Thank you for choosing a NIVELCO instrument.
We are sure that you will be satisfied throughout its use.

NIVOPRESS

HYDROSTATIC LEVEL TRANSMITTER

USER'S MANUAL

1. APPLICATION

The NIVOPRESS submersible hydrostatic level transmitter is applicable for the continuous level measurement of clean or chemically faintly contaminated liquids in bored well, open reservoirs and tanks. The NIVOPRESS is easy to install in already existing tanks and in deep bored well and is especially recommended for controlling of submersible pumps.

2. TECHNICAL DATA

Type	NPK	NPH
Ranges	0 …1, 2, 5 etc max 200 m. water head (see order codes)	
Overload allowed	3 x Range	
Output	4 … 20 mA 2-wire	0 … 10V 3-wire
Operating voltage	9 to 30 V DC	18 to 30 V DC(0 V ≤ 80 mV)
Maximum load resistance	$R_s = (U_s - 9\ V) / 0.02\ A$ U_s = voltage of the power supply	≥ 5 kΩ
Current	—	< 6 mA
Accuracy (FSO)	≤ ± 0.5 %	
Temperature coefficient	≤ ± 0.1 %/ 10K	≤ ± 0.2% / 10 K
Operating temperature	-10 °C to +60 °C for special request +75 °C	
Ingress	IP 68	
Cable cross secion	0.34 mm²	
Cable coating	Polyurethane ∅ 7mm	
Cable length	up to 300 m according to the order	
Probe size	∅ 22 x 145 mm	
Mass	probe: 0.2 k g cable: 0.06 kg/m	
Wetted parts	Sensor: stainless steel 1.4404 Probe stainless steel 1.4571 Cable coating: polyurethane Sealing: VITON Protecting cap: ABS	

Cable mounting plate NAA-103		
Applicable	With cable length up to150 m	
Operating temperature	-10 °C to +45 °C	
Dimensions	110 x 110 mm	
Cable terminal box NAA-101		
Dimensions	139 x 119 x 70 mm	
Ingress	IP 65	
Operating temperature	–40 °C to +65 °C	
Material	Plastic	
Cable gland	ASM16 (∅ 5 to ∅ 10 mm)	
Electric connection	Terminal block for cable with max cross section of 2.5 mm²	
Cable terminal box with over voltage protection NAA-102 (for 2-wire models only)		
Voltage clipping	33 V_{pp}	
Serial resistance	13 ohm ±10 %	
Leakage current	10 µA	
Other data	Same as with NAA101	
Over voltage protection unit OVP12/33 and OVP32/33		
Electric data	Same as with NAA102	
	OVP12/33	**OVP32/33** DIN rail mount
Ingress protection	IP 54	IP 20
Dimensions	72 x 42 x19 mm	62 x 65 x 18 mm

2.1 ACCESSORIES

- User's Manual
- Guarantee sheet
- Declaration of conformity

Optional (to be ordered)

Cable mounting plate	NAA 103
Cable terminal box	NAA 101
Cable terminal box with OVP12/33	NAA 102
DIN rail mount over voltage protection	OVP32/33

2.2 ORDER CODE

NIVOPRESS N P □ - 2 □ □ - □

OUTPUT	CODE
two-wire 4 … 20 mA	K
three-wire 0 … 10 V DC	H

** Different span within the range on special request.

RANGE **	CODE
0 … 1 m water head	1
0 … 2 m water head	2
0 … 5 m water head	3
0 … 10 m water head	4
0 … 20 m water head	5
0 … 50 m water head	6
0 … 100 m w. head	7
0 … 200 m w. head	8

CABLE LENGTH	CODE	
0 m	0	up to 100 m
10 m	1	
20 m	2	
30 m	3	
40 m	4	
50 m	5	
60 m	6	
70 m	7	
80 m	8	
90 m	9	
100 m	A	over 100 m
200 m	B	
300 m	C	

CABLE LENGTH	CODE
0 m	0
1 m	1
2 m	2
3 m	3
4 m	4
5 m	5
6 m	6
7 m	7
8 m	8
9 m	9
0 m	0
10 m	1
:	:
90 m	9

CE

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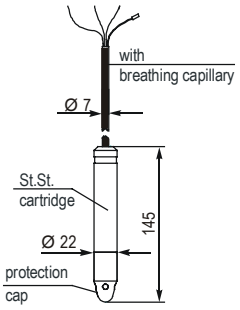
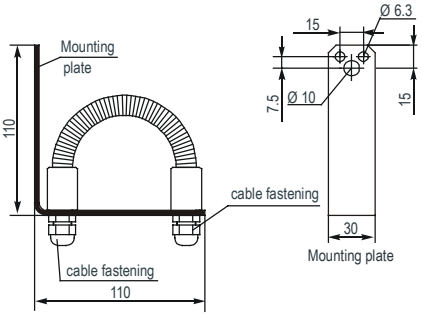
e-mail: sales@nivelco.com ♦ www.nivelco.com

2.3 DIMENSIONS in mm

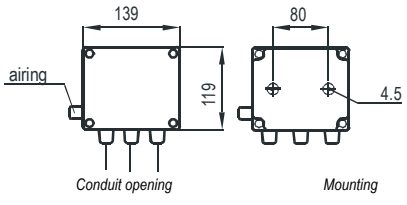
NIVOPRESS NP PROBE



CABLE MOUNTING PLATE NAA103



CABLE TERMINAL BOX NAA101/NAA102



3. INSTALLATION

For fastening the cable use cable mounting plate NAA103 that provides a solution for hanging the cable without slipping and risk of crushing. This mounting plate can be applied with cable length of max 150 m.

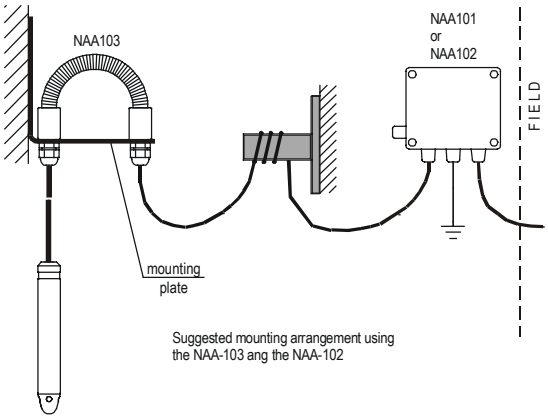
STEPS OF INSTALLATION

- Pass the special cable through the glands, arrange proper length of cable and fasten the cable with the glands.
- Fasten cable mount plate (e.g. by the use of 2 pcs of M5 screw) to a plain surface.
- Excessive cable part has to be wounded on a pipe with a min. diameter of 100mm **The special cable must not be cut short!**
- Let the probe down to the lowest possible point, for only the height of the liquid above the probe will be measured..

For connecting of the special breathing cable and the signal cable use the cable terminal box NAA101 or NAA102 (with IP65), that accommodates the cable end in an ambience free of dust and humidity. In open air or industrial applications the transmitter should be protected against surges/over-voltage. The GND of the OVP must be connected with the shortest possible wire (and without direction changes) to the protecting ground. For this case the application of the NAA-102 terminal box (with OVP) is suggested preferably next to the measurement

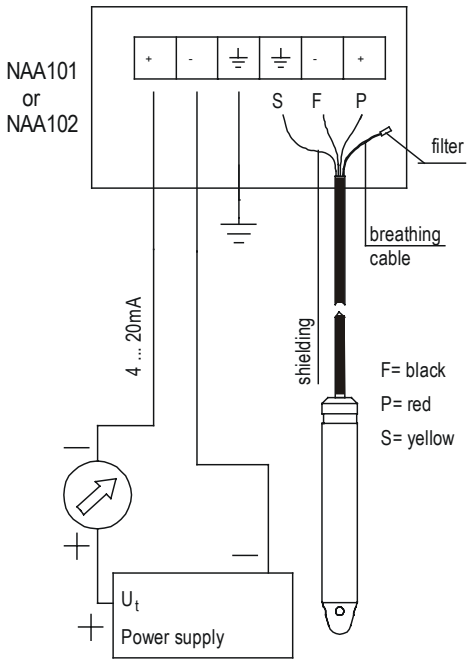
In case of distances over 15 to 20 m with cabling in open air between transmitter and processing unit the use of an additional over voltage protection is advised to protect the processing unit against overvoltage.

For protection against surges coming through the medium, a protecting electrode e.g. a steel pipe is also recommended



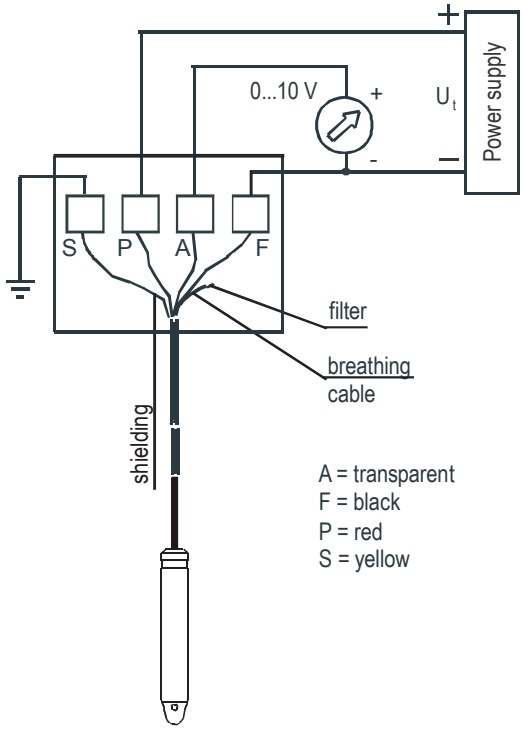
4. WIRING

TWO-WIRE (4 … 20 mA) VERSION

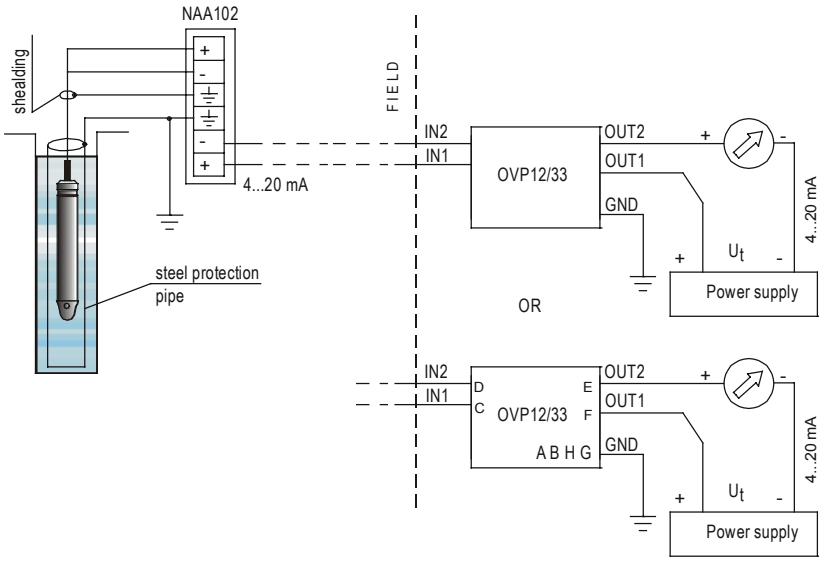


After completing the wiring pull the filter (found in the cable terminal box) onto the end of the breathing cable!

THREE-WIRE (0 … 10 V) VERSION



WIRING OF THE OVER VOLTAGE PROTECTION



5. PUTTING INTO OPERATION, ADJUSTMENT

The unit installed and wired according to the specification is immediately operable, however the specified accuracy will be reached in one-hour time.

6. MAINTENANCE, REPAIR

The unit does not require regular maintenance. In some instances however, the probe may need occasional cleaning to remove surface deposits within the protective cap that can easily flipped out. Do not touch the sensor membrane. Repairs during or beyond guarantee period are to be carried out solely by the manufacturer.

7. STORAGE CONDITIONS

Ambient temperature: -10 °C to +60 °C

8. GUARANTEE

All NIVELCO products are warranted to be free from defects according to the Warranty Sheet, within two (2) years from the date of purchase.

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May, 2004
Technical specification may be changed without notice.