



**pH-4101,
pH-4101.I.-Ex
pH/ORP-meter - transmitter
industrial**



Ph/ORP meter-transmitter pH-4101 is designed for automatic measuring of the hydrogen ions activity (pH) of the analyzed liquid complete with flow or submersible holders pH for a combination electrode and redox potential (ORP) electrodes.

pH-meter transmitter provides measurement of electromotive force (EMF), developed by the electrode system and temperature, pH calculation and conversion to signal 4...20 mA or RS-485 interface signal.

Transmitter enclosure is available in three versions:
S - of stainless steel, D- of

aluminum alloy, I - of aluminum alloy with a transparent display window. In the case of complete supply with the holders, in which a combination electrode is to be installed, the transmitter (electronic unit) enclosure is attached directly to the probe or next to it.

pH4101.x.I.-Ex pH-meters (PT in the "I" enclosure) have an explosion protection type "flameproof enclosure" provided with a marking "1Ex d IIB T6 X".

Scope of application: heat power industry, chemical, petrochemical, food processing, brewing and other industries.

BASIC TECHNICAL SPECIFICATION AND PARAMETERS

pH measuring range.....	0...14
ORP measuring range, mV.....	±1500
Basic absolute error value limit when measuring	
pH.....	± 0,05 pH
ORP.....	±2mV
Analyzed liquid temperature measuring range.....	look section Electrodes: Combined pH and ORP
Basic accuracy of the measuring temperature.....	± 0,5°C
Thermal compensation modes.....	automatic, manual
Cable length up to a combination electrode.....	max 4m
Output signal, pH-proportional:.....	(4..20) mA, or RS-485, with ModBus RTU communication protocol
DC supply voltage.....	(12..36)V
Power consumption.....	max 3 VA
Explosion protection type (only for "I" design).....	1ExdIIBT6 X
Climatic version.....	T=(-40...+50)°C
Dust and water protection.....	IP65
Resistance to mechanical influences.....	N2
Enclosure material:	
- D, I type.....	aluminum alloy
- S type (for a transmitter with an LCD indicator).....	SS321L
Weight.....	max 2 kg

EXTERNAL WIRING

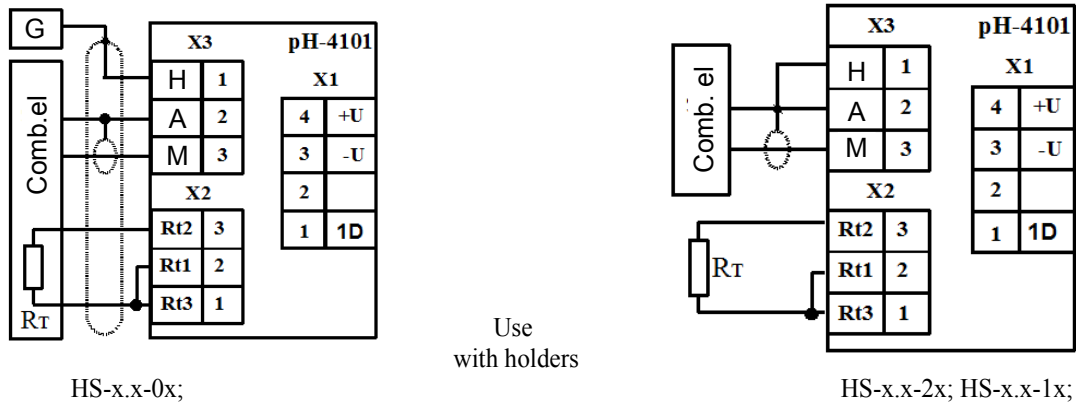


Figure 1. Connection diagrams of electrodes to pH meter. EC - combined electrode; EG - electrode grounding; Rt - temperature sensor; H – housing; A – Auxiliary electrode In; M – measuring electrode In.

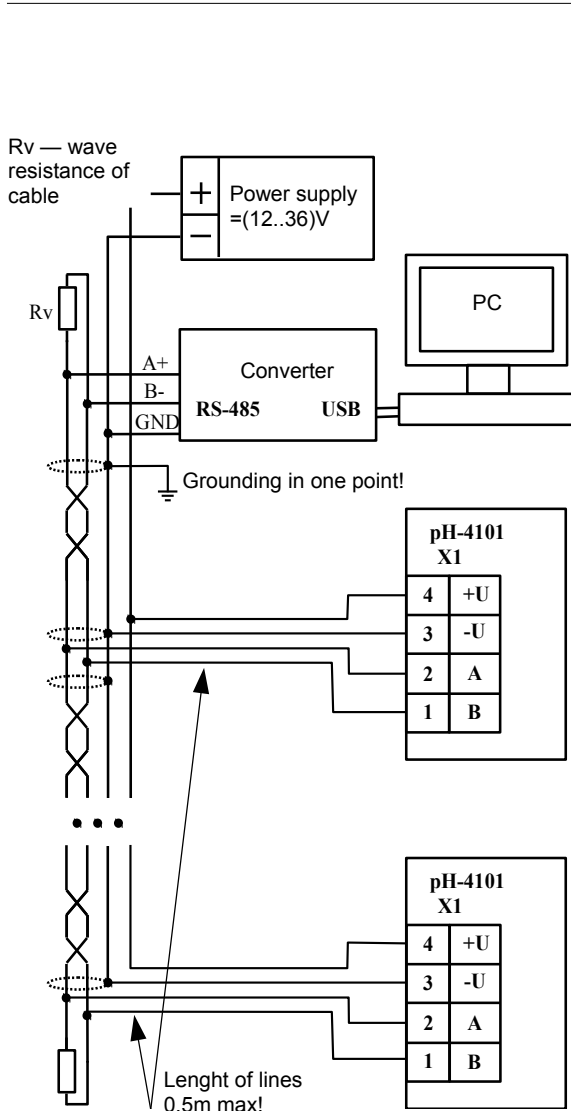


Figure 3. Scheme of the pH-meters connection in the Modbus network

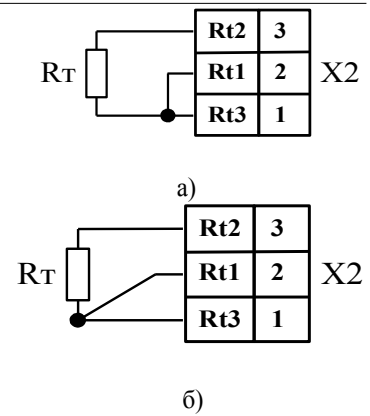


Figure 2. Connection diagrams Resistance thermometer (Temperature sensor Rt) A - two-wire; B - three-wire.

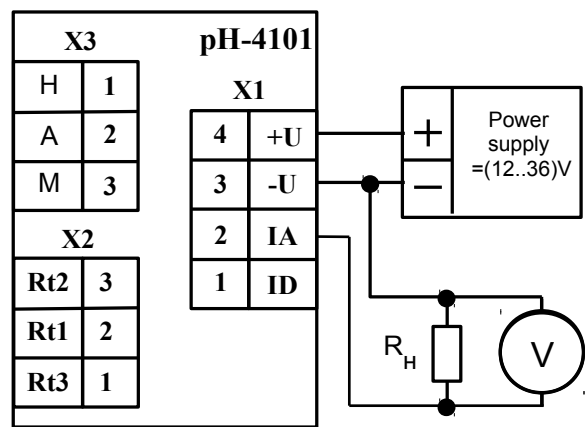


Figure 4. Connection pH meter to the power supply

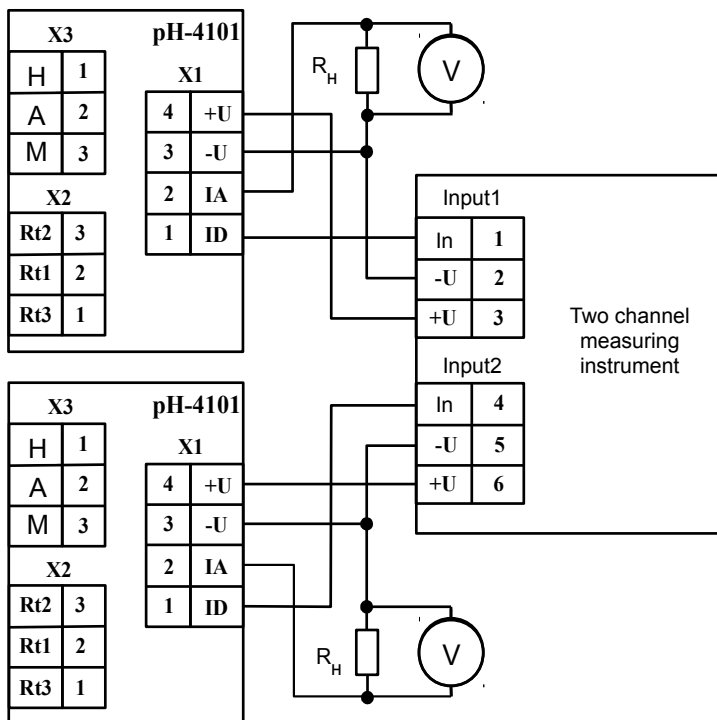


Figure 5. Diagrams of external connections of devices with current output

OVERALL AND ENCLOSURE DIMENSIONS

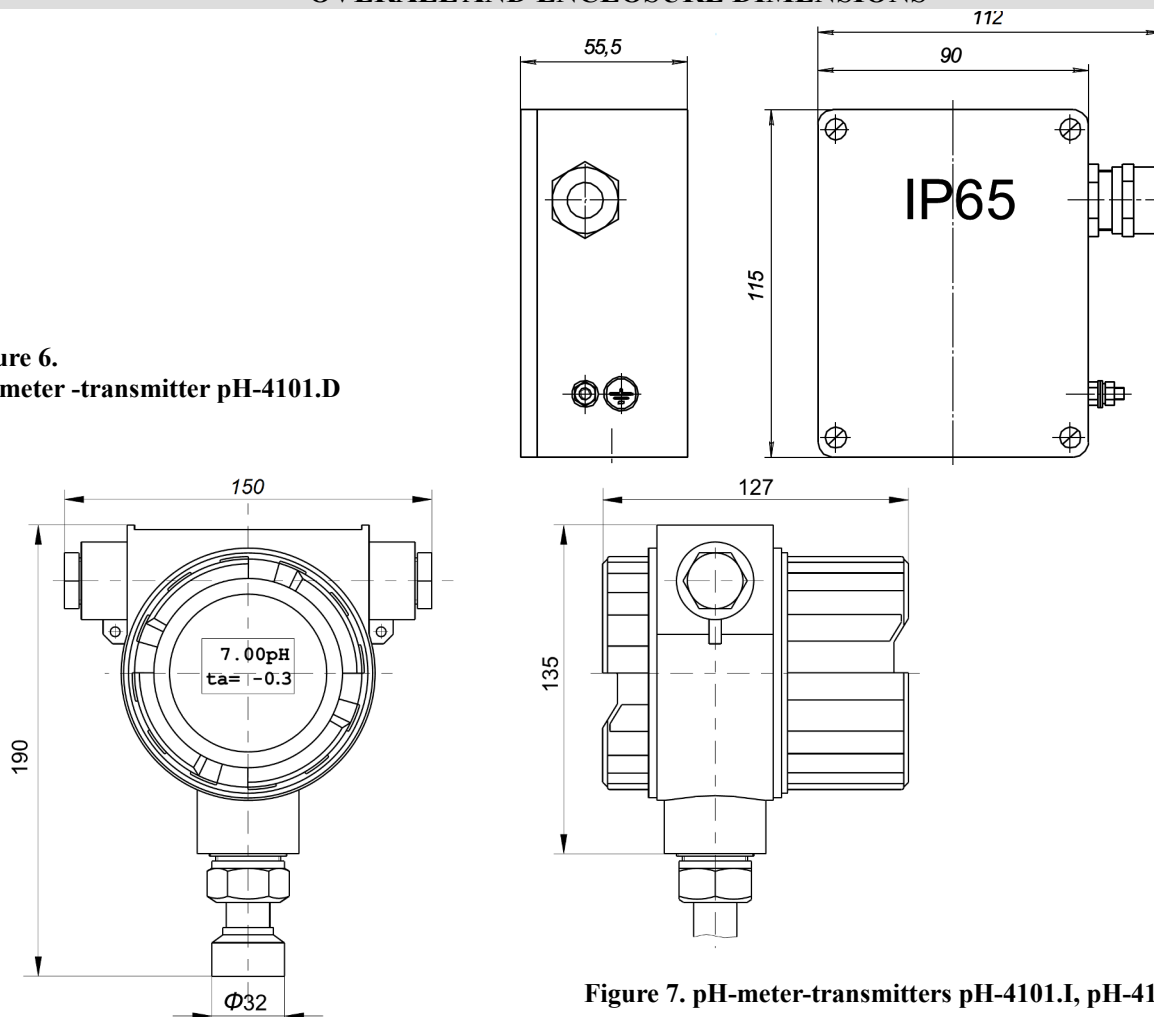


Figure 6. pH meter -transmitter pH-4101.D

Figure 7. pH-meter-transmitters pH-4101.I, pH-4101.I-Ex

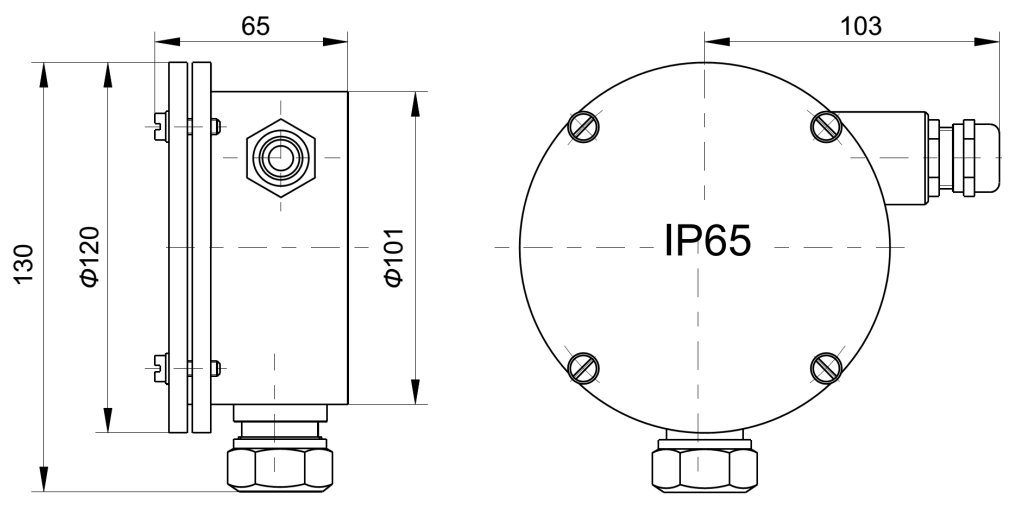


Figure 8. pH-meter-transmitter pH-4101.S

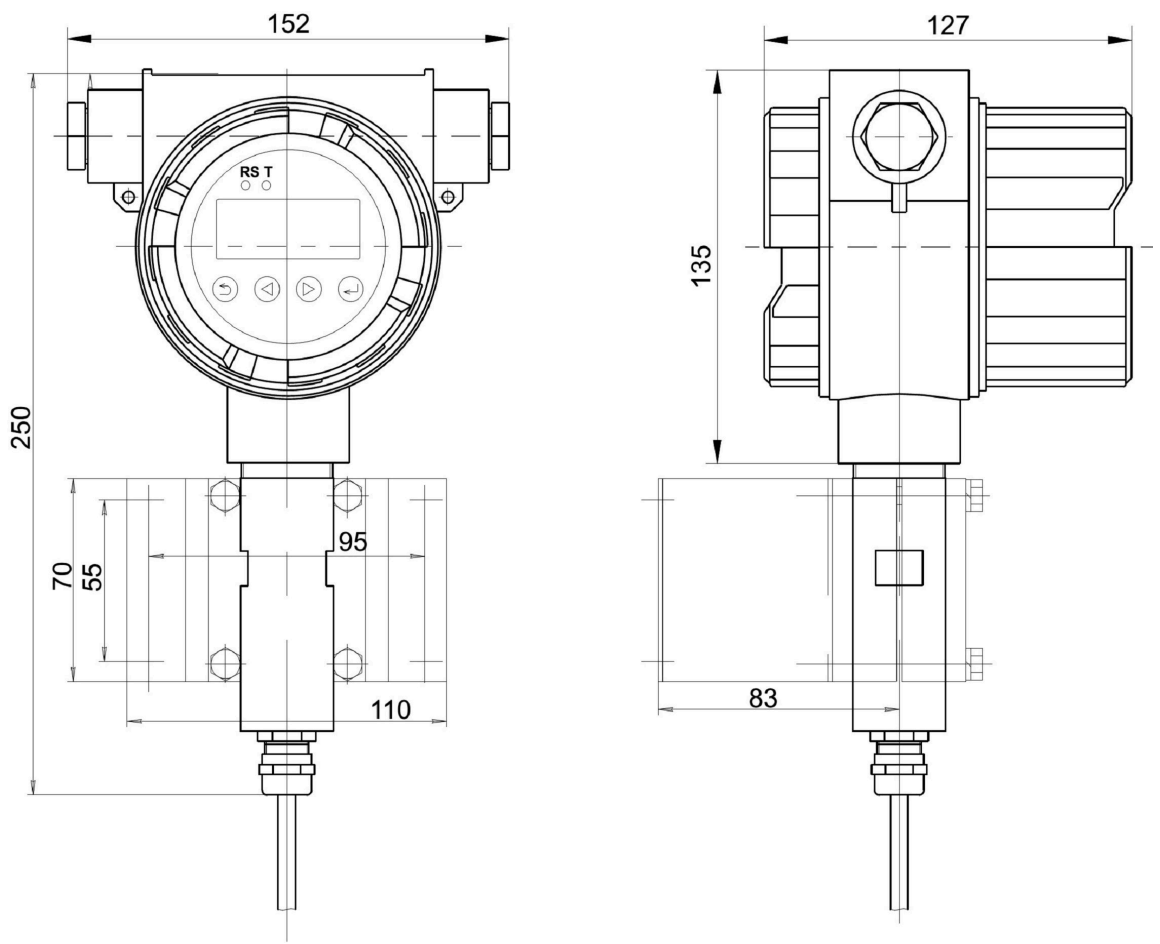


Figure 9. Mounting the transmitter. Example based on pH-4101.I-Ex

ORDER REFERENCE CODE

pH-41	x.	x.	x.	x.	x.	x	x	x	x	x
	<i>Explosion protection (only for pH-4101..I, pH-4122..I, pH-4121..I):</i>									
	00 without explosion protection									
	Exd with an explosion protection type "flameproof enclosure"									
	<i>Fixture type</i>									
	00 without holder									
	Specify the holder type (e.g., SH 1.1) see Chapter Holders									
	<i>Sensors package content option:</i>									
	00 without electrodes									
	10 combination pH electrode of SZ, ID, ЭСК-1 type and a separate temperature sensor of 100П type									
	20 combination pH electrode of 201020, Polilyte, ASP type with an integrated temperature sensor									
	30 combination ORP electrode									
	<i>Measuring transducer enclosure design:</i>									
	W wall-mounted enclosure, made of ABS plastics, IP65									
	P panel-mounted enclosure, made of duralumin. IP54 on the front panel									
<i>LED display color:</i>										
R red										
G green										
<i>PT indicator type:</i>										
LCD liquid crystal display										
LED light-emitting diode display										
<i>Measuring transducer enclosure design:</i>										
S stainless steel enclosure 12X18H10T										
I explosion proof enclosure, made of aluminum alloy with a display window										
D aluminum alloy enclosure										
<i>Design:</i>										
GPI general purpose industrial										
NP for nuclear plants										
<i>Transmitter version:</i>										
01 monoblock without MI										
10 split with MI electrodes calibration										
21 split with PT electrodes calibration										
22 two-channel split (with 2 PT) with with PT electrodes calibration										
22.P monoblock, two-channel, PT and MI in one enclosure										
31 monoblock, PT and MI in one enclosure										

ACCESSORIES

- combination electrode (see section "Combination pH and ORP electrodes»);
- holders for pH-electrodes installation (see section "Holders for sensors»);
- power supply 24VDC;
- pH-metric cable.