

LEVEL GAUGES WITH
MAGNETIC JOINT
L 14 - L 22 - L 34

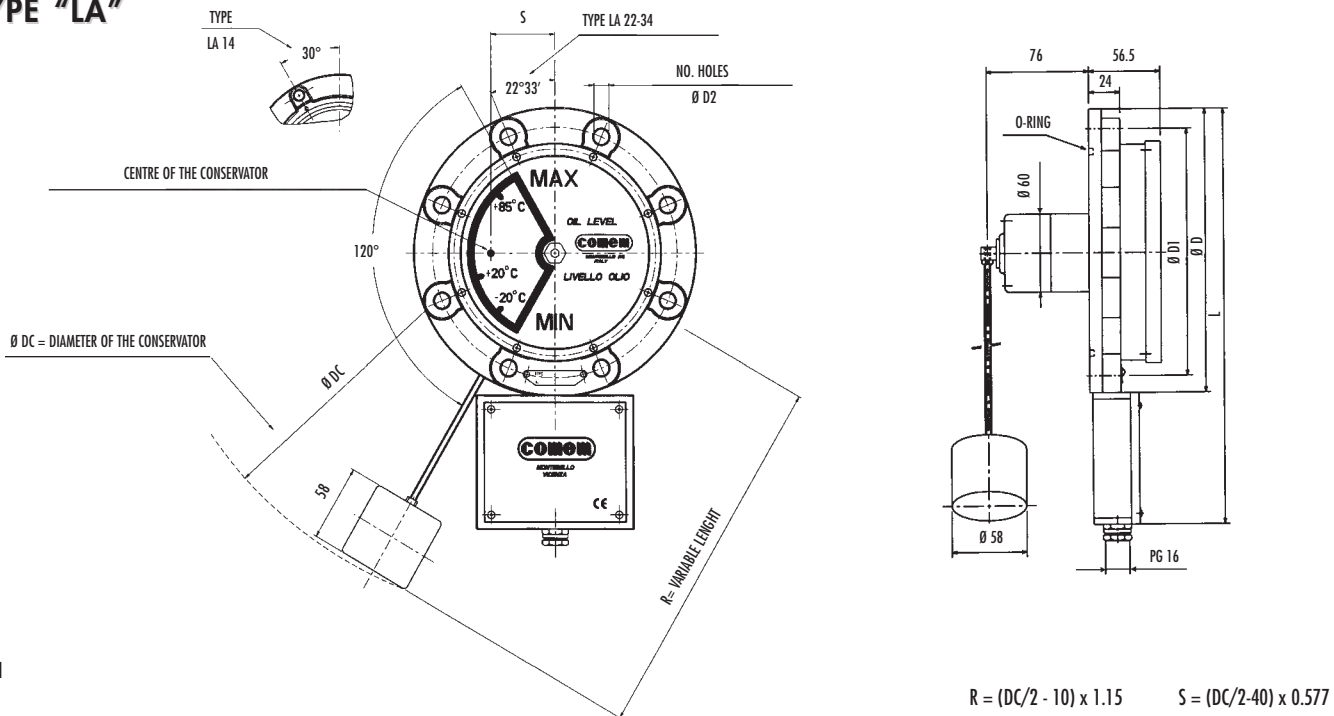
A stylized orange graphic consisting of a vertical line that curves into a series of horizontal, rounded rectangular shapes, resembling a spring or a stylized 'C' shape, leading to the brand name.

comem[®]

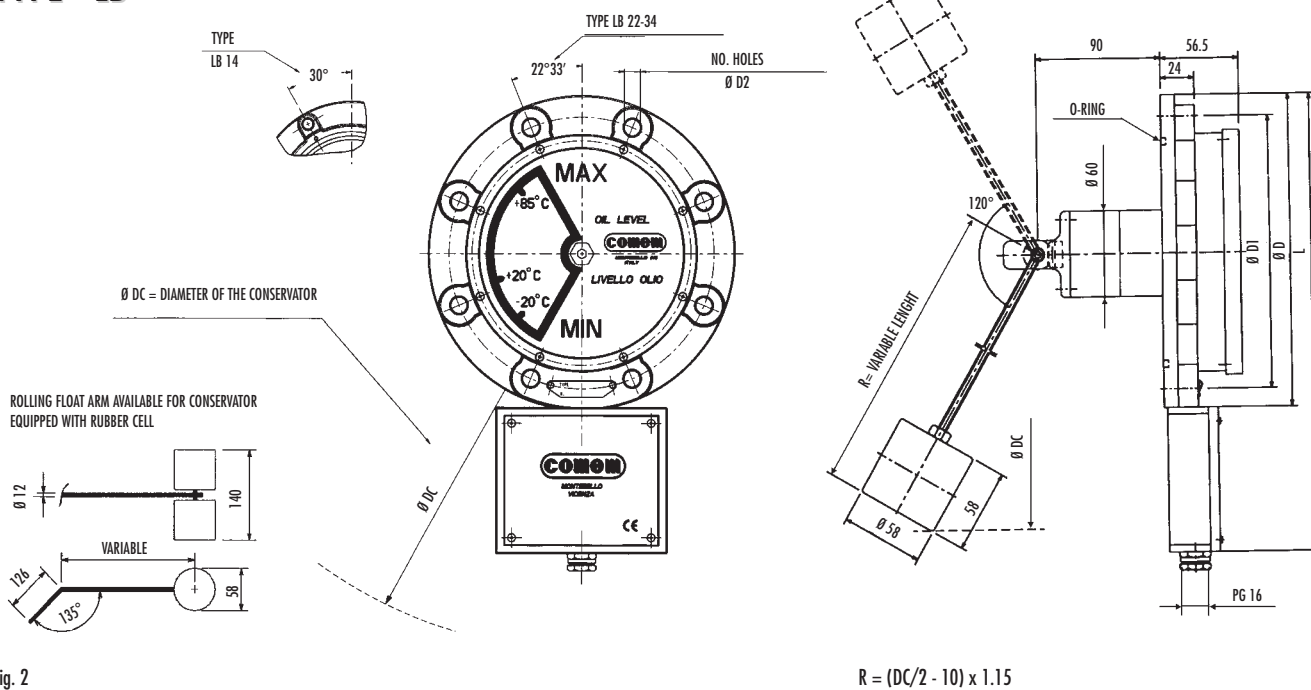
LEVEL GAUGES WITH MAGNETIC JOINT
SIZE Ø 140/220/340
ACCORDING TO EN 50216-5



TYPE "LA"



TYPE "LB"



TYPE OF GAUGE

Ø D

Ø D1

Ø D2

No. HOLES

L

O-RING TYPE

WEIGHT kg

R STANDARD

LA14

140

125

7

6

245

O.R. 186 (6362)

1.40

max. 370

LA22

220

190

11.5

8

325

O.R. 221

2.30

max. 550

LA34

340

305

18

8

445

O.R. 248 (81000)

6.00

max. 710

LB14

140

125

7

6

245

O.R. 186 (6362)

1.70

max. 370

LB22

220

190

11.5

8

325

O.R. 221

3.60

max. 550

LB34

340

305

18

8

445

O.R. 248 (81000)

6.30

max. 710

DIMENSIONS IN MILLIMETERS

LEVEL GAUGES WITH MAGNETIC JOINT

The level gauges with a magnetic joint are composed of a sturdy watertight body of aluminium alloy painted against corrosion. The movement of the float rod and the gauge disk takes place by means of magnetic coupling through an angle of 120°. In this way, for every variation in the level of the liquid there is a corresponding rotation of the magnet with consequent variation of the indication on the dial of the gauge. The gauge disk is coloured white and red. The system is closed with a screen-printed polycarbonate disk with reference marks corresponding to the levels that the oil should reach at the following temperatures in degrees Centigrade: -20°C, +20°C, +85°C. **Note:** special dials may be made on request.

READING THE INDICATIONS OF THE VARIOUS LIQUID LEVELS

- **Minimum level:** when the dial shows all red.
- **Maximum level:** when the dial shows all white.
- Intermediate indications between **MAX** and **MIN**: the dial shows part white and part red. Remember that the amount of red shown indicates, in proportion, the part of the conservator left without liquid.

FLOAT MOVEMENT

This may be in the radial direction of the conservator (type "LA") or in the axial direction (type "LB"), as shown in the drawing (Fig. 1 and 2). "LB" model is also available with "rolling floats" for applications on conservators equipped with rubber cell.

FLOAT ROD

This is completely threaded. If the length is not specified (distance R in the drawing, fig. 1 and 2), the standard size indicated on the table is supplied. The rolling float arm is an aluminium tube.

ELECTRIC INDICATION

These level gauges are fitted with microswitches for indicating the minimum and maximum oil level.

ELECTRIC CHARACTERISTICS

- Power supply: 24 to 220 V a.c. or d.c.
- Interruption power: 3 A 125/250 V ac (resistive)
0.5 A 125 V dc for inductive load L/R = 40 ms
0.25 A 250 V dc for inductive load L/R = 40 ms

INDICATING INTERVENTION

The electric microswitches intervene with an advance angle $\leq 5^\circ$ with respect to the indications of the minimum or maximum oil level in the conservator. When there is a double contact on MIN and/or MAX, the second contact intervenes about 5° after the first contact. After installation of the gauges it is possible to check the correct operation of the microswitches and, in general, good operation of all the internal parts of the gauge by proceeding as follows:

- Remove the cap situated in the centre of the dial on the front of the level gauge, unscrewing it in an anticlockwise direction.
- Insert a screwdriver in the slot provided and turn the gauge disk until the electric circuit connected to it switches on or off.
- Close the cap again, being particularly careful to position the O-ring (O.R.) correctly under the cap and to screw the cap on quite firmly.

NOTES

External nuts and bolts made of stainless steel.

External painting in grey RAL 7001.

Degree of protection: IP 55.

Working temperature. All the level gauges are suitable for working with:

- Oil temperature between: -25°C and +120°C
- Environment temperature between: -25°C and +60°C

INDICATIONS FOR ASSEMBLY

The level gauges which have float movement in the radial direction of the container (type "LA") must be fitted offset with respect to the horizontal axis of the conservator (distance "S" fig. 1) so as to have an exact indication of the minimum and maximum oil level.

Those with movement in the axial direction (type "LB") must be fitted in the centre of the conservator. The measurements of the movements (distance "S") and the length of the rod (distance "R") are obtained from the formulae given under fig. 1 and 2. It is good practice to check operation of the gauge after having fitted it on the conservator. For further and more detailed information, see the technical information card supplied.

TESTS AND INSPECTIONS

The level gauges are subjected to insulation test towards earth as follows: 2.5 kV AC 50 Hz for 72 seconds. The bodies of the level gauges, after having passed the dimensional inspection and without their internal parts, are tested for watertightness so as to eliminate those that have leaks. Final testing is carried out when the level gauge is completely assembled. The sensitivity of all the signaling movements and the accuracy of their assembly are scrupulously checked.

IDENTIFICATION MARKS

The mark that completely identifies the type of level gauge is composed of a series of letters and numbers according to the following pattern:

1 (letter)	L	Level gauge
2 (letter)	A	Movement of the radial float (fig. 1) (letter)
	B	Movement of the axial float (fig. 2)
3 & 4 (number)	14	Size of the level gauge = Ø 140 mm
	22	Size of the level gauge = Ø 220 mm
	34	Size of the level gauge = Ø 340 mm
5 (letter)	K	Wiring diagram with 1 contact on min.
	Y	Wiring diagram with 2 contacts on min.
	X	Wiring diagram with 1 contact on min. + 1 contact on max.
	W	Wiring diagram with 2 contacts on min + 2 contacts on max.
6 (letter)	O	Ordinary paint
	S	Paint for corrosive environments
7 (letter)	N	COMEM standard level gauge
	S	Specific level gauge for customer

Example : LA14XON

Level gauge with radial movement, diameter 140 mm, wiring diagram with 1 contact on minimum and 1 contact on maximum, painted for normal environments and with standard COMEM dial and rod length.

WIRING DIAGRAMS

DIAGRAM TYPE "K"

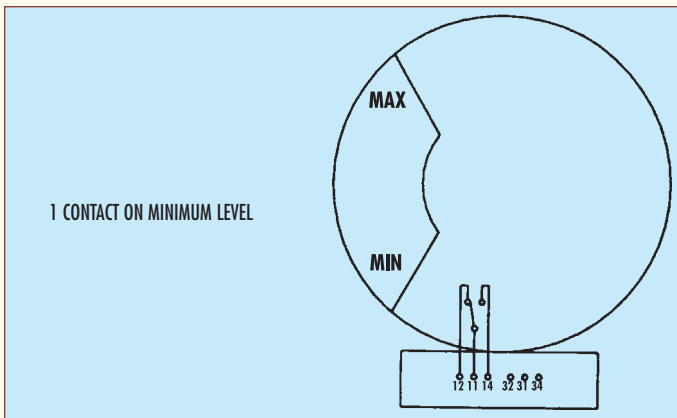


DIAGRAM TYPE "Y"

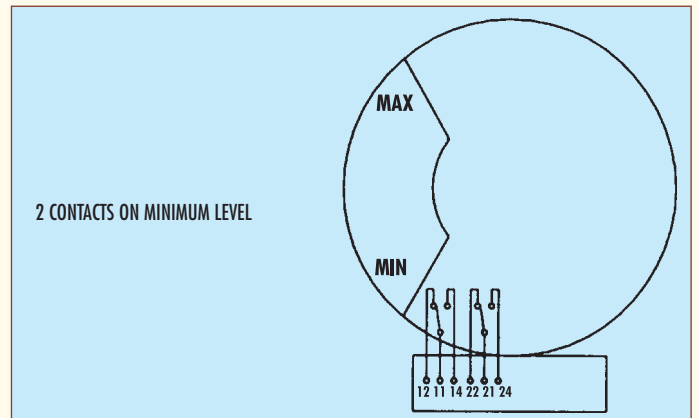


DIAGRAM TYPE "X"

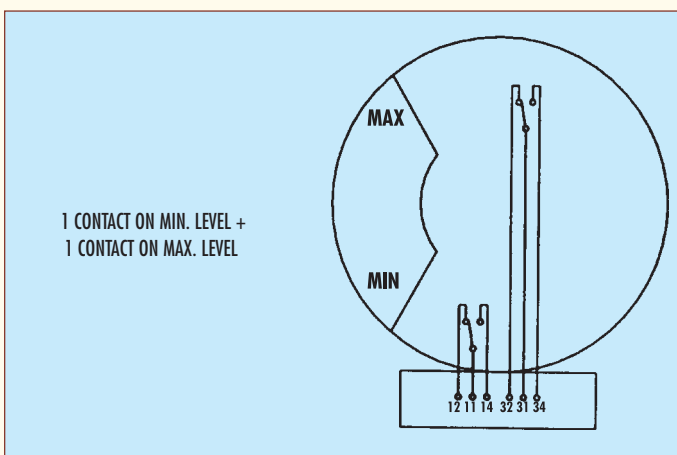
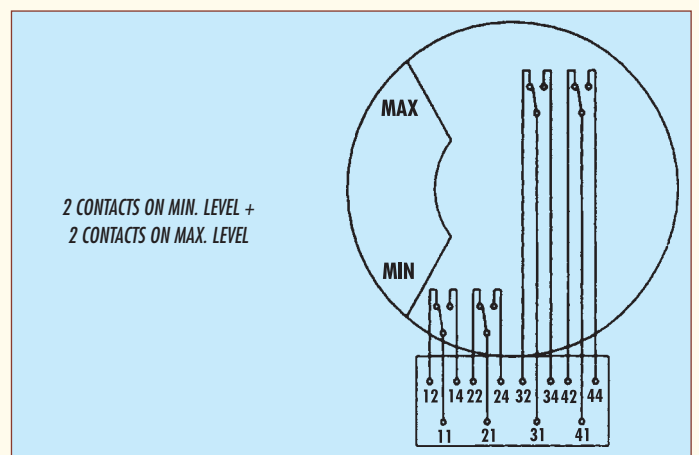


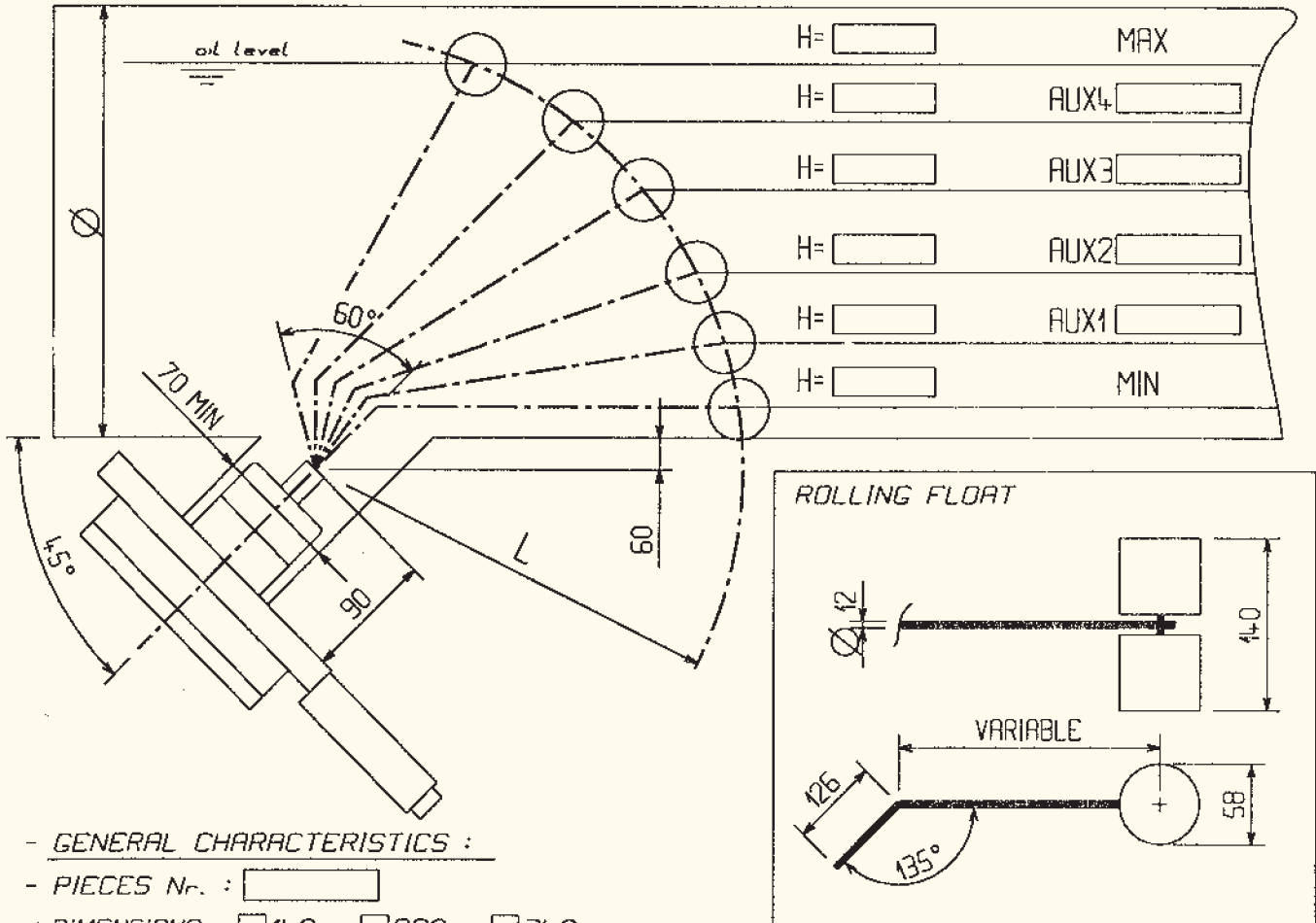
DIAGRAM TYPE "W"



**TECHNICAL SPECIFICATION
FOR OIL LEVEL INDICATORS
WITH ROLLING FLOAT
TYPE LB R=1:2**

TECHNICAL DATA : FOLLOWING INFORMATION SHOULD BE SPECIFIED :

- OIL LEVELS IN THE CONSERVATOR THAT NEED TO BE SHOWN
- TEMPERATURE VALUES AUX1,2... NEEDED TO BE SHOWN ON THE GAUGE DISK



GENERAL CHARACTERISTICS :

- PIECES N_r :
- DIMENSIONS : 140 220 340
- CONSERVATOR DIAMETER Ø =
- CONSERVATOR LENGTH L =

- ROLLING FLOAT LENGTH $L = \sqrt{15876 + \left(\frac{H_{max} - 61}{0.866}\right)^2 + 178} \cdot \frac{H_{max} - 61}{0.866}$

- NUMBER OF CONTACTS : 1 CONTACT
- 2 CONTACTS =
- 4 CONTACTS

- CONTACTS RELEASE : MIN AUX1 AUX2 AUX3 AUX4 MAX

GAUGE DISK MATERIAL :

- POLYCARBONATE MINERAL GLASS (CORROSIVE ENVIROMENT) AS PER SPECIFICATION

PROTECTIVE COATING (GREY COATING RAL7001) :

- NORMAL SPECIAL (CORROSIVE ENVIROMENT) AS PER SPEX.



comem[®] - S.p.A

Strada Statale 11, Signolo 22
36054 MONTEBELLO VIC.NO (VI) ITALY
Tel. 0444 449 311 • Fax 0444 449 352 - 440 359
Internet <http://www.comem.com> • e-mail: comem@comem.com

Due to technical improvement of our products, the information contained in this catalogue may be subjected to change without notice.

edizione GB 03/2007 - www.edigrafisrl.com