



LA1S

Liquid Alarm Sensors Series LA[®] for Conductive Media

Version LA1S, LA25S and flow chambers LS, LS25 as well as LA1 and LA25 for use in hazardous areas

Special Features

- **Reliable detection even of minimal liquid quantities**
- **Line-break monitoring for LA1S and LA25S**
- **Integrable in M&C universal filters and flow chambers**
- **Also versions for higher pressure and temperatures**
- **No electrolytic effects on the sensor surface**
- **High chemical resistance**
- **Cable length up to 100 m [≈ 328.1 ft]**

Application

Liquid alarm sensors are used in gas conditioning systems to monitor gas cooling and condensate drains in order to protect downstream analytical instruments. This simple monitoring device reliably signals a condensate ingress in the event of a defect in cooling units or condensate drains and prevents expensive downtimes as well as high repair costs for analysis equipment.

In the event of an alarm, the sample gas pump or a shut-off solenoid valve in the conditioning system must be disconnected from the power supply.

Description

The M&C liquid alarm sensors LA...S operate according to the principle of electrical conductivity from a conductance value of 50 $\mu\text{S}/\text{cm}$. In order to prevent electrolytic effects on the sensor surface, the sensors are operated with alternating voltage.

The required evaluation electronics LA-1.1 and LA-1.4 are available in various designs and are described in the separate data sheet "Electronic controllers series LA[®]". For the M&C liquid sensors LA...S, only the electronic controllers as of year of construction 04/2006 described in this data sheet can be used.

The M&C liquid alarm sensors LA...S are designed in such a way that any liquid droplets in the sample gas flow reach the sensor surface directly due to gravity and even the smallest droplets trigger a safe and fast alarm.

The LA1S sensor is designed for operating pressures up to 4 bar and the LA25S sensor up to 25 bar. They comply with protection class IP65 EN 60529.

The LA1S sensor with its 12 mm \varnothing glass body is mounted in the GL connection of a universal filter F...-D or in the LS flow chamber.

The LA25S sensor has a 1/4" special screw-in fitting for mounting in the FSS...-D universal filters or for mounting in 8 mm \varnothing tubes using a special T-fitting LS25.

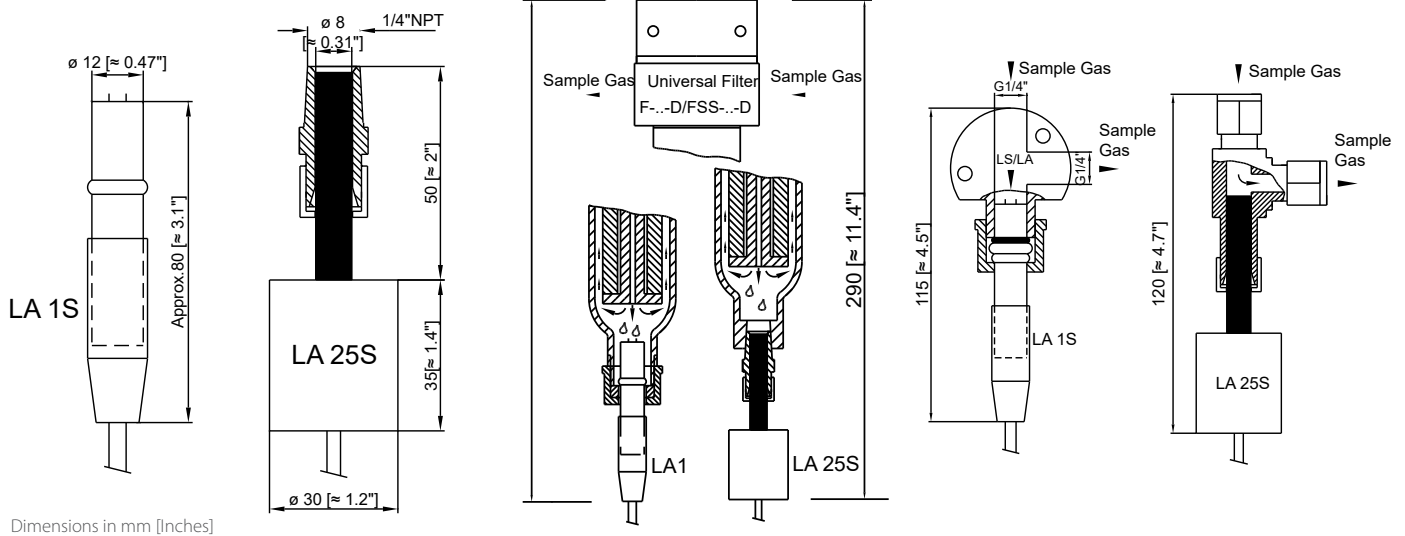
With the universal filters and the flow chamber, the gas inlet and outlet can be rotated 180° during installation.

For hazardous areas, the sensors LA1 and LA25 of the old series can be used without line-break monitoring, as these are simple components. However, these may only be used with approved evaluation electronics, e.g. ER142 Ex (Part No. 03E2009 for 230 V or 03E2009a for 115 V) for intrinsically safe supply of the sensor.

Liquid sensors LA1S, LA25S, LA1 and LA25

Liquid sensors LA1S and LA25S in universal filter F...-D and FSS...-D

Liquid alarm sensors LA1S and LA25S with flow chamber LS and LS25



Dimensions in mm [Inches]

Technical Data Liquid Alarm Sensor

Sensor Series LA*	LA1S with cable break monitoring	LA1 (former version)	LA25S with cable break monitoring	LA25 (former version)
Part No.	03E1001	03E1000	03E1111	03E1110
Connection cable	4 m [≈ 13.1 ft] length, diameter: ø 4.2 mm, 2-core, each additional meter: Part No. 03E9001, total max. 100 m [≈ 328.1 ft]	4 m [≈ 13.1 ft] length, diameter: ø 2 mm, 2-core, each additional meter: Part No. 03E9000, total max. 100 m [≈ 328.1 ft]		
Pressure	2 bar g inside universal filter, 0 to 4 bar g inside flow chamber		0 to 25 bar g* (up to 100 bar g*) inside universal filter and inside flow chamber	
Operating temperature max.	+80 °C [176 °F] ***			
Installation connection	ø 12 mm for GL 25 nut and GL 25- 12 mm sealing ring		1/4" NPT a	1/4" NPT a
Material of sample-contacting parts***	Glass, platinum	Glass, platinum	SS 316Ti PVDF	SS 316Ti PVDF
Type of mounting	Clamping attachment	Clamping attachment	Screw-on	Screw-on
Mounting position	Vertical			
Electrical conductivity	> 50 µS/cm			
Weight	50 g [≈ 0.1 lb]	50 g [≈ 0.1 lb]	140 g [≈ 0.3 lb]	140 g [≈ 0.3 lb]
Cable break monitoring	Yes	No	Yes	No
Operating in Ex areas	No	Yes	No	Yes

* Other pressure ranges -, ** Other dimensions -, *** Other materials or temperatures on request

Technical Data Flow Chamber

Flow Chamber Series LS	LS for LA1S and LA1 (former version)	LS25 for LA25S and LA25 (former version)
Part No.	03E3100	03E1120
Pressure	0 to 4 bar	0 to 25 bar g* (up to 100 bar g*)
Flow rate	0 to 1000 l/h	
Operating temperature max.	+80 °C ***	
Gas connections	G 1/4" i	ø 8 mm **
Stagnant space	Approx. 3 ml	
Material of sample-contacting parts***	PVDF, FKM	SS 316Ti
Type of mounting	Wall-mounting	Tube line
Mounting position	Vertical, the mounting position of the liquid sensor is vertical	
Weight	60 g	100 g
Operating in Ex areas	Yes	Yes

* Other pressure ranges -, ** Other dimensions -, *** Other materials or temperatures on request

Part numbers for combined filters or flow chamber sets including sensor and electronic controllers can be taken from the current list of items.