



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Technical Information

Prosonic S FMU95

Transmitter in housing for field or top-hat rail mounting
for up to 10 ultrasonic sensors FDU90/91/91F/92/93/95/96



Application

- Continuous, non-contact level measurement of fluids, pastes, sludge and powdery to coarse bulk materials with up to 5 or 10 ultrasonic sensors
- Measuring range up to 70 m (depending on sensor and material measured)
- Calculation of average values or sums

Your benefits

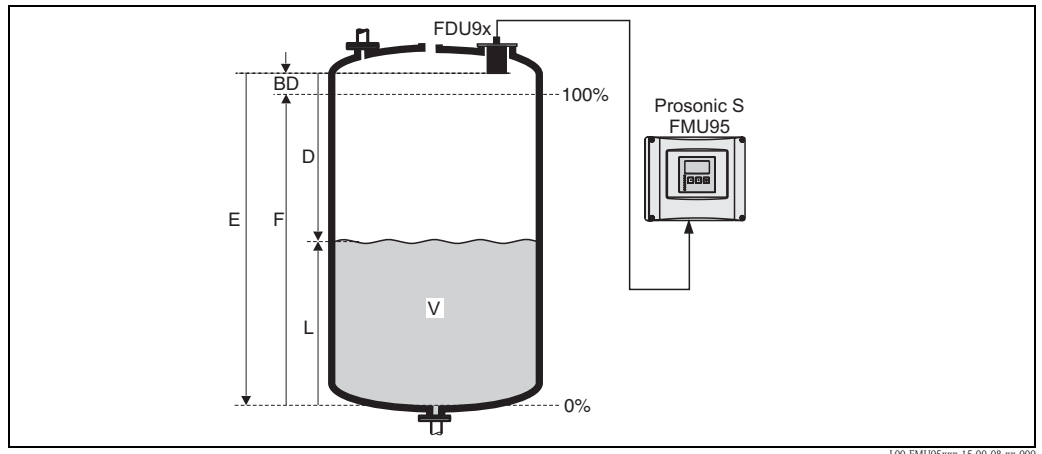
- Simple, menu-guided operation with 6-line plain text display
- Envelope curves on the display for quick and simple diagnosis
- Easy operation, diagnosis and measuring point documentation with the supplied "ToF-Tool - FieldTool Package" or "FieldCare" operating program.
- Temperature dependent time-of-flight correction via the integrated temperature measurement in the sensors
- Linearisation (up to 32 points, freely configurable)
- System integration via PROFIBUS DP with up to 20 measured values
- Automatic detection of the sensors FDU90/91(F)/92/93/95/96
- The sensors of the former series FDU8x can be connected (for certificates see note on page 5)
- adjustable to the individual requirements via product structure

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Function and system design

Measuring principle



BD: blocking distance; **D:** distance from sensor membrane to fluid surface; **E:** empty distance **F:** span (full distance); **L:** level; **V:** volume (or mass)

The sensor transmits ultrasonic pulses in the direction of the product surface. There, they are reflected back and received by the sensor. The transmitter Prosonic S measures the time t between pulse transmission and reception. From t (and the velocity of sound c) it calculates the distance D from the sensor membrane to the product surface:

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

From D results the desired measuring value:

- level L
- volume V

Blocking distance

The span F may not extend into the blocking distance BD . Level echos from the blocking distance can not be evaluated due to the transient characteristics of the sensor. The blocking distances of the individual sensors are given in the following documents:

- TI 396F for the sensors FDU 90/91/91F/92/93/95/96
- TI 189F for the sensors FDU 80/80F/81/81F/82/83/84/85/86

Time-of-flight correction

In order to compensate for temperature dependent time-of-flight changes, a temperature sensor is integrated in the ultrasonic sensors.

Interference echo suppression

The interference echo suppression feature of the Prosonic S ensures that interference echos (e.g. from edges, welded joints and installations) are not interpreted as a level echo.

Linearisation

Pre-programmed linearisation curves for specific types of vessels

- horizontal, cylindrical tank
- spherical tank
- tank with pyramidal bottom
- tank with conical bottom
- tank with flat, inclined bottom

The pre-programmed linearisation curves are calculated on-line.

Linearisation table

consisting of up to 32 linearisation points; to be entered manually or half-automatically.

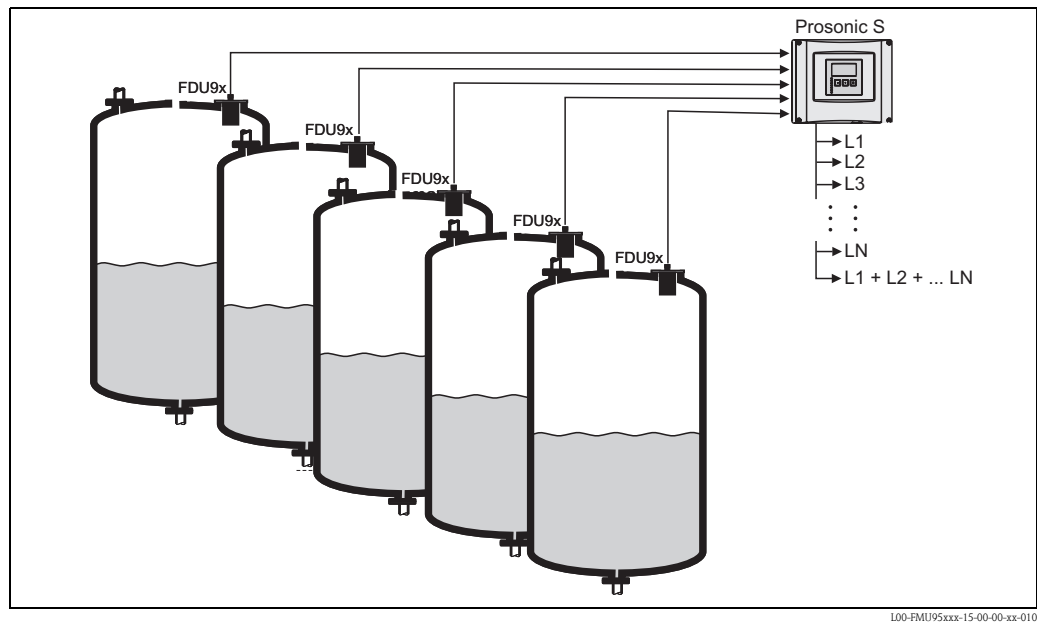
Datalog functions

Basic version

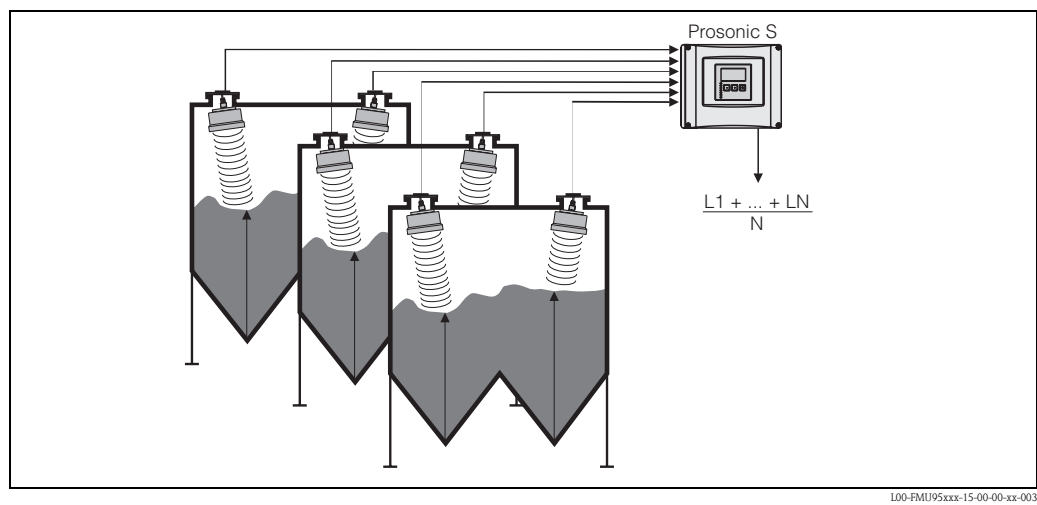
- Peak hold indicator of the min./max. levels and the min./max. temperatures at the sensors
- Recording of the last 10 alarms
- Indication of the operating status
- Indication of the operating hours

Application examples

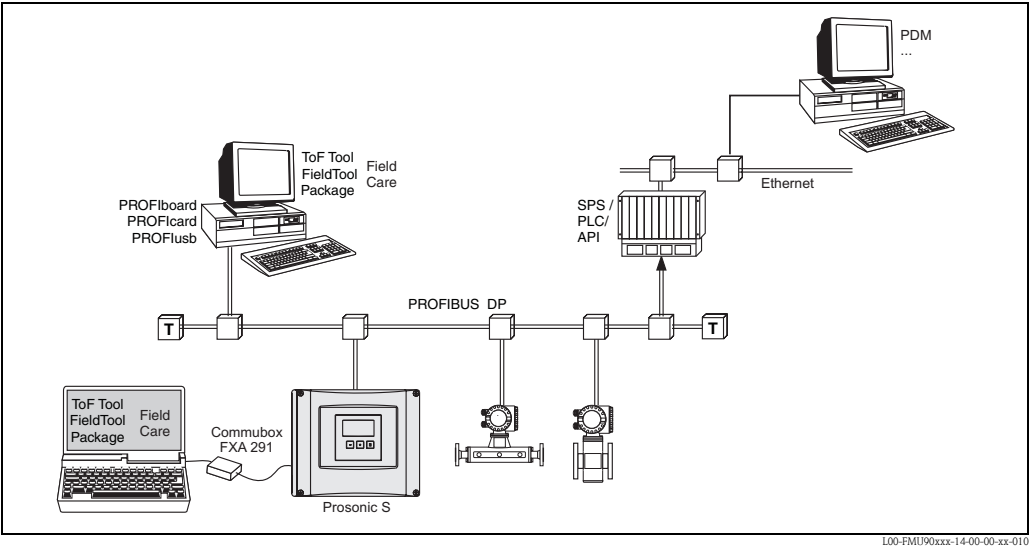
Multi-channel level measurement with sum calculation



Multi-channel level measurement with average calculation



System integration
PROFIBUS DP



Operating options

- via the display and operating module at the Prosonic S
- via the service interface with the Commubox FXA291 and the operating program "ToF Tool - FieldTool Package" or "FieldCare"
- via PROFIBUS DP with Profiboard or Proficard and the operating program "ToF Tool - FieldTool Package" or "FieldCare"

Input

Sensor inputs

Depending on the instrument version, up to 5 or up to 10 of the sensors FDU90, FDU91, FDU91F, FDU92, FDU93, FDU95 and FDU96 can be connected. The Prosonic S identifies these sensors automatically.

Sensor	FDU90	FDU91 FDU91F	FDU92	FDU93	FDU95	FDU96
max. range ¹⁾ in liquids	3 m	10 m	20 m	25 m	-	-
max. range ¹ in solids	1.2 m	5 m	10 m	15 m	45 m	70 m

1) This table gives the maximum range. The range depends on the measuring conditions. For an estimation see Technical Information TI 396F, chapter "Input".

In order to support existing installations, the sensors of the former series FDU8x can be connected as well. The type of sensor must be entered manually.

Sensor	FDU80 FDU80F	FDU81 FDU81F	FDU82	FDU83	FDU84	FDU85	FDU86
max. range ¹⁾ in liquids	5 m	9 m	20 m	25 m	-	-	-
max. range ¹ in solids	2 m	5 m	10 m	15 m	25 m	45 m	70 m

1) This table gives the maximum range. The range depends on the measuring conditions. For an estimation see Technical Information TI 189F, chapter "Planning Recommendations".



Warning!
The sensors FDU83, FDU84, FDU85 and FDU86 with an ATEX, FM or CSA certificate are not certified for connection to the transmitter FMU95.

Output

PROFIBUS DP interface

Profile	3.0
Transmittable values	<ul style="list-style-type: none"> main value (level 1 to level 10) distances temperatures averages/sums
Function blocks	<ul style="list-style-type: none"> 20 Analog Input Blocks (AI)
Supported baud rates	<ul style="list-style-type: none"> 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
Service Access Points (SAPs)	2
ID number	154E (hex) = 5454 (dec)
GSD file	EH3x154E.gsd
Addressing	via dip switches at the instrument or via software (e.g. FieldCare) Default address: 126 per software
Termination	can be activated/deactivated in the instrument
Locking	The device can be locked by hardware or software.

Auxiliary energy

Supply voltage/ Power consumption/ Current consumption

Instrument version	Supply voltage	Power consumption	Current consumption
AC voltage (FMU95 - ****A****)	90 ... 253 V _{AC} (50/60 Hz)	max. 23 VA	max. 100 mA at 230 V _{AC}
DC voltage (FMU95 - ****B****)	10,5 ... 32 V _{DC}	max. 14 W (typically 8 W)	max. 580 mA at 24 V _{DC}

Galvanic isolation

The following terminals are galvanically isolated from each other:

- auxiliary energy
- sensor inputs
- bus connection (PROFIBUS DP)

Fuse

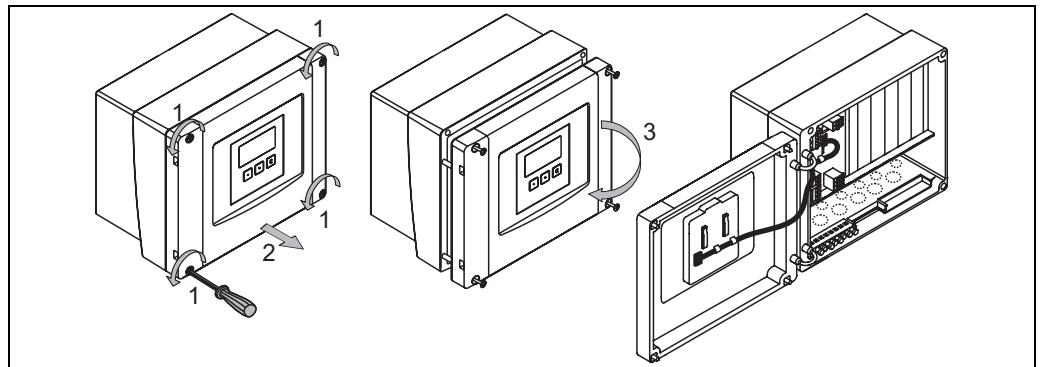
- 2 A T /DC
- 400 mA T /AC

accessible in the terminal compartment

Electrical connection

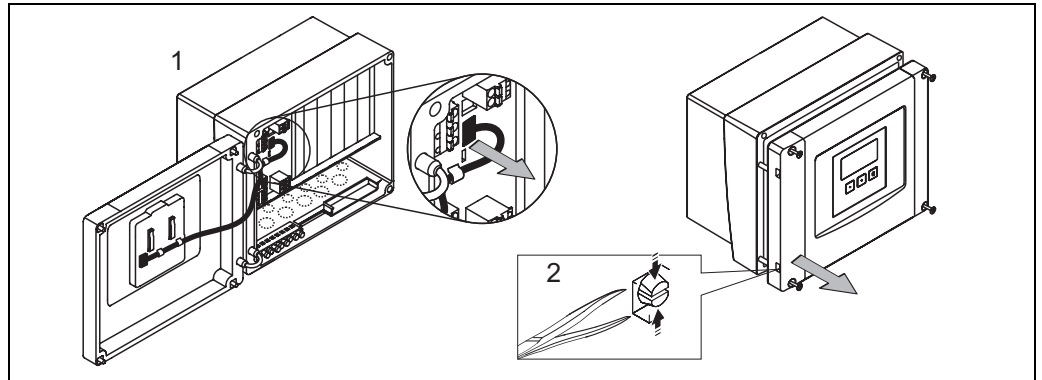
Terminal compartment of the field housing

The field housing has a separate terminal compartment. It can be opened after loosening the four screws of the lid.



L00-FMU90xxx-04-00-00-xx-002

For easier wiring, the lid can be completely removed by unplugging the display plug (1) and loosening the hinges (2):



L00-FMU90xxx-04-00-00-xx-009

Cable entries of the field housing

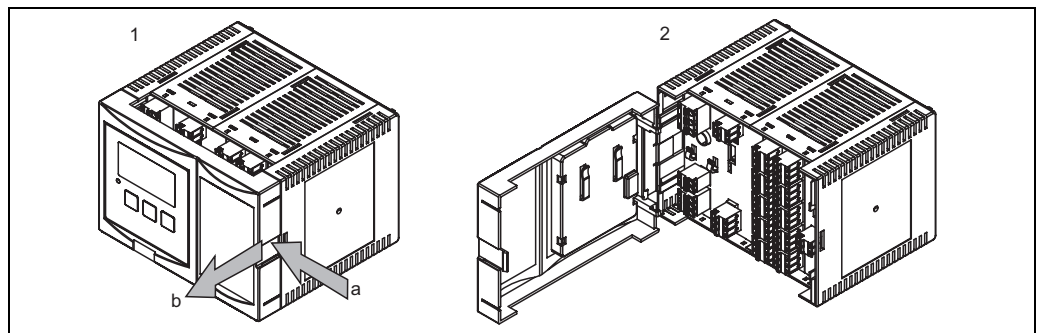
On the bottom of the housing the following openings for cable entries are prestamped:

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

A suitable cutting device must be used for cutting out the openings.

Terminal compartment of the DIN-rail housing

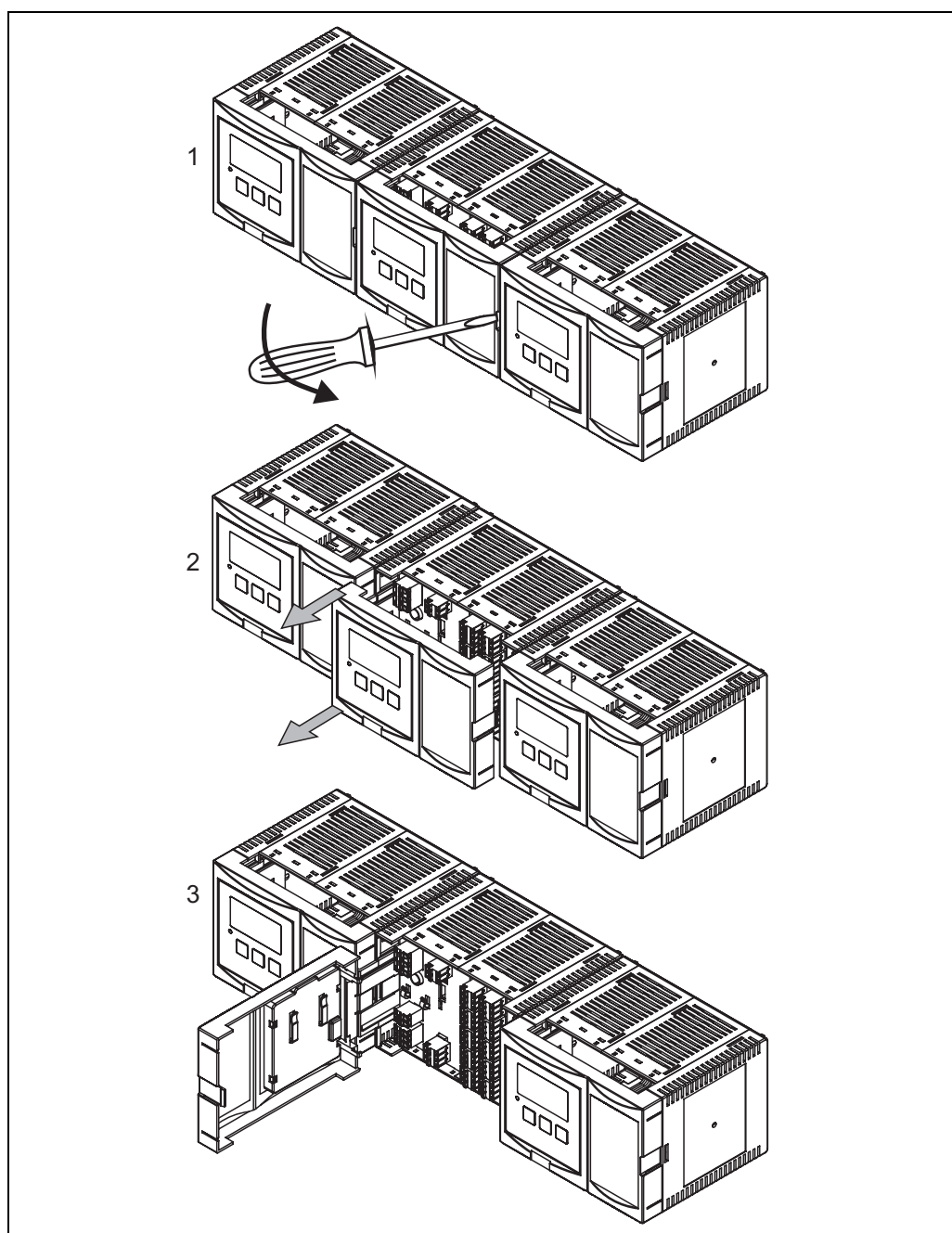
Single instrument



L00-FMU95xxx-04-00-00-xx-005

The catch can be unlocked by slightly pressing onto the clip. Then, the cover of the terminal compartment can be opened.

Several instruments mounted side by side



100-FMU95xxx-04-00-00-xx-006

1. Open the catch of the cover (e.g. by a screwdriver).
2. Pull the cover out by approx. 2 cm.
3. The cover can now be opened.



Note!

The cables can be inserted into the housing from above or from below.



Note!

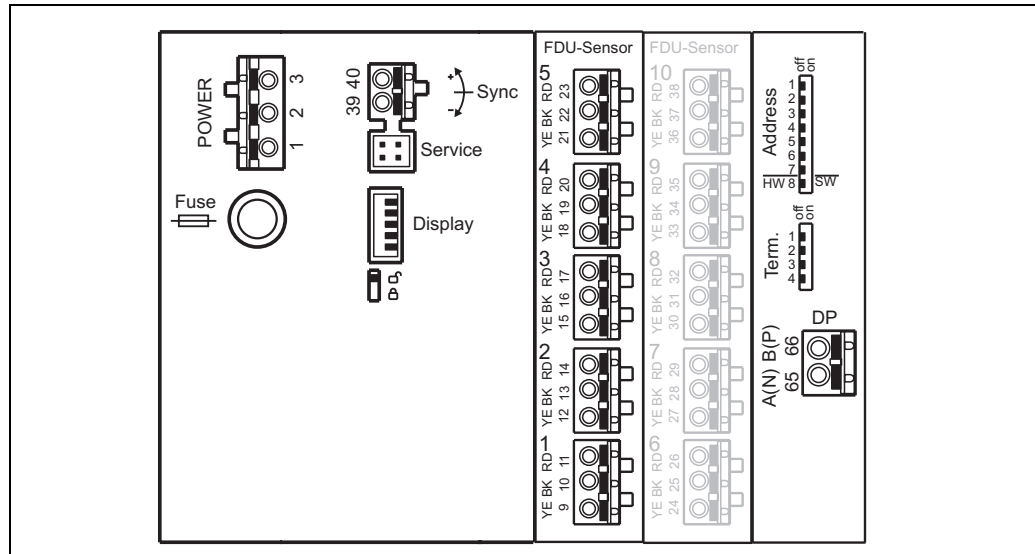
If the instruments are mounted next to each other and if the sensor cables run in parallel, the synchronization terminals (39 and 40) must be interconnected (see sections "Terminal assignment" and "Synchronization line").

Terminals

Pluggable spring-force terminals for connection of the cables are supplied in the terminal compartment. Rigid conductors or flexible conductors with cable and sleeve can directly be inserted and are contacted automatically.

Conductor cross section	0,2 mm ² - 2,5 mm ²
Cable and sleeve cross section	0,25 mm ² - 2,5 mm ²
min. stripping length	10 mm

Terminal assignment



100-FMU90xxx-04-00-00-xx-001

Terminals of the Prosonic S FMU95; the terminals depicted in grey are not present in every instrument version.

Terminals	Meaning	Remarks
Auxiliary energy		
1	<div><div>■ L (for AC version)</div><div>■ L+ (for DC version)</div></div>	depending on instrument version: <div><div>■ 90 ... 253 V_{AC}</div><div>■ 10,5 ... 32 V_{DC}</div></div>
2	<div><div>■ N (for AC version)</div><div>■ L- (for DC version)</div></div>	
3	Potential equalization	
Fuse		depending on instrument version: <div><div>■ 400 mA T (for AC)</div><div>■ 2 A T (for DC)</div></div>
Bus communication		
65	PROFIBUS A (RxT/TxD - N)	
66	PROFIBUS B (RxT/TxD - P)	
Synchronization		
39, 40	Synchronization	see section "Synchronization line"
Level inputs		
09,10,11	Sensor 1 (FDU8x/9x)	YE: yellow strand BK: black strand RD: red strand
12, 13, 14	Sensor 2 (FDU8x/9x)	
15, 16, 17	Sensor 3 (FDU8x/9x)	
18, 19, 20	Sensor 4 (FDU8x/9x)	
21, 22, 23	Sensor 5 (FDU8x/9x)	
24, 25, 26	Sensor 6 (FDU8x/9x)	only available for the version with 10 sensor inputs
27, 28, 29	Sensor 7 (FDU8x/9x)	
30, 31, 32	Sensor 8 (FDU8x/9x)	
33, 34, 35	Sensor 9 (FDU8x/9x)	
36, 37, 38	Sensor 10 (FDU8x/9x)	

**Warning!**


When using the public supply mains, an easily accessible power switch must be installed in the proximity of the device. The power switch must be marked as a disconnecter for the device (IEC/EN 61010)



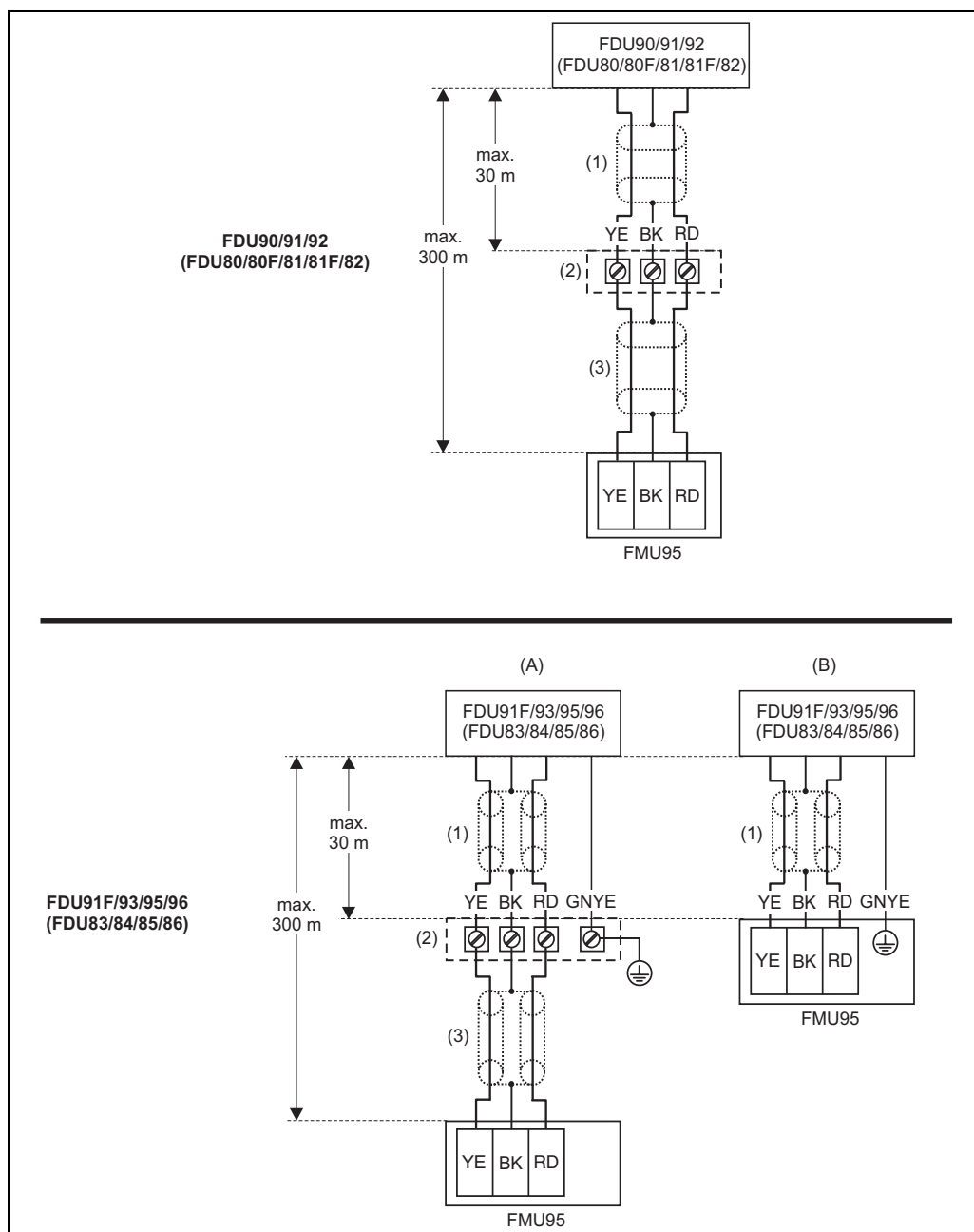
Note!

- In order to avoid interference signals, the sensor cables should not be laid parallel to high voltage or electric power lines.
- The cables may not be laid in the proximity to frequency converters.

Additional elements on the terminal areas

Designation	Meaning/Remarks
Fuse	Fuse: 2 A T /DC or 400 mA T/AC
Display	Connection of the display or the remote display and operating module (see chap. 4.7)
Service	Service interface for connection of a PC/Notebook via Commubox FXA291 (see chap. 5.1)
	Locking switch, see chap. 5.5.3
Term.	Bus termination
Address	Bus address

Connection of the sensors FDU9x



I00-FMU95xxx-04-00-00-xx-004

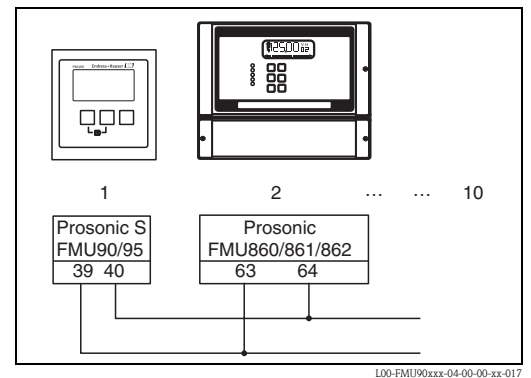
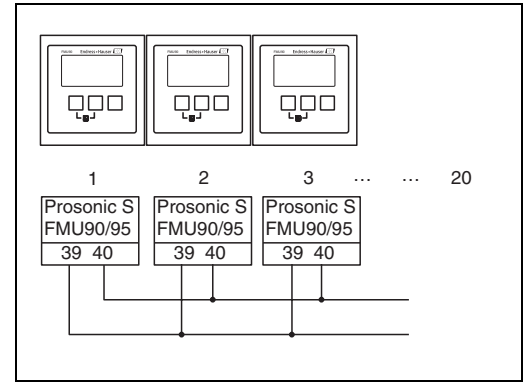
- (A): grounding at the terminal box;
 (B): grounding at the transmitter FMU95;
 (1): screen of the sensor cable;
 (2): terminal box;
 (3): screen of the extension cable;

Colours of the strands: YE = yellow; BK = black; RD = red; BU = blue; BN = brown; GNYE = green-yellow

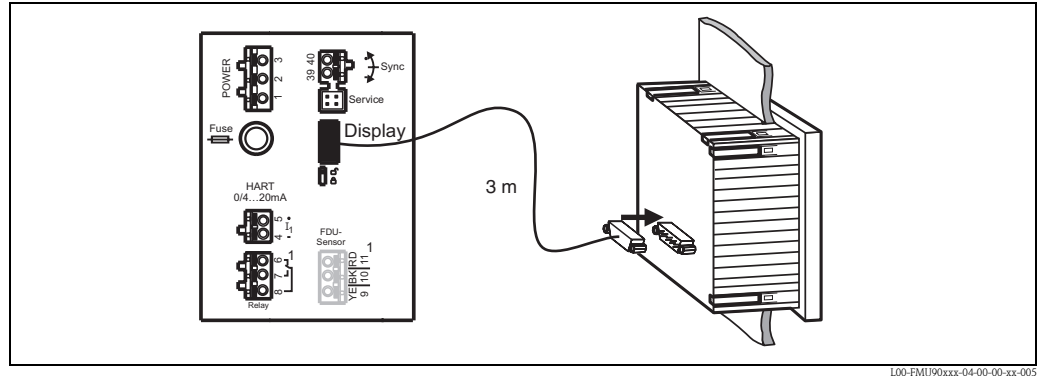
For details on the sensor connection refer to Technical Information TI 396F (FDU9x) or TI189F (FDU8x).

Synchronization line

- If wiring several Prosonic S (FMU90/FMU95) which are mounted in a common cabinet and if the sensor cables run in parallel, the synchronization terminals (39 and 40) must be interconnected.
- Up to 20 instruments can be synchronized in this way.
- If there are more than 20 instruments, groups must be formed, each containing a maximum of 20 instruments. For the instruments within each group, the sensor cables may run in parallel. The sensor cables of different groups must be separated from each other.
- Usual commercial screened cable can be used for synchronization
 - max. length: 10 m between the individual instruments
 - cross section: $2 \times (0.75 - 2.5 \text{ mm}^2)$
 - for lengths up to 1 m, an unscreened cable can be used; for lengths exceeding 1 m, screening is required. The screen must be connected to ground
- Instruments of the Prosonic FMU86x family can be connected to the synchronization line as well. In this case a maximum of 10 instruments can be connected to each synchronisation line.



Connection of the separate display and operating module




For the version of the Prosonic S with a separate display for panel mounting, a pre-assembled connecting cable (3 m) is supplied. The cable must be connected to the display plug of the Prosonic S.



Note!
Minimum diameter for cable bushing: 2 cm

Performance characteristics

Reference operating conditions	<ul style="list-style-type: none"> ■ Temperature = 24 ± 5 °C ■ Pressure = 960 ± 100 mbar ■ Relative humidity = 60 ± 15 % ■ Ideally reflecting surface, sensor vertically aligned (e.g. calm, plane liquid surface of 1 m²) ■ No interference echoes within the signal beam ■ Settings of the application parameters: <ul style="list-style-type: none"> – tank shape = flat ceiling – medium property = liquid – process condition = calm surface
Measuring uncertainty¹⁾	$\pm 0,2$ % of the maximum span of the sensor
Typical accuracy²⁾	± 2 mm + 0,17 % of the measured distance
Measured value resolution	1 mm with FDU91
Measuring frequency	<ul style="list-style-type: none"> ■ 0,2 Hz (with 5 sensors) ■ 0,1 Hz (with 10 sensors) <p>The exact value depends on the settings of the application parameters and the instrument version (5 sensors or 10 sensors).</p> <p> Note! If unused sensor inputs are switched off (in the "sensor management" menu), the measuring frequency increases. The Prosonic S measures with one sensor per second.</p>

Ambient conditions

Ambient temperature	<p>-40 ... 60 °C</p> <p>The functionality of the LC display becomes restricted at $T_U < -20$ °C.</p> <p>If the device is operated outdoors in strong sunlight, a protective cover should be used (s. chapter "Accessories").</p>
Storage temperature	-40 ... 60 °C
Climate class	<ul style="list-style-type: none"> ■ Field housing: according to DIN EN 60721-3 4K2/4K5/4K6/4Z2/4Z5/4C3/4S4/4M2 (DIN 60721-3 4K2 corresponds to DIN 60654-1 D1) ■ Housing for DIN rail mounting: according to DIN EN 60721-3 3K3/3Z2/3Z5/3B1/3C2/3S3/3M1 (DIN 60721-3 3K3 corresponds to DIN 60654-1 B2)
Vibration resistance	<ul style="list-style-type: none"> ■ Housing for DIN rail: DIN EN 600068-2-64 / IEC 68-2-64; 20 ... 2000 Hz; 0,5 (m/s²)²/Hz ■ Field housing: DIN EN 600068-2-64 / IEC 68-2-64; 20 ... 2000 Hz; 1,0 (m/s²)²/Hz
Ingress protection	<ul style="list-style-type: none"> ■ Field housing: IP66 / NEMA 4x ■ Housing for DIN rail: IP20 ■ separate display: <ul style="list-style-type: none"> – IP65 / NEMA 4 (front panel , if mounted in cabinet door) – IP20 (rear panel, if mounted in cabinet door)
Electromagnetic compatibility (EMC)	<ul style="list-style-type: none"> ■ Interference emission to EN 61326; Equipment class A ■ Interference immunity to EN 61326; Annex A (Industrial) and NAMUR recommendation EMC (NE21)

1) according to NAMUR EN 61298-2

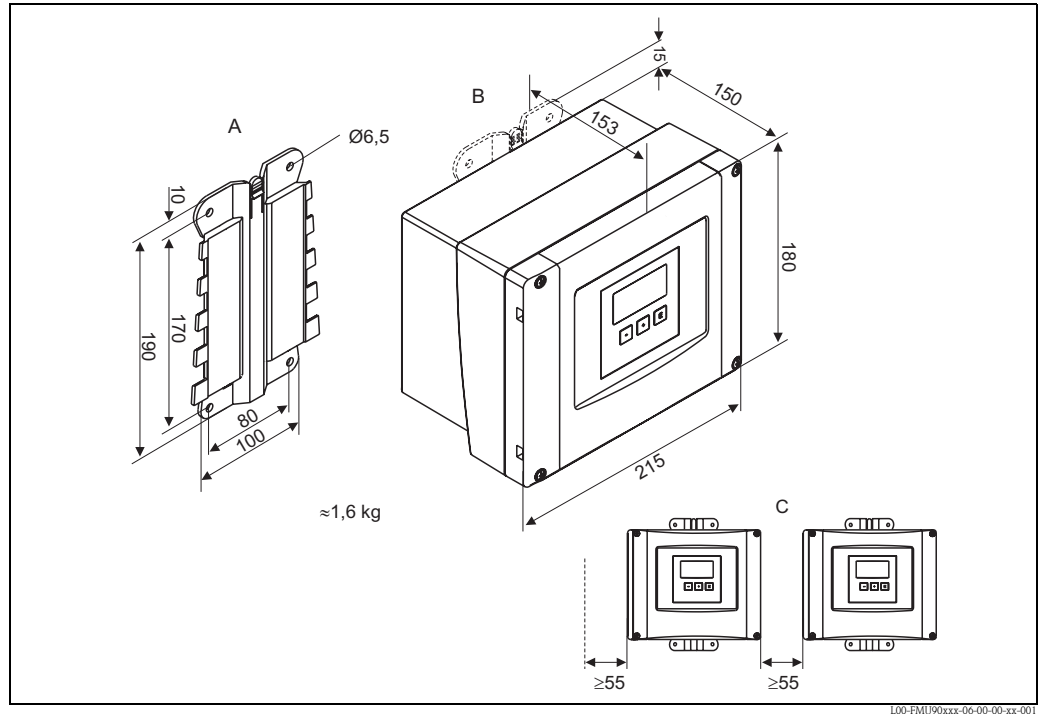
2) after calibration

Mechanical construction

Housing versions

- Field housing; optionally with integrated display and operating module
- Housing for top-hat rail mounting; optionally with integrated display and operating module
- Housing for top-hat rail mounting with separated display and operating module for cabinet door mounting

Dimensions of the field housing



Dimensions in mm

A: Mounting help (supplied); can also be used as drilling template ; **B:** Field housing; **C:** minimum mounting distance

The dimensions of the field housing are the same for all instrument versions.

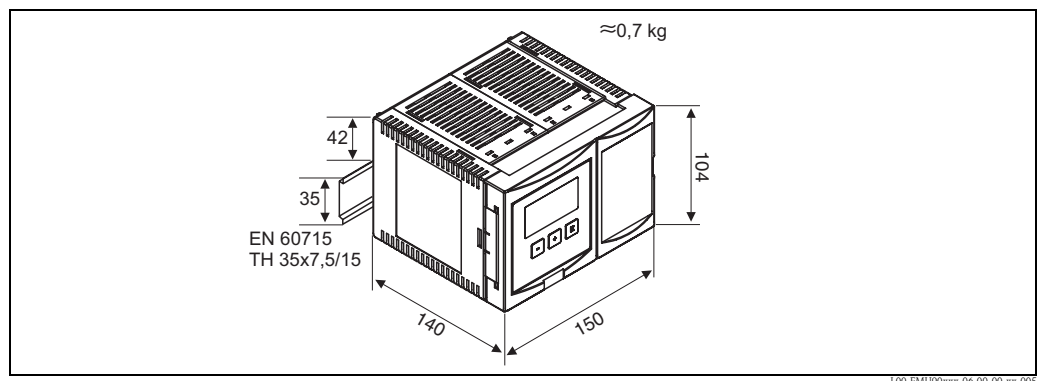
To open the housing, a minimum mounting distance of 55 mm is required on the left.



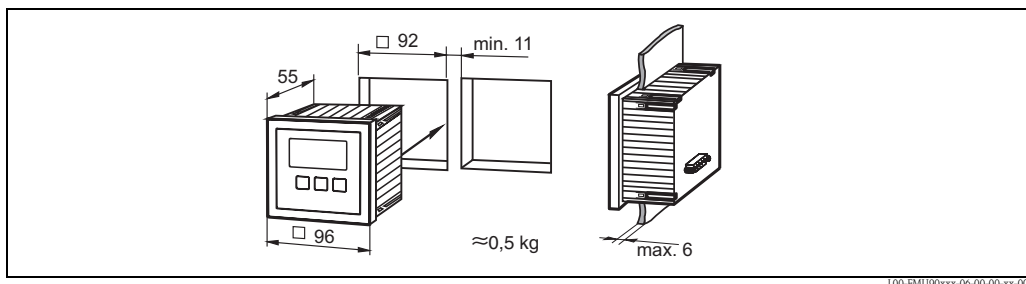
Note!

The mounting help must be mounted on a plane surface and must not become bent. Otherwise the mounting of the field housing may be difficult or impossible.

Dimensions of the DIN-rail housing



Dimensions of the separate display and operating module



Dimensions in mm

Weight

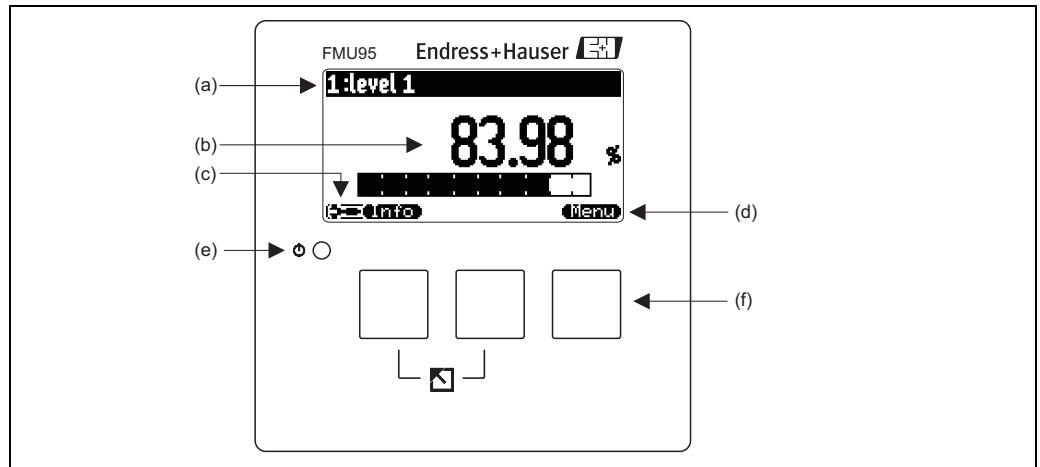
Housing version	Weight
Field housing	approx.. 1,6 ... 1,8 kg; depending on instrument version
Housing for DIN rail	approx. 0,7 kg;
separate display and operating module	approx. 0,5 kg

Materials

- Field housing: PC
- Housing for DIN rail: PBT

Human interface

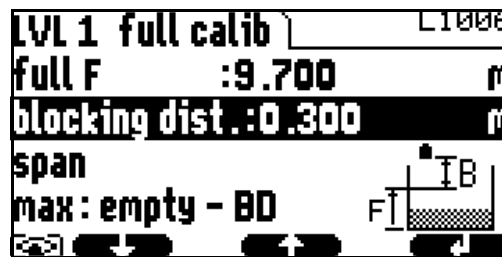
Display and operating module



L00-FMU95xxxx-07-00-00-xx-001

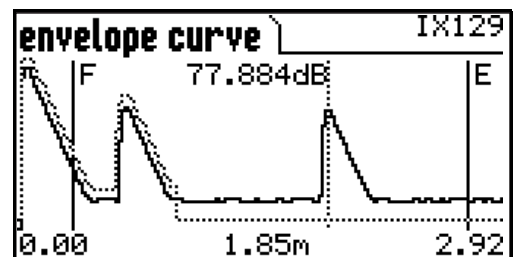
(a): name of the parameter; (b): value of the parameter, including unit; (c): display symbols; (d): softkey symbol; (e): LED indicating the operating state; (f): keys

Display (Examples)



L00-FMU90xxxx-07-00-00-en-041

Display of a function including help text and descriptive graphic



L00-FMU90xxxx-19-00-00-en-089

Display of the envelope curve including the mapping. The level echo and the empty distance are marked.

Keys (softkey operation)

The function of the keys depends on the current position within the operating menu (softkey functionality). The key functions are indicated by softkey symbols in the bottom line of the display.

LED

The LED (a) indicates the operating state ("normal operation", "alarm" or "warning")

Illuminated display

An illuminated display is available as an option (s. feature 40 of the product structure)

Operating menu

The Prosonic S has got a dynamical operating menu. Only those functions are visible which are relevant for the instrument version and installation environment at hand.

Basic setup





The operating menu contains a basic setup for easy commissioning of the connected sensors. The basic setup guides the user through the complete commissioning procedure.

Locking of the instrument

The instrument can be locked against parameter changes in the following ways:

- Locking switch in the terminal compartment
- Key combination at the operating module
- Input of a locking code via software (e.g. "ToF Tool" or "FieldCare")

Certificates and Approvals

CE mark	The measuring system meets the legal requirements of the EC-guidelines. Endress+Hauser confirms the instrument passing the required tests by attaching the CE-mark.
Ex approval	<p>The available certificates are listed in the ordering information. Note the associated safety instructions (XA) and control or installation drawings (ZD).</p> <p>Measuring systems for use in hazardous environments are accompanied by separate "Ex documentation", which is an integral part of this Operating Manual. Strict compliance with the installation instructions and ratings as stated in this supplementary documentation is mandatory.</p> <ul style="list-style-type: none"> ■ Ensure that all personnel are suitably qualified. ■ Observe the specifications in the certificate as well as national and local standards and regulations. <p>The transmitter may only be installed in suitable areas. Sensors with a certificate for hazardous areas may be connected to a transmitter without a certificate.</p> <p> Warning! For FM approvals: Unauthorized substitution of components may impair the suitability for Division 1 or Division 2.</p> <p> Warning! Do not disconnect equipment unless the area is known to be non-hazardous.</p> <p> Note! The sensor must be installed and used in a way that eliminates any danger. Possible installation positions: in tanks, vessels, silos, over stockpiles, open channels, weirs or other bins.</p> <p> Note! Sensors FDU9x with Ex-approval can be connected to the transmitter FMU95 without Ex-approval.</p>
External standards and guidelines	<p>EN 60529 Protection class of housing (IP code)</p> <p>EN 61326 Electromagnetic compatibility (EMC requirements)</p> <p>NAMUR Standards committee for measurement and control in the chemical industry</p> <p>US Standard UL 61010-1 CSA General Purpose Units FMU9x-N***** are tested according to US standard UL 61010-1, 2nd edition</p>

Ordering information

Product structure

10	Approval									
	R	Non-hazarous area								
	J	ATEX II 3D								
	N	CSA General Purpose								
20	Application									
	1	Level								
30	Housing, material									
	1	Field mounting PC, IP66 NEMA 4x								
	2	DIN rail mounting PBT, IP20								
40	Operation									
	C	Illuminated display + keypad								
	E	Illuminated display + keypad, 96x96, panel mounting, front IP65								
	K	w/o display, via communication								
50	Power supply									
	A	90-253 VAC								
	B	10,5-32 VDC								
60	Level input									
	A	5x sensor FDU9x/8x								
	B	10x sensor FDU9x/8x								
80	Output									
	3	PROFIBUS DP								
110	Language (*)									
	1	de, en, nl, fr, es, it, pt								
	2	en, ru, pl, cs								
	3	en, zh, ja, ko, th, id								
120	Additional option									
	A	Basic version								
FMU95 -										complete product designation

(*): meaning of the language code:

cs: Czech; de: German; en: English; es: Spanish; fr: French; id: Bahasa (Indonesia, Malaysia); it: Italian; ja: Japanese; ko: Korean; nl: Dutch; pl: Polish; pt: Portuguese; ru: Russian; th: Thai; zh: Chinese

Scope of delivery

- Instrument according to the version ordered
- Operating program: "ToF Tool - FieldTool Package" or "FieldCare"
- Operating Instructions (depending on communication version, see chapter "Supplementary documentation")
- for certified instrument versions: Safety Instructions (XAs) or Control Drawings (ZDs) (s. chapter "Supplementary documentation")

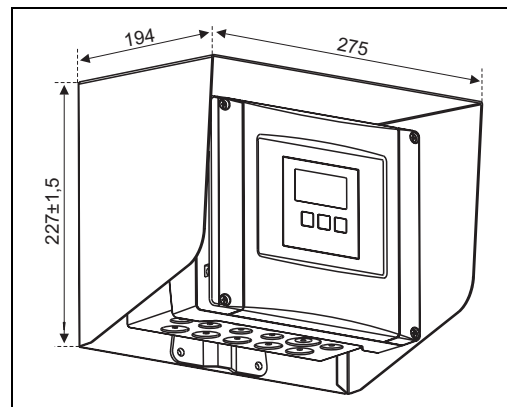
Accessories

Commubox FXA291

For intrinsically safe communication with ToF Tool/FieldCare via the service interface (IPC) of the instrument and the USB interface of a PC/Notebook.
Ordering Code: 51516983

Protection cover for the field housing

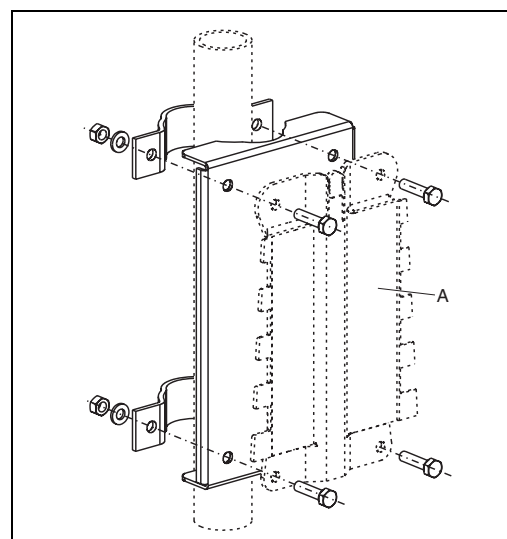
- Material: 316Ti/1.4571
- is mounted by the mounting help of the Prosonic S
- Order-Code: 52024477



L00-FMU90xxx-06-00-00-xx-003

Mounting plate for the field housing

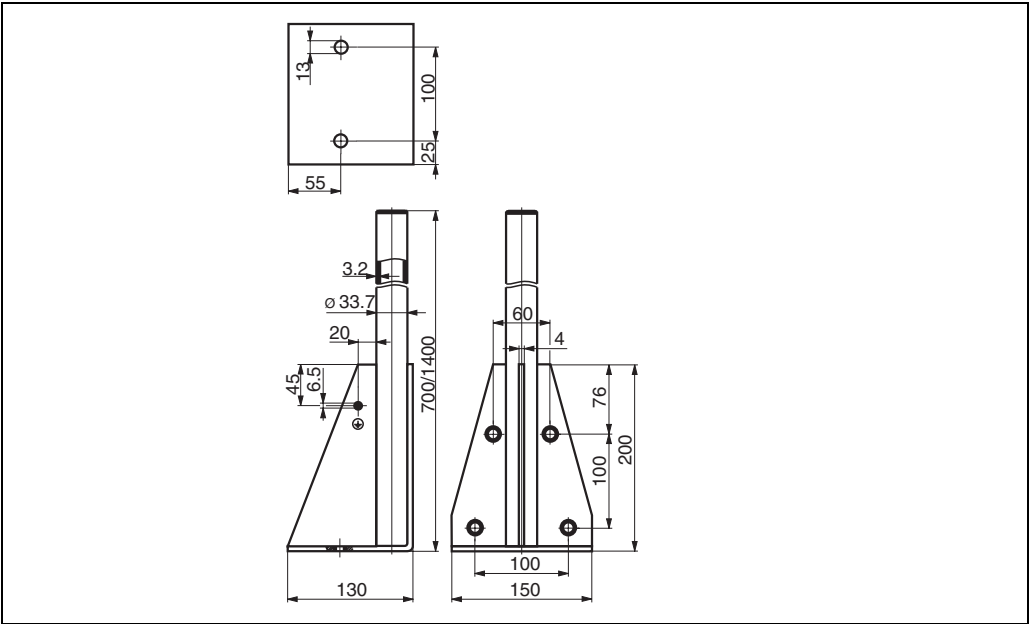
- suited for the mounting help of the Prosonic S
- for 1" - 2" tubes
- Dimensions: 210 mm x 110 mm
- Material: 316Ti/1.4571
- fixing clips, screws and nuts are supplied
- Order code: 52024478



L00-FMU90xxx-00-00-00-xx-001

A: mounting help of the field housing

Mounting bracket



L00-FMU14x-00-00-00-yy-005

Height	Material	Order Code
700 mm	galv. steel	919791-0000
700 mm	316 Ti	919791-0001
1400 mm	galv. steel	919791-0002
1400 mm	316 Ti	919791-0003

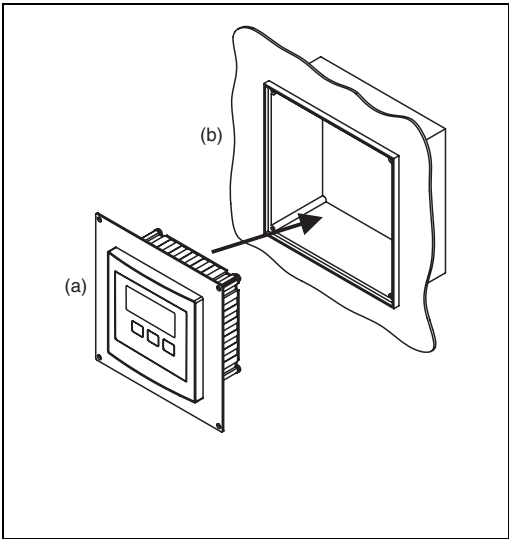
Adaption plate for remote display

Used to mount the remote display into the opening (138 mm x 138 mm) of the remote display module of the Prosonic FMU860/861/862 (Display size: 144 x 144 mm).

Order-Code: 52027441

Note!

The adapter plate will be mounted directly in the old remote display of the FMU86x series. The housing of the remote display of FMU860/861/862 is the holder for the adapter plate and the new remote display of the FMU90/95 in the format 96x96 mm.



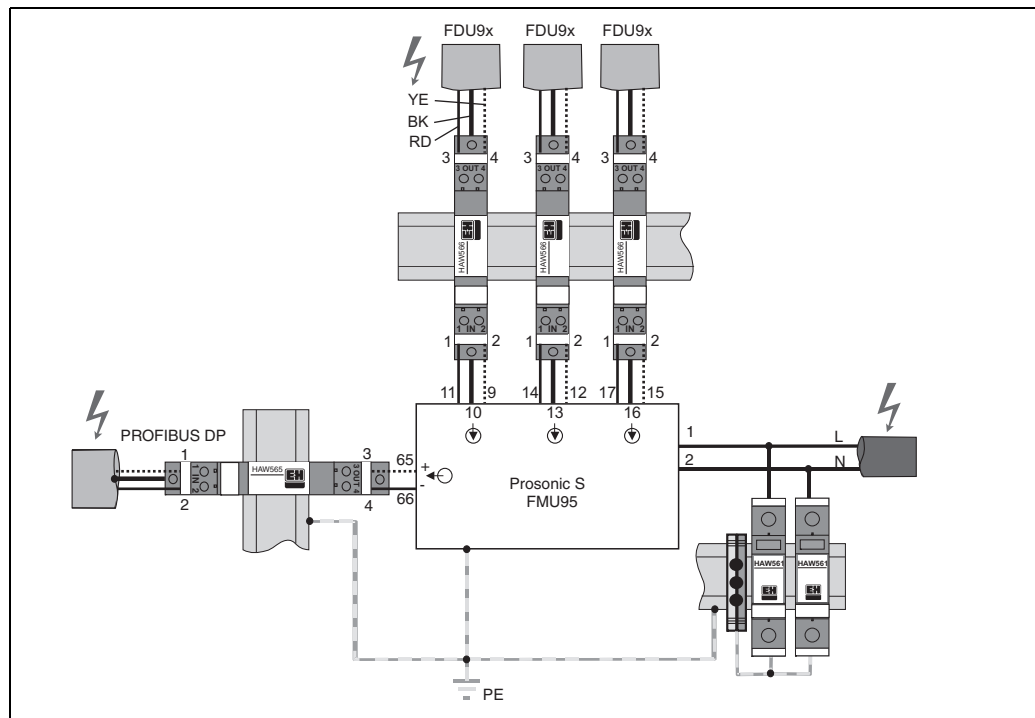
L00-FMU90xxx-00-00-00-xx-001

(a): remote display of the Prosonic S with adaption plate;
(b): opening of the remote display FMU860/861/862

Option:
Adaption plate 160x160 mm, thickness 3mm, aluminum, opening 92x92 mm for remote display of the FMU90 (size of the display: 96 x 96 mm).
Can be used to replace the FMU86x remote display or DMU2160/2260.
Order Code: TSPFU 0390
Please contact your Endress+Hauser representative.

Overvoltage protection HAW56x

Application example



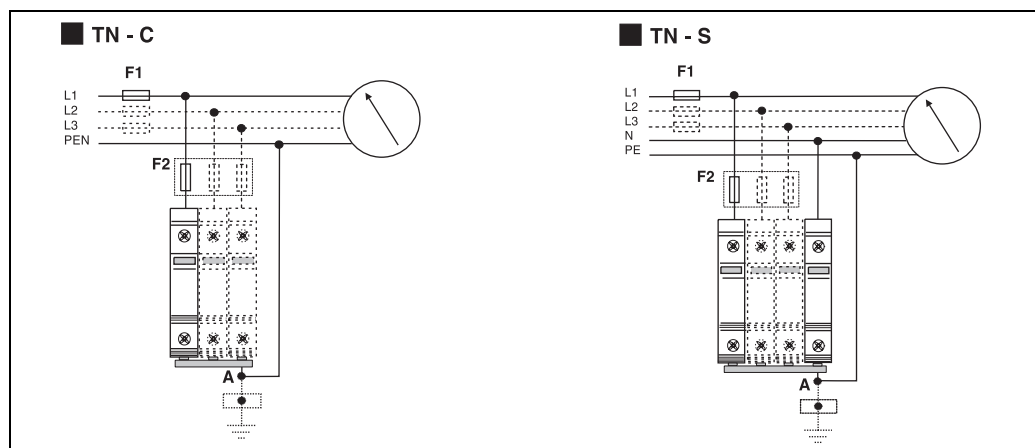
L00-FMU95xxx-04-00-00-xx-012

The following components are required:

- 1 x HAW560+565 for the signal line PROFIBUS DP
- for each sensor: 1 x HAW560+566
- 2 x HAW561 for the power supply of the transmitter

Electrical connection

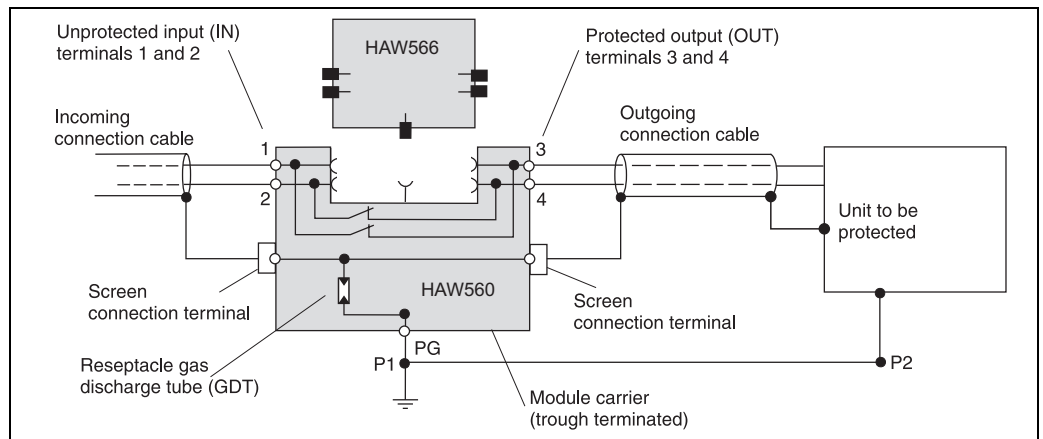
Power supply: HAW561 and 561K



C09-HAW50xxx-04-10-xx-xx-001

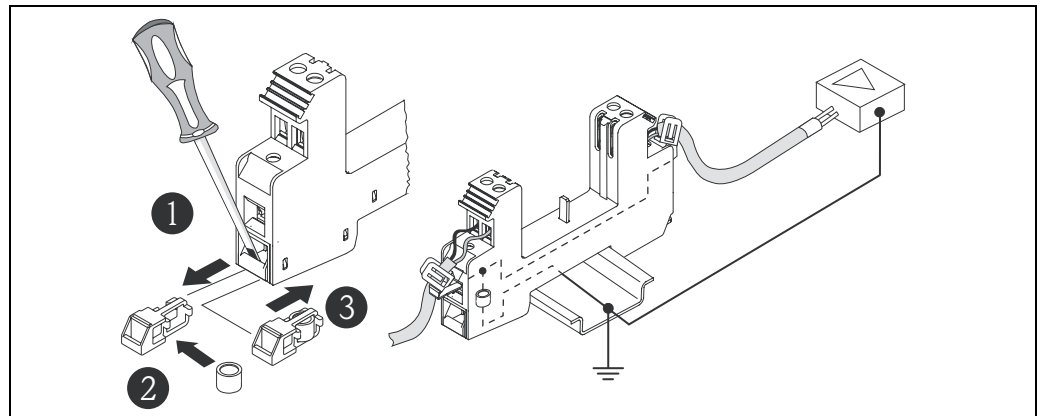
A fixed allocation of the phase and ground terminal is not allocated (pole security). The unit is fitted on both ends with a multi function connection terminal. This gives the opportunity to simultaneously connect a cable as well as a fork ferrule from standard busbars.

Connection of the unit is as in the diagram above. Dependent on the cabling, up to four units will be required.

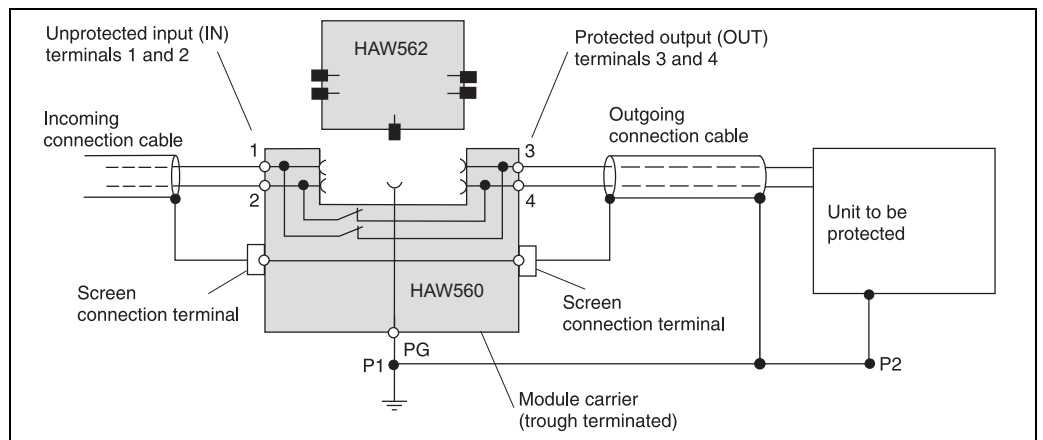
Sensor signal: HAW560 with HAW566

G09-HAW56xxx-04-10-01-en-001

Connection of the unit as in the diagram. The ground connection is made using the DIN rail. For indirect screening (as required if connecting the Prosonic S signal line to an HAW566) a gas-discharge arrester is supplied. It must be inserted into the provided plug-in bay on the HAW560:



G09-HAW56xxx-11-10-xx-xx-000

Output signal

G09-HAW56xxx-04-10-01-en-002

Connection of the unit as in the diagram. The ground connection is made using the DIN rail.

Product overview

Oreder code	Unit
51003569	Surge arrester HAW561K For low voltage users 24/48V, single pole, requirement class C, basic component with plugged in protection unit, defect display, 18 mm housing width
51003570	Surge arrester HAW561 For standard voltage users 115/230 V, single pole, requirement class C, basic component with plugged in protection unit, defect display, 18 mm housing width
51003571	Surge arrester module carrier HAW560 Two pole through terminated for fitting surge arrester modules for units in information technology, 12 mm housing width, colour grey
51003573	Surge arrester module HAW565 For protection of 2 single lines, e.g. 2 asymmetrical single lines with high frequency signal transmission, e.g.: Profibus DP, RS 485, 12 mm housing width, colour grey
71028875	Surge arrester module HAW566 Protection for 2 signal inputs, e.g. 2 asymmetrical inputs, e.g. Prosonic S signal 12 mm housing with, colour grey

For details see Technical Information TI093R.

Supplementary documentation

Technical Information	TI 396F Technical Information for the ultrasonic sensors FDU90/FDU91/FDU91F/FDU92/FDU93/FDU95/FDU96
Operating Instructions	BA344F Operating Instructions for Prosonic S FMU95; This document describes the installation and commissioning of the Prosonic S. It contains those functions from the operating menu which are required for a standard measuring task. Additional functions are contained in the "Description of Instrument Functions", BA345F. BA345F Description of Instrument Functions for Prosonic S FMU95 BA346F Slot-Index tables for the PROFIBS-DP interface of Prosonic S FMU95
Safety Instructions	XA326F Safety Instructions for ATEX II 3D

Instruments International

Endress+Hauser
Instruments International AG
Kaegenstrasse 2
4153 Reinach
Switzerland

Tel. +41 61 715 81 00
Fax +41 61 715 25 00
www.endress.com
info@ii.endress.com

Endress+Hauser 

People for Process Automation

