Eltako
ELECTRONICS

CE

Wireless actuator

Master universal dimmer switch FMD70-230V

Master universal dimmer switch, power MOSFET up to 400W. Automatic lamp detection. Standby loss only 0.7W. Minimum brightness settable. With children's room and sleep timer circuits. Also with light scene control or constant light control.

Installation in 230V main connecting wire, for example in suspended ceilings.

100mm long, 50mm wide and 31mm deep.

Universal dimmer switch for R, L and C loads up to 400W dependent on ventilation conditions. Dimmable energy saving lamps (ESL) and dimmable 230V LED lamps are also dependent on the lamp electronics.

Switching in zero crossing with soft ON and soft OFF to preserve bulbs.

Switching voltage 230V.
No minimum load required.

This dimmer switch is controlled by wireless buttons FT and FFT, the wireless hand-held transmitter on the side FHS and FMH and the remote controls FF8 and UFB.
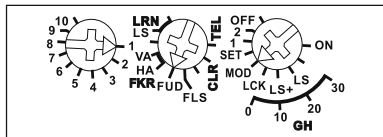
The brightness level setting is stored to memory when it is switched off.

If there is a power failure, the switch position and brightness level are saved. The device can also be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature shutdown.

The master universal dimmer switch FMD70-230V can control any number of slave universal dimmer switches FSD70-230 V by automatic wireless telegrams. The lamps with identical dimming levels can then be increased to any number.

Function rotary switches

The left rotary switch on the side is required first for teach-in and then in FLS mode defines the number of sequential light scenes:

The middle rotary switch on the side is required first for teach-in and then in service selects the FUD mode (universal dimmer switch). FLS (light scene control) or FKR (constant light control: fully automatic VA or semiautomatic HA).

The right rotary switch is set to MOD in FUD mode. In all other modes, additional functions can be selected as described in the operator manual.

The wireless buttons can be taught-in either as direction buttons or universal buttons:

In direction button function, one side is then 'switch on and dim up' and the other side is 'switch off and dim down'. Double-click on the ON side to trigger automatic dim-up to full brightness. A double-click on the OFF side triggers the sleep timer. The children's room circuit is triggered on the ON side.

In universal button function, the direction is reversed by briefly releasing the button. With children's room circuit and sleep timer.

Switching operation for children's rooms (universal switch or direction switch on the switch-on side): If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down. The last saved brightness level is not modified.

Snooze function (universal switch or direction switch on the switch-off side): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down.

Light scenes on the PC are set and retrieved using the Wireless Visualisation and Control Software FVS. A description of the FVS is at "eltako-wireless.com". One or several FMD70 devices must be taught in on the PC as dimming switches with percentage brightness values.

The LEDs on the side below the left rotary switch accompany the teach-in process as described in the Operator Manual and indicate the commands in operation by lighting up briefly.

Teaching-in wireless sensors in wireless actuators

All sensors must be taught-in in the actuators so that they can detect and execute commands.

Teaching-in actuator FMD70-230V

⚠ Before starting the teach-in process, connect the device and plug in the power supply unit.

The teach-in memory is empty on delivery from the factory. If you are unsure whether the teach-in memory contains something or not, **you must first clear the memory contents completely:**

Set the middle rotary switch to CLR. The LED flashes at a high rate. Within the next 10 seconds, turn the left rotary switch three times to the right stop (turn clockwise) and then turn back away from the stop. The LED stops flashing and goes out after 2 seconds. All taught-in sensors are cleared.

Clear individual taught-in sensors in the same way as in the teach-in procedure, except that you set the middle rotary switch to CLR instead of LRN, and operate the sensor. The LED previously flashing at a high rate goes out.

Teach in FMD70 (Master) in all FSD70s (Slave):

1. Turn the middle rotary switch on the FSD70 to AUTO.
2. Turn the middle rotary switch on the FMD70 to TEL (left stop).
3. Switch on the supply voltages to all devices at the same time.
   The green LED on the FMD70 lights up. After 2 seconds a teach-in telegram is sent automatically.
   The red LED on the FSD70 flashes and goes out after 2 seconds. Its green LED lights up briefly as confirmation.
4. Turn the middle rotary switch on the FMD70 to the required operating mode.

FUD operating mode:
Teach in sensors in FMD70 (FUD)

1. Setting of the left rotary switch to the desired teaching-in function:
   1 = Teach in universal button;
   2 = Teach in 'Central control button OFF';
   3 = Teach in direct light scene button;
   4 = Teach in 'Central control button ON';
   5 = Teach in direction button;
   When pressed, one rocker is fully taught-in automatically. Where the button is pressed is then defined for switch-on and the other side is then the switch-off side.
   6 = Teach in synchronisation button;

When a PC is taught in using FVS (Wireless Visualisation Software), no teach-in position need be considered.

2. Set the middle rotary switch to LRN. The LED flashes at a low rate.
3. Operate the sensor which should be taught-in. The LED goes out.

To teach-in further sensors, turn the middle rotary switch briefly away from position LRN. Continue the procedure from pos 1. After teach-in, turn the middle rotary switch to FUD and the right rotary switch to MOD.

Save light scenes:
Up to four brightness values can be saved and retrieved by a direct light scene button (button with double rocker, top left = light scene 1, top right = light scene 2, bottom left = light scene 3 and bottom right = light scene 4).

1. Set the required brightness value using a previously taught-in universal button or direction button.
2. Within 60 seconds, press one of the four rockers on the previously taught-in direct light scene buttons for 3 to 5 seconds to save this brightness value.
3. Repeat from point 2 to save further directly retrievable light scenes.

Retrieve the light scene you require by pressing a button briefly.

FLS operating mode:
Teach in sensors in FMD70 (FLS):

1. Turn the left rotary switch to the required teach-in function:
   6 = Teach in synchronisation button
   7 = Teach in FBH
   8 = Teach in direction button (teach-in button)
   When you press a button, a rocker is fully taught-in automatically. Where the button is pressed is then defined for switch-on and the other side is then the switch-off side.
   9 = Teach in sequential light scene button: When a PC is taught in using FVS (Wireless Visualisation Software), no teach-in position need be considered.

2. Set the middle rotary switch to LRN. The LED flashes at a low rate.
3. Operate the sensor which should be taught-in. The LED goes out.

To teach-in further sensors, turn the middle rotary switch briefly away from position LRN. Continue the procedure from pos 1. After teach-in, turn the middle rotary switch to FLS and turn the left rotary switch to the number of taught-in sequential light scenes.

You can influence automatic mode using the right rotary switch:

ON = Light on at full brightness.

LS = Light scenes are only retrievable and can not be changed.

LS+ = Light scenes are retrievable and can only be changed temporarily using the "Teach in button".

OFF = Light off.

Save sequentially retrievable light scenes:

You can save up to 10 light scenes.

1. Turn the middle rotary switch to FLS.
2. Turn the right rotary switch to MOD.
3. Turn the left rotary switch to the required light scene position (1 to 10).
4. Set the required brightness using a previously taught-in direction button (teach in button) or switch off if this FMD70 is supposed to be off in the required light scene.
5. Turn the right rotary switch to SET. The LED lights up for 2 seconds.

To save other light scenes, repeat from point 2.

Save directly retrievable light scenes:

1. Turn the right rotary switch to LS+.
2. Turn the middle rotary switch to FLS.
3. The position of the left rotary switch need not be considered.
4. Set the required brightness using a previously taught-in direction button (teach in button) or switch off if this FMD70 is supposed to be off in the required light scene.
5. Turn the middle rotary switch to LS-LRN. The LED flashes at a low rate.
6. Press the required light scene button. The LED goes out

To save other light scenes, repeat from point 2.

Motion detection with taught-in wireless motion detector FBH:

The light switches off automatically after 15 minutes if no motion is detected.

The FBH does not switch on if motion is detected. The light can only be switched on manually.

<u>**FKR operating mode:**</u>

The FMD70 receives its information from one or several wireless sensors FAH or FBH and then controls the output or turns the light on or off. Since light bulbs and halogen lamps radiate a high proportion of infrared just as daylight, these lamps can only be controlled by a brightness sensor fitted outside the building using the wireless outdoor brightness sensor FAH as master. Motion is detected inside a room by an FBH as slave. By contrast, dimmable energy saving lamps and LEDs

only require one FBH per room to control brightness and detect motion.

Automatic mode can be overridden by a wireless button or hand-held wireless transmitter to dim down the light for a beamer presentation to a preset value, for example.

Only one FBH or FAH can be taught-in as master and it is then responsible for constant light control. Several FBH devices can be taught-in as slaves. As long as one of the motion sensors detects motion, the required lighting remains on. Only when all FBH devices detect no activity for 1 minute long is the light switched off automatically after 15 minutes.

To teach in wireless buttons and hand-held wireless transmitters, one rocker is taught in as direction button. Press lower rocker to switch the light off. Press upper or lower rocker to dim up or dim down. The automatic control then shifts the direction to brighter or darker. Double-click the lower rocker to dim to the set value 'Beamer presentation'. When the light is switched off and you press the upper rocker for longer, the light dims up from the lowest brightness level until you release the rocker. Automatic control is reset when the light is switched off automatically or by double-clicking on the upper direction button. The beamer brightness can also be taught-in to an additional universal button. The 'Central control button ON' switches the light on at the brightness defined by the FBH or FAH. 'Central control button OFF' switches the light off.

A **synchronisation button** switches all FSD70s back to slave mode.

Teach in sensors in FMD70 (FKR):

1. Setting of the left rotary switch to the desired teaching-in function:

    1 = Teach in universal button to retrieve brightness for beam presentation

    2 = Teach in 'Central control button OFF'

    4 = 'Teach in 'Central control button ON'

    5 = Teach in direction button

    When you press a button, a rocker is fully taught-in automatically. Where the button is pressed is then defined for switch-on and the other side is then the switch-off side.

    6 = Teach in master FBH or FAH and synchronisation button

    7 = Teach in slave FBH

    When a PC is taught in using FVS (Wireless Visualisation Software), no teach-in position need be considered.

2. Set the middle rotary switch to LRN. The LED flashes at a low rate.

3. Operate the sensor which should be taught-in. The LED goes out.

To teach-in further sensors, turn the middle rotary switch briefly away from position LRN. Continue the procedure from pos 1.

After teaching in the middle rotary switch to FKR VA: set to fully automatic (switch on/off brightness and motion controlled); or to FKR HA: semiautomatic (only switch off brightness and motion controlled).

Use the right rotary switch and the left rotary switch together to set the basic brightness (GH) dependent on room usage. The setting parameters and then added. The lowest settable value is therefore 1 (0+1), the higher value is 40 (30+10). The standard setting is about 21.

Teach in brightness for beamer presentation on the FMD70:

1. Turn the left rotary switch to 10.
2. Turn the right rotary switch to 1.
3. Turn the middle rotary switch to FKR VA.
4. Set the required brightness using the previously taught-in direction button.
5. Turn the middle rotary switch to LRN -> LED lights up for 2 s.

Teach in minimum brightness for all operating modes on the FMD70:

1. Turn the left rotary switch to 10.
2. Turn the right rotary switch to 2.
3. Turn the middle rotary switch to FKR VA.
4. Set the required brightness using a previously taught-in direction button.
5. Turn the middle rotary switch to LRN. The red LED under the left rotary switch lights up for 2 seconds.

The **synchronisation button** switches all FSD70s back to slave mode in all operating modes.

⚠ When an actuator is ready for teach-in (the LED flashes at a low rate), the very next incoming signal is taught-in. Therefore, make absolutely sure that you do not activate any other sensors during the teach-in phase.

Important note!

Only skilled electricians may install this electrical equipment otherwise there is the risk of fire or electric shock.