



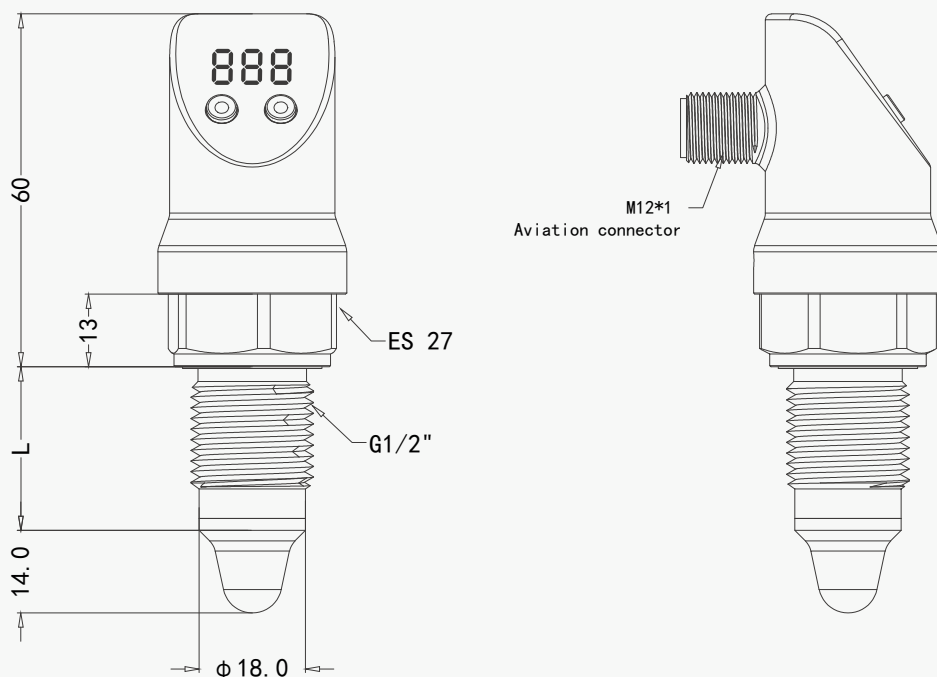
Principle structure

The LS283 capacitive level switch/sensor has its signal processed by the post-processing circuit and converted into a standard industrial electrical signal for output and display. The one-piece injection molded shell design enables this series of products to be used in various industrial Settings. Key setting, simple operation, high-brightness LED can digitally display real-time measurement values. Multiple connection methods can fully meet various specific installation requirements.

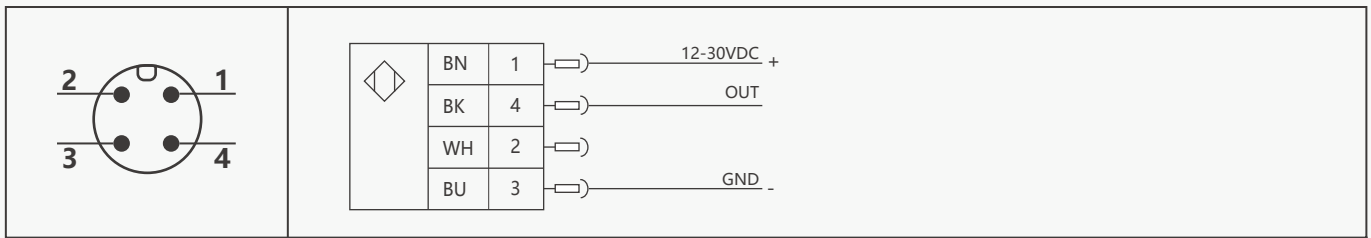
Technical parameters

- ◇ Supply voltage: 12... 30Vdc
- ◇ No-load current consumption: Maximum 30mA, powered by 24Vdc
- ◇ Output type: PNP/NPN can be set, and normally open/normally closed can be set
- ◇ Switching load: <200mA
- ◇ Response time: <100ms
- ◇ Switch point hysteresis: The factory default hysteresis is 0.5% of the switch set value (adjustable).
- ◇ Stability (annual drift) : $\leq \pm 0.3\%$ range
- ◇ Temperature
 - Medium temperature: -20... 85°C
 - Ambient temperature: -20... 80°C
 - Storage temperature: -30... 80°C
- ◇ Materials:
 - Probe material: PEEK
 - Process connection: Stainless steel 304
 - Sealing material: Nitrile rubber/fluorine rubber
- ◇ Shell: Engineering plastic
- ◇ Protection grade: IP67
- ◇ Cable exit method: M12x1 connector

Dimension drawing (mm)



Wiring diagram

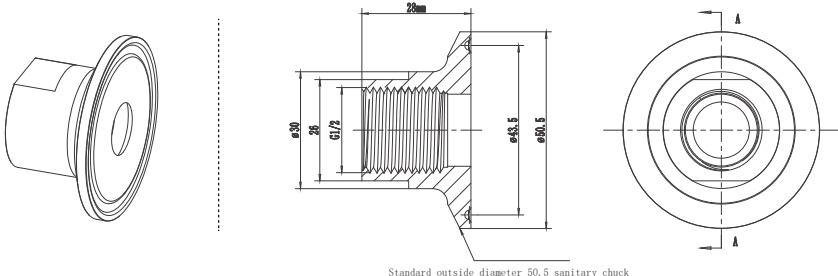
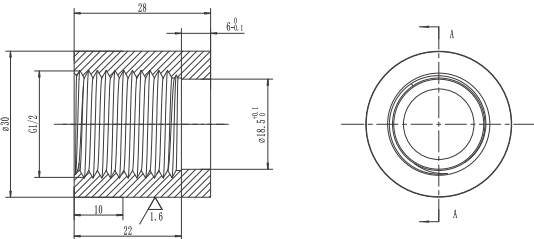


1-channel Switch

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT)	SP1 Switch PNP (Factory default) SP1 Switch NPN	WH	2	/

Selection Table

LS283 -	L030	-	Detailed description
LS283 -			LS283 Capacitive level switch
	L030		Probe length: 30mm
	L035		Probe length: 35mm
	L050		Probe length: 50mm
	L100		Probe length: 100mm
	L250		Probe length: 250mm
	LXX		Probe length: Customizable
		-	Output signal: 1-channel switch

name	Outline drawing/Dimension drawing (unit :mm)	order number
Sanitary chuck installation accessories	 Standard outside diameter 50.5 sanitary chuck	LS280-K50.5 KTYLLC13868
Welding the base		LS280-HJDZ KTYLLC13867

Factory standard:ZL03-PC02G

name	Outline drawing/dimension drawing (mm)	material	model
M12*1-4Pin (2m cable)		PUR	ZL03-PU02G
M12*1-4Pin (5m cable)			ZL03-PU05G
M12*1-4Pin (10m cable)			ZL03-PU010G
M12*1-4Pin (2m cable)		PVC	ZL03-PC02G
M12*1-4Pin (5m cable)			ZL03-PC05G
M12*1-4Pin (10m cable)			ZL03-PC010G
M12*1-4Pin (2m cable)		PUR	ZL03-PU02W
M12*1-4Pin (5m cable)			ZL03-PU05W
M12*1-4Pin (10m cable)			ZL03-PU010W
M12*1-4Pin (2m cable)		PVC	ZL03-PC02W
M12*1-4Pin (5m cable)			ZL03-PC05W
M12*1-4Pin (10m cable)			ZL03-PC010W

M12* 1-4pin self-connector/size drawing (mm)	model
	GL04 (4Pin joint)
	WL04 (4Pin joint)

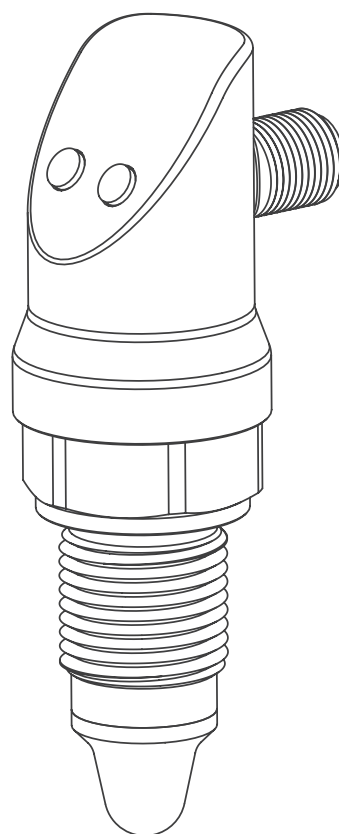
——— Sensor and controller ———
■ Flow ■ pressure ■ temperature ■ level ■ position

KATU 卡图

Operating Instructions

Capacitive digital liquid level switch

LS283 Series



Purpose of product application



danger

The sensor (switch) can only be used in the specified application range.

The temperature range must be within the permissible range. Do not exceed the rated pressure and power load value.

Assembly, commissioning and operation must be carried out in accordance with applicable national and local safety instructions.

The switch is designed to be used as a safety device for pressurizing the system in accordance with "Pressure Equipment Directive 97/23 / EC(PED)".

Standard

The standards applied during development, manufacturing and configuration are listed in the CE Compliance and manufacturer declarations.

Quality assurance

Our scope of delivery and service is subject to legal warranties and warranty periods.

Warranty clause

We guarantee that the functions and materials of the dual pressure switch meet the statutory requirements under normal operation and maintenance conditions.

Security of loss

Such as:

- Incorrect use,
- Incorrect installation
- Incorrect operation or operation in violation of the provisions of this operation manual.

No liability shall be assumed for any damage resulting therefrom or consequential.

Safety instruction

Safety instructions are intended to protect users from dangerous situations and /or prevent material damage.

In the operating instructions, the severity of the potential risk can be indicated by the following signal words:



danger

An imminent danger to the user. Failure to comply may result in fatal injury.



warning

An identifiable hazard.

Failure to comply may result in fatal injury and damage to equipment or plant parts.



caution

It means a danger.

Non-compliance may result in minor injury and material damage to the sensor (switch) and/or plant.



important

Information that is important to the user.

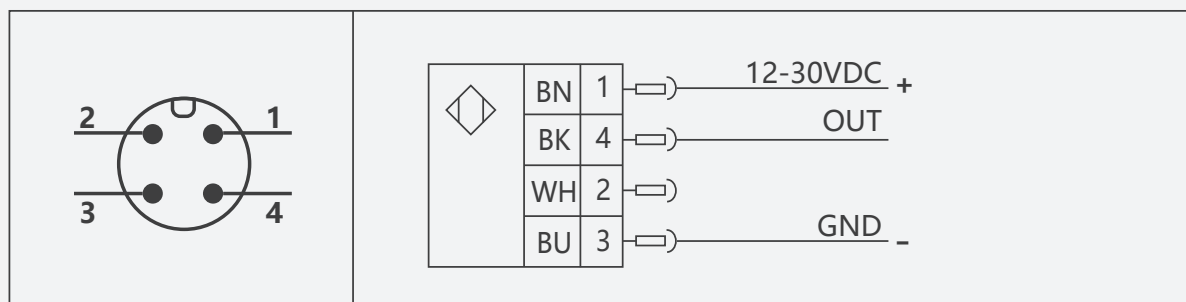


Deal with

Sensors (switches) must be handled correctly in accordance with national or local regulations for electrical/electronic equipment.

Sensors (switches) cannot be disposed of with household waste!

Electrical connection

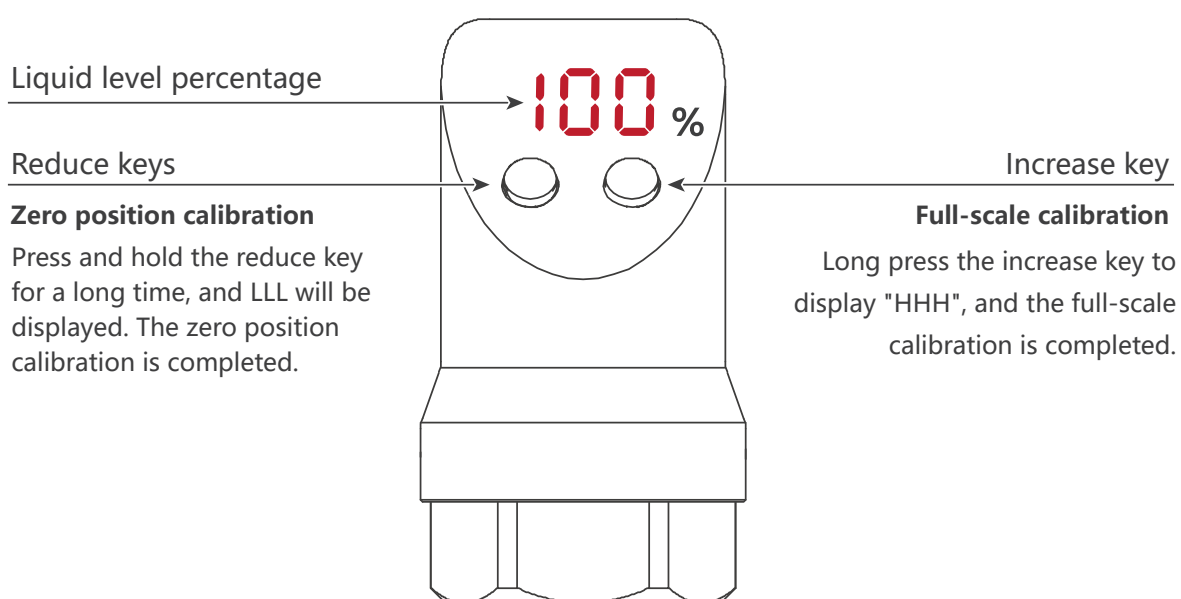


1-channel Switch

colour	stitch	Instructions
BN	1	power supply (+)
BU	3	power supply (-)
BK	4 (OUT)	SP1 switch PNP (factory default) SP1 switch NPN

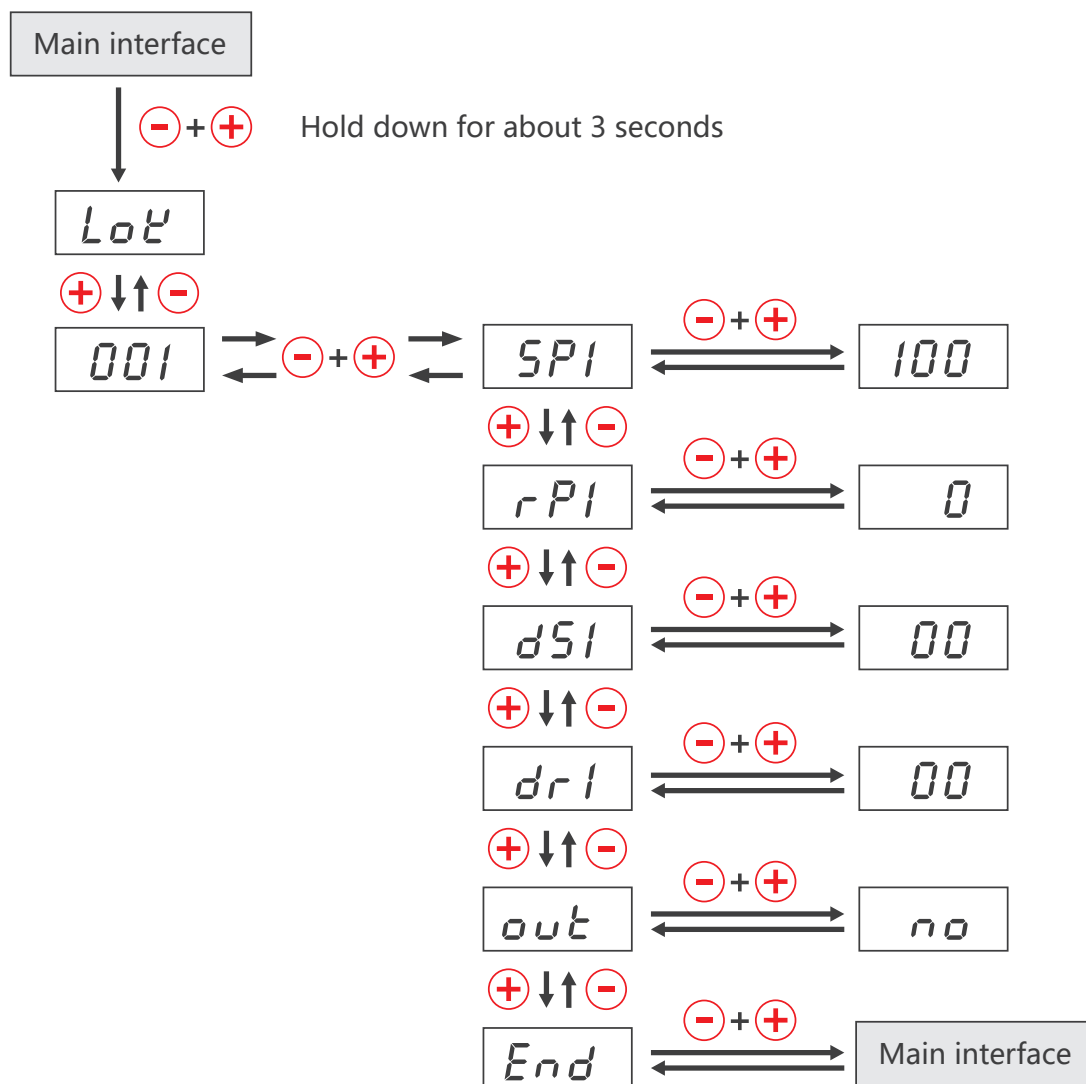
Debugging/operation

■ Convenient calibration operation mode



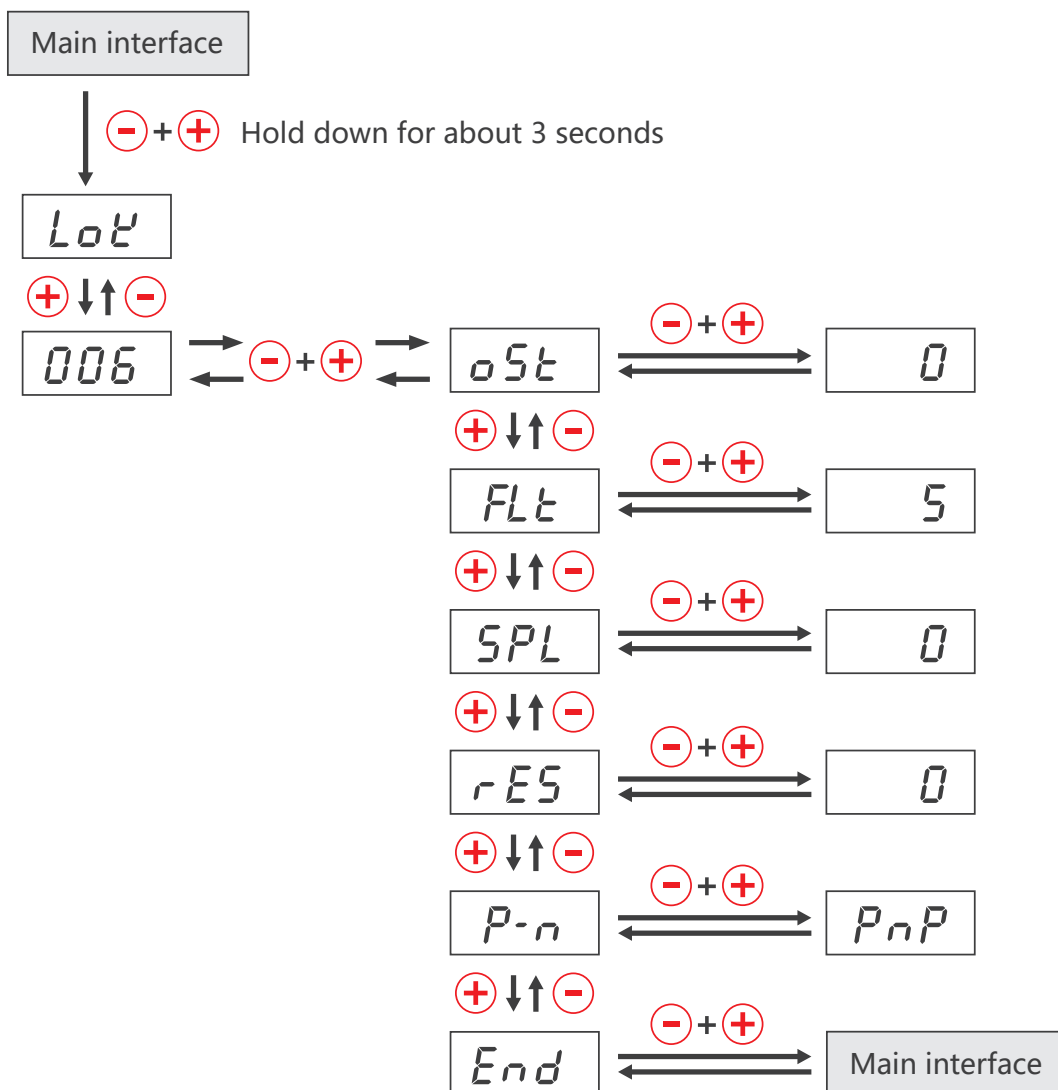
001Menu	
sp1	Switch alarm value (factory default value is 50% of the range)
rp1	Switch reset value (factory default value is SP1-5%)
ds1	The activation delay of OUT (factory default is 0s)
dr1	The shutdown delay of OUT (factory default is 0s)
out	Switch output signal NO: Normally open NC: Normally closed
end	Confirm save and exit

■ 001 Menu debugging (non-professional personnel do not operate)

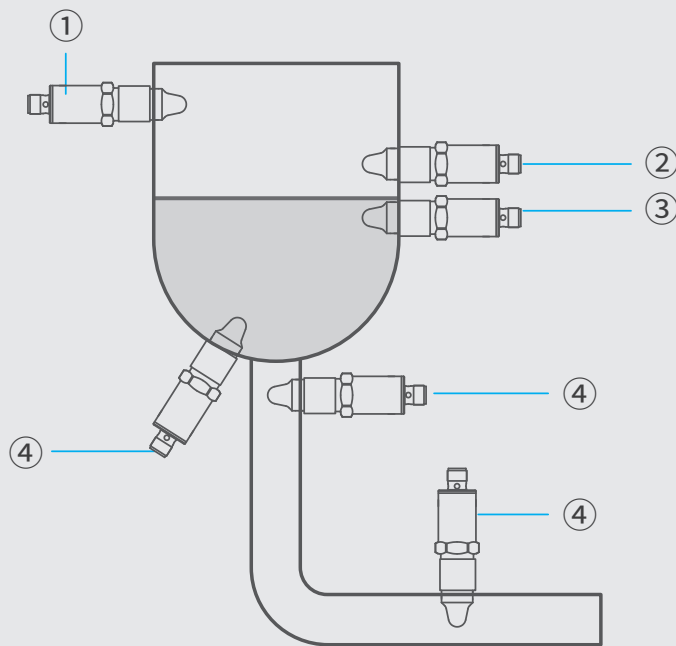


006 menu	
ost	Display value compensation, the default is 0, increase and decrease the value, the actual display value corresponds to the increase or decrease of the corresponding value
flt	The filter coefficient is adjustable from 1 to 25. The default value is 5
spL	Display value The reaction rate increases/decreases
res	factory data reset.
p-n	PNP/NPN switchover
end	Confirm to save and exit

■ 006 Menu debugging (non-professional personnel do not operate)



Installation

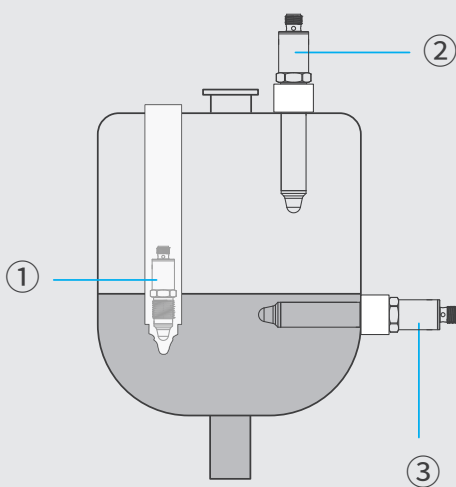


Standard installation

- ① Over-filling protection
- ② Limit level, maximum.
- ③ Limit level, minimum value.
- ④ Dry dry protection

The sensor can be installed at any point in the container. Mounted in a container

- (1) Sensors on the top ensure to prevent over-filling. Further downward connected sensors can detect the maximum
- (2) or minimum
- (3) Limit level. Mount on bottom or output tube
- (4) The sensor can protect the pump from dry operation.



Installation of extendable sensors

- ① Limit grade: installation with pipe
- ② Backfill protection device (lengthen)
- ③ Limited water level of paste or powder medium (lengthen)

Diameter:

lengthen: 82mm (fixed)

custom: 15... 228mm (adjustable)

Adjustable version L allows bridge span tank insulation.

In a mushy or powdery medium, the deeper the tilt,

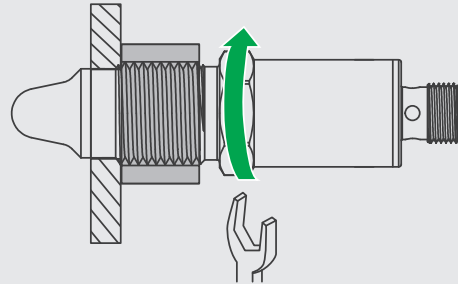
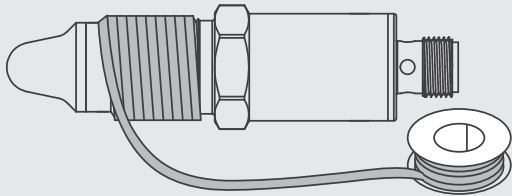
Make the sensor less prone to clogging.

Installation in industrial applications

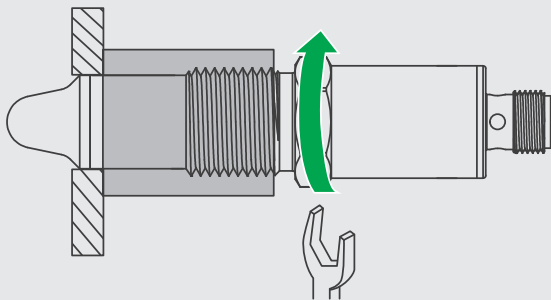


Hazard Risk of injury due to hazardous media Wear hazardous media (such as protective equipment, such as acid or alkali).

Empty containers and pipes before installation.



Containers and pipes do not contain media. Seal the thread on the sensor with teflon tape. Screw in sensor. Tightening torque GxxA: maximum 30Nm. Tighten torque XX-14NPT: Max. 20Nm.



For these process connections, do not use polytetrafluoroethylene tape (PTFE) or elastomers for sealing.

(1) Vessels and pipelines do not contain media.

(2) Adapter or welded sleeve installation without dead space. Screw in sensor.

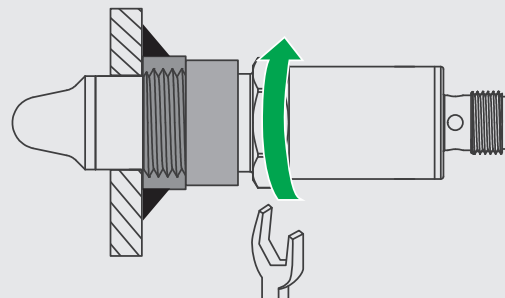
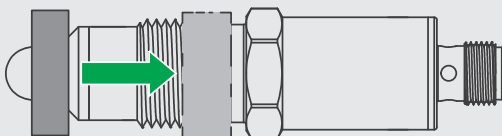
Tightening torque: 15.. 20Nm

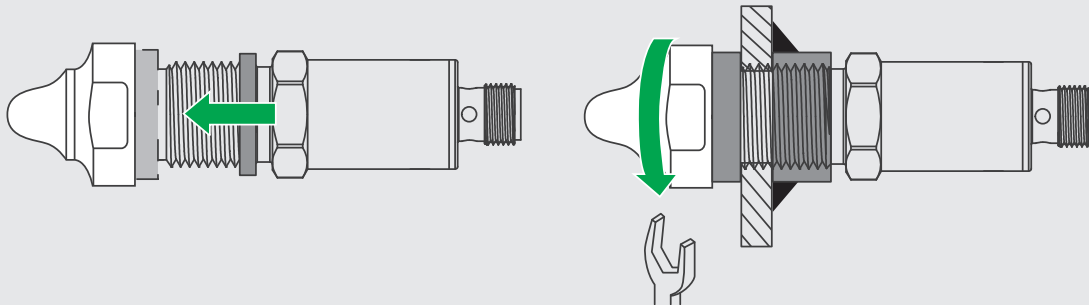
Vessels and pipelines do not contain media.

Push the seal ring.

Screw in sensor.

Tightening torque: 15.. 20Nm





Vessels and pipelines do not contain media.
 Push the seal ring.
 Screw in sensor.
 Tightening torque: 15.. 20Nm

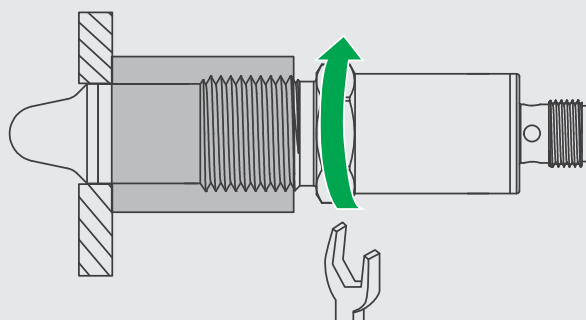
Installation for health applications



Warning of health risks from contaminated media only use Baumer tubing company welded sleeves or adapters.

Do not use polytetrafluoroethylene tape (PTFE) or elastomer sealing process connectors.

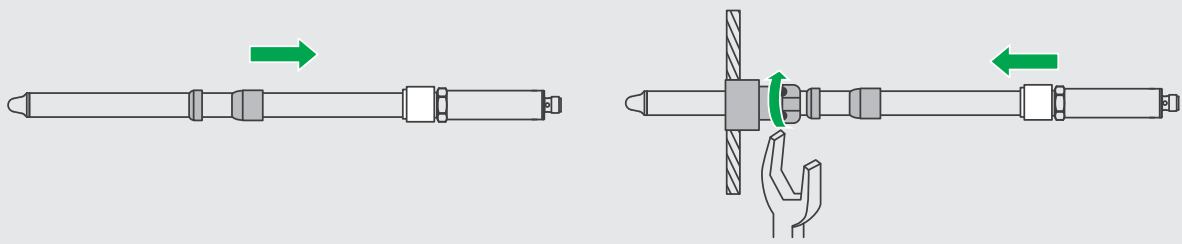
Welding must be performed only by welders trained in the sanitary field.



- (1) Welded sleeves or adapters must be hygienically installed and internally flushed.
- (2) The weld shall be smooth to $Ra < 0.8\mu m$.
- (3) The leakage hole points downward.

Screw in sensor.

Tightening torque: 10.. 15Nm



(1) Welded sleeves or adapters must be hygienically installed and internally flushed.

(2) The weld shall be smooth to $Ra < 0.8\mu m$.

(3) The leakage hole points downward.

(4) Clamping rings must be in good condition (if deformation occurs, please change two clamping rings).

Push the wider clamping ring onto the catheter.

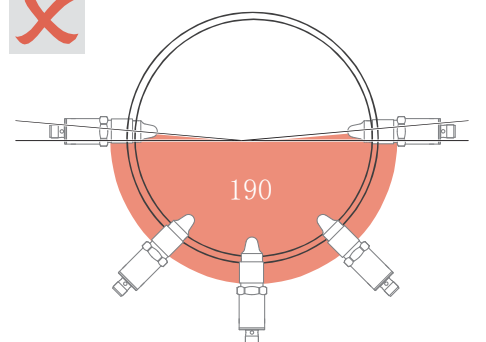
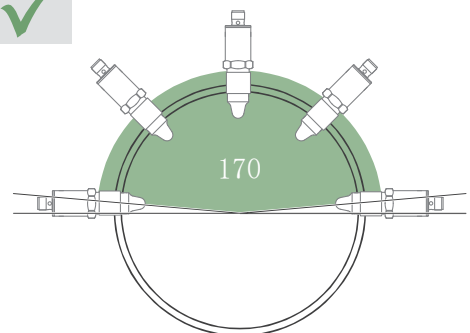
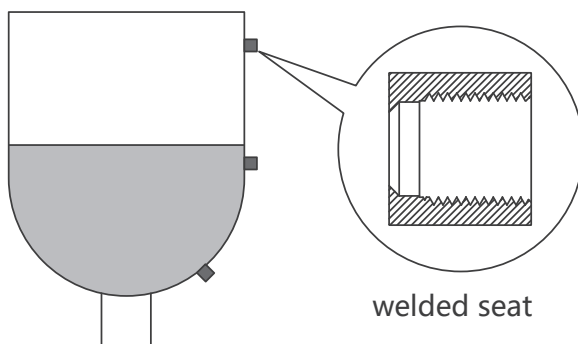
Push the narrow clamping ring onto the catheter.

Location sensor. Adjust the depth of inclination.

Projection length: 15... 228mm Tighten the screw latch.

Tightening torque: 10.. 15Nm

Example of installing welded casing



Maintenance/cleaning

Sensors (switches) do not require maintenance.



warning

Periodically check whether the switch is working properly.

If the switch does not work properly, stop the operation immediately.



caution

Use of improper cleaning agent may damage the switch.

The following cleaning agents can be used to clean polycarbonate: mild soap or detergent Isopropyl alcohol

Immediately after cleaning, rinse with water. Do not leave cleaner on the surface of the product. Do not clean products in high heat or direct sunlight.

The following cleaning agents are known to affect the integrity of polycarbonate components and should not be used: ZEP Fast 505, Pinesol, Formula 409

Halogenated solvents (benzene, gasoline, acetone or carbon tetrachloride)

Strong alkalinity

Methyl ethyl ketone

Abrasive substance

disassemble



danger

Only remove the switch in case of power failure (electrical, hydraulic/pneumatic).

Switch disconnection from pressure and power supply must be performed by trained or directed personnel in accordance with the most advanced standards.



warning

Be aware that the surface of the shell may become very hot if the operating temperature is higher!

Katu Electronic (Kunshan) Co.,Ltd.



telephone: 400-150-8815



Website: www.katusensor.com



Factory: Building 27B, Jingdong Intelligent Industrial Park,
No.9 Jinjie Road, Huaqiao Economic Development Zone,
Kunshan City, Suzhou