

Product Information NVS-146.w, NVS-345.2w

FOOD

# Point level switch as per the German Federal Water Act (Wasserhaushaltsgesetz WHG)



### Application/Specified usage

- Point level measurement in tanks and pipes of non-combustible media that is hazardous to water with a minimum conductivity of 10 µS/cm.
- For use in LAU installations, plants for storage, filling and conversion propose substances hazardous to water (chemicals and their mixtures).

### Hygienic design/process connection

- A flow-optimized, hygienic and easily sterilizable installation is achieved by the Negele weld-in sleeve EMZ-... or the weld-in system EHG-...
- Elastomer-free sealing system for gap-free sensor installation without dead space (see "CLEANadapt" production information)
- CIP/SIP cleaning up to 143 °C/max. 120 minutes

### Special features

- Integrated level transmitter in housing
- Electrodes can be shortened
- Quiescent current principle
- Certification Z-65.13-238 by Deutsches Institut für Bautechnik (DIBT)

### Authorizations



### Certification number



NVS-146.w

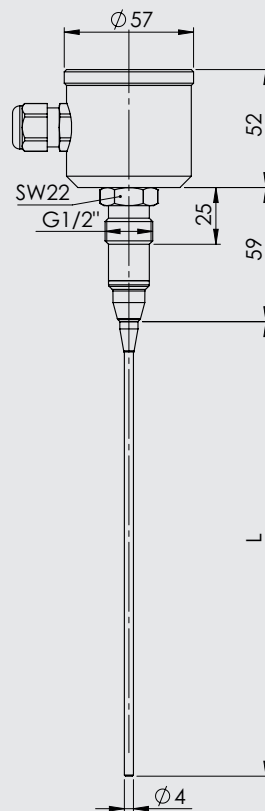


NVS-345.2w

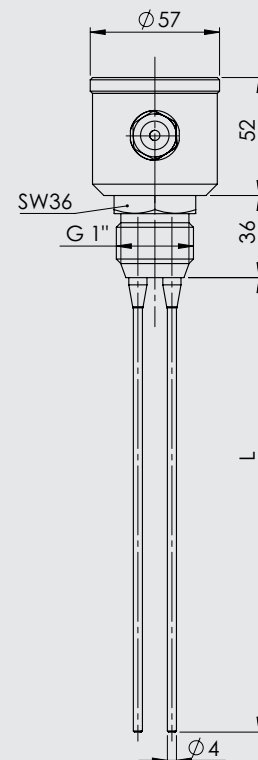


Technical data of point level switch		
Process connection	NVS-146.w NVS-345.2w	G1/2", tightening torque 10 Nm G1", tightening torque 10 Nm
Materials	Connecting head Electrode Isolator Coating	1.4301 1.4404 PEEK (FDA approval number 21CFR177.2414) PFA (FDA approval number 21CFR177.2440, 21CFR177.1550)
Surface quality		$R_a \leq 0.8 \mu\text{m}$ (product contacting)
Weight		Approx. 500 g
Electrodes		$\varnothing 4 \text{ mm}$ Length [mm]: 200, 500, 850, 1000, 1500, 2000 (can be shortened)
Operating pressure		Max. 10 bar
Temperature ranges	Ambient Process Cleaning	-10...+60 °C 0...140 °C 143 °C / max. 120 minutes
Electrical connection	Cable gland	M16x1.5 (PG)
Protection class		IP 67
Supply voltage		15...36 V DC
Sensor measurement		Free of DC voltage
Sensitivity		10 k $\Omega$ (with jumper) 100 k $\Omega$ (jumper disconnected)
Output		Supply voltage -10% / 0.05 A (short-circuit proof)
Time delay	Fixed	0.5 s

Dimensional drawing NVS-146.w

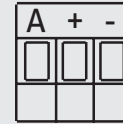


Dimensional drawing NVS-345.2w



## Electrical connection

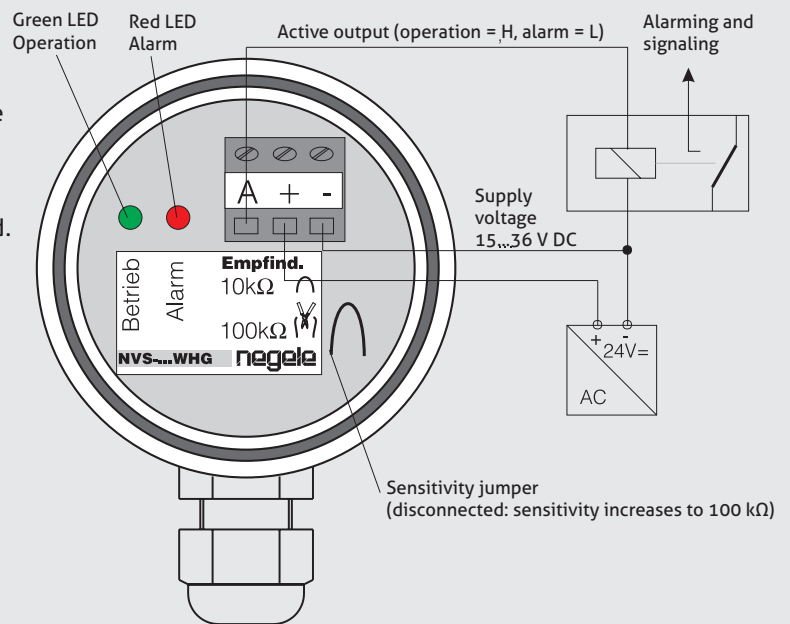
+	+ Supply voltage
-	- Supply voltage
A	Active output (operation = H, alarm = L)



## Installation and function tests

- 1: Shorten the special rod to the required maximum level and install the sensor in the existing sleeve
- 2: Apply the supply voltage. The electrode is free
  - Operation LED (green) lights up.
  - Output A carries H potential (approx. 24 V)
- 3: Increase the level until the electrode is wetted.
  - The operation LED (green) goes out and the alarm LED (red) lights up.
  - Output A carries L potential (0 V)
- 4: If the alarm LED (red) does not light up even though the electrode is wetted, the jumper must be disconnected to increase the sensitivity of the sensor to 100 k $\Omega$ . Then repeat points 2 and 3.

## Connection diagram



## Information on CLEANadapt process connections



A complete overview of all available adapters and the technical data can be found with the **CLEANadapt** process adaptation product information.

## Selection of possible process connections

Process connection	Pipe piece EHG (DIN 11850 Range 2)	Weld-in sleeve	Weld-in ball	Collar sleeve	APV-Inline

## General setup procedure



- If necessary, cut the electrodes to the required lengths. In doing so, ensure that the anchoring between the rod and the thread connector is not strained excessively. If using coated electrodes, do not damage the insulation of the rod part that remains on the sensor.
- Strip 5 mm of insulation off the tip of insulated rod (length depends on the conductivity of the medium).
- Screw the sensor into the sleeve and connect as shown in the wiring diagrams. Do not damage the coating when inserting the sensor into the sleeve.

### Mounting instructions



- When screwing in the sensors, do not exceed the maximum permissible torque.
- To ensure the measuring point is functioning properly, ensure that the process connection thread of the sensor makes good electrical contact with the pipe or tank wall. Therefore, do not use insulating sealants such as Teflon. Also note the instructions in the CLEANadapt product information.
- For tanks with a metallic tank wall, use the NVS-146w. For a non-metallic tank wall use NVS-345.2w.
- When tightening and loosening the sensor, only use the wrench flats provided for this purpose. Never use the connecting head.

### Cleaning/Maintenance



- When using a pressure washer, do not point the nozzle directly at the electrical connections.

### Transport/Storage



- No outdoor storage
- Store in an area that is dry and dust-free
- Do not expose to corrosive media
- Protect against solar radiation
- Avoid mechanical shock and vibration
- Storage temperature 0...40 °C
- Relative humidity max. 80%

### Reshipment



- Sensors and process connection must be clean and must not be contaminated with hazardous media and/or heat-conductive paste. Note the cleaning information!
- To avoid damage of the equipment, use suitable transport packaging only.

### Standards and guidelines



- Compliance with the applicable regulations and directives is mandatory.

### Note on CE



- Applicable directives: Electromagnetic Compatibility Directive 2014/30/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

### Disposal



- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

### Order code

NVS- Conductive point level switch with integrated level transmitter

**146.w** Single-rod point level switch G1/2" process connection with WHG certification  
**345.2w** Two-rod point level switch G1" process connection with WHG certification

#### Electrode (can be shortened)

**200** Length 200 mm, diameter 4 mm, coated  
**500** Length 500 mm, diameter 4 mm, coated  
**850** Length 850 mm, diameter 4 mm, coated  
**1000** Length 1000 mm, diameter 4 mm, coated  
**1500** Length 1500 mm, diameter 4 mm, coated  
**2000** Length 2000 mm, diameter 4 mm, coated

NVS- **146.w** **200**