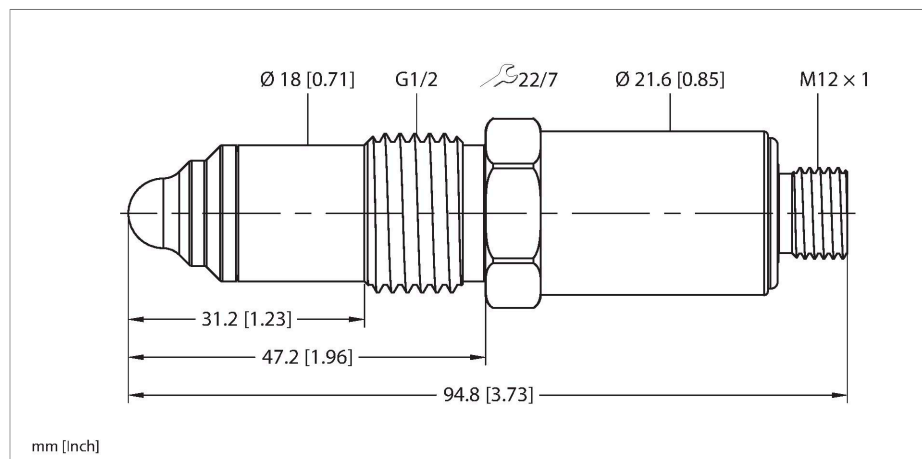


# NCLS-30-UP6X-H1141

## Capacitive Limit Level Sensor



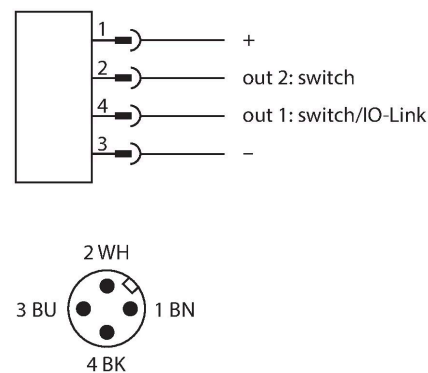
### Technical data

Type	NCLS-30-UP6X-H1141
ID	100004248
Mounting location	any
Installation information	Please use the NCLS limit level sensor only with original Turck process adapters!
Required permittivity ( $\epsilon_r$ )	1.5
Process Pressure	10 bar
Vacuum resistance	-1 bar
Ambient temperature	-10...+70 °C
Medium temperature	0...+100 °C
Comment on the media temperature	0...+130 °C for < 1 h at an ambient temperature of 40 °C
Storage temperature	-20...+70 °C
CIP/SIP-capable	yes
<b>Electrical data</b>	
Operating voltage $U_B$	12...32 VDC
	In IO-Link mode
Power consumption	3 W
Switch-on time	< 0.3 s
Response time	< 0.2 s
Switching frequency	$\leq 5$ Hz
Isolation test voltage	0.5 kV
Communication protocol	IO-Link
SIO mode-compatible	Yes

### Features

- Media-contacting detection of limit levels in tanks and pipes
- Detection of different substances (liquid, viscous, granular, powder form)
- Hygienic PEEK tip, CIP/SIP compatible
- EHEDG certified (with NCLS-WA1 process adapter)
- Highly visible ring LED
- 12...32 VDC, power consumption: typically 1 W, max. 3 W
- Two digital outputs, separately adjustable as NO/NC
- PNP, NPN or push-pull, switchable
- IO-Link for parameterization/process values
- Process connection G1/2" male thread, hygienic (in combination with TURCK adapters)
- 4-pin connector device, M12 x 1

### Wiring diagram



## Technical data

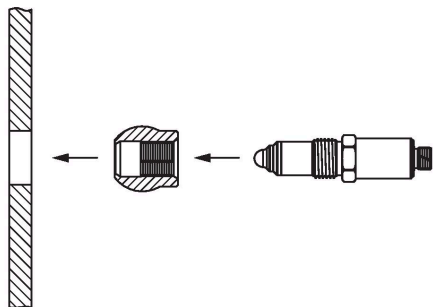
Number of digital outputs	2
Output function	4-wire, NO/NC, PNP
Short-circuit protection	yes
Wire break/reverse polarity protection	yes/Complete
Insulation class	III
<b>Tests/approvals</b>	
Approvals	CE EHEDG
<b>IO-Link</b>	
IO-Link specification	V 1.1
Programming	FDT/DTM
Transmission physics	corresponds to 3-wire physics (PHY2)
Transmission rate	COM 2/38.4 kbps
Process data width	16 bit
Measured value information	14 bit
Switchpoint information	2 bit
Frame type	2.2
Included in the SIDI GSDML	Yes
<b>Mechanical data</b>	
Design	Threaded barrel, G ½"
Dimensions	94.8 x 22 x 22 mm
Housing material	Stainless steel, 1.4404 (AISI 316L)
Materials (contact with media)	Plastic, PEEK
Max. tightening torque of housing nut	20 Nm
Process connection	G 1/2" male thread, hygienic
Electrical connection	Connector, M12 × 1
Vibration resistance	2 Hz (1 mm)
Shock resistance	7 g (11 ms)
Protection class	IP67 IP69K
MTTF	1080 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	Ring LED, Green
Switching state	Ring LED, Green, (Reverse of operating voltage indicator)

## Functional principle

Capacitive proximity switches are designed for wear-free detection of metal (electrically conductive) as well as non-metal (not electrically conductive) objects. A key feature of the NCLS limit level sensors is the ability to detect and differentiate between various liquids, viscous materials, granular materials and powders by making contact with the media. They are extremely well suited for detecting level limits (max./min.) and changes to the media in tanks and pipelines.

## Mounting instructions

## Product features



Please use the NCLS limit level sensor only with original Turck process adapters!

In principle, the sensor can be installed in any position and any location.

Mounting positions where deposits occur as a result of highly adhesive or viscous media or air pockets must be avoided.

A minimum distance of 15 mm must be maintained between the sensor tip and any adjacent objects (e.g. the wall of a container or pipe).

The relative permittivity ( $\epsilon_r$ ) of the medium must be  $>1.5$ .