

Fully electronic multifunction time relay MFZ12PMD-UC with 18 functions

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

Temperature at mounting location:
-20°C up to +50°C.
Storage temperature: -25°C up to +70°C.
Relative humidity:
annual average value <75%.

Power MOSFET with almost unlimited number of circuits up to 400 W. Automatic lamp detection. Standby loss 0.3 watt only. Dim down to minimum brightness and up to maximum brightness and Soft ON / soft OFF are also adjustable for lamp circuit.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. Digital settable and fully electronic multifunction time relay for lamps up to 400 W depending on the ventilation conditions. Dimmable energy saving lamps and dimmable 230 V LED lamps are also dependent on the lamps electronics.

If **minimum brightness** is not set to 0, the circuit is not switched off but dimmed down to the set percentage.

Up to 3600 W with capacity enhancers LUD12-230V at the terminals X1 and X2.

Universal control voltage 12 to 230 V UC and additionally the universal voltage control inputs 8 to 230 V UC central ON and central OFF. The control inputs are electrically isolated from the supply voltage and switching voltage.

Zero passage switching to protect lamps.

Glow lamp current up to 5 mA starting at 110 V. Automatic electronic overload protection and over-temperature switch-off.

Enter both the functions and the times using the two buttons MODE and SET. The functions and times are indicated digitally on an LC display. The time can be set by entering all values within the preselected time scale (0.1

to 9.9 or 1 to 99 seconds, minutes or hours). The longest time is 99 hours. This permits 600 time settings. The time(s) entered is (are) permanently displayed digitally.

Settable functions

RV = release delay
AV = operate delay
AV+ = additive operate delay
TI = clock generator starting with impulse
TP = clock generator starting with pause
IA = impulse-controlled operate delay
IF = pulse shaper
EW = fleeting NO contact
AW = fleeting NC contact
EAW = fleeting NO contact and fleeting NC contact

ARV = operate and release delay
ARV+ = additive operate and release delay
ES = impulse switch
SRV = release-delay impulse switch
ESV = impulse switch with release delay and switch-off early-warning function

ER = relay
ON = permanent ON
OFF = permanent OFF

With TI, TP, IA, EAW, ARV and ARV+ functions, a different second time can be entered also with different time ranges.

Setting the times and functions: The LCD component to be changed is selected by pressing the MODE key. The component accessed flashes. Press the SET key to change the component accessed. This may be the function, the time ranges, time T1 or time T2 (on TI, TP, IA, EAW, ARV and ARV+ only). Pressing the MODE key terminates each input. Once the time has been set with MODE, no more components are flashing. The timing relay is now ready to operate. Press the MODE key again to restart the input cycle. All the entered parameters are retained if they are not changed using SET. 25 sec. after the last operation and if the component still flashes the input cycle is automatically terminated and the previously made changes lapse.

Setting additional parameters valid for all functions: when you press the MODE button for longer than 2 seconds, you access the

sub menu. Press the SET button to select the parameter you want to change. Then confirm by pressing MODE. Press SET to enter the parameter and confirm by pressing MODE. After the 'LED' submenu, you return automatically to the main menu.

MIN = Minimum brightness in OFF state settable to 0 and from 10 to 89 (%), factory setting = 0.

MAX = Maximal brightness in ON state settable from 10 to 99 (%), factory setting = 99. MAX must be at least 10 divisions above MIN.

RMP = Switch ON/OFF ramp (soft ON and soft ON) adjustable from 0 = 10ms to 99 = 1s, factory setting = 0.

LED = LED + for dimmable 230V LED lamps which are not being dimmed down enough when set to automatic mode (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle, must be activated via MODE key, factory setting = LED without +.

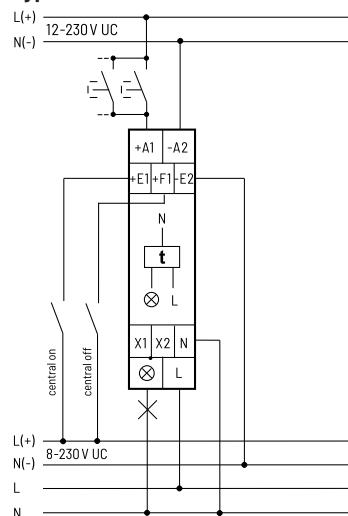
Functions of the LC display:

if you selected the functions ON or OFF, no time is displayed. Instead an arrow indicates either ON or OFF. In all other functions the set time(s), the function abbreviation and an arrow next to ON and OFF display the switching position. The clock symbol flashes while the set time is elapsing and the remaining time is shown.

Safety in the event of a power failure:

The set parameters are stored in an EEPROM and are therefore immediately available again when the power supply is restored after a power failure.

Typical connection



Description of functions

RV A1-A2 ⊗

AV A1-A2 ⊗

AV+ = Function same as AV. However, after an interruption the elapsed time is stored.

TI A1-A2 ⊗

TP A1-A2 ⊗

IA A1-A2 ⊗

IF A1-A2 ⊗

EW A1-A2 ⊗

AW A1-A2 ⊗

EAW A1-A2 ⊗

ARV A1-A2 ⊗

ARV+ = Same function as ARV, but after an interruption of the operate delay the elapsed time is stored.

ES = with control impulses from 50 ms it is switched on and off.

SRV = with control impulses from 50 ms it is switched on and off. In on position it will be automatically switched off after delay time has elapsed.

ESV = Function same as SRV. Additionally with switch-off early warning: approx. 30 sec. before time-out the lighting starts flickering 3 times at gradually shorter time intervals.

ER = As long as the control contact is closed, it is switched on.

Program flow chart MFZ12PMD-UC:



The strain relief clamps of the terminals must be closed, that means the screws must be tightened for testing the function of the device. The terminals are open ex works.

Technical data

Incandescent and halogen lamps 230 V (R)	up to 400 W ¹⁾
Inductive trans-formers (L)	up to 400 W ¹⁾²⁾³⁾
Electronic trans-formers (C)	up to 400 W ¹⁾³⁾
Dimmable energy saving lamps ESL	up to 400 W ⁵⁾
Dimmable LEDs	up to 400 W ⁵⁾
Max./min. temperature at mounting location	+50°C/-20°C ⁴⁾
Standby loss (activ power)	0,3 W

¹⁾ At a load of more than 50% ventilation clearance of 1/2 module to adjacent devices must be maintained. For capacity enhancement with **LUD12-230V**, the LUD12-230V has to be set to the operating mode **capacity enhancement for one light** (⚙️).

²⁾ Per dimmer it is only allowed to use max. 2 inductive (wound) transformers of the same type, furthermore no-load operation on the secondary part is not permitted. The dimmer might be destroyed. Therefore do not permit load breaking on the secondary part.

³⁾ **When calculating the load a loss of 20% for inductive (wound) transformers and a loss of 5% for capacitive (electronic) trans formers must be considered in addition to the lamp load.**
Mixing of L loads (inductive loads, e.g. wound trans formers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incan descent lamps and halogen lamps) may be added anytime.

⁴⁾ Affects the max. switching capacity.

⁵⁾ Usually applies for dimmable energy saving lamps ESL and dimmable 230 V LED lamps. Due to differences in the lamps electronics, there may be limited dimming range, switch on and off problems dependent on the manufacturer and a restriction on the maximum number of lamps; especially if the connected load is very low (for 5 W-LEDs). The setting LED+ only gives a maximum power up to 100 W. No inductive (wound) transformers may be dimmed in these positions.

Manuals and documents in further languages:



<http://eltako.com/redirect/MFZ12PMD-UC>



Must be kept for later use!

We recommend the housing for operating instructions GBA14.

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