

# Time control technique

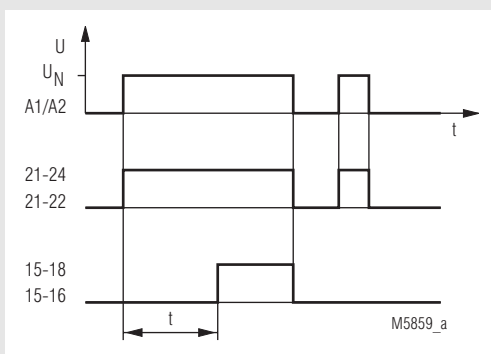
## Time relay MK 9906, AA 9906<sup>1)</sup>, operate delayed minitimer

<sup>1)</sup> only for replacement



- According to IEC/EN 61 812-1
- Time delay of 0,05 s ... 100 h
- Repeat accuracy  $\leq \pm 0,5 \%$
- Adjustable on absolute scale
- MK 9906 as a 2-voltage version
- AA 9906/200 for AC/DC 24 ... 240 V
- Available with instantaneous contact
- LED indicators for operation and contact position
- Controllable by proximity sensors
- 2 changeover contacts
- MK 9906: width 22,5 mm
- AA 9906: width 45 mm

### Function diagram



### Approvals and marking



### Application

Time-dependent controllers

### Indicators

upper LED: on, when supply connected  
 lower LED: on, when output relay active (contact 15-18 closed)

### Technical data

#### Time circuit

Time ranges:	0,05 ... 1 s	0,5 ... 10 min
	0,15 ... 3 s	1,5 ... 30 min
	0,5 ... 10 s	3 ... 60 min
	1,5 ... 30 s	0,15 ... 3 h
	3 ... 60 s	0,5 ... 10 h
	5 ... 100 s	1,5 ... 30 h
	15 ... 300 s	5 ... 100 h

**Time setting:** stepless on an absolute scale

#### Recovery time

tw 50 / 100:

40 ms

#### Repeat accuracy:

$\leq \pm 0,5 \%$  of the scale limit value

#### Voltage influence:

$\leq 1 \%$

#### Temperature influence:

$< 0,1 \%$  / K

### Input

#### Nominal voltage $U_N$ :

AC/DC 24 V <sup>1)</sup> + AC 110 ... 127 V <sup>2)</sup>  
 AC/DC 24 V <sup>1)</sup> + AC 230 ... 240 V <sup>2)</sup>  
 also available as single-voltage version  
 AC/DC 12 V, AC/DC 42 ... 48 V

<sup>1)</sup> at terminals A3 - A2

<sup>2)</sup> at terminals A1 - A2

#### Voltage range:

AC 0,8 ... 1,1  $U_N$   
 DC 0,9 ... 1,25  $U_N$

#### Nominal consumption:

AC 230 V DC 24 V DC 42 V  
 8,5 VA 1 W 1 W

#### Nominal frequency:

50 / 60 Hz

#### Frequency range

$\pm 5 \%$   $f_N$

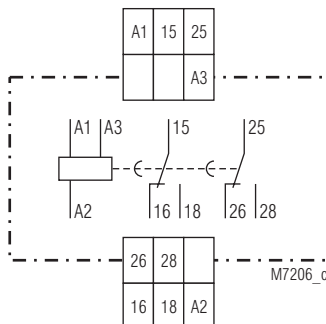
#### Resetting voltage:

15 %  $U_N$

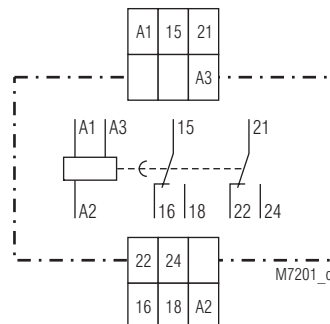
#### Permissible residual current:

5 mA

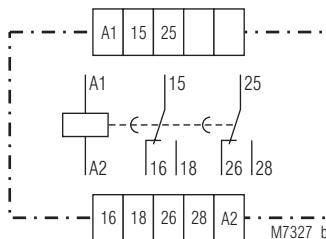
### Circuit diagrams



MK 9906.82



MK 9906.32



AA 9906.82

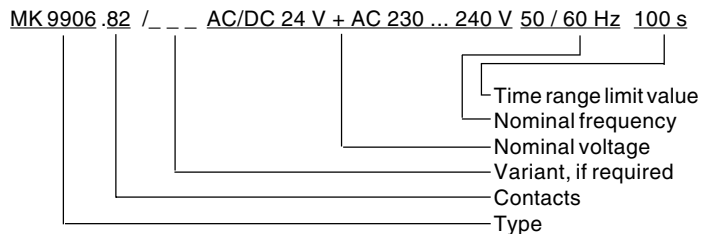
Technical data	
<b>Output</b>	
<b>Contacts</b>	
MK 9906:	2 changeover contacts
MK 9906.32:	1 changeover contact, non-delayed 1 changeover contact, delayed
AA 9906.81:	1 changeover contact
AA 9906.82:	2 changeover contacts
<b>Release time:</b>	30 ms
<b>Thermal current <math>I_{th}</math>:</b>	5 A
<b>Switching capacity</b>	
to AC 15	
NO contact (MK 9906):	3 A / AC 230 V IEC/EN 60 947-5-1
NC contact (MK 9906):	2 A / AC 230 V IEC/EN 60 947-5-1
<b>Electrical life</b>	IEC/EN 60 947-5-1
to AC 15 at 3 A, AC 230 V:	5 x 10 <sup>5</sup> switching cycles
<b>Permissible switching frequency:</b>	
	6 000 switching cycles / h
<b>Short circuit strength</b>	
<b>max. fuse rating:</b>	6 A gL IEC/EN 60 947-5-1
<b>Mechanical life:</b>	
	> 30 x 10 <sup>6</sup> switching cycles

General data	
<b>Operating mode:</b>	Continuous operation
<b>Temperature range</b>	
MK 9906:	- 20 ... + 60 °C
AA 9906:	- 40 ... + 60 °C
<b>Clearance and creepage distances</b>	
overvoltage category / contamination level:	
Input/output:	4 kV / 2 IEC 60 664-1
<b>EMC</b>	
Electrostatic discharge:	8 kV (air) IEC/EN 61 000-4-2
HF irradiation:	10 V / m IEC/EN 61 000-4-3
Fast transients	4 kV IEC/EN 61 000-4-4
Surge voltages between wires for power supply:	
between wire and ground:	1 kV IEC/EN 61 000-4-5
HF-wire guided:	2 kV IEC/EN 61 000-4-5
Interference suppression	10 V IEC/EN 61 000-4-6
<b>Degree of protection</b>	Limit value class B EN 55 011
<b>Housing:</b>	Housing: IP 40 IEC/EN 60 529
	Terminals: IP 20 IEC/EN 60 529
	Thermoplastic with V0 behaviour according to UL subject 94
<b>Vibration resistance:</b>	Amplitude 0,35 mm, frequency 10 ... 55 Hz, IEC/EN 60 068-2-6
<b>Climate resistance:</b>	20 / 060 / 04 IEC/EN 60 068-1
<b>Terminal designation:</b>	EN 50 005
<b>Wire connection:</b>	
MK 9906:	2 x 1,5 mm <sup>2</sup> solid or 2 x 1,0 mm <sup>2</sup> stranded wire with sleeve DIN 46 228-1/-2/-3/-4
AA 9906:	2 x 2,5 mm <sup>2</sup> solid or 2 x 1,5 mm <sup>2</sup> stranded wire with sleeve DIN 46 228-1/-2/-3/-4
<b>Wire fixing:</b>	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
<b>Mounting:</b>	DIN rail IEC/EN 60 715
<b>Weight</b>	
MK 9906:	140 g
AA 9906:	160 g
<b>Dimensions</b>	
<b>Width x height x depth</b>	
MK 9906:	22,5 x 82 x 99 mm
AA 9906:	45 x 77 x 127 mm

Standard types	
MK 9906	AC/DC 24 V + AC 220 ... 240 V 0,5 ... 10 s
Article number:	0044853 stock item
• Output:	2 changeover contacts
• Nominal voltage $U_N$ :	AC/DC 24 V + AC 220 ... 240 V
• Width:	22,5 mm
AA 9906.81	AC 230 V 0,5 ... 10 min.
Article number:	0017124
• Output:	1 changeover contact
• Nominal voltage $U_N$ :	AC 230 V
• Width:	45 mm

Variants	
MK 9906.83:	AC 230 ... 240 V 3 changeover contacts
MK 9906.81/007:	to be used as star-delta timer resetting time of contacts approx. 100 ms, AC 230 V, 1 changeover contact
MK 9906.81/009:	With resetting time of 300 ms to bridge brief power failures, 1 changeover contact Nominal voltage: AC 230 ... 240 V Recovery time: tw 50 / 100: ≤ 500 ms
MK 9906.82/008:	DC 24 V, 2 changeover contacts Make current: ≤ 100 mA, typ. at DC 24 V: 80 mA Recovery time: t <sub>w</sub> 50/100: ≤ 20 ms (suitable to be controlled by reed contacts)
MK 9906.82/60:	with CSA-approval, 2 changeover contacts
MK 9906.82/61:	with UL-approval, 2 changeover contacts
AA 9906.___/200:	for AC/DC 24 ... 240 V at -40°C ... + 60°C ambient temperature range Voltage range: AC 19 ... 264 V DC 19 ... 300 V

#### Ordering example for Variants



Accessories	
for MK 9906:	
ET 4752-143	marking plate
for AA 9906:	
K 70-34	Cover