

# Time Control Technique

## MINITIMER Timer, Off-delay MK 9961

Translation  
of the original instructions



### Your Advantages

- 2-wire proximity sensor control
- Easy operation

### Features

- Power OFF-delay relay according to EN 61812-1
- No-voltage safe
- Delay up to 600 s
- Repeat accuracy  $< \pm 1\%$
- Voltage range AC/DC 24 V with polarity protection, AC 230 V
- Remote setting by external potentiometer
- LED indicator for voltage supply
- As option with 1 CO contact and 1 NO contact or 1 CO contact
- As option with instantaneous contact
- Width: 22,5 mm

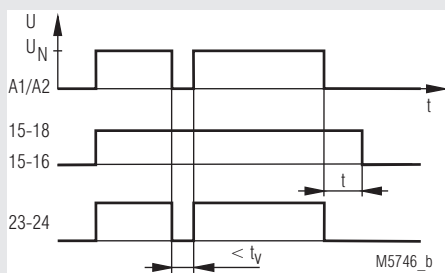
### Indicators

The timer MK 9961 release delayed of the MINITIMER series, is intended for use in time-dependent control systems. without auxiliary voltage. The time range is adjustable and remote setting by external resistance is also possible.

### Approvals and Markings



### Function Diagram



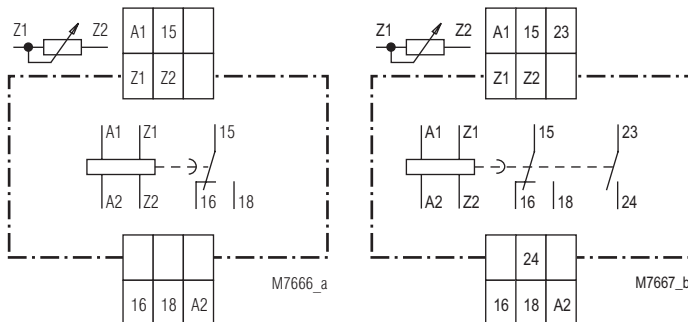
### Applications

Time dependent controls

### Indicators

LED: On when operating voltage applied

### Circuit Diagrams



MK 9961.81

MK 9961.35

### Connection Terminals

Terminal designation	Signal description
A1	L/+
A2	N/-
15, 16, 18	Changeover contact (delayed)
23, 24	NO contact (instantaneous)
Z1, Z2	Input for remote potentiometer connection for time setting

## Technical Data

### Time Circuit

<b>Time ranges:</b>	0.05 ... 1 s	3 ... 60 s
	0.15 ... 3 s	5 ... 100 s
	0.5 ... 10 s	15 ... 300 s
	1.5 ... 30 s	30 ... 600 s

**Time setting:** Infinitely, on absolute scale  
remote setting via external potentiometer

<b>Repeat accuracy:</b>	< ± 1 %
<b>Min. setting time:</b>	80 ms
<b>Voltage influence:</b>	< ± 1.5 %
<b>Temperature influence:</b>	< 0.1 % / K

### Input

**Nominal voltage  $U_N$**   
(Operating voltage): AC/DC 24 V with polarity protection

<b>Voltage range:</b>	0.8 ... 1.1 $U_N$
<b>Permissible residual current:</b>	10 mA
<b>Nominal consumption:</b>	AC 230 V / 9 VA
<b>Nominal frequency:</b>	50 / 60 Hz
<b>Frequency range:</b>	± 5 % $f_N$
<b>Release voltage:</b>	15 % $U_N$

### Output

#### Contacts

MK 9961.81:	1 changeover contact, delayed
MK 9961.35:	1 NO contact, instantaneous 1 changeover contact, delayed

#### Contact material:

Changeover contact:	AgSnO <sub>2</sub>
NO contact:	AgNi

**Voltage rated operating:** AC 250 V

#### Thermal current $I_{th}$

MK 9961.81:	5 A
MK 9961.35:	2 A

#### Switching capacity to AC 15

NO contact:	3 A / AC 230 V	IEC/EN 60947-5-1
NC contact:	1 A / AC 230 V	IEC/EN 60947-5-1

#### Electrical life

to AC 15 at 3 A, AC 230 V

MK 9961.81:	5 x 10 <sup>5</sup> switching cycles
MK 9961.35:	3 x 10 <sup>5</sup> switching cycles

#### Permissible switching frequency:

3 000 switching cycles / h

#### Short circuit strength

**max. fuse rating:** 4 A gG / gL IEC/EN 60947-5-1

**Mechanical life:** 50 x 10<sup>6</sup> switching cycles

### General Data

**Operating mode:** Continuous operation

#### Temperature range

Operation: - 20 ... + 60°C

Storage: - 20 ... + 60°C

**Altitude:** ≤ 2000 m

#### Clearance and creepage distances

rated impulse voltage /  
pollution degree: 4 kV / 2 (base insulation) IEC 60664-1

Overvoltage category: III

Insulation test voltage,  
type test: 2.5 kV; 1 min

#### EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61000-4-2

HF irradiation

80 MHz ... 1 GHz: 10 V / m IEC/EN 61000-4-3

1 GHz ... 2.5 GHz: 3 V / m IEC/EN 61000-4-3

2.5 GHz ... 2.7 GHz: 1 V / m IEC/EN 61000-4-3

Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages

between

wires for power supply: 2 kV IEC/EN 61000-4-5

between wire and ground: 4 kV IEC/EN 61000-4-5

HF wire guided: 10 V IEC/EN 61000-4-6

Interference suppression: Limit value class B EN 55011

## Technical Data

### Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

**Housing:** Thermoplast with V0 behaviour  
according to UL subj. 94

**Vibration resistance:** Amplitude 0.35 mm  
frequency 10 ... 55 Hz IEC/EN 60068-2-6

20 / 060 / 04 IEC/EN 60068-1

**Climate resistance:**

**Terminal designation:** EN 50005

**Wire connection:** 2 x 1.5 mm<sup>2</sup> solid or strand. wire with sleeve  
DIN 46228-1/-2/-3/-4

Insulation of wires or

sleeve length: 8 mm

**Wire fixing:** Flat terminals with self-lifting

clamping piece IEC/EN 60999-1

0.4 Nm

**Mounting:** DIN rail IEC/EN 60715

**Weight:** 140 g

### Dimensions

**Width x height x depth:** 22.5 x 82 x 99 mm

### Standard Type

MK 9961.81 AC 230 V 50/60 Hz 0.5 ... 10 s

Article number: 0021491

• Output: 1 changeover contact

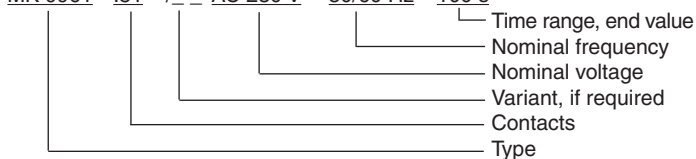
• Nominal voltage  $U_N$ : AC 230 V

• Time range: 0.5 ... 10 s

• Width: 22.5 mm

### Ordering Example

MK 9961 .81 / \_ \_ AC 230 V 50/60 Hz 100 s



### Accessories

AD 3:

External potentiometer

Article number: 0004082 1 MΩ at time range 1 s

Article number: 0004082 1 MΩ at time range 3 s

Article number: 0004082 1 MΩ at time range 10 s

Article number: 0003706 4.7 MΩ at time range 30 s

Article number: 0004084 10 MΩ at time range 60 s

Article number: 0004084 10 MΩ at time range 100 s

Article number: 0004085 20 MΩ at time range 300 s

Article number: 0004085 20 MΩ at time range 600 s

Degree of protection

front side:

IP 40

