

# Time Control Technique

## MINITIMER

Timer, On Delayed

BA 7905, AI 905<sup>1)</sup>, EO 9905

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



0227/956



BA 7905



AI 905



EO 9905 for DIN rail mounting with socket



EO 9905 with front frame ET 4048-3

- According to IEC/EN 61 812-1
- Delay up to 300 s
- Repeat accuracy  $< \pm 1 \%$
- Voltage up to DC 220 V without series resistor
- With remote potentiometer connection
- BA 7905 with LED indication for operation and contact position
- 1 changeover contact
- BA 7905, AI 905: width 45 mm
- EO 9905: front surface 35 x 48 mm

### Approvals and Marking



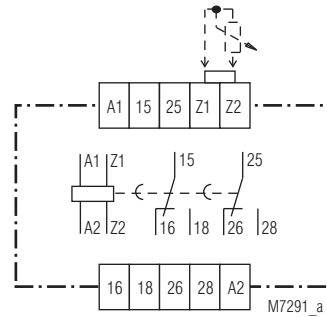
### Application

Time dependent control

### Indication

BA 7905:  
upper LED: on when operating voltage applied  
lower LED: on when output relay activated

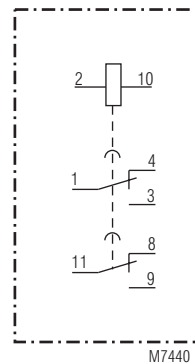
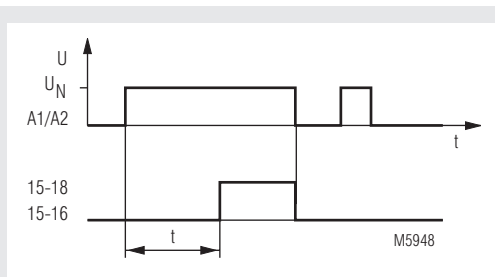
### Circuit Diagrams



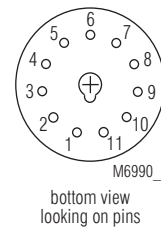
BA 7905.82, AI 905.82



### Function Diagram



EO 9905.82



bottom view looking on pins

The terminals 5-6 have to be linked. The link must be removed when a remote potentiometer is connected

## Technical Data

### Time circuit

<b>Time ranges:</b>	0.05 ... 1 s	1.5 ... 30 s
	0.15 ... 3 s	5 ... 100 s
	0.5 ... 10 s	15 ... 300 s
<b>Setting:</b>	Stepless, setting on absolute scale. Connection possibility for external variable resistor on terminal Z1-Z2 (5-6). Variable resistor in the device to be set to the minimum value and bridge Z1-Z2 (5-6) is to be removed.	

### Recovery time

tw 50 / 100:	100/50 ms
<b>Repeat accuracy:</b>	≤ ± 1 % of max. scale value
<b>Voltage influence:</b>	0.5 %
<b>Temperature influence:</b>	0.2 % / K

### Input

<b>Nominal voltage U<sub>N</sub>:</b>	AC 24, 42, 110 ... 127, 230, 240 V
	DC 24, 42, 60, 110 ... 127, 220 V

<b>Voltage range:</b>	0.8 ... 1.1 U <sub>N</sub>
<b>Nominal consumption</b>	
BA 7905, AI 905:	AC 24 230 V

	1.9 VA
DC 24 220 V	0.8 W

EO 9905:	AC 24 230 V
	0.8 VA
DC 24 220 V	0.8 W

<b>Nominal frequency:</b>	50 / 60 Hz
<b>Frequency range:</b>	± 5 % f <sub>N</sub>

### Output

#### Contacts

BA 7905.81, AI 905.81, EO 9905.81:	1 changeover contact, delayed
BA 7905.82, AI 905.82, EO 9905.82:	2 changeover contacts, delayed
<b>Release time:</b>	10 ms
<b>Thermal current I<sub>th</sub>:</b>	5 A
<b>Switching capacity</b>	
to AC 15:	3 A / AC 230 V IEC/EN 60 947-5-1
to DC 14:	2 A / DC 24 V IEC/EN 60 947-5-1
	IEC/EN 60 947-5-1

#### Electrical life

to AC 15 at 3 A, AC 230 V	
BA 7905.81, AI 905.81, EO 9905.82:	2.5 x 10 <sup>5</sup> switching cycles
BA 7905.82, AI 905.82, EO 9905.82:	0.5 x 10 <sup>5</sup> switching cycles

#### Permissible switching frequency:

	6000 switching cycles / h
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#### Short circuit strength

<b>max. fuse rating:</b>	
BA 7905, AI 905:	4 A gL IEC/EN 60 947-5-1
EO 9905:	6 A fast, 4 A sluggish IEC/EN 60 947-5-1

#### Mechanical life:

BA 7905, AI 905:	50 x 10 <sup>6</sup> switching cycles
EO 9905:	> 30 x 10 <sup>6</sup> switching cycles

### General Data

<b>Operating mode:</b>	Continuous operation	
<b>Temperature range</b>		
BA 7905, AI 905:	- 20 ... + 60°C	
EO 9905:	- 20 ... + 50°C	
<b>Clearance and creepage distances</b>		
rated impuls voltage / pollution degree		
in- / output:	4 kV / 2	IEC 60 664-1

## Technical Data

### EMC

Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF irradiation:	10 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:	1 kV	IEC/EN 61 000-4-5
between wire and ground:	2 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
<b>Degree of protection:</b>	Housing: IP 40	IEC/EN 60 529
	Terminals: IP 20	IEC/EN 60 529

### Housing:

	Thermoplast with V0 behaviour according to UL subject 94
<b>Vibration resistance:</b>	Amplitude 0.35 mm
	frequency 10...55Hz IEC/EN 60 068-2-6
<b>Climate resistance:</b>	20 / 050 / 04 IEC/EN 60 068-1
<b>Terminal designation:</b>	EN 50 005

### Wire connection

BA 7905, AI 905:	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
EO 9905:	via plug-in-socket suitable for 11-pole socket according to IEC 67-1-18a
<b>Wire fixing:</b>	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
	DIN rail IEC/EN 60 715

### Mounting:

<b>Weight</b>	
BA 7905:	170 g
AI 905:	150 g
EO 9905:	90 g

### Dimensions

#### Width x height x depth

BA 7905:	45 x 74 x 133 mm
AI 905:	45 x 77 x 127 mm
EO 9905:	35 x 48 x 109 mm
Front panel cut-out	
EO 9905:	45 <sup>+0.6</sup> x 45 <sup>+0.6</sup> mm

### Standard Type

BA 7905.81	AC 230 V	50/60 Hz	0.5 ... 10 s	
Article number:	0021737			stock item
• Output:	1 changeover contact, delayed			
• Nominal voltage U <sub>N</sub> :	AC 230 V			
• Time range:	0.5 ... 10 s			
• Width:	45 mm			
EO 9905.81	AC 220 ... 240 V	50/60 Hz	0.5 ... 10 s	
Article number:	0004877			stock item
• Output:	1 changeover contact, delayed			
• Nominal voltage U <sub>N</sub> :	AC 220 ... 240 V			
• Time range:	0.5 ... 10 s			
• Front surface:	35 x 48 mm			

### Variants

BA 7905.82/200	with guided contacts
AI 905._____/04:	with LED indication

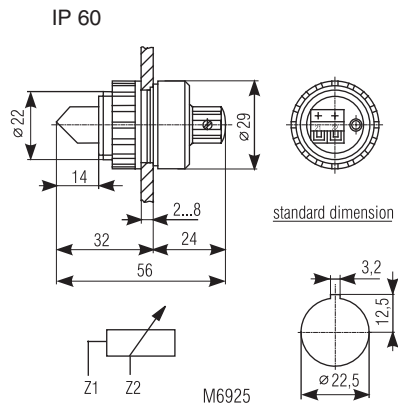
### Ordering example for variants

BA 7905	.81	/	__	AC 230 V	50 / 60 Hz	300 s	
							Time range max. value
							Nominal frequency
							Nominal voltage
							Variant, if required
							Contacts
							Type

## Accessories

AD 3:	External variable resistor	
	0.05 ... 1 s	1 M $\Omega$
	0.15 ... 3 s	2.2 M $\Omega$
	0.5 ... 10 s	10 M $\Omega$
	1.5 ... 30 s	10 M $\Omega$
	5 ... 100 s	10 M $\Omega$
	15 ... 300 s	20 M $\Omega$

Degree of protection  
front side:



K 70-34: Transparent cover for AI 905

for EO 9905:

for DIN rail mounting:

ET 4048-21:

ET 4048-22:

for flush mounting:

ET 4048-13:

ET 4048-3:

Plug-in-socket without fixing clamp

Plug-in-socket with fixing clamp

Plug-in adapter

Front frame

