

# Ultrasonic measurement Time-of-Flight Prosonic FMU40

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



More information and current pricing:

[www.endress.com/FMU40](http://www.endress.com/FMU40)

## 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)

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**Continuous / Liquids****Max. measurement distance**

Liquids: 5 m (16 ft),

Solids: 2 m (6.6 ft)

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**Communication**

4...20 mA HART

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**Certificates / Approvals**

ATEX, FM, CSA, TIIS, INMETRO, NEPSI

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**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

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Ultrasonic

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**Application limits**

Take notice of range diagram

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**Point Level / Liquids****Measuring principle**

Ultrasonic Limit

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**Characteristic / Application**

Compact ultrasonic transmitter

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**Point Level / Liquids****Supply / Communication**

2-wire HART

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**Ambient temperature**

-40 °C...+80 °C

(-40 °F...+176 °F)

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**Process temperature**

-40 °C...+80 °C

(-40 °F...+176 °F)

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**Process pressure / max. overpressure****limit**

0.7 bar...3 bar abs

(10 psi...44 psi)

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**Main wetted parts**

PVDF

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**Process connection**

G / NPT 1 1/2"

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**Blocking distance**

0.25 m (0.8 ft)

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**Communication**

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**Point Level / Solids****Measuring principle**

Ultrasonic Limit

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**Point Level / Solids****Characteristic / Application**Compact ultrasonic transmitter

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**Supply / Communication**2-wire HART

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**Ambient temperature**

-40 °C...+80 °C

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**Process temperature**

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**Process pressure / max. overpressure  
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**Main wetted parts**PVDF

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**Process connection**G / NPT 1 1/2"

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**Blocking distance**0.25 m (0.8 ft)

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**Communication**4...20 mA HART

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**Certificates / Approvals**ATEX, FM, CSA, INMETRO, NEPSI

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**Application limits**Take notice of range diagram

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## Liquids

**Measuring principle**

Ultrasonic

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**Product headline**

Compact ultrasonic measuring instrument  
Cost effective solution for open channel

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**Max. measurement error**

Low accuracy

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**Measuring range**

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

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**Max. process pressure**

atm.

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**Medium temperature range**

-40°C ... 80°C  
(-40°F...176°F)

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**Degree of protection**

IP68

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**Outputs**

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

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**Inputs**

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

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**Digital communication**

PROFIBUS PA, FOUNDATION Fieldbus

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**Hazardous area approvals**

ATEX, FM, CSA

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