RSL100

diapason level switch for liquids

technical documentation EN rev. of 14/10/2021

sgm lektra

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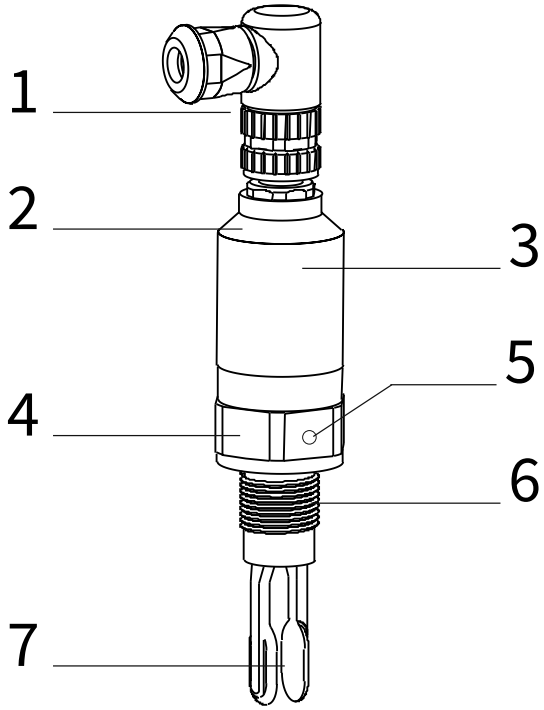
1-GARANZIA

Products supplied by SGM LEKTRA are guaranteed for a period of 12 (twelve) months from delivery date according to the conditions specified in our sale conditions document.
SGM LEKTRA can choose to repair or replace the Product.
If the Product is repaired it will maintain the original term of guarantee, whereas if the Product is replaced it will have 12 (twelve) months of guarantee.
The warranty will be null if the Client modifies, repair or uses the Products for other purposes than the normal conditions foreseen by instructions or Contract.
In no circumstances shall SGM LEKTRA be liable for direct, indirect or consequential or other loss or damage whether caused by negligence on the part of the company or its employees or otherwise howsoever arising out of defective goods.

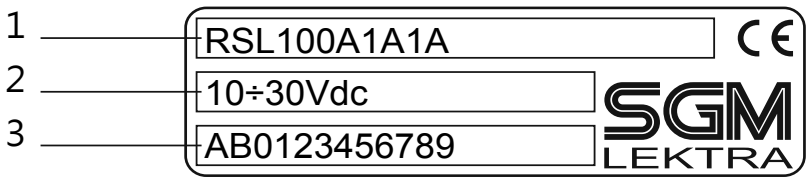
2- PRODUCT



1. Connector
2. LED status
3. Sensor body
4. Hexagon for CH32
5. Position marker
6. Process connection
7. Tuning fork

2.1 - IDENTIFICATION

Each unit has an adhesive identification plate on which are the meter main data.
The following picture describes the information and data on the identification plate.



1. Product code
2. Power supply
3. Serial number

3-FEATURES

Application
Oils, water, paints and transparent inks, sauces, milk, liquids containing carbon dioxide, oil foaming.

Housing
PVDF / SS316

Tuning fork / process connection material
SS316

Process connection
G 1”; G 3/4”; G 1/2” DIN 2999

IP rating
IP66

Max pressure
operative: 40 bar between -20°C and +70°C

Max temperature
Operative fluid: 100°C (150°C for B version)

Power supply
10 ÷ 30 Vdc

Load capacity
0.5 A max. (5A per 40 ms)

Min. switching current
7.5 mA

OFF mode
leakage current: < 2 mA constant

Voltage drop
4.5 V at 500 mA 10 V at 7.5 mA

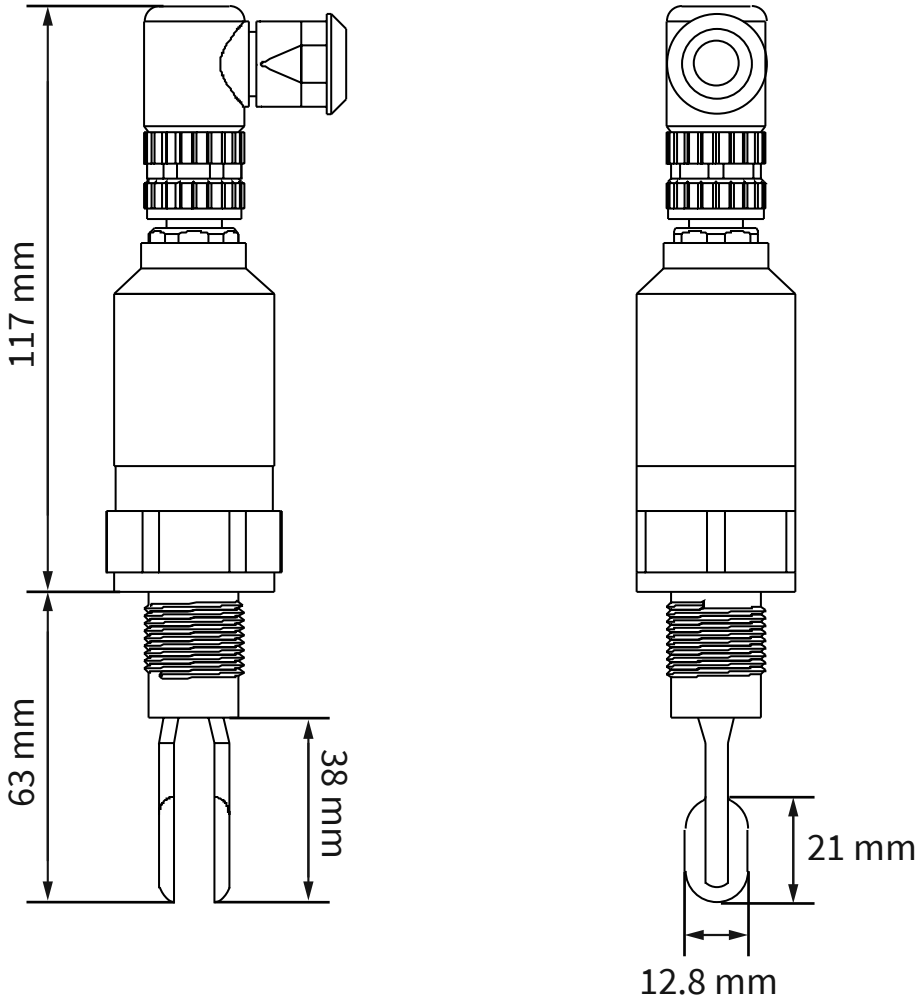
Delay
1 sec

Viscosity
5000 cst max at 25°C

Hysteresis
4 mm vertical, 1 mm horizontal

Repeatability
± 1 mm

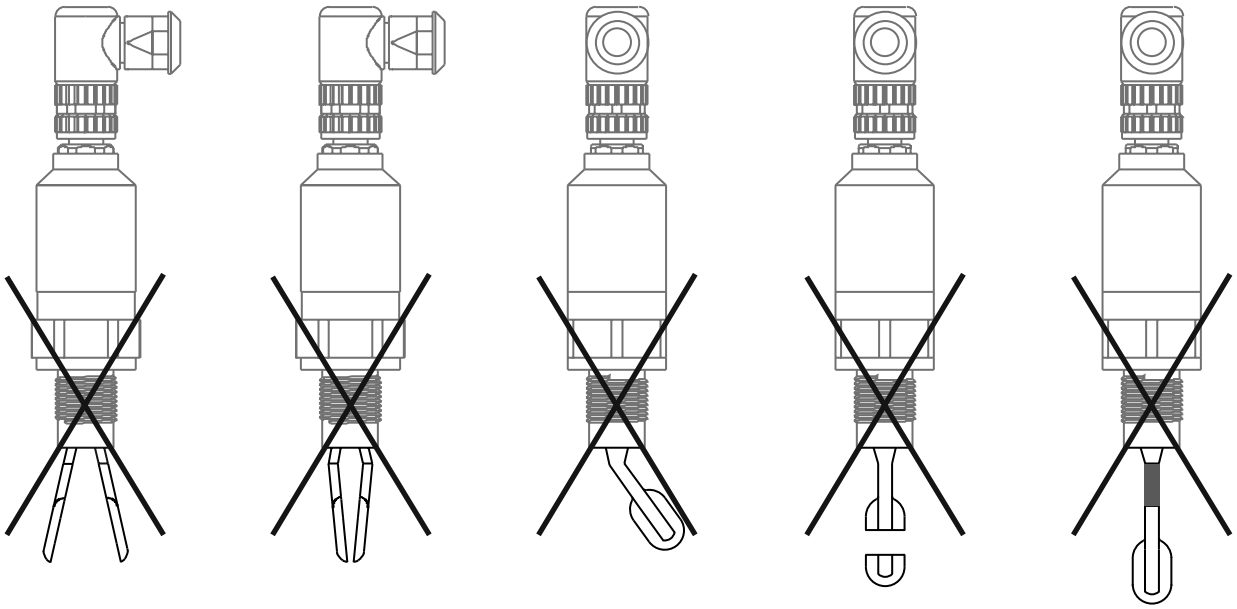
4-DIMENSIONS



5-INSTALLATION

5.1 - INSTALLATION PRECAUTIONS

- Installation should only be performed by qualified personnel and in accordance with applicable regulations.
- The equipment must be used only after having correctly transposed the instructions of this manual
- Always observe the nameplate data for the power supply and the electrical connections
- Use only the threaded connection (32mm wrench) to insert the probe in the process; do not use the connector to manually screw the sensor to the process.
- Transport the product in the factory packaging up to the point of installation.
- Do not exert forces on the tuning fork.
- Do not use “RSL100” as support for climbing.
- Do not bend, extend or shorten the tuning fork.
- Improper use of the device may cause damage to people, to the product and connected equipment
- Properly tighten the cable gland after making the electrical connections.

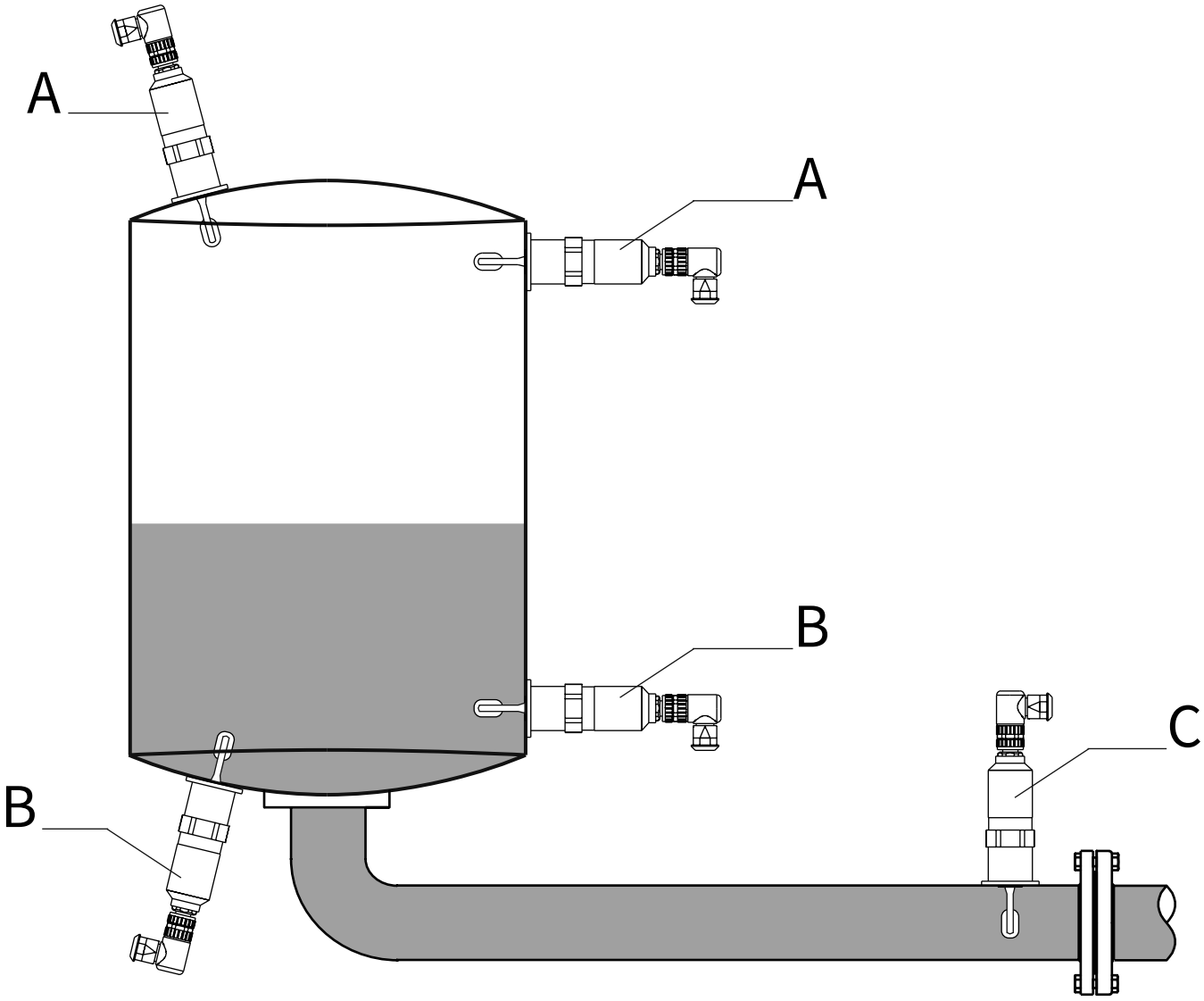


5.2 - APPLICATION CONDITIONS

5.2.1 - Positioning

RSL100 can be installed in any position, as long as it is in the predetermined switching point:

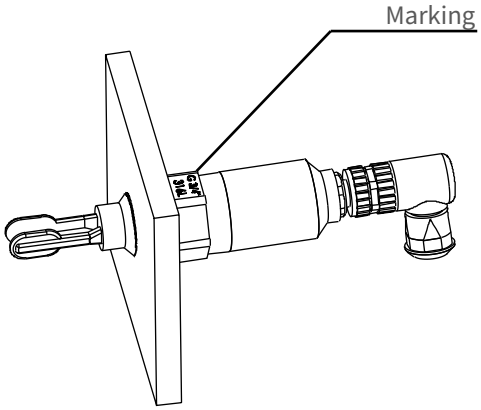
A- Maximum level, or overflow safety.
B- Minimum level.
C- Protection against pumps dry running.

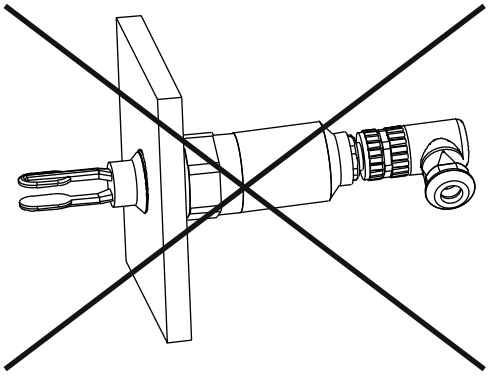


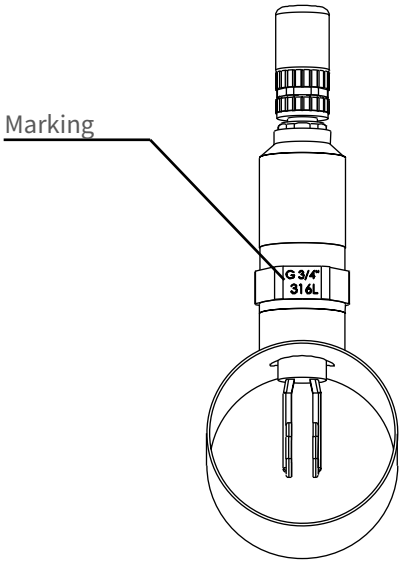
5.2.2 - Tuning fork position marking

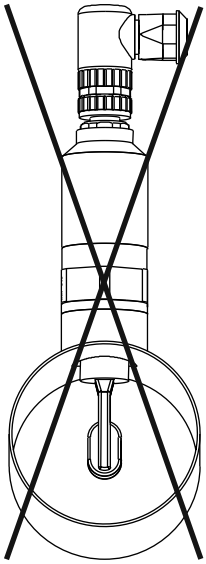
The marking is located on the process connection hexagon, it indicates the correct tuning fork position inside the tank or pipe (see figures below).
The correct positioning in the process is crucial, especially when it is a horizontal installation. In this case the marking will be facing upwards, indicating the vertical positioning of the tuning fork.

Moreover, marking indicates the process connection material (eg. 316L), and thread type (eg. G ½).





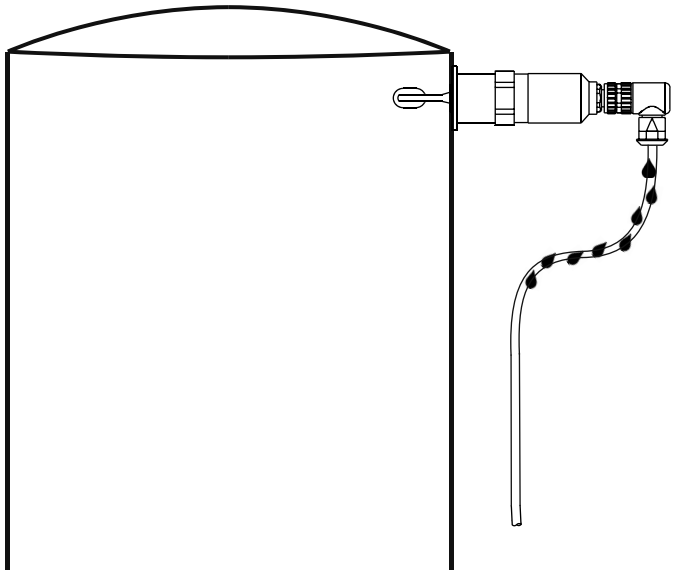




5.2.3 - Installation in tanks

When the installation is on the tank horizontal wall, care should be taken to the correct tuning fork orientation (see previous chapter), this is to prevent the material buildup on the tuning fork.

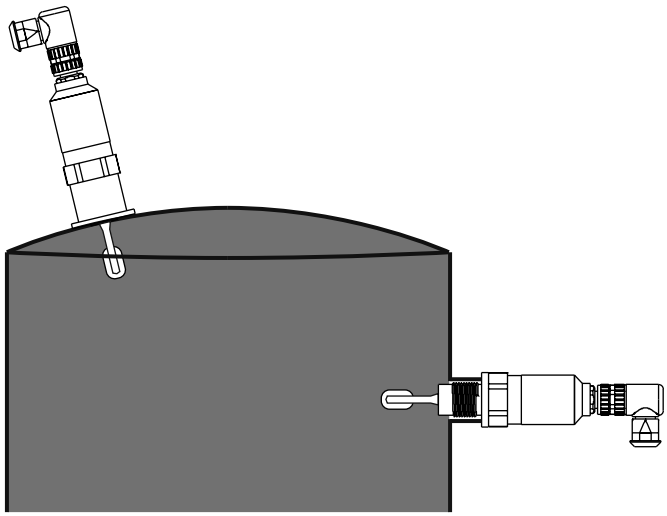
Moreover, in order to prevent the ingress of humidity into the instrument, turn the connector down and fully tighten the cable gland (see figure below).



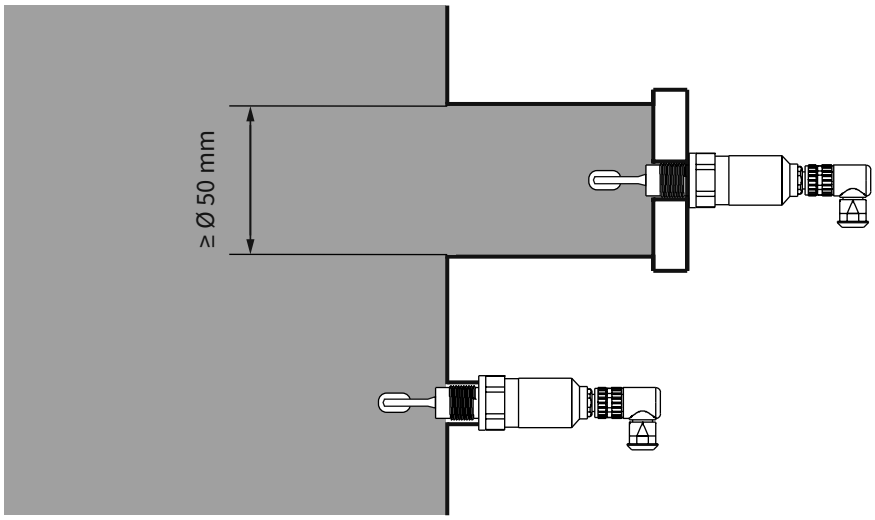
5.2.4 - Liquids viscosity

With very viscous liquids, threshold intervention delays may occur.
For proper instrument operation, it's necessary to ensure that the liquid to be measured can easily flow out of the tuning fork:

- When RSL100 is installed in tanks with **high viscosity liquids** (2000 ÷ 10000 mP-s), the tuning fork should not be in the stub pipe (see figure below).



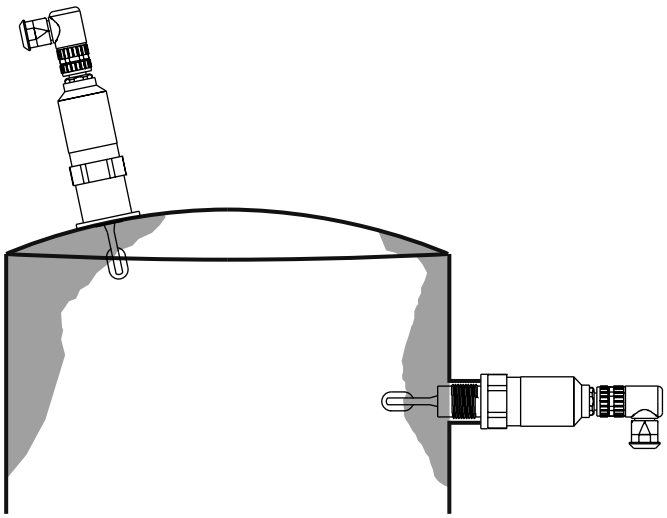
- When RSL100 is installed in tanks with **low viscosity liquids** (<2000 mP-s), the tuning fork can be placed in the stub pipe (see figure below). The stub pipe for the installation should not be less than the minimum diameter of 50mm (2 ").

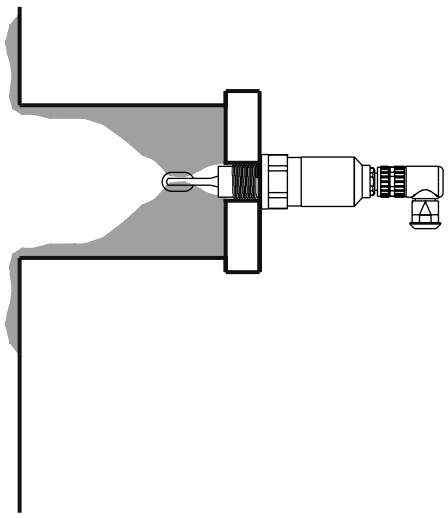


5.2.5 - Material buildup

Make sure the stub pipe for the process connection is not too long, because the tuning fork can protrude inside the tank.

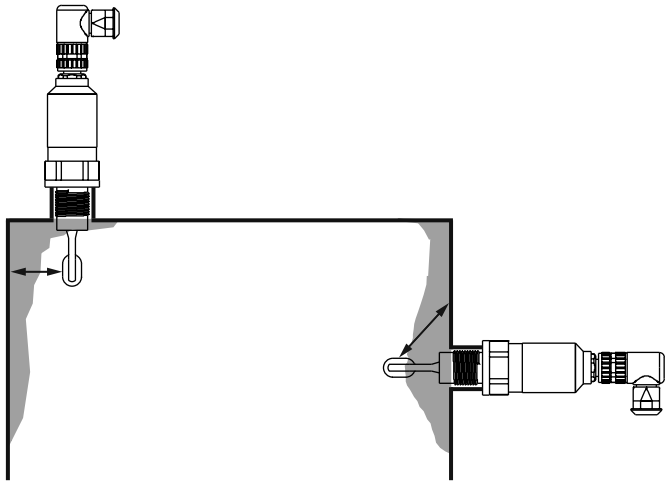
Advice for the mechanical installation optimizing:
- The RSL100 vertical positioning allows to minimize the material buildup.
- When possible, flush mounting of the tank wall or pipe is the best solution.





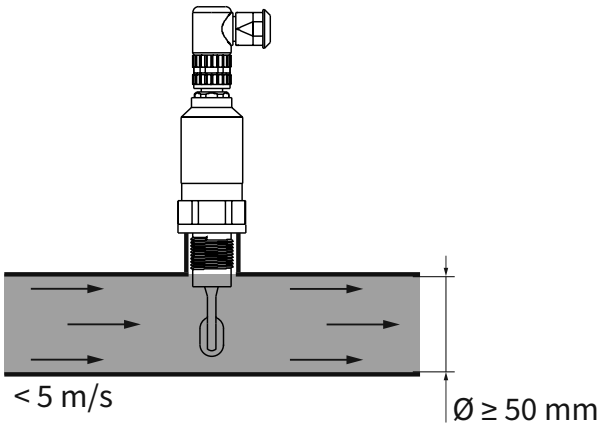
5.2.6 - Distance from the tank wall

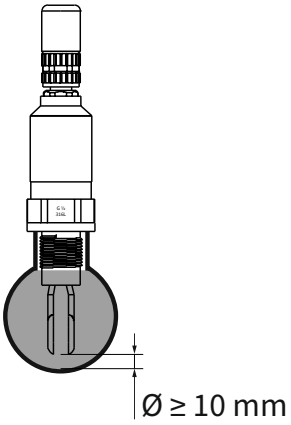
The distance between the tank wall and the tuning fork should be ≥ 10mm (0.39 in), this in order to avoid the material buildup formation.

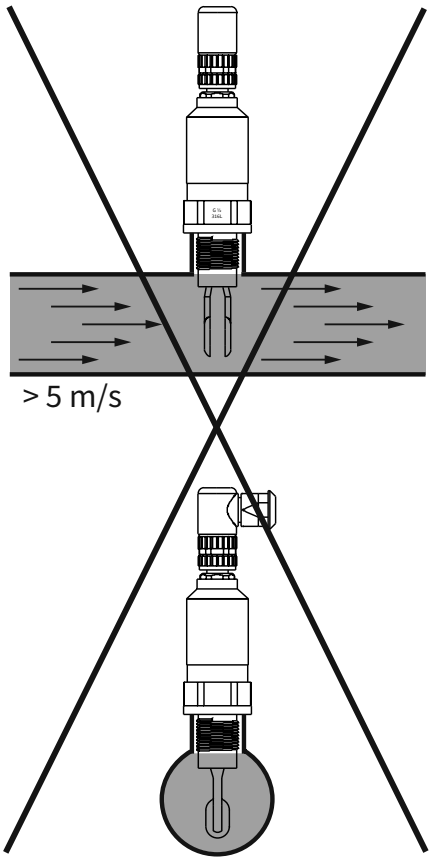


5.2.7 - Installation in the pipe

The tuning fork position within the pipe should be oriented in function of the flow, this in order to minimize the turbulence.
The distance between the tuning fork and the pipe inner surface must always be ≥ 10mm (0.39 in).
The flow velocity must be always and in any case less than 5 m/s.



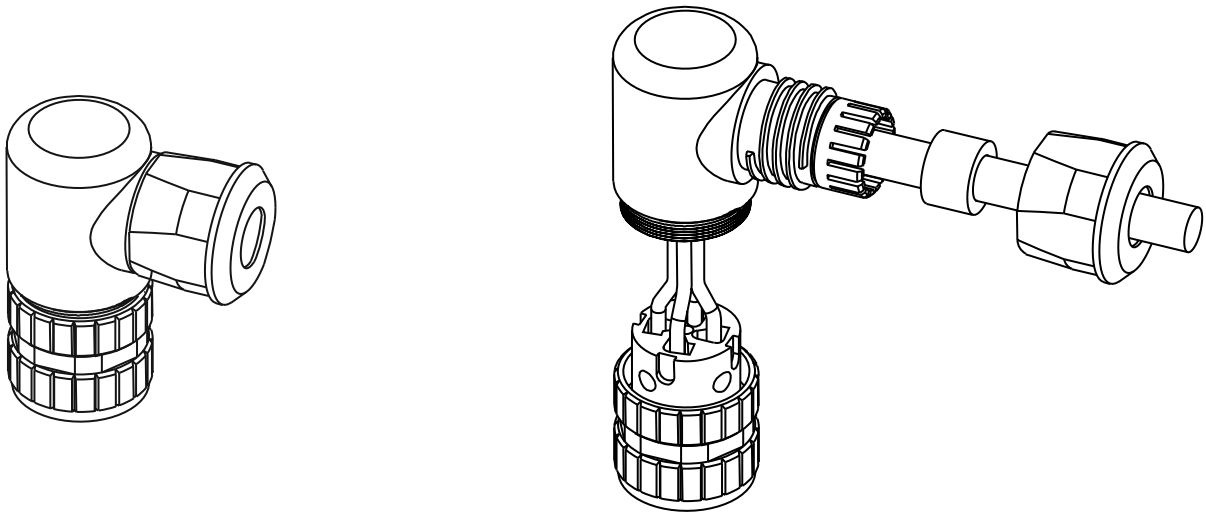




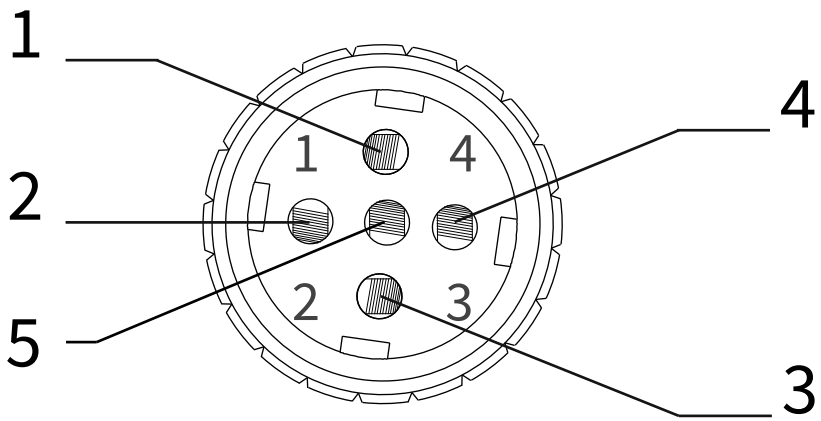
6-ELECTRICAL CONNECTIONS

6.1 - CONNECTOR - CABLE ENTRY

For the electrical connection, RSL100 has a 90° female connector, M12x1, with threaded connection.



6.1.3 - Cable wiring to the connector



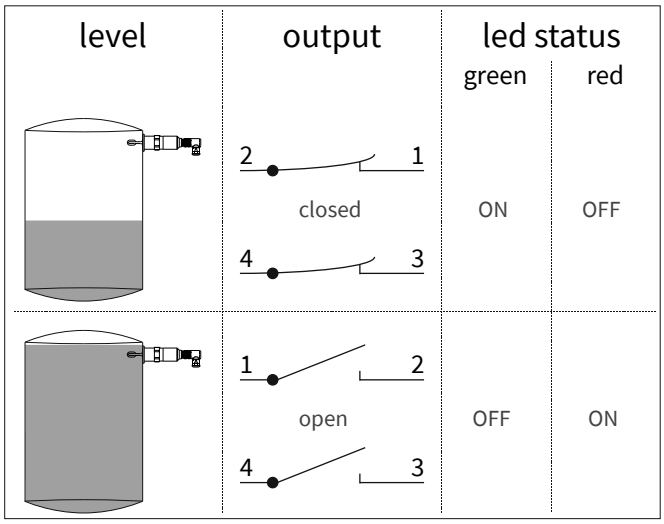
6.1.4 - Connector version with pre-wired cable (optional)

Refer to the below table for the correspondence between cable colours and connector pin.

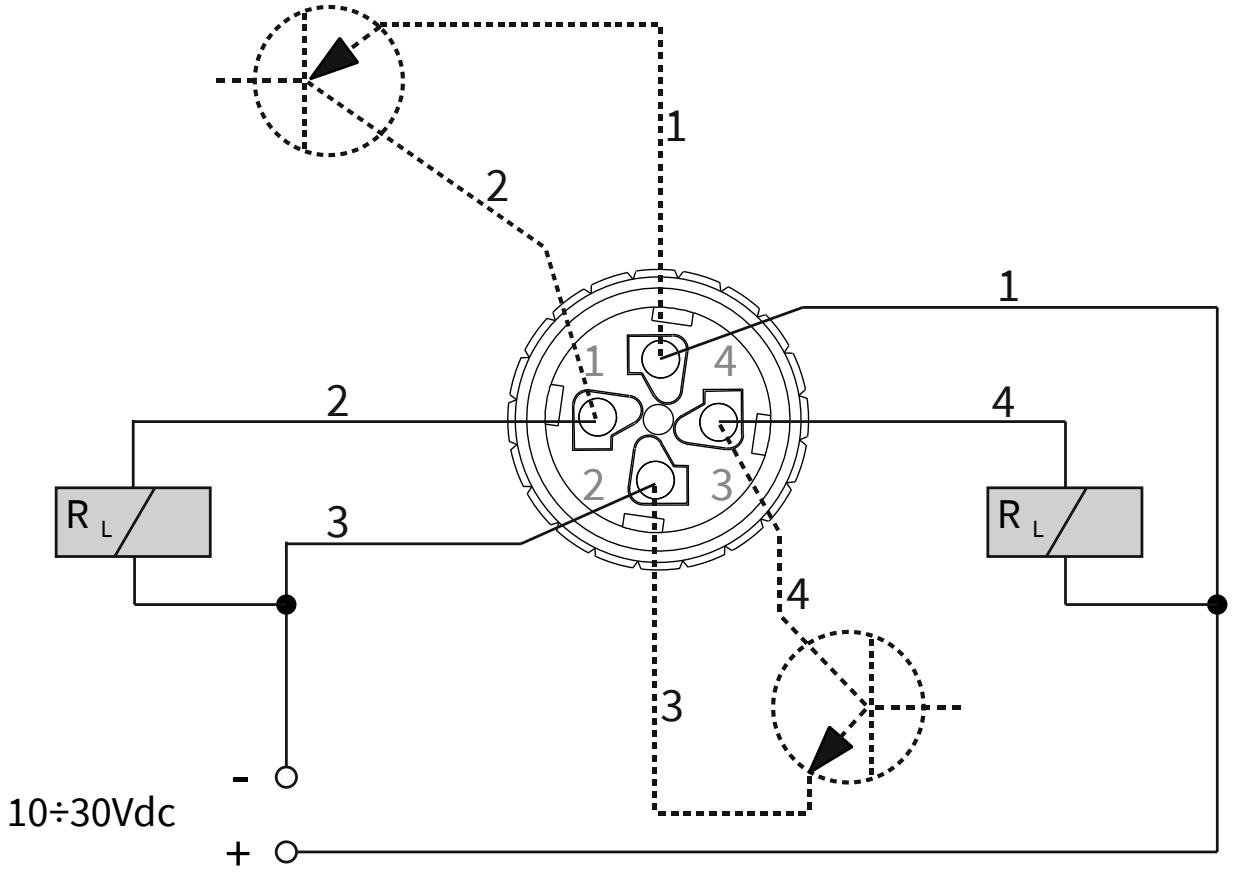
Colore	Pin
brown	1
white	2
blu	3
black	4
grey	5

6.2 - OPEN COLLECTOR OUTPUT VERSION

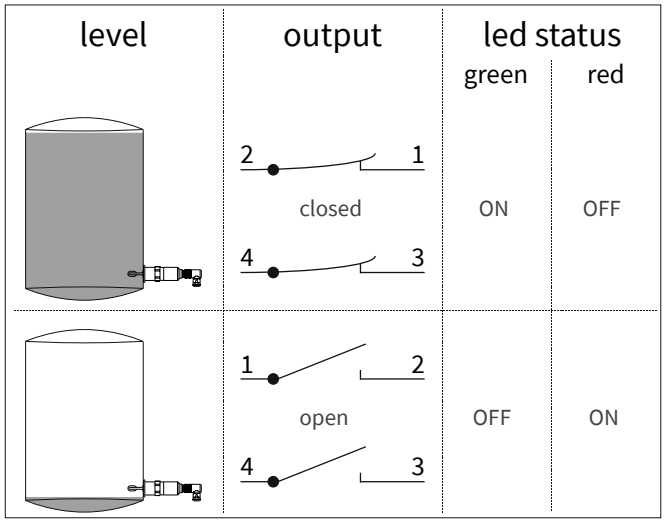
6.2.1 - Maximum level Switch



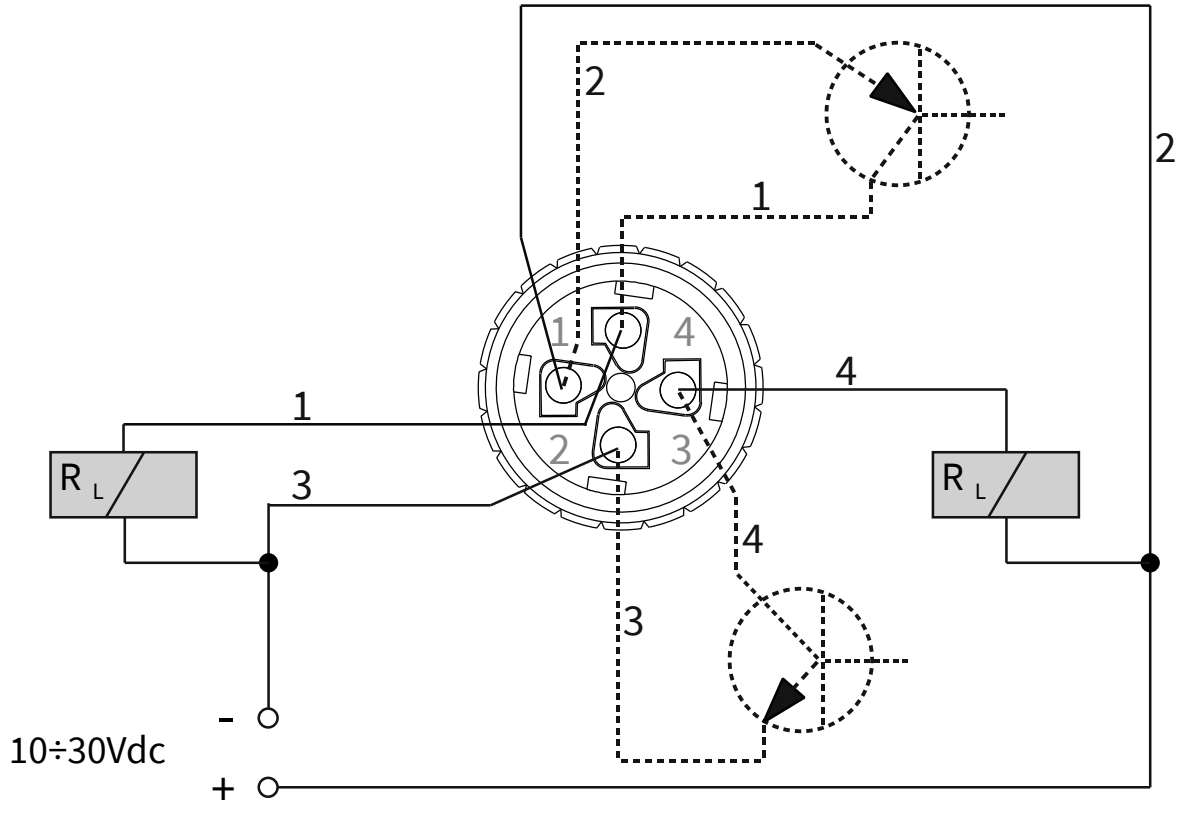
6.2.2 - Connections for maximum level switch configuration



6.2.3 - Minimum level Switch

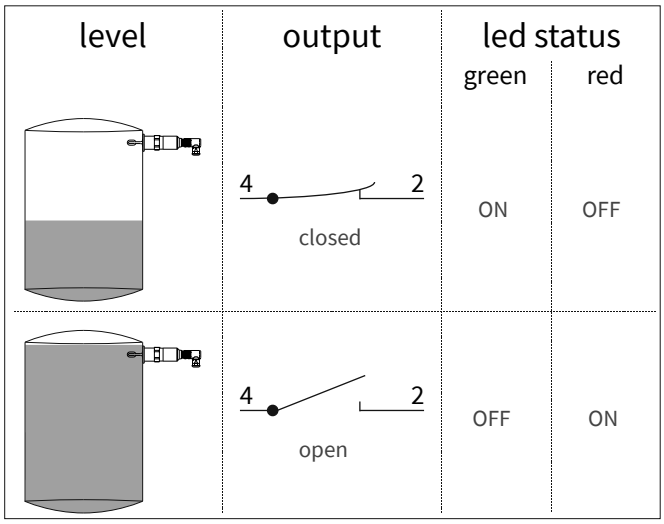


6.2.4 - Connections for minimum level switch configuration

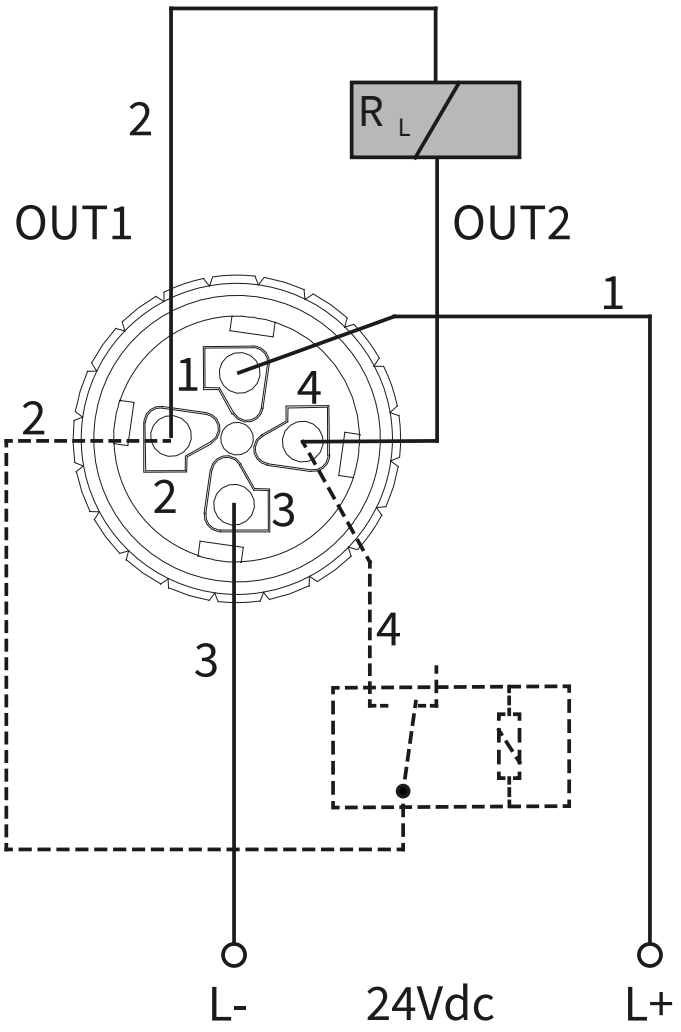


6.3 - RELE OUTPUT VERSION

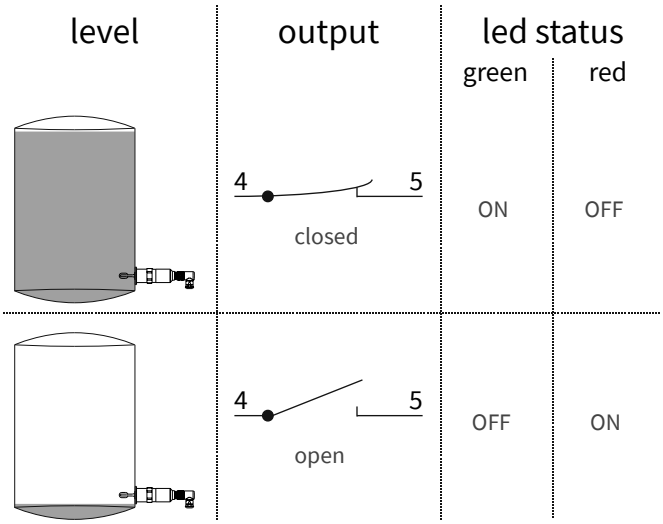
6.3.1 - Maximum level Switch



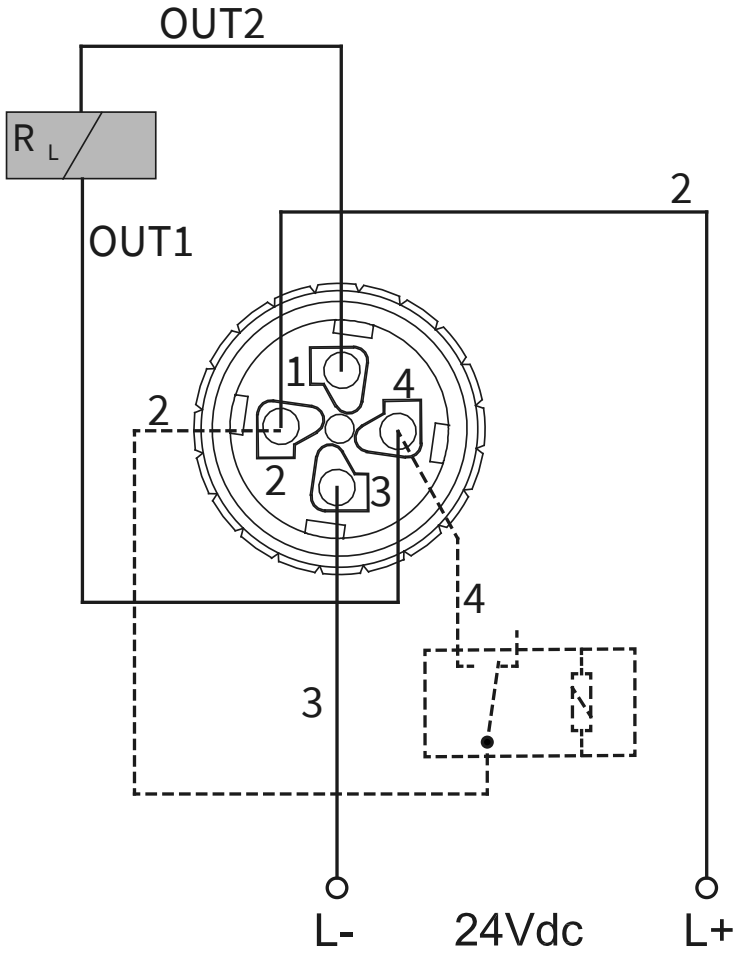
6.3.2 - Connections for maximum level switch configuration



6.3.3 - Mnimum level Switch



6.3.4 - Connections for mnimum level switch configuration



7-FACTORY TEST / QUALITY CERTIFICATE

CE

In conformity to the company and check procedures I certify that the equipment:

(Diapason level switch for liquids)

is conform to the technical requirements on Technical Data and it is made in conformity to the procedure

Quality Control Manager: ..... Production and check date: .....

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