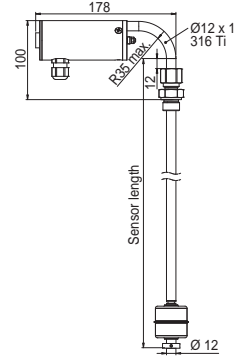
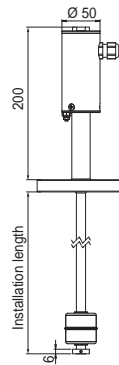
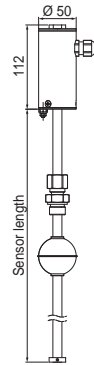


Compact design for all TORRIX SC version with serial interface to connect to the LOGI Command

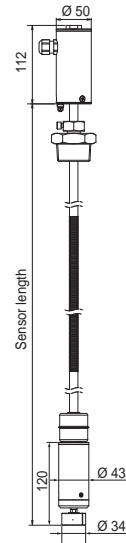
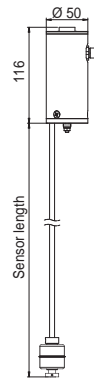
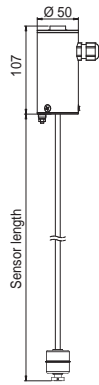


For order code and technical documentation visit:
www.fafnir.com/TORRIX





Name	TORRIX	TORRIX Flange	TORRIX 90
Description	Our standard sensor, with a variable process connection. The sensor length can be adjusted directly on the tank during installation. Most standard threads up to 1.5 are available.	The process connection is airtight welded to the sensor, making it especially suitable for high-pressure application or application with toxic liquid.	The sensor head bends by 90 °C, which reduces the needed head space significantly. The best solution where head space is limited, i.e. for barrels stored under a table or in a safety cabinet.
Probe tube			
Diameter	12 mm	12 mm	12 mm
Length	100 mm to 6,000 mm Highest-temperature version (HHT) up to 3,000 mm	100 mm to 6,000 mm Highest temperature version (HHT) up to 3,000 mm	150 mm to 500 mm
Accuracy	Standard: ± 0.5 mm or ± 0.025 % Precision: ± 0.3 mm or ± 0.01 % (only NT)	Standard: ± 0.5 mm or ± 0.025 % Precision: ± 0.3 mm or ± 0.01 % (only NT)	Standard: ± 0.75 mm or ± 0.025 %
Process conditions			
Temperature	Normal temperature (NT): -40 °C to +125 °C High temperature (HT): -40 °C to +250 °C Highest temperature (HHT): -40 °C to +450 °C Low temperature (LT): -65 °C to +125 °C	Normal temperature (NT): -40 °C to +125 °C High temperature (HT): -40 °C to +250 °C Highest temperature (HHT): -40 °C to +450 °C Low temperature (LT): -65 °C to +125 °C	Normal temperature (NT): -40 °C to +125 °C
Pressure	-1 bar to 120 bar (20 °C) -1 bar to 95 bar (250 °C) -1 bar to 82 bar (450 °C)	-1 bar to 120 bar (20 °C) -1 bar to 95 bar (250 °C) -1 bar to 82 bar (450 °C)	-1 bar to 120 bar (20 °C)
Minimal process connection	G 3/8"	DN 25	G 3/8"



TORRIX Bypass

Our best solution for mounting on the outside of a magnetic level indicator. The TORRIX Bypass picks up the magnetic field of the floater. The ideal solution for retrofitting most brands of magnetic level indicator.

TORRIX 6

Where space in the process container is limited, our compact version of the TORRIX is ideal for application in small containers, for example in the lab or in pilot plants.

TORRIX 6B

When not only the space in the container is limited, but also at the top of the containers, where the TORRIX sensor tubing and other connection already have taken up most of the space. Our Sensor tube is mounted off-centre.

TORRIX Flex T/F

The flexible version of our sensor for large tanks. The sensor is shipped rolled in a compact package and then rolled up during installation.

12 mm	6 mm	6 mm	12 mm/13 mm (Version T/F)
200 mm to 6,000 mm Highest-temperature version (HHT) up to 3,000 mm	100 mm to 1,000 mm	100 mm to 1,000 mm	3,500 mm to 10,000 mm (Version T) 1,500 mm to 5,000 mm (Version F)
Standard: ± 0.5 mm or ± 0.025 %	Standard: ± 0.75 mm or ± 0.025 %	Standard: ± 0.75 mm or ± 0.025 %	Standard: ± 2 mm or ± 0.025 %
Normal temperature (NT): -40 °C to +125 °C High temperature (HT): -40 °C to +250 °C Highest temperature (HHT): -40 °C to +450 °C Low temperature (LT): -65 °C to +125 °C	Normal temperature (NT): -40 °C to +125 °C	Normal temperature (NT): -40 °C to +125 °C	Normal temperature (NT): -40 °C to +85 °C
n.a.	-1 bar to 16 bar (125 °C)	-1 bar to 16 bar (125 °C)	-1 bar to 2 bar (85 °C)
n.a.	G 1/4"	G 1/4"	G 3/8"



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