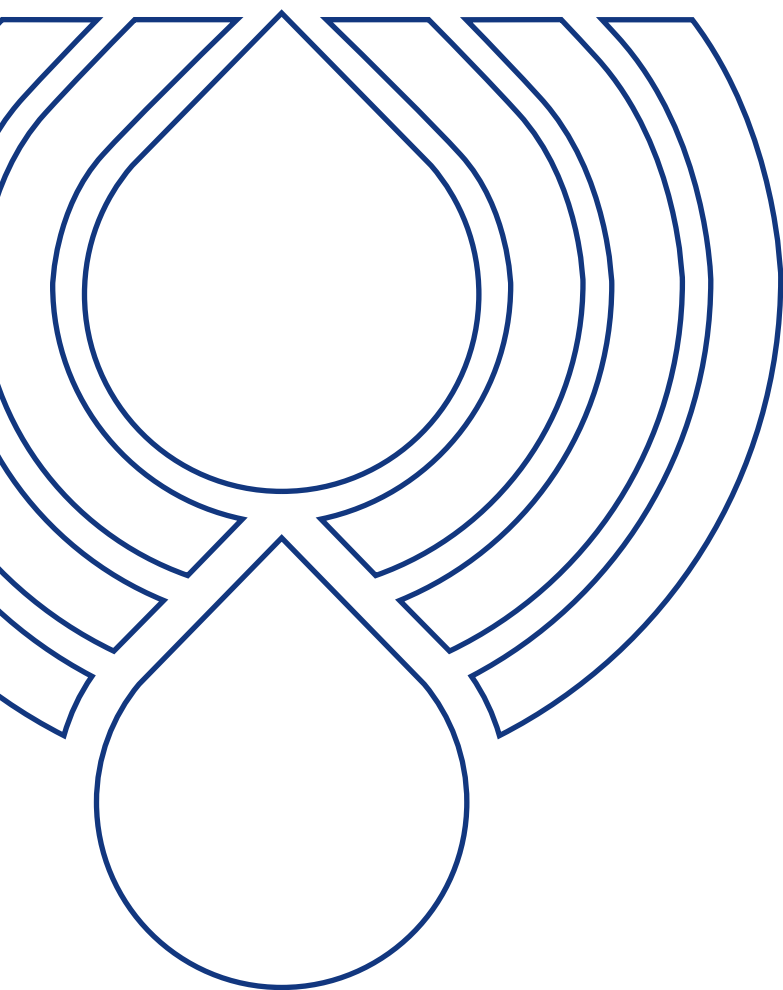


# TANK ACCESSORIES

ELECTRICAL OIL LEVEL INDICATORS



PASSION TO PERFORM







## A WORLDWIDE LEADER IN THE FIELD OF HYDRAULIC FILTRATION EQUIPMENT.

Our company started life in 1964, when Bruno Pasotto decided to attempt to cater for the requests of a market still to be fully explored, with the study, design, development, production and marketing of a vast range of filters for hydraulic equipment, capable of satisfying the needs of manufacturers in all sectors. The quality of our products, our extreme competitiveness compared with major international producers and our constant activities of research, design and development has made us a worldwide leader in the field of hydraulic circuit filtering. Present for over 50 years in the market, we have played a truly decisive role in defining our sector, and by now we are a group capable of controlling our entire chain of production, monitoring all manufacturing processes to guarantee superior quality standards and to provide concrete solutions for the rapidly evolving needs of customers and the market.

## MARKET LEADER



Our work is based on a skillful interaction between advanced technology and fine workmanship, **customizing products according to specific market requests**, focusing strongly on innovation and quality, and following every step in the manufacturing of both standard and special products, fully respecting customer expectations.



Our customer-oriented philosophy, which enables us to satisfy all customer requests **rapidly and with personalized products**, makes us a **dynamic and flexible enterprise**. The possibility of constantly controlling and monitoring the entire production process is essential to allow us to guarantee the quality of our products.

## WORLDWIDE PRESENCE

Our foreign Branches enable us to offer a diversified range of products that allow us to successfully face the aggressive challenge of international competition, and also to maintain a stable presence at a local level.

The Group boasts **8 business branches**





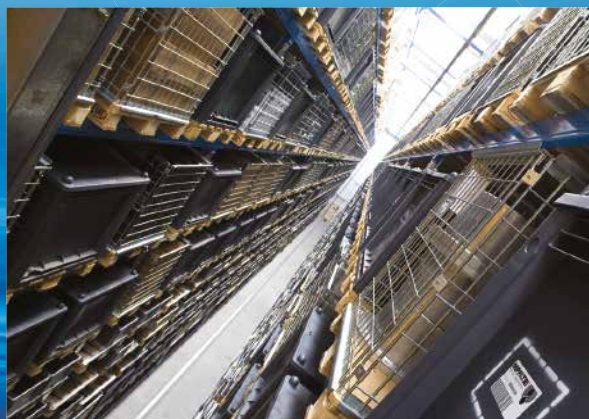
## TECHNOLOGY

Our constant **quest for excellence in quality and technological innovation** allows us to offer only the best solutions and services for applications in many fields, including general industry, test rigs, lubrication, heavy engineering, renewable energies, naval engineering, offshore engineering, aviation systems, emerging technologies and mobile plant (i.e. tractors, excavators, concrete pumps, platforms).



## AND PRODUCTION

Our high level of technological expertise means **we can rely entirely on our own resources, without resorting to external providers.** This in turn enables us to satisfy a growing number of customer requests, also exploiting our constantly updated range of machines and equipment, featuring **fully-automated workstations** capable of **24-hour production.**





## SUCTION FILTERS

Flow rates  
up to 875 l/min

Mounting:  
- Tank immersed  
- In-Line  
- In tank with  
shut off valve  
- In tank  
with flooded suction

## RETURN FILTERS

Flow rates  
up to 3000 l/min

Pressure  
up to 20 bar

Mounting:  
- In-Line  
- Tank top  
- In single  
and duplex designs

## RETURN / SUCTION FILTERS

Flow rates  
up to 300 l/min

Pressure  
up to 80 bar

Mounting:  
- In-Line  
- Tank top

## SPIN-ON FILTERS

Flow rates  
up to 365 l/min

Pressure  
up to 35 bar

Mounting:  
- In-Line  
- Tank top

## LOW & MEDIUM PRESSURE FILTERS

Flow rates  
up to 3000 l/min

Pressure  
up to 80 bar

Mounting:  
- In-Line  
- Parallel manifold version  
- In single  
and duplex designs

## HIGH PRESSURE FILTERS

Flow rates  
up to 750 l/min

Pressure from 110 bar  
up to 560 bar

Mounting:  
- In-Line  
- Manifold  
- In single  
and duplex designs



## PRODUCT RANGE

MP Filtri can offer a vast and articulated range of products for the global market, suitable for all industrial sectors using hydraulic equipment.

This includes filters (suction, return, return/suction, spin-on, pressure, stainless steel pressure) and structural components (motor/pump bell-housings, transmission couplings, damping rings, foot brackets, aluminium tanks, cleaning covers).

We can provide all the skills and solutions required by the modern hydraulics industry to monitor contamination levels and other fluid conditions.

Mobile filtration units and a full range of accessories allow us to supply everything necessary for a complete service in the hydraulic circuits.



### STAINLESS STEEL HIGH PRESSURE FILTERS

Flow rates up to 125 l/min  
Pressure from 320 bar  
up to 1000 bar

Mounting:

- In-Line
- Manifold
- In single and duplex designs



### CONTAMINATION MONITORING PRODUCTS

- Online, in-line particle counters
- Off-line bottle sampling products
- Fully calibrated using relevant ISO standards
- A wide range of variants to support fluid types and communication protocols



### MOBILE FILTRATION UNITS

Flow rates from 15 l/min  
up to 200 l/min



### POWER TRANSMISSION PRODUCTS

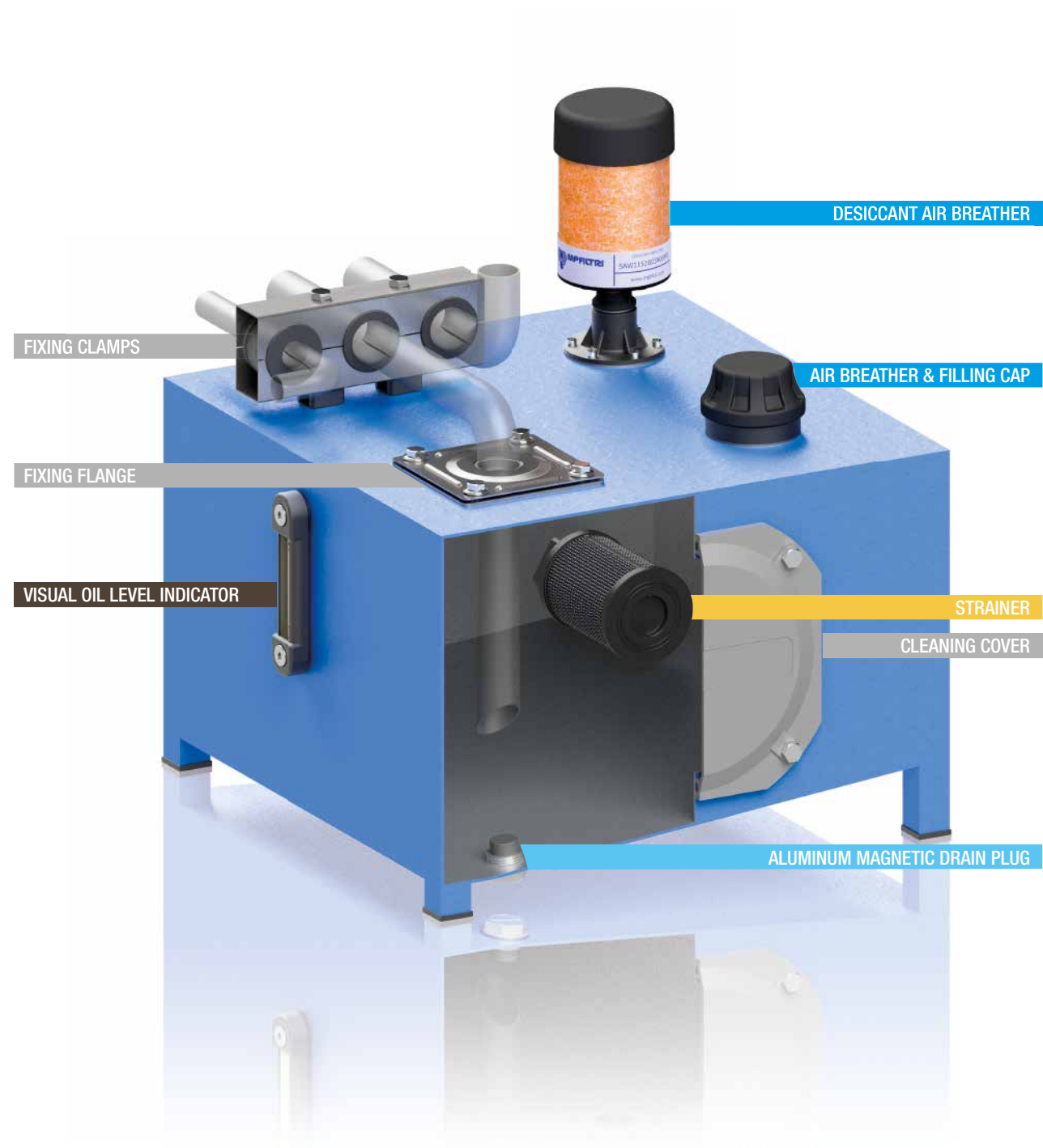
- Aluminium bell-housings for motors from 0.12 kW to 400 kW
- Couplings in Aluminium Cast Iron - Steel
- Damping rings
- Foot bracket
- Aluminium tanks
- Cleaning covers



### TANK ACCESSORIES

- Oil filler and air breather plugs
- Optical and electrical level gauges
- Pressure gauge valve selectors
- Pipe fixing brackets
- Pressure gauges

# TANK ACCESSORIES



<b>1</b>	<b>page</b>	<b>INTRODUCTION</b>
1		COMPANY
6		PRODUCT RANGE

<b>10</b>	<b>page</b>	<b>STRAINERS</b>
13		STR & MPA - MPM Submerged suction filter, with bypass or magnetic column

<b>20</b>	<b>page</b>	<b>AIR BREATHERS AND FILLER PLUGS</b>
23		SAP 054-075 - SA Air breathers
29		SAW 115 Desiccant air breathers
33		SCS Metal air breathers with interchangeable filter element
39		SME 1 - SMF 1 - SML 1 Risers for breathers and filler caps installation
45		TA 46 - TAP 50 - SAP 50 Filling cap, air breather & filling cap
53		TA 80 Filling cap
57		TAP 90 Air breather & filling cap
63		TAP 114 Air breather & filling cap
67		TAP 115 & SAP 115 Filling cap, air breather & filling cap

<b>72</b>	<b>page</b>	<b>FILLER AND DRAIN PLUGS</b>
75		TC 50 Nylon filler plug
79		TKT - TSD Nylon filler plugs
79		TKM Aluminium magnetic drain plug

<b>86</b>	<b>page</b>	<b>VISUAL OIL LEVEL INDICATORS</b>
89		LCP - LCC Spy eyes
95		LVA - LVU Visual oil level indicator

<b>100</b>	<b>page</b>	<b>ELECTRICAL OIL LEVEL INDICATORS</b>
103		LEN - LEG - LET - LEM - LEU Electrical oil level indicator
115		LVK Electrical and visual oil level indicator

<b>120</b>	<b>page</b>	<b>ACCESSORIES</b>
123		EM1 Gauge isolator valves
129		SVM Gauge isolator valves
133		FTA - FTR Oil tank fixing flange
137		SFT Fixing clamps
143		OB Cleaning covers
149		SE10LT Aluminium tanks

**Electromagnetic float level indicators use the action of a magnet fixed to the float to change the electrical status of a reed switch mounted inside the tube.**

**As the fluid level in the tank changes, the float moves together with the magnet that, connected with the reed switch, move the contacts thereby tripping an alarm signal.**

**The movement of the float is normally limited by mechanical stops because once the magnet exceeds the point at which it activates the reed switch, the switch reverts to its original status.**

**To invert the contact status from N.O. to N.C. and vice versa, it is normally sufficient to invert the float.**



# Electrical Oil Level Indicators



LEN - LEG - LET - LEM - LEU page 103  
LVK 115



# LEN - LEG - LET - LEM - LEU series

Electrical oil level indicators



## Technical data

### Electrical oil level indicators

LEN is a range of electrical fluid level indicators for monitoring of the fluid level into the tank.

They are directly fitted on the tank.

The float moves through the rod while the fluid level changes.

A magnet, fitted into the float, turns a reed sensor fixed into the rod.

### Available features:

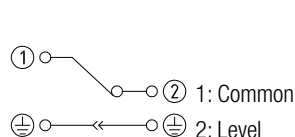
- G 1" male threaded or flanged connections
- Adjustable size on request, to meet every size of tank
- 1 or 2 floats, to monitor the minimum level, the maximum level or both of them.

### Common applications:

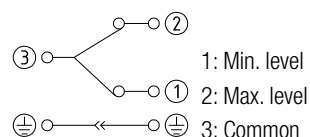
- Hydraulic systems
- Mobile machines
- Industrial equipment

### Electrical symbol:

LEN 1 Float



LEN 2 Floats



**Note:** to invert the contact status from NC to NO and vice versa, simply invert the float.

### Materials

- Flange/Threaded body: Aluminium
- Tube: Brass, AISI 304 (on request)
- Float: Nylon foam, AISI 316 (on request)
- O-Ring: NBR
- Circlip: Phosphor bronze
- Contact: N.C. reed, N.O. (on request)

### Electrical data

- Protection rating: IP65
- Max switching capacity: 80 W
- Max switching current: 1 A
- Max switching voltage: 250 Vac
- Fluid specific gravity: > 0.75

### Temperature

From -15 °C to + 80 °C

### Weight

LEN 1 float 0.185 kg  
LEN 2 floats 0.230 kg

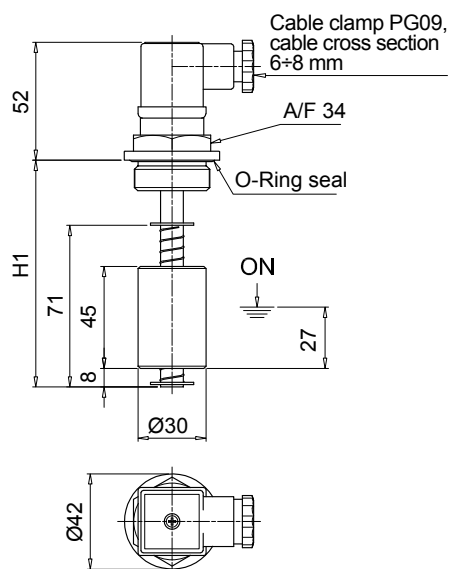


## Designation & Ordering code

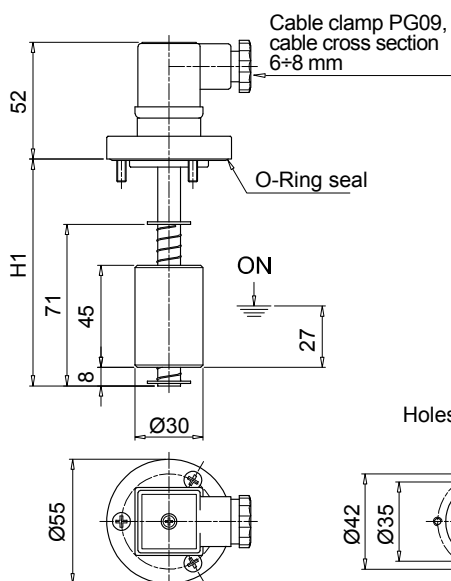
LEN												
Series			Configuration example :									
LEN			LEN	A	350	2	A	1	A	G	S	P01
Tube material												
A	Brass											
Length												
150	200	250	350	400	500							



Connection "G"



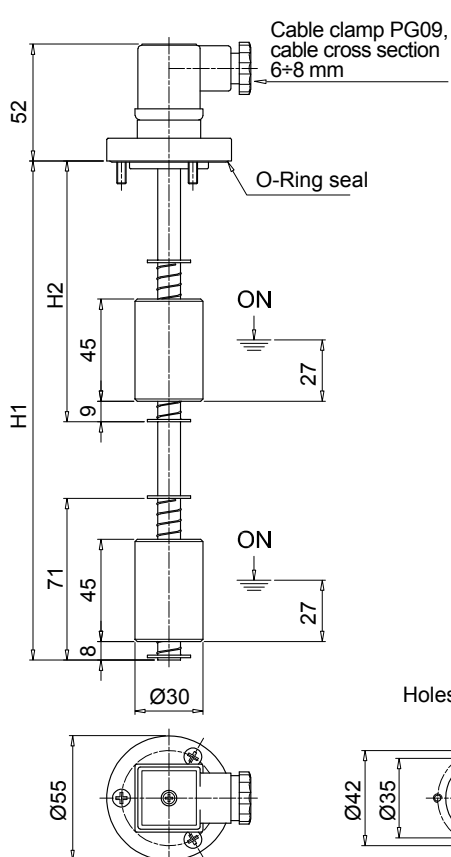
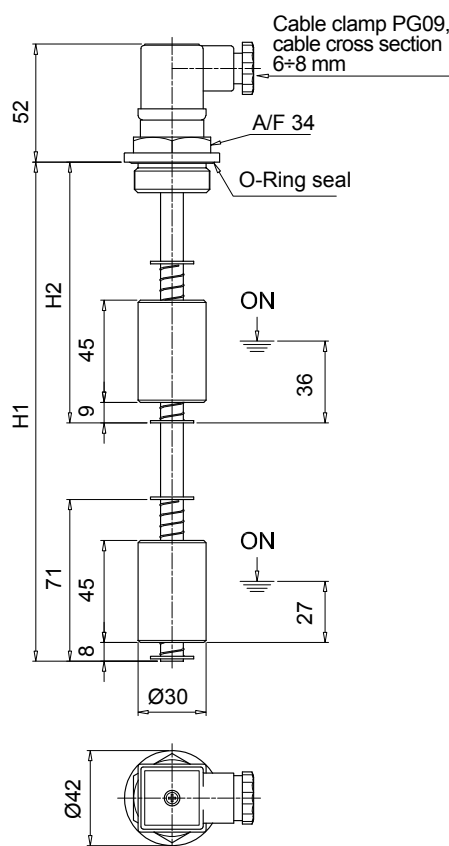
Connection "F"



LEN

Nr. 1 float

Length	H1 [mm]
150	150
200	200
250	250
350	350
400	400
500	500



LEN

Nr. 2 floats

Length	H1 [mm]	H2 [mm]
200	200	95
250	250	105
350	350	115
400	400	115
500	500	125

Optional

## DIN 43650 CONNECTOR

## Materials

- Flange: aluminum
- Rod: brass
- Float: nylon foam
- Seals: A= NBR - V= FPM

## Temperature

From -15 °C to +80 °C

For temperatures outside this range, contact  
MP Filtri Technical and Sales Department

# LEG GENERAL INFORMATION

## Technical data

### Electrical oil level indicators

LEG is a range of electrical fluid level indicators for monitoring of the fluid level into the tank.

They are directly fitted on the tank side.

The float moves through the rod while the fluid level changes.

A magnet, fitted into the float, turns a reed sensor fixed into the rod.

### Available features:

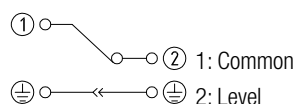
- Flanged connections
- Adjustable size on request, to meet every size of tank
- 1 float, to monitor the minimum level or the maximum level.

### Common applications:

- Hydraulic systems
- Mobile machines
- Industrial equipment

### Electrical symbol:

LEG 1 Float



**Note:** to invert the contact status from NC to NO and vice versa, simply invert the float.

### Materials

- Flange: Aluminium
- Tube: Brass
- Float: Nylon foam
- O-Ring: NBR
- Circlip: Phosphor bronze
- Contact: N.C. reed, N.O. (on request)

### Electrical data

- Protection rating: IP65
- Max switching capacity: 80 W
- Max switching current: 1 A
- Max switching voltage: 250 Vac
- Fluid specific gravity: > 0.75

The electrical properties indicated are referred to resistive loads; for capacitive and inductive loads and incandescent lamps, use protection circuits.

### Temperature

From -15 °C to + 80 °C

### Weight

LEG A 102 0.19 kg

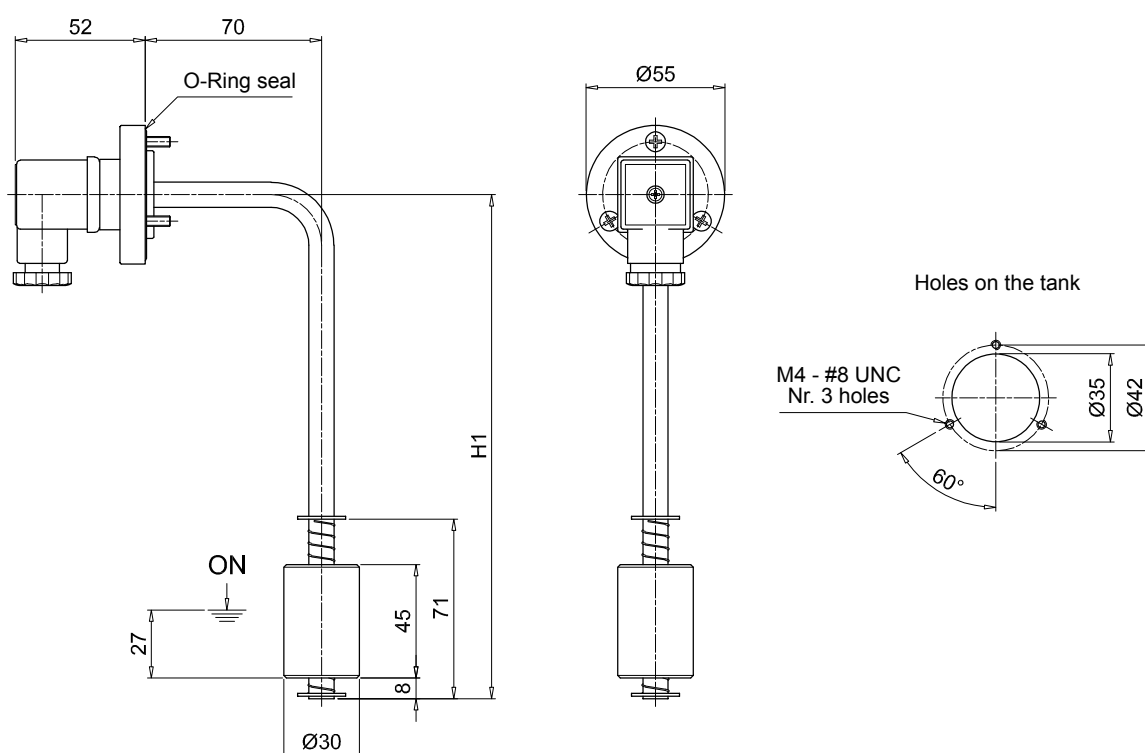
LEG A 200 0.22 kg



## Designation & Ordering code

LEG										
Series	Configuration example : LEG A 200 1 A 1 A F S P01									
LEG										
Tube material										
A Brass										
Length										
102   200										
Number of floats										
1 Nr. 1 float										
Float material										
A Nylon foam										
Electrical switch										
1 N.C. (Normally Closed)										
Seals										
A NBR										
Connection to the tank										
F Nr. 3 holes flange										
Electrical connection										
S DIN 43650 connector										
Execution										
P01 MP Filtri standard										
Pxx Customized										

LEG	
Size	H1 [mm]
<b>LEG 102</b>	103
<b>LEG 200</b>	200



Optional

**DIN 43650 CONNECTOR****Materials**

- Flange: aluminum
- Rod: brass
- Float: nylon foam
- Seals: A= NBR - V= FPM

**Temperature**

From -15 °C to +80 °C

For temperatures outside this range, contact  
MP Filtri Technical and Sales Department

**Note:** for installation onto OB Cleaning covers see page 147

## Technical data

### Electrical oil level indicators

LET is a range of electrical fluid level indicators for monitoring of the fluid level into the tank. They are directly fitted on the tank.

The float moves through the rod while the fluid level changes.

A magnet, fitted into the float, turns a reed sensor fixed into the rod.

The integrated thermostat allows to get a remote monitoring of the temperature.

### Available features:

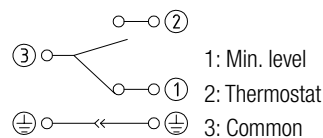
- G 1" male threaded or flanged connections
- Adjustable size on request, to meet every size of tank
- 1 float, to monitor the minimum level or the maximum level.

### Common applications:

- Hydraulic systems
- Mobile machines
- Industrial equipment

### Electrical symbol:

LET 2 Floats with thermostat



**Note:** to invert the contact status from NC to NO and vice versa, simply invert the float.

### Materials

- Flange/Threaded body: Aluminium
- Tube: Brass, AISI 304 (on request)
- Float: Nylon foam, AISI 316 (on request)
- O-Ring: NBR
- Circlip: Phosphor bronze
- Contact: N.C. reed, N.O. (on request)

### Electrical data

- Protection rating: IP65
- Max switching capacity: 80 W
- Max switching current: 1 A
- Max switching voltage: 250 Vac
- Fluid specific gravity: > 0.75

### Temperature

From -15 °C to + 80 °C

### Weight

LET A 200	0.20 kg
LET A 300	0.23 kg
LET A 400	0.28 kg



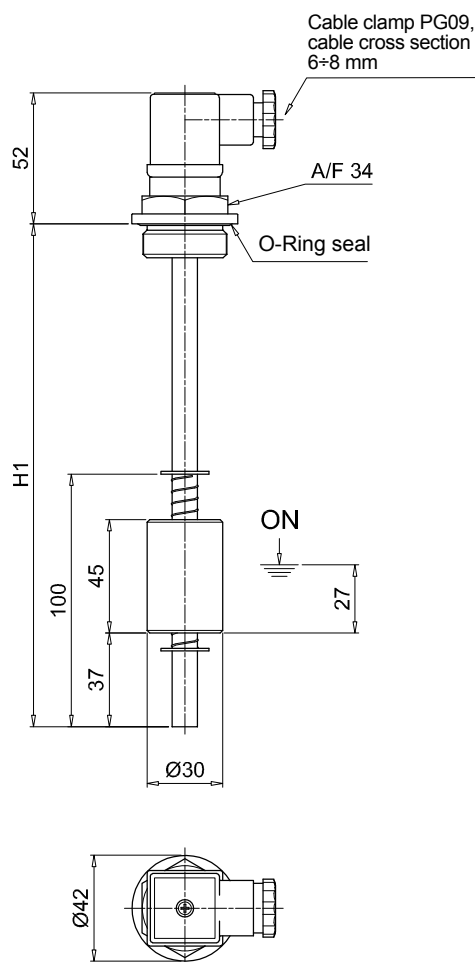
## Designation & Ordering code

LET											
Series	Configuration example :	LET	A	300	1	A	1	A	F	S	50 P01
<b>LET</b>											
Tube material											
<b>A</b> Brass											
Length											
<b>200   300   400</b>											
Number of floats											
<b>1</b> Nr. 1 float											
Float material											
<b>A</b> Nylon foam											
Electrical switch											
<b>1</b> N.C. (Normally Closed)											
Seals											
<b>A</b> NBR											
Connections to the tank											
<b>G</b> Thread G 1"											
<b>F</b> Nr. 3 holes flange											
Electrical connection											
<b>S</b> DIN 43650 connector											
		Thermostat setting		Execution							
		<b>50</b> 50°C N.O. (Normally Open)		<b>P01</b> MP Filtri standard							
				<b>Pxx</b> Customized							

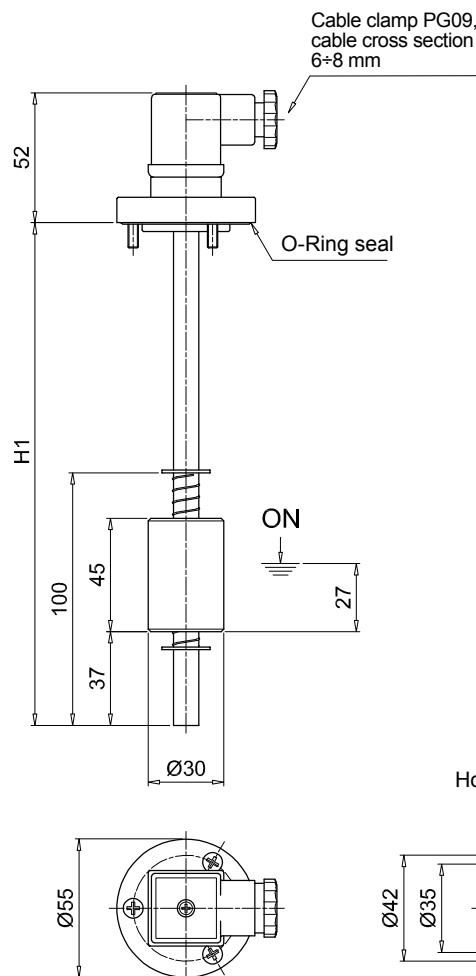


LET	
Length	H1 [mm]
200	200
300	300
400	400

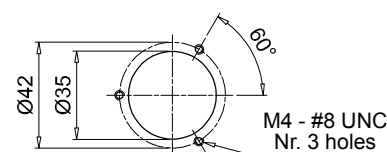
### Connection "G"



### Connection "F"



### Holes on the tank



Optional

### DIN 43650 CONNECTOR

#### Materials

- Flange: aluminum
- Rod: brass
- Float: nylon foam
- Seals: A= NBR - V= FPM

#### Temperature

From -15 °C to +80 °C

For temperatures outside this range, contact  
MP Filtri Technical and Sales Department

## Technical data

### Electrical oil level indicators

LEM is a range of electrical fluid level indicators for monitoring of the fluid level into the tank. They are directly fitted on the tank. The float moves through the rod while the fluid level changes. A magnet, fitted into the float, turns a reed sensor fixed into the rod. The setting point is adjustable on site, with few easy actions.

#### Available features:

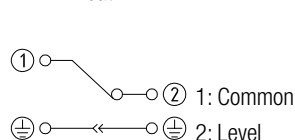
- Flanged connections
- Adjustable size on request, to meet every size of tank
- 1 float, to monitor the minimum level or the maximum level
- Integrated thermostat, to get a remote monitoring of the temperature.

#### Common applications:

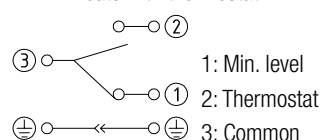
- Hydraulic systems
- Mobile machines
- Industrial equipment

#### Electrical symbol:

LEM 1 Float



LEM 2 Floats with thermostat



**Note:** to invert the contact status from NC to NO and vice versa, simply invert the float.

### Materials

- Flange/Threaded body: Aluminium
- Tube: Brass
- Float: Nylon foam
- O-Ring: NBR
- Circlip: Phosphor bronze
- Float contact: N.C. reed, N.O. (on request)
- Thermostat contact: N.O., N.C. (on request)

### Electrical data

- Protection rating: IP65
- Max switching capacity: 80 W
- Max switching current: 1 A
- Max switching voltage: 250 Vac
- Fluid specific gravity: > 0.75

### Temperature

From -15 °C to + 80 °C

### Weight

LEM 0.406 kg

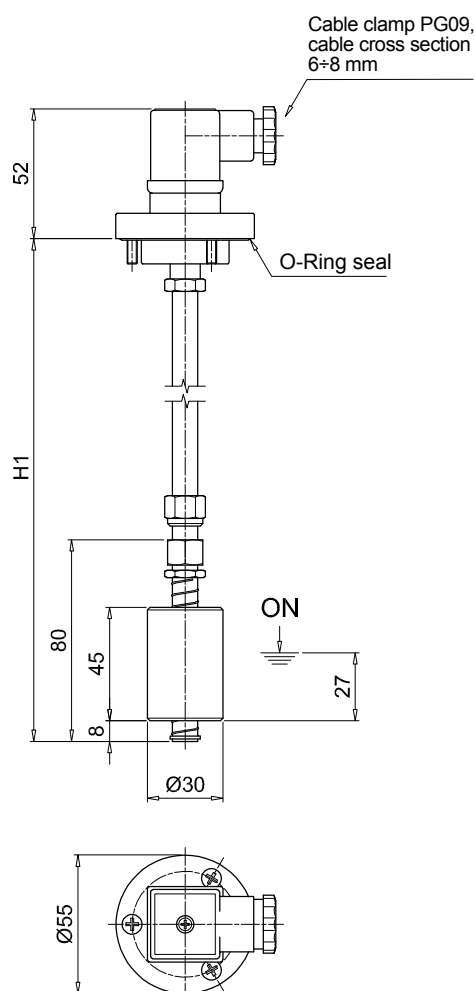


## Designation & Ordering code

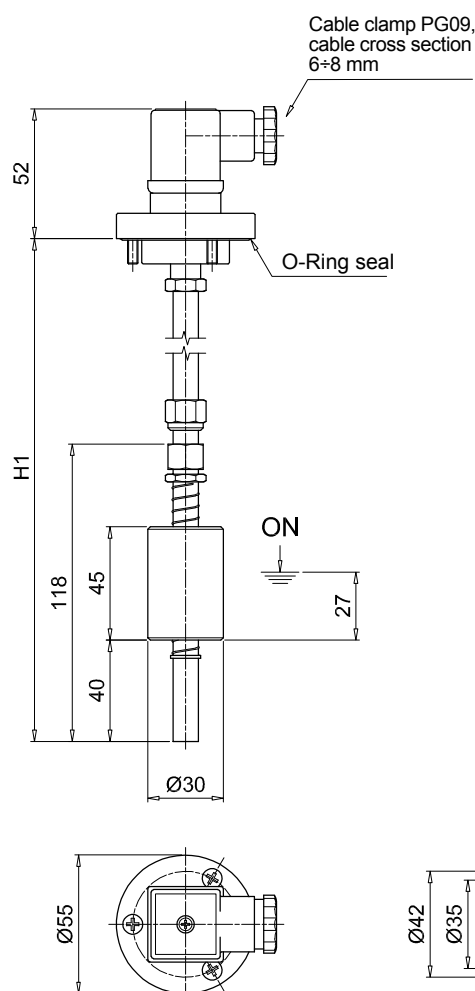
LEM											
Series	Configuration example : LEM A 1000 1 A 1 A F S 60 P01										
LEM											
Tube material											
A Brass											
Length											
500   1000											
Number of floats											
1 Nr. 1 float											
Float material											
A Nylon foam											
Electrical switch											
1 N.C. (Normally Closed)											
Seals											
A NBR											
Connections to the tank											
F Nr. 3 holes flange											
Electrical connection											
S DIN 43650 connector											
				Thermostat setting				Execution			
				00 Without thermostat				P01 MP Filtri standard			
				60 60°C N.O. (Normally Open)				Pxx Customized			

LEM	
Length	H1 [mm]
500	500
1000	1000

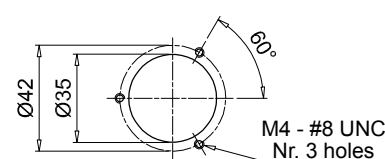
### Without thermostat



### With thermostat



### Holes on the tank



### Optional

#### DIN 43650 CONNECTOR

#### Materials

- Flange: aluminum
- Rod: brass
- Float: nylon foam
- Seals: A= NBR - V= FPM

#### Temperature

From -15 °C to +80 °C

For temperatures outside this range, contact  
MP Filtri Technical and Sales Department

## Technical data

### Electrical oil level indicators

LEU is a range of electrical fluid level indicators for monitoring of the fluid level into the tank. They are directly fitted on the tank.  
The float moves through the rod while the fluid level changes.  
A magnet, fitted into the float, turns a reed sensor fixed into the rod.  
The setting point is adjustable on site, with few easy actions.  
They are made of stainless steel, to meet every heavy duty application.

### Available features:

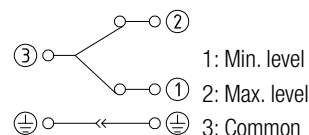
- Flanged connections
- Adjustable size on request, to meet every size of tank
- 2 floats, to monitor both the minimum level and the maximum level.

### Common applications:

- Hydraulic systems
- Mobile machines
- Industrial equipment

### Electrical symbol:

LEU 2 Floats



**Note:** to invert the contact status from NC to NO and vice versa, simply invert the float.

### Materials

- Flange: Aluminium
- Tube: AISI 304
- Float: Hard rubber, AISI 316 (on request)
- O-Ring: NBR
- Circlip: AISI 304
- Float contact: N.C. reed, N.O. (on request)

### Electrical data

- Protection rating: IP65
- Max switching capacity: 50 W
- Max switching current: 0.5 A
- Max switching voltage: 250 Vac
- Fluid specific gravity: > 0.75

### Temperature

From -15 °C to + 80 °C

### Weight

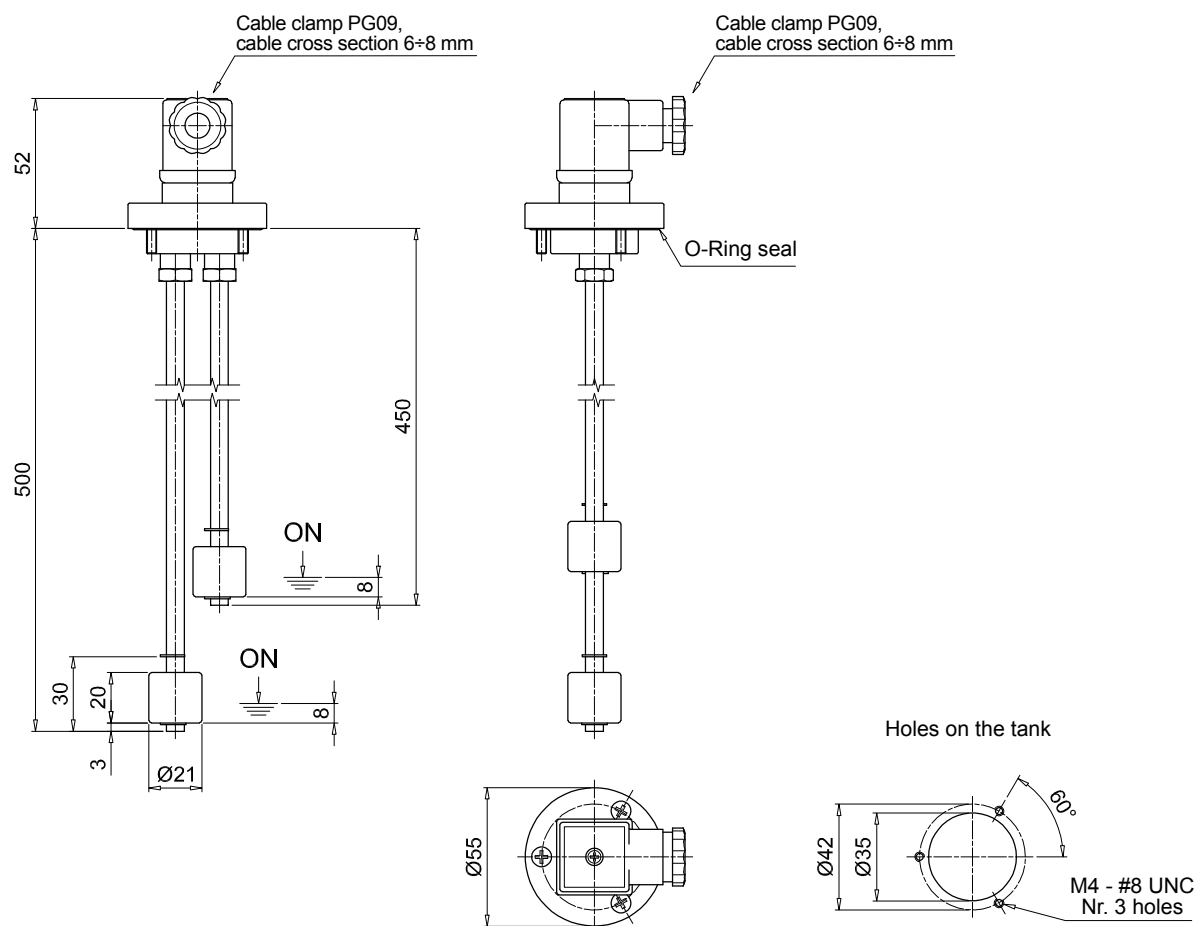
LEU 1 float 0.310 kg  
LEU 2 floats 0.415 kg



## Designation & Ordering code

LEU									
Series	Configuration example: LEU B 2 B 1 A F S P01								
LEU									
Tube material	B AISI 304								
Number of floats	2 Nr. 2 floats								
Float material	B NBR								
Electrical switch	1 N.C. (Normally Closed)								
Seals	A NBR								
Connections to the tank	F Nr. 3 holes flange								
Electrical connection	S DIN 43650 connector								
Execution									
P01 MP Filtri standard									
Pxx Customized									





Optional

**DIN 43650 CONNECTOR****Materials**

- Flange: aluminum
- Rod: brass
- Float: nylon foam
- Seals: A= NBR - V= FPM

**Temperature**

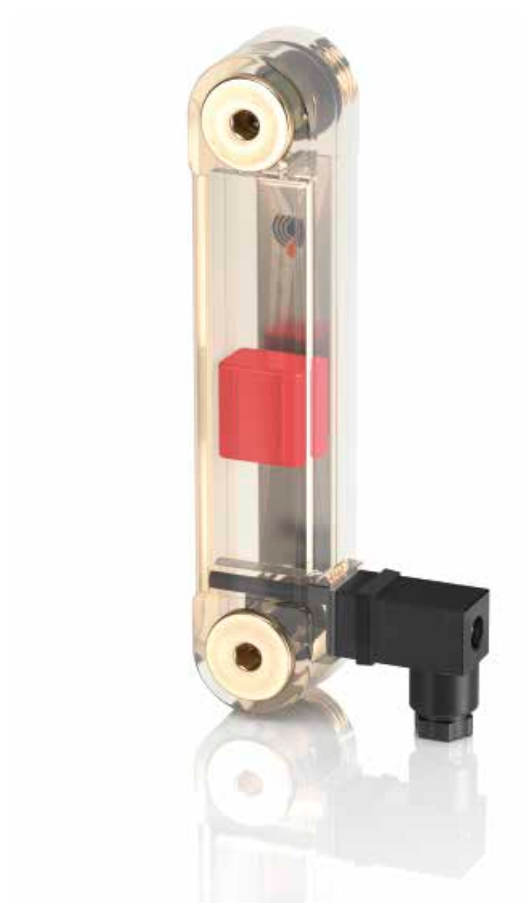
From -15 °C to +80 °C

For temperatures outside this range, contact  
MP Filtri Technical and Sales Department



# LVK series

Electrical and visual oil level indicator



## Technical data

### Electrical and visual oil level indicators

LVK is a range of electrical and visual fluid level indicators for monitoring of the fluid level into the tank. They are directly fitted on the tank side. The float moves through the indicator housing while the fluid level changes.

A magnet, fitted into the float, turns a reed sensor fixed into the housing.

### Available features:

- Several male threaded connections
- Three different sizes, to meet every size of tank
- Thermometer, thermostat or PT100, to check the temperature of the fluid

### Common applications:

- Hydraulic systems
- Mobile machines
- Industrial equipment

### Electrical symbol:

see page. 118

### Materials

- Head: Polyamide
- Screws: Nickel plated brass (standard), Aisi 314 (optional)
- Seal: NBR (standard), FPM (optional)
- Float: Polyamide
- Sensor thermometer: Screw + thermometer

### Temperature

From -20 °C to + 80 °C

### Weight

LVK 10	0.140 kg
LVK 20	0.170 kg
LVK 30	0.250 kg

### Quantity

25 pcs/pack

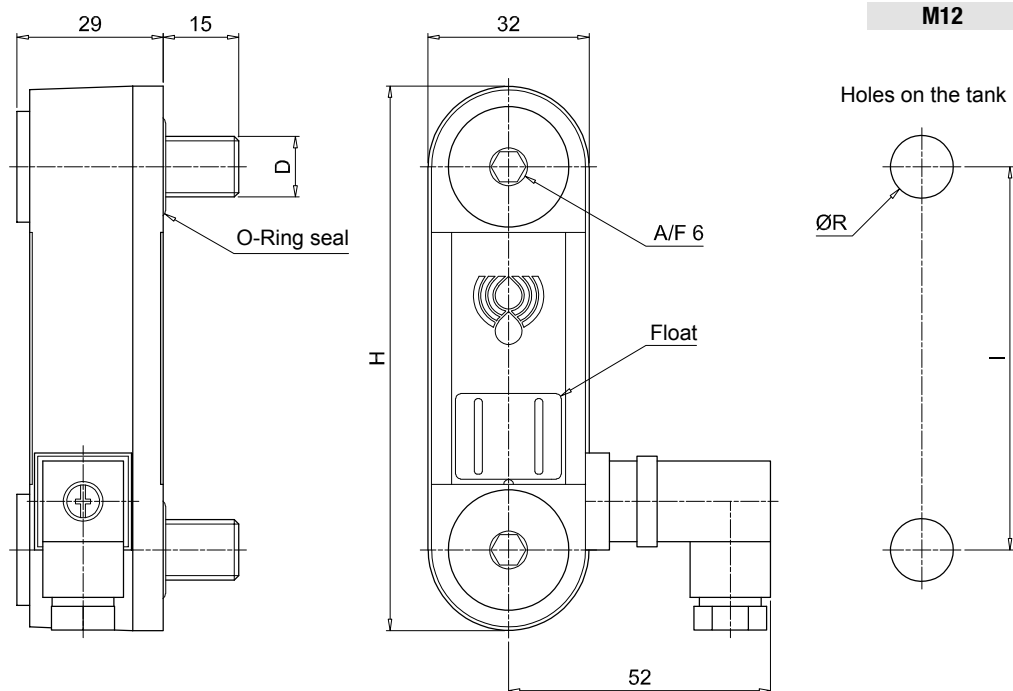


## Designation & Ordering code

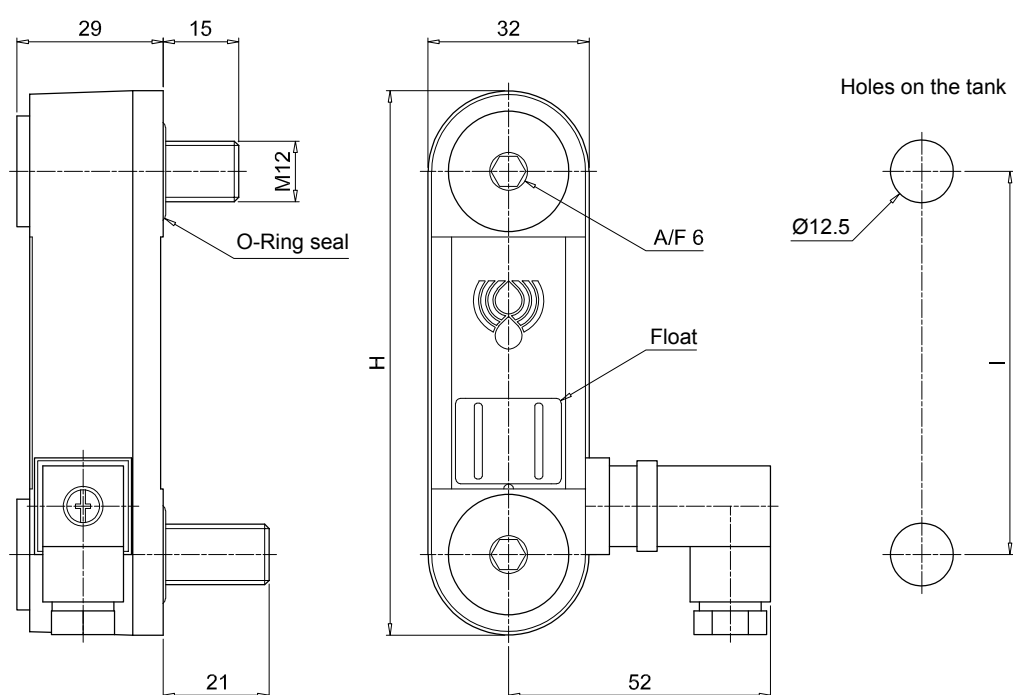
LVK									
Series	Configuration example : LVK 20 A M12 1 T 5 P01								
LVK									
Length									
10   20   30									
Seals									
A NBR									
Connections									
M10 Screws M10 M12 Screws M12									
Electrical switch in absence of fluid									
1 N.O. (Normally Open)									
2 N.C. (Normally Closed)									
3 SPDT (single-pole, double throw)									
Version									
	M10	M12							
S Standard	•	•							
T With thermostat		•							
P With PT100 sensor		•							
Thermostat setting									
	S	T	P						
S Standard (no setting)	•		•						
1 50°C N.O. (Normally Open)		•							
2 60°C N.O. (Normally Open)		•							
3 70°C N.O. (Normally Open)		•							
5 50°C N.C. (Normally Closed)		•							
6 60°C N.C. (Normally Closed)		•							
7 70°C N.C. (Normally Closed)		•							
Execution									
P01	MP Filtri standard								
Pxx	Customized								

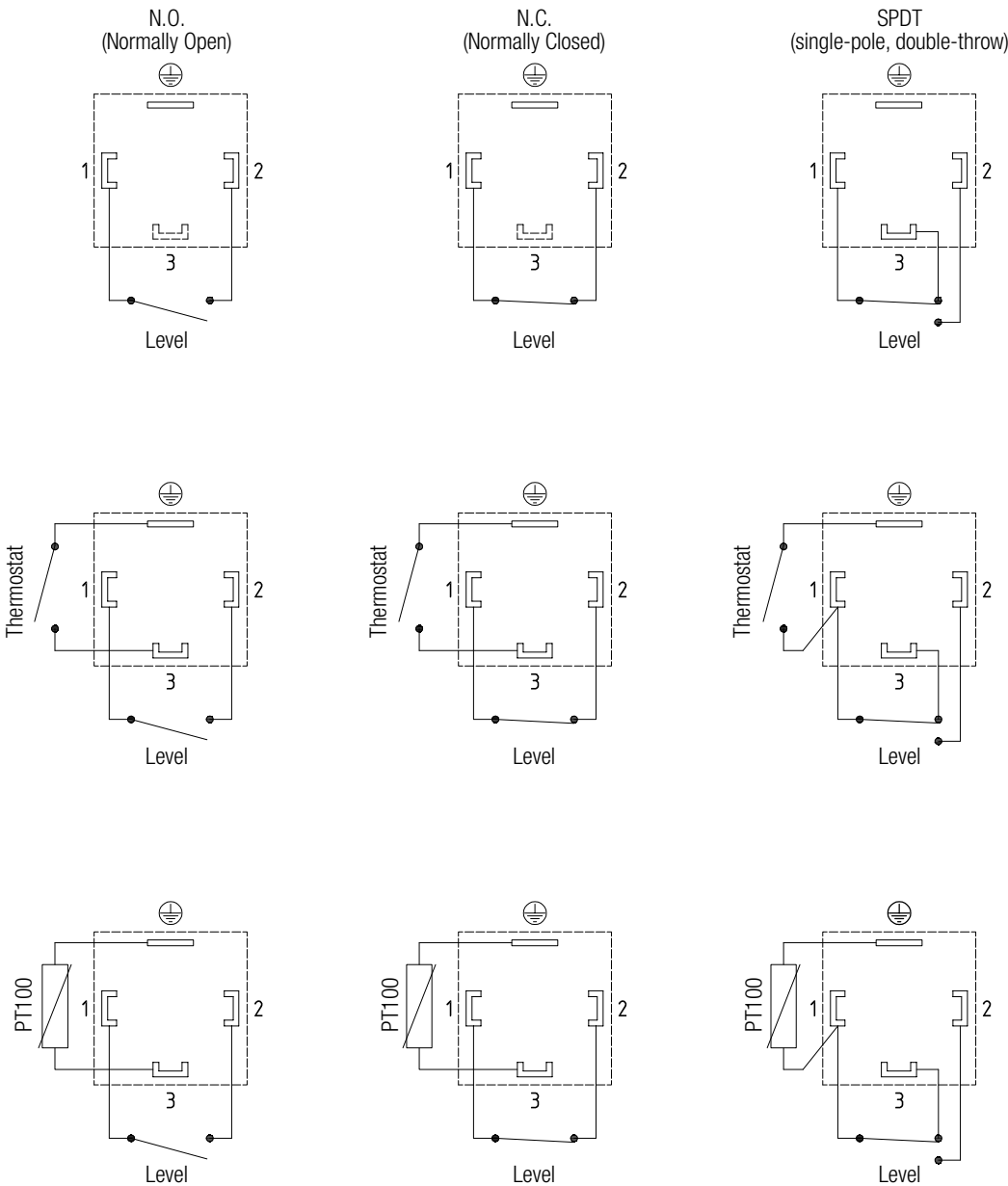
LVK		
Size	H [mm]	I [mm]
<b>10</b>	108	76
<b>20</b>	159	127
<b>30</b>	286	254
Connection	D [mm]	ØR [mm]
<b>M10</b>	M10	10.5
<b>M12</b>	M12	12.5

Without thermostat



With thermostat











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## PASSION TO PERFORM



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