

## **10A Multi-Function Actuator**

**Ver1.1**

MX2410

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## **1 Summary**

This manual provides you with detailed technical information of the 10A series multifunctional actuator, including installation and programming details, and explains how to use the 10A series multifunctional actuator based on practical examples. The multi-functional actuator is a modular installation device. In order to facilitate installation in the distribution box, it is designed according to EN60715 and can be installed on a 35 mm D rail. The device uses screw terminals to realize electrical connection, and the bus connection is directly connected through EIB terminals. , the system power supply does not require an additional power supply voltage other than the bus.

The multi-function actuator is a multi-output module that integrates multiple output functions, including switch output, curtain DC/AC output, fan output and valve output. The functions of this module can be freely configured according to the needs, such as a part of the output is used to control the switch, a part of the output is used to control the curtain, and a part of the output is used to control the fan, etc.

Installed together with other loads via EIB/ KNX bus to become a system.

Set up and operate the entire system using the engineering design tool software ETS

## **2 Product and Feature Overview**

The 10A series multifunctional actuator is a modular installation device, which is a multi-channel output module and integrates a variety of output functions. Connect to the EIB / KNX system through the EIB bus terminals, and use the engineering design tool software ETS software (version ETS4.0 or above) to assign physical addresses and set parameters.

The maximum load current output by the multifunctional actuator is 10A. One relay in the device represents one output, a total of 24 outputs. Some functions may require multiple outputs. For example, one curtain AC output requires two relay outputs, one the relay is used to control the forward rotation, one is used to control the reverse rotation, and the ordinary switch output needs to occupy one relay output. Therefore, in the process of engineering application, select products according to actual needs.

Each circuit of the multifunctional actuator can independently control the switch of 2000W lamps. The above is only for resistive load lamps. In actual use, it is more appropriate to drive resistive loads at 80% of the power. For inductive loads and capacitive loads, especially in the case of multiple lamps connected in parallel, the load that can be carried will decrease. Although the power remains unchanged, the instantaneous impact current will increase, which will easily melt the relay contacts. Therefore, for inductive for load and capacitive load, it is generally appropriate to use 1/5 or 1/6 of the maximum current, and even some inferior LED lamp loads need to use 1/8 of the maximum current.

The multi-functional actuator is equipped with manual control buttons, among which the LED indicates the switch status of each circuit, which can be more convenient for engineering debugging. In addition, the multi-functional actuator also has 4 dry contact input interfaces, and the communication distance of dry contact (I/O) wiring is less than 10m.

**The features are outlined below:**

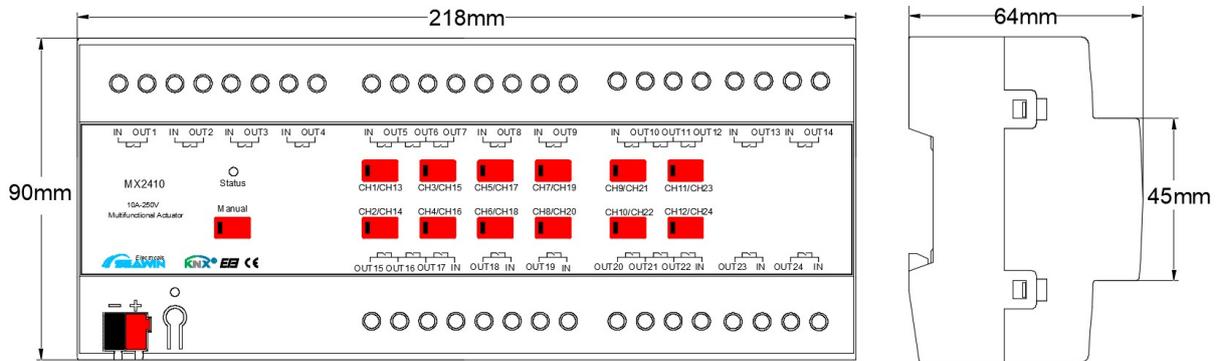
<b>Switch output</b>	<b>FCA output</b>	<b>Curtain Output</b>
(1) Independently control 24 loop lamps/loads; (2) With manual switch control; (3) With relay magnetic latching function; (4) With delay on/off function; (5) It has the function of timing off and cycle switch; (6) With on-site save and restore functions; (7) It has the function of status value query and reply; (8) It has scene combination control and scene learning functions; (9) With logic operation function; (10) With interlocking group function and channel lock function; (11) It has the function of recording the number of relay operations; (12) It has the function of selecting the relay switch state after bus power failure and voltage recovery; (13) It has an I/O dry contact input interface, which can input control commands such as switches, curtains, dimming, and scenes, and can directly link fire emergency lighting;	(1) With 4 independent outputs; (2) With manual switch control; (3) With relay magnetic latching function; (4) With delay on/off function; (5) Control the 4-control and 2-control fan coil units; (6) It can output heating and cooling according to automatic or manual control, and has the interlock function of heating and cooling; (7) According to the automatic or manual control of high, medium and low wind speed, it has the function of wind speed interlocking; (8) Selection function of relay switching state after bus power failure and voltage recovery; (9) The local wind speed and valve status can be reported; (10) It has an I/O dry contact input interface, which can input control commands such as switches, curtains, dimming, and scenes, and can directly link fire emergency lighting;	(1) With 12 independent outputs; (2) With manual switch control; (3) Scene combination control function can be set; (4) With on-site save and restore functions; (5) Status value query and reply function; (6) The selection function of the relay switch state after the bus voltage is restored; (7) It is possible to set the time interval to cycle open or close; (8) It has an I/O dry contact input interface, which can input control commands such as switches, curtains, dimming, and scenes, and can directly link fire emergency lighting; (9) Scope of use: opening and closing curtains, projection screens, venetian blinds, rolling shutters, lifters, etc.;

### 3 Specification

Bus voltage	21-30 VDC via KNX bus
Quiescent current	≤ 12mA
Charging current	≤ 20mA
Static power consumption	≤360mW
Charging power consumption	≤ 600mW
Main Output	24 channel, Each channel 250VAC (50/60Hz) , Max 10A (resistive load)
Dimension (Lx W x H)	218mm x 90mm x 64mm
Weight (approx.)	0.74KG
Shell material	PA66
Installation method	DIN rail installation
Working temperature	-5°C...+45°C
Stock temperature	-25°C...+55°C
Transport temperature	-25°C...+70°C
Relative humidity	max 90%

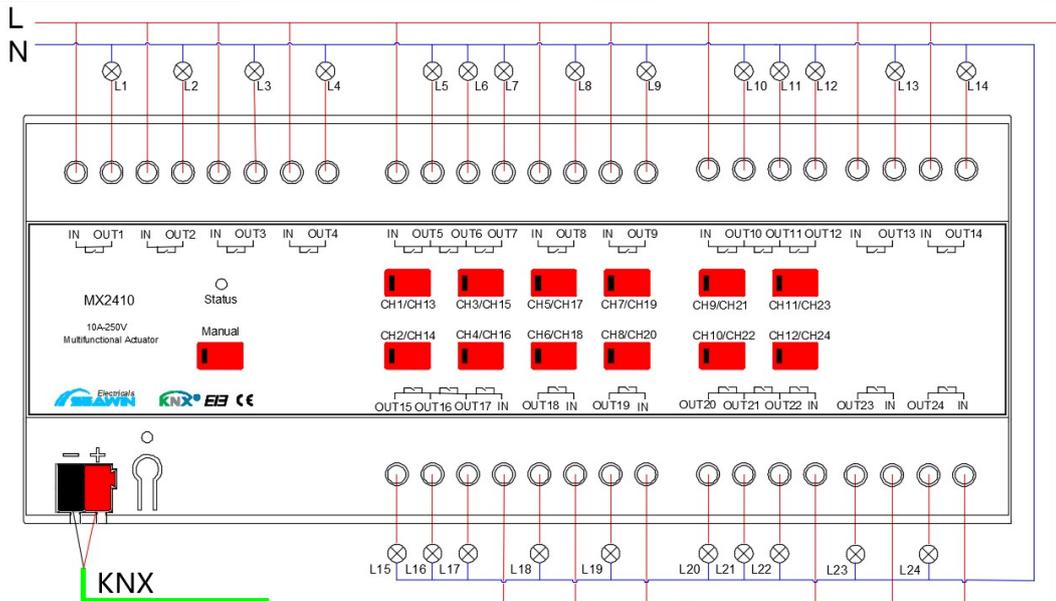
### 4 Dimensional drawings and wiring diagrams

#### 4.1 Dimension



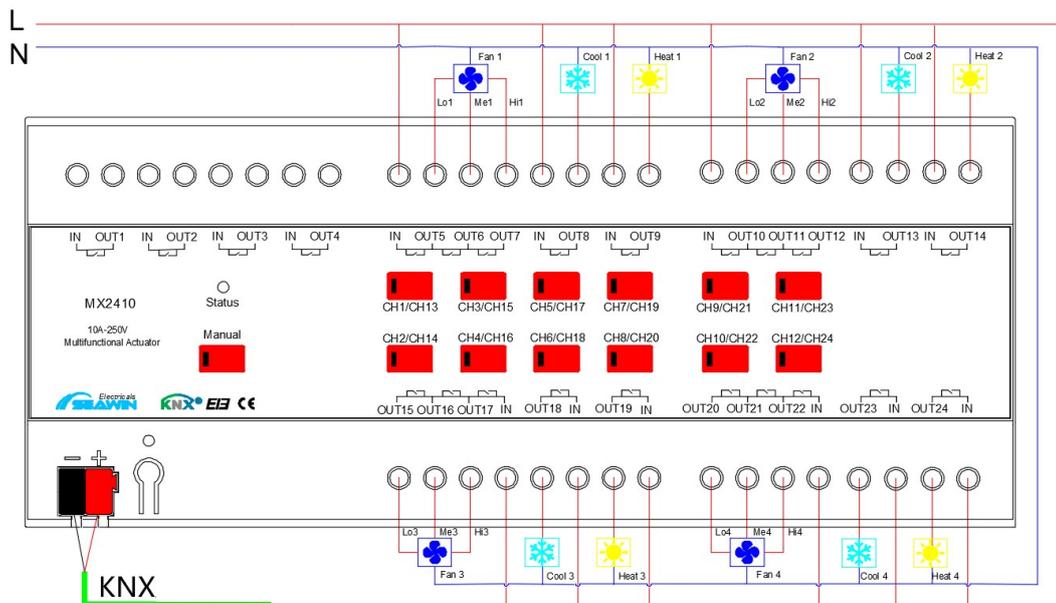
#### 4.2 Wiring diagrams

##### 4.2.1 Switch output



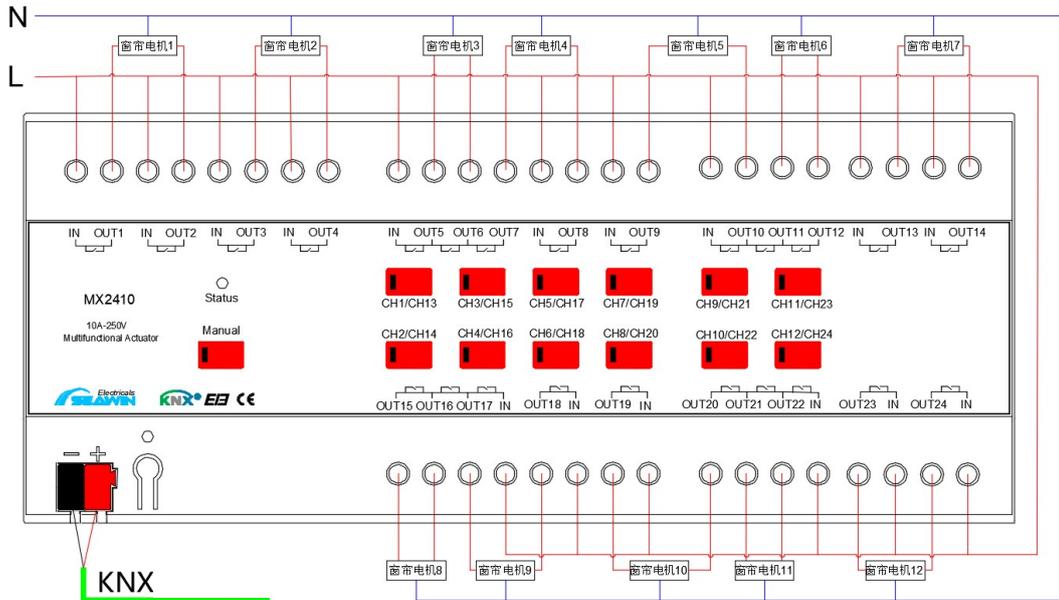
Switch output wiring diagram

**4.2.2 FCA output**



FCA wiring diagram

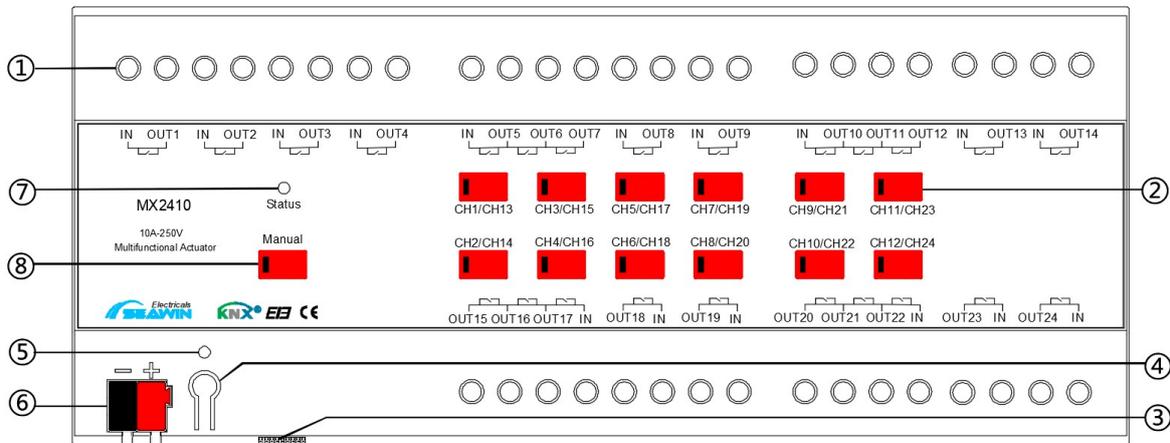
**4.2.3 Curtain Output**



Curtain wiring output

## 5 Product Operating Instructions

### 5.1 MX2410



- ①Description: Relay output terminals: one in and one out, the aperture can be connected to  $\varphi 4$  wires;
- ②Description: Each circuit control button, manual operation, short press the button, the circuit relay will do the reverse operation (when the relay is closed, the indicator light on the button is on, and the indicator light is off when it is disconnected);
- ③Description: Dry contact input terminals;
- ④Description: programming button, short press the button to enter programming mode;
- ⑤Description: Programming indicator light, when the indicator light is red, the device is in the programming state, when the device is programmed or working normally, the indicator light is off;
- ⑥Description: KNX terminal block, KNX bus connection, the red line is connected to "+", and the black line is connected

to "-";

⑦Note: Status is the status indicator of the device power supply. When the indicator is green, the bus power supply status of the device is normal;

⑧Explanation: Manual is the circuit switching button. Press the button shortly, and the indicator light on the button can switch to red and orange. When the indicator light on the button is red, it can control the CH1~CH12 circuit; when the button on the button When the indicator light is switched to orange, it can control the CH13-CH24 circuit;

## 6 Safe use and maintenance

- (1) Read all instructions carefully before use.
- (2) To establish a good ventilation environment.
- (3) During use, pay attention to moisture-proof, shock-proof and dust-proof.
- (4) It is strictly forbidden to rain, contact with other liquids or corrosive gases.
- (5) If it is damp or attacked by liquid, it should be dried in time.
- (6) When the machine breaks down, please contact professional maintenance personnel or our company.

## 7 Contact

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