

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 110 ... 127, 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

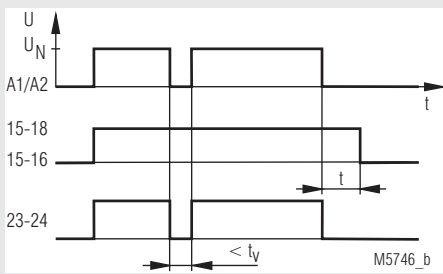
Indicators

The timer MK 9961 release delayed, 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



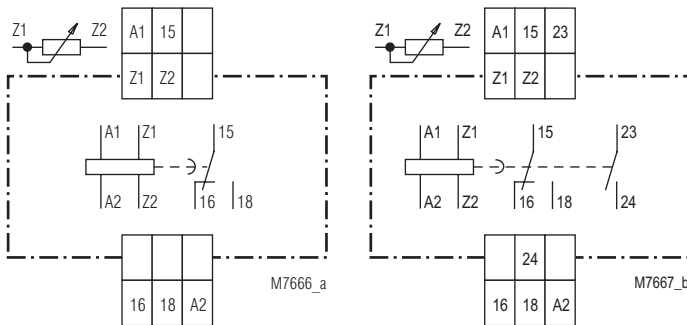
Applications

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

Time ranges:	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

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

Input

Nominal voltage U_N
(Operating voltage): AC/DC 24 V with polarity protection
AC 110 ... 127, 230 V

Voltage range:	0.8 ... 1.1 U_N
Permissible residual current:	10 mA
Nominal consumption:	AC 230 V / 9 VA
Nominal frequency:	50 / 60 Hz
Frequency range:	± 5 % f_N
Release voltage:	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: AgSnO₂
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 10⁵ switching cycles
MK 9961.35: 3 x 10⁵ 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 10⁶ 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:

Wire connection: 2 x 1.5 mm² 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

Fixing torque: 0.4 Nm

Mounting: DIN rail IEC/EN 60715

Weight: 140 g

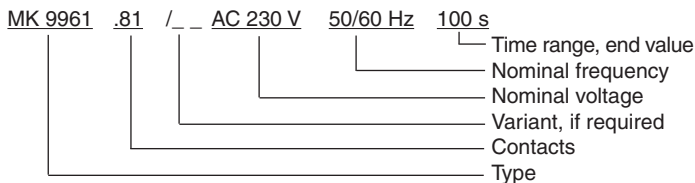
Dimensions

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



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

