TECFLUID
instrumentación para fluidos

Level detector
LD61

Users Manual

TECHNICAL DATA

Material:	Fork: EN 1.4404 (AISI 316L). Others on demand. Housing: Polycarbonate.
Pipe fittings:	Threads G1 (BSP), 1 NPT. DIN 11851, Clamp ISO 2852.
Models:	24-250 Vac. Maximum load 350 mA. 2 wire connection with series load 12 - 55 Vdc. Maximum load 350 mA. 3 wire connection
Switching time:	> 1s
Hysteresis:	± 2 mm with H_2O
Working Limits:	Viscosity. Up to 10.000 cSt Density. > 0,6 kg / l Process temperature (liquid). -30 a 150ºC Ambient temperature. -20 a 70ºC Standard pressure: PN 16
Degree of Protection:	IP65

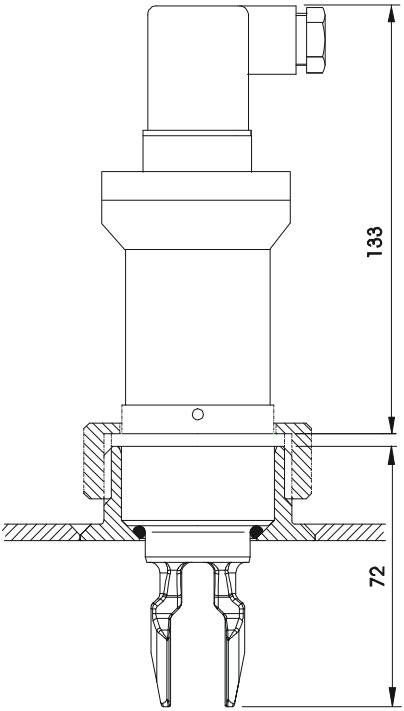
Conforms with the Directives 73/23/CE & 89/336/CE

Conforms with the Pressure Equipment Directive 97/23/CE

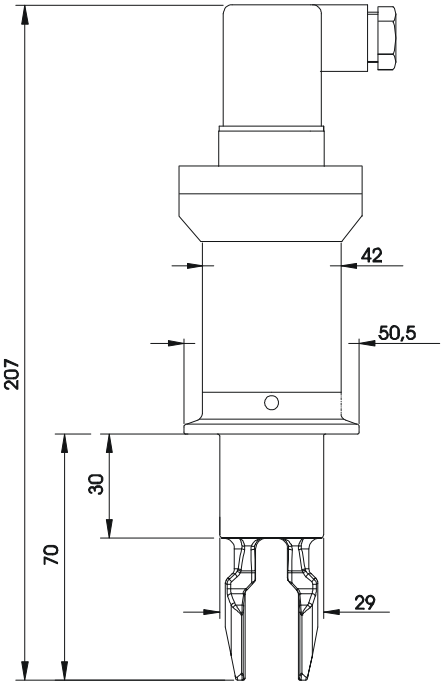
This equipment is considered as being a pressure accessory and **NOT** a safety accessory as defined in the 97/23/CE directive, Article 1, paragraph 2.1.3.

Dimensions:

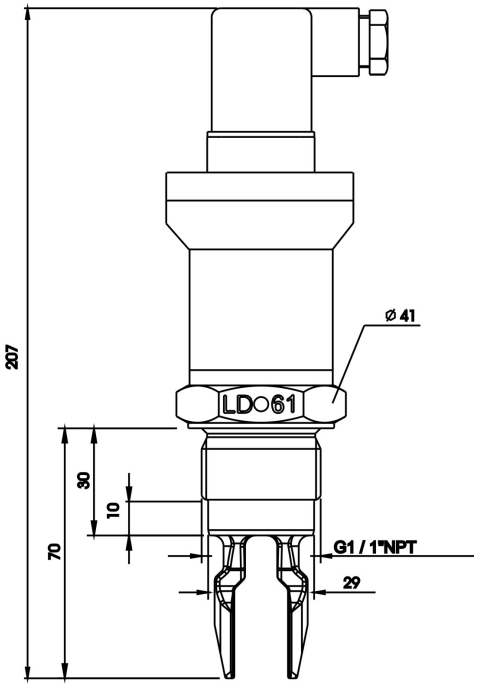
Sanitary Thread (DIN 11851)



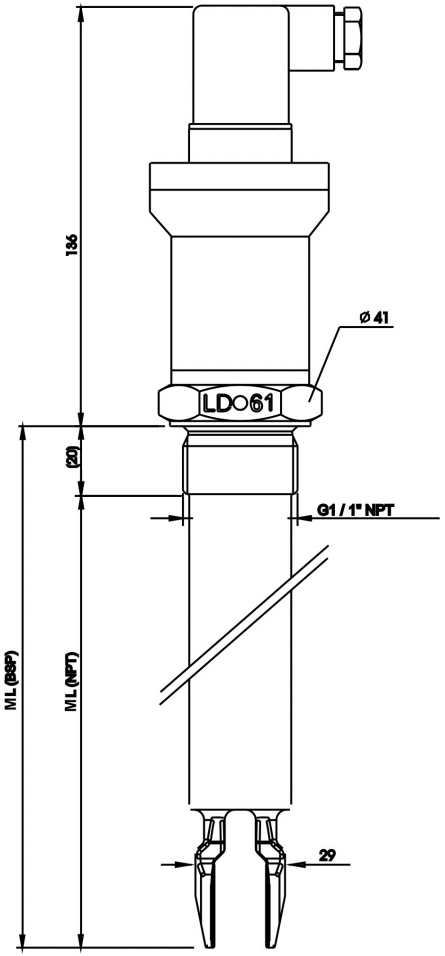
Clamp (ISO 2852)



G1 or 1 NPT Thread



LD61 ML



WORKING PRINCIPLE

The LD61 level switch is based on the variation of the natural resonant frequency of a vibrating fork, when it comes into contact with a liquid.

This variation is detected by the internal electronics and is used to determine the state of the output .

RECEPTION

The LD61 level detectors are supplied ready for installation and operation.

They are supplied packed for their protection during storage and haulage.

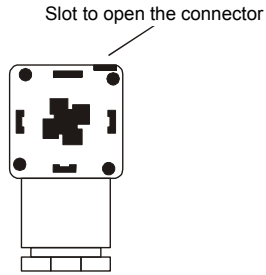
To handle the detectors, they should always be held by the head, never by the vibrating fork.

The vibrating fork should not be modified or bent, as this can damage the detector beyond repair.

ELECTRICAL CONNECTION

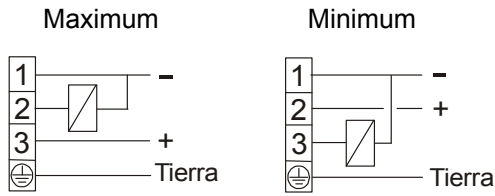
The LD61 can be installed as a detector of minimum or maximum level. The electrical connection is made by means of a DIN 43650-A connector with a PG-9 cable gland. Multiple conductor cable with sections about 0,5 mm^2 should be used.

To open the connector, remove the centre screw and prise open using a small screwdriver in the slot shown in the following drawing (looking at the female connector from the contact side).

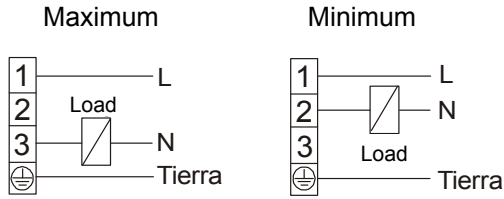


The working mode (maximum or minimum) is chosen by means of the cable connection, as shown in the following figure.

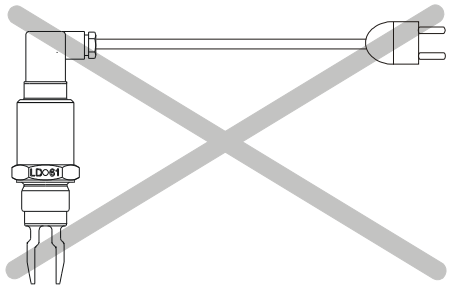
a) DC version.



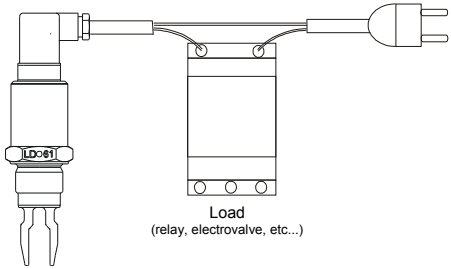
b) AC version.



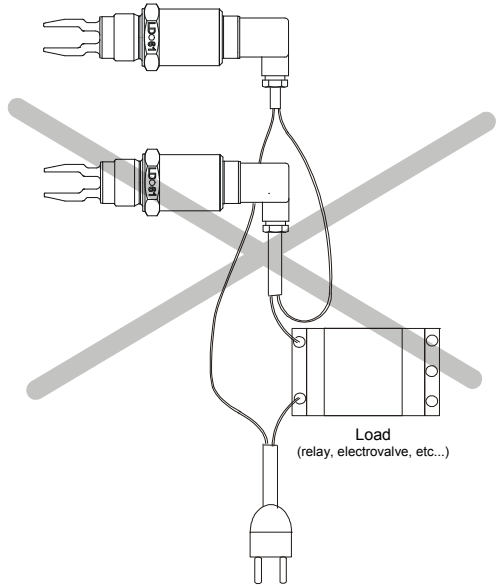
NOTE: The AC version has a power consumption of 6 mA when the load is deactivated. This should be taken into account when the load is a relay. You must make sure that the dropout voltage of the relay is greater than the voltage across the coil when a current of 6 mA flows through it. If the dropout voltage is equal or smaller then the relay can be in an activated position independent of the LD61 state.



With the AC version. the connection without a load will damage the instrument !



The LD61 detector cannot be connected in series. Each detector must have its own load. When



the LD61 is connected to detect a maximum level, the load is “activated” when the fork is not in contact with the fluid. In the same way, when the LD61 is connected to detect a minimum level, the load is “activated” when the fork is in contact with the fluid.

The LD61 has a bi-colour LED that indicates the state of the load “activated” (green colour) or “open” (red colour).

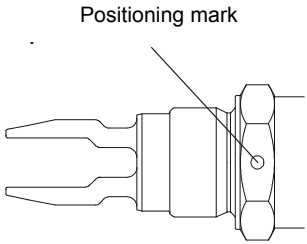
MOUNTING

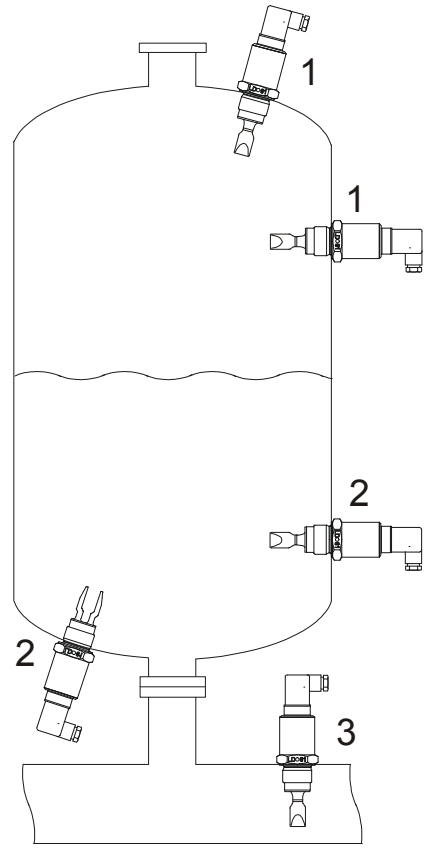
The LD61 detector can be mounted in any position. The more usual insertion points are shown in the drawing.

In positions 1 the LD61 acts as a maximum level detector. In positions 2 the LD61 acts as a minimum level detector and in position 3 it acts as an empty pipe detector (for example, to protect a pump).

If the LD61 is installed in a horizontal position it is recommended to install it with the tines vertical to avoid accumulation of substances, especially in the case of high viscosity materials.

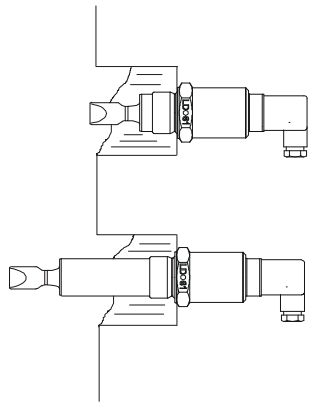
To indicate the position of the tines the LD61 has a round mark on two of the flats of the nut. These marks should be in a vertical position when the detector is installed in a horizontal position.





In the same way, when the detector is installed where there is flow, the position must be taken into account. The flat part of the tines must be aligned parallel with the flow direction.

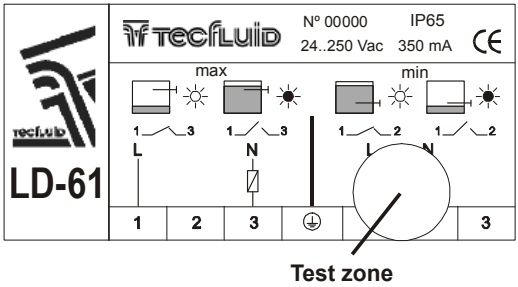
If the viscosity is high, the tines must be kept away from other objects (such as the wall of the tank). In these cases it is preferable to install a longer detector.



The cable gland should be situated on the lower side of the connector. If it is necessary, the position of the connector can be changed by 90º or 180º. To do this, open the connector and rotate. This operation must be done with the power disconnected

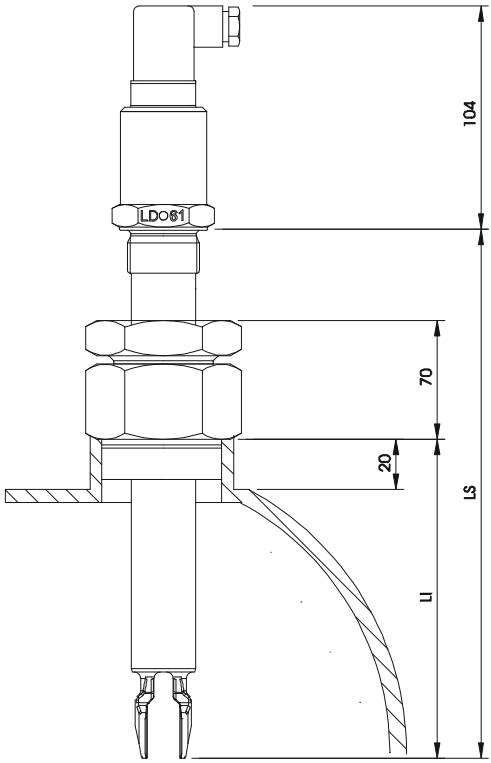
OPERATION TEST

The operation of the installation can be checked by placing a magnet in the zone shown in the following figure. This magnet will change the output to the opposite state. In this way the correct installation of the instrument can be checked without having to change the level in the tank. At the same time, the bi-colour LED will indicate the change of state of the output.



ACCESSORIES

An accessory that permits changing the length of the LD61 which penetrates in the tank is available. This permits adjustment of the detection level.



WARRANTY

Tecfluid S.A. guarantee all the products for a period of 24 months from their sale, against all faulty materials, manufacturing or performance. This warranty does not cover failures which might be imputed to misuse, use in an application different to that specified in the order, the result of service or modification carried out by personnel not authorized by Tecfluid S.A., wrong handling or accident.

This warranty is limited to cover the replacement or repair of the defective parts which have not damaged due to misuse, being excluded all responsibility due to any other damage or the effects of wear caused by the normal use of the devices.

Any consignment of devices for repair must observe a procedure which can be consulted in the website www.tecfluid.com, “After-Sales” section.

All materials sent to our factory must be correctly packaged, clean and completely exempt of any liquid, grease or toxic substances.

The devices sent for repair must enclose the corresponding form, which can be filled in via website from the same “After-Sales” section.

Warranty for repaired or replaced components applies 6 months from repair or replacement date. Anyway, the warranty period will last at least until the initial supply warranty period is over.

TRANSPORTATION

All consignments from the Buyer to the Seller´s installations for their credit, repair or replacement must always be done at freight cost paid unless previous agreement.

The Seller will not accept any responsibility for possible damages caused on the devices during transportation.

Tecfluid
The art of measuring

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Quality Management System ISO 9001 certified by

Pressure Equipment Directive 97/23/CE certified by

ATEX European Directive 94/9/CE certified by