

## SERIES OMD



OMD is an atmospheric oil mist detection instrument for marine and industrial applications, developed for installation in machinery room, pump room, etc. in commercial, naval, ro-ro ships as requested by the actual international IMO marine regulations (circ.1086). The OMD detector is an independent measuring and transmitting system with 4÷20mA+HART<sup>®</sup> and photorelays output, proportional to the density of oil mist in the sampled air.

OMD oil mist measuring is based on the physical principle of optical scattering. Infrared light emitted from a LED is received from two photodiodes for measure and reference purpose; by the comparison between the photodiodes output, the presence of oil mist can be detected. The typical flammability level of the oil mist is 50mg/l; the alarm level is set to 2.5% of lower flammability level and is calibrated to 1.2mg/l. The detector must be calibrated by the manufacturer with a certified oil mist generator, as stated by IMO recommendations. OMD is based on a digital electronics for signal analysis, including fault detection and photodiodes degrading monitoring system.



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## TECHNICAL FEATURES

### Electrical parameters

Supply:	3 wires: 24 Vdc±20%
Output signal:	4 ÷ 20 mA + HART rev.6
Fault Output:	21 mA
Photorelays:	3 photorelays (alarm, pre-alarm, fault - 50Vdc, 100mA max load)

### Measurement performance

Total accuracy:	< ± 0.2 mg/l
Detected particle diameter:	0.4 ÷ 10 µm
Oil mist density measuring field:	0 ÷ 2 mg/l
Alarm level:	1.2mg/l
Pre-Alarm level:	0.2mg/l
Self-test:	Yes

### Environmental Conditions

Process temperature:	-20 ÷ 70 °C
Storage temperature:	-40 ÷ 75 °C
Dimension and weight:	175x165 All out 2.7 Kg about

### Notes

Advanced diagnostic and control system  
Fan and filter completely removable, cleanable and replaceable

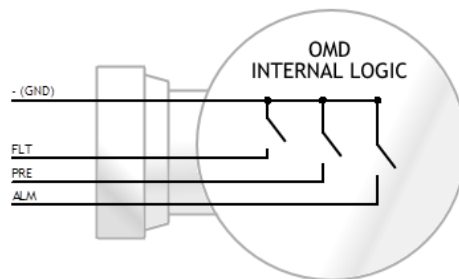
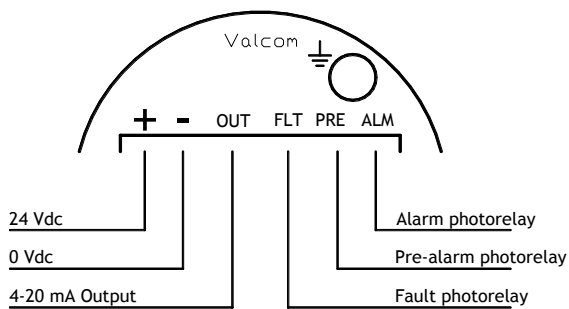
## APPROVALS

### Type approvals

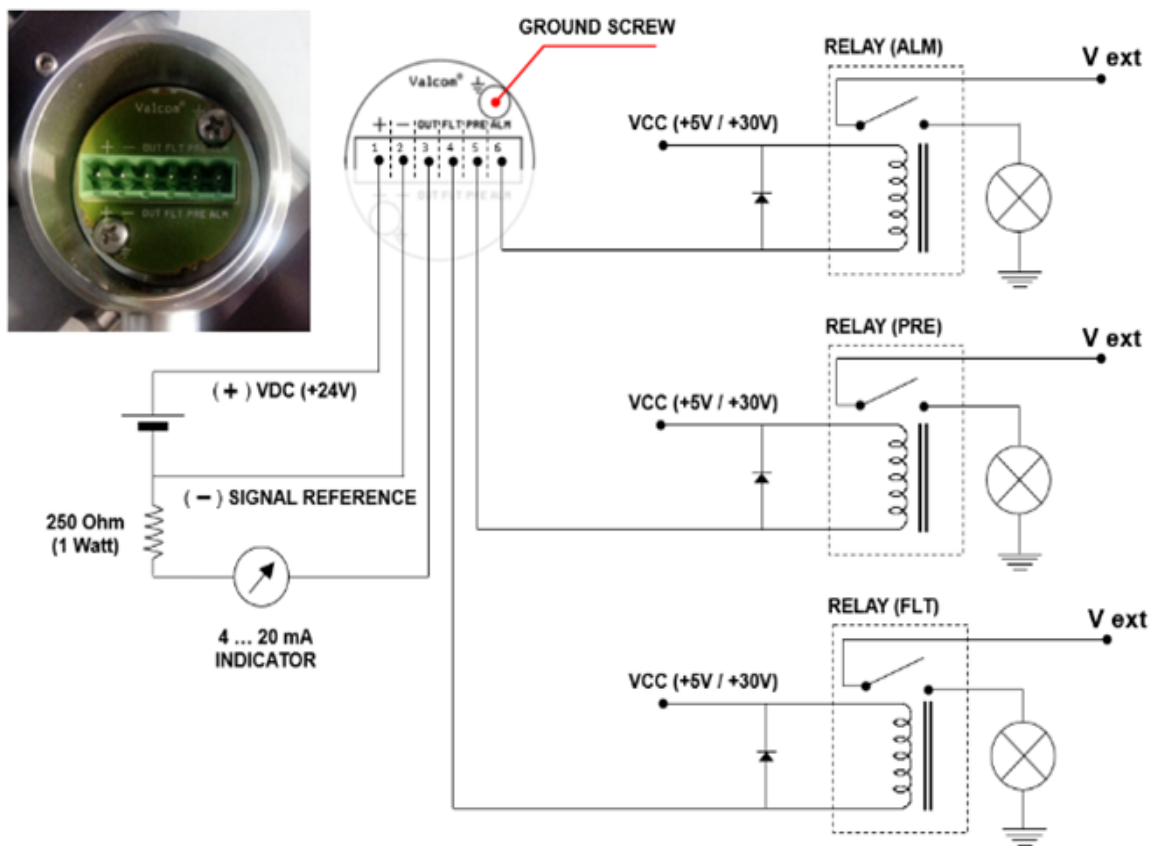
Directive 2014/30/EU (EMC)	Adequate level of electromagnetic compatibility
Marine type approval	In compliance with applicable requirements of RINA type approval system

## ELECTRICAL WIRING

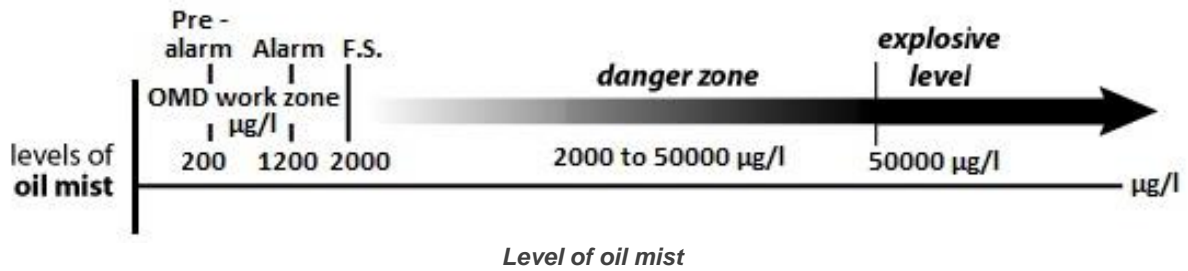
Transmitters are protected against reverse polarity and the electronics has an isolation from earth of at least 500Vdc. The recommended wiring cable is a screened signal cable, with wires of min. section area of 0.2 mm<sup>2</sup> (AWG24) and shielding > 80 %.



Sensor terminal blocks output and OMD internal logic



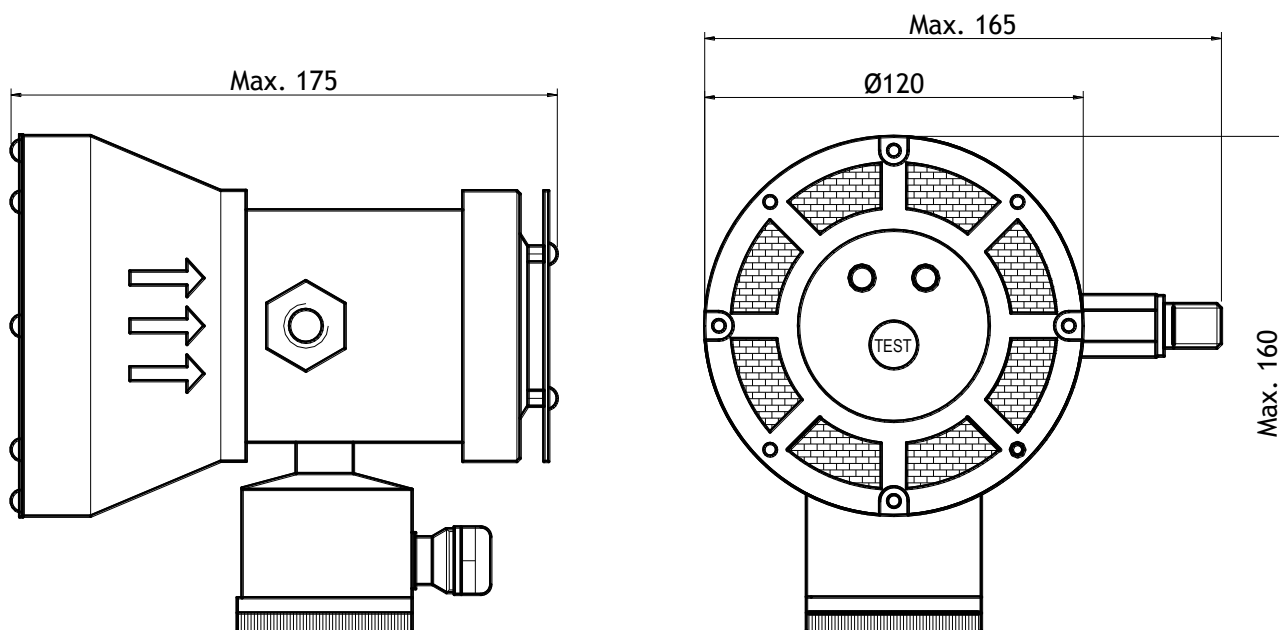
Relay Process Schematics



OMD STATUS	LED		FOTORELAY		
	LEFT	RIGHT	FLT	PRE	ALM
NORMAL	G	-	OP	CL	CL
PREALARM	G	Y	OP	OP	CL
ALARM	G	R	OP	CL	OP
FAULT	Y	Y	CL	OP	CL
TEST	G	R	OP	CL	OP

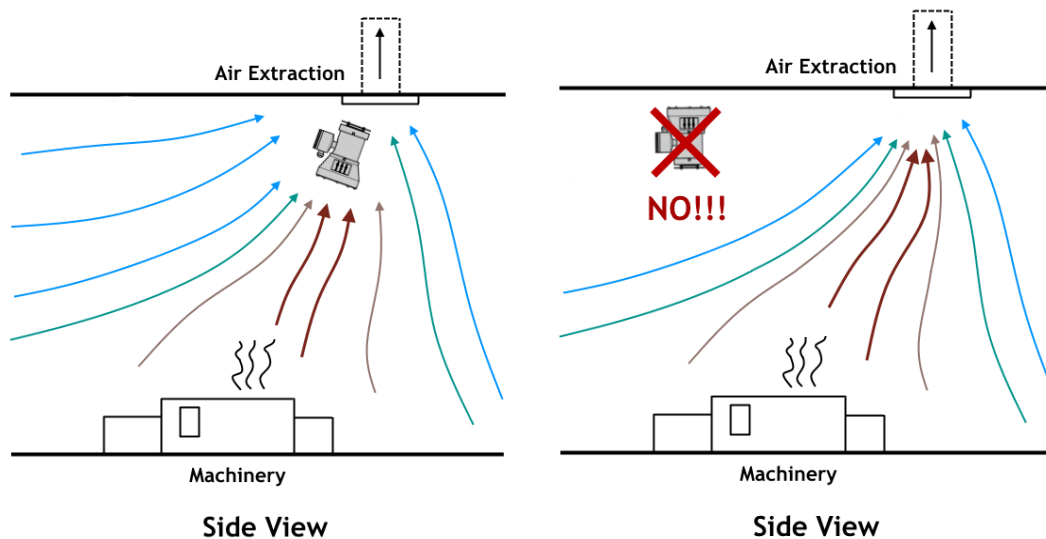
LED: G = green, Y = yellow, R = red  
 Photorelay: OP = open, CL = closed  
 Max 50Vdc, 100mA for channel

## DIMENSIONAL DRAWINGS

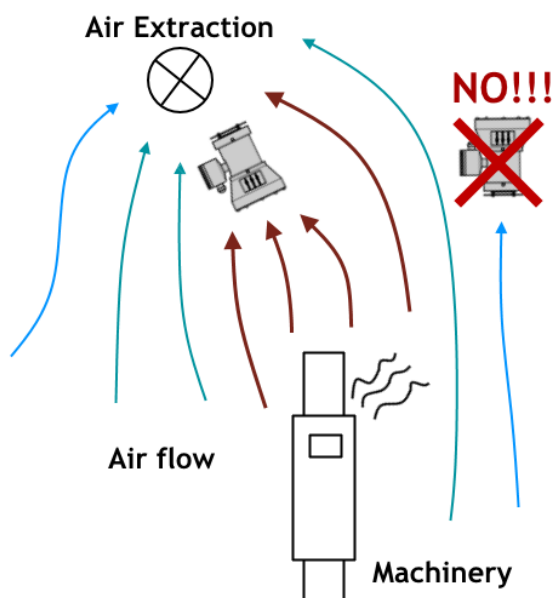


## INSTALLATION EXAMPLES

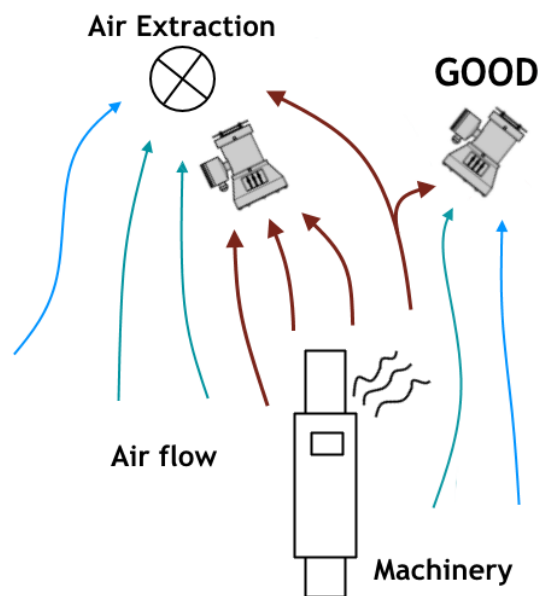
The best position to install OMD is in front of the room air extraction vents, with the frontal side (identified by the LED presence) looking towards the machinery to be monitored. Example of installation are reported in the below pictures.



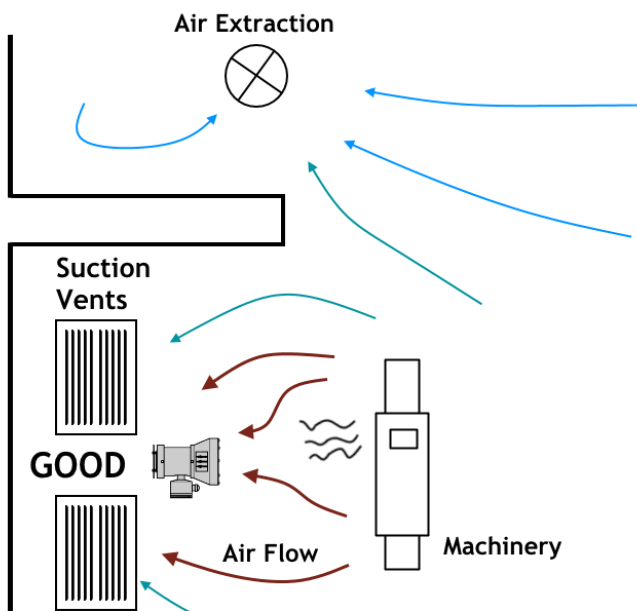
## INSTALLATION EXAMPLES



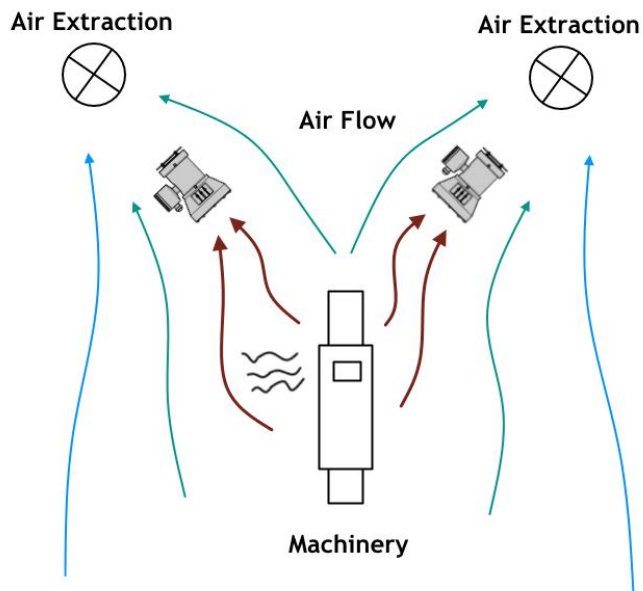
Top View



Top View



Top View



Top View

## ORDERING CODE

<input type="checkbox"/> OMD	Oil mist detector
<b>01</b>	<b>Type of measure</b>
<input type="checkbox"/> H	Oil mist percentage
<b>02</b>	<b>Sensor type</b>
<input type="checkbox"/> OP	Optical
<b>03</b>	<b>Measuring range</b>
<input type="checkbox"/> E01	0 ÷ 100%
<b>04</b>	<b>Filling oil</b>
<input type="checkbox"/> N	No filling
<b>05</b>	<b>Process temperature limits</b>
<input type="checkbox"/> A	-10 ÷ 60 °C
<b>06</b>	<b>Housing material and type</b>
<input type="checkbox"/> D03	SS AISI 316 + Aluminum
<b>07</b>	<b>Process connection</b>
<input type="checkbox"/> NN	None
<b>08</b>	<b>Extension length</b>
<input type="checkbox"/> NN	None
<b>09</b>	<b>Sensor material</b>
<input type="checkbox"/> X	None
<b>10</b>	<b>Process gasket material</b>
<input type="checkbox"/> N	None
<b>11</b>	<b>Wetted parts material</b>
<input type="checkbox"/> 0	None
<b>12</b>	<b>Electrical connection</b>
<input type="checkbox"/> 29	Nylon cable gland PG9 Ø 5 ÷ 7 mm cable IP67
<input type="checkbox"/> 37	Nipple 1/2" NPT-F
<input type="checkbox"/> 81	Screwed M20 x 1.5-F
<b>13</b>	<b>Electrical output</b>
<input type="checkbox"/> B	Current 4-20 mA + HART + photorelays
<b>14</b>	<b>Ex type approval</b>
<input type="checkbox"/> NO	No Ex certification
<b>15</b>	<b>Options and accessories</b>
<input type="checkbox"/> S6	Wall mounting bracket
<input type="checkbox"/> S8	Zinc plated wall mounting bracket
<input type="checkbox"/> Z9	Special
<input type="checkbox"/> NN	No options