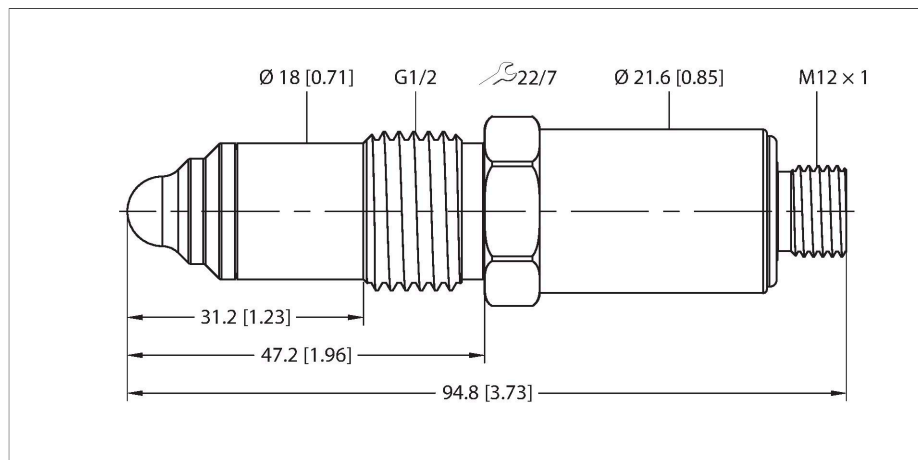


NCLS-30-UN6X-H1141

Capacitive Limit Level Sensor



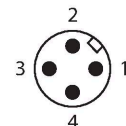
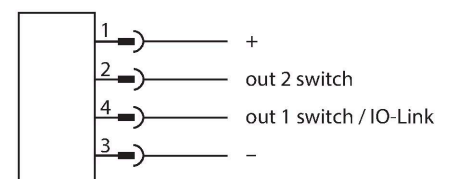
Features

- Media-contacting detection of limit levels in tanks and pipelines
- Detection of different substances (liquids, viscous materials, granular materials, powders)
- Hygienic PEEK tip, CIP/SIP-compatible
- EHEDG (submitted)
- Highly visible ring LED
- 12...32 VDC, < 1 W fuel consumption in idle mode
- 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

Technical data

Type	NCLS-30-UN6X-H1141
Ident. no.	100004249
Mounting location	any
Installation information	Please use the NCLS limit level sensor only with original Turck process adapters!
Required permittivity (ϵ_r)	1.5
Pressure resistance	10 bar
Vacuum resistance	-1 bar
Ambient temperature	-10...+70 °C
Medium temperature	0...+100 °C
Comment on the media temperature	0...+130 °C für <1 h bei einer Umgebungstemperatur von 40 °C
Storage temperature	-20...+70 °C
CIP/SIP-capable	yes
Electrical data	
Operating voltage	12...32 VDC
Power consumption	3 W
Switch-on time	< 0.3 s
Response time	< 0.2 s
Isolation test voltage	≤ 0.5 kV
Communication protocol	IO-Link
SIO mode-compatible	Yes
Number of digital outputs	2
Output function	4-wire, NO/NC programmable, NPN
Short-circuit protection	yes
Wire breakage/Reverse polarity protection	yes / yes
Protection class	III

Wiring diagram



Functional principle

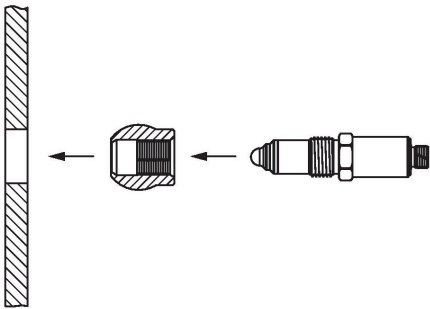
Capacitive proximity switches are designed for wear-free detection of metal (electrically conductive) as well as non-metal (not electrically conductive) objects. A key feature of the NCLS limit level sensors is the ability to detect and differentiate between various liquids, viscous materials, granular 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.

Technical data

Approvals	CE EHEDG (submitted)
Warning	Avoid static charging Protect against mechanical damage, do not disconnect connectors under voltage
IO-Link	
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
Mechanical data	
Design	Threaded barrel, G ½"
Dimensions	94.8 x 22 x 22 mm
Housing material	Stainless steel, 1.4404 (316L)
Materials (contact with media)	Plastic, PEEK
Max. tightening torque housing nut	20 Nm
Process connection	G ½" male thread, hygienic
Electrical connection	Connectors, M12 × 1
Vibration resistance	2 Hz (1 mm)
Shock resistance	7 g (11 ms)
Protection class	IP67 / IP69K
MTTF	324 years
Power-on indication	Ring LED, Green
Switching state	Ring LED, Green, (Reverse of operating voltage indicator)

Mounting instructions

Product features

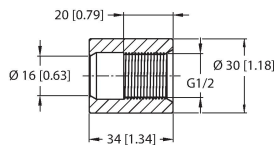


Please use the NCLS limit level sensor only with original Turck process adapters!
 In principle, the sensor can be installed in any position and any location.
 Mounting positions where deposits occur as a result of highly adhesive or viscous media or air pockets must be avoided.
 A minimum distance of 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 (ϵ_r) of the medium must be >1.5 .

Accessories

NCLS-WA0

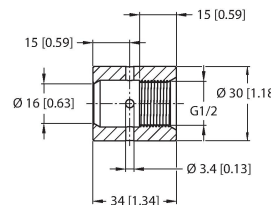
100004429



Prozessadapter, zylindrische Einschweißmuffe G1/2" ohne Kontrollbohrung für kapazitive Grenzstandsensoren NCLS, metallisch dichtend für hygienische Applikationen, Material 316L, max. Temperatur 140°C

NCLS-WA1

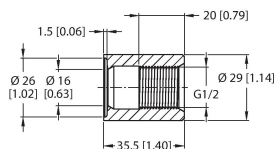
100004430



Prozessadapter, zylindrische Einschweißmuffe G1/2" mit Kontrollbohrung für kapazitive Grenzstandsensoren NCLS, metallisch dichtend für hygienische Applikationen, Material 316L, max. Temperatur 140°C

NCLS-WA2

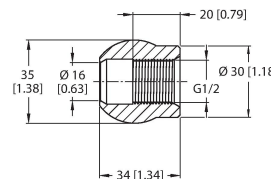
100004431



Prozessadapter, Schweißbundmuffe G1/2" ohne Kontrollbohrung für kapazitive Grenzstandsensoren NCLS, metallisch dichtend für hygienische Applikationen, Material 316L, max. Temperatur 140°C

NCLS-WA4

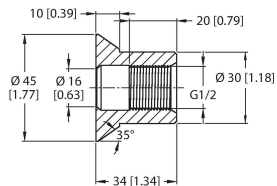
100004432



Prozessadapter, Kugelmuffe G1/2" ohne Kontrollbohrung für kapazitive Grenzstandsensoren NCLS, metallisch dichtend für hygienische Applikationen, Material 316L, max. Temperatur 140°C

NCLS-WA7

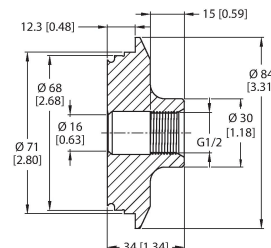
100004433



Prozessadapter, Einschweißmuffe G1/2" mit Kragen für kapazitive Grenzstandsensoren NCLS, metallisch dichtend für hygienische Applikationen, Material 316L, max. Temperatur 140°C

NCLS-VA

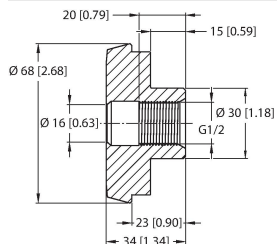
100004434



Varivent process adapter G1/2" DN50 for NCLS limit level sensors, metallic sealing for hygienic applications, material 316L, max. temperature 140 °C

NCLS-DF50

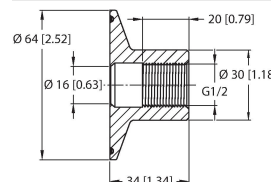
100004435



Dairy screw connection process adapter G1/2" DN50 for NCLS limit level sensors, metallic sealing for hygienic applications, material 316L, max. temperature 140 °C

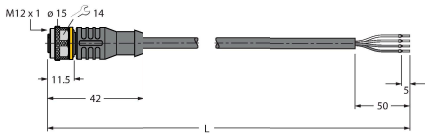
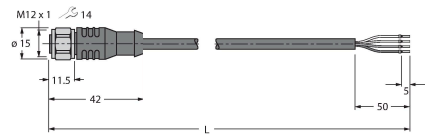
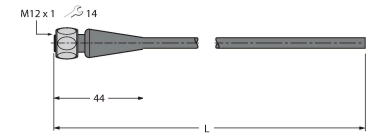
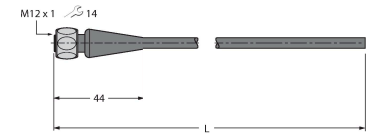
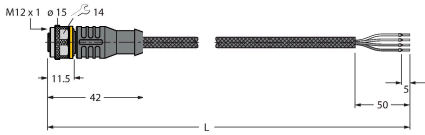

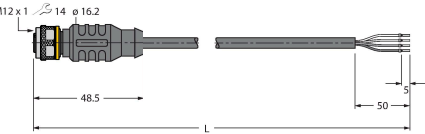
NCLS-TC50

100004436



Tri-Clamp process adapter G1/2" DN50 for NCLS limit level sensors, metallic sealing for hygienic applications, material 316L, max. temperature 140 °C

Accessories

Dimension drawing	Type	Ident. no.	
 <p>Technical drawing showing dimensions for RKC4.4T-2/TEL: Connector diameter M12 x1 with 14 pins, length 42, sheath length 50, total length L.</p>	RKC4.4T-2/TEL	6625013	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
 <p>Technical drawing showing dimensions for RKC4.4T-2/TXL: Connector diameter M12 x1 with 14 pins, length 42, sheath length 50, total length L.</p>	RKC4.4T-2/TXL	6627544	Connection cable, M12 female, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; stainless steel coupling nut; cULus approval; other cable lengths and qualities available, see www.turck.com
 <p>Technical drawing showing dimensions for RKH4.4-2/TFG: Connector diameter M12 x1 with 14 pins, length 44, total length L.</p>	RKH4.4-2/TFG	6933086	Connection cable, M12 connector, female, straight, 4-pin, cable length: 2 m, sheath material: TPE, grey; temperature range: -40...+105 °C (in resting state), -25...+105 °C (in motion); other cable lengths and types available, see www.turck.com
 <p>Technical drawing showing dimensions for RKH4.4-2/TFE: Connector diameter M12 x1 with 14 pins, length 44, total length L.</p>	RKH4.4-2/TFE	6934473	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, sheath material: PVC, grey; temperature range: -25...+80 °C (in resting state), 0...+80 °C (in motion); other cable lengths and types available, see www.turck.com
 <p>Technical drawing showing dimensions for RKC4.4T-2/TXL1001: Connector diameter M12 x1 with 14 pins, length 42, sheath length 50, total length L.</p>	RKC4.4T-2/TXL1001	6628825	Connection cable, M12 connector, female, straight, 4-pin, cable length: 2 m, protective sheathing material: Aramid fibers, yellow; Temperature peak: 200 °C; other cable lengths and qualities available, see www.turck.com
 <p>Technical drawing showing dimensions for RKC4.4T-P7X2-2/TEL: Connector diameter M12 x1 with 14 pins and 16.2 mm diameter, length 48.5, sheath length 50, total length L.</p>	RKC4.4T-P7X2-2/TEL	6626162	Connection cable, M12 female, straight, 4-pin, 2 LED, cable length: 2 m, jacket material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
 <p>Technical drawing showing dimensions for RKC4.4T-P7X2-2/TXL: Connector diameter M12 x1 with 14 pins and 16.2 mm diameter, length 48.5, sheath length 50, total length L.</p>	RKC4.4T-P7X2-2/TXL	6626795	Connection cable, M12 female, straight, 4-pin, 2 LED, cable length: 2 m, jacket material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com