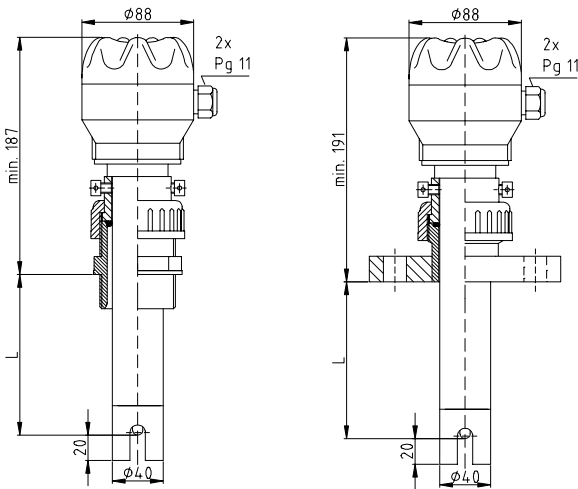


Operating Instructions

MAXIMAT C... Compact Overfill Sensor



Safety Precautions

- Installation, initial start-up and maintenance may only be performed by trained personnel! All applicable European and national regulations regarding installation of electrical equipment must be adhered to.
- The device may only be connected to supply power which complies with the specifications included in the technical data and on the serial plate!
- The device must be disconnected from all sources of power during installation and maintenance work!
- The device may only be operated under the conditions specified in the operating instructions!

Functions Description

The MAXIMAT C... compact overfill sensor is used as a fill-level limit switch for permanently installed containers used for the storage of non-flammable, water endangering liquids.

It is equipped with three different output circuits:

- A binary output for controlling a coupling relay, or the digital input of a PLC
- A 0 to 20 mA current output for controlling an analogue input channel, e.g. a programmed logic controller (PLC)
- Self-monitoring measuring circuit in combination with the MAXIMAT SHR C... measuring transducer with 2-wire connection

Applications:

The MAXIMAT C... compact overfill sensor is suitable for liquids with a reactive impedance of less than 5 kΩ/cm, or a mutual capacitance to earth of greater than 50 pF. Stored liquids may not tend to precipitate insulating or conductive sediments.

Important!



Always connect cable shield and operational earthing!
Observe the wiring diagram.

Technical Data

Supply power

24 V DC ± 10%

With current limiting or 250 mA fuse recommended

Connected load

Approx. 3 W

Ambient temperature

-20 to +60 °C

Container pressure

Atmospheric (0.8 to 1.1 bar)

Terminal housing

IP 65

Terminals

Screw terminals: IP 20

Max. wire cross-section: 2.5 mm²

Outputs

Binary output: +DO/-DO max. 20 mA / 24 V +AO / -AO
0 to 20 mA

Output for MAXIMAT SHR C... measuring transducer

DIP Switch

Operating Mode	DIP1	DIP2	DIP3	DIP4
Binary output	ON	ON	ON	OFF
Current output/PLC	OFF	OFF	OFF	OFF
MAXIMAT SHR C	OFF *	OFF *	OFF *	OFF *

* Default setting

Note:

Be sure to examine the DIP switch settings before switching supply power on!

Indicators

Green LED on the connector PCB:

- Run = LED illuminated
- Alarm / error = LED off

Measuring circuit for use with SHR C... transducer

Max. cable inductance: approx. 5 mH

Max. cable capacitance: approx. 0.5 μF

Measuring circuit cable length

Max. 300 m

Min. wire cross-section: 0.5 mm²

The compact overfill sensor is furnished with one measuring sensor as standard equipment. Where critical applications are involved, e.g. inadequate earthing of the stored liquid, use of the MAXIMAT CP... variant with two measuring sensors is advisable.

CE mark

In accordance with low-voltage directive (73/23/EWG), EMC directive (89/336/EWG) and

- EN 50 082-2:1995
- EN 55 011 (class A):1998

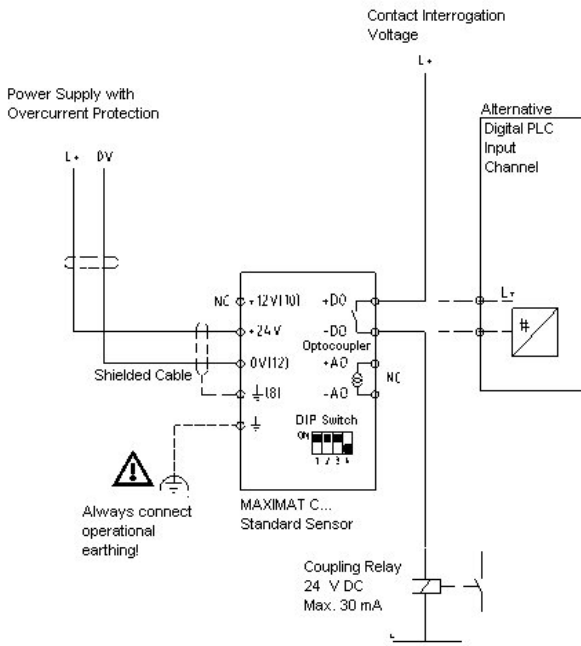
DIBT Approval

Approval no. **Z-65.13-294** for overfill sensors and leakage sensors in accordance with WHG §19

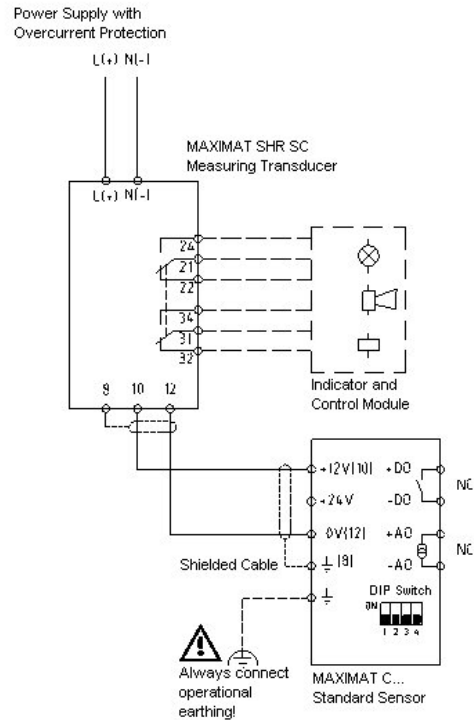
Note:

The accompanying "General Building Supervisory Approval no. Z-65.13-294" is an integral part of the operating instructions and all stipulations contained therein must be adhered to!

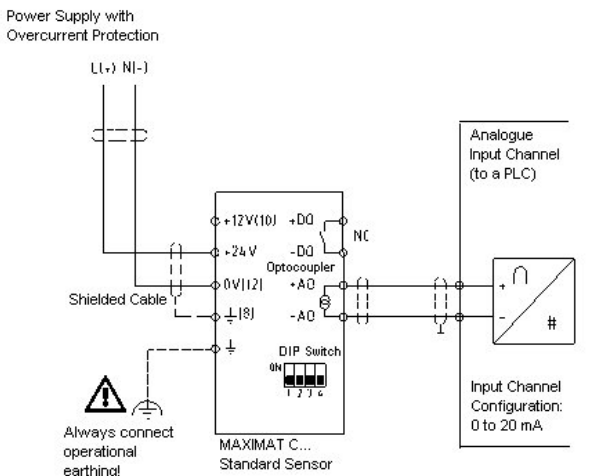
Electrical connection:



MAXIMAT C... binary output to coupling relay

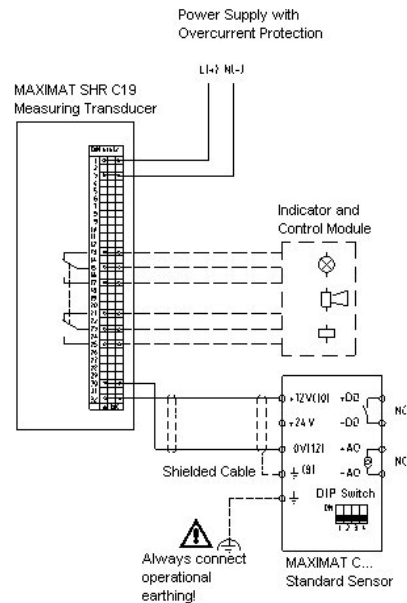


MAXIMAT C... to MAXIMAT SHR CS measuring transducer



Analysis Logic:
 OK: measured current > 4 mA ... < 20 mA
 Fill level alarm: measured current < 4 mA
 Defect: measured current < 4 mA or > 20 mA

MAXIMAT C... current output to PLC analogue input



MAXIMAT C... to MAXIMAT SHR C19 transducer

Note regarding operational earthing:

Any grounded metal part in close proximity to the measuring transducer can be used as a connection point for operational earthing, for example **grounded** metal building supports, metal stairways, railings, cable ducts etc., or even better the equipotential bonding strip or the foundation earth.

It is not advisable to use the PE terminal at the mains power supply, because it is often charged with harmful interference voltages.

Test Instructions

MAXIMAT Overfill Inhibitors and Leakage Probes, and CAPSYTRON Limit Value Switches



Overfill inhibitor

MAXIMAT C...
MAXIMAT SUN...
MAXIMAT LW CN-SDR
CAPSYTRON SFL...
CAPSYTRON CN L...

Leakage probe

Safety probe

Fill-level limit value switch

Measuring Method

The measuring sensors function in accordance with the capacitive proximity switch principle. The measuring method is based upon making a differentiation between the electrical capacitance of a conductive and a non-conductive medium with reference to earth, in this case between an electrically conductive liquid and the non-conductive atmosphere above the liquid's fill-level.

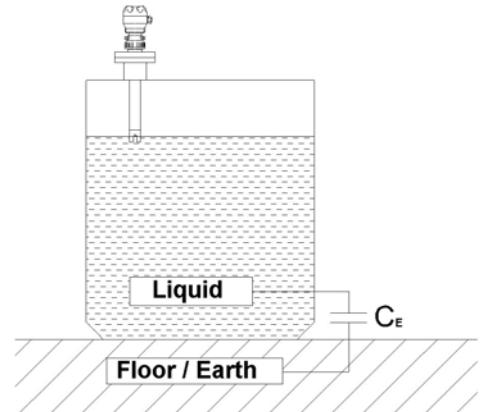
Range of Applications

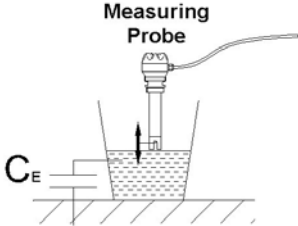
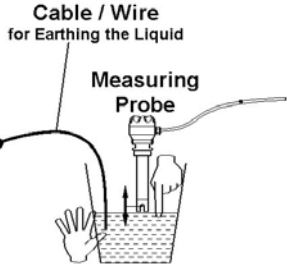
The measuring sensors are suitable for liquids with a **reactive impedance of less than 5 kΩ per cm**, or a **coupling capacitance to earth of greater than 50 pF**. Stored liquids may not tend to precipitate insulating or conductive sediments.

Periodic Testing per WHG §19

The measuring probes must be tested for correct functioning at reasonable intervals, and in any case no less than once a year. It is the sole responsibility of the user to select the utilised test type, as well as a testing interval within the prescribed timeframe. Observe the instructions included in the pamphlet "General Building Supervisory Approval", a copy of which is provided with every measuring probe which requires approval!

Function Test: Before Installation and Initial Start-Up, and During Inspection



<h3>Method 1</h3>  <p>Bucket is on the floor.</p>	<h3>Method 2</h3> <div data-bbox="876 1061 1126 1323" style="border: 1px solid black; padding: 5px;"> <p>Earth Connection For example:</p> <ul style="list-style-type: none"> - Protective conductor - Foundation earth electrode - Metal water pipe - Metal guard rail - Metal buttress etc. </div>  <p>Bucket is not on the floor.</p>
<ul style="list-style-type: none"> ○ Fill a bucket (plastic or metal) with original liquid or water (at least 5 litres) and set it onto the floor. ○ Immerse and remove the measuring probe several times. ○ Examine the switching status of the measuring circuit (refer to the respective operating instructions to this end). 	<ul style="list-style-type: none"> ○ Fill a bucket (plastic or metal) with original liquid or water (at least 5 litres). ○ Earth the liquid in the bucket with a cable/wire. or Grasp the bucket with your hand from the outside. or Immerse a finger into the liquid. ○ At the same time, immerse and remove the measuring probe several times. ○ Examine the switching status of the measuring circuit (refer to the respective operating instructions to this end).

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