

Ultrasonic measurement Time-of-Flight Prosonic FDU92

Ultrasonic sensor for level and flow
measurement for connection to FMU9x
(measuring range up to 20m)



Benefits:

- Integrated temperature sensor for Time-of-Flight correction. Accurate measurements are possible, even if temperature changes are present
- Hermetically welded PVDF sensor for highest chemical resistance
- Suited for rough ambient conditions thanks to separate installation from the transmitter (up to 300m)
- Reduced build-up formation because of the self-cleaning effect
- Integrated automatic sensor detection for transmitters FMU90/ FMU95 for simple commissioning
- Weather resistant and flood-proof (IP 68)
- International Dust-Ex and Gas-Ex certificates available

Specs at a glance

- **Accuracy** +/- 2mm + 0.17% of measured distance
- **Process temperature** -40 °C ... 95 °C (-40 °F ... 203 °F)
- **Process pressure / max. overpressure limit** 0.7 bar ... 4 bar abs (10 psi ... 58 psi)
- **Max. measurement distance** Liquids: 20 m (65 ft), Solids: 10 m (33 ft)
- **Main wetted parts** PVDF (fully welded IP68 / NEMA 6P)

Field of application: The FDU92 ultrasonic sensor for continuous, non-contact and maintenance-free level measurement of fluids, pastes, sludges and powdery to coarse bulk materials. But also for flow measurement in open channels and measuring weirs. The measurement is unaffected by dielectric constant, density or humidity and also

unaffected by build-up due to the self-cleaning effect of sensors. Suited for explosion hazardous areas. Maximum measuring range in liquids 20m (65ft), solids 10m (33ft).

Features and specifications

Continuous / Liquids

Measuring principle

Ultrasonic

Characteristic / Application

Separated version with field housing or top hat rail housing for control cabinet instrumentation, 300 m in-between sensor and transmitter

Supply / Communication

4-wire (HART, PROFIBUS DP)

Accuracy

+/- 2mm + 0.17% of measured distance

Ambient temperature

-40 °C ... 95 °C
(-40 °F ... 203 °F)

Process temperature

-40 °C ... 95 °C
(-40 °F ... 203 °F)

Process pressure / max. overpressure limit

0.7 bar ... 4 bar abs
(10 psi ... 58 psi)

Main wetted parts

PVDF (fully welded IP68 / NEMA 6P)

Process connection

G / NPT 1"

Blocking distance

0.4 m (1.3 ft)

Continuous / Liquids**Max. measurement distance**

Liquids: 20 m (65 ft),
Solids: 10 m (33 ft)

Communication

Transmitter:
4 ... 20 mA HART
PROFIBUS DP

Certificates / Approvals

ATEX, FM, CSA, IEC Ex, INMETRO, NEPSI, UK Ex

Options

Second 4...20 mA output

Components

Transmitter:
FMU90, FMU95

Application limits

For tank farms scanner:
FMU95

Continuous / Solids**Measuring principle**

Ultrasonic

Characteristic / Application

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Supply / Communication

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Transmitter:
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PROFIBUS DP

Certificates / Approvals

ATEX, FM, CSA, IEC Ex, INMETRO, NEPSI, UK Ex

Options

Second 4...20mA output

Components

Transmitter:
FMU90

Liquids

Measuring principle

Ultrasonic

Product headline

Ultrasonic sensor for level and open channel flow measurement.
For applications requiring separate level / open channel flow measurement system.

Max. measurement error

accuracy:

distance measurement: +/- 2mm + 0.17%

Measuring range

Up to 20m / 65ft

Max. process pressure

0.4 bar...4 bar

(10 psi...58 psi)

Medium temperature range

-40...95°C

(-40...203°F)

Degree of protection

IP68

Display/Operation

Transmitter FMU90

Outputs

Transmitter:

4...20mA HART

PROFIBUS DP

Inputs

Transmitter FMU90

Digital communication

HART, PROFIBUS DP

Liquids

Hazardous area approvals

ATEX, FM, CSA, IEC Ex, INMETRO, NEPSI, UK Ex

More information www.endress.com/FDU92