Precise level measurement even with difficult media and operating conditions

Continuous Level Sensor NSL-F

Benefits in production processes

For efficient production processes, continuous, precise monitoring of the filling level of feed tanks, storage tanks or fillers is essential. The flexible, modular level sensor NSL-F with its potentiometric measuring principle offers a reliable and precise application even with difficult to measure media and with demanding applications such as:

- strongly or differently foaming media
- pasty media or media adhering to the measuring rod
- pressurized tanks
- fast level changes, e.g. during filling processes
- non-metallic tanks
- different media in one tank
- tank shapes with restricted installation access
- production environments with high mechanical or chemical stress (e.g. cleaning agents)

Advantages of the NSL-F level sensor

- **Maximum resource efficiency due to precise measurement even with demanding media**: Even with foam or with the measuring rod coated by pasty or strongly adhesive media, the **measuring accuracy is < 1%** of the rod length.
- Ready for industry 4.0: **digital IO-Link interface and analog 4...20 mA** data transmission in parallel
- **Ideal for metallic, non-metallic and pressurized tanks** due to rod length from 50 mm to 3 m, installation from below, above or from the side and optional versions
- **Extremely fast response time < 100 ms** for precise dosing monitoring, e.g. for filling systems
- **Automatic adjustment to media**, no adaptation required with alternating media in one tank
- **Hygienic alternative to float sensors** due to easily sterilizable installation solution
- **Robust construction** made entirely of stainless steel

Typical customer applications

- Dairies / milk production: milk heaters, separators, fillers, ice cream production plants, tanks for yoghurt and pasty milk products
- Breweries: Brewing, lautering and storage tanks, filters, bottling plants
- Beverage and food industry: Filling systems for alternating beverages and juices, storage and production tanks

Optional versions

Remote-Version NSL-FR

Curved Version NSL-F-01

Double rod version NSL-F-02

PEEK insulated rod end

Technical specification at a glance

- **Extremely precise, fast & flexible** level sensor
- **Flex Hybrid Technology** with **digital + analog** interface (**IO-Link + 4...20 mA**): from simple data transfer to intelligent communication
- Modular design: configurable from the **low-priced basic version to the fully equipped high-end model**
- For vessels from **50 mm to 3 m** height
- CIP / SIP cleaning up to **143 °C / 120 min.**
- **Response time < 100 ms** for constantly precise values even with rapid level changes in high-speed fillers
- **Protection class IP 69K** for highest application safety
- **Smart Replace Design for remote version**: Easy replacement of all components by plugging in

Modular Sensor platform with IO-Link and 4...20 mA

The **Flex-Hybrid Technology** with **IO-Link and 4...20 mA** combines the best of both worlds: Data from the sensor can be transmitted digitally, analogously or in parallel. The bidirectional communication enables status control and preventive maintenance at any time to avoid production downtimes. Installation and commissioning are time- and cost-saving thanks to plug-and-play technology, and sensor replacement is easier than ever before thanks to "Smart Replace Design" with automatic detection, configuration and parameterization.

Order code

NSL-F-00 (Potentiometric level sensor, straight design)

Rod lenght EL

0050...3000 (In steps of 10 mm, intermediate sizes at extra charge)

Process connection

S00	(CLEANadapt G1/2" hygienic)
S01	(CLEANadapt G1" hygienic)
TC1	(Tri-Clamp 1½")
TC2	(Tri-Clamp 2")
T25	(Tri-Clamp 2½")
TC3	(Tri-Clamp 3")
V10	(Varivent type B, DN 10/15)
V25	(Varivent type F, DN 25)
V40	(Varivent type N, DN 40/50)

Material certificate

O	(No certificate)
Z	(With 3.1 material certificate)

Mounting position

1	(Installation from top, head orientation horizontal)
2	(Installation from top, head orientation vertical)
3	(Installation from bottom, head orientation horizontal)
4	(Installation from bottom, head orientation vertical)
5	(Installation from top, head orientation horizontal, 40 mm insulation) only for EL ≥ 200 mm
6	(Installation from top, head orientation vertical, 40 mm insulation) only for EL ≥ 200 mm

Signal module

A42	(1x 4...20 mA level)
I42	(IO-Link and 1x 4...20 mA level)

Electrical connection

P	(Cable gland M16x1.5)
M	(1x M12 plug)
L	(1x M12 plug, 5 pin, wiring according to LN sensor)
C	(1x M12 plug, 5 pin analog output and IO-Link)

Display

X	(Without display)
S	(Simple User Interface with small display)
L	(Large User Interface with display)

Cap

X	(Opaque plastic)
P	(Clear plastic)
M	(Stainless steel without control window)
W	(Stainless steel with control window)

Insulation at rod end

XX	(Without insulation)
PK	(With PEEK insulation >> EL + 30 mm)

Configuration

X	(Factory setting)
S	(Special customer setting)

NSL-F-00 /	1500 /	S00 /	O /	1 /	A42 /	P /	X /	X /	XX /	X

Note:

Order code for optional versions see product information:

Remote:	NSL-FR
Curved:	NSL-F-01
Double rod:	NSL-F-02

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