

## Technical Information

# Promonitor NRF560

## Tank Side Monitor

For tank side monitoring and controlling of Proservo NMS5 intelligent tank gauge



### Application

Promonitor NRF560 is a monitoring unit for use with the Proservo series of tank gauges.

Mounted at the tank side or up to 1200 meters away (local HART connection).

Promonitor provides indication of measured level, temperature data and operating status, and can send operating commands to the Proservo NMS5 from a convenient location.

### Features and benefits

- Remote monitoring and control for Proservo tank gauge
- Indication via two line illuminated display
- Operation via 3 optical keys (touch control) and Endress+Hauser user friendly
- Programming matrix
- Protection class IP 67 housing
- Explosion proof for hazardous area mounting

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## Function and system design

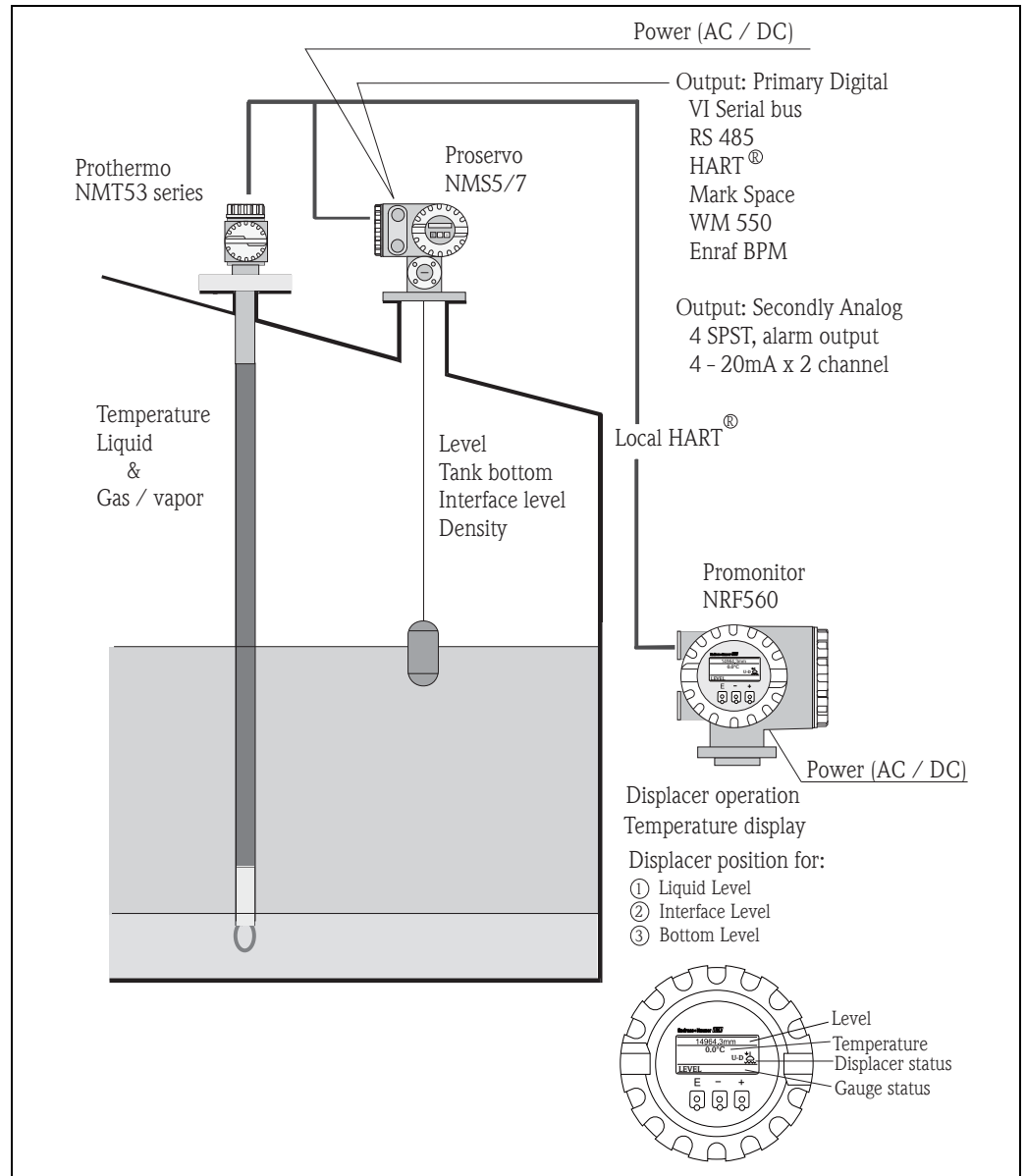
### System design

The Promonitor NRF 560 is a tank side monitor and control station for the Proservo NMS5 of intelligent tank gauges.

The Promonitor NRF 560 is a simple low-cost tank side monitor for displaying interface level, tank bottom level, and temperature. Additionally, the Proservo NMS5 can be operated to measure the level, interface level, bottom level, or to hoist the displacer.

The tank gauge is operated by three visual operating elements ("touch control").

For the transmission between the Proservo NMS5 and the Promonitor NRF 560, a two-wire HART® protocol is utilized.

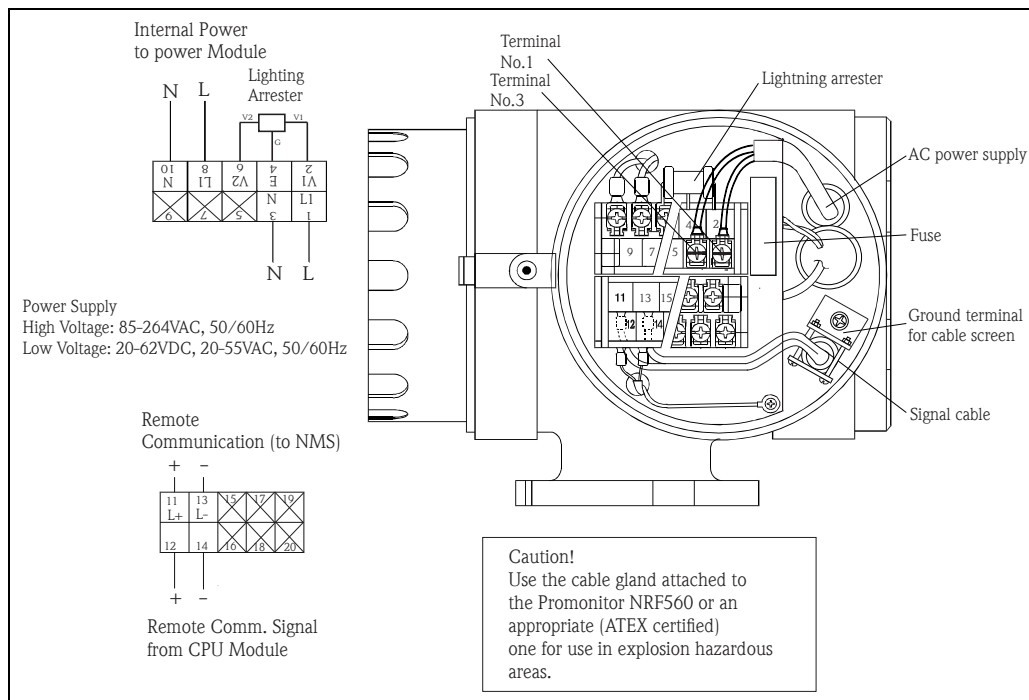


# Input

<b>Measured variables</b>	Multidrop local HART®
<b>Communication</b>	2 wire, Endress + Hauser HART® protocol to host communication gauge ■ Proservo NMS5

# Auxiliary energy

## NRF560 Terminal



Check that the power supply of the Promonitor is turned off.  
 Insert AC power supply and signal cable from each side of the cable entries. Ground for the signal cable screen.  
 Connect cables to each terminal. (recommend a crimped connection.)  
 After completing all electric connections, screw the terminal cover and hook its lock (shroud).  
 During the installation take care of mounting the conductor in such a way that selfloosening and corrosive effects will be prevented.

<b>Power Supply</b>	85-264VAC, 50/60Hz, 25VA 20-62VDC, 20-55VAC, 50/60Hz, 25VA
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**Caution!**  
 Allowable voltage supply is specifically stated depending on each Ex approval. Refer to the designated certification

<b>Current Consumption</b>	Maximum 25 VA
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<b>Grounding</b>	The NRF560 must be grounded to the tank potential before connection to host gauge. All ground connections must be compliant with local and company regulations, and checked before the equipment is commissioned.
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## Performance characteristics

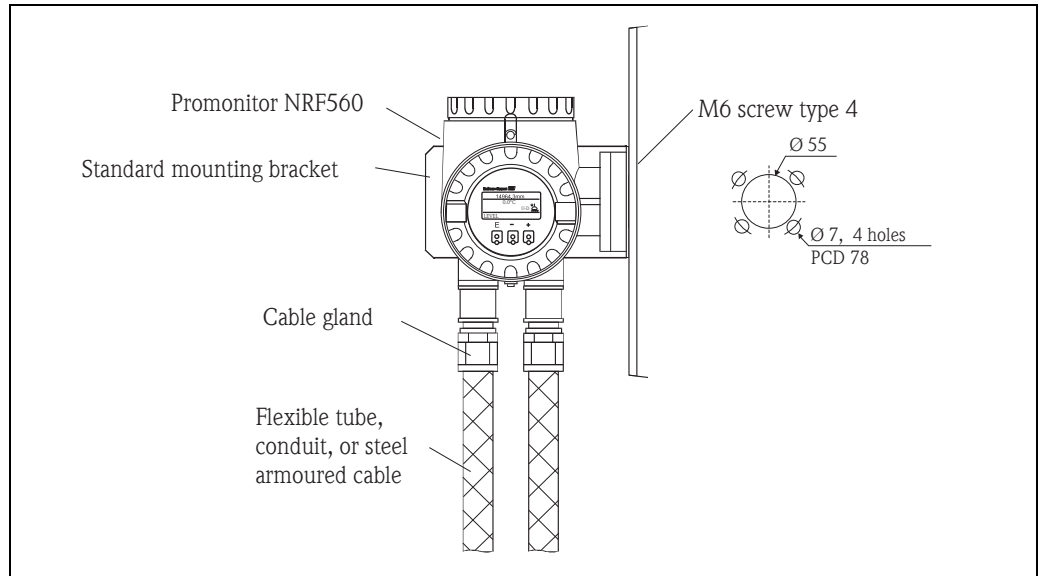
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**Display(LCD)**

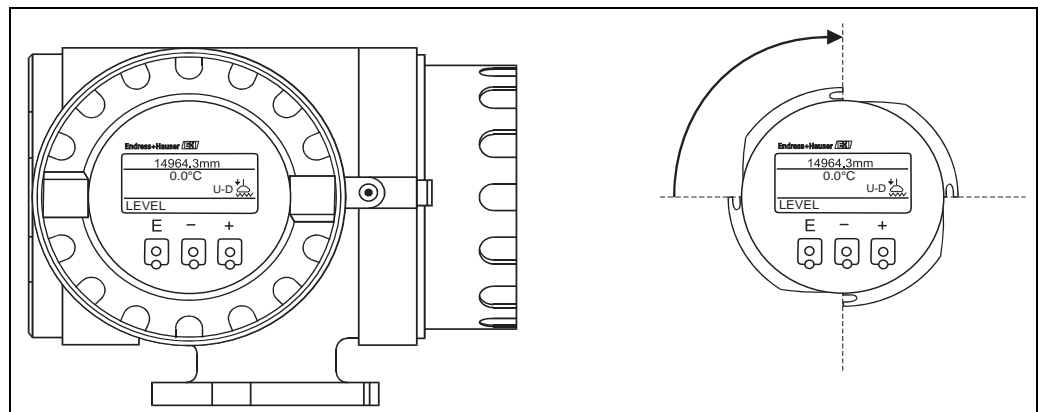
4 lines. 128 x 64 (pixels)  
Language selection:  
English, Chinese, Japanese

## Operating conditions: Installation

### Mounting on the wall



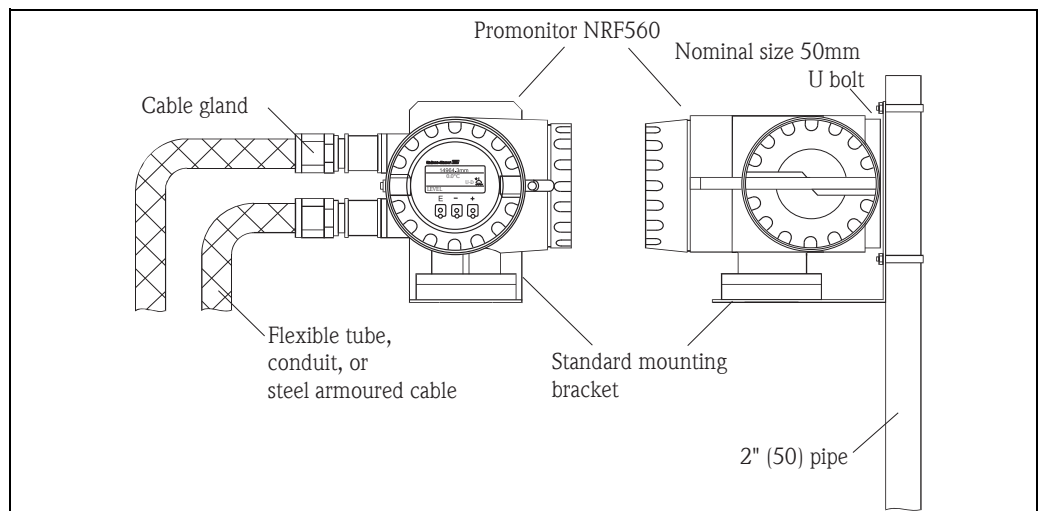
### Engaging the display and operating elements



**Note!**

After removal of the cover, the display and operating elements of the Promonitor NRF560 can be engaged in steps of 90°.

### Mounting on a 2" (50mm) pipe



## Operating conditions : Environment

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<b>Ambient temperature</b>	-20...+60°C(-4...+140°F)
<b>storage temperature</b>	-20...+60°C(-4...+140°F)
<b>Ingress protection</b>	IP67

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## Operating condition: Process

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### Wiring

The following cable entries are available:

- G1/2
- NPT 1/2
- M 20

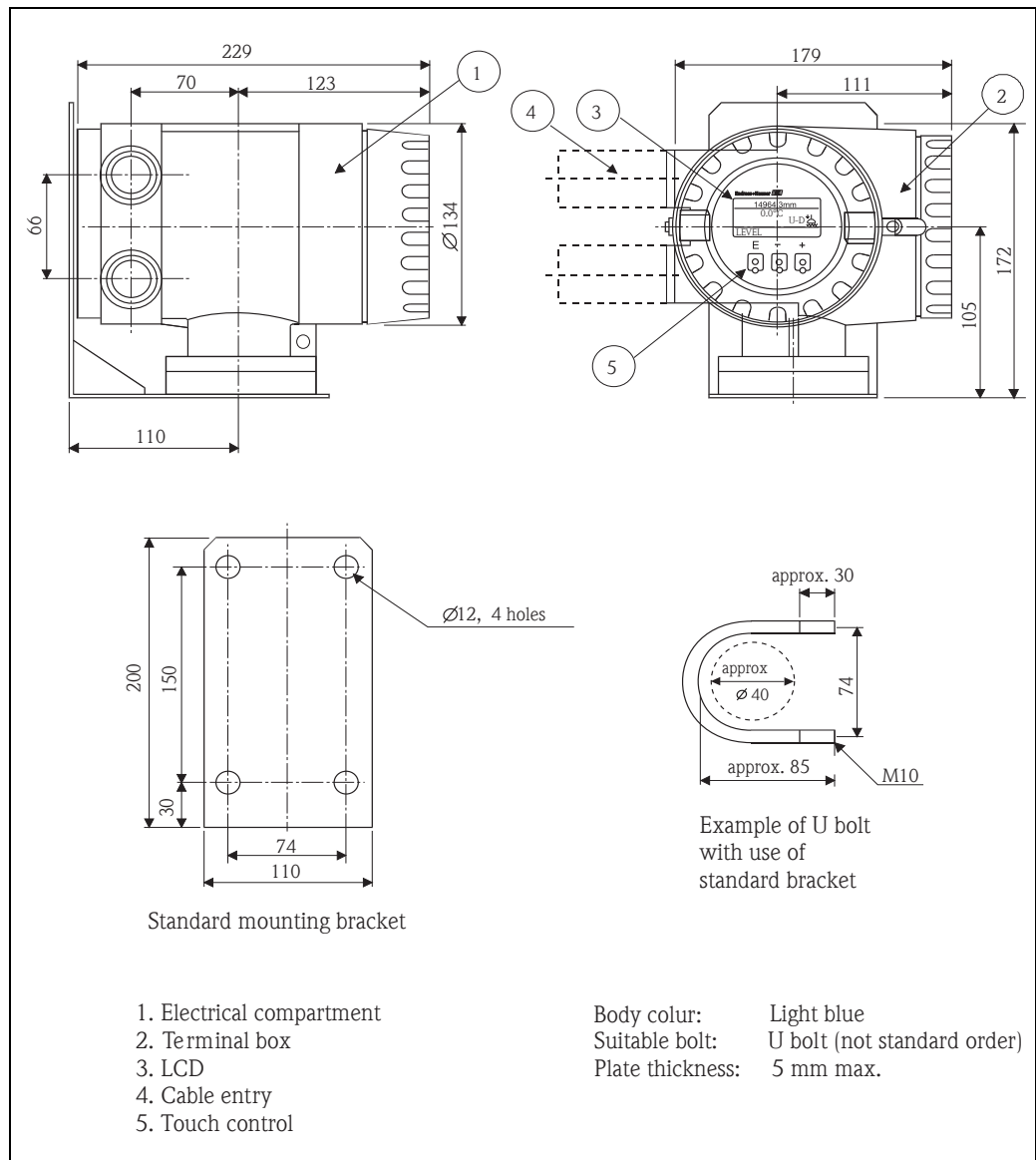


### Caution!

- Promonitor NRF560 of Ex d IIB T4, TIIS is delivered with cable glands.
- Be sure to use the attached cable glands.
- Except for the above approval type, cable glands are not attached.

## Mechanical construction

### Dimensions



**Weight**                      Approx. 6.5 kg

**Housing material**                      Aluminium, coated with rust-inhibitor paint



## Human interface



### Operating element

The Promonitor NRF560 is operated by three visual operating elements, namely the keys "E", "-", and "+". They are activated when the appropriate field on the protective glass of the display is touched with the finger ("touch control").

Display language can be set into English, Japanese or Chinese. Measuring unit and decimal point can also be set by the matrix.

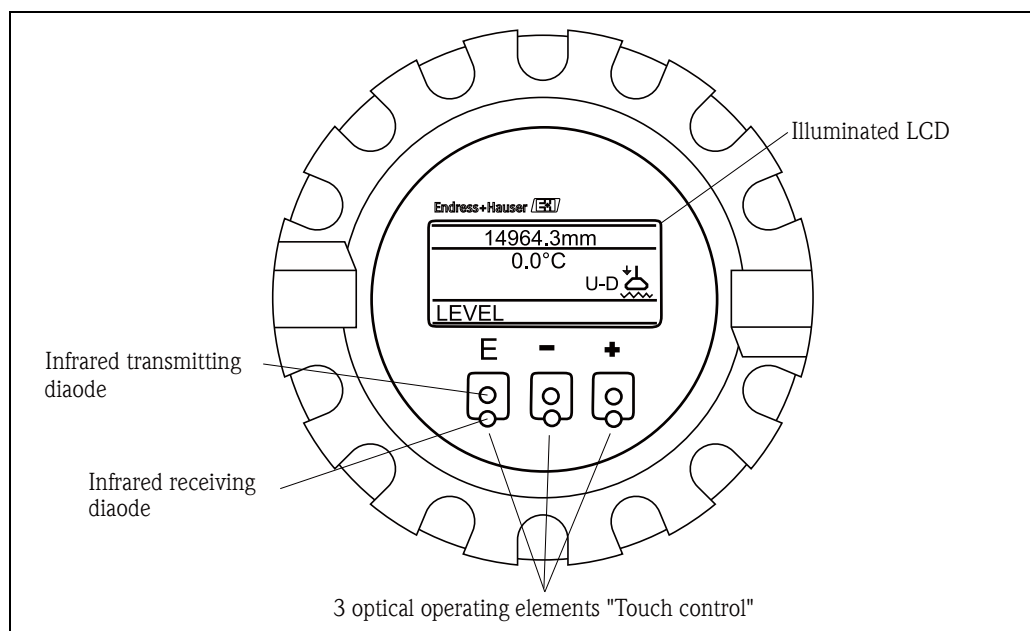
#### Operational security measures

The software and hardware installed in the Promonitor NRF560 rule out any malfunction that may be caused in this way. Even in explosion hazardous areas, the explosion-proof housing of the touch control ensures safe access to the data.

Key	Function
	<ul style="list-style-type: none"> <li>■ Access to the programming matrix (touching the key for more than 3 s)</li> <li>■ Return to the HOME position (touching the key for more than 3 s)</li> <li>■ Moving horizontally within a function group to select functions</li> <li>■ Saving parameters or access code</li> </ul>
	<ul style="list-style-type: none"> <li>■ Moving vertically to select function groups</li> <li>■ Selecting or setting parameters</li> <li>■ Setting access code</li> </ul>

### Display element

The Promonitor NRF560 has an illuminated LCD that consists of 4 lines with (128 x 64 pixels). During normal operation, it shows the level, the temperature, and the status of the device on the "HOME" position. For the display of the other data and the programming of the parameters for operation, the Promonitor NRF560 uses a convenient programming matrix.



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## Certificates and approvals

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**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.

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**Ex approvals** See ordering information

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**External standards and guide line** To conception and development for Promonitor NRF560 have been followed the external standards and guidelines:

**EMC-Directive 89/336/EC**

**EN 60529**

Protection class of housing (IP code)

## Ordering Information

**Promonitor NRF560**

<b>010</b>	<b>Approval:</b>		
	0	Weather proof, IP67 NEMA 4X	
	1	TIIS Ex d IIB T4	
	4	FM XP Cl.I, Div.1, Gr.A-D	
	5	CSA Cl.I, Div.1, Gr.A-D	
	6	ATEX II 2G Ex d IIC T4	
	8	ATEX II 2G Ex d IIC T4 , NMi	
	F	IEC Ex d IIC T4 Gb	
	9	Special version, TSP-no. to be spec.	
<b>020</b>	<b>Cable Entry:</b>		
	A	2 x thread G1/2	
	B	2 x thread NPT1/2	
	D	2 x thread M20	
	Y	Special version, TSP-no. to be spec.	
<b>030</b>	<b>Power Supply:</b>		
	3	85-264VAC, 50/60Hz	
	4	20-62VDC, 20-55VAC, 50/60Hz	
	9	Special version, TSP-no. to be spec.	
<b>040</b>	<b>Mounting Bracket:</b>		
	0	Not selected	
	1	Selected	
	9	Special version, TSP-no. to be spec.	
<b>050</b>	<b>Colour:</b>		
	0	Blue	
	9	Special version, TSP-no. to be spec.	
<b>NRF560-</b>			Complete product designation

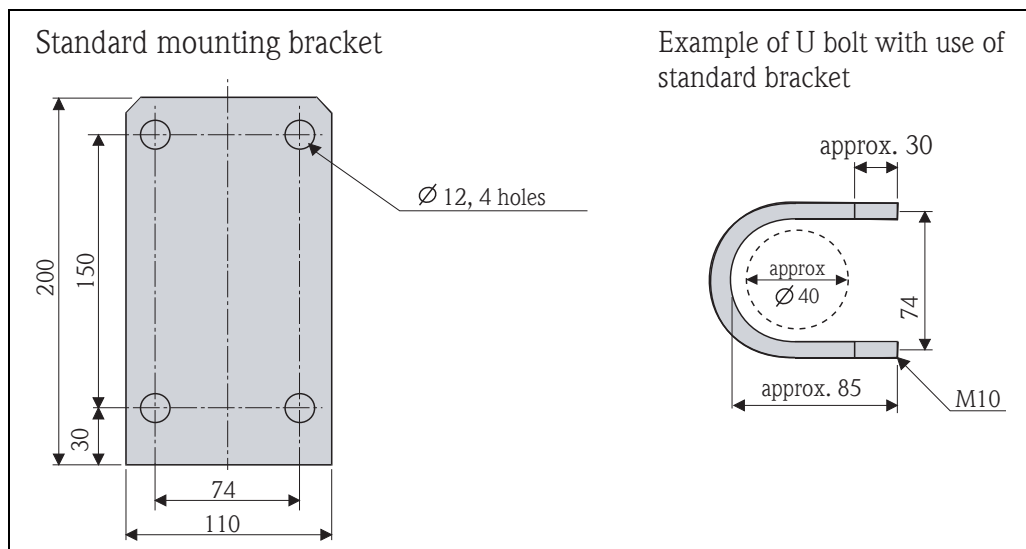
## Accessories

### Mounting bracket



#### Note!

U bolt is not attached to the mounting bracket. If you need U bolt, please contact Endress+Hauser .



## Supplementary Documentation

### Technical Information

#### TI 00452G

Technical Information Proservo NMS5

### Operating Instructions

#### BA 00425G

Operating Instructions Promonitor NRF560

#### BA 00401G

Operating Instructions Proservo NMS5

### Safety Instructions

#### XA 00664G (IECEX)

#### XA 00586G (ATEX)

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