

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

Optical Flow Monitoring Series FA®

Versions 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 dismantling the measuring glass tube**
- **Also applicable for very low flow quantities**
- **Even suitable for non-metallic or very small floats**
- **Easy adjustment of any MIN alarm set-point**

Application

The optical flow monitoring unit with light guides is used in gas analysis on heated flow meters with temperatures > 60 °C [140 °F]. The measuring glass tubes must be transparent. Thanks to optical scanning, very low flow quantities can be recorded even in the case of flow meters with non-metallic or very small (1 mm [≈ 0.04"]) floats.

When using the pre-amplifier K-FA-H, a distance of 200 meters [≈ 656.2 ft] between the flow meter and the electronic controller FA-1 [see datasheet "Electronic Controller Series FA®"] is possible without any problems.

The LED emitters' light beam passes through the FO light guides and is detected by the photo-transistor through the FM1-H flow meter measuring glass tube. As soon as the float blocks the light beam, the photo-transistor does not detect the light beam anymore. The FA-1 electronic controller analyzes this changed status accordingly.

The monostable version ensures a MIN alarm function at the lowest sensor setting position.

Description

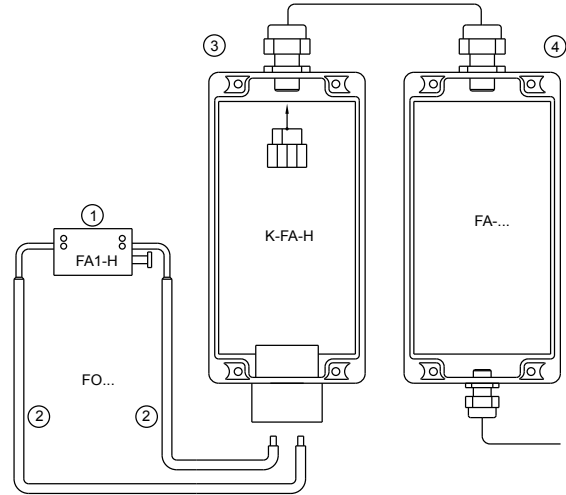
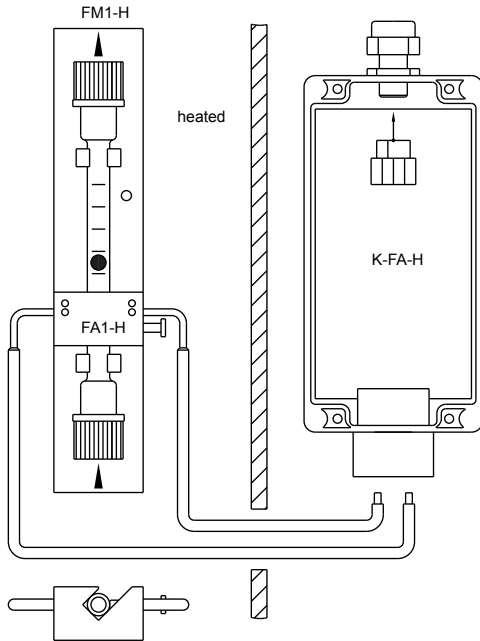
The M&C flow monitoring unit FA1-H consists of 4 sub-assembly modules:

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

– ** see data sheet "Electronic Controller Series FA®" –

The sensor head FA1-H is attached to the FM1-H flow meter by means of a pressure screw with its stationary open prism to the measuring glass tube. Assembly is simple and does not require any dismantling of the measuring glass tube. The FO1 light guide is supplied in a standard length of 600 mm [≈ 2.0 ft]. Light guide FO3 (900 mm [≈ 3.0 ft] long) and FO2 (1200 mm [≈ 3.9 ft] long) can be supplied for greater length requirements.

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



- ① 1 x sensor head FA1-H
- ② 2 x light guides FO1/FO2/FO3 for monostable function
- ③ 1 x K-FA-H pre-amplifier
- ④ 1 x 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 No.	02E4001	02E4060	02E4063	02E4065	02E4010
Function monostable	1 x	2 x			1 x
Measuring tube	5 to 14 mm [≈ 0.2" to 0.6"]				
Light guide length		600 mm [≈ 2.0 ft]	900 mm [≈ 3.0 ft]	1200 mm [≈ 3.9 ft]	
Dimensions (W x D x H)	24 x 40 x 24 [≈ 0.9" x 1.6" x 0.9"]	ø 6 mm [≈ ø 0.2"]			80 x 160 x 55 [3.2" x 6.3" x 2.2"]
Weight	90 g [≈ 0.2 lb]	230 g [≈ 0.51 lb]	330 g [≈ 0.7 lb]	420 g [≈ 0.9 lb]	560 g [≈ 1.2 lb]
Material	Anodized aluminium	Glass fiber, 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					EN 61010
Operating temperature	-25 to +180 °C [-13 to 356 °F]				-25 to +60 °C [-13 to 140 °F]
Storage temperature	-25 to +70 °C [-13 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	02E7300*	02E7110
Part No. 115 V, 50/60 Hz	02E7300*	02E7110a
Part No. 24 V DC	02E7300d	02E7110d
Part No. 24 V AC	02E7300b	02E7110d

Switchable 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 "Electronic Controller Series FA*" for information on FA-1.1..., FA-1.4, K-FA

Complete Flow Monitoring Unit FA1-H-.. :

Complete Flow Monitoring Unit	Type Part No.	FA1-H-6 02E4270	FA1-H-9 02E4273	FA1-H-12 02E4275
Consisting of :				
Sensor FA1-H	(02E4001)	1 x		
Light guide FO1, 600 mm [≈ 2.0 ft] long	(02E4060)	2 x		
Light guide FO3, 900 mm [≈ 3.0 ft] long	(02E4063)		2 x	
Light guide FO2, 1200 mm [≈ 3.94 ft] long	(02E4065)			2 x
Pre-amplifier with adapter K-FA-H	(02E4010)	1 x		
Electronic controller FA-1.1 / 230 V/115 V	(02E7300)	1 x		