

# 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, 42 V with polarity protection, AC 110 ... 127, 230, 240 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

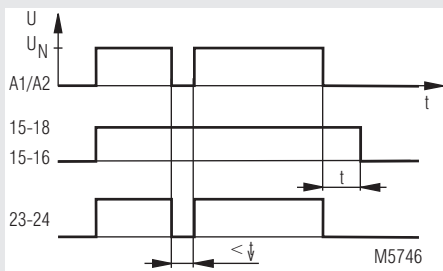
The timer MK 9961 release delayed, is intended for use in time-dependent control systems. without auxiliary voltage. The time range is adjustable and remote setting by external resistance is also possible.

### Approvals and Markings



\* see variant

### Function Diagram



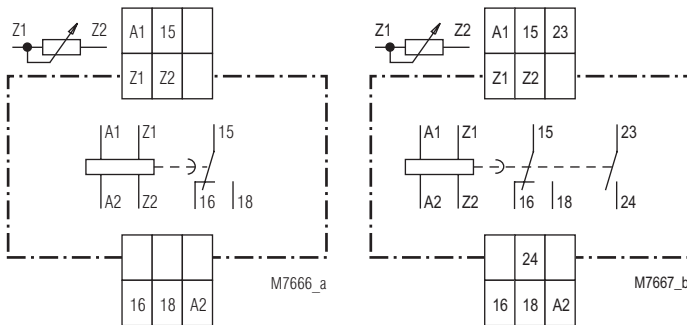
### Applications

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, 42 V with polarity protection  
AC 110 ... 127, 230, 240 V

<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

<b>Contacts</b>	
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

<b>Thermal current <math>I_{th}</math></b>	
MK 9961.81:	5 A
MK 9961.35:	2 A
<b>Switching capacity</b>	
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
<b>Electrical life</b>	IEC/EN 60947-5-1
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

<b>Permissible switching frequency:</b>	3 000 switching cycles / h
<b>Short circuit strength</b>	
<b>max. fuse rating:</b>	4 A gG / gL IEC/EN 60947-5-1
<b>Mechanical life:</b>	50 x 10 <sup>5</sup> switching cycles

### General Data

<b>Operating mode:</b>	Continuous operation	
<b>Temperature range</b>		
Operation:	- 20 ... + 60°C	
Storage:	- 20 ... + 60°C	
<b>Altitude:</b>	≤ 2000 m	
<b>Clearance and creepage distances</b>		
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	
<b>EMC</b>		
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

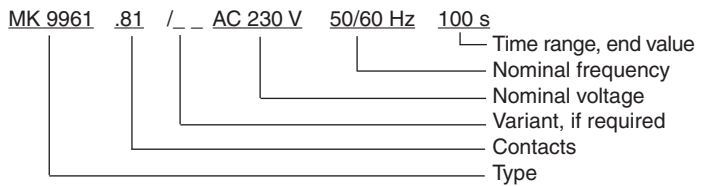
## Standard Type

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		

## Variant

MK 9961/61: With UL-approval

## Ordering example of variant



## 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

