

## EMCO magnetic level indicators series LI

### Application

EMCO magnetic level indicators series LI indicates the liquid level of vessels and tanks locally without power supply. The liquid level detection is safe, reliable and maintenance free. Special types indicates the interface between 2 non homogeneous liquids. Reed switches can be added for alarm function or for control of pumps and valves. Remote indication of the liquid level via a 4-20 mA signal (or HART protocol) is optional.

The LI level indicators are fully in compliance with PED 97/23 EC

### Principle

The EMCO magnetic level indicator is constructed from a vertical stand pipe made from a non magnetic material. The side mounted types are connected to the vessel at the top and bottom creating the principle of connected vessels.

Inside the stand pipe a float containing a permanent magnet moves up and down following the change of liquid level.

On the outside of the stand pipe a transparent rail with indicator flaps are mounted.

The small flaps hold small permanent magnets. The flaps are bi-colour with colours red and yellow.

When the float passes the flaps, the flaps are rotated 180° by the magnetic field in the float.

The indicator shows the red colour up to the liquid level.

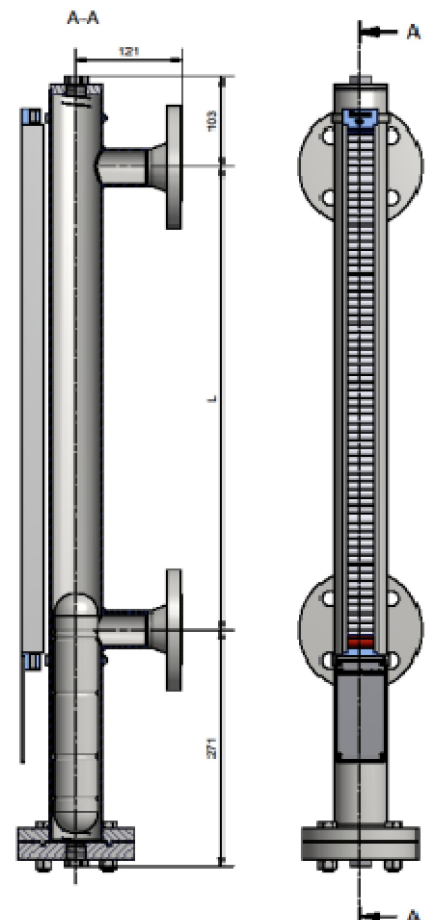
Above the colour is yellow

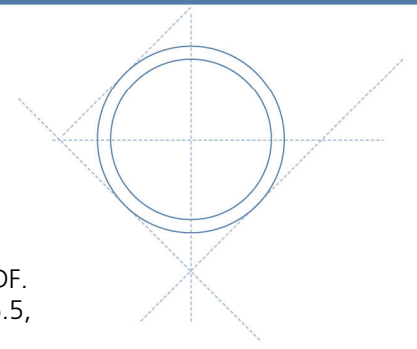
### Technical features:

No risk of leakage

For corrosive and non corrosive liquids, explosive, flammable and toxic liquids

0-01-012-1e





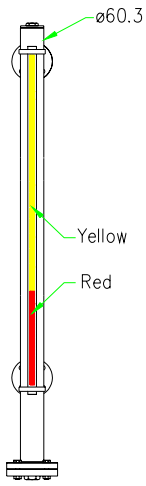
## Technical Data

Material, stand pipe and flanges other non magnetic materials	: AISI 316, PVC, PP, PVDF, : on request.
Material, float	: AISI 316, Titanium, PVC, PP, PVDF.
Flange connection	: According to DIN and ANSI B 16.5, others on request
Sizes	: DN 15-50, ½" – 2"
Flange facing	: flat or raised face according to DIN 2526 Form A and C : RF or RTJ
Threaded connection	: According to DIN and ANSI, others on request
Sizes	: ½" – 1" RG (BSP) or NPT internal or external
Pressure rating	: up to PN 320, 1500 lbs
Minimum specific gravity	: 0,5
Temperature range	: - 50 - +350 °C
Viscosity	: max. 20 °E 150 cSt)
Maximum C - C distance	: 5000 mm

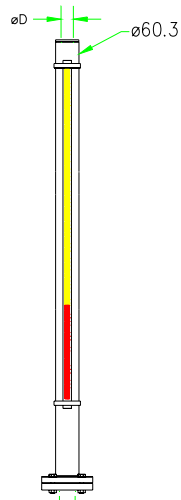
## Types

Type	Material	Design pressure	Design temperature	Density, min.	Process connection	Connection Type
LI 3	AISI 316	PN 16 <i>150 lbs</i>	-50 - + 350	0,8 ( 0,5)	DN 15-32 <i>½" - 1"</i>	Flange
LI 3.0	AISI 316	PN 16 <i>150 lbs</i>	-50 - + 350	0,8 (0,5)	DN 40-50 <i>1½"-2"</i>	Flange
LI 4	AISI 316	PN 16 <i>150 lbs</i>	-50 - + 350	0,8 length dependable	DN 50 <i>2"</i>	Flange
LI 4.1	AISI 316	PN 16 <i>150 lbs</i>	-50 - + 350	0,6 length dependable	DN 150 <i>6"</i>	Flange
LI 5.1.1	AISI 316	PN 16 <i>150 lbs</i>	-50 - + 350	0,8 (0,5)	½" – 1"	Thread
LI 6	AISI 316	PN 40 <i>300 lbs</i>	-50 - + 350	0,8 (0,5)	DN 15-32 <i>½" - 1"</i>	Flange
LI 6.0	AISI 316	PN 40 <i>300 lbs</i>	-50 - + 350	0,8 (0,5)	DN 40-50 <i>1½"-2"</i>	Flange
LI 7.0	PVC	PN 16 <i>150 lbs</i>	0 - + 60	0,8	DN 80 <i>3"</i>	Flange
LI 7.1	PP	PN 16 <i>150 lbs</i>	0 - + 80	0,8	DN 80 <i>3"</i>	Flange
LI 7.2	PVDF	PN 16 <i>150 lbs</i>	0 - + 120	0,8	DN 80 <i>3"</i>	Flange
LI 8.0	PVC	PN 16 <i>150 lbs</i>	0 - + 60	0,5	DN 25-50 <i>1"-2"</i>	Flange
LI 8.1	PP	PN 16 <i>150 lbs</i>	0 - + 80	0,5	DN 25-50 <i>1"-2"</i>	Flange
LI 8.2	PVDF	PN 16 <i>150 lbs</i>	0 - + 120	0,5	DN 25-50 <i>1"-2"</i>	Flange
LI 9.0	PVC	PN 16 <i>150 lbs</i>	0 - + 60	0,5	DN 25-50 <i>1"-2"</i>	Flange
LI 9.1	PP	PN 16 <i>150 lbs</i>	0 - + 80	0,5	DN 25-50 <i>1"-2"</i>	Flange
LI 9.2	PVDF	PN 16 <i>150 lbs</i>	0 - + 120	0,5	DN 25-50 <i>1"-2"</i>	Flange
LI 10	AISI 316	PN 100 <i>600 lbs</i>	-50 - + 350	0,8	DN 15-25 <i>¾" - 1"</i>	Flange
LI 11	AISI 316	PN 160 <i>900 lbs</i>	-50 - + 350	0,8	DN 15-25 <i>¾" - 1"</i>	Flange
LI 12	AISI 316	PN 250 <i>1500 lbs</i>	-50 - + 350	0,8	DN 15-25 <i>¾" - 1"</i>	Flange
LI 13	AISI 316	PN 320	-50 - + 350	0,8	DN 15-25	Flange

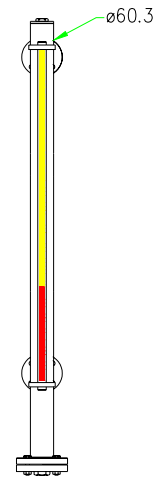
( ) floats in Titanium



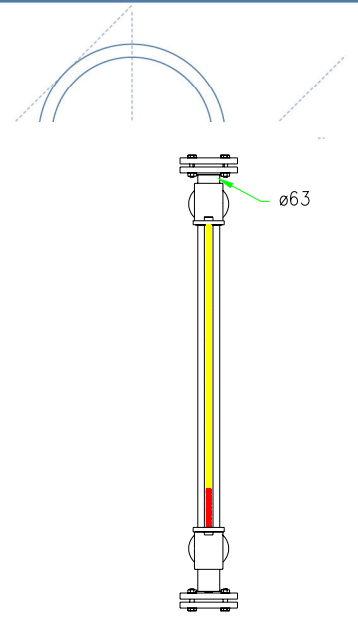
LI 3, LI 3.0



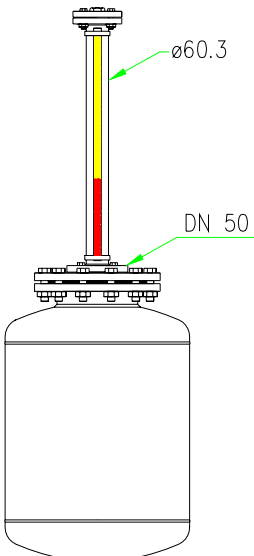
LI 5.1.1



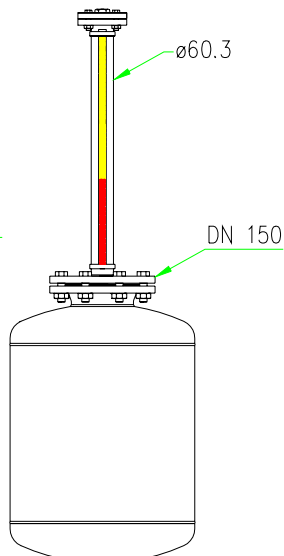
LI 6, LI 6.0



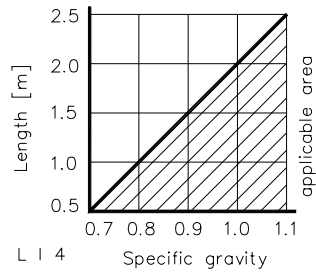
LI 8.0, LI 8.1, LI 8.2



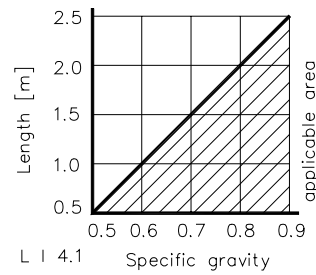
LI 4



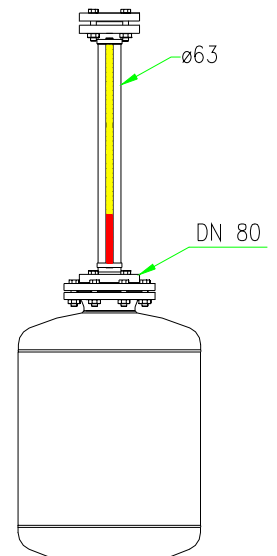
LI 4.1



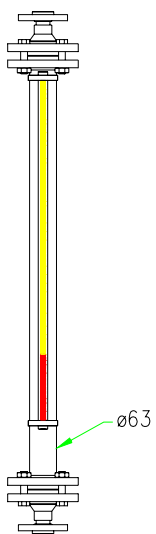
LI 4



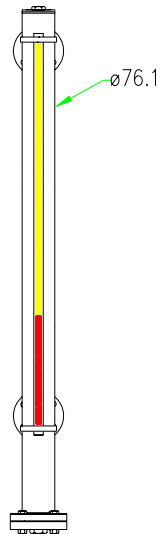
LI 4.1



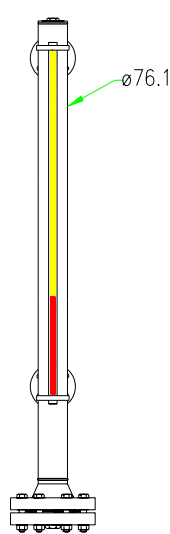
LI 7.0, LI 7.1, LI 7.2



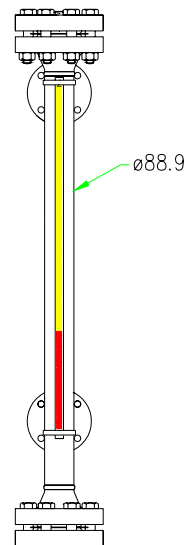
LI 9.0, LI 9.1, LI 9.2



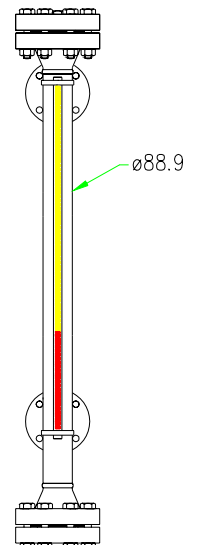
LI 10



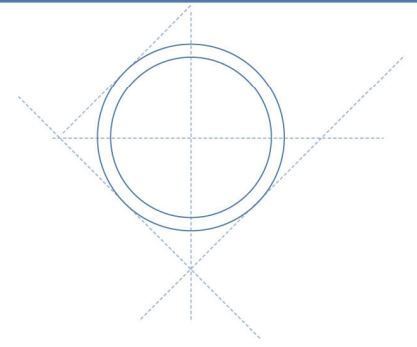
LI 11



LI 12



LI 13



## Indicator rails

LI magnetic level indicators can be supplied with 3 different indicator rails:

1. The standard rail is made from Macrolon plastics, suitable for fluid temperatures up to 120 °C.
2. From temperatures 120 - 220°C the flaps are made from high temperature Macrolon and the cage from aluminium.
3. The high temperature version is fully made from aluminium with a max. temperature of 350 °C

The Macrolon indicator rails can for outdoor use be supplied with a protecting tube.

## Accessories

Reed switches :

Type LI402BSL

Dimensions	Wiring	Protection	Rating	Max. Fluid temperature
		IP65	Max 220 V, Max 1 Amp, ac Max 45 VA Max 0,4 Amp dc, Max 30 W dc	120°C

## Remote indication

The LI magnetic level indicators can be supplied with a level transmitter type HS89 for remote Indication or for control. The transmitter is mounted outside the standpipe. The magnet in the float also activate the level transmitter.

The transmitter is a 2-wire, 4 – 20 mA type. Special transmitters can be used for Ex applications, galvanic isolated and with HART protocol.

## Insulation

Insulation of the standpipe is used for very low and very high temperatures. In case of low temperature applications the standpipe is traced with an electrical heater controlled by a temperature controller.

Scales with cm or % indication

Drain valve in stainless steel

Steam jacket

Documentation may on request include:

Material certificates, Non destructive tests of weldings, Pressure testing