STÜBBE

Level limit switch CGS

Features

- Reliably prevents overfilling of containers
- High functional reliability
- Simple installation and start-up
- Compact device for stand-alone applications or process controlling
- Suitable for aggressive fluids
- Independent of temperature and density
- For conductive and non-conductive fluids
- DIBt-approved for storing substances hazardous to water according to the Water Resources Act
- Long life and low maintenance requirement due to sturdy structure
- Wear-free due to capacitive principle
- No adhesion problems
- Position-independent installation

PE

www.stuebbe.com/en/products-systems/instrumentation/

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Issue 2018.06.22-en
Print-No. 301166
TR MA DE Rev001

Pictogram Level limit switch CGS

CGS

Capacitive level limit switch

Signal - output — R
Relay: 1 relay
Switching function NC/NO
Operating voltage: 18–36 V DC

Connection — 1
PVC-U male thread 2“
Sealing EPDM

Housing / probe — PE
Probe length
300 mm
450 mm
750 mm
950 mm

● available
○ not available

Connection Material (process connection)

1 **PVC-U** Adaptor
2“ male thread*

* included in the delivery scope

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Application
- The level limit switch, as a part of an overfill prevention system, is used for preventing overfill of permanently installed containers with non-combustible fluids hazardous to waters.

Use
- The level limit switch with an integrated transducer is suitable for installation on open and closed containers
- The probes may be exposed to the temperatures and pressure specified on the next page.
- For metal and non-metal containers.

Application limits
- Foam formation
- Formation of insulating or conductive deposits
- Formation of separating layers
- Formation of gumming

Supply
- The limit switch is a compact device, i.e. it can be operated without external evaluation.
- The integrated electronics evaluate the filling level signal and transmit a switch signal. This switch signal can be used to directly actuate a downstream device (e.g. a warning device or PLC).

Function
- The system consists of a measuring transducer (integrated electronics) and two electrodes integrated in the tip of the level sensor (measuring and earth electrode) These generate an electric field, which is influenced by the dielectric properties of the environment.
- As soon as the environment no longer consists of air/gas but of stored fluid, a capacity change occurs that is converted into an output signal in the measuring transducer depending on a limit value.

Programming
- If necessary, 2 sensor sensitivity levels can be set on the device.

Stübbe resistance guide
- www.stuebbe.com/pdf_resistance/300051.pdf

Approvals
- DIBt: Approval No. Z-65.13-581

Testing
- Check the overfill prevention system for proper function and perfect condition at suitable intervals, however, at least once a year.

Operating pressure
- PN 0.8–1.1 bar (atmospheric)

Voltage supply
- U_{in} = 18–36 V DC

Cable connections
- Cable outside diameter: 7–13 mm
- Nominal cross-section: 1.5 mm²
- Pipe length to sensor: 100–1000 mm

Material with medium contact

Sensor material:
- PVC-U, PP, PE, PVDF

Probe housing:
- polyethylene (PE-HD)

Probe rod:
- polyethylene (PE-HD)

Device connection:
- polyvinyl chloride (PVC)

Material without medium contact

Connection head:
- polypropylene (PP)

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Seal
- NBR
- Sealing, cable feedthrough: CR (Neoprene®)

Protection class
- IP 67 according to EN 60 529

Output signals
1 potential free change-over contact:
- I_L = 3 A / U_L = 250 V AC
  I_L = 3 A / U_L = 30 V DC

Drop-out signal
- Relay dropped out (closed-circuit current principle)

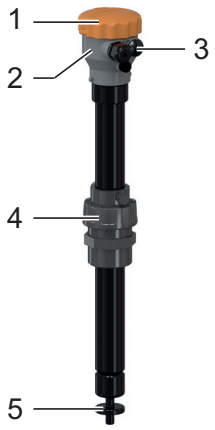
Switching delays
- max. 0.5 s

Ambient temperature
- -20–60 °C

Process temperature
- -20–60 °C

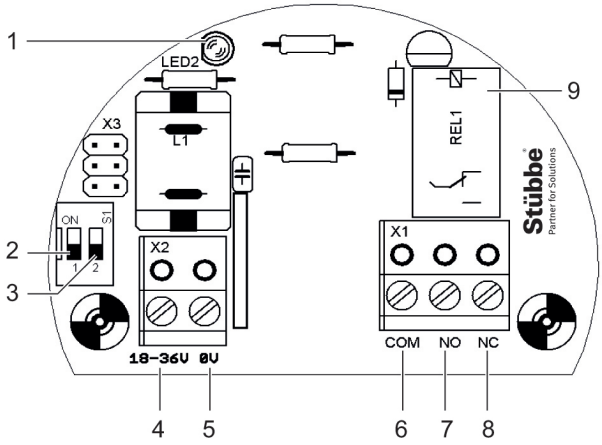
Relative air humidity
- 20–85 %

CGS components



No.	Description
1	Housing cover
2	Housing with electronics
3	Cable feedthrough
4	Device connection
5	Sensor

CGS connection diagram



Item	Description
1	LED2 (green)
2	Dip switch 1
3	Dip switch 2
4	Voltage supply (+)
5	Voltage supply (–)
6	Relay output COM
7	Relay output NO (closes when alarm is triggered)
8	Relay output NC (opens when alarm is triggered)
9	Relay

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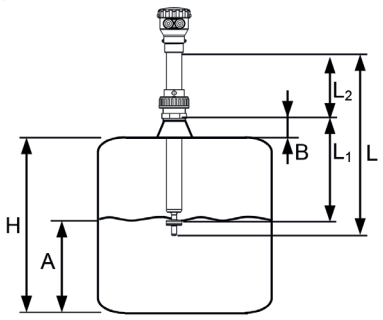
Setting information for mechanical installation

Attention

The permissible filling level of a storage container can be calculated according to TRbF 180 or 280 No. 2.2.
To determine the trigger height of the overfill protection device, the follow-up volume and the switching and closing delay times must be taken into account in addition to the certification principles, so that the permissible filling level is not exceeded.

Calculation of the limit switch length

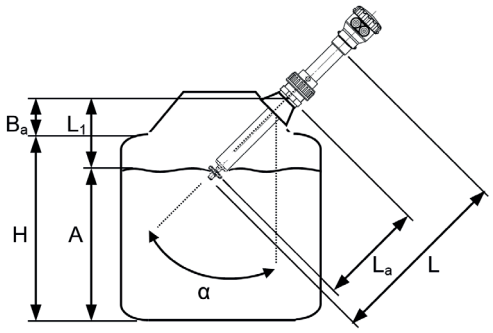
Vertical installation



L1 = H+B-A
L › L1

	Description
H	Container height
A	Response height
B	Socket height including seal (if installed)
L	Order dimensions, limit switch
L1	Height to switching point
L2	Limit switch length, visible

Diagonal installation



L1 = H+Ba-A
$La = \frac{L1}{\cos \alpha}$ with α = 0–45°
L › La

	Description
H	Container height
A	Response height
Ba	Height above container up to installation
L	Order dimensions, limit switch
L1	Height to switching point
La	Limit switch length installed up to switching point (diagonal installation)

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We reserve the right to make technical changes.
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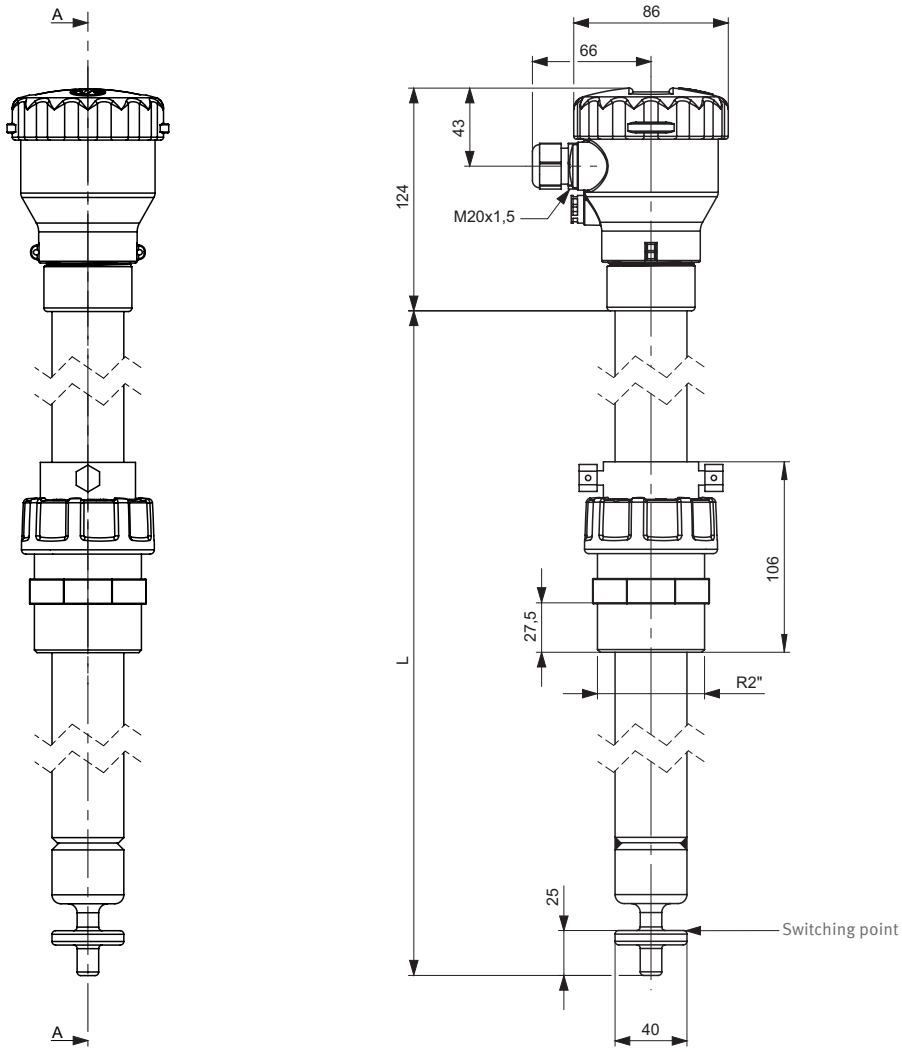

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