

Ultrasonic measurement Time-of-Flight Prosonic FMU40

Cost effective device for sophisticated level measurement in liquids and bulk solids for up to 5m



Benefits:

- Reliable non-contact measurement
- Quick and simple commissioning via menu-guided on-site operation with four-line plain text display, 7 languages selectable
- Envelope curves on the on-site display for simple diagnosis
- Hermetically sealed and potted sensor
- Chemically resistant sensor out of PVDF
- Calibration without filling or discharging
- Integrated temperature sensor for automatic correction of the temperature dependent sound velocity

Specs at a glance

- **Accuracy** +/- 2 mm or +/- 0.2 % of set measuring range 1)
- **Process temperature** -40 °C ... 80 °C (-40 °F ... 176 °F)
- **Process pressure / max. overpressure limit** 0.7 bar ... 3 bar abs (10 psi ... 44 psi)
- **Max. measurement distance** Liquids: 5 m (16 ft), Solids: 2 m (6.6 ft)
- **Main wetted parts** PVDF

Field of application: The Prosonic FMU40 sensor is suited for non-contact level measurement in fluids, pastes, coarse bulk material and flow measurement in open channels or at weirs. The two-wire or four-wire compact transmitter can be used in applications with storage tanks, agitators, on stockpiles and conveyor belts. The envelope curve can be shown on the on-site display for simple diagnosis. Linearization function

(up to 32 points) for conversion of the measured value into any unit of length, volume or flow rate.

Features and specifications

Continuous / Liquids

Measuring principle

Ultrasonic

Characteristic / Application

Compact ultrasonic transmitter

Supply / Communication

2-wire HART

Accuracy

+/- 2 mm or +/- 0.2 % of set measuring range

Ambient temperature

-40 °C ... 80 °C
(-40 °F ... 176 °F)

Process temperature

-40 °C ... 80 °C
(-40 °F ... 176 °F)

Process pressure / max. overpressure limit

0.7 bar ... 3 bar abs
(10 psi ... 44 psi)

Main wetted parts

PVDF

Process connection

G / NPT 1 1/2"

Blocking distance

0.25 m (0.8 ft)

Continuous / Liquids**Max. measurement distance**

Liquids: 5 m (16 ft),

Solids: 2 m (6.6 ft)

Communication

4...20 mA HART

Certificates / Approvals

ATEX, FM, CSA, TIIS, INMETRO, NEPSI

Application limits

For higher resistance:

FMU42/FDU9x

Foam / high turbulence possible:

FMU41/FDU91

Fast filling and discharging rate:

FMU90 + FDU9x

Level limit detection:

FMU90 + FDU9x

Continuous / Solids**Measuring principle**

Ultrasonic

Characteristic / Application

Compact ultrasonic transmitter

Supply / Communication

2-wire HART

Accuracy

+/- 2 mm or +/- 0.2 % of set measuring range

1)

Ambient temperature

-40 °C ... 80 °C

(-40 °F ... 176 °F)

Continuous / Solids**Process temperature**

-40 °C ... 80 °C
(-40 °F ... 176 °F)

Process pressure / max. overpressure limit

0.7 bar ... 3 bar abs
(10 psi ... 44 psi)

Main wetted parts

PVDF

Process connection

G / NPT 1 1/2"

Blocking distance

0.25 m (0.8 ft)

Max. measurement distance

Liquids: 5 m (16 ft),
Solids: 2 m (6.6 ft)

Communication

4...20 mA HART

Certificates / Approvals

ATEX, FM, CSA, TIIS, INMETRO, NEPSI

Application limits

Take notice of range diagram

Point Level / Liquids**Measuring principle**

Ultrasonic Limit

Characteristic / Application

Compact ultrasonic transmitter

Point Level / Liquids**Supply / Communication**

2-wire HART

Ambient temperature

-40 °C...+80 °C

(-40 °F...+176 °F)

Process temperature

-40 °C...+80 °C

(-40 °F...+176 °F)

Process pressure / max. overpressure**limit**

0.7 bar...3 bar abs

(10 psi...44 psi)

Main wetted parts

PVDF

Process connection

G / NPT 1 1/2"

Blocking distance

0.25 m (0.8 ft)

Communication

4...20 mA HART

Certificates / Approvals

ATEX, FM, CSA, INMETRO, NEPSI

Application limits

Take notice of range diagram

Point Level / Solids**Measuring principle**

Ultrasonic Limit

Point Level / Solids**Characteristic / Application**

Compact ultrasonic transmitter

Supply / Communication

2-wire HART

Ambient temperature

-40 °C...+80 °C

(-40 °F...+176 °F)

Process temperature

-40 °C...+80 °C

(-40 °F...+176 °F)

**Process pressure / max. overpressure
limit**

0.7 bar...3 bar abs

(10 psi...44 psi)

Main wetted parts

PVDF

Process connection

G / NPT 1 1/2"

Blocking distance

0.25 m (0.8 ft)

Communication

4...20 mA HART

Certificates / Approvals

ATEX, FM, CSA, INMETRO, NEPSI

Application limits

Take notice of range diagram

Liquids

Measuring principle

Ultrasonic

Product headline

Compact ultrasonic measuring instrument

Cost effective solution for open channel

Max. measurement error

Low accuracy

Measuring range

0,25...5m [0.8...16ft]

Max. process pressure

atm.

Medium temperature range

-40°C ... 80°C
(-40°F...176°F)

Degree of protection

IP68

Outputs

4...20mA(Hart),PA,FF

Inputs

2-wire 16-36V DC,
4-wire 16-36V DC,
90-253V AC 50/60Hz

Digital communication

PROFIBUS PA, FOUNDATION Fieldbus

Hazardous area approvals

ATEX, FM, CSA
