

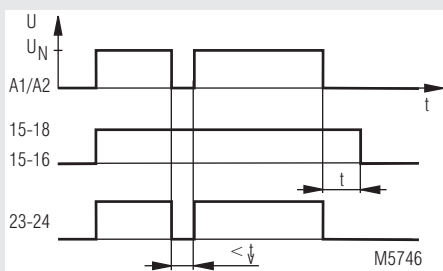
Time Control Technique

MINITIMER Timer, Release Delay MK 9961



- According to IEC/EN 61 812-1
- Delay up to 600 s
- Repeat accuracy $< \pm 1 \%$
- Without auxiliary voltage
- Available with instantaneous contact
- Safe resetting
- Remote potentiometer connection to terminal Z1 - Z2 possible
- 2-wire proximity sensor control
- Width 22.5 mm

Function Diagram



Approvals and Markings

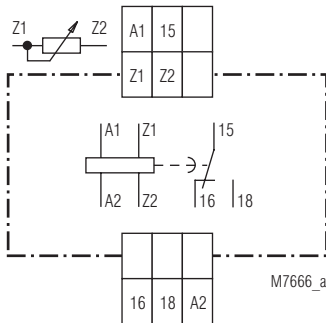


* see variant

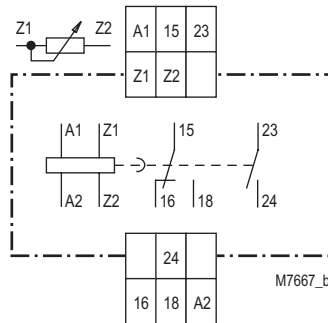
Indicators

LED: on when operating voltage applied

Circuit Diagrams



MK 9961.81



MK 9961.35

Connection Terminals

Terminal designation	Signal description
A1, A2	Operating voltage
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, 42 V with polarity protection AC 110 ... 127, 230, 240 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:	AgSnO ₂
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 60 947-5-1
NC contact:	1 A / AC 230 V IEC/EN 60 947-5-1
Electrical life	IEC/EN 60 947-5-1
to AC 15 at 3 A, AC 230 V	
MK 9961.81:	5 x 10 ⁵ switching cycles
MK 9961.35:	3 x 10 ⁵ switching cycles
Permissible switching frequency:	3 000 switching cycles / h
Short circuit strength	
max. fuse rating:	4 A gG / gL IEC/EN 60 947-5-1
Mechanical life:	50 x 10 ⁶ switching cycles

General Data

Operating mode:	Continuous operation	
Temperature range		
Operation:	- 20 ... + 60°C	
Storage:	- 20 ... + 60°C	
Altitude:	< 2,000 m	
Clearance and creepage distances		
rated impulse voltage / pollution degree:	4 kV / 2 (base insulation) IEC 60 664-1	
Overvoltage category:	III	
Insulation test voltage, type test:	2.5 kV; 1 min	
EMC		
Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF irradiation		
80 MHz ... 1 GHz:	10 V / m	IEC/EN 61 000-4-3
1 GHz ... 2.5 GHz:	3 V / m	IEC/EN 61 000-4-3
2.5 GHz ... 2.7 GHz:	1 V / m	IEC/EN 61 000-4-3
Fast transients:	2 kV	IEC/EN 61 000-4-4
Surge voltages between wires for power supply:	2 kV	IEC/EN 61 000-4-5
between wire and ground:	4 kV	IEC/EN 61 000-4-5
HF wire guided:	10 V	IEC/EN 61 000-4-6
Interference suppression:	Limit value class B	EN 55 011

Technical Data

Degree of protection

Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529
Housing:	Thermoplast with V0 behaviour according to UL subj. 94	
Vibration resistance:	Amplitude 0.35 mm frequency 10 ... 55 Hz IEC/EN 60 068-2-6 20 / 060 / 04 IEC/EN 60 068-1	
Climate resistance:		
Terminal designation:	EN 50 005	
Wire connection:	2 x 1.5 mm ² solid or strand. wire with sleeve DIN 46 228-1/-2/-3/-4	

Insulation of wires or sleeve length:	8 mm
Wire fixing:	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
Fixing torque:	0.4 Nm
Mounting:	DIN rail IEC/EN 60 715
Weight:	140 g

Dimensions

Width x height x depth:	22.5 x 82 x 99 mm
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Standard Type

MK 9961.81 AC 230 V 50/60 Hz 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
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Ordering example of variant

MK 9961	.81	/	AC 230 V	50/60 Hz	100 s	
						Time range, end value
						Nominal frequency
						Nominal voltage
						Variant, if required
						Contacts
						Type

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

