



Out of Liquid Bubble detector

Benefits & Characteristics

- For several corrosive liquids
- Bubble detection in stainless-steel tube

Applications

- Process control
- Leak detection

The OOL bubble detector operates on a thermal principle. It detects bubbles through a stainless-steel tube and can be used for several liquids, including corrosive liquids. The sensor detects changes in heat conduction and inclusions of e.g. gases in oil.

Output signal

The output is an „open drain“ switched ground signal (open = bubble detected)

For resistive and inductive loads

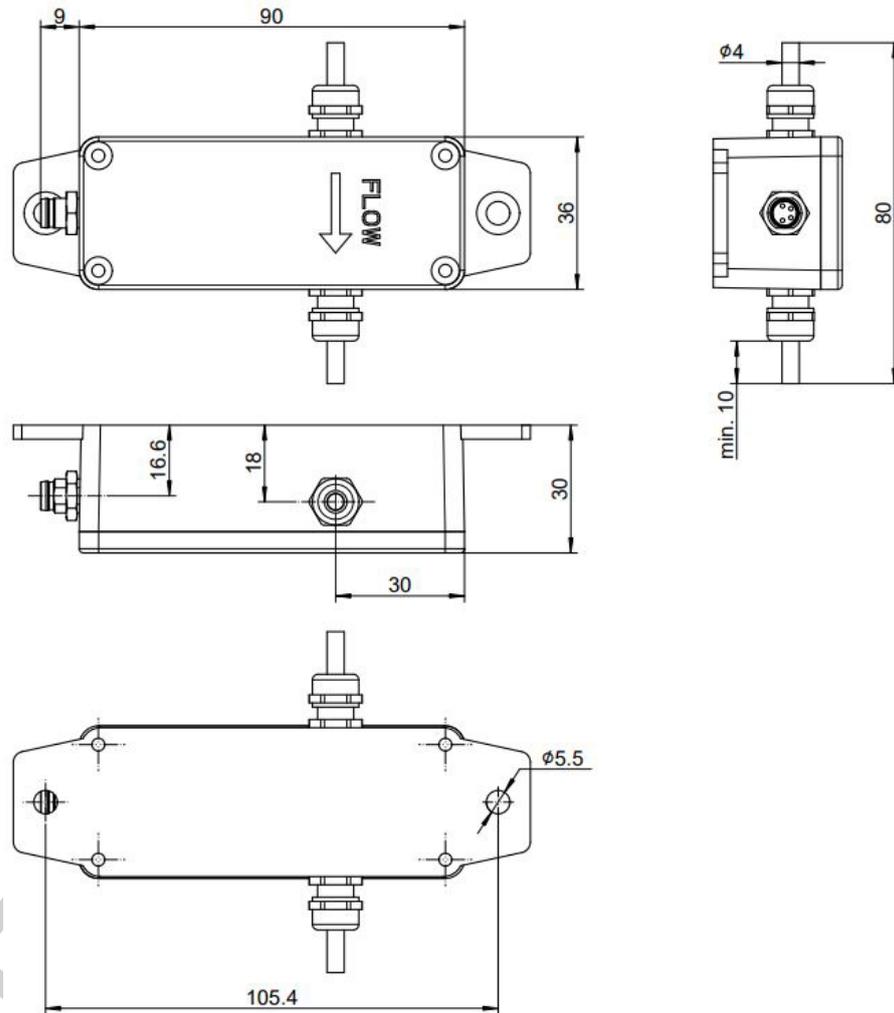
On-state resistance typ.:	550 m Ω
Switching voltage:	up to 60 V
Short circuit protected :	up to 36 V
Nominal load current:	700 mA
Pulse duration :	depending on bubble size

Product photo





Illustration



Performance

Parameter	Value	Comment
Operating parameters		
Bubble sensitivity	> 1/3	of inner tube diameter *
Response time	6 ms *	
Min. flow	0.5 kg/h	for water
Temperature range	+5 °C to + 50 °C	
Max. operating pressure	~70 bar	
General parameters		
Pressure loss	0 to 0.9 mbar	Based on DI-H ₂ O for 1 to 20 kg/h at 25 °C
Storage temperature	0 to +60 °C	

An abrupt flow change fro zero flow to a finite value can cause a bubble detection

* when installed horizontally. Otherwise, the same as the inside diameter of the pipe



Mechanical parameters

Parameter	Value	Comment
Flow channel		
Media wetted material	Stainless steel 1.4301	
Length	80.0 mm	
Outer diameter	4.0 mm	
Inner diameter	3.7 mm	
Process connection	4.0 mm	open ended steel tube
Housing		
Material	Aluminium	
Width	30 mm	
Length	90 mm	
Height	36 mm	
General parameters		
Protection class	IP65	
Weight	140	

Electrical parameters

Parameter	Value	Comment
Supply voltage	10 to 26 V	DC
Power consumption	~1.5 W	
Electrical connection	M8 4-pin	Connector compatible with Phoenix SACC-DSI-M8MS-4CON-L90 SH / Binder 09-3421-82-04

Pin Assignment



Pin 1	GND	
Pin 2	Nc	
Pin 3	VCC	Voltage supply
Pin 4	Out	



Recommendation for connecting the module

Based on a plastic tube with an outer diameter of 6.0 mm and a wall thickness of 1.0 mm:

- Ear clamps with insert ring
- One-Ear clamp with insert ring 5.6 - 6.5

Order Information

Order code	Product name
153312	EvaKit OOL Bubble Detector v1.0

PRELIMINARY



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