Ultrasonic measurement
Time-of-Flight
Prosonic FDU95

Ultrasonic sensor for level measurement for connection to FMU9x (measuring range up to 45m)

Benefits:
- Integrated temperature sensor for Time-of-Flight correction. Accurate measurements are possible, even if temperature changes are present
- 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)
- Non-contact measurement method minimizes service requirements
- International Dust-Ex and Gas-Ex certificates available

Specs at a glance
- **Process temperature** -40 °C...80 °C or 150 °C, (-40 °F...176 °F or 302 °F)
- **Process pressure / max. overpressure limit** 0.7 bar...1.5 bar abs (10 psi...22 psi)
- **Max. measurement distance** 45 m (148 ft)
- **Accuracy** +/- 2 mm + 0.17% of measured distance
- **Main wetted parts** UP (unsaturated polyester) Silicon / Al PTFE coated

Field of application: The FDU95 ultrasonic sensor for continuous, non-contact and maintenance-free level measurement of powdery to coarse bulk materials. 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 solids 45m (148ft).

**Features and specifications**

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Continuous / Liquids

**Process connection**
G / NPT 1"

**Blocking distance**
0.7 m / 80 °C,
(2.3 ft / 176 °F),
0.9 m / 150 °C,
(2.9 ft / 302 °F)

**Max. measurement distance**
45 m (148 ft)

**Communication**
Transmitter:
4...20 mA HART
Profibus DP

**Certificates / Approvals**
ATEX, FM, CSA, IEC Ex, INMETRO, NEPSI, EAC Ex

**Options**
Second 4...20 mA output

**Components**
Transmitter:
FMU90, FMU95

Continuous / Solids

**Measuring principle**
Ultrasonic

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

**Supply / Communication**
4-wire (HART, Profibus DP)
### Continuous / Solids

**Accuracy**

$\pm 2\text{mm} + 0.17\%$ of measured distance

| **Ambient temperature** | -40 °C ... 80 °C  
| or 150 °C | (-40 °F ... 176 °F  
| or 302 °F) |
| **Process temperature** | -40 °C ... 80 °C  
| or 150 °C | (-40 °F ... 176 °F  
| or 302 °F) |
| **Process pressure / max. overpressure limit** | 0.7 bar...1.5 bar abs  
| (10 psi...22 psi) |
| **Main wetted parts** | UP (unsaturated polyester)  
| Silicon / PE foam (80°C / 176°F)  
| Silicon / stainless steal (150°C / 302°F) |
| **Process connection** | G / NPT 1" |
| **Blocking distance** | 0.7 m / 80 °C  
| (2.3 ft / 176 °F)  
| 0.9 m / 150 °C  
| (2.9 ft / 302 °F) |
| **Max. measurement distance** | 45 m (148 ft) |
**Continuous / Solids**

**Communication**
Transmitter:
4 ... 20 mA HART
Profibus DP

**Certificates / Approvals**
ATEX, FM, CSA, IEC Ex, INMETRO, NEPSI, EAC Ex

**Options**
Second 4...20mA output

**Components**
Transmitter:
FMU90

More information [www.us.endress.com/FDU95](http://www.us.endress.com/FDU95)