

Universal voltage multifunction time relay MFZ12.1 with 18 functions and universal voltage time relays EZ12..

Time relays to German standard	DIN VDE 0435, EN61000-6-3, EN61000-6-1, EN60669
Rated switching capacity	10A/250V AC, 1 CO contact
Universal control voltage	8..230V UC
Multifunction time relay	MFZ12.1-8..230V UC
Release delay (OFF delay)	EZ12RV-8..230V UC
Operate delay (ON delay)	EZ12AV-8..230V UC
Operating and release delay	EZ12ARV-8..230V UC
Clock generator (flasher relay)	EZ12TI-8..230V UC
Passing make-contact relay	EZ12EW-8..230V UC
Passing break-contact relay	EZ12AW-8..230V UC



LED

The LED flashes while the time elapses as long as the contact (15-18) is in open position (15-16 closed); it is permanently lit as long as the make-contact 15-18 is closed (15-16 open).

Time base [T]

The time base is adjusted by means of a latching rotary switch [T]. The selectable time bases are 0.1 second, 0.5 second, 2 seconds, 5 seconds, 1 minute, 2 minutes, 5 minutes, 1 hour, 2 hours and 4 hours. The total time is obtained by multiplying the time base by the multiplier.

Multiplier [xT]

The multiplier will be fixed by a latching rotary switch [xT] between factors 1 and 10. This permits time settings ranging between 0.1 second (time base 0.1 second and multiplier 1) and 40 hours (time base 4 hours and multiplier 10).

Only MFZ12.1: According to the connection of the power supply to the terminals B1 or B2 **two different level of settings** can be selected.

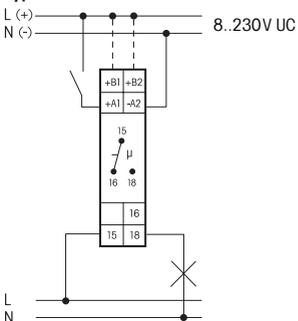
Level of setting (1) with connection of the power supply to B1-A2

- RV = release delay
- AV = operate delay
- TI = clock generator starting with impulse
- TP = clock generator starting with pause
- IA = impulse controlled operate delay (for example: automatic door-opener)
- EW = passing make-contact
- AW = passing break-contact
- ARV = operate and release delay
- ON = permanent ON
- OFF = permanent OFF

Level of setting (2) with connection of the power supply to B2-A2 ER

- = relay function
- EAW = passing make contact and passing break contact
- ES = impulse switch function
- IF = pulse shaper
- ARV+ = additive operate and release delay
- ESV = impulse switch with release delay and early-warning function
- AV+ = additive operate delay
- SRV = release-delay impulse switch
- ON = permanent ON
- OFF = permanent OFF

Typical connection for MFZ12.1 and EZ12..



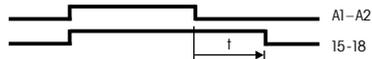
Terminal assignment for MFZ12.1 and EZ12..

+B1 +B2	B1 - A2 (N)	= continuous supply voltage for level of setting (1)
+A1 -A2	B2 - A2 (N)	= continuous supply voltage for level of setting (2) (only MFZ12.1) 8..230V UC
15	A1 - A2 (N)	= control input 8..230V UC
μ	A1/B1/B2	= DC+ resp. L
16 18	A2	= DC- resp. N
15	15	= make-contact input
16	16	= make-contact output NC contact
15 18	18	= make-contact output NO contact

The control input is immune to interaction, thus allowing parallel operation. The make-contacts are potential free. The test voltage contact/contact is 1000V, control connection/contact 2000V. Glow lamps in parallel to the control pushbuttons are not permitted.

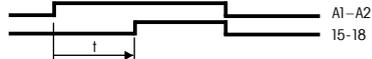
Description of functions of time relays MFZ12.1 and EZ12..

RV = Release delay (OFF delay)



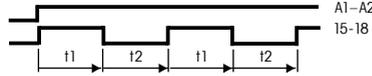
When the control voltage is applied the make-contact switches to 15-18. As the control voltage is interrupted the timing period is started; on time-out the make-contact returns to normal position 15-16. Resettable during the timing period.

AV = Operate delay (ON delay)



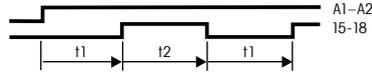
When the control voltage is applied the timing period is started; on time-out the make-contact changes to 15-18. After an interruption, the timing period is restarted.

TI = Clock generator starting with impulse (flasher relay)



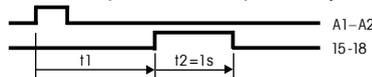
As long as the control voltage is applied the make-contact opens and closes. On MFZ12.1 the changeover time in both directions is identical, and is equal to the preset time. On EZ12TI both times can be set separately (identical time base, but additional multiplier). When the control voltage is applied the make contact immediately changes to 15-18.

TP = Clock generator starting with pause (flasher relay, only MFZ12.1)



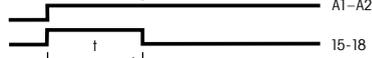
Description of function same as for TI, except that, when the control voltage is applied, the contact initially remains at 15-16 rather than changing to 15-18.

IA = Impulse-controlled operate delay and pulse shaper (only MFZ12.1)



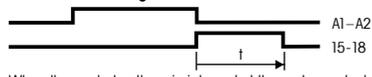
With a control impulse from 20ms the timing period t1 starts; on time-out the make-contact changes for the timing period t2 (for MFZ12.1 = 1 second) to 15-18 for 1 second (e.g. for automatic door opener). If t1 is set to t1 min = 0.1 seconds, the IA operates as pulse shaper, with timing period t2 elapsing, independent from duration of the control impulse (min. 150ms).

EW = Passing make-contact



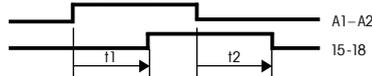
When the control voltage is applied the make-contact changes to 15-18 and reverts on wiping time-out. If the control voltage is removed during the wiping time the make-contact immediately reverts to 15-16 and the residual time is cancelled.

AW = Passing break-contact



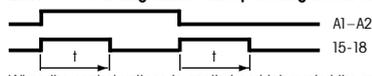
When the control voltage is interrupted the make-contact changes to 15-18, and reverts on wiping time-out. If the control voltage is applied during the wiping time the make-contact immediately reverts to 15-16 and the residual time is cancelled.

ARV = Operating and release delay



When the control voltage is applied the timing period starts; on time-out the make-contact changes to 15-18. If the control voltage is interrupted then, another timing period is started and, on time-out, the make-contact reverts to normal position. On MFZ12.1 this release delay is identical to the operating delay. On EZ12ARV both times can be set separately (identical time base, but additional multiplier). After an interruption of the operating delay, the timing period is restarted.

EAW = Passing make- and passing break-contact (only MFZ12.1)



When the control voltage is applied and interrupted the make-contact changes to 15-18 and reverts on wiping time-out.

IF = Pulse shaper (nur MFZ12.1)



When the control voltage is applied the make-contact changes for the time set to 15-18. Further control impulses will only be evaluated after the set time has elapsed.

ARV+ = Additive operate and release delay (only MFZ12.1)

Same function as ARV, but after an interruption of the operate delay the elapsed time will be stored.

ESV = impulse switch with release delay and early-warning function (only MFZ12.1) Same function as SRV, but with additional early warning function: 30 seconds before time out the light starts flickering 3 times in shorter time periods.

AV+ = Additive operate delay (only MFZ12.1)

Same function as AV, but after an interruption the elapsed time will be stored.

SRV = Release-delay impulse switch (only MFZ12.1)

In position 15-18 it will be automatically switched to 15-16 after the delay time has elapsed.

Important reminder!

This electrical equipment may only be installed by skilled electricians otherwise fire hazard or danger of electric shock exists.