



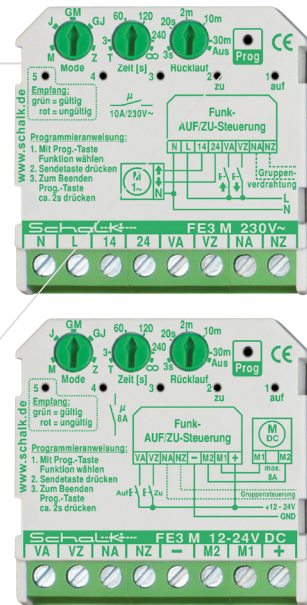
# Wireless motor controller FE3 M

with up/down (open/close) function for installation in electrical boxes (UP)  
Variants: 230V AC for AC motors, 12-24V DC for DC motors

For convenient (wireless) control of roller shutters and louver blinds, hinged shutters, skylights, smoke extractor hoods in fire protection systems, gate drives, valve controls, etc.

## Special features

- ▶ One or two button control
- ▶ Auxiliary inputs for group and central control
- ▶ Electronic pushbutton interlock  
hence normal pushbuttons can be used
- ▶ Special louver blind mode  
allows easy louver adjustment
- ▶ Automatic closing function (with adjustable time)  
with run time doubled by longer button press
- ▶ 2 differently addressed transmitters configurable  
(e.g. for single and group/central control; arbitrarily extendible with additional transmitters with the same addressing)
- ▶ Motor protection by limiting the run time
- ▶ Antenna integrated into the housing
- ▶ Functions for local, group and auxiliary inputs
- ▶ configurable
- ▶ Open air range of 50m (FV2 R repeater available)



## General information

Used with the transmitters of the FS3 series, the FE3 M wireless receiver is a universally applicable motor controller for clockwise and anti-clockwise rotation. It can be implemented as either a one-button two-button motor controller. Using the higher priority auxiliary inputs, it is possible to combine several FE3 M controllers to form group and central control systems.

The motor run time can be limited, e.g. to prevent overloading the motor in the event of mechanical jamming. A convenient, automatic and adjustable closing function prevents e.g. inadvertently leaving a skylight open. In the case of louver blind controls, the individual louvers can be exactly adjusted or automatically set to a predefined angle on switching off.

## Application

Roller shutters and louver blinds, hinged shutters, skylights, smoke extractor hoods in fire protection systems, gate drives, valve controls, etc.

## Operation

The FE3 M can be actuated wirelessly as well as by means of commercially available pushbuttons. These buttons do not require any mechanical interlock.

Briefly pressing the button on local input VA (Local Open)

or VZ (Local Close) causes the drive to begin moving in the selected direction and then stop after the preset run time (or prior to that if stopped by the limit switch integrated into the motor).

Pressing the button (on VA or VZ) again during the run time immediately stops the motor.

In the case of one-button motor control, both local inputs are actuated at the same time using just one button (by bridging VA and VZ). In this type of control system, the direction changes after each press of the button (Open-Stop-Close-Stop). By using the auxiliary inputs NA (Open) and NZ (Close), any number of drives can be opened or closed simultaneously in a defined process, regardless of their current status. When activated via an auxiliary input, the motor only runs while the actuation command from the upstream group control unit is active. If NA and NZ are active at the same time, NA has priority. While NA or NZ is active, the local inputs remain disabled.

If the FE3 M is used as a group control unit, the auxiliary inputs are not timer-controlled. This allows the subordinate control units to be maintained in a desired position for any required duration (e.g. by a wind monitor).

In the louver blind mode, the running drive is immediately stopped again after a short press of a local input button. Pressing the button for longer (>1s) then causes the drive to continue running until its end position or the end of its run

time. This mode enables the user to adjust the louvers of the blind by using short (<1s) button presses. In the case of single-button motor control, the direction of rotation of the motor is not changed if the button is pressed repeatedly in rapid succession. This feature enables louver blind louvers to be more easily adjusted.

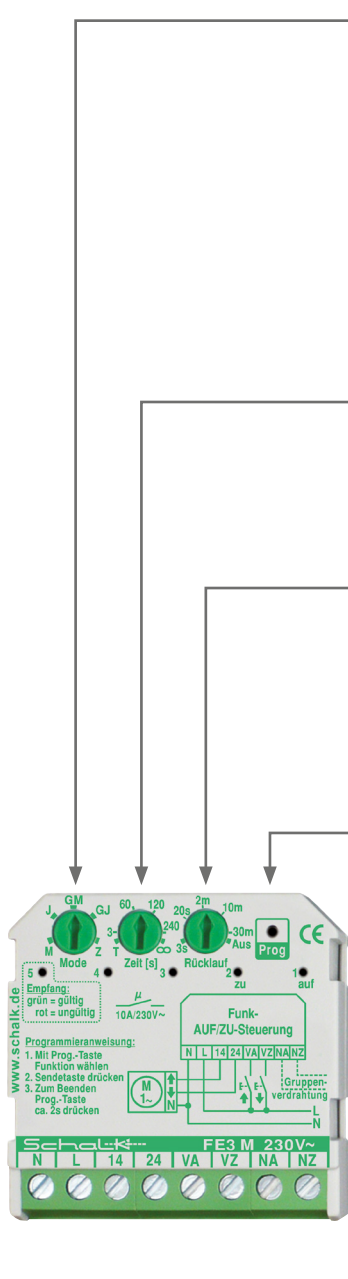
If automatic reverse is set, the drive begins to move in the closed direction after the preset reverse delay time has elapsed. If VA is activated for longer than 2s, the reverse

delay is doubled. In louver blind mode, instead of the closing function, a counter-direction pulse is set to ensure automatic positioning of the louvers after a motor stop.

The "Motor centrally controllable by pushbutton" (Z) is provided to enable simple central control in smaller systems without an upstream group control unit. In this case, the auxiliary inputs NA and NZ can be actuated by pushbuttons in the same way as the local inputs, but the auxiliary inputs have priority.

## 1. Basic configuration and installation

### 1.1 Controls and indicators for basic configuration



**„Mode“ control:**  
The operating mode is set as follows:

- M Motor control: short push for OPEN, CLOSE or STOP
- J Louvre blind control: short push for fine adjustment of the louver angle or STOP; long push for OPEN, CLOSE
- GM Group controller for motor control\* (no time control) GJ Group controller for louver blind control\* (no time control)
- Z Motor centrally controllable by pushbutton (all inputs are operated using buttons)

*\* In GM and GJ modes, the relay outputs M1 and M2 (14 and 24) are always active so long as an auxiliary input remains activated. This means that higher priority actuation (with disabling of local inputs) by sensors (e.g. wind monitor, rain sensor etc.) is possible.*

**Control „Zeit [s]“ (=time):**  
The motor run time is set as follows:

- T Pushbutton mode (motor only runs while input is actuated)
- 3...240 Motor run time in seconds
- ∞ No run time limit

**Control „Rücklauf“ (=reverse):**  
The automatic reverse/closing function is set as follows:

- In mode „M“ (motor control): Time for automatic closing function  
**3s..30min**, or **off** (function deactivated)
- In mode „J“ (louver blind control): Duration of the counter-direction pulse  
**0.1s to 1.3s** (scale does not apply here!), or **off** (function deactivated)

**Programming button „Prog“:**  
This button is used to activate/deactivate programming mode and to select the programming functions.

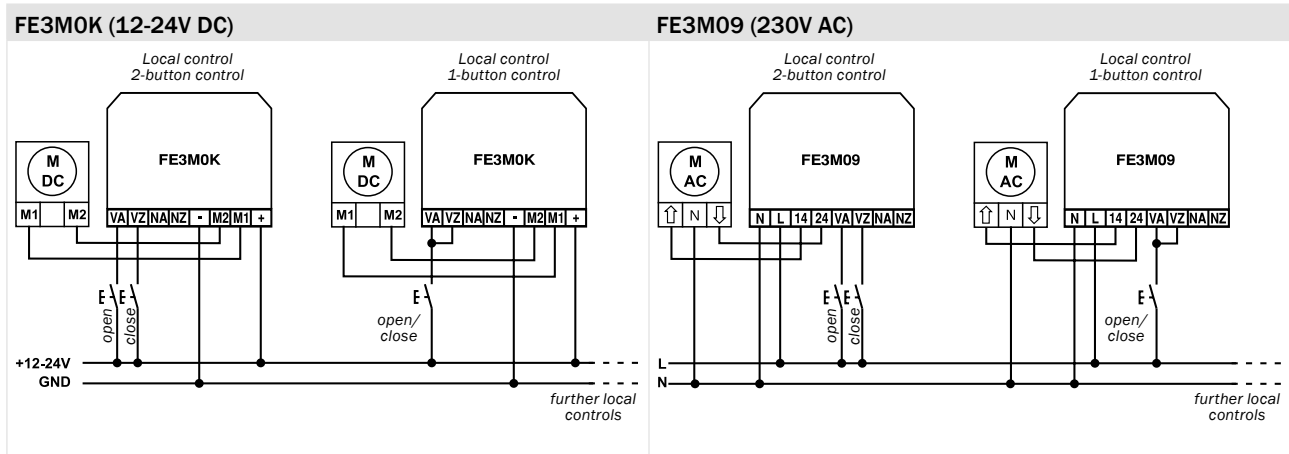
**LED's 1-5:**  
These LEDs show device status (operating state, selected function in programming mode, fault codes).

**Legend:**

- LED off
- LED glows red
- ⊕ LED flashed red
- LED glows green
- ⊕ LED flashes green
- ⊕ LED flashes alternately red/green

**Inputs:**  
VA/VZ: Local inputs for OPEN (VA) and CLOSE (VZ) push-buttons  
NA/NZ: Auxiliary inputs for central/group control inputs OPEN (NA) and CLOSE (NZ)

## 1.2 Installation: Example connection of wireless roller shutter controller



### Info

The configurable functions NA (auxiliary input OPEN) and NZ (auxiliary input CLOSE) are used for wireless transmission of long-duration switch states (e.g. wind monitors, twilight sensors, motion detectors, temperature sensors).

When used in conjunction with a time interval transmitter (FS3 U4), the FE3 M receiver continues to operate, deactivating after a 30s delay when no more signals are received from the transmitter. The N-Stop function may be used in conjunction with a changeover relay (see the connection example on the right) if the run-on time needs to be interrupted before it has fully elapsed.

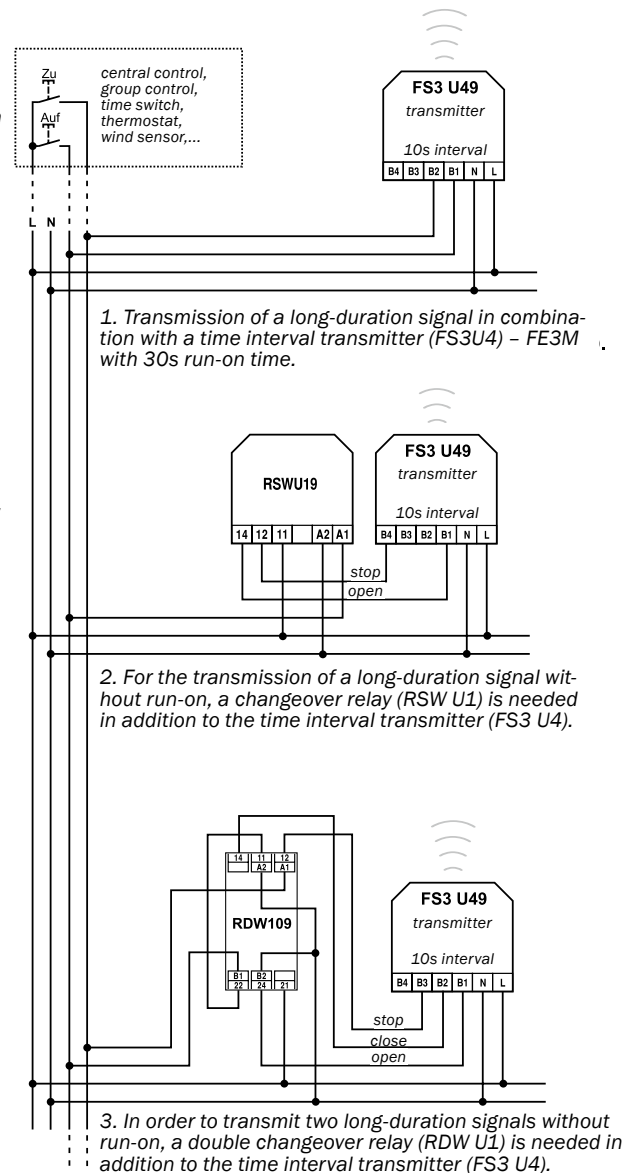
### Attention!

The supply voltage and the control voltage must be in phase!

### Information on signal range

The open air signal range is at least 50 metres. However, the radio signal may be strongly attenuated by walls, concrete ceilings, metal surfaces, bushes and damp soil. Aligning the transmitter and the receiver with one another can significantly increase the signal range.

Radio or mains interference by other electrical appliances will reduce the sensitivity of the receiver.



## 2. Programming

### 2.1 Default settings

The transmitter and the receiver are given a standard address at the factory so that the two running directions OPEN and CLOSE are available immediately after electrical connection by using buttons 1 and 2 on a handheld transmitter that also has the default settings. In programming mode, the available functions can be assigned to any of the transmitter buttons.

#### Resetting to factory defaults:

To restore the factory default settings, press and hold the Prog button for 10s. Once LEDs 5 and 1 have blinked five times (⊕○○○⊕), the procedure is finished.

If all the configured addresses / wireless transmitters are also to be deleted, keep the programming button pressed for 20s until all LEDs have blinked five times (⊕⊕⊕⊕⊕).

### 2.2 Configuring for wireless transmitters and programming functions

For a particular button on a wireless transmitter to be able to execute a desired function on the FE3 M, the device must first be configured accordingly.

#### To do this, use the following procedure:

1. Select the desired function by repeatedly pressing the programming key ("Prog") on the FE3 M (the "Configurable functions" table shows the 18 possible functions).
2. Briefly press the desired button on the transmitter, and the LEDs for the selected function will start to flash, meaning that the function has been accepted.  
*Attention: If the address is already in use, all the LEDs will light up red (●●●●●). This prevents a transmitter button from being assigned twice. Try using a different button on the transmitter, or delete this button beforehand (see below).*
3. Now either press and hold the Prog button for about 2s until all the LEDs go out to finish programming (configuration mode terminates automatically after 20s), or select another function by briefly pressing the Prog button in order to configure the device for another button on the wireless transmitter.

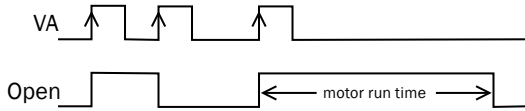
If a button for which the wireless transmitter has been configured (= address) is to be deleted, select the function that is assigned to it, and then press the Prog button for about 5s until LEDs 4, 3 and 2 (○⊕⊕⊕○) flash five times.

Table: Configurable functions

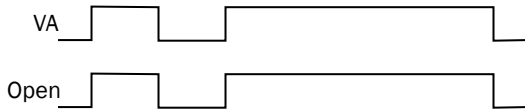
	LED display 5 4 3 2 1	Function	Description
Transmitter 1	●○○○●	<b>1: Open/Stop</b>	Local control function VA, Open/Stop
	●○○●○	<b>2: Close/Stop</b>	Local control local function VZ, Close/Stop
	●○●○○	<b>3: Open/Stop/Close/Stop</b>	One-button control, Open/Stop/Close/Stop
	●○○○●	<b>4: Open</b>	Group control, Open (not retriggerable)
	●○○●○	<b>5: Close</b>	Group control, Close (not retriggerable)
	●○●○○	<b>6: Stop</b>	Stop (does not apply to auxiliary inputs)
	●○○○●	<b>7: N-Open</b>	Auxiliary Open, 30s run-on time (only in combination with a time interval transmitter)
	●○○●○	<b>8: N-Close</b>	Auxiliary Close, 30s run-on time (only in combination with a time interval transmitter)
	●○●○○	<b>9: N-Stop</b>	Auxiliary Stop, (the Stop command only applies to N-Open and N-Close)
Transmitter 2	○●○○●	<b>10: Open/Stop</b>	Local control function VA, Open/Stop
	○●○●○	<b>11: Close/Stop</b>	Local control local function VZ, Close/Stop
	○●●○○	<b>12: Open/Stop/Close/Stop</b>	One-button control, Open/Stop/Close/Stop
	○●○○●	<b>13: Open</b>	Group control, Open (not retriggerable)
	○●○●○	<b>14: Close</b>	Group control, Close (not retriggerable)
	○●●○○	<b>15: Stop</b>	Stop (does not apply to auxiliary inputs)
	○●○○●	<b>16: N-Open</b>	Auxiliary Open, 30s run-on time (only in combination with a time interval transmitter)
	○●○●○	<b>17: N-Close</b>	Auxiliary Close, 30s run-on time (only in combination with a time interval transmitter)
	○●●○○	<b>18: N-Stop</b>	Auxiliary Stop, (the Stop command only applies to N-Open and N-Close)

## Function diagrams

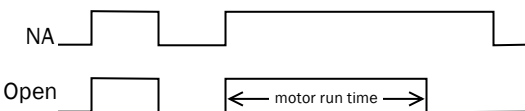
All operating modes and set motor run time:  
Local inputs are edge-triggered and timer-controlled.



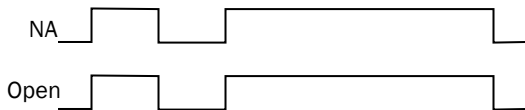
Motor run time in button mode: Local inputs are level-triggered and not timer-controlled.



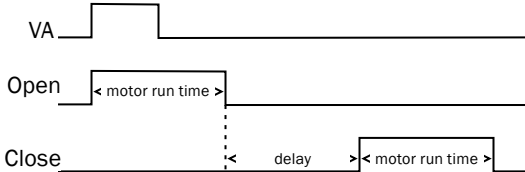
Operating modes M and J with motor run time:  
Auxiliary inputs are level-triggered and timer-controlled.



Operating modes GM and GJ or motor run time in button mode:  
Auxiliary inputs are level-triggered and not timer-controlled.

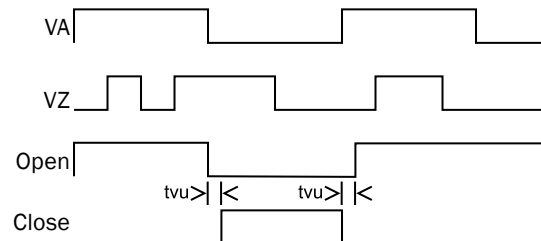


When automatic reverse is set, the reverse delay time begins at the end of the motor run time.

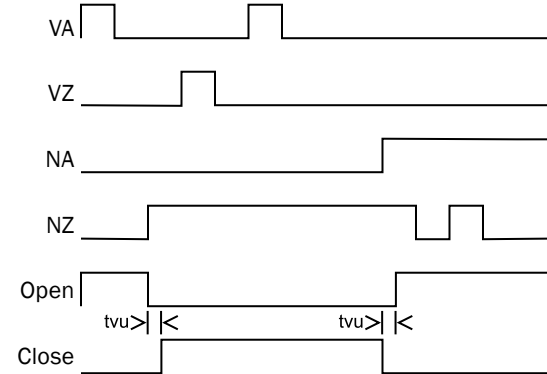


$t_{vu}$  = changeover delay (0.6s) between Open and Close to protect the motor (from mechanical stresses).

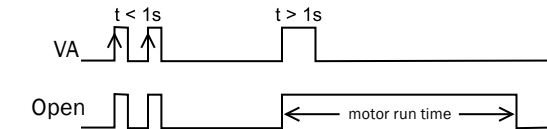
While one local button is pressed, the other local button is ignored.



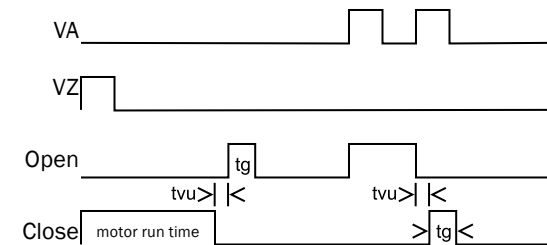
While auxiliary inputs are active, local inputs are ignored. NA has priority over NZ.



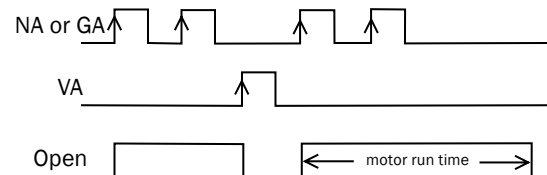
Louver blind mode: Local inputs are level-controlled for short button presses and edge-controlled for long button presses.



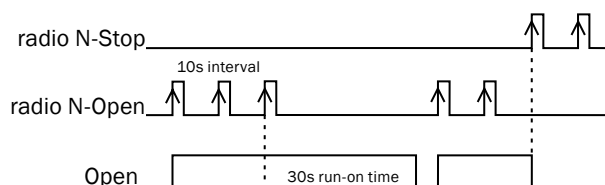
Louver blind counter-rotation (tg) set: Counter-rotation is triggered by a timeout of VZ or by a manual stop with VA or VZ.



Operating mode Z with motor run time: Auxiliary inputs are edge-triggered and timer-controlled.



The configurable functions Auxiliary-OPEN (N-Open) and Auxiliary-CLOSE (N-Close) have a fixed run-on time of 30 seconds. This run-on time can be interrupted by the Auxiliary-Stop function before it has fully elapsed if required!



## LED status display

LED display	Meaning
5 4 3 2 1	
● ○ ○ ○ ○	Valid address received
● ● ● ● ○	Invalid address received
● ○ ○ ○ ●	Configurable function selected (see Table: Configurable functions)
● ○ ○ ○ ●	Configurable function has been accepted
○ ○ ○ ● ○	Flashes rapidly: CLOSE run time is activated
○ ○ ○ ● ○	Flashes slowly: CLOSE reverse is activated
○ ○ ○ ● ○	Lit but goes out briefly: NZ is active
○ ○ ○ ● ○	Continuously lit: No CLOSE run time activated
○ ○ ○ ● ○	Flashes rapidly: OPEN run time is activated
○ ○ ○ ● ○	Flashes slowly: OPEN reverse is activated Lit
○ ○ ○ ● ○	but goes out briefly: NA is active
○ ○ ○ ● ○	Continuously lit: No OPEN run time activated
● ○ ○ ○ ●	Flash 5 times: Default settings have been restored
○ ● ○ ● ○	Flash 5 times: Selected addresses have been deleted
● ● ○ ● ○	Flash 5 times: All addresses have been deleted
● ● ● ● ●	If all the LEDs light up red during configuration, the device was not configured for the currently selected transmitter button because that button is already present.

## Technical data

Supply voltage for FE3M09	230V 50/60Hz ±10%
Relay voltage for FE3M09	10A 250V AC
Supply voltage for FE3M0K	12-24V DC ±10%
Relay voltage for FE3M0K	12-24V DC max. 8A
Received signal	433,92 MHz OOK PWM
Actuation voltage	Same as supply voltage
Power consumption	Active 0,75W / Passive 0,25W
Run time	3-240s
Automatic reverse time	3s-30min
Counter-direction pulse	0.1-1.3s
Relay changeover delay	0.6s
Ambient temperature	-10°C to +45°C
Connections	Socket terminals with captive screws M3
Clamping range	0.5 mm <sup>2</sup> - 2.5 mm <sup>2</sup>
Strip length	6.5 mm - 7.0 mm
Screwing torque	0.50 Nm
Outside dimensions	43x43x18.5mm <sup>3</sup>
Weight	35g
RAL colour	Grey 7035 / Green 6029

## Order data

Item no.	EAN	Type	Item designation
FE3M09	4 046929 101318	FE3 M (230V AC)	Wireless OPEN/CLOSE controller 230V AC (UP), with additional wired external control inputs VA/VZ, NA/NZ
FE3M0K	4 046929 101325	FE3 M (12-24V DC)	Wireless OPEN/CLOSE controller 12-24V DC (UP), with additional wired external control inputs VA/VZ, NA/NZ

Compatible devices: FE3 / FD3 / FS3 series radio transceiver, FV2 R radio repeater

### Info

Also available as a variant without wireless control; see UMS U5 and DMS U5