TECFLUID

instrumentation
for fluids

Level Switch

Series

LC40

Instructions Manual

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1. INTRODUCTION

The LC40 series are level limit switches based on a float.

The changes in level are followed by the float mounted on a pivoted arm.

On the opposite end from the float there is a sealed permanent magnet which acts on another magnet, situated in the inside of the electrical housing, that acts on the limit switches.

The limit switches can be electric or pneumatic, depending on the needing of the installation.

Applications:

- Liquid storage tanks
- Hot water storage.
- Control of steam condensates storage tanks .
- On-Off of pumps.
- Maximum and minimum level control.

2. RECEPTION

The LC40 level detectors are supplied individually packed for protection during transport .

On reception of the level detector, check:

- That the float pivots freely in the fork that supports it.
- That the pivot shaft has the two split pins, one on each end.

Before installation, it is recommended to check the limit switch.

To do this, unscrew the electrical housing cover to gain access to the electrical connections.

Move manually the float from the bottom stop to the top stop of the fork.

The signal at the electrical connection terminals will vary according to the float's position (with the AMM and AMR switches this can be checked easily using a multimeter in continuity mode).

3. INSTALLATION

The models designed to be mounted in the side of the tank (horizontal installation) should be installed as in figures in page 6.

The mounting position must be so that the float can move freely in a vertical plane.

The LC40V and LC40VR models should be installed in the top of the tank (see page 7).

Important:

Check that the working pressure is not above that specified on the instrument's identification label.

Check that the ambient and liquid temperatures are within the limits specified on page 5.

4. ELECTRICAL CONNECTION

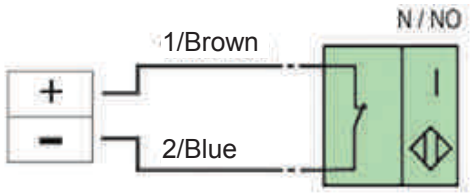
The limit switches of the LC40 series are provided of a terminal block in order to connect the cables.

Before starting the electrical installation, make sure that the cable to be used is the right size for the PG9 cable gland. This will guarantee that the instrument is perfectly sealed (it is recommended the use of shielded pair wiring with an exterior diameter between 5 and 8 mm. The section of the cables inside will be 0,25 or 0,5 mm^2).

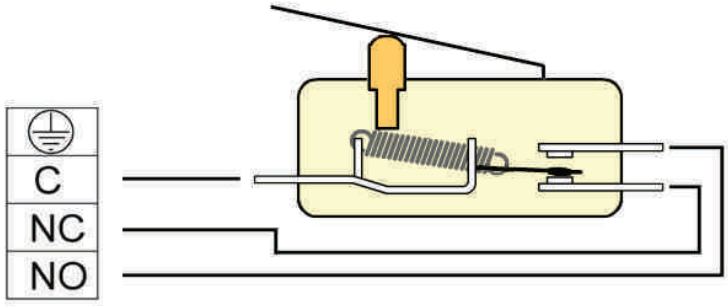
Peel the outside insulation to free the inner cables. It is recommended to tin the ends of the wires to avoid loose ends. Pass the cables through the cable glands and screw down in the corresponding positions of the terminal strip. Once the wiring is finished make sure that the cables are well gripped by the cable glands to maintain the degree of protection.

The different connection diagrams depending on the limit switch are the following:

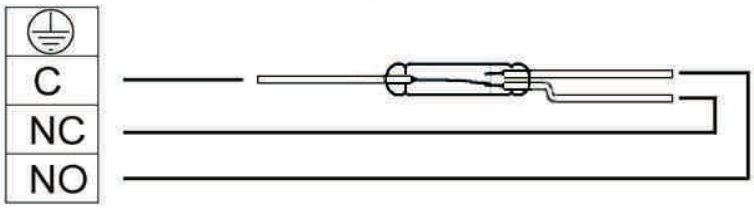
3.1 AMD



3.2 AMM



3.3 AMR



5. MAINTENANCE

Mechanical: Maintain the pivot shaft clean and remove dirt from the fork.

There is no preventive maintenance for the electrical or pneumatic part.

6. TECHNICAL CHARACTERISTICS

- Mounting: Vertical / Side mounting.
- Fittings: DIN 2501 DN65 PN 16flanges
  Others on demand
- Minimum liquid density: 0.45 kg/l
- Liquid viscosity: maximum 3.000 mPa.s
- Repeatability: ±3 mm of the level .
- Materials: EN 1.4404 (AISI-316L)
  On demand: PVC, PP, PTFE, PVDF
- Electrical housing: Metal alloy aluminium
  On demand: EN 1.4401 (AISI-316), PP, PTFE
- Pressure: PN16 (PN10 for plastic)
  On demand: PN40 ... PN400
- Liquid temperature: Depends on the following table

Materials	Liquid temperature range	Maximum product temperature (1) + thermal housing
EN 1.4404 (AISI-316L)	-50ºC…...150º C	300º C
PVC	0ºC…..50º C	-------
PP	-20ºC…..90ºC	-------
PTFE	-20ºC…..150º C	-------
PVDF	-20ºC.....150º C	-------

(1) The liquid working temperatures are given for an ambient temperature of 20ºC.

- Ingress protection IP65
- Limit switch characteristics

Switch	System	Characteristics	Maximum ambient temperature
AMM	Snap action switch C/NO/NC	250 V max. 3 A max.	-25 to +85 ºC
AMD	Inductive NAMUR	max.. I > 2.2 mA min. I < 1.1 mA	-25 to +85 ºC
AMR	Reed switch C/NO/NC	250 V max. 0.5 A max.	-25 to +85 ºC
AMP	Pneumatic switch	2 ... 6 bar	0 to +50 ºC

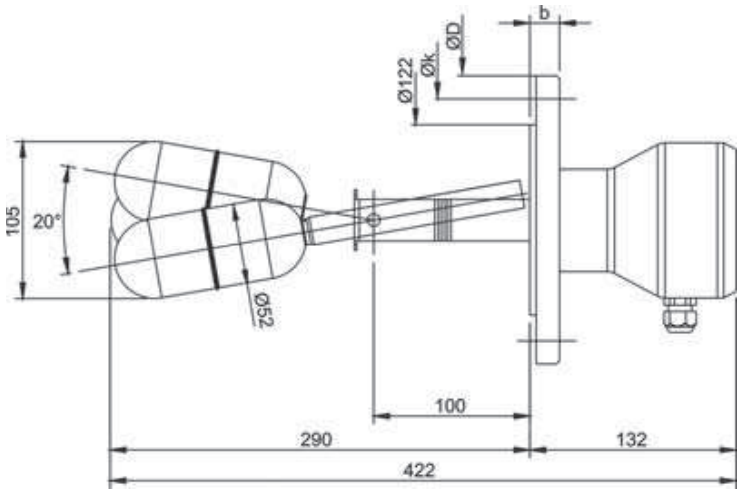
Complies with 97/23/EC Directive for pressure equipment. CE

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

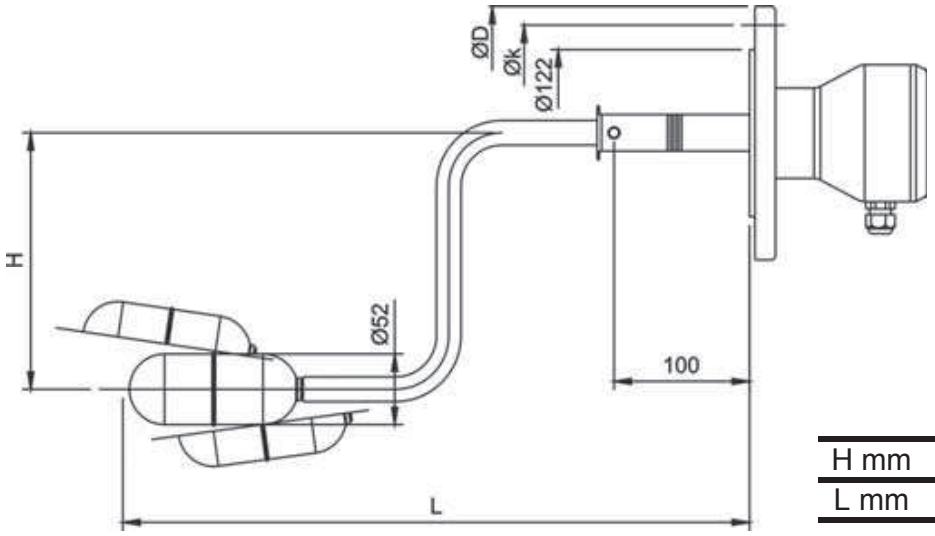
7. DIMENSIONS

Horizontal installation

LC40/INOX



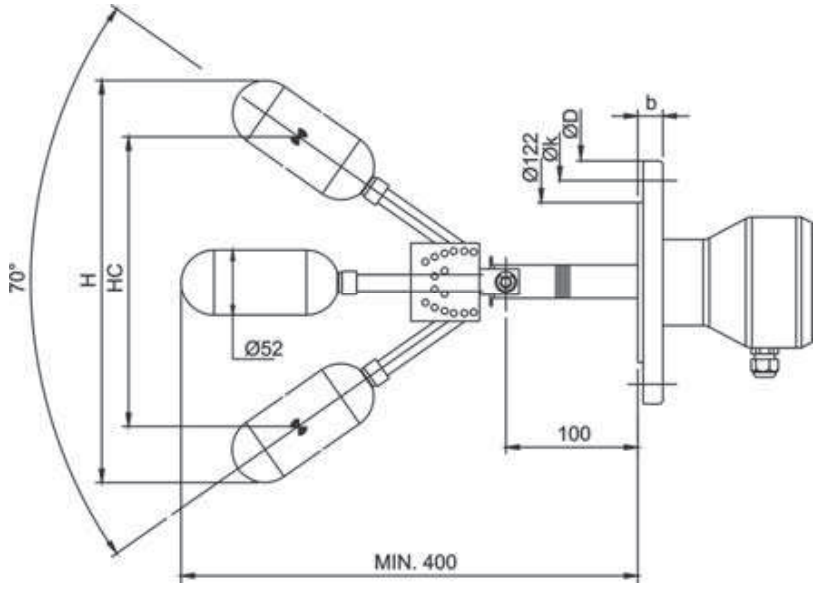
LC40-BA/INOX



H mm	150	200	300	400
L mm	250	350	450	600

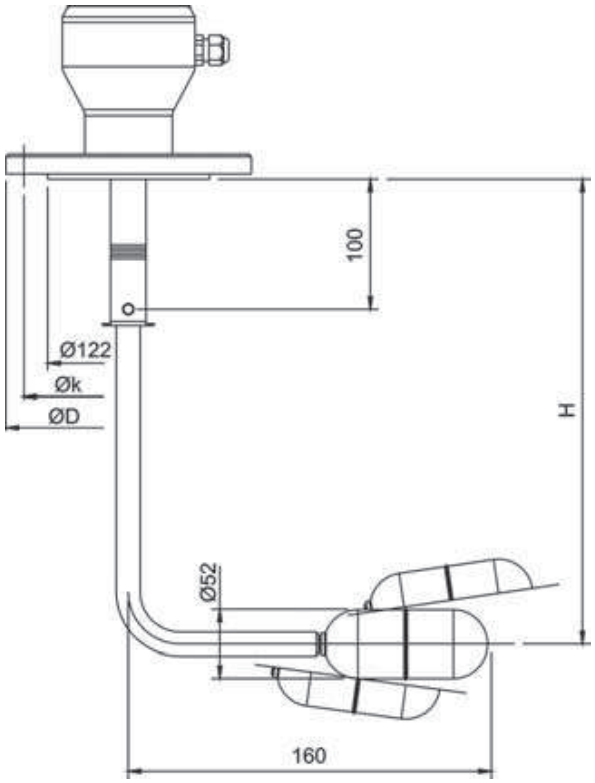
Horizontal installation with accessories

LC40-A21/INOX



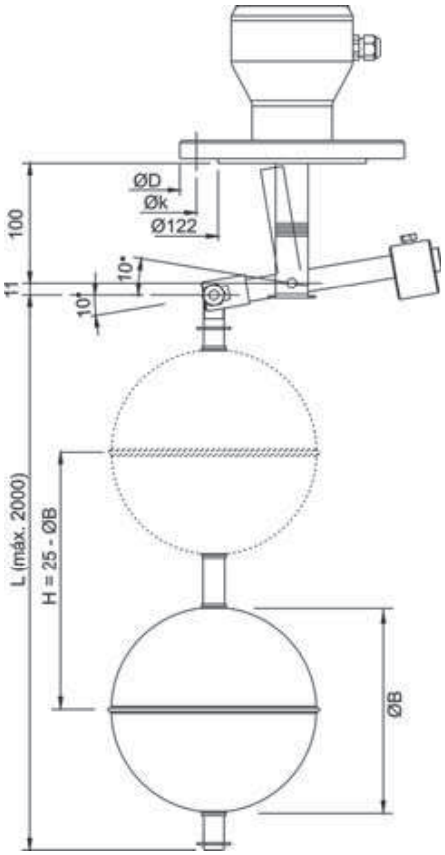
Vertical installation

LC40-V/INOX



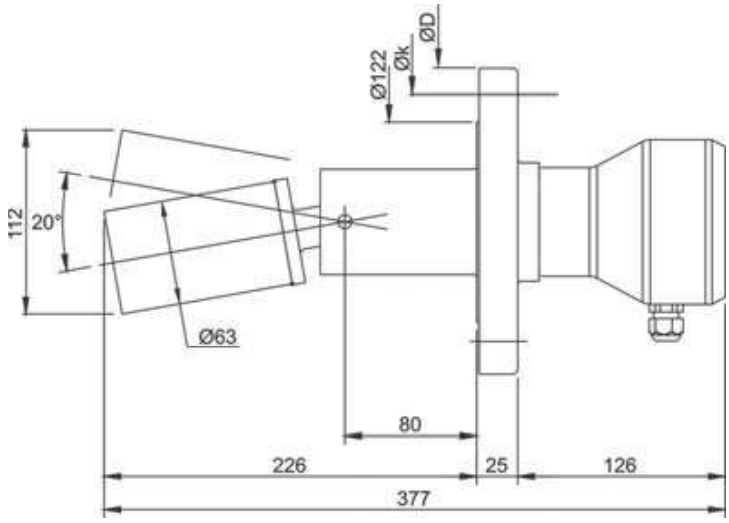
H average distance for actuation
H max: 1000 mm

LC40-VR/INOX



H maximum-minimum level differential
H max: 1875 mm - ØB

LC40-03/PVC, LC40-05/PTFE, LC40-09/PP, LC40-00/PVDF



FLANGE DIMENSIONS (DN65)

STAINLESS STEEL				
PN	D	k	L x nº	b
16	185	145	18 x 4	18
40	185	145	18 x 8	22
64	205	160	22 x 8	26
100	220	170	26 x 8	30
160	220	170	26 x 8	34
250	230	180	26 x 8	42

PLASTIC				
PN	D	k	L x nº	b
10	185	145	18 x 4	18

WARRANTY

TECFLUID guarantees 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, 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.fr, "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.

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