



KS3

## Liquid alarm sensor

### KS3 / KS3 EX, KS3 EX PEEK, KS3 EX PEEK SS, KS3 EX SS



for non-conductive and conductive media

#### Special Features

- Sure detection even of minimal liquid quantities
- Can be integrated into M&C-universal filters and flow chamber
- Explosion proof version according to ATEX for zone 1
- Rugged aluminium enclosure
- Extended operating temperature range of -20 °C to 50°C (~-4 °F to 122 °F) for EX versions

#### Application

The liquid alarm sensor type KS3... is an adequate replacement for the previous KS2... model. The KS3... has a rugged aluminium enclosure. Additionally, the operating temperature range for the KS3 EX versions has been extended to -20 °C up to 50°C (~-4 °F to 122 °F) in connection with the renewed Type Examination Certificate.

Liquid alarm sensors are used in gas sample conditioning systems for monitoring gas cooling and condensate drain-off devices in order to provide protection for downstream analysis instruments. The monitoring devices KS3 / KS3 EX versions signal reliably the penetration of non conductive (e.g. alcohol) and conductive (e.g. water) liquid in the event of cooling or condensate drain-off equipment being defective, thus avoiding expensive down time as well as high repair costs for analysis instruments.

In the event of an alarm, power for the sample gas pump must be switched off or a solenoid valve must be switched idle in the sample conditioning system.

directly to the active sensor surface. Even the smallest liquid droplets will trigger a sure and rapid alarm.

The sensors are mounted with the 16 mm Ø stainless steel body in the GL-25 connector of the universal filter F...-D or the condensate pot TG1 or in the flow chamber LS/KS.

#### Description

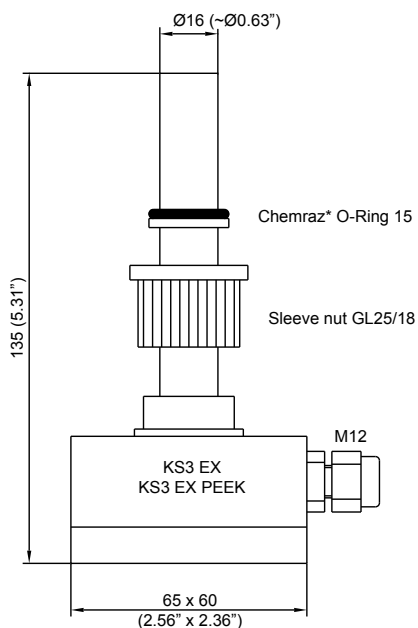
The M&C liquid sensors KS3 / KS3 EX versions work on the principle of capacitive measurement and is suitable for non-conductive and conductive media. A pre-amplifier is integrated in the sensor housing and is connected with the necessary external electronic controller via 2- resp. 3-wire. For KS3 the required electronic controller is available in various versions, FA1.1; FA1.4 and is described in the separate data sheet 9.5.

The M&C liquid sensors KS3 EX, KS3 EX PEEK, KS3 EX PEEK SS and KS3 EX SS should only be used in connection with electronic controller WE77.Ex1 or KFA6-SR2-Ex1W.

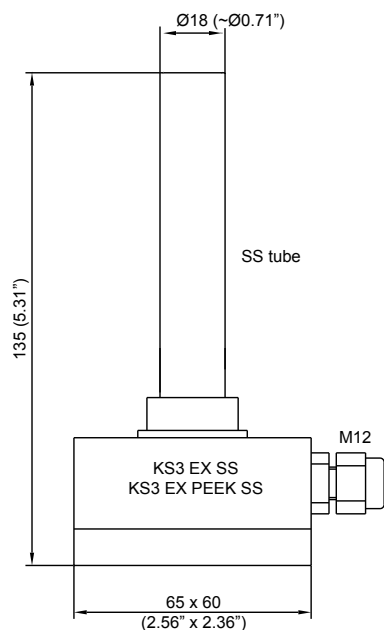
The M&C liquid sensors KS3 / KS3 EX versions are constructed in such a way that any droplets of liquid in the sample gas are attracted

## Dimensions

### KS3 / KS3 EX, KS3 EX PEEK liquid alarm sensor

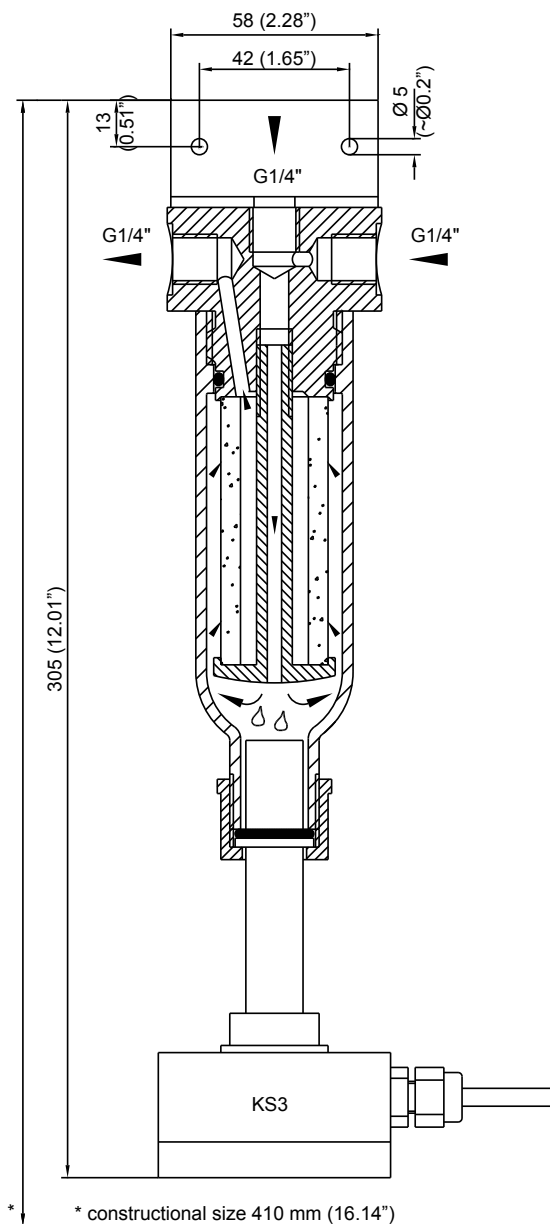


### KS3 EX PEEK SS, KS3 EX SS liquid alarm sensor



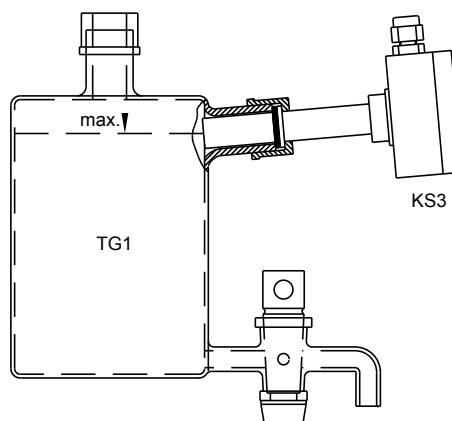
Dimensions in mm (Inches)

### Liquid alarm sensor KS3 / KS3 EX, KS3 EX PEEK, KS3 EX PEEK SS, KS3 EX SS in a universal filter F.-.-D



In the event of condensate penetration, the filter housing acts as a buffer vessel preventing immediate liquid penetration.

### KS3... liquid sensor for level monitoring in condensate pot TG1



## Technical Data sensors for non-EX areas

Sensor	KS3	KS3 Peek	KS3 SS	KS3 Peek SS
Part.-No.	03 E 4150	03 E 4160	03 E 4170	03 E 4180
Pressure	max. 2 bar abs.	max. 11 bar abs.	max. 2 bar abs.	max. 11 bar abs.
Max. operating temperature	-20 °C bis +60 °C* (~-4 °F to 140 °F)*			
Liquid alarm limit	1.5 ml			
Material of sample contacting parts	PTFE, Chemraz**, SS 316Ti	Peek, Chemraz**, SS 316Ti	PTFE, Chemraz**, SS 316Ti	Peek, Chemraz**, SS 316Ti
Sample connection Standard (Fitting for mounting in stainless steel filter: connector GE SS ½"NPT-18 mm Part No.: 09 V 2317)	ø 16 mm for GL25	ø 16 mm for GL25	ø 18 mm for mounting inside stainless steel filter FSS...-D1/2"NPT	ø 18 mm for mounting inside stainless steel filter FSS...-D1/2"NPT
Method of mounting / mounting position	clamping attachment / for liquid alarm vertical mounting position with opening facing upwards			
Power supply	8-12 Vdc, feeding via FA1.1 or FA1.4			
Connection cable, length 1.5 m(4.92 ft) standard	3 x 0.25 mm <sup>2</sup>			
Cable	capacity inductivity	200 pF/m 1 µH/m		
Protection	IP 54 EN 60529			
Weight	230 g (0.51 lb)		260 g (0.57 lb)	
Evaluation electronic	FA1.1 oder FA1.4 (see data sheet 9.5)			

\* To specify the minimum operating temperature, the freezing point of the condensate needs to be considered.

\*\*Chemraz is a trademark of Greene Tweed

## Technical Data sensors for EX areas

Sensor	KS3 EX	KS3 EX Peek	KS3 EX SS	KS3 EX Peek SS
Part.-No.	03 E 4250	03 E 4260	03 E 4270	03 E 4280
Pressure	max. 2 bar abs.	max. 11 bar abs.	max. 2 bar abs.	max. 11 bar abs.
Max. operating temperature	-20 °C to +50 °C* (~-4 °F to 122 °F)*			
Liquid alarm limit	1.5 ml			
Material of sample contacting parts	PTFE, Chemraz**, SS 316Ti	Peek, Chemraz**, SS 316Ti	PTFE, Chemraz**, SS 316Ti	Peek, Chemraz**, SS 316Ti
Sample connection Standard (Fitting for mounting in stainless steel filter: connector GE SS ½"NPT-18 mm Part No.: 09 V 2317)	ø 16 mm for GL25	ø 16 mm for GL25	ø 18 mm for mounting inside stainless steel filter FSS...-D1/2"NPT	ø 18 mm for mounting inside stainless steel filter FSS...-D1/2"NPT
Method of mounting / mounting position	clamping attachment / for liquid alarm vertical mounting position with opening facing upwards			
Max. voltage / current / power consumption	13,5 V / 31 mA / 125 mW			
Internal capacity max.	150 nF			
Internal inductivity max.	0 mH			
Power supply	8 V DC / max.2.4 mA during operation: < 1.4 mA alarm			
Connection cable, length 1.5 m(4.92 ft) standard	2 x 0,25 mm <sup>2</sup>			
Cable	capacity inductivity	200 pF/m 1 µH/m		
Protection	II 2G Ex ia IIC T6 Gb (if mounted inside a filter or a condensate pot:  II 2G Ex ia IIB T6 Gb) BVS 16 ATEX E 127 IECEx BVS 16.0092			
Weight	230 g (0.51 lb)		260 g (0.57 lb)	
Evaluation electronic	KFA6-SR2-Ex1W Part.-No.: 01 U 2501 (230 V) / 01 U 2501A (115 V)			

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