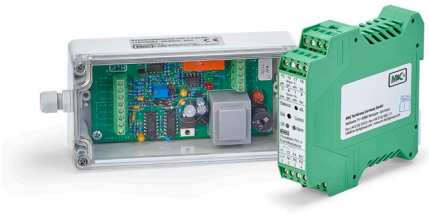

FA1.1, FA1.4

# Electronic Controller Series FA®

Versions FA-1.1, FA-1.4, K-FA
for flow monitoring sensors series FA® and for liquid alarm sensor series KS®, versions KS2, KS3

## Special Features

- **For wall- or rail-mounting**
- **3 operating modes**
- **With line-break monitoring**
- **With 1 potential-free change-over contact in "safety-first" design**
- **LEDs for displaying operational and fault status**
- **Automatic control of the LED brightness inside the optical flow alarm sensor**

## Application

The M&C electronic controllers series FA® are required for the operation of the flow monitoring sensors FA-1/2/3bi and FA1-H (see data sheets "Optical Bi-Stable Flow Alarm Sensors Series FA®" and "Optical Flow Monitoring Series FA®") as well as the liquid alarm sensors KS2 and KS3 (not KS2.Ex, KS3.Ex).

## Description

The M&C electronic controllers series FA® are available for wall- or rail-mounting.

Three operating modes are available, which are defined via the electrical connection:

- Electronic controller for flow monitoring in bistable design in combination with the forked photoelectric sensor FA-1/2/3bi.
- Electronic controller for flow monitoring in monostable design in combination with the forked photoelectric sensor FA-1/2/3bi or FA2-H.
- Electronic controller for liquid alarm sensors KS2 and KS3 or for operation in combination with the external pre-amplifiers K-FA and K-FA-H (see datasheet "Optical Flow Monitoring Series FA®"). This operation mode is used when the cable lengths between forked photoelectric sensor FA... and electronics FA-1... are more than 10 m [≈ 32.8 ft] long or when strong electrical interference signals via the sensor cable influence the evaluation.

For safe operation, line break monitoring is integrated, and for reliable alarm signalling a potential-free change-over contact in "safety-first" design is available. This contact has a switch-on and -off delay to avoid unintended alarm signals due to pulsating gas flow.

There are also two LEDs for displaying the operating and malfunction status.

The electronic controllers FA-1... are calibrated to the forked photoelectric sensors FA... and the measuring glasses of the flow meters FM-1/10/40 at the factory.

In addition, the brightness of the FA... forked photoelectric sensor is automatically controlled depending on the ambient and operating conditions (light conditions, temperature, aging of the LEDs, contamination of the measuring glass, etc.).

When operating a bistable flow monitoring system, the flow rate set by the FA... forked photoelectric sensor is detected when the flow exceeds or falls below the setpoint (MIN or MAX).

With a monostable flow monitoring system, the only thing detected is whether the float is either in the light beam of the forked photoelectric sensor FA... or above or below it.



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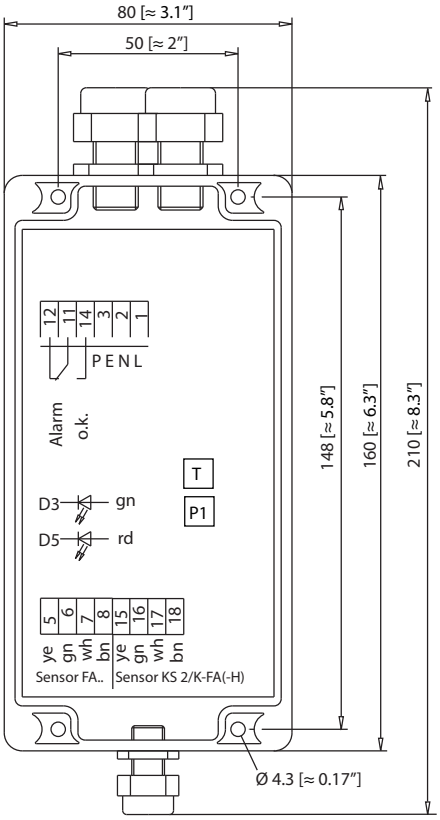
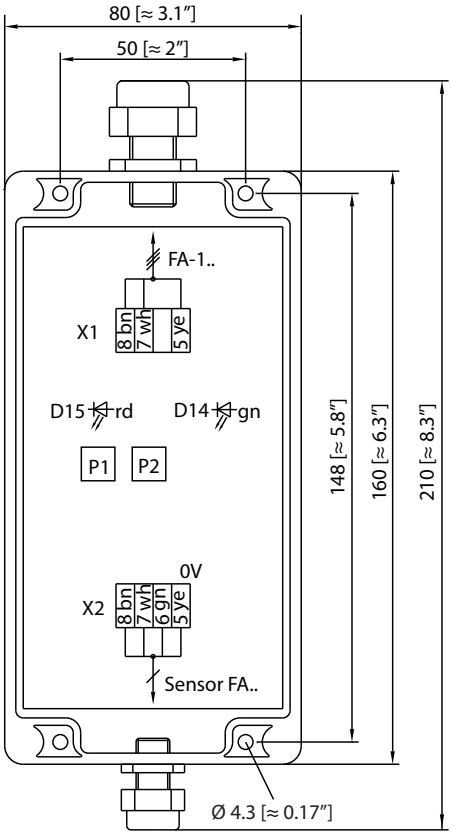
## Dimensions

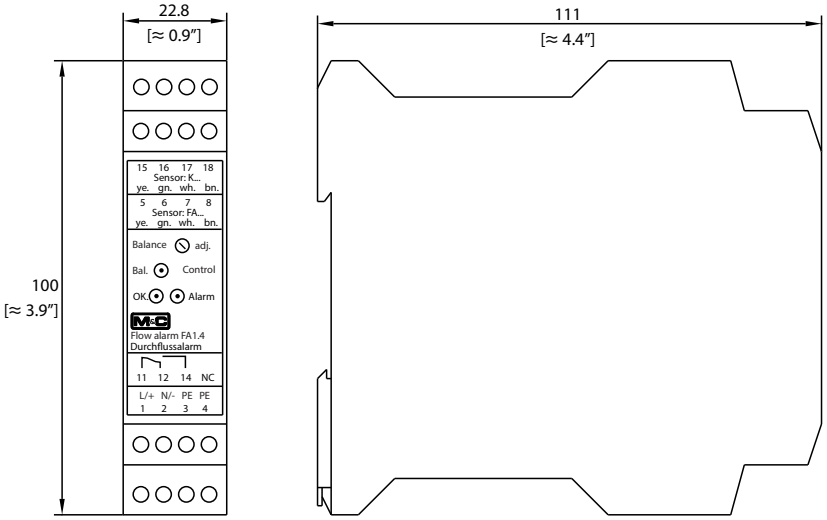
### FA-1.1 in wall-mounting housing




### Pre-amplifier K-FA




### FA-1.4 rail-mounting housing




Dimensions in mm [inches]



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## Technical Data

| Electronic Controller Type | FA-1.1 | FA1.4 | K-FA** |
|---|---|---|---|
| Part No.<br>230 V, 50/60 Hz<br>115 V, 50/60 Hz<br>24 V DC<br>24 V AC | <br>02E7300*<br>02E7300*<br>02E7300d<br>02E7300b | <br>02E7110<br>02E7110a<br>02E7110d<br>02E7110d | 02E4020 |
| Mounting | Wall-mounting housing | Rail-mounting housing<br>EN 50022 | Wall-mounting housing |
| Sensor input | 1 | | |
| Function mono-/bistable / KS2, KS3 | All, selectable by assignment | | Mono- or bistable selectable |
| Power consumption | 2 VA | 1 VA | |
| Alarm relay (MC/NC/NO)<br>contact rating | 250 V DC/AC<br>AC = 500 VA, DC = 50 W, 3 A | 250 V AC/DC<br>AC = 500 VA, DC = 45 W, 2 A | |
| Switch-on and -off delay of alarm relay | 2 s | | |
| Cable entry | 1 x clamping range 3 - 6.5 mm<br>2 x clamping range 5 - 10 mm | | 1 x clamping range 3 - 6.5 mm<br>2 x clamping range 5 - 10 mm |
| Electrical connections | Terminals max. 2.5 $mm^2$ | | |
| Sensitivity adjustment sensor FA... | After removing the lid<br>at the potentiometer | In the front side of the housing at<br>the potentiometer | |
| Distance between sensor<br>and electronic FA-... | Max. 10 m [≈ 32.8 ft] | | > 10 m [≈ 32.8 ft],<br>max. 200 m [≈ 656.2 ft] |
| Line breakage detection | Yes | | |
| Housing protection type | IP65, EN 60529 | IP20, EN 60529 | IP65, EN 60529, IP20 |
| Housing material | Polycarbonate | Polyamide | Polycarbonate |
| Ambient temperature | -25 to +60 °C [-13 to 140 °F] | | |
| Electrical standard | EN 61010 | | |
| Dimensions (H x W x D) | 55 x 80 x 160 mm<br>[≈ 2.2" x 3.1" x 6.3"] | 100 x 22.8 x 111 mm<br>[≈ 3.9" x 0.9" x 4.4"] | 55 x 80 x 160 mm<br>[≈ 2.2" x 3.1" x 6.3"] |
| Weight | 0.31 kg [≈ 0.8 lb] | 0.18 kg [≈ 0.4 lb] | 0.3 kg [≈ 0.7 lb] |

* Switchable power consumption 230 V, 50/60 Hz /115 V, 50/60 Hz, factory-set: 230 V, 50/60 Hz

** To be used in combination with electronic controller FA-1.1 or FA-1.4 if the cable length between the flow alarm sensor and the electronic controller exceeds 10 m [≈ 32.8 ft]