

# Technical Information

## Prosonic S FMU95

Ultrasonic measuring technology



Transmitter for up to 10 ultrasonic level sensors  
FDU90/91/91F/92/93/95

### Application

- Continuous, non-contact level measurement of liquids, pastes, sludge and powdered to coarse-grained bulk materials with up to 5 or 10 ultrasonic sensors.
- Measuring range up to 45 m (148 ft)
- Calculation of average values or totals

### Your benefits

- Simple, menu-guided operation with 6-line plain text display, choice of 15 languages
- Envelope curves on the display for straightforward onsite diagnostics
- Easy operation, diagnostics and measuring point documentation with the free "FieldCare" operating program
- Temperature-dependent time-of-flight correction with integrated or external temperature sensors
- Linearization function (up to 32 points, user-configurable)
- System integration via PROFIBUS DP with up to 20 measured values
- Optional aluminum field housing with ATEX II 3D approval



## Table of contents

|                                                           |           |                                              |           |
|-----------------------------------------------------------|-----------|----------------------------------------------|-----------|
| <b>Important document information</b> . . . . .           | <b>3</b>  | <b>Certificates and approvals</b> . . . . .  | <b>19</b> |
| Symbols used . . . . .                                    | 3         | CE mark . . . . .                            | 19        |
| <b>Function and system design</b> . . . . .               | <b>4</b>  | RoHS . . . . .                               | 19        |
| Level measurement . . . . .                               | 4         | RCM marking . . . . .                        | 19        |
| Blocking distance . . . . .                               | 4         | EAC conformity . . . . .                     | 19        |
| Temperature-dependent time-of-flight correction . . . . . | 5         | Ex approval . . . . .                        | 19        |
| Interference echo suppression (mapping) . . . . .         | 5         | Other standards and guidelines . . . . .     | 19        |
| Level linearization . . . . .                             | 5         | <b>Ordering information</b> . . . . .        | <b>19</b> |
| Data logging functions . . . . .                          | 5         | Ordering information . . . . .               | 19        |
| Application examples . . . . .                            | 6         | Scope of delivery . . . . .                  | 20        |
| <b>Input</b> . . . . .                                    | <b>7</b>  | <b>Accessories</b> . . . . .                 | <b>21</b> |
| Sensor inputs . . . . .                                   | 7         | Communication-specific accessories . . . . . | 21        |
| <b>Output</b> . . . . .                                   | <b>8</b>  | Device-specific accessories . . . . .        | 21        |
| PROFIBUS DP interface . . . . .                           | 8         | <b>Supplementary documentation</b> . . . . . | <b>25</b> |
| <b>Power supply</b> . . . . .                             | <b>9</b>  | Technical Information . . . . .              | 25        |
| Connection data (alternating voltage) . . . . .           | 9         | Operating Instructions . . . . .             | 25        |
| Connection data (DC voltage) . . . . .                    | 9         | Description of Device Parameters . . . . .   | 25        |
| Galvanic isolation . . . . .                              | 9         | Slot/Index lists (PROFIBUS DP) . . . . .     | 25        |
| Fuse . . . . .                                            | 9         | Safety Instructions . . . . .                | 25        |
| <b>Electrical connection</b> . . . . .                    | <b>10</b> |                                              |           |
| Cable entries . . . . .                                   | 10        |                                              |           |
| Cable specification . . . . .                             | 10        |                                              |           |
| <b>Performance characteristics</b> . . . . .              | <b>11</b> |                                              |           |
| Reference operating conditions . . . . .                  | 11        |                                              |           |
| Maximum measured error . . . . .                          | 11        |                                              |           |
| Measured error . . . . .                                  | 11        |                                              |           |
| Measured value resolution . . . . .                       | 11        |                                              |           |
| Measuring frequency . . . . .                             | 11        |                                              |           |
| <b>Environment</b> . . . . .                              | <b>12</b> |                                              |           |
| Ambient temperature . . . . .                             | 12        |                                              |           |
| Storage temperature . . . . .                             | 12        |                                              |           |
| Climate class . . . . .                                   | 12        |                                              |           |
| Vibration resistance . . . . .                            | 12        |                                              |           |
| Degree of protection . . . . .                            | 12        |                                              |           |
| Electromagnetic compatibility (EMC) . . . . .             | 12        |                                              |           |
| <b>Mechanical construction</b> . . . . .                  | <b>13</b> |                                              |           |
| Dimensions . . . . .                                      | 13        |                                              |           |
| Weight . . . . .                                          | 15        |                                              |           |
| Materials . . . . .                                       | 15        |                                              |           |
| <b>Operability</b> . . . . .                              | <b>17</b> |                                              |           |
| Operation method, PROFIBUS DP . . . . .                   | 17        |                                              |           |
| Display and operating module: overview . . . . .          | 17        |                                              |           |
| Display and operating elements . . . . .                  | 18        |                                              |           |
| Operating concept . . . . .                               | 18        |                                              |           |

## Important document information

### Symbols used

#### Safety symbols



This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.



This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.



This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.



This symbol contains information on procedures and other facts which do not result in personal injury.

#### Electrical symbols



Direct current



Alternating current



Direct current and alternating current



#### Ground connection

A grounded terminal which, as far as the operator is concerned, is grounded via a grounding system.



#### Protective earth (PE)

Ground terminals that must be connected to ground prior to establishing any other connections. The ground terminals are located on the inside and outside of the device.

- Interior ground terminal; protective earth is connected to the mains supply.
- Exterior ground terminal; device is connected to the plant grounding system.

#### Symbols for certain types of information and graphics



Indicates additional information



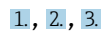
Reference to documentation



Reference to graphic



Notice or individual step to be observed



Series of steps



Result of a step

1, 2, 3, ...

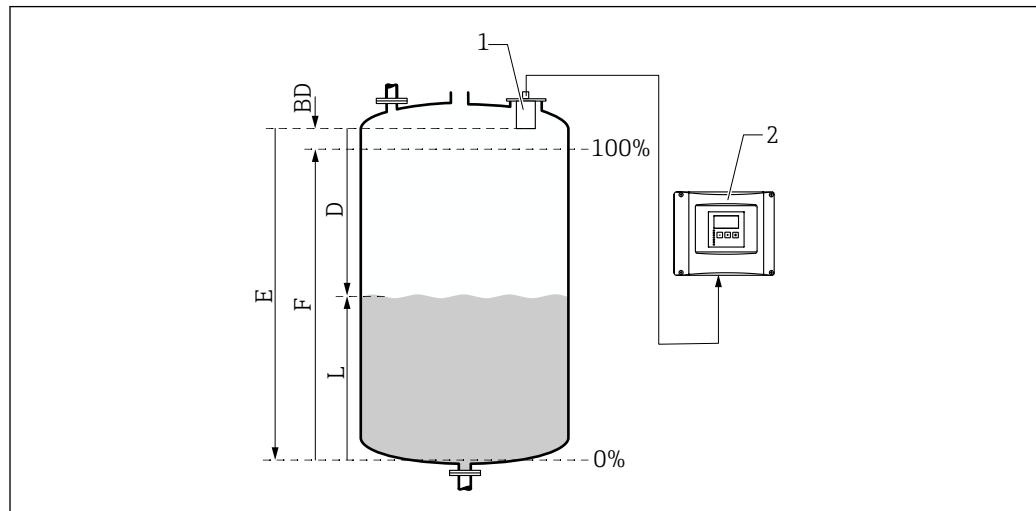
Item numbers

A, B, C, ...

Views

## Function and system design

### Level measurement



A0034882

- 1 Prosonic S sensor
- 2 Prosonic S transmitter
- BD Blocking distance
- D Distance between reference point (sensor membrane) and surface of medium
- E Empty distance
- F Span
- L Level

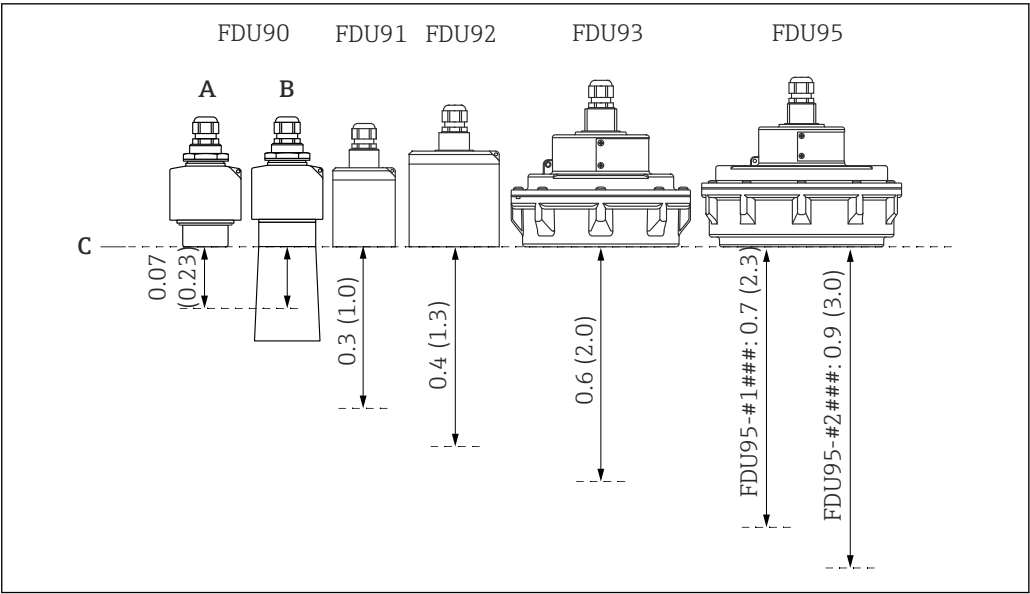
The sensor transmits ultrasonic pulses in the direction of the surface of the medium. There, they are reflected back and received by the sensor. The transmitter measures the time  $t$  between the transmission and reception of a pulse. From this time, and using the sonic velocity  $c$ , the transmitter calculates the distance  $D$  between the reference point (sensor membrane) and the surface of the medium:

$$D = c \cdot t / 2$$

The level  $L$  is derived from  $D$ . With linearization, the volume  $V$  or the mass  $M$  is derived from  $L$ .

### Blocking distance

Signals within the blocking distance (BD) range cannot be measured due to the transient response of the sensor.



1 Blocking distance of FDU9x ultrasonic sensors. Engineering unit m (ft)

- A FDU90 without flooding protection tube
- B FDU90 with flooding protection tube
- C Reference point of measurement

Temperature-dependent  
time-of-flight correction

For sensors without sensor heating

Via the temperature sensors integrated in the ultrasonic sensors

Interference echo  
suppression (mapping)

Ensures that interference echoes (e.g. from edges, welds or internal fixtures) are not interpreted as a level echo.

Level linearization

Pre-programmed linearization curves

- Horizontal cylindrical tank
- Spherical tank
- Tank with pyramid bottom
- Tank with conical bottom
- Tank with flat angled bottom

 The pre-programmed linearization curves are calculated online.

Linearization table

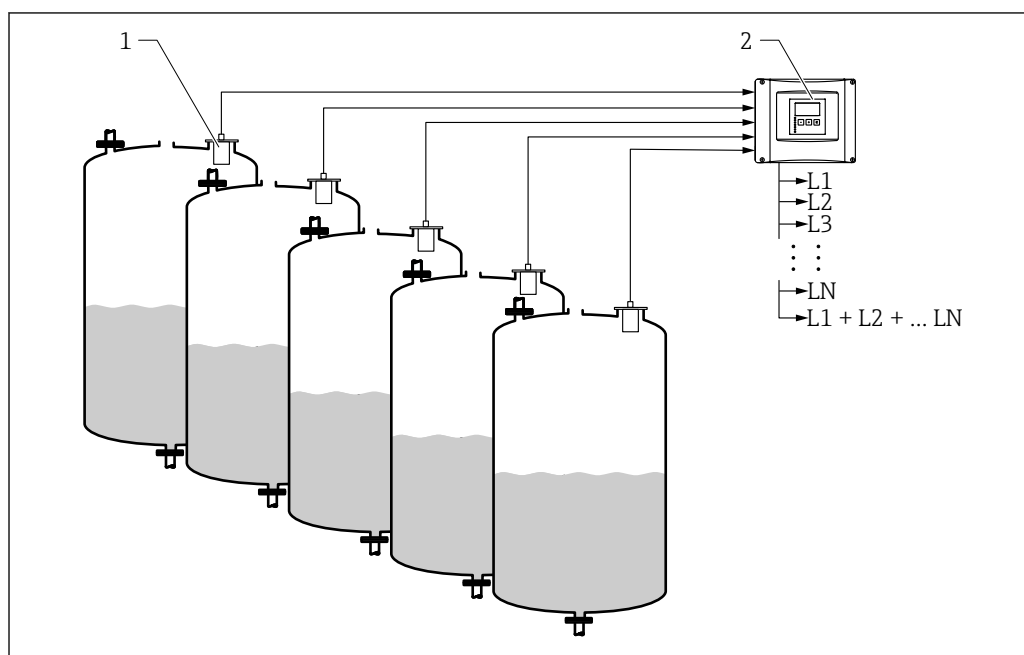
- Manual or semi-automatic entry
- Up to 32 "Level/volume" linearization points

Data logging functions

- Peak indicator of min./max. levels/flows/sensor temperatures
- Last 10 alarms recorded
- Operational state displayed
- Operating hours counter

## Application examples

## Multi-channel level measurement with summation



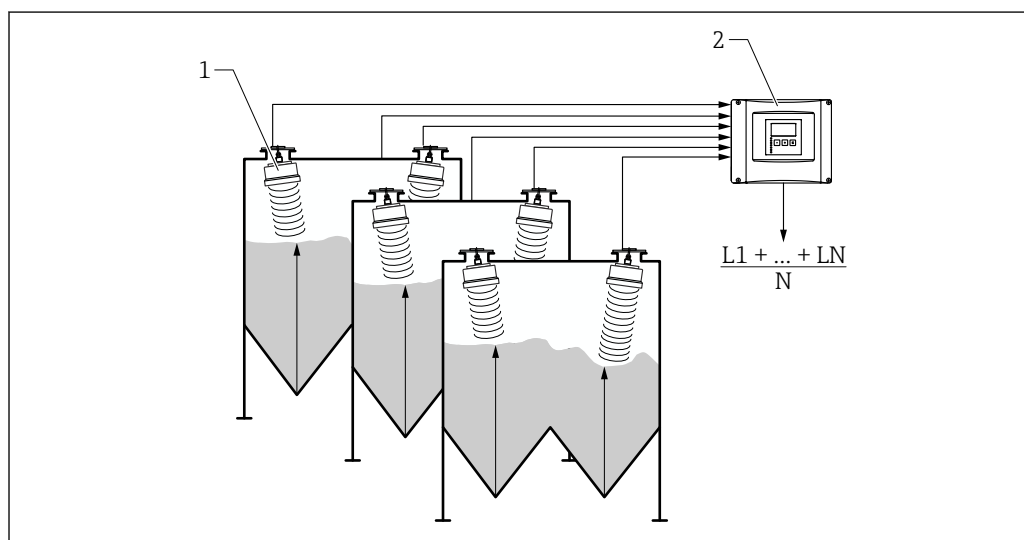
A0035220

2 Multi-channel level measurement with summation

1 FDU9x sensor

2 FMU95 transmitter

## Multi-channel level measurement with averaging



A0035221

3 Multi-channel level measurement with averaging

1 FDU9x sensor

2 FMU95 transmitter

## Input

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### Sensor inputs

#### Number of sensor inputs

5 or 10; defined in order code 060 (level input)

#### Connectable sensors

- FDU90 TI01469F
- FDU91 TI01470F
- FDU91F TI01471F
- FDU92 TI01472F
- FDU93 TI01473F
- FDU95 TI01474F



The connected sensor is recognized automatically.

#### Old connectable sensors

- FDU80
- FDU80F
- FDU81
- FDU81F
- FDU82
- FDU83
- FDU84
- FDU85
- FDU86
- FDU96



- Technical data of FDU8x sensors: TI00189F
- These sensors are no longer available, but can be connected to the Prosonic S transmitter to support existing installations.
- In the case of FDU8x sensors, the sensor type must be specified manually.

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## Output

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### PROFIBUS DP interface

#### Technical data

- Profile: 3.0
- Service Access Points (SAPs): 2
- ID number: 154E (hex) = 5454 (dec)
- GSD: EH3x154E.gsd
- Addressing: via DIP switches on the device or via software (e.g. DeviceCare/FieldCare)
- Default address: 126
- Termination: can be activated/deactivated by a switch in the device
- Locking: the device can be locked by hardware or software

#### Transmittable values

- Primary values (level or flow, depending on the device version)
- Distances
- Temperatures
- Average/total

#### Function blocks

20 Analog Input Blocks (AI)

#### Supported baud rates

- 9.6 kbaud
- 19.2 kbaud
- 45.45 kbaud
- 93.75 kbaud
- 187.5 kbaud
- 500 kbaud
- 1.5 Mbaud
- 3 Mbaud
- 6 Mbaud
- 12 Mbaud

## Power supply

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**Connection data (alternating voltage)****Device version**

Order code 050 (power supply); option A (90-253VAC)

**Technical data**

- Supply voltage: 90 to 253 V<sub>AC</sub> (50/60 Hz)
- Power consumption: ≤ 23 VA
- Current consumption: ≤ 100 mA at 230 V<sub>AC</sub>

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**Connection data (DC voltage)****Device version**

Order code 050 (power supply); option B (10.5-32VDC)

**Technical data**

- Supply voltage: 10.5 to 32 V<sub>DC</sub>
- Power consumption: ≤ 14 W (typically 8 W)
- Current consumption: ≤ 580 mA at 24 V<sub>DC</sub>

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**Galvanic isolation**

The following terminals are galvanically isolated from one another:

- Power supply
- Sensor inputs
- Bus connection (PROFIBUS-DP)

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**Fuse**

Accessible in terminal compartment:

- 2 A T / DC
- 400 mA T /AC

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## Electrical connection

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### Cable entries

#### Polycarbonate field housing

Precut openings on the bottom of the housing for the following cable entries:

- M20x1.5 (10 openings)
- M16x1.5 (5 openings)
- M25x1.5 (1 opening)

#### Aluminum field housing

12 M20x1.5 openings for cable entries on the bottom of the field housing

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### Cable specification

- **Conductor cross-section:** 0.2 to 2.5 mm<sup>2</sup> (26 to 14 AWG)
- **Wire sleeve cross-section:** 0.25 to 2.5 mm<sup>2</sup> (24 to 14 AWG)
- **Min. stripping length:** 10 mm (0.39 in)

## Performance characteristics

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reference operating conditions</b> | <ul style="list-style-type: none"> <li>■ Temperature: +24 °C (+75 °F)±5 °C (±9 °F)</li> <li>■ Pressure: 960 mbar (14 psi) ±100 mbar (±1.45 psi)</li> <li>■ Humidity: 60 % r.F. ±15 % r.F.</li> <li>■ Surface of medium: ideally a reflecting surface (e.g. calm, even liquid surface of 1 m<sup>2</sup> (10.76 ft<sup>2</sup>))</li> <li>■ Sensor alignment: vertically to surface of medium</li> <li>■ No interference echoes in the signal beam</li> <li>■ Parameter settings: <ul style="list-style-type: none"> <li>■ Tank shape = flat ceiling</li> <li>■ Medium property = liquid</li> <li>■ Measuring conditions = calm surface</li> </ul> </li> </ul> |
| <b>Maximum measured error</b>         | Determined under reference operating conditions according to EN 61298-2:<br>±0.2 % in relation to the maximum sensor span                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Measured error</b>                 | Determined under reference operating conditions; includes linearity, reproducibility and hysteresis:<br>±2 mm (±0.08 in) + 0.17 % of the measured distance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Measured value resolution</b>      | 1 mm (0.04 in) with FDU90/FDU91                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Measuring frequency</b>            | <ul style="list-style-type: none"> <li>■ With 5 sensors: 0.2 Hz</li> <li>■ With 10 sensors: 0.1 Hz</li> </ul> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"></div> <ul style="list-style-type: none"> <li>■ The exact value depends on the configured application parameters.</li> <li>■ If unused sensor connections are switched off (<b>Sensor management</b> menu), the measuring frequency increases. FMU95 measures with one sensor per second.</li> </ul> </div>                                                             |

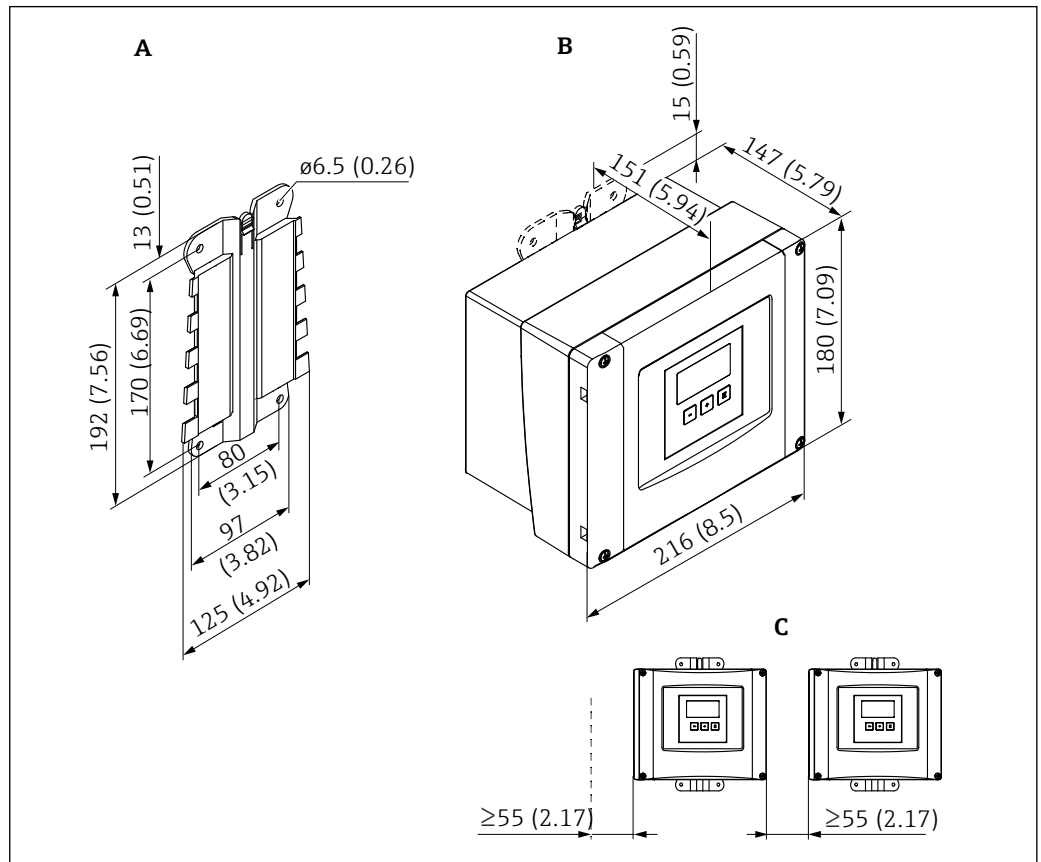
## Environment

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ambient temperature</b>                 | <p>–40 to 60 °C (–40 to 140 °F)</p> <ul style="list-style-type: none"> <li>■ The functionality of the LCD display becomes limited at <math>T_A &lt; -20\text{ °C}</math> (–4 °F).</li> <li>■ If the device is operated outdoors in strong sunlight, use a protective cover.</li> </ul>                                                                                                                                                                                                                              |
| <b>Storage temperature</b>                 | –40 to 60 °C (–40 to 140 °F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Climate class</b>                       | <p><b>Climate class of polycarbonate field housing</b></p> <p>DIN EN 60721-3 4K2/4K5/4K6/4Z2/4Z5/4C3/4S4/4M2 (DIN 60721-3 4K2 corresponds to DIN 60654-1 D1)</p> <p><b>Climate class of aluminum field housing</b></p> <p>DIN EN 60721-3 4K2/4K5/4K6/4Z2/4Z5/4C3/4S4/4M2 (DIN 60721-3 4K2 corresponds to DIN 60654-1 D1)</p> <p><b>Climate class of DIN rail housing</b></p> <p>DIN EN 60721-3 3K3/3Z2/3Z5/3B1/3C2/3S3/3M1 (DIN 60721-3 3K3 corresponds to DIN 60654-1 B2)</p>                                      |
| <b>Vibration resistance</b>                | <p><b>Vibration resistance of polycarbonate field housing</b></p> <p>DIN EN 60068-2-64 / IEC 68-2-64; 20 to 2000 Hz; <math>1.0\text{ (m/s}^2\text{)}^2\text{/Hz}</math></p> <p><b>Vibration resistance of aluminum field housing</b></p> <p>DIN EN 60068-2-64 / IEC 68-2-64; 20 to 2000 Hz; <math>1.0\text{ (m/s}^2\text{)}^2\text{/Hz}</math></p> <p><b>Vibration resistance of DIN rail housing</b></p> <p>DIN EN 60068-2-64 / IEC 68-2-64; 20 to 2000 Hz; <math>0.5\text{ (m/s}^2\text{)}^2\text{/Hz}</math></p> |
| <b>Degree of protection</b>                | <p><b>Degree of protection of polycarbonate field housing</b></p> <p>IP66 / NEMA 4x</p> <p><b>Degree of protection of aluminum field housing</b></p> <p>IP66 / NEMA 4x</p> <p><b>Degree of protection of DIN rail housing</b></p> <p>IP20</p> <p><b>Degree of protection of remote display</b></p> <ul style="list-style-type: none"> <li>■ IP65 / NEMA 4 (at front, if mounted in cabinet door)</li> <li>■ IP20 (at rear, if mounted in cabinet door)</li> </ul>                                                   |
| <b>Electromagnetic compatibility (EMC)</b> | <p>Electromagnetic compatibility in accordance with all of the relevant requirements outlined in the EN 61326 series and NAMUR Recommendation EMC (NE 21). For details, refer to the Declaration of Conformity.</p> <p>With regard to interference emission, the device meets the requirements of class A, and is only designed for use in an "industrial environment".</p>                                                                                                                                         |

## Mechanical construction

### Dimensions

#### Dimensions of polycarbonate field housing



4 Dimensions of Prosonic S with polycarbonate field housing. Unit of measurement mm (in)

A Housing bracket (supplied), can also be used as a drilling template

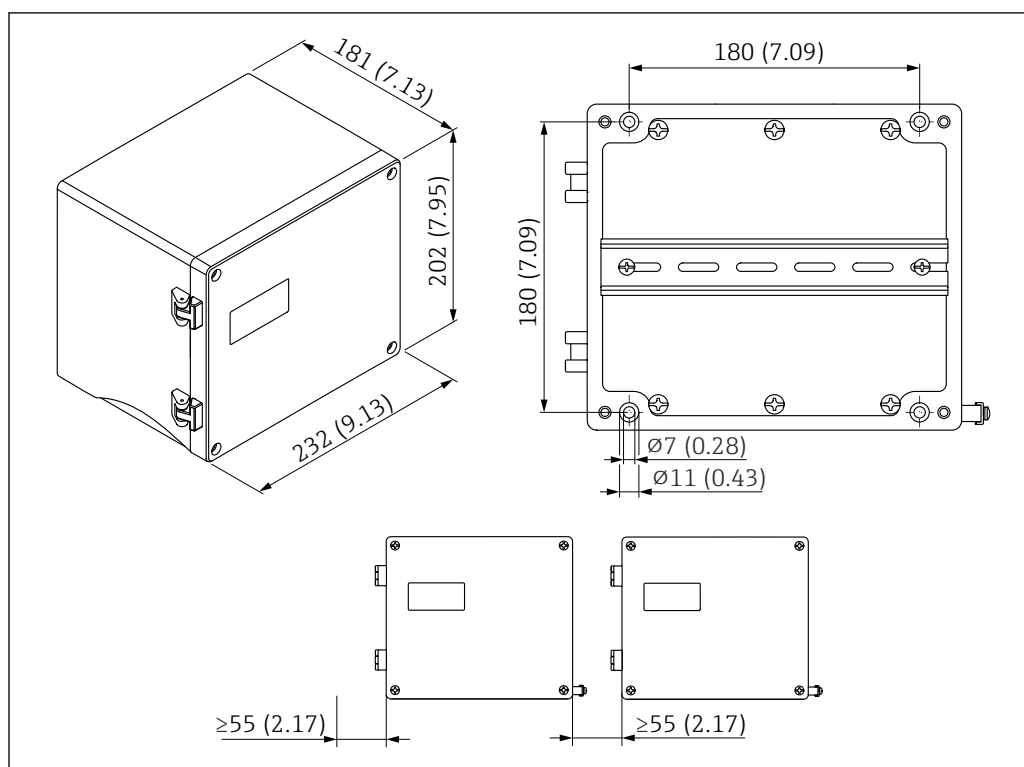
B Polycarbonate field housing

C Minimum mounting clearance



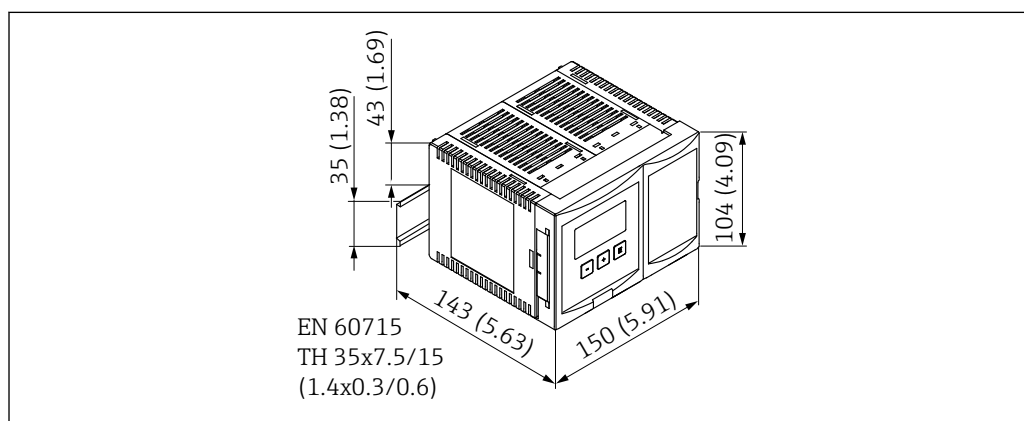
Mount the housing bracket on a level surface so that it cannot become warped or bent. Otherwise it may be difficult or impossible to mount the polycarbonate field housing.

### Dimensions of the aluminum field housing



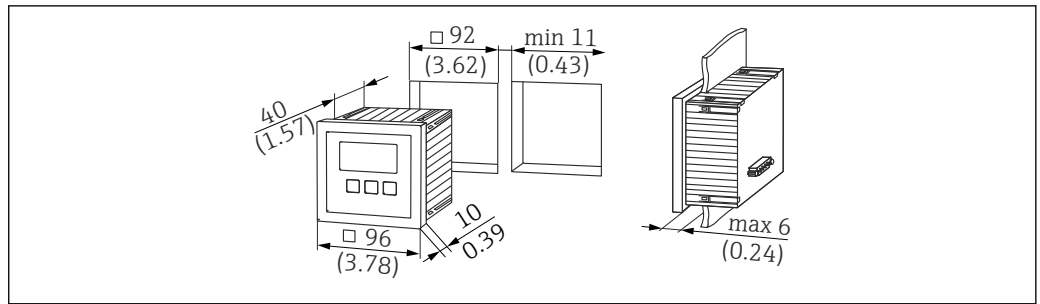
5 Dimensions of Prosonic S with aluminum field housing. Unit of measurement mm (in)

### Dimensions of DIN rail housing



6 Dimensions of DIN rail housing; dimensions in mm (in)

### Dimensions of remote display and operating module



A0032560

7 Dimensions of remote display and operating module for cabinet door installation. Unit of measurement mm (in)

### Weight

#### Weight of polycarbonate field housing

Approx. 1.6 to 1.8 kg (3.53 to 3.97 lb) depending on device version

#### Weight of aluminum field housing

Approx. 6 kg (13.23 lb)

#### Weight of DIN rail housing

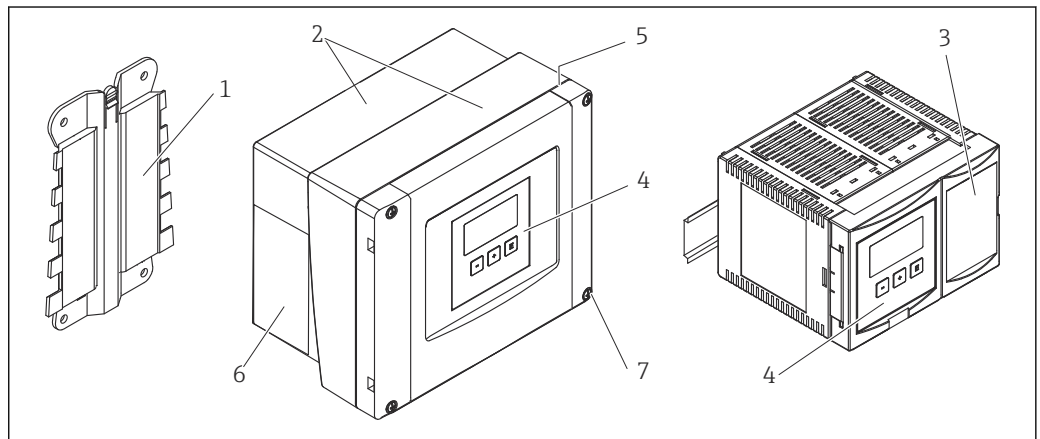
Approx. 0.7 kg (1.54 lb) depending on device version

#### Weight of remote display and operating module

Approx. 0.5 kg (1.10 lb)

### Materials

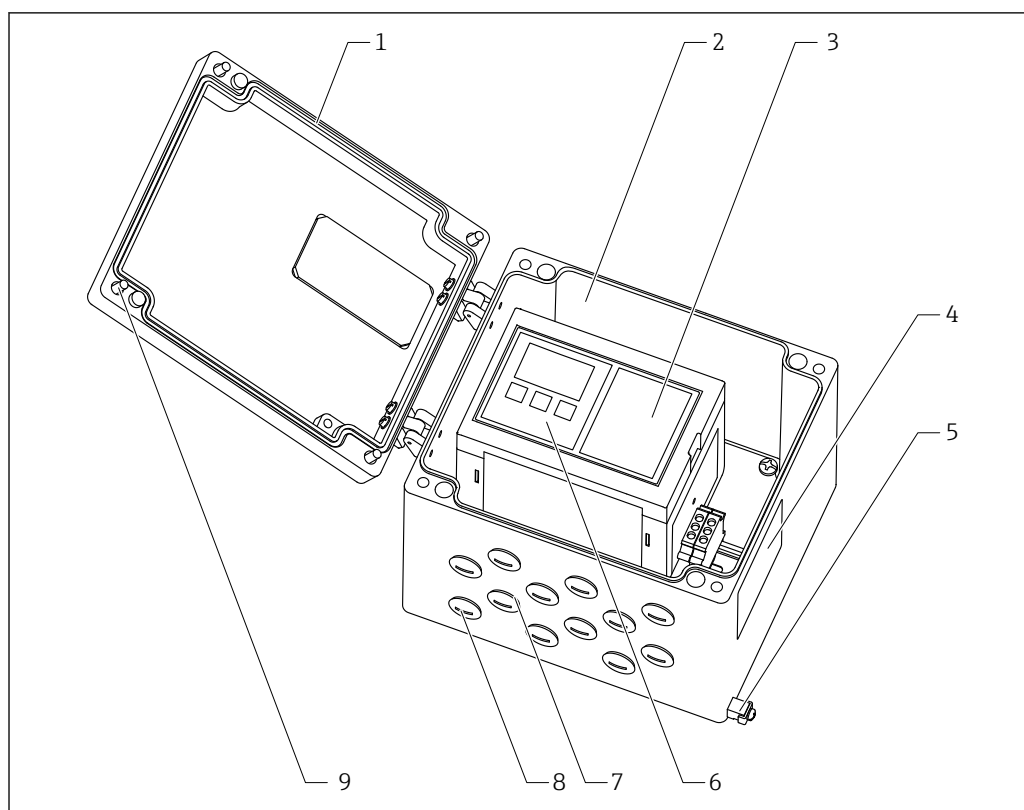
#### Materials: polycarbonate field housing and DIN rail housing



A0034920

8 Components of polycarbonate field housing with DIN rail housing

- 1 Housing bracket: PC-FR
- 2 Field housing: PC-FR
- 3 DIN rail housing: PBT-GF
- 4 Display and operating module: PC
- 5 Seal: PUR soft foam
- 6 Nameplate: polyester
- 7 Screws: A4 (1.4578)

**Materials: aluminum field housing with DIN rail housing**

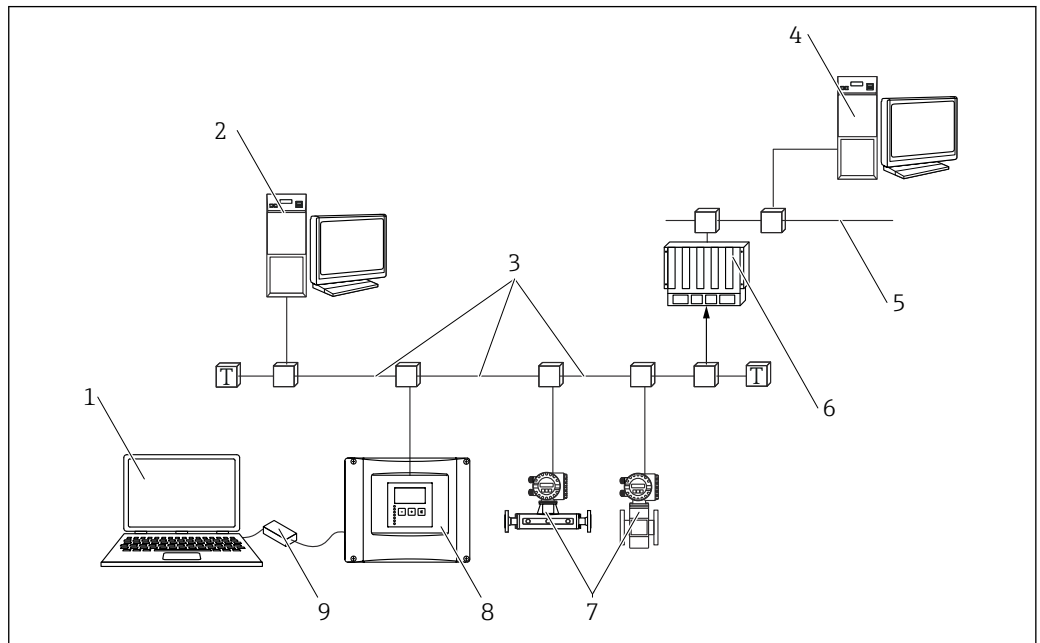
A0033634


**9**    Components of aluminum field housing with DIN rail housing

- 1    Seal: silicone
- 2    Aluminum field housing: EN AC-ALSi12 (Fe)
- 3    DIN rail housing: PBT-GF
- 4    Nameplate: polyester
- 5    Ground connection: A2 (1.4305), A2 (1.4301) and A2 (1.4310); base: A2 1.4305; clamp: A2 1.4301; spring washer: A2 1.4310; screw M5: A2
- 6    Display and operating module: PC
- 7    Dummy plug: nickel-plated brass
- 8    O-ring: EPDM 70 + PTFE
- 9    Screws: A2

## Operability

### Operation method, PROFIBUS DP



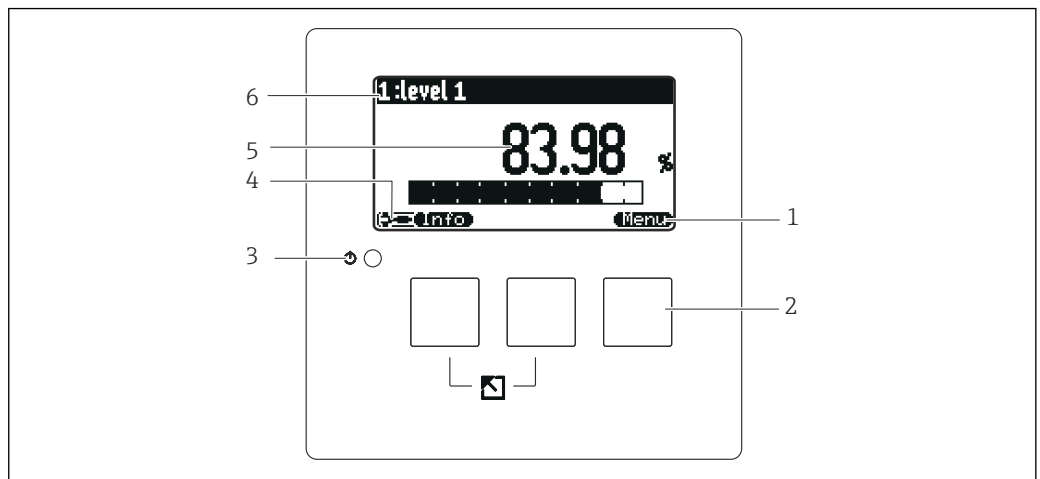
A0034892

#### 10 Operation method, PROFIBUS DP

- 1 Computer with DeviceCare/FieldCare
- 2 Computer with DeviceCare/FieldCare
- 3 PROFIBUS DP
- 4 Computer with DeviceCare/FieldCare
- 5 Ethernet
- 6 PLC
- 7 Field devices
- 8 Prosonic S transmitter
- 9 Commubox FXA291

### Display and operating module: overview

#### Elements of the display and operating module



A0035312

#### 11 Display and operating module

- 1 Soft key symbols
- 2 Keys
- 3 LED to indicate the operational state
- 4 Display symbol
- 5 Parameter value with unit (here: primary value)
- 6 Name of displayed parameter

### Versions of the display and operating module

Depends on order code 040 (operation)

- Option C (illuminated display + keypad):  
Display and operating module is integrated in transmitter
- E (illuminated display + keypad, 96x96, panel mounting, front IP65): display and operating module is separate from the transmitter; cable: 3 m (9.8 ft) included in the delivery.

### Display and operating elements

#### Keys

- The function of the key depends on the current position within the operating menu.
- The current key function is indicated by soft key symbols on the bottom line of the display.



In the case of the aluminum field housing, the keys are only accessible when the housing is open.

#### LED

Indicates the operational state of the device.



In the case of the aluminum field housing, the LED is only visible when the housing is open.

### Operating concept

#### Dynamic operating menu

Only function groups that are relevant for the device version and installation environment are displayed in the menu. The "Basic setup" submenu guides the user through the entire commissioning procedure.

#### Locking operation

- Via the lock switch in the terminal compartment
- Via a key combination at the operating module
- By entering a locking code via the software (e.g. "FieldCare")

## Certificates and approvals

Current certificates and approvals for the product are available at [www.endress.com](http://www.endress.com) on the relevant product page:

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Downloads**.

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CE mark</b>                        | <p>The measuring system meets the legal requirements of the applicable EU directives. These are listed in the corresponding EU Declaration of Conformity together with the standards applied.</p> <p>The manufacturer confirms successful testing of the device by affixing to it the CE mark.</p>                                                                                                                                                                                                                                                                              |
| <b>RoHS</b>                           | <p>The measuring system is not compliant with the substance restrictions of the Restriction on Hazardous Substances Directive 2011/65/EU (RoHS 2).</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>RCM marking</b>                    | <p>The supplied product or measuring system meets the ACMA (Australian Communications and Media Authority) requirements for network integrity, interoperability, performance characteristics as well as health and safety regulations. Here, especially the regulatory arrangements for electromagnetic compatibility are met. The products bear the RCM marking on the nameplate.</p> <div style="text-align: center;">  </div> <p style="text-align: right; font-size: small;">A0029561</p> |
| <b>EAC conformity</b>                 | <p>The measuring system meets the legal requirements of the applicable EAC guidelines. These are listed in the corresponding EAC Declaration of Conformity along with the standards applied. Endress+Hauser confirms successful testing of the device by affixing to it the EAC mark.</p>                                                                                                                                                                                                                                                                                       |
| <b>Ex approval</b>                    | <ul style="list-style-type: none"> <li>■ Available Ex approvals: see Product Configurator</li> <li>■ Associated Safety Instructions: (→  25)</li> </ul> <p> FDU9x sensors with an Ex approval can be connected to the FMU90 transmitter without an Ex approval.</p>                                                                                                                                       |
| <b>Other standards and guidelines</b> | <p><b>EN 60529</b><br/>Degrees of protection provided by enclosures (IP code)</p> <p><b>EN 61326 series</b><br/>EMC product family standard for electrical equipment for measurement, control and laboratory use</p> <p><b>NAMUR</b><br/>User association of automation technology in process industries</p> <p><b>US Standard UL 61010-1</b><br/>CSA General Purpose devices FMU9x-N***** have been tested according to US Standard UL 61010-1, 2nd edition.</p>                                                                                                               |

## Ordering information

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ordering information</b> | <p>Detailed ordering information is available for your nearest sales organization <a href="http://www.addresses.endress.com">www.addresses.endress.com</a> or in the Product Configurator under <a href="http://www.endress.com">www.endress.com</a> :</p> <ol style="list-style-type: none"> <li>1. Click Corporate</li> <li>2. Select the country</li> <li>3. Click Products</li> <li>4. Select the product using the filters and search field</li> <li>5. Open the product page</li> </ol> |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The Configuration button to the right of the product image opens the Product Configurator.



**Product Configurator - the tool for individual product configuration**

- Up-to-the-minute configuration data
  - Depending on the device: direct input of information specific to the measuring point, such as the measuring range or operating language
  - Automatic verification of exclusion criteria
  - Automatic creation of the order code and its breakdown in PDF or Excel output format
  - Ability to order directly in the Endress+Hauser Online Shop

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**Scope of delivery**

- Ordered version of the device
- Brief Operating Instructions
- For certified device versions: Safety Instructions (XAs)

## Accessories

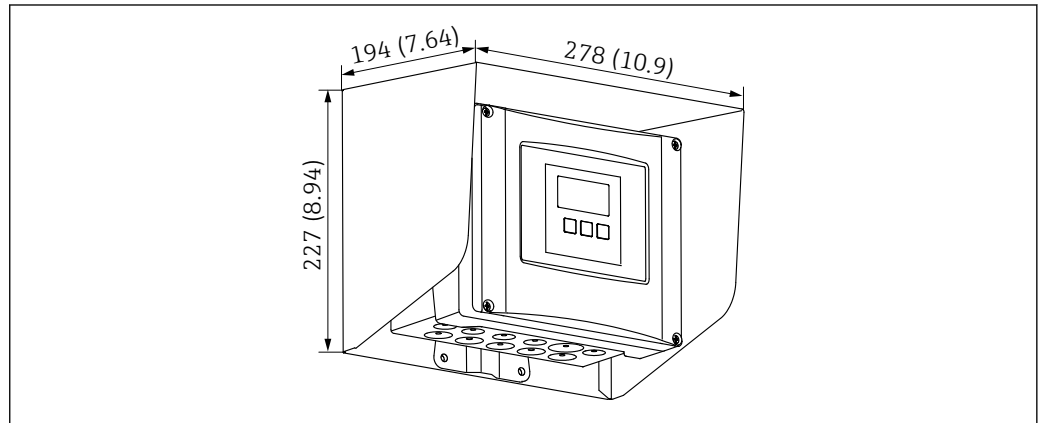
### Communication-specific accessories

#### Commubox FXA291

- Connects the CDI interface (Common Data Interface) of Endress+Hauser devices with the USB port of a computer.
- Order number: 51516983
- Additional information: Technical Information TI00405C

### Device-specific accessories

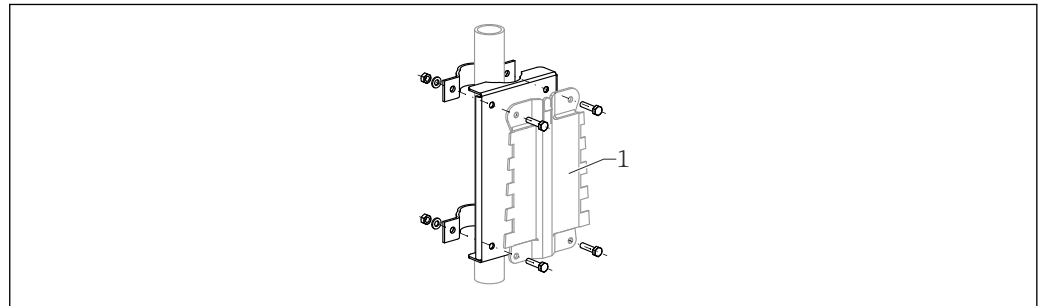
#### Weather protection cover for polycarbonate field housing



12 Weather protection cover for polycarbonate field housing. Unit of measurement mm (in)

- Material: 316Ti (1.4571)
- Mounting and fixing: using the Prosonic S housing bracket
- Order number: 52024477

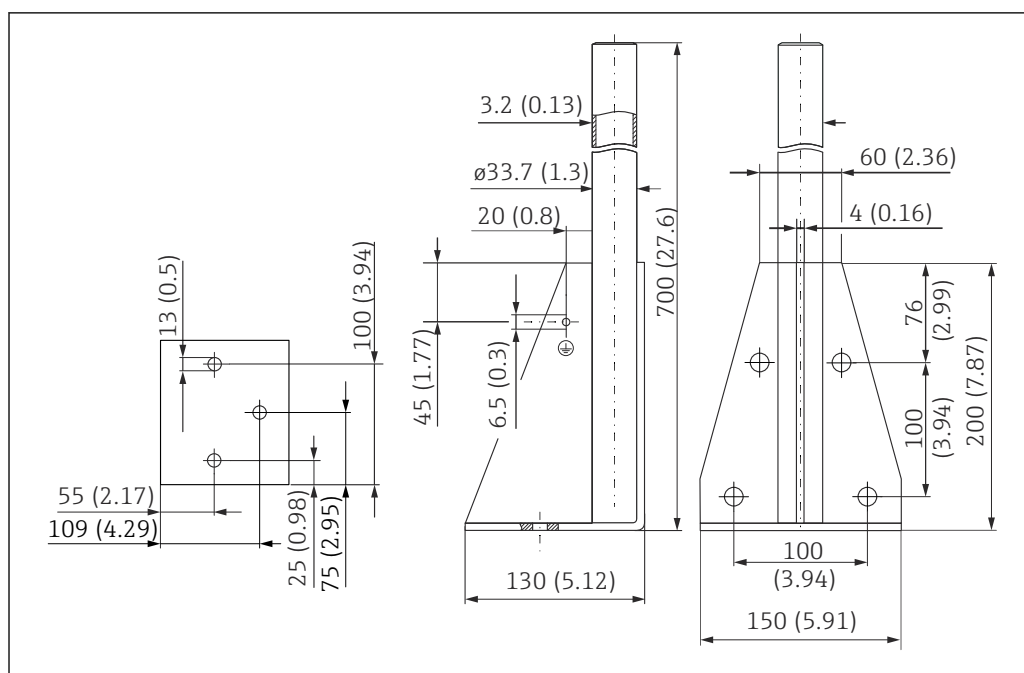
#### Mounting plate for polycarbonate field housing



13 Mounting plate for polycarbonate field housing

- Compatible with the Prosonic S housing bracket
- Pipe diameter: 25 to 50 mm (1 to 2 in)
- Dimensions: 210 x 110 mm (8.27 x 4.33 in)
- Material: 316Ti (1.4571)
- Mounting accessories: Fastening clips, screws and nuts are supplied.
- Order number: 52024478

Mounting stand, 700 mm (27.6 in) for cantilever with pivot



A0037799

14 Dimensions. Unit of measurement mm (in)

**Weight:**

4.2 kg (9.26 lb)

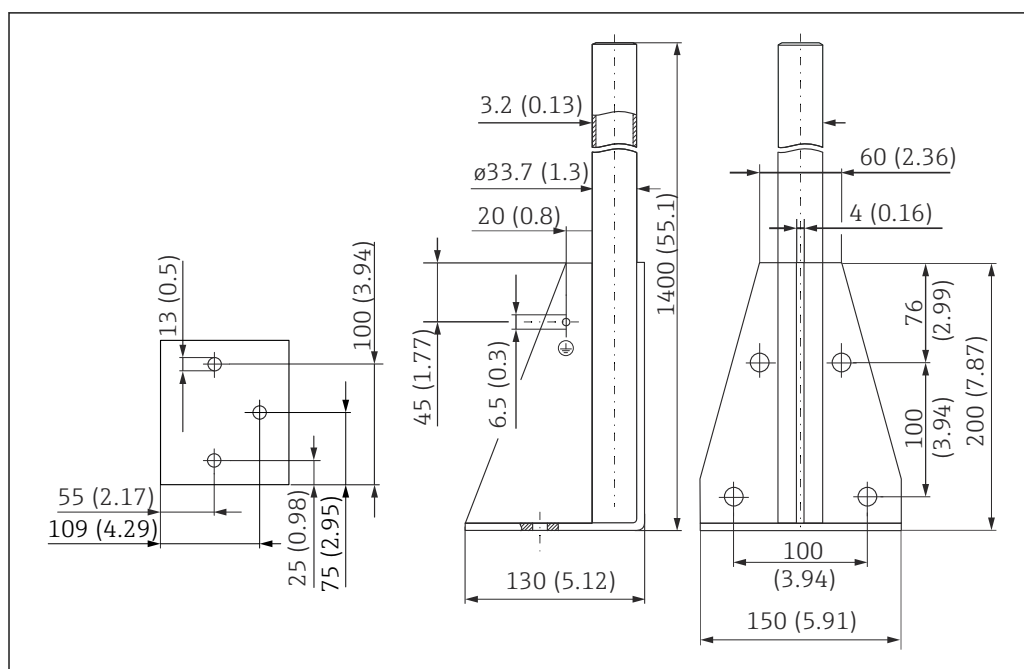
**Material**

316L (1.4404)

**Order number**

71452327

Mounting stand, 1 400 mm (55.1 in) for cantilever with pivot



A0037800

15 Dimensions. Unit of measurement mm (in)

**Weight:**

6 kg (13.23 lb)

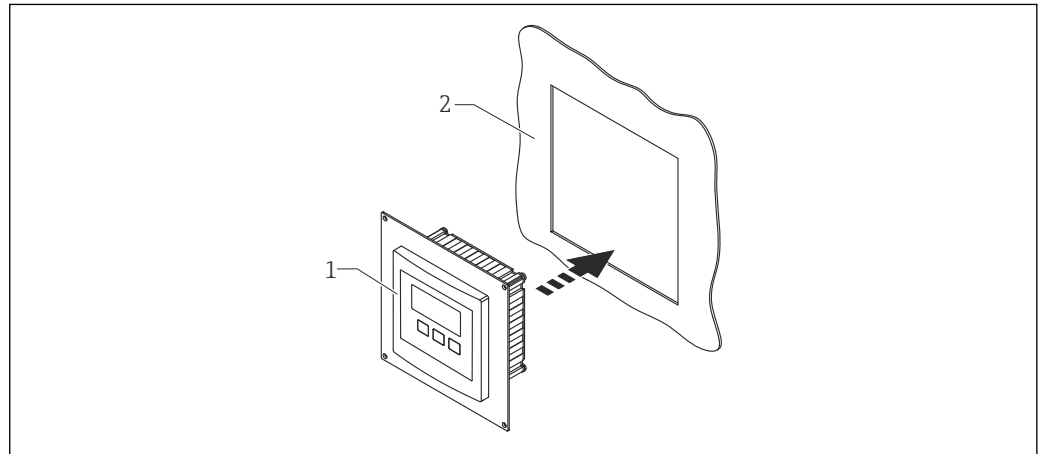
**Material**

316L (1.4404)

**Order number**

71452326

**Adapter plate for remote display**



A0035916

**16 Use of adapter plate**

1 Remote display of Prosonic S FMU9x with adapter plate

2 Installation opening of the remote display of the FMU86x predecessor transmitter

To mount the remote display of the Prosonic S FMU9x in the housing of the larger remote display of the FMU86x predecessor

- Dimensions: 144 x 144 mm (5.7 x 5.7 in)
- Material: 304 (1.4301)
- Order number: 52027441

**HAW562 surge arrester**

Reduces residual voltages from upstream lightning arresters; limits surges induced or generated in the system

Additional information: Technical Information TI01012K

**Extension cables for sensors**



- Maximum permissible total length (sensor cable + extension cable): 300 m (984 ft)
- The sensor cable and extension cable are the same type of cable.

**FDU90/FDU91 without sensor heater**

- Cable type: LiYCY 2x(0.75)
- Material: PVC
- Ambient temperature:
- Order number: 71027742

**FDU90/FDU91 with sensor heater**

- Cable type: LiYY 2x(0.75)D+2x0.75
- Material: PVC
- Ambient temperature: -40 to +105 °C (-40 to +221 °F)
- Order number: 71027746

**FDU92**

- Cable type: LiYCY 2x(0.75)
- Material: PVC
- Ambient temperature: -40 to +105 °C (-40 to +221 °F)
- Order number: 71027742

**FDU91F/FDU93/FDU95**

- Cable type: LiYY 2x(0.75)D+1x0.75
- Material: PVC
- Ambient temperature: -40 to +105 °C (-40 to +221 °F)
- Order number: 71027743

**FDU95**

- Cable type: Li2G2G 2x(0.75)D+1x0.75
- Material: silicone
- Ambient temperature: -40 to +150 °C (-40 to +302 °F)
- Order number: 71027745

## Supplementary documentation



For an overview of the scope of the associated Technical Documentation, refer to the following:

- The *W@M Device Viewer*: enter the serial number from the nameplate ([www.endress.com/deviceviewer](http://www.endress.com/deviceviewer))
- The *Endress+Hauser Operations App*: enter the serial number from the nameplate or scan the 2-D matrix code (QR code) on the nameplate.

|                                         |                                                                                                                                                                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technical Information</b>            | Technical Information for ultrasonic sensors: <ul style="list-style-type: none"><li>■ FDU90 TI01469F</li><li>■ FDU91 TI01470F</li><li>■ FDU91F TI01471F</li><li>■ FDU92 TI01472F</li><li>■ FDU93 TI01473F</li><li>■ FDU95 TI01474F</li></ul> |
| <b>Operating Instructions</b>           | <b>BA00344F</b><br>Describes the installation and commissioning of the FMU95. All the functions in the operating menu that are necessary for standard measuring tasks are described here.                                                    |
| <b>Description of Device Parameters</b> | <b>GP01152F</b><br>Description of all the device parameters for the Prosonic S FMU95                                                                                                                                                         |
| <b>Slot/Index lists (PROFIBUS DP)</b>   | <b>BA00346F</b><br>Slot/Index lists for all the parameters of the ProsonicS FMU95                                                                                                                                                            |
| <b>Safety Instructions</b>              | <b>XA00326F</b><br>Safety Instructions for ATEX II 3D                                                                                                                                                                                        |

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

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