



### Product Overview

AX-ANA-L Liquid Analytical Transmitters, Designed for measuring pH, Redox (ORP), and Dissolved Oxygen (DO) in liquids.

**pH:** Detects the voltage difference between measuring and reference electrodes to determine acidity/alkalinity. Provides temperature-compensated pH (25°C) with proportional output. Periodic calibration required.

**ORP:** Measures oxidation–reduction potential via electrode voltage on a platinum surface. Outputs a signal proportional to the oxidising/reducing balance in the medium.

**DO:** Uses a membrane-covered sensor generating a signal proportional to dissolved oxygen concentration. Electronics provide temperature-compensated DO (25°C) for monitoring and control.

### Products Features

- Compact and Integrated Versions.
- Separated versions up to 10m
- Measurement range: pH: 0-14, ORP:  $\pm 1000$  mV, DO: 0-20 ppm
- 4-20mA, HART, Relay Output
- IP67 / IP68 protection
- Plug-in display unit

### Product Specifications

Measuring Range:	pH: 0-14pH, Reserve ( $\pm 2$ pH) ORP: $\pm 1000$ mV, Reserve ( $\pm 200$ mV) DO: 0 – 20 ppm v. 0 – 10 ppm, Reserve (20%)
System:	2 Wire
Accuracy:	pH & ORP (0.1% of the measured value $\pm 1$ digit $\pm 0.01\%$ / °C) DO (0.5% of the measured value $\pm 1$ digit $\pm 0.01\%$ / °C)
Measuring Cycle:	300 msec, on display: 1 sec
Electrode Input:	pH & ORP: Combined electrode, galvanic isolated, input impedance: $>1012\Omega$ , connection: SN6 DO: DO sensor input: Galvanic isolated current input, 0.725V polarisation voltage, connection: SN6
Output :	4 – 20 mA, (3.9 - 20.5mA), $R_{tmax} = 1200\Omega$ galvanic isolated, protection against surge transients
Temperature Measuring	<u>Range:</u> -50 to 130°C, <u>Accuracy:</u> $\pm 0.5^\circ\text{C}$ , <u>Resolution:</u> $0.1^\circ\text{C}$
Ambient Temperature :	<u>Aluminium housing:</u> -30°C to +70°C, <u>Plastic housing:</u> -25°C to +70°C, <u>With display:</u> -20°C to +70°C
Power Supply:	12-36 V DC / 48 mW-720 mW, Galvanic Isolated, Protection against surge transients.
Housing:	<u>Compact type:</u> plastic (PBT) or paint coated aluminium, <u>Probe:</u> Polypropylene (PP), KYNAR (PVDF)
Electrical Connection:	<u>Compact type:</u> 2xM20x1,5 plastic cable glands for cable: O6-12mm, or 2xM20x1.5 metal cable glands for cable: O7-13 mm wire cross section: 0.5-1.5mm <sup>2</sup> (shielded cable is recommended), + 2 x NPT 1/2" internal thread for cable protective pipe
Ingress Protection:	IP67
Electrical Protection:	Class III. electric shock protection
Weight:	<7 kg (15.4 lb)
Country Of Origin:	Hungary

### Product Order Codes

AX-ANA-LEP-1x1-2	Analytical pH Transmitter, 0-14pH, Plastic Housing BSP 1½ PP, 4-20mA
AX-ANA-LER-1x1-2	Analytical ORP Transmitter, $\pm 1000$ mV, Plastic Housing BSP 1½ PP, 4-20mA
AX-ANA-LED-1x1-2	Analytical DO Transmitter, 0 – 20 ppm v.0 – 10 ppm, Plastic Housing BSP 1½ PP, 4-20mA
AX-ANA-SAP300	Display Unit for Ultrasonic Level Transmitter “AX-UL-L” series
	<b>** Replace “x” in part number from Probe Selection Chart on Page 2.</b>

### Probe Selection Charts

#### PH Probes

No	Part No	Description
1	4xphe112seph	1-12 pH / 6 bar / 80°C
2	4xphe112seph	1-12 pH / 8 bar / 80°C
3	4xphe112seph	1-12 pH / 16 bar (25°C); 6 bar (100°C)
4	4xphe112seph	3-14 pH / 6 bar / 100°C
5	4xphe112seph	1-12 pH / 0.5 bar / 60°C
6	4xphe112seph	1-12 pH / 3 bar / 60°C
7	4xphe112seph	1-12 pH / 6 bar / 80°C
8	4xphe112seph	1-12 pH / 3 bar / 60°C



No	Solution Part No	Description
1	4vpuf4ph50mph	Buffer solution pH4 / 50 ml
2	4vpuf4ph250ph	Buffer solution pH4 / 250 ml
3	4vpuf4ph100ph	Buffer solution pH4 / 1 l
4	4vpuf7ph50mph	Buffer solution pH7 / 50 ml
5	4vpuf7ph250ph	Buffer solution pH7 / 250 ml
6	4vpuf7ph100ph	Buffer solution pH7 / 1 l
7	4vpuf10ph50ph	Buffer solution pH10 / 50 ml
8	4vpuf10ph25ph	Buffer solution pH10 / 250 ml
9	4vpuf10ph10ph	Buffer solution pH10 / 1 l
10	4vtarkcl350ph	Storage solution KCl 3 mol / 50 ml
11	4vtarkcl250ph	Storage solution KCl 3 mol / 250 ml
12	4vtarkcl310ph	Storage solution KCl 3 mol / 1 l
12	4vtisold25ph	Cleaning solution / 250 ml

#### ORP Probes

No	Part No	Description
1	4xorrherpseor	50 µS/cm / 6 bar / 80°C
2	4xorrhexpseor	500 µS/cm / 16 bar (25°C); 6 bar (100°C)
3	4xorrheptseor	150 µS/cm / 1 bar / 60°C
4	4xorrhespseor	150 µS/cm / 3 bar / 60°C
5	4xorrheppseor	150 µS/cm / 6 bar / 80°C
6	4xorrheklseor	150 µS/cm / 3 bar / 60°C



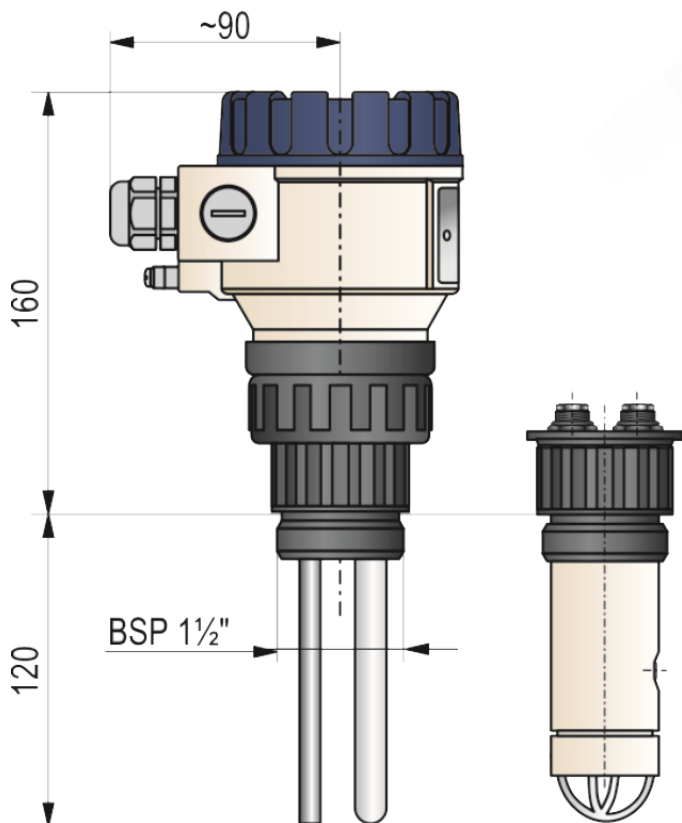
No	Solution Part No	Description
1	4vpuf4ph50mph	Buffer solution pH4 / 50 ml
2	4vpuf4ph250ph	Buffer solution pH4 / 250 ml
3	4vpuf4ph100ph	Buffer solution pH4 / 1 l
4	4vpuf7ph50mph	Buffer solution pH7 / 50 ml
5	4vpuf7ph250ph	Buffer solution pH7 / 250 ml
6	4vpuf7ph100ph	Buffer solution pH7 / 1 l
7	4vpuf10ph50ph	Buffer solution pH10 / 50 ml
8	4vpuf10ph25ph	Buffer solution pH10 / 250 ml
9	4vpuf10ph10ph	Buffer solution pH10 / 1 l

#### DO Probes

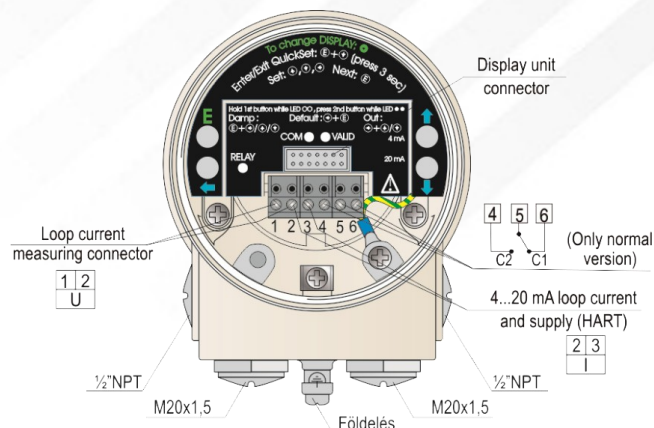
No	Part No	Description
1	4x085g0023ydo	0 - 20 ppm
2	4x085g0022ydo	0 - 10 ppm



### Dimensions



### Wiring



The instrument should be wired with shielded cable led through the cable gland. The wiring of cables can be done after removing the cover of the instrument and the SAP display unit. Make sure that the power supply is turned off at the source. After removal of the cover of the housing and taking the display module (if any) out, the wiring cables can be connected. (Recommended cable: shielded, two-wire, with 0.5 to 1.5 mm<sup>2</sup> cross section. Connect shielding to grounding by the inner or outer grounding screw first. Switch on the unit. After switching of the unit, necessary programming can be done. After the wiring, adjustment and programming, check proper sealing and close the cover carefully.

The housing of the transmitter should be grounded to the EPH network. Resistance of the EPH network should be  $R \leq 2 \text{ ohm}$  measured from the neutral. Shielding of the cable should be grounded at the control room side to the EP network. To avoid disturbing noises, keep away of closeness to high-voltage cables. Especially critical can be the inductive couplings of harmonics (which are present at frequency converter control) because even cable shielding does not supply effective protection against these cases.

The instrument may be damaged by electrostatic discharge (ESD) via its terminal, thus apply the precautions commonly used to avoid electrostatic discharge e.g. by touching a properly grounded point before removing the cover of the enclosure.

### Datasheet Contents

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