



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

- **Easy mounting of the sensor head at the flow meter without dismantling 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**

## Optical flow monitoring series FA<sup>®</sup>

### Version FA1-H-.. for temperatures up to 180 °C with 2 light guides for monostable functioning

#### Application

The optical flow monitoring unit with light guides is used in gas analysis on heated flowmeters with temperatures > 60 °C. 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) 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 5-6.10.2 –

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. Light guide **FO3** (900 mm long) and **FO2** (1200 mm long) can be supplied for greater length requirements.

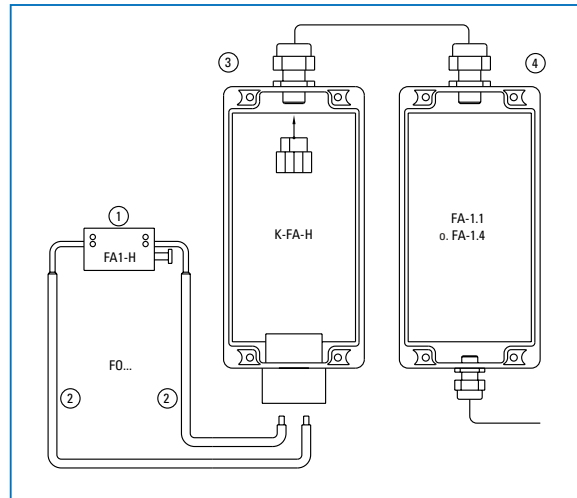
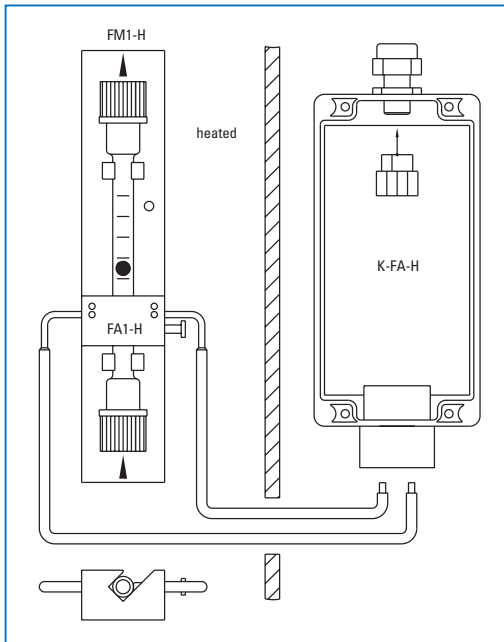
The angled light-guide ends are fixed into the **FA1-H** sensor head with one pressure screw each. Two light-guides are needed for the monostable function.

By use of the pre-amplifier **K-FA-H** a distance of 200 meters between the flow meter and the electronic controller **FA-1..** (see 5-6.10.2) 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 **F01/F02/F03** 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 F01	Light guide F03	Light guide F02	pre-amplifier K-FA-H
<b>Part Number</b>	02 E 4001	02 E 4060	02 E 4063	02 E 4065	02 E 4010
<b>Function monostable</b>	1x	2 pieces			1x
<b>Measuring tube</b>	5-14 mm				
<b>Light guide length</b>		600 mm	900 mm	1200 mm	
<b>Dimensions W x D x H</b>	24 x 40 x 24	ø 6 mm			80 x 160 x 55
<b>Weight</b>	90 g	230 g	330 g	420 g	560 g
<b>Material</b>	anodized aluminium	Glass fibre, SS 316Ti, brass-chromed			Polycarbonate
<b>Assembly</b>	Fixed with clamping screw				Wall mounting
<b>Cable entry</b>					terminal range 5mm - 10mm
<b>Electrical connection</b>					Terminals 2,5 mm <sup>2</sup>
<b>Supply voltage</b>					12V dc internal from FA-1..
<b>Electrical standard</b>					EN61010
<b>Operating temperature</b>	- 25 °C to +180 °C				-25 °C to +60 °C
<b>Storage temperature</b>	- 25 °C to +70 °C				
<b>System of protection</b>	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
<b>Part Number 230V 50/60Hz</b>	02 E 7300*	02 E 7110
<b>Part Number 115V 50/60Hz</b>	02 E 7300*	02 E 7110 a
<b>Part Number 24V dc</b>	02 E 7300 d	02 E 7110 d
<b>Part Number. 24V ac</b>	02 E 7300 b	02 E 7110 d

Reversing power consumption 230V 50/60Hz / 115V 50/60Hz, adjusted at works: 230V 50/60Hz

Technical data: see data sheet **FA-1.1.., FA-1.4, K-FA** 5-6.10.2

### 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
<b>consisting of :</b>				
<b>Sensor FA1-H</b>	(02 E 4001)	1 piece		
<b>Light guide F01, 600 mm long</b>	(02 E 4060)	2 pieces		
<b>Light guide F03, 900 mm long</b>	(02 E 4063)		2 pieces	
<b>Light guide F02, 1200 mm lang</b>	(02 E 4065)			2 pieces
<b>Pre-amplifier with adapter K-FA-H</b>	(02 E 4010)	1 piece		
<b>Electronic controller FA-1.1 / 230V/115V</b>	(02 E 7310)	1 piece		