

Time Control Technique

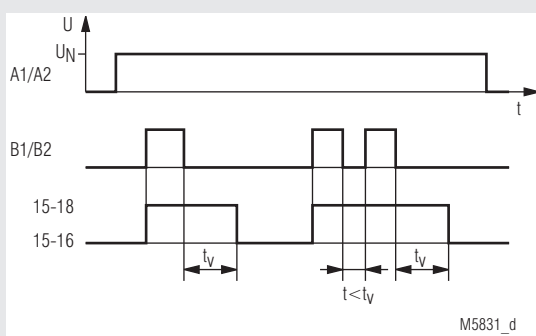
MINITIMER
Timer, Off-delay
BA 7962, MK 9962

Translation
of the original instructions



- OFF-delay relay with control signal according to EN 61812-1
- Time delay up to 100 h
- Repeat accuracy $\leq \pm 1\%$
- MK 9962 with dual voltage supply
- Control by voltage free contact
- MK 9962 optionally control by supply voltage
- 2 LED displays for control and contact position
- 2 changeover contacts
- BA 7962, AA 9962: Width 45 mm
- MK 9962: Width 22.5 mm

Function Diagram



Approvals and Markings



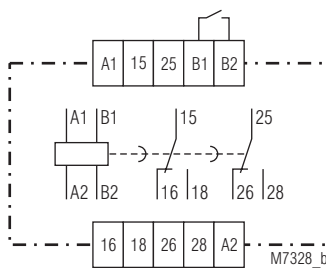
Applications

Time-dependent controllers

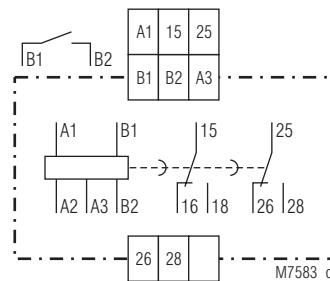
Indication

Upper LED: On when control contact closed
Lower LED: On when output relay energized

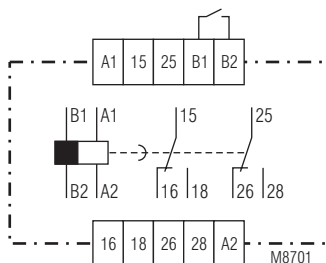
Circuit Diagrams



BA 7962.82



MK 9962



BA 7962.82/200
with forcibly guided contacts

Connection Terminals

Terminal designation	Signal description
A1, A2, A3	Operation voltage
B1, B2	Control input
15, 16, 18	Changeover contacts (output relay)
25, 26, 28	Changeover contacts (2 nd output relay)

Notes



The DC variants of BA 7962 and MK 9962 have no galvanic separation between B1 - B2 and A1 - A2 - A3. The control of B1 - B2 has to be done with volt free contact. The contacts used on B1 - B2 must be capable to handle the voltage the is connected to A1 - A2 - A3!

Technical Data

Time Circuit

Time ranges:

0.05 ... 1 s	0.5 ... 10 min.	0.15 ... 3 h
0.15 ... 3 s	1.5 ... 30 min.	0.5 ... 10 h
0.5 ... 10 s	3 ... 60 min.	1.5 ... 30 h
1.5 ... 30 s		5 ... 100 h
5 ... 100 s		
15 ... 300 s		

Time setting: Stepless on absolute scale

Min. switch-on time: 20 ms

Repeat accuracy: $\leq \pm 1\%$ of set value

Voltage influence: $\leq \pm 0.5\%$

Temperature influence: $< \pm 0.1\%$ / K

Input

Nominal voltage U_N :

BA 7962: AC 24, 42, 110, 127, 230, 240 V
DC 24, 48, 60, 110, 220, 240 V

MK 9962: AC/DC 24 V¹⁾ + AC 110 ... 127 V²⁾
AC/DC 24 V¹⁾ + AC 220 ... 240 V²⁾
AC/DC 24 V¹⁾ + AC/DC 42 V²⁾

¹⁾ at terminals A3 - A2

²⁾ at terminals A1 - A2

Voltage range: 0.8 ... 1.1 U_N at AC

Nominal power consumption:

BA 7962: AC 3.5 VA
DC 24 V 1 W
DC 48 V 2 W
DC 60 V 2 W
DC 110 V 2 W
DC 220 V 3 W
DC 240 V 3 W

MK 9962: AC 24 V 0.8 VA
AC 42 V 1.8 VA
AC 110 V 3.5 VA
AC 230 V 7 VA
AC 240 V 8 VA
DC 24 V 0.8 W
DC 42 V 1.8 W

Nominal frequency: 50 / 60 Hz

Frequency range: $\pm 5\%$ f_N

Output

Contacts: 2 delayed changeover contacts

Contact material: AgNi 0.2 μ m, gold plated

Measured nominal voltage: AC 250 V

Thermal current I_{th} : 5 A

Switching capacity

To AC 15

NC contact: 1 A / AC 230 V IEC/EN 60947-5-1

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

Electrical life IEC/EN 60947-5-1

To AC 15 at 3 A, AC 230 V:

BA 7962.82: 0.5 x 10⁵ switching cycles

MK 9962: 5 x 10⁵ switching cycles

Permissible operating

frequency: 6000 switching cycles / h

Short circuit strength

Max. fuse rating: 6 A gG / gL IEC/EN 60947-5-1

Mechanical life: 30 x 10⁶ switching cycles

General Data

Operating mode: Continuous operation

Temperature range

Operation, Storage

BA 7962 (AC),

MK 9962: - 20 ... + 60 °C

BA 7962 (DC): - 20 ... + 50 °C

Altitude: ≤ 2000 m

Clearance and creepage distances

Rated impulse voltage /
pollution degree: 4 kV / 2 IEC 60664-1

Technical Data

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 GHz: 3 V / m IEC/EN 61000-4-3

2 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

Interference suppression: Limit value class B EN 55011

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing:

Thermoplastic with V0 behaviour

according to UL subject 94

Amplitude 0.35 mm, IEC/EN 60068-2-6

frequency 10...55Hz IEC/EN 60068-1

20 / 060 / 04 IEC/EN 60068-1

Terminal arrangement: DIN 46199-5

Terminal designation: EN 50005

Wire connection:

BA 7962: 2 x 2.5 mm² solid or

2 x 1.5 mm² stranded wire with sleeve

MK 9962: 2 x 1.5 mm² solid or

2 x 1.0 mm² stranded wire with sleeve

DIN 46228-1/-2/-3/-4

Flat terminals with self-lifting

clamping piece IEC/EN 60999-1

Fixing torque

BA 7962: 0.8 Nm

MK 9962: 0.4 Nm

Mounting: DIN rail IEC/EN 60715

Weight

BA 7962 (AC): 240 g

BA 7962 (DC): 150 g

MK 9962: 180 g

Dimensions

Width x height x depth:

BA 7962: 45 x 73 x 133 mm

MK 9962: 22.5 x 82 x 99 mm

Standard Type

MK 9962 AC/DC 24 V + AC 220 ... 240 V 15 ... 300 s

Article number: 0044937

• Output: 2 changeover contacts

• Nominal voltage U_N : AC/DC 24 V + AC 220 ... 240 V

• Time range: 15 ... 300 s

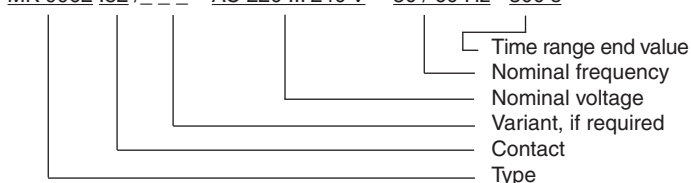
• Width: 22.5 mm

Variants

BA 7962.82/200: 2 guided changeover contacts delayed

Ordering example for variants

MK 9962 .82 / _ _ _ AC 220 ... 240 V 50 / 60 Hz 300 s



Accessories

ET 4752-143: Marking plate for MK 9962

Article number: 0043203