



Electromechanical High Precision Time Relay

MZ 530, MZ 531 for single voltage

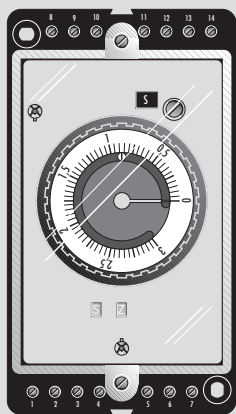
Function: OFF-delay (RV) with auxiliary supply

1 setting range, divided into 6 time ranges

Contact equipment: MZ 530 = 3 timed changeover

MZ 531 = 2 timed and 1 instantaneous changeover

MZ 530, ...



General

RV (see page M 5/3).

The electromechanical high precision time relay is equipped with a synchronous motor and a solenoid clutch.

The setting of the time ranges is done on the timer's front by means of a selector switch. Infinitely variable time setting within a range is carried out with the aid of a transparent rotary knob.

The time-remaining indicator moves during operation from zero in the direction of the set time and jumps back to zero after the output contacts changed over. The device is equipped with a contact position indicator on the front. Thus depending upon the relay function, the position of the instantaneous or timed contacts is indicated by the symbols S (instantaneous) and Z (timed).

Function

Upon energization the solenoid is energized and it actuates the instantaneous and timed contacts (no symbols appear in the contact position indicator).

Upon de-energization, the axis gear is coupled to the timing mechanism, the timing period starts and the instantaneous contacts go into their off-position (symbol S in the contact position indicator). When the preset time has elapsed, the timed contacts (symbol Z in the contact position indicator) go back to their off-position.

In the event of a voltage interruption during the timing period, the time already elapsed is stored, and the timed contacts remain in the operating position.

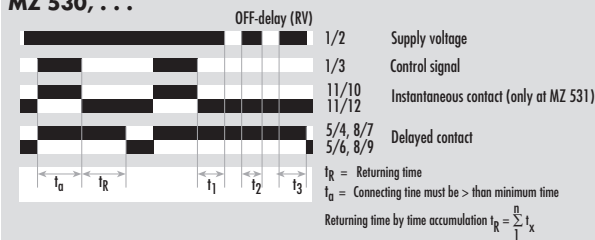
Note

- ▶ The relay has an inboard frequency switch that can be set to 50 or 60 Hz, depending on the connected external supply. The factory presetting is 50 Hz.
- ▶ In case of operating times under 60s, the motor has to be kept constantly at operating voltage to reduce time dispersion to a minimum.
- ▶ Maximum accuracy (repeatability) is achieved by selecting the shortest possible timing range.
- ▶ No maintenance is necessary.

Function Diagram

FD 0012

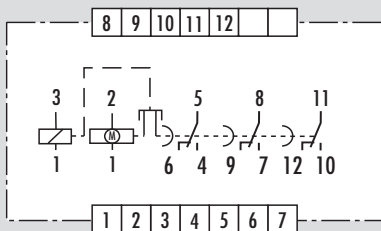
MZ 530, ...



Connection Diagram

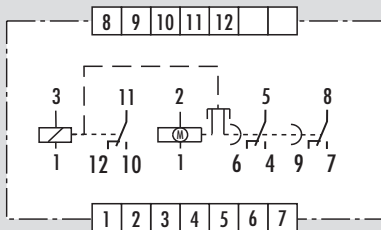
KS 5039/2

MZ 530



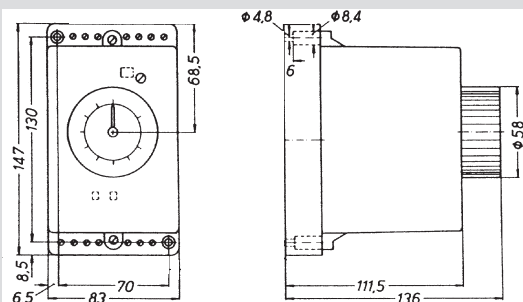
MZ 531

KS 5041/2



Dimensions

M 2-3





Electromechanical High Precision Time Relays

Product Description

The electromechanical high precision time relays MZ 530 and MZ 531 are available with one setting range, divided into 6 time ranges.

Setting Range	Time Range
0,15 s to 30 h divided into :	0,15 to 3 s
	1,5 to 30 s
	0,15 to 3 min
	1,5 to 30 min
	0,15 to 3 h
	1,5 to 30 h
or	
0,3 s to 60 h divided into :	0,3 to 6 s
	3 to 60 s
	0,3 to 6 min
	3 to 60 min
	0,3 to 6 h
	3 to 60 h

Accessories

Lockable cover V 3

Price code for accessories (see page M 5/19).

Type	Standard voltage	Price Code
MZ 530 30 h MZ 530 60 h	24 V AC 110 to 115 V AC 230 V AC 50 and 60 Hz	M 5/8.1
MZ 531 30 h MZ 531 60 h	24 V AC 110 to 115 V AC 230 V AC 50 and 60 Hz	M 5/8.2



Electromechanical High Precision Time Relays

TECHNICAL DATA

FUNCTION according to DIN VDE 0435 Part 1 110:04.89

Point 3.17

Function display
Function diagram

POWER SUPPLY

Rated voltage U_N V AC

Rated consumption: motor at 50 Hz and U_N (AC) VA
 Rated consumption: motor at 50 Hz and U_N (AC) W
 Rated consumption: coil at 50 Hz and U_N (AC) VA
 Rated consumption: coil at 50 Hz and U_N (AC) W
 Rated frequency Hz
 Operating voltage range

TIME CIRCUIT

Time setting/Number of time ranges
2 setting ranges available

Recovery time ms
 Minimum switch-ON time ms
 Release value % U_N
 Permissible parallel load yes
 Internal rectifier yes
 Average of the error related to the full-scale value -
 Dispersion
 Setting range 0,15 to 3 s s
 Setting range 0,3 to 6 s s
 Setting range 0,6 to 12 s s
 Setting range 1,5 to 30 s s
 Setting range 3 to 60 s s
 Maximum operating time ≥ 3 min %

OUTPUT CIRCUIT

Contact equipment

Contact material
 Available modifications
 Switching voltage U_n V AC/DC
 Maximum continuous current I_n A
 Application category according to EN 60947-5-1:1991

Permissible switching frequency switching cycles/h
 Mechanical service life switching cycles
 Response time ms
 Release time ms

GENERAL DATA

Creepage and clearance distances between circuits according to DIN VDE 0110-1:04.97: rated surge voltage kV
 Over voltage category III
 Contamination level 3 outside, 2 inside
 Design voltage V AC 400
 Test voltage U_{eff} 50 Hz acc. to DIN VDE 0110-1, Table A.1 kV 2,68
 Protection class housing/terminals acc. to DIN VDE 0470 Sec. 1:11.92 IP 30/IP 20
 Radiated noise EN 50081-1:03.93, -2:03.94
 Noise immunity EN 50082-2:1995

Ambient temperature, working range °C -10 to +55
 Dimensions M 2-3
 Connection diagram KS 5039/2
 Weight kg 1,2
 Accessories lockable cover V 3

Approvals

GENERAL TECHNICAL SPECIFICATIONS

MZ 530

Electromechanical high precision time relay for single voltage
 OFF-delay additive time relay
 Operating time indicator
 FD 0012

24 | **110-115** | **230**

ca. 0,9
 ca. 1,0
 ca. 14,2 pick-up/ca. 8,8 hold
 ca. 11 pick-up/ca. 3,4 hold
 50 and 60 switchable on the device
 0,8 to 1,1 x U_N

analog/6
 1. setting range 0,15 s to 30 h divided into: s. item description
 2. setting range 0,3 s to 60 h divided into: s. item description

-
 ≤ 250
 ≥ 15
 yes
 yes
 -
 Standard duty Rapid start
 $\pm 0,04$ $\pm 0,01$
 $\pm 0,055$ $\pm 0,025$
 $\pm 0,08$ $\pm 0,05$
 $\pm 0,15$ $\pm 0,12$
 $\pm 0,27$ $\pm 0,24$
 $\pm 0,4$ related to the full-scale value

3 timed changeover

Ag Cd O
 Ag Pd 70/30*
 400/400
 5
 AC-15 U_e 230 V AC, I_e 2 A
 DC-13 U_e 24 V DC, I_e 2 A
 3000
 30×10^6
 ≤ 20
 -

5
 III
 3 outside, 2 inside
 400
 2,68
 IP 30/IP 20
 EN 50081-1:03.93, -2:03.94
 EN 50082-2:1995

-10 to +55
 M 2-3
 KS 5039/2
 1,2
 lockable cover V 3

page i.4

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*) Price: upon request

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 Operating time indicator
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