

Continuous Level Sensor



Application

- continuous level monitoring in metallic vessels up to 2,5m
- suitable for level measurement of pastes and adhesive media
- two-rod version for plastic vessels available
- conductivity 1µS/cm min (e. g. distilled water)

Application Examples

- continuous level monitoring in small vessels down to 200mm
- level control in first running vessels of dosing plants to ensure a constant pressure

Hygienic Design / Process Connection

- by using Negeles weld-in sleeve EMZ-352 or EMZ-132 respectively will result a hygienic measurement point, easy to sterilize and with a minimum of flow resistance
- CIP-/ SIP-cleaning up to 150°C
- FDA conformable sensor materials
- sensor completely made of stainless steel, isolator made of PEEK
- available process connections:
Tri-Clamp, dairy flange, DRD, Varivent, APV-Inline, BioControl

Features

- potentiometric measurement principle
- integrated evaluation circuit with 4-20mA output signal
- defined empty signal

Options / Accessories

- isolation of rods upper 100mm if the sensor is installed from the top
- installation from the bottom side

Attention: Use only Negele weld-in systems to ensure a save function of the measurement point!

Specification

Process connection	thread	G1/2" or G1" resp. at the sensor
	torque G1/2"	10Nm max
	torque G1"	20Nm max
Materials	head / thread connection	stainless steel V2A, (1.4305) 55mm dia. / WW 36mm
	isolator	PEEK
	rods	stainless steel (1.4404) 6 or 10mm dia.
	Operation pressure	10bar max
Temperature ranges	ambient	0...70°C
	process	-10...100°C
	CIP-/ SIP-cleaning	-10...150°C 30min max



rod length in mm	200...500	501...2500
rod in mm	Ø 6	Ø 10
thread connection	G1/2" G1"	G1"
double rod version	G1" Ø6/Ø4	G1" Ø6/Ø4

Accuracy	≤ 1,0%	
Linearity	≤ 1,0%	
Electr. connection	2x cable entry	PG (M16x1,5) 2pin 1,5mm ²
	cable connection	M12 plug-in for power supply
	supply voltage	18...36V DC
Sensor connection	cable LIYY (oil resist.)	5x0,75mm ²
	length max	1,5m (or shorter)
Output	analog	4-20mA, burden resist. 500Ω max
	Empty signal	output
Type of protection		IP69K

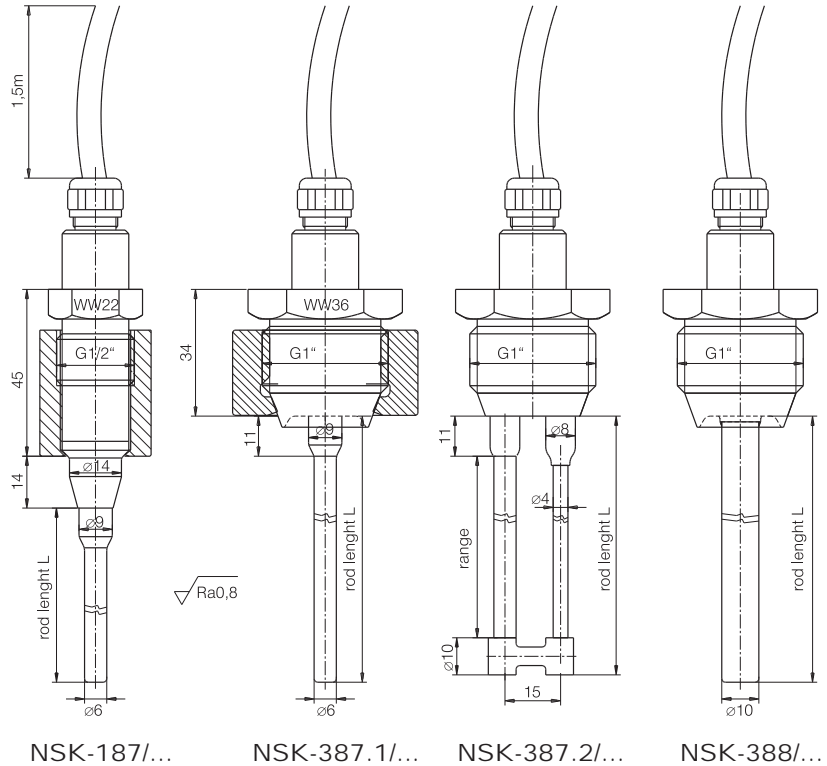
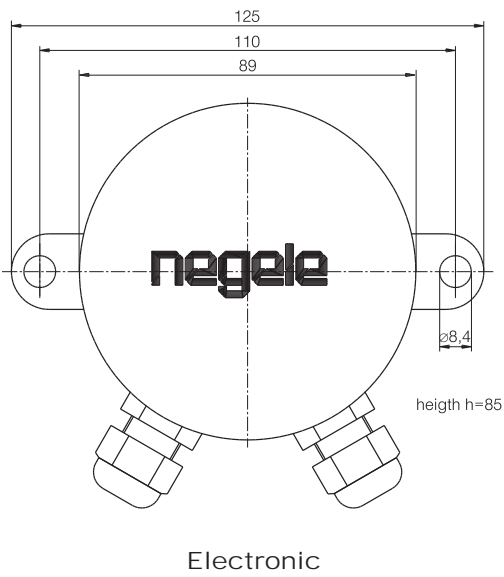
Order Code

Type	Model	Rod length	Installation position/ Isolation	Electrical connection
NSK-187	single rod G1/2" with ≤1,5m cable and electronic	100... 500mm	o top / without oi top / with isolation u bottom / without isolation	PG M12 (power supply only)
NSK-387.1	single rod G1" with ≤1,5m cable and electronic	100... 500mm		
NSK-387.2	double rod G1" with ≤1,5m cable and electronic	200... 800mm		
NSK-388	single rod G1", Ø10mm with ≤1,5m cable and electronic	501... 2500mm		

Order example: **NSK-187 / 200 / oi / PG**



Dimensioned Drawings NSK-...



Mechanical Connection / Installation

- **Attention!** Don't shorten the sensor rod!
- It's not possible to exchange different electronics and sensor rods, just in some cases!
- If a single rod version, **NSK-187, -387.1/...** and **-388/...**, is used, the sensor rod should be nearly parallel to the vessel wall. If this is not possible you can use the Negele indicator, **PEM-DD**, for a linearisation!

Electrical Connection / First Time Operation

Attention: To guarantee a trouble-free function the power supply cable as well as the signal cable should be shielded and grounded at the electrical control box!

Sensor Calibration

A calibration is necessary in this cases:

- the sensor rod is changed
- a sensor rod with another length is built in
- the sensor cable has been shorten

To do the calibration, follow the instructions below:

- connect power supply as shown in the drawing
- connect current meter to the output
- fill the vessel and control the levels
e. g. 50% level = 12mA, 100% level = 20mA.
- use trimmer T2 and T3 to set the current output if needed:
0% = 4mA, 100% = 20mA. The current output of 0% and 100% can be adjusted separately.

Adjustment of dry alarm

- fill the vessel up to the lowest point of the sensor rod
- turn the trimmer T1 (dry alarm) until the red LED called "Sonde" will be flashing shortly (take a look on the table "nsk-sensitivity" status 3).

Connection Diagramm NSK-e view from top, (lid open)

Connection of sensor rod

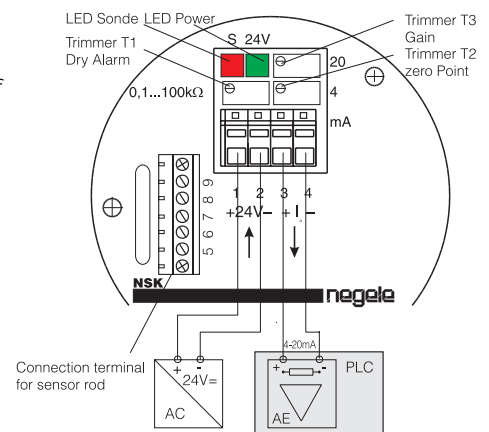
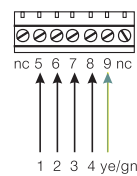


Table NSK-sensitivity

status	LED	S	4-20mA	0,1...100kΩ
1.	✳	—	2,4mA	✗
2.	✳	—	4-20mA	✗
3.	✳	—	4-20mA	o.k.
4.	✳	—	4-20mA	✗