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Guidense TDR400/M

Continuous guided level radar with integrated cellular 4G (LTE-M) modem



Features

- Technology based on the proven Guidense TDR level sensor platform e.g. with analogue (4...20mA) output.
- 3 Probe types: single rod probe (shown), wire rope probe and a coaxial probe.
- Accurate continuous level measurement from 100 mm up to 20.000 mm measuring height or range.
- Highly robust measurement, innovative signal analysis and DSS Disturbance Signal Suppression.
- Very limited (mechanical) mounting and installation instructions.
- No influences caused by tank/vessel internals outside a radius of 100 mm from probe.
- Remote analysis and configuration.
- Can transmit data to any database, (I)IoT sensor platform, including the *ProcessMonitor Cloud-Portal*.
- GPS optional available.
- Weatherproof IP67 enclosure.

Advantages

- Complete *remote level monitoring* solution for tanks, silos, containers, cans, bins, drums, vessels etc. etc.
- Save traveling time to take readings, anticipate and respond effectively to demands from remote site.
- The level data sent by the TDR400M can be used to add multiple functionalities, e.g. alerts & alarms, inventory management, forecasting, route planning, data visualization and analysis.
- Versatile applicable for liquids, solids, powders, refined-, edible-, recyclable oils and fats, lye's, suspensions, slurries, sludges etc.
- Integrated cellular 4G modem (LTE-Cat 1 or LTE-M with Quad-band GPRS fall-back)
- Battery powered by only 6 AA-batteries.
- Lifetime of the batteries more than 4 years at an update rate of every 3 hours (8 times per 24 hours) or over 6 years at 2 updates per 24 hours.

ProcessMonitor bv

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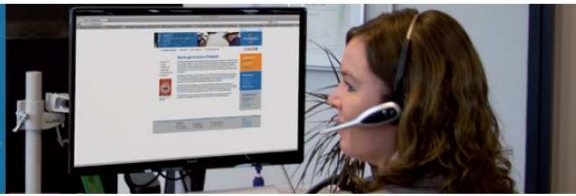
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Mechanical specifications


Guidense TDR level measurement, a Guided Wave Radar sensor with integrated cellular 4G modem and different 3 probe types for continuous level measurement in liquids and solids.

Probe types	Materials/ wetted parts
Single rod probe - Ø 6 mm Max. lateral load 6Nm	SS 1.4404 / 316L, PEEK
Coaxial probe - Ø 17,2 mm Max. lateral load 100Nm	SS 1.4404 / 316L, PEEK, Viton or EPDM O-ring (select at order)
Wire rope probe - Ø 4 mm Counterweight - Ø 22 mm Max. tensile load 5kN	SS 1.4401 / 316, PEEK
Process connection	G ^{3/4} A or 3/4" NPT (wrench size 32mm)
Gasket at connection thread	Klingersil C-4400, 2mm
Housing/enclosure	Epoxy coated aluminium
- Protective rating	IP67 / NEMA6P
- Cable entries	2x M20 x 1,5

Electrical specifications

Power	6 standard AA internal batteries (Lithium recommended)
Lifetime batteries	2 transmissions per day: > 6 years 3 transmissions per day: > 4 years
	No other external power supply required

Communication specifications

Cellular modem (embedded)	4G LTE Cat. 1 modem Europe or North America LTE-M with Quad-band GPRS fall-back  Other standards (CDMA, 3G, NBIoT) possible upon request SIM card and/or data plan not included. Is included with use of <i>ProcessMonitor Cloud-Portal</i>
Antenna	Enclosure-mounted or external with cable adapter and extension, depending on field strength of the available cellular network at remote location (e.g. in- or outdoors)
Configuration	Through local USB port on TDR device, using an easy and straightforward configuration tool (supplied) or remotely via the cellular network connection The intervals for level measurements and data transmission can be adjusted independently of each other
Connectivity	JSON files by HTTP(S) Please consult ProcessMonitor for more details.

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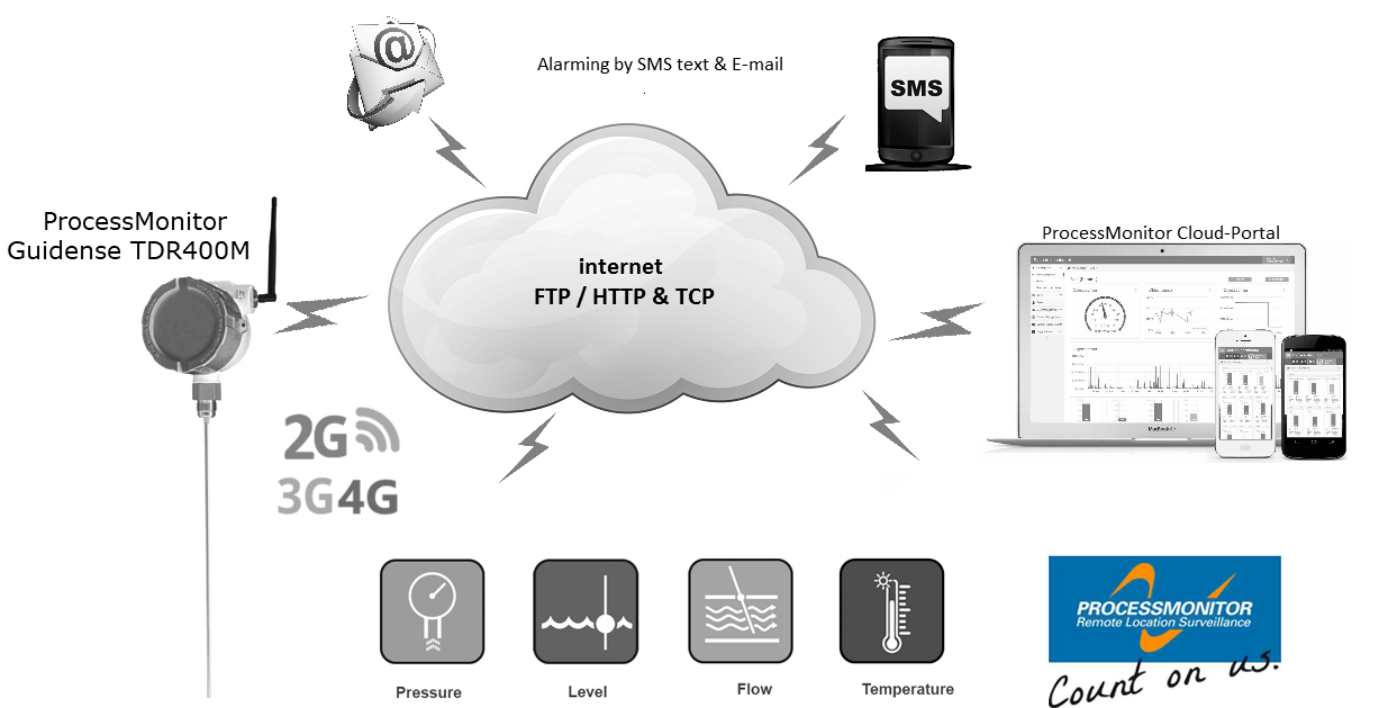
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Application specifications

Dielectric constant	Coaxial probe: ϵ_r minimal 1,4 Single rod & wire rope probe: ϵ_r minimal 1,8
Conductivity	No restrictions
Density	No restrictions
Dynamic viscosity	Single rod & wire rope probe : $< 5.000\text{mPa s} = 5.000\text{cP}$ Coaxial probe : $< 500\text{mPa s} = 500\text{cP}$
Level change velocity	$< 1.000\text{mm/s}$
Interface measurement	Layer $> 70\text{mm}$, consult ProcessMonitor for details
Application pressure	-1bar to 40bar
Process temperature	Single rod / wire rope probe : -40°C to $+150^\circ\text{C}$ Coaxial probe EPDM O-ring : -40°C to $+130^\circ\text{C}$ Coaxial probe FKM (Viton) O-ring: -15°C to $+150^\circ\text{C}$
Ambient/storage temperature	-25°C to $+80^\circ\text{C}$

Measurement specifications

Accuracy	$\pm 3\text{mm}$ or 0.03% of measured distance, whichever is greatest
Repeatability	$< 2\text{mm}$
Resolution	$< 1\text{mm}$



*Schematic representation of the ProcessMonitor Cloud-Portal services:
Remote (Inventory) Monitoring at anytime, from anywhere, maximizing your resources
(people and capital) to increase efficiency, improve schedules and production routines.*

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Battery powered Guidense TDR400M with embedded cellular 4G modem operating independent from any local infrastructure: No hassle with cabling for power or IT-managers regarding security for their local network: just install the TDR400M and unlock the inventory data in order to reduce costs by optimizing delivery schedules, eliminating over-shipments, reshipments, run outs, emergency deliveries and downtime.



Dimensions Guidense TDR400M

