# MZEA / MZEB

- 4 Timers, 8 Digital Inputs

- Delay Time from 20 msec to 4 min

- 4 Time Ranges can be Set With Jumpers on the Module

- Fine Tuning with Potentiometer (Potentiometer on the MZEA Module, External Potentiometer connected to MZEB)

- Inputs are Galvanically Isolated

- Input Voltage 24 VDC

- LED Status Display for Inputs and Timers

## TECHNICAL DATA

| TECHNICAL DATA | MZEA | MZEB |
|---|---|---|
| Inputs 8 | 8 | |
| **Electrical Isolation** | | |
| Input - PLC | YES (Optocoupler) | YES (Optocoupler) |
| Input - Input | NO | NO |
| **Input Voltage** | | |
| Nominal | 24 VDC | 24 VDC |
| Minimal | 16 VDC | 16 VDC |
| Maximal | 30 VDC | 30 VDC |
| Input Resistance | ca. 2.2 kΩ | ca. 2.2 kΩ |
| **Switching Threshold** | | |
| log. 0 → log. 1 | Min. 16 VDC | Min. 16 VDC |
| log. 1 → log. 0 | Max. 12 VDC | Max. 12 VDC |
| Input Current at 24 VDC | ca. 10 mA | ca. 10 mA |
| **Switching Delay** | | |
| log. 0 → log. 1 | ca. 10 msec | ca. 10 msec |
| log. 1 → log. 0 | ca. 20 msec | ca. 20 msec |
| Timers | 4 | 4 |
| **Timer Setting** | | |
| Normal | With Jumpers | With Jumpers |
| Fine | With Pot. on Module | With External Pot. (1 MΩ) |
| Time Range | See Table | See Table |
| Repeatability | < 0.1 % [2] | < 0.1 % [2] |
| **Documentation** | Hardware Manual MINICONTROL | |
| German | MAHWMINI-0 | |
| English | MAHWMINI-E | |
| French | MAHWMINI-F | |

## SLOTS

| | | 0 1 2 3 4 5 |
|---|---|---|
| **MZEA** | Base Units A and C | ● ● ● ● ● ● |
| **MZEB** | Base Units A and C | ● ● ● ● ● ● |

## ORDER DATA

| | |
|---|---|
| **MCMZEA-0** | Input/Timer Module, 8 digital inputs, input voltage 24 VDC, LED status display, galvanically isolated, reference potential GND, switching delay ca. 10 msec, four definable timers (on-delay), four time ranges set with jumpers, fine tuning with potentiometers on the module, times range from 20 msec to 4 min. |
| **MCMZEB-0** | Input/Timer Module, 8 digital inputs, input voltage 24 VDC, LED status display, galvanically isolated, reference potential GND, switching delay ca. 10 msec, four definable timers (on-delay), four time ranges set with jumpers, connections for external potentiometer, times range from 20 msec to 4 min. |

## TIME RANGE SETTINGS

Two jumpers exist for each channel. These are marked on the module as jumpers A and B. These jumpers are used to set the time range. They can be inserted and removed without any tools.

| | Jumper A | Jumper B | Time Range |
|---|---|---|---|
| Jumper Closed | OPEN | OPEN | 740 msec to 30 sec |
| | OPEN | CLOSED | 20 msec to 1 sec |
| Jumper Open | CLOSED | OPEN | 90 msec to 4 sec |
| | CLOSED | CLOSED | 6 sec to 4 min |

## FUNCTIONALITY

By setting the Start/Stop address "O 0xy" [1] the timer is started. When the defined time (T) has elapsed, the time address is "I 0xy" [1] = 1. It remains 1 until the "O" address is set. By resetting Start/Stop address "O", the timer is reset.
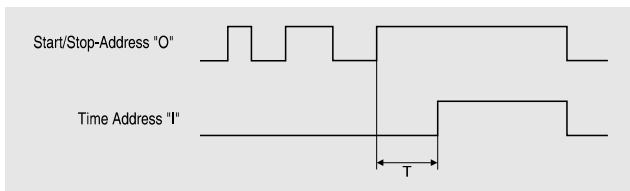
If Start/Stop address "O" is reset before the defined time has elapsed, the time begins at 0 again with a restart.

## CONNECTIONS

| No. | MZEA | MZEB |
|---|---|---|
| 0 | | Connection for ext. Pot. Timer 0 |
| 1 | | Connection for ext. Pot. Timer 1 |
| 2 | | Connection for ext. Pot. Timer 2 |
| 3 | | Connection for ext. Pot. Timer 3 |
| 8 | Input 8 | Input 8 |
| 9 | Input 9 | Input 9 |
| A | Input A | Input A |
| B | Input B | Input B |
| C | Input C | Input C |
| D | Input D | Input D |
| E | Input E | Input E |
| F | Input F | Input F |
| ▶ | GND | GND |

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[1] x is the slot number of the module (0 to 5), y is the timer number (0 to 3).

[2] At constant environmental temperature