TECHNICAL GUIDE

Liquid level indicators

Content index

Application

	Standard features														Options				
Type	Dial diameter (mm)	Holes x Ø (mm)	Wheelbase (mm)	Weight (kg)	Fixed contacts (up to 4)	Indication: Pointer	Indication: Circular dial (red/white)	Angle design	Radial movement	Axial movement	Suitable for conservator with rubber bag	Removable body from the fixing flange	Corrosion protection: C4 Medium. Moderate salinity (ISO 12944)	4-20 mA oil level monitoring MODBUS RTU communication	Adjustable contact (up to 4)	Corrosion protection: C5 Medium Coastal area (ISO 12944)	Corrosion protection: CX Off shore (ISO 12944)	Solution with carter (Fig. 4)	Remote visual indicator (eViewer)
OLI	146	4 x Ø 13	102	3.3	●	●	-	●	●	●	●	●	●	-	●	●	●	-	-
eOLI	146	4 x Ø 13	102	3.5	●	●	-	●	●	●	●	●	●	●	●	●	●	-	●
OLI22	146	8 x Ø 11.5	190	3.5	●	●	-	●	●	●	●	●	●	-	●	●	●	●	-
eOLI22	146	8 x Ø 11.5	190	3.7	●	●	-	●	●	●	●	●	●	●	●	●	●	●	●
L140	90	6 x Ø 7	125	1.4	●	●	●	-	●	●	●	-	●	-	-	●	-	-	-
L220	146	8 x Ø 11,5	190	2.3	●	-	●	-	●	●	●	-	●	-	-	●	-	●	-
L340	250	8 x Ø 18	305	6.0	●	●	●	-	●	●	●	-	●	-	-	●	-	-	-

Technical data

Liquid Level Indicators	Technical data
	Material
Housing and upper part inclusive terminal box	C4-Medium:Aluminum casting, RAL 7032 powder coated; C5-Medium: Coastal area on request (surface treatment, not painted) CX Off shore: on request (RAL 7035)
Lens material (dial protection)	Polycarbonate (standard), temperate glass (optional)
Float	Rohacell
	Characteristics data
Standard	IEC 60076-22-1
Installation	Indoors and outdoors, tropical proof
Ambient temperature	-40°C to 80°C / -40°F to 176°F (arctic version on demand)
Oil temperature	-40°C to 120°C / -40°F to 248°F
Degree of protection	IP66 in accordance with EN60529 (L340 and L220 available only IP65)
	Protected micro switches
Number and types	Up to 4 micro switches
Tolerance switches operation	±2.5°
Switching points	5° before the Min and Max
Nominal Voltage	24 – 230 VAC/DC
Making capacity	2A
Max breaking capacity DC	0.25 A at 250 VDC (L/R<40 ms)
Max breaking capacity AC	3 A at 250 VAC (cosΦ>0.5)
Rated insulation voltage	2.0 kV AC 1 min between contacts and earth, 1.0 kV AC 1 min between open contacts
	Connection
Connection terminals	Min 0.25 mm2 / max. 4 mm2
Cable gland	M25 x 1.5 (n°1 for coventional version and n°3 for eDevices)
	Mechanical test
Sinusoidal (EN 60721-3-4)	cl.4M4: 2-9 Hz (6 mm peak to peak), 9 – 200 Hz (1 g) – All axis
Shock	cl.4M4: 10 g (11 ms) in all the directions (EN60721-3-4)
Seismic	EN60068-3-3 (cl.0, level II)

Technical data

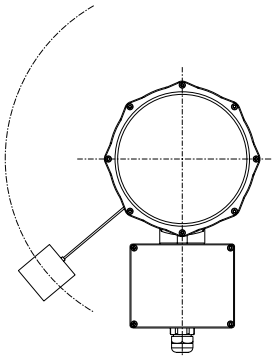
Oil Level Indicator	Dial indication movement
Angle range	120° (axial or radial)

eDevices (eOLI/eOLI22)	Technical data
Analog output	4-20 mA (dielectric strength between electronic card and analogical output: 2kV) Maximum resistance: 450 Ω Accuracy : 2.5% of full scale
Digital output	Serial RS485 for MODBUS RTU Accuracy : 2.5% of full scale
Rated voltage	24 VDC ±10% polarized - active current loop
Ventilation valve	To prevent the formation of condensation
Wires	Max 2.5mm^2 – advised 4x1mm^2 or 6x1mm^2 shielded twisted pair cable for analog/digital output
EMC guaranteed	Cable length up to 30 m / 98 ft
Current consumption	Max. 0.5 W

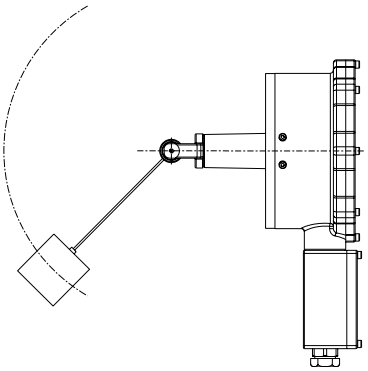
eViewer	
Analog input (eOLI or eOLI22)	4-20 mA
Rated voltage	24 VDC ±10% polarized
Ventilation valve	To prevent the formation of condensation
Wires	Max 2.5mm^2 – advised 4x1mm^2 or 6x1mm^2 shielded twisted pair cable for analog/digital output
EMC guaranteed	Cable length up to 30 m / 98 ft
Current consumption	Max 0.5 W

Floating elements

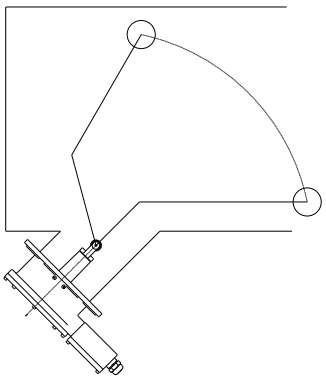
Radial movement “LA” (Fig.1)



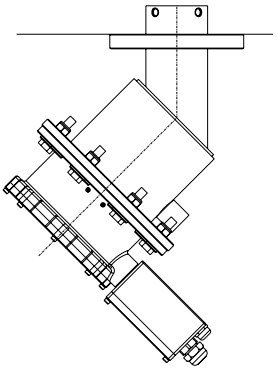
Axial movement “LB” (Fig.2)



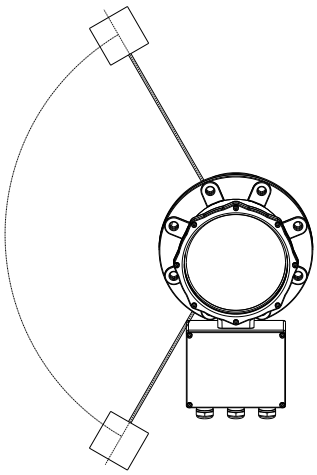
Axial movement with Bent arm "LB" (Fig.3)

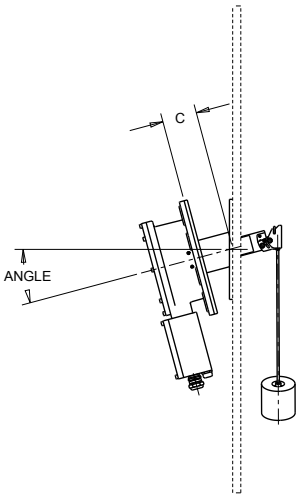


Axial movement for Carter design (Fig.4)



Radial movement for angle design (Fig.5)

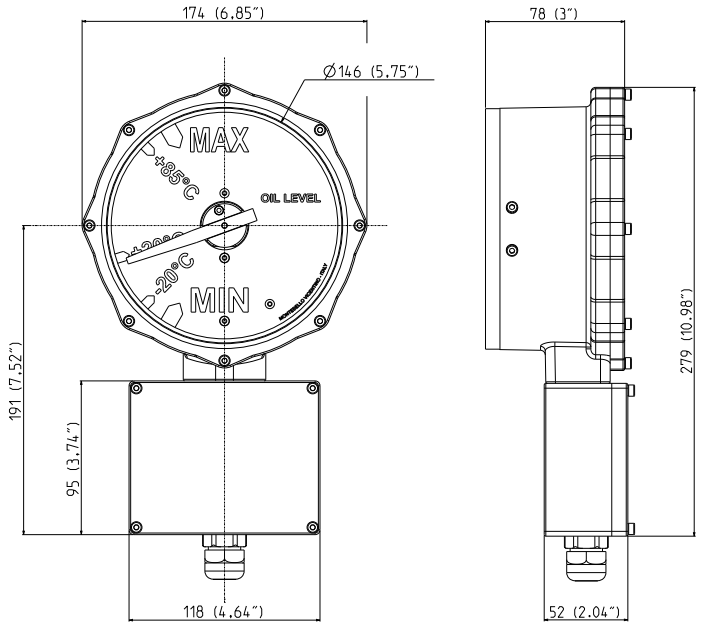




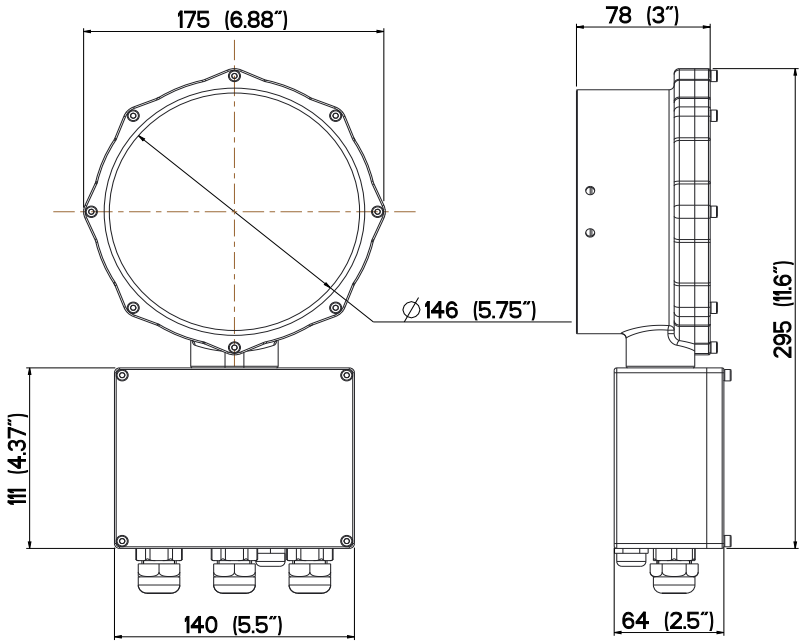
Case dimensions

OLI/OLI22/eOLI/eOLI22

OLI/OLI22



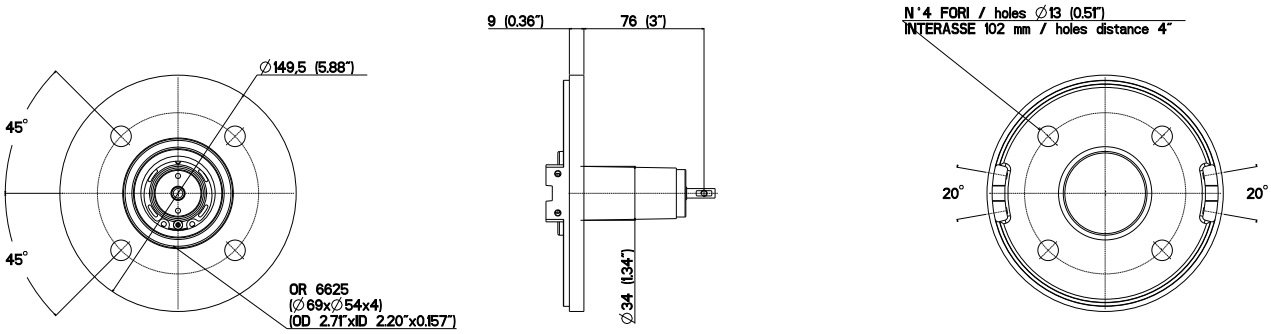
eOLI/eOLI22



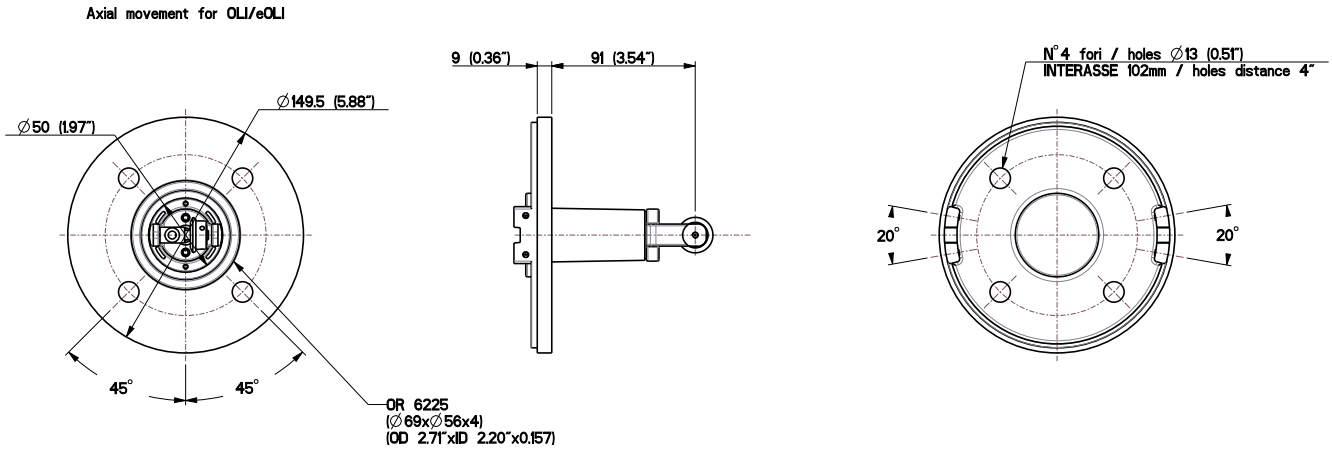
DIN Flange dimensions

OLI / eOLI Hole of the tank from 52 mm to 54 mm

Radial movement for OLI/eOLI



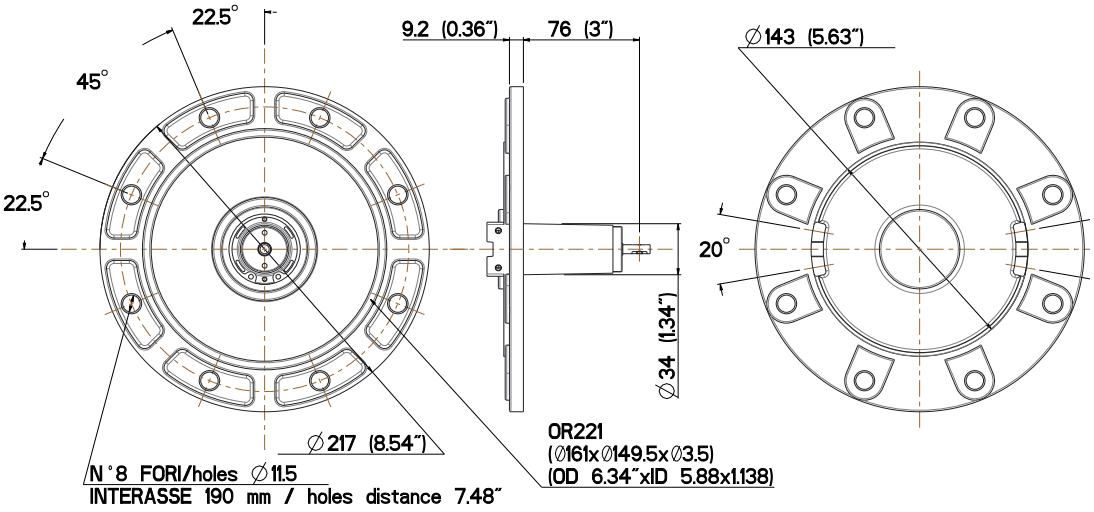
Axial movement for OLI/eOLI



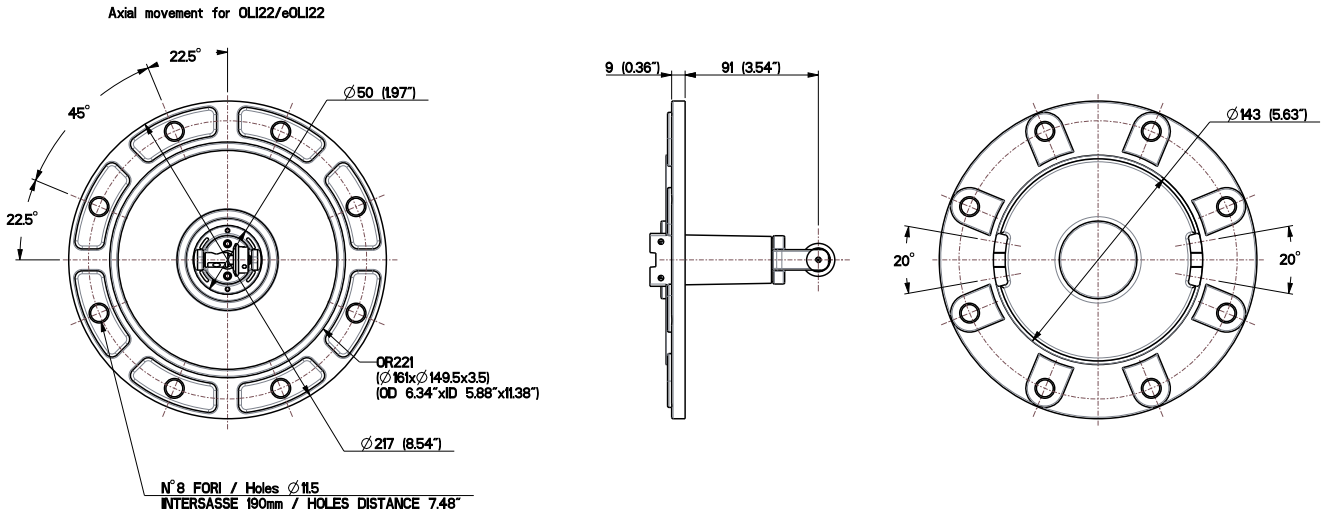
Flange dimensions

OLI22 / eOLI22 Hole of the tank from 70 mm to 140 mm

Radial movement for OLI22/eOLI22

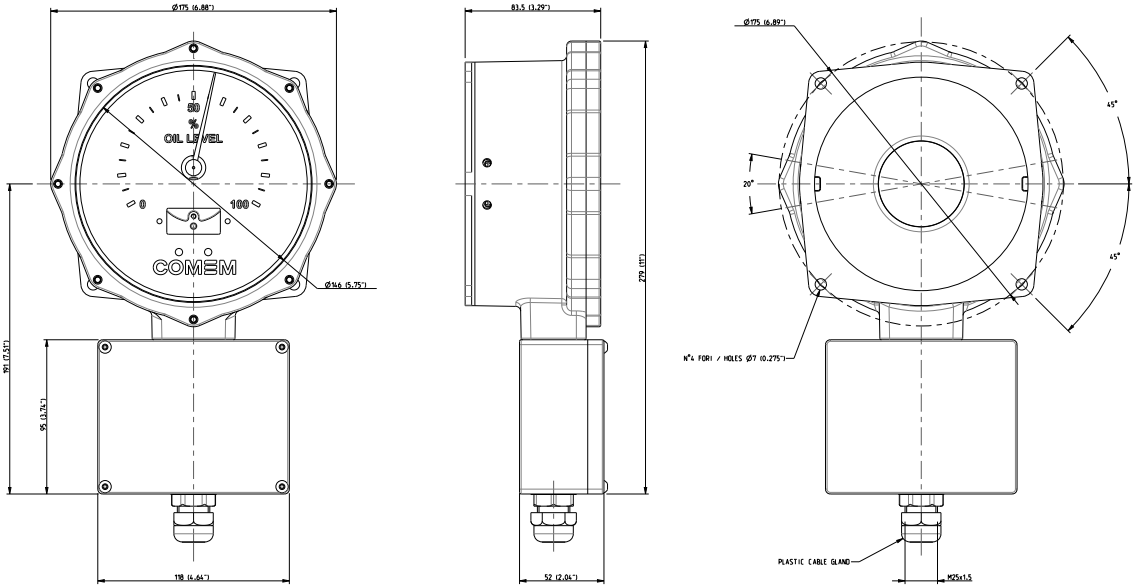


Axial movement for OLI22/eOLI22

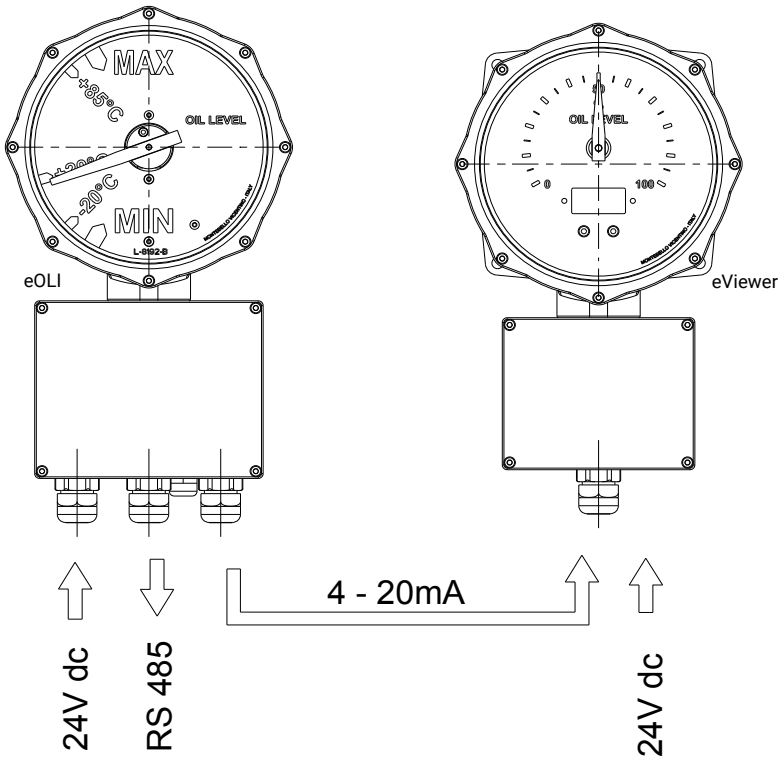


eViewer dimensions

eViewer



eOLI - eViewer connection



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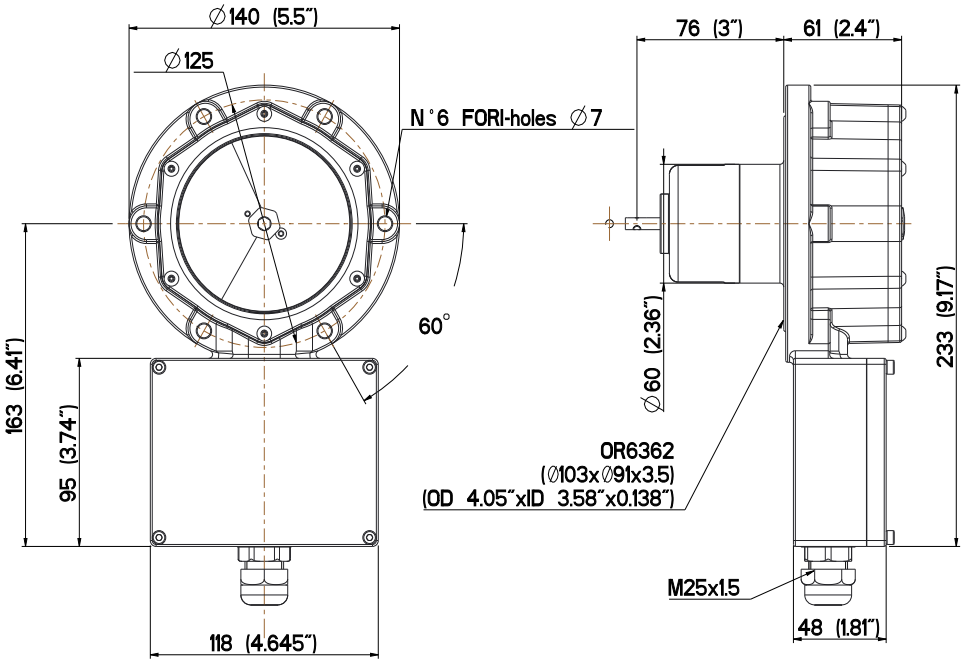
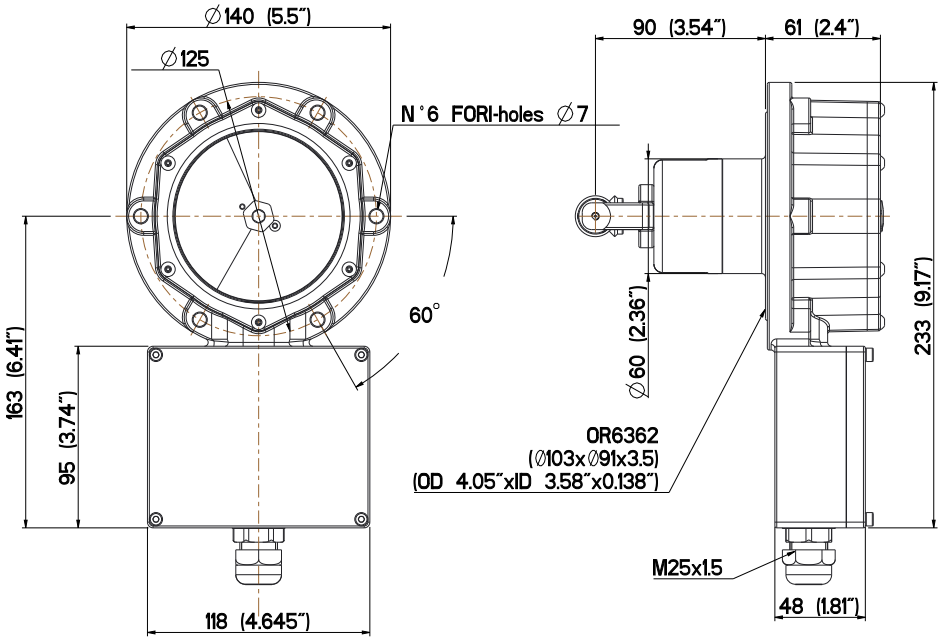
L140 dimensions

Radial movement for L140
Hole of the tank from 70 mm to 84 mm

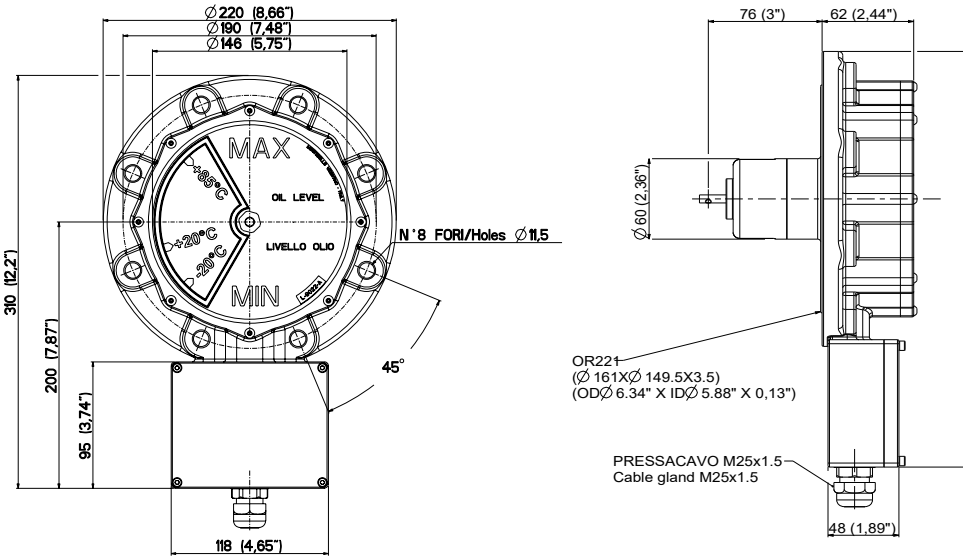


Axial movement for L140

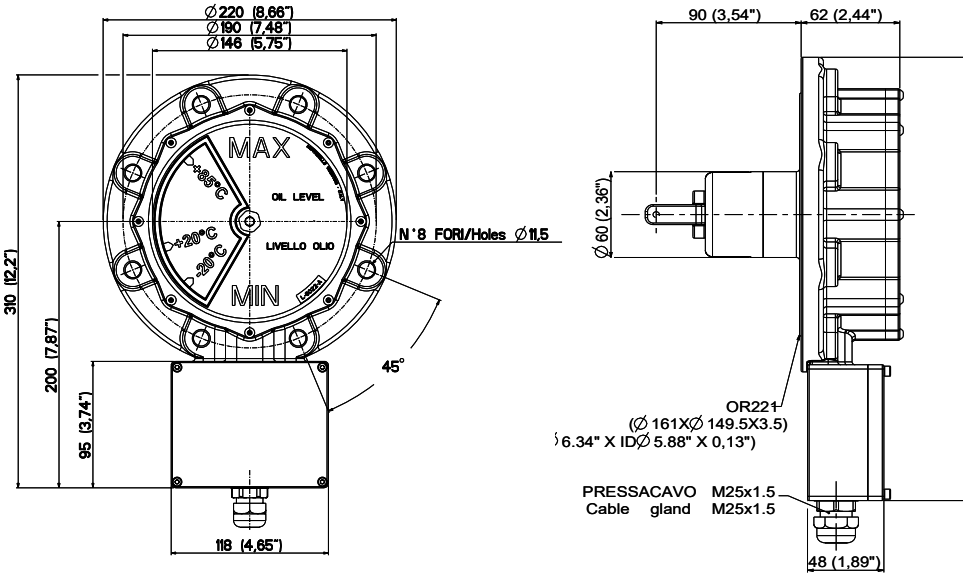


L220 dimensions

Radial movement for L220
Hole of the tank from 70 mm to 140 mm

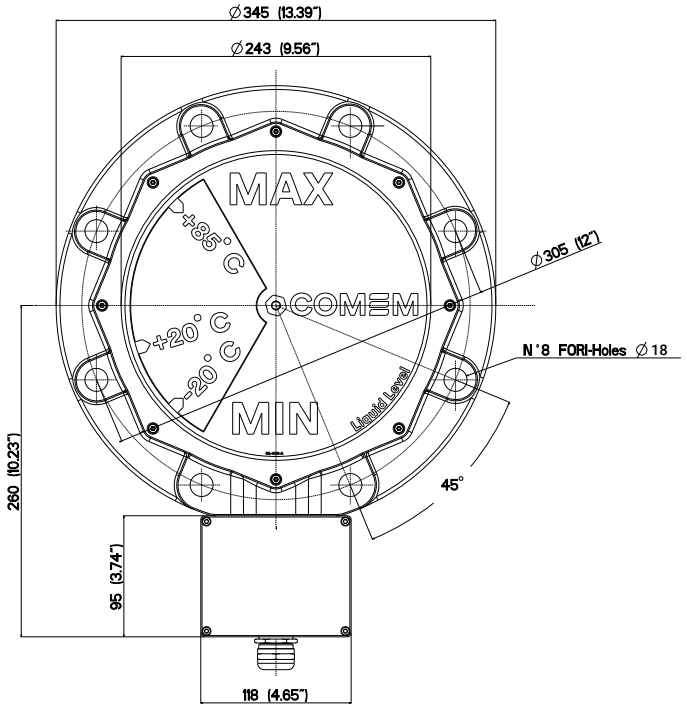


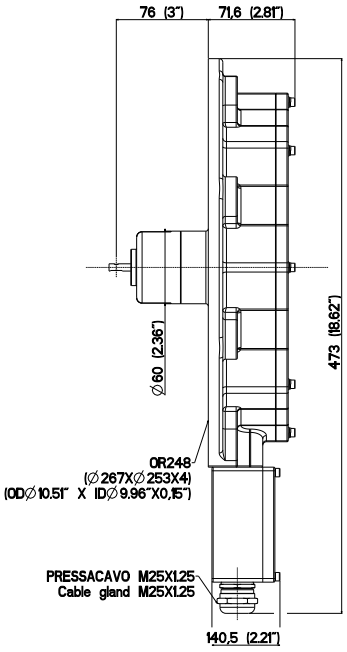
Axial movement for L220



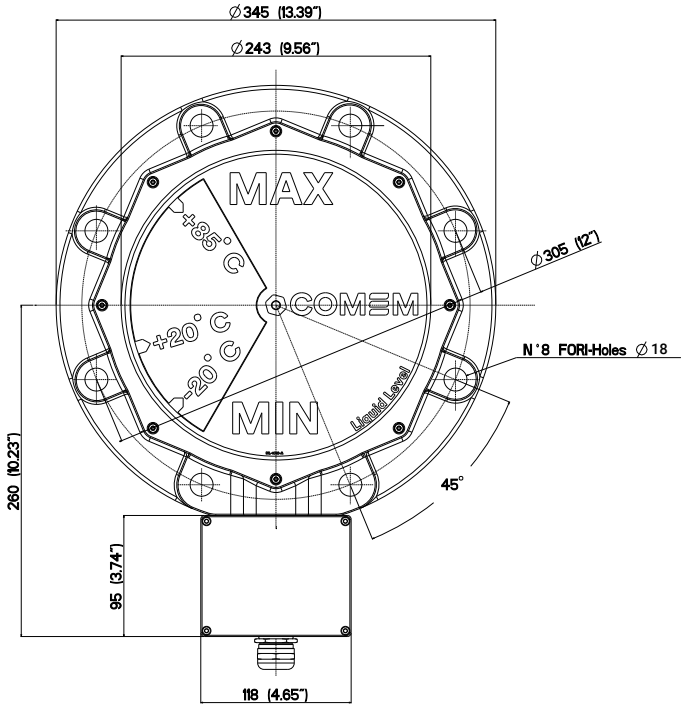
L340 dimensions

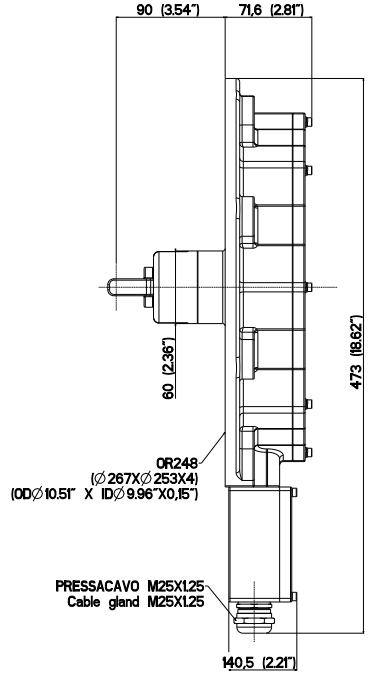
Radial movement for L340
Hole of the tank from 70 mm to 230 mm





Axial movement for L340





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Electrical scheme

Micro switch types

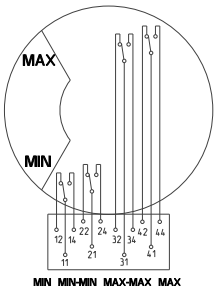


DIAGRAM W

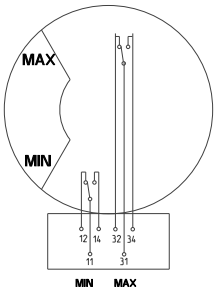


DIAGRAM X

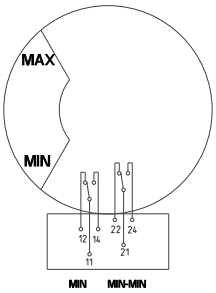


DIAGRAM Y

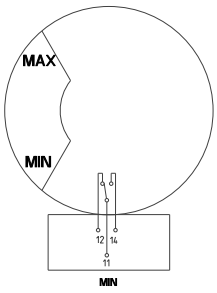


DIAGRAM K

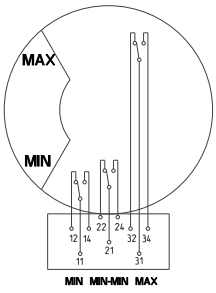
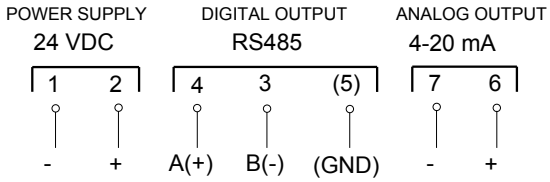


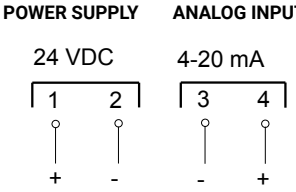
DIAGRAM N

NOTE:
- MIN switch will commutate 5° before MIN mark on the dial
- MIN-MIN switch will commutate 10° before MIN mark on the dial
- MAX-MAX switch will commutate 10° before MAX mark on the dial
- MAX switch will commutate 5° before MAX mark on the dial

eOLI / eOLI22

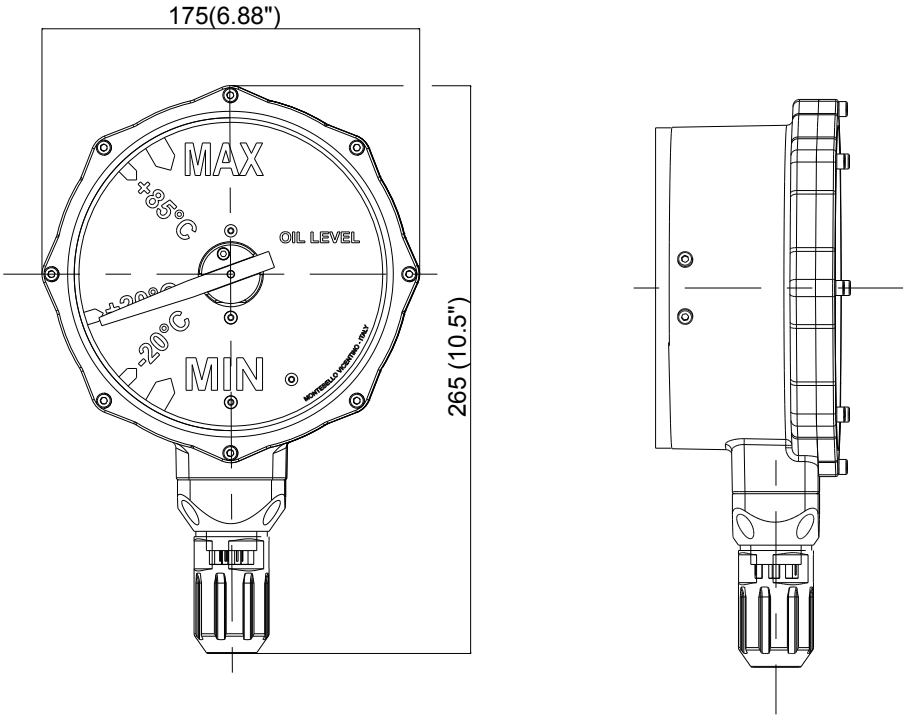


eViewer

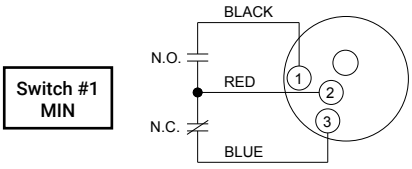


Liquid level indicators with plug-in connector

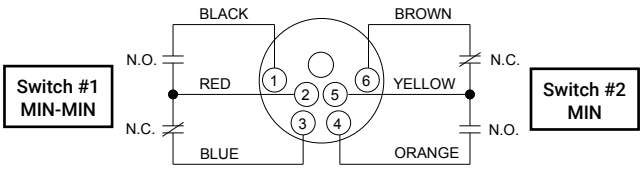
Case dimensions for OLI/OLI22 with plug-in connector



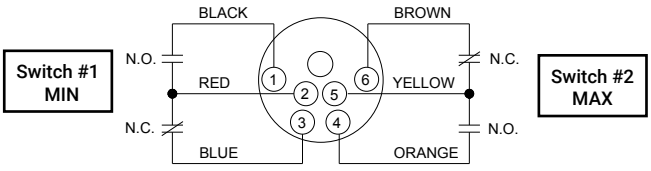
Electrical scheme for OLI/OLI22 with plug-in connector



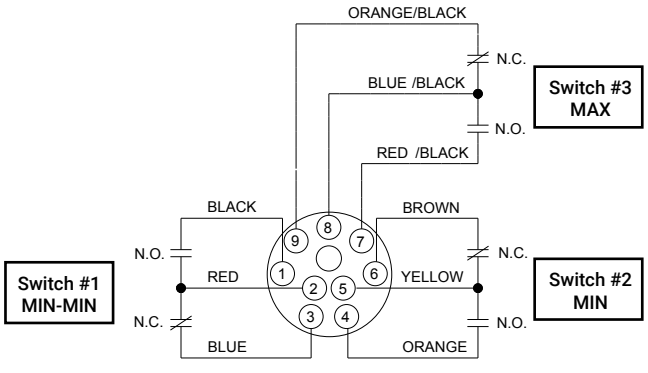
Scheme K



Scheme Y



Scheme X



Scheme N

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Order sheet

	Type	See Fig. A-B
	L140	Pointer
	L140	Circular Red/white
	OLI	Pointer
	eOLI	Pointer
	OLI22	Pointer
	eOLI22	Pointer
	L220	Circular Red/white
	L340	Pointer
	L340	Circular Red/white
	eViewer (for visualisation only)	Pointer

Date	
Rev.	
Customer reference	

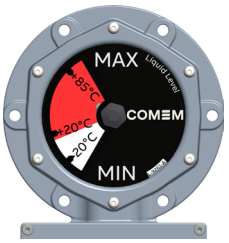


Fig.A: Circular Red/White

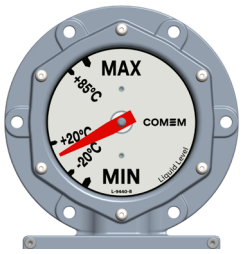


Fig.B: Pointer

	Shaft movement	For complete details fill-in:
	Radial movement (Fig.1 - Page 7)	page 21
	Axial movement (Fig.2 - Page 7)	page 20+21
	Axial movement with bent arm (Fig.3 - Page 7)	page 22+23
	Axial movement for carter design - only OLI22 – eOLI22 – L220 (Fig.4 - Page 7)	page 24
	Radial movement for angle design (Fig.5 - Page 7)	page 25

Type of switches

	Fixed (standard)
	Adjustable (only for OLI/OLI22 /eOLI/eOLI22)

Electrical scheme with terminal box (page. 15)

	1 min	K scheme
	2 min	Y scheme
	1 min + 1 max	X scheme
	2 min + 1 max	N scheme
	2 min + 2 max	W scheme

Electrical scheme with plug-in connector only for OLI/OLI22 (page. 16)

	1 min	K scheme
	2 min	Y scheme
	1 min + 1 max	X scheme
	2 min + 1 max	N scheme

Lens material (dial protection)

	Polycarbonate (standard - not available for CX offshore corrosion protection class)
	Glass (optional)

Gasket

	NBR (from -40°C up to 120°C) Standard
	Viton (from-10°C up to 150°C)
	Fluorosilicone (from -60°C up to 200°C)

Corrosion protection class

	C4 Medium acc. to ISO 12944 (standard)
	C5 Medium acc. to ISO 12944 (not paintable)
	CX offshore acc. to ISO 12944 (RAL 7035) Only for OLI/OLI22/eOLI/eOLI22/eVIEWER

Order sheet

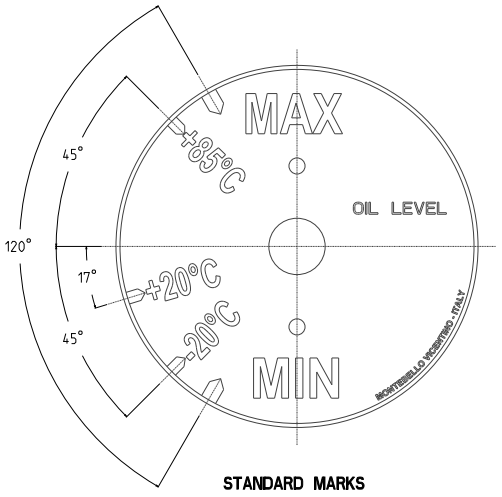
Choose dial type

Date	
Rev.	
Customer reference	

☐ **Dial with standard marks (-20°C, +20°C, +85°C)**

Mark	Oil conservator height Y* (mm)
Max	
Min	

For oil conservator height Y consult the following pages



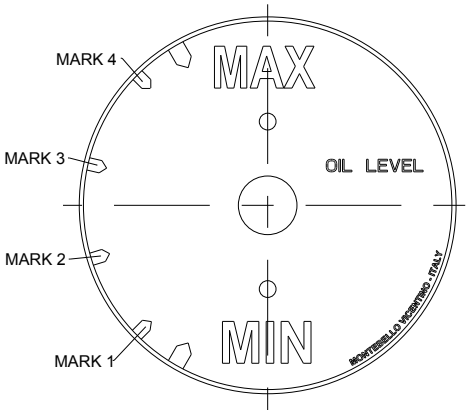
STANDARD MARKS

Or:

☐ **Dial with special marks (please indicate the desired value)**

Mark	Marking on dial	Oil conservator height Y* (mm)	Position and number of micro switches
Max			
Mark 4			
Mark 3			
Mark 2			
Mark 1			
Min			

For oil conservator height Y consult the following pages



SPECIAL MARKS

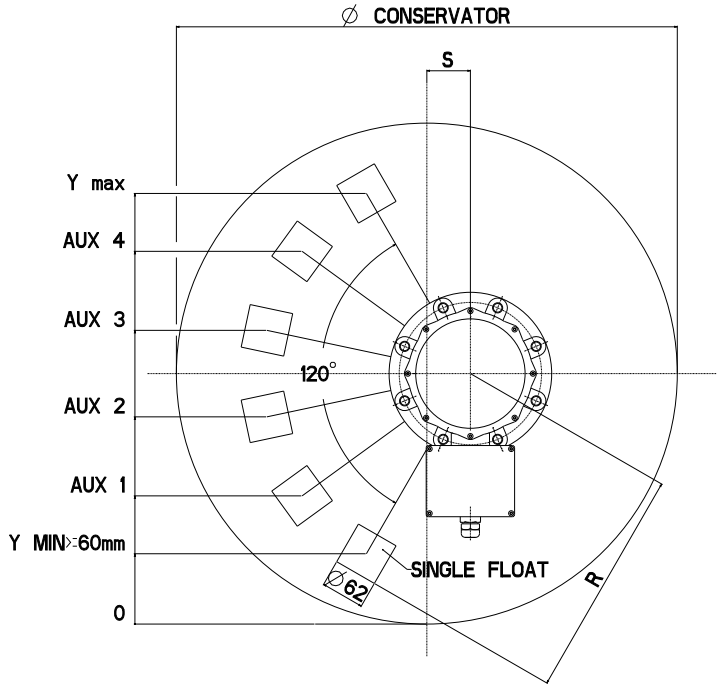
Liquid level indicator with radial movement

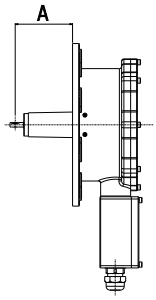
Date	
Rev.	
Customer reference	

General features (mm)

Conservator diameter	Ø		
Displacement between the conservator and dial centers	S		
Length shaft inside the conservator	A		76 mm (standard)
			90 mm (special)

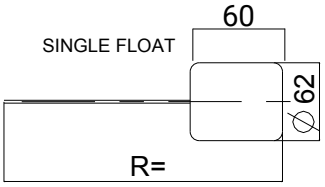
* Other dimensions are available upon request. Please indicate all the dimensions of the conservator and we will propose to you the most suitable configuration





Length of the arm with float

Type		R: Standard (mm)	R: Special >=100mm
L140		370	
L220		550	
OLI		550	
OLI22		550	
L340		710	



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Order sheet

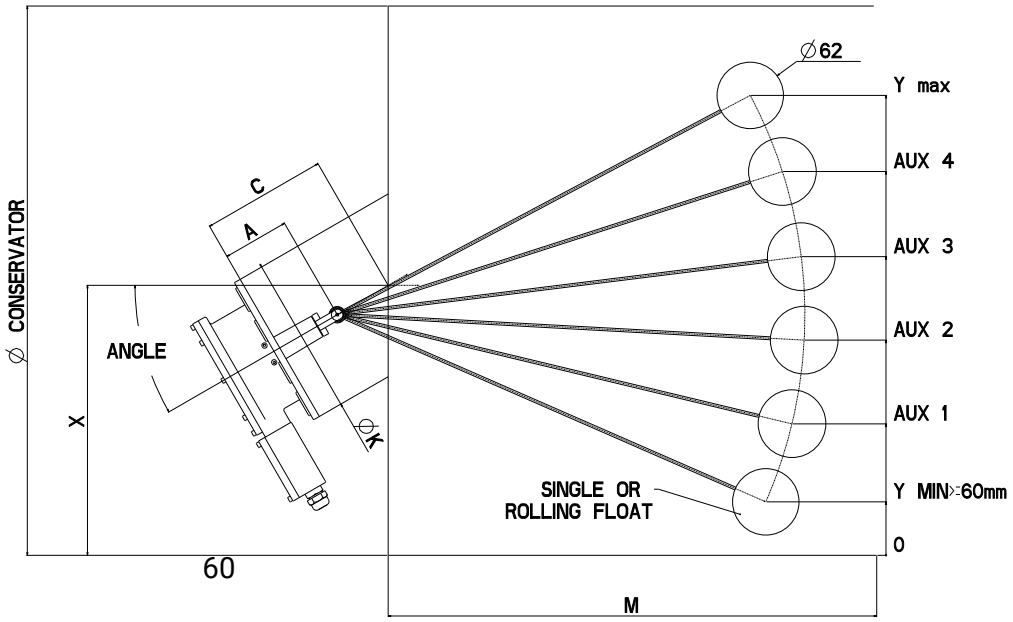
Liquid level indicator with axial movement (Fig.2 - page 7)

Date	
Rev.	
Customer reference	

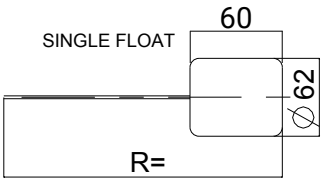
General features (mm)

Conservator diameter	Ø		
Conservator length	M		
Oil Level Indicator inclination	Angle		0° (Standard)
			special:
Length inside the conservator	A		90 mm (Standard)
			110 mm (Special)
Displacement between flange and conservator	C		
Height from theconservator base	X		
Tube diameter	K		

* Other dimensions are available upon request. Please indicate all the dimensions of the conservator and we will propose to you the most suitable configuration



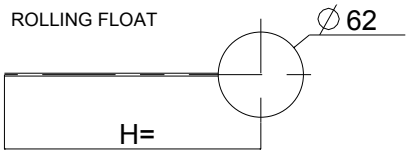
SINGLE FLOAT TYPE “R” (STANDARD)



Length of the arm with single float

Type	R: Standard (mm)	R: Special >=130mm
L140	370	
L220	550	
OLI	550	
OLI22	550	
L340	710	

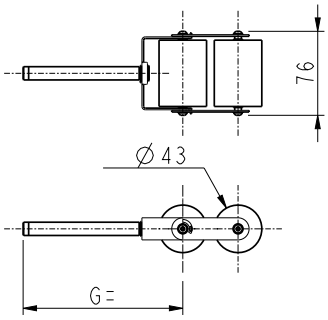
ROLLING FLOAT TYPE “H” (STANDARD SOLUTION FOR ROLLING FLOAT)



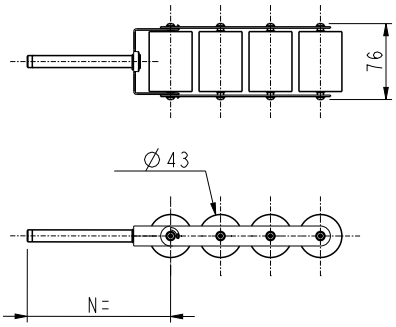
Length of the arm with rolling float

Type	H: Standard (mm)	H: Special >=110mm
L140	370	
L220	550	
OLI	550	
OLI22	550	
L340	710	

ROLLING FLOAT TYPE “G”



ROLLING FLOAT TYPE “N”



Length of the arm with 2 rollers

Type	G: Standard (mm)	G: Special >=110mm <1000mm
L140	370	
L220	550	
OLI	550	
OLI22	550	
L340	710	

Length of the arm with 4 rollers

Type	N: Standard (mm)	N: Special >=110mm <2000mm
L140	370	
L220	550	
OLI	550	
OLI22	550	
L340	710	

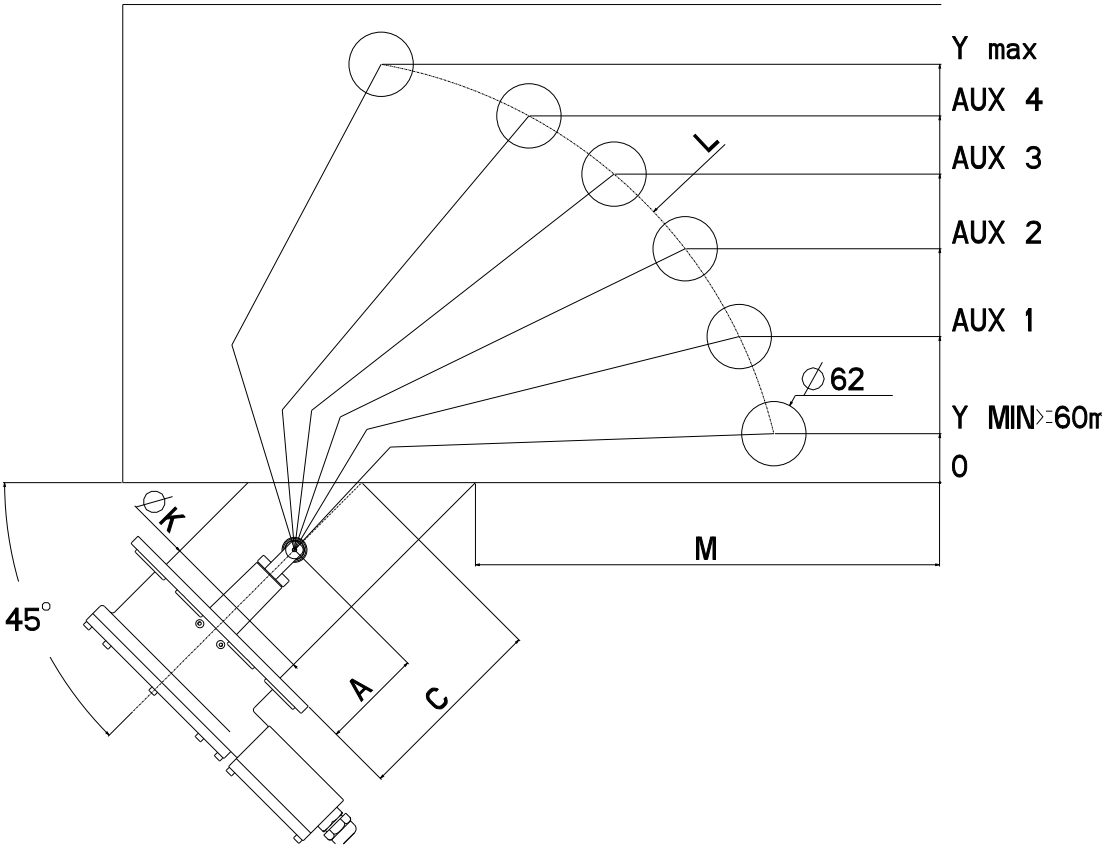
Liquid level indicator with bent arm with axial movement (Fig.3 - page 7)

Date	
Rev.	
Customer reference	

General features (mm)

Conservator diameter	Ø		
Conservator length	M		
Length inside the conservator*	A		90 mm (Standard)
			110 mm (Special)
Tube diameter	K		
Displacement between flange and conservator	C		

* Other dimensions are available upon request. Please indicate all the dimensions of the conservator and we will propose to you the most suitable configuration



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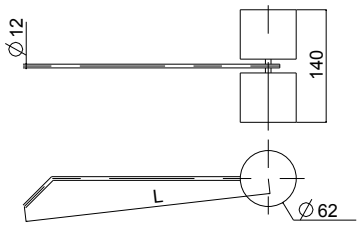
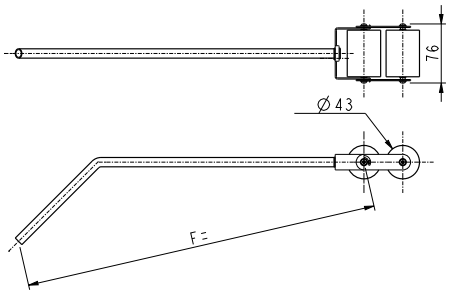
WITH BENT ARM TYPE “L” (STANDARD)



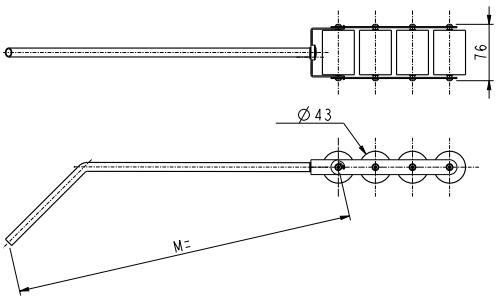
Bent arm lengths >=250mm

L	

WITH BENT ARM TYPE “F”



WITH BENT ARM TYPE “M”



Length of the arm with 2 rollers

Type		F: Standard (mm)	F: Special >=250mm <1000mm
L140		370	
L220		550	
OLI		550	
OLI22		550	
L340		710	

Length of the arm with 4 rollers

Type		M: Standard (mm)	M: Special >=250mm <2000mm
L140		370	
L220		550	
OLI		550	
OLI22		550	
L340		710	

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Liquid level indicator carter design with axial movement (Fig.4 - page 7)

Date	
Rev.	
Customer reference	

Arm movements (Note: The arm is not included in the product)

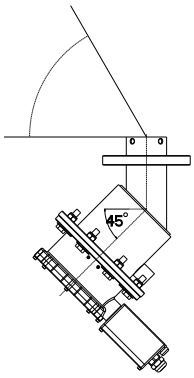


Fig. A ☐

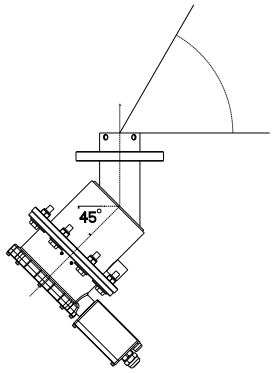


Fig. B ☐

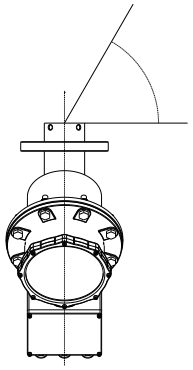


Fig. C ☐

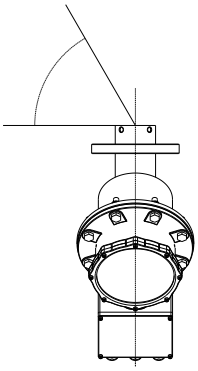
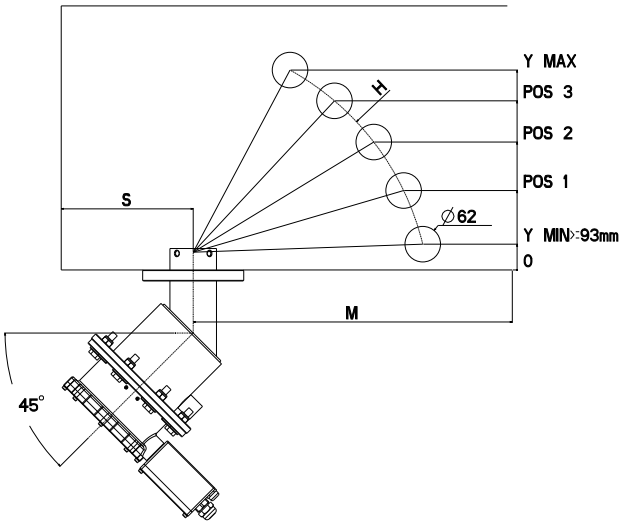
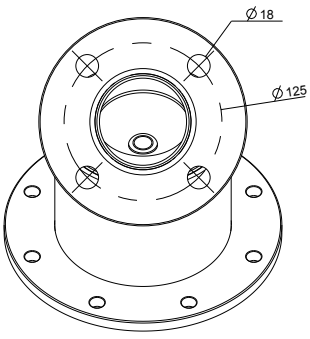


Fig. D ☐



General features (mm)

Conservator diameter	Ø	
Conservator length	M	
Distance from the front of the conservator	S	



Note: Carter fixing flange included.

Liquid level indicator with angle design with radial movement (Fig.5 - page 7)

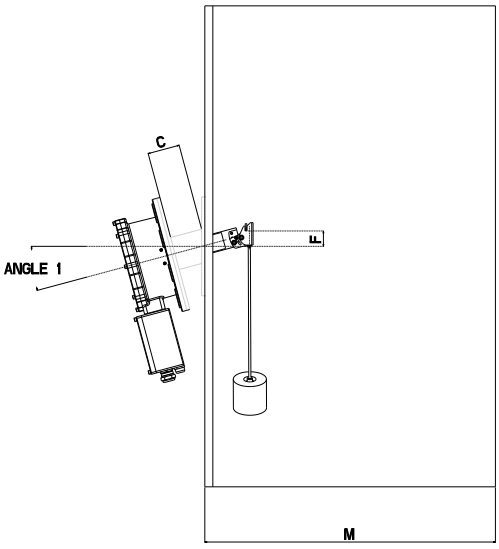
Date	
Rev.	
Customer reference	

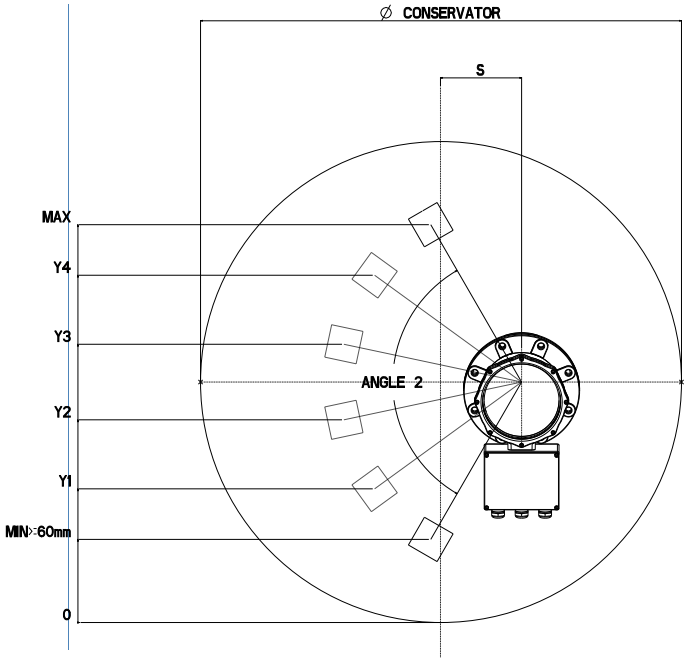
General features (mm)

Conservator diameter	Ø	
Conservator length	M	
Displacement between the conservator and dial centers	S	

	Angle 1	Angle 2	Displacement F
	-15° (C=64mm)	120°	18 mm
	-30° (C=145 mm)	130°	44 mm
	-45° (C=233mm)	140°	82 mm

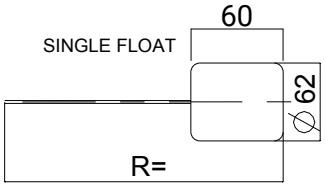
*Angle design applicable for OLI, eOLI, OLI22, eOLI22 - see page 4)

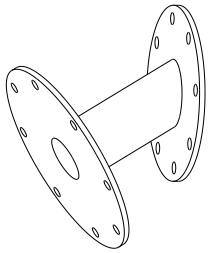




Length of the arm with float

Type		R: Standard (mm)	R: Special >=100mm
L140		370	
L220		550	
OLI		550	
OLI22		550	
L340		710	





Note: Inclined fixing flange not provided.

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