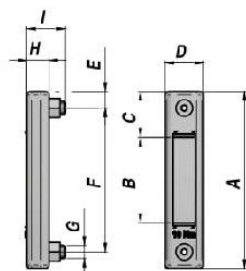
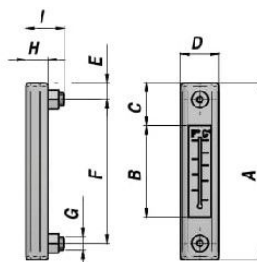


INDICATEUR DE NIVEAU HUILE VERTICAL  
VERTICAL OIL LEVEL GAUGE

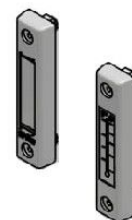
LVO - LVOT



LVO



LVOT



Code Code	Type Type	A	B	C	D	E	F	G	H	I	kg
ALV0007610	LVO 76/10	108	31				76	M10			0,20
ALV0007612	LVO 76/12	108	31				76	M12			0,20
ALV0012710	LVO 127/10	159	82	39	37	16	127	M10	23	41	0,24
ALV0012712	LVO 127/12	159	82				127	M12			0,24
ALV0025412	LVO 254/12	285	209				254	M12			0,40
ALVOT07610	LVOT 76/10	108	31				76	M10			0,20
ALVOT07612	LVOT 76/12	108	31				76	M12			0,20
ALVOT12710	LVOT 127/10	159	82	39	37	16	127	M10	23	41	0,24
ALVOT12712	LVOT 127/12	159	82				127	M12			0,24
ALVOT25412	LVOT 254/12	285	209				254	M12			0,40

# HL 91 LEVEL INDICATORS

## TECHNICAL DATA

HL 91 level indicators are directly connected to the reservoir to check the level and temperature of the hydraulic fluid. There are 3 different dimensions available with difference between centers of 3 in (76 mm), 5 in (127 mm) and 10 in (254 mm) and are equipped with M10 or M12 fixing screws.

Versions with a thermometer are also available.

The external protection is made of anodized aluminum to provide strong impact resistance, while the central body is made of see-thru polyamide.

- Anodized aluminum external protection
- High resistance against impacts
- Applicability to pressurized tanks up to 14.5 psi (1 bar)

### MATERIALS

External protection	Anodized aluminum
Terminals	Reinforced nylon
Central body	See-thru polyamide
Reading tag	Polyamide
Fixing screws	Zinc-plated steel
Nuts	Zinc-plated steel
Seals	Buna - Viton

### FLUIDS COMPATIBILITY

In accordance with ISO 2943 (Norm ISO 6743/4)

Mineral oils	HH - HL - HM - HR - HV - HG
Water emulsions	HFAE - HFAS
Synthetic fluids	HS - HFDR - HFDU - HFDS

### PRESSURE

Maximum working pressure	14.5 psi (1 bar)
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### WORKING TEMPERATURE

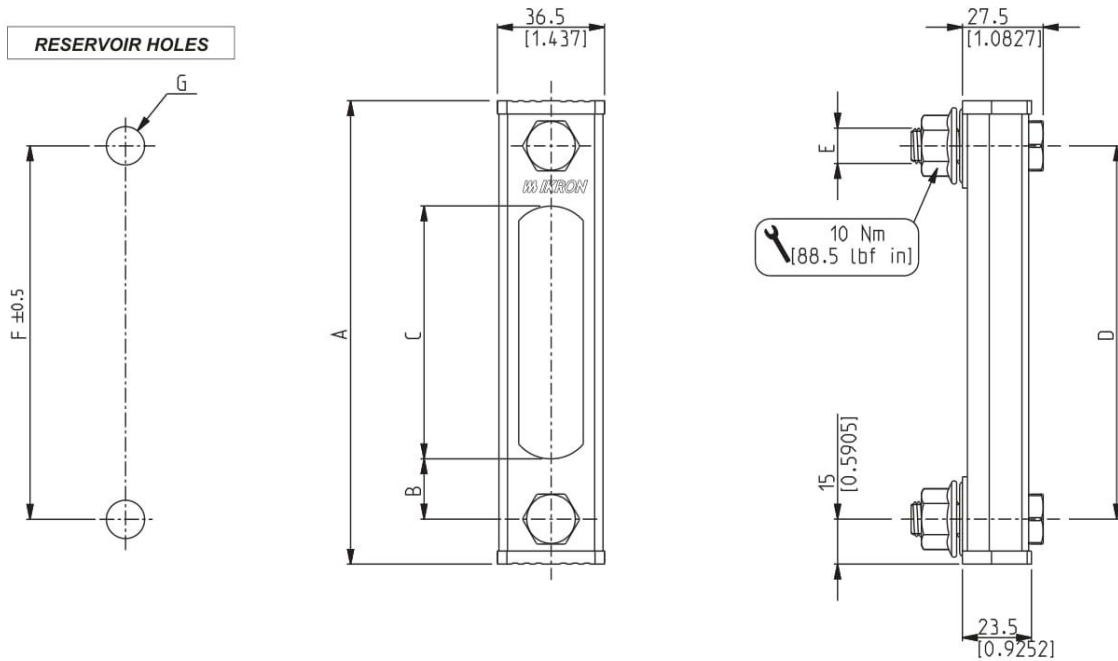
	-22 ÷ 195 °F (-30 ÷ 90 °C)
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### THERMOMETER RANGE

HL 91-10	32 ÷ 176 °F (0 ÷ 80 °C)
HL 91-20	32 ÷ 212 °F (0 ÷ 100 °C)
HL 91-30	32 ÷ 212 °F (0 ÷ 100 °C)

01/09.2011

### DIMENSIONS

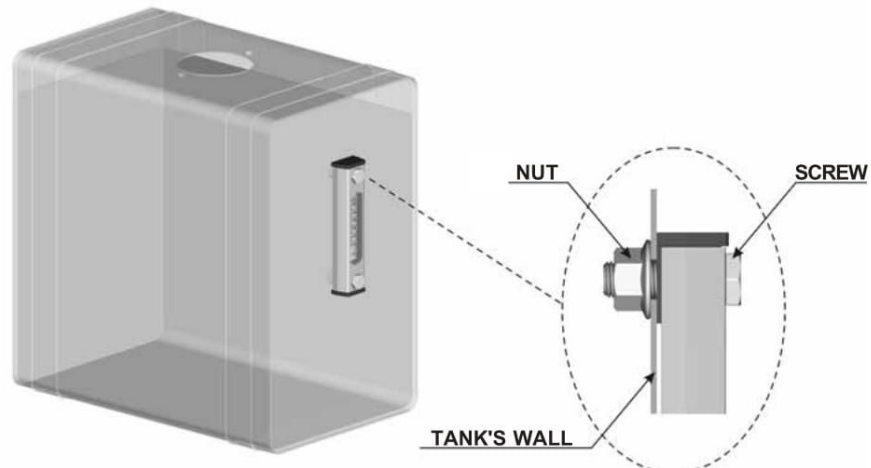


ICAT\_024\_021\_HL91

Indicator type	Weight	A	B	C	D	E	F	G
	Kg(lbs)	mm(in)	mm(in)	mm(in)	mm(in)	Metric	mm(in)	mm(in)
<b>HL 91-10</b>	0,15 (0.33)	106 (4.1732)	17,5 (0.6890)	41 (1.6142)	76 (3.0000)	M10	76 (3.0000)	11 (0.4330)
						M12		13 (0.5118)
<b>HL 91-20</b>	0,19 (0.42)	157 (6.1811)	20,5 (0.8071)	86 (3.3858)	127 (5.0000)	M10	124 (5.0000)	11 (0.4330)
						M12		13 (0.5118)
<b>HL 91-30</b>	0,23 (0.51)	284 (11.1811)	20,5 (0.8071)	213 (8.3858)	254 (10.0000)	M10	254 (10.0000)	11 (0.4330)
						M12		13 (0.5118)

### ASSEMBLY INSTRUCTIONS

The connection of the HL 91 level indicators is done through the built-in-screws. After they pass the tank's drilled wall they have to be mounted using the supplied nuts to a torque of 88.5 lbf in (10 Nm). Before connecting make sure there are no burrs in the screws mounting seats.



**NOTE**

To avoid accidental impacts that might break the level indicator and cause oil leaks, we suggest to arrange additional protection of the tank.

01/09.2011

## HOW TO ORDER AN HL 91 LEVEL INDICATOR

	<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>	
<b>HL 91</b>	-	<b>10</b>	-	<b>T1</b>	-	<b>T</b>	-	<b>B</b>

<b>1</b>	<b>Indicator type</b>	<b>CODE</b>
	3 in (76 mm) wheelbase	HL 91-10
	5 in (127 mm) wheelbase	HL 91-20
	10 in (254 mm) wheelbase	HL 91-30

<b>2</b>	<b>Fixing screws</b>	<b>CODE</b>
	M 10	T1
	M 12	T2

<b>3</b>	<b>Thermometer</b>	<b>CODE</b>
	Without	N
	With thermometer	T

<b>4</b>	<b>Seals</b>	<b>CODE</b>
	Buna	B
	Viton	V

Standard  
 On request

# INDICATORE DI LIVELLO LEVEL GAUGE

# LV

Gli indicatori di livello serie "LV" permettono di visualizzare attraverso un tubo trasparente collegato al serbatoio il livello del fluido. O-Ring, localizzati nei punti di collegamento, assicurano la tenuta perfetta anche in condizioni di fissaggio su pareti non perfettamente lisce od uniformi. La protezione esterna è orientabile di 180° e i terminali mobili permettono di recuperare eventuali errori d'interasse dei fori di fissaggio sino a + 4 mm. Oltre che con oli minerali possono essere utilizzati con differenti tipi di fluido non aggressivo. Sono disponibili con termometro per l'indicazione della temperatura (serie LVT) o con contatti elettrici di segnale di minimo livello (serie LVSE). Possono essere inoltre richiesti sino a lunghezze massime di 2.5 metri.

## Caratteristiche Tecniche:

**Terminali di fissaggio:** in nylon caricato con fibra di vetro

**Protezione:** in alluminio anodizzato

**Tubo trasparente:** in metacrilato perbex

**Bulloni di fissaggio:** in acciaio zincato

**Montaggio:** in posizione verticale con due fori filettati M12 o due fori passanti Ø 13 mm

**Interasse standard:** 127mm o 254 mm

**Temperatura d'impiego:**

- da +5 °C a +80°C esecuzione LVSE
- da -20 °C a +80°C altre esecuzioni

**Pressione massima di utilizzo:** 2 Bar

**Vita Meccanica:** 10<sup>6</sup> cicli a 20°C

**Garanzia:** vedi pagina dedicata

**Parti di ricambio:** vedi pagina dedicata

**Disponibile:**

- Qualsiasi valore di interasse tra i fori di fissaggio fino a 2.5 m
- Esecuzioni con segnale elettrico di massimo livello
- LVT con termometro per l'indicazione della temperatura
- LVSE con contatti elettrici in scambio per segnale di minimo livello

**Caratteristiche elettriche per LVSE:**

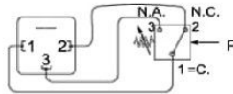
- Attacco elettrico: secondo norme DIN 43650
- Protezione elettrica: secondo norme DIN 40050: IP65
- Massimo carico sui contatti elettrici:  
AC fino 48 V - 0,5 A  
DC fino 48 V - 0,5 A

**Note:** NON SI TRATTA DI UNO STRUMENTO DI SICUREZZA



**LVSE**

Livello stato con contatti in scambio  
Level gauges with exchange contacts



**LVT**



**LV**

The "LV" level gauges allow the visualization of the fluid level through a transparent tube connected to the tank. O-Ring are located in all joining points to allow a perfect sealing even when the unit is mounted on a non perfectly flat surface. The tube protection can be orientated on a 180° angle and the mobile heads permit to recuperate drilling mistakes on fixation holes centres up to +4mm. Besides mineral oils they can be used with other not aggressive fluids. They can be supplied with thermometer fit inside the sight tube (LVT series) or with electric contact when reaching minimum oil level (LVSE series). They can be supplied with 2,5 meters of maximum length.

## Technical Features:

**Fixing heads:** in nylon filled with fibreglass

**Protection:** in anodised aluminium

**Transparent tube:** in Perbex methacrylate

**Fixing screws:** in zinc-plated carbon steel

**Installation:** in vertical position with two M12 threaded holes or two Ø 13 mm passing holes

**Standard axle base:** 127mm or 254 mm

**Working temperature:**

- from +5°C to +80°C for the "LVSE" execution
- from -20°C to +80°C for the others execution

**Maximum working pressure:** 2 Bar

**Mechanical life:** 10<sup>6</sup> cycles at 20°C

**Warranty:** see dedicated page

**Spare parts:** see dedicated page

**Also available:**

- Any axle base value between the fixing holes until 2.5 m
- Executions with maximum level electric signal
- LVT with thermometer for the indication of the temperature
- LVSE with minimum level exchange electric contacts alarm

**Electric features for LVSE:**

- Electric connection: according to DIN43650
- Electric protection: according to DIN 40050: IP65
- Maximum load on the electric contacts:  
AC until 48 V - 0,5 A  
DC until 48 V - 0,5 A

**NOTE:** IT IS NOT A SAFETY TOOL



## ESEMPIO D'ORDINE / HOW TO ORDER

<u>LV</u>	:	:	...
Tipo	Esecuzione	Interasse fori	Tipologia segnale elettrico
Type	Execution	Axle base of the holes	Type of the electric signal
		mm	
<b>LV</b>	<b>T</b> esecuzione con termometro execution with thermometer	<b>2</b> indica 127 mm means 127 mm	<b>MAX</b> segnale di massimo livello maximum level signal
	<b>SE</b> esecuzione con contatti in scambio execution with exchange contacts	<b>3</b> indica 254 mm means 254 mm	se omissa indica esecuzione standard if omitted means standard execution
	se omissa indica solo visivo if omitted means only visual		