

FA1-H, 2 x FO1, K-FA-H, FA-1.1

Optical flow monitoring series FA®

Version FA1-H-.. for temperatures up to 180 °C (356 °F) with 2 light guides for monostable functioning

Special Features

- **Easy mounting of the sensor head at the flow meter without dismounting the measuring glass**
- **Also applicable for very low flow quantities**
- **Also suitable for non-metallic or very small floating balls**
- **Easy adjustment of any MIN alarm set-point**

Application

The optical flow monitoring unit with light guides is used in gas analysis on heated flowmeters with temperatures > 60 °C (140 °F). The measuring cones must be transparent.

Thanks to optical scanning, very low flow quantities can be recorded even in case of flowmeters with non-metallic or very small (1 mm (0.04")) floats.

Description

The M&C flow monitoring unit FA1-H-.. consists of 4 sub-assembly modules:

1. the patented sensor head FA1-H,
2. the 2 light guides FO.. for monostable function
3. the K-FA-H pre-amplifier
4. the electronic controller FA-1.1 or FA-1.4**

– ** see data sheet FA-.., K-FA 9.5 –

The sensor head FA1-H is assembled on the FM1-H flowmeter by means of a pressure screw with its stationary open prism to the measuring glass. Assembly is simple and does not require any disassembly of the flow-measuring glass.

The FO1 light guide is supplied with a standard length of 600 mm (1.97 ft). Light guide FO3 (900 mm (2.95 ft) long) and FO2 (1200 mm (3.94 ft) long) can be supplied for greater length requirements.

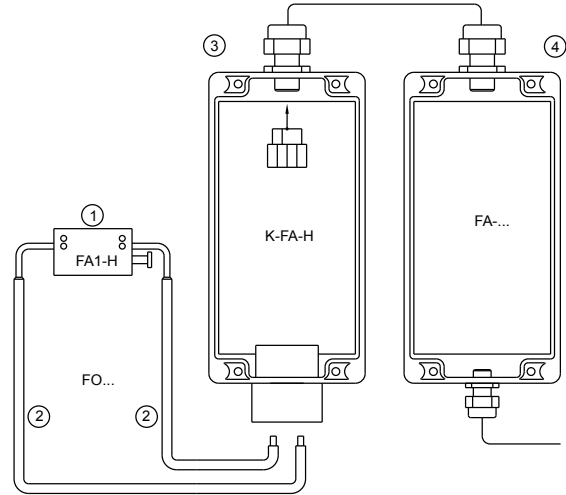
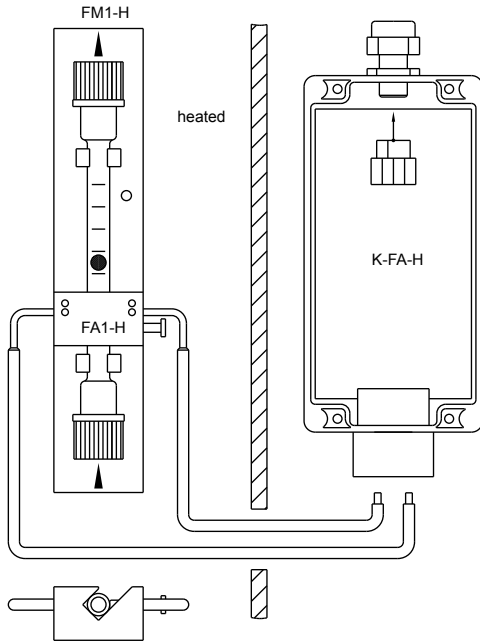
The angled light-guide ends are fixed into the FA1-H sensor head with one pressure screw each. Two light-guides are needed for the monostable function.

By use of the pre-amplifier K-FA-H a distance of 200 meters (656.17 ft) between the flow meter and the electronic controller FA-1.. (see 9.5) is possible without problems.

The LED emitters' light beam passes through the FO .. light guides and falls upon the photo-transistor through the FM1-H flowmeter measuring glass. As soon as the float breaks the light beam, the photo-transistor is blacked out. The FA-1.. electronic controller analyses this changed status accordingly.

By the monostable version a MIN alarm function in the lowest sensor setting position is guaranteed.

Flow monitoring FA1-H.. on flowmeter FM1-H



- ① 1 piece sensor head FA1-H
- ② 2 pieces light guides FO1/FO2/FO3 for monostable function
- ③ 1 piece K-FA-H pre-amplifier
- ④ 1 piece electronic controller FA-1.1 or FA-1.4

Technical Data

	Sensor Head FA1-H*	Light guide FO1	Light guide FO3	Light guide FO2	pre-amplifier K-FA-H
Part Number	02 E 4001	02 E 4060	02 E 4063	02 E 4065	02 E 4010
Function monostable	1x	2 pieces			1x
Measuring tube	5 - 14 mm (0.2" - 0.55")				
Light guide length		600 mm (1.97 ft)	900 mm (2.95 ft)	1200 mm (3.94 ft)	
Dimensions W x D x H	24 x 40 x 24 (0.94"x 1.57"x 0.94")	ø 6 mm (ø 0.24")			80 x 160 x 55 (3.15"x 6.3"x 2.17")
Weight	90 g (0.2 lb)	230 g (0.51 lb)	330 g (0.73 lb)	420 g (0.93 lb)	560 g (1.23 lb)
Material	anodized aluminium	Glass fibre, SS 316Ti, brass-chromed			Polycarbonate
Assembly	Fixed with clamping screw				Wall mounting
Cable entry					terminal range 5 - 10 mm
Electrical connection					Terminals 2,5 mm ²
Supply voltage					12V DC internal from FA-1..
Electrical standard					EN61010
Operating temperature	- 25 °C to +180 °C (~-13 °F to 356 °F)				-25 to +60 °C (~-13 to 140 °F)
Storage temperature	- 25 °C to +70 °C (~-13 °F to 158 °F)				
System of protection	IP65 EN 60529				

(* Other mounting designs for the light guides on request.)

Separate electronic controller required for the K-FA-H pre-amplifier

Electronic controller	FA-1.1	FA-1.4
Part No. 230 V 50 / 60 Hz	02 E 7300*	02 E 7110
Part No. 115 V 50 / 60 Hz	02 E 7300*	02 E 7110 a
Part No. 24 V DC	02 E 7300 d	02 E 7110 d
Part No. 24 V AC	02 E 7300 b	02 E 7110 d

Reversing power consumption 230 V 50 / 60 Hz / 115 V 50 / 60 Hz, adjusted at works: 230 V 50 / 60 Hz
 Technical data: see data sheet 9.5: FA-1.1.., FA-1.4, K-FA

Complete flow monitoring unit FA1-H.. :

Complete flow monitoring unit	Type Part Number	FA1-H-6 02 E 4270	FA1-H-9 02 E 4273	FA1-H-12 02 E 4275
consisting of :				
Sensor FA1-H	(02 E 4001)	1 piece		
Light guide FO1, 600 mm (1.97 ft) long	(02 E 4060)	2 pieces		
Light guide FO3, 900 mm (2.95 ft) long	(02 E 4063)		2 pieces	
Light guide FO2, 1200 mm (3.94 ft) long	(02 E 4065)			2 pieces
Pre-amplifier with adapter K-FA-H	(02 E 4010)	1 piece		
Electronic controller FA-1.1 / 230 V / 115 V	(02 E 7300)	1 piece		