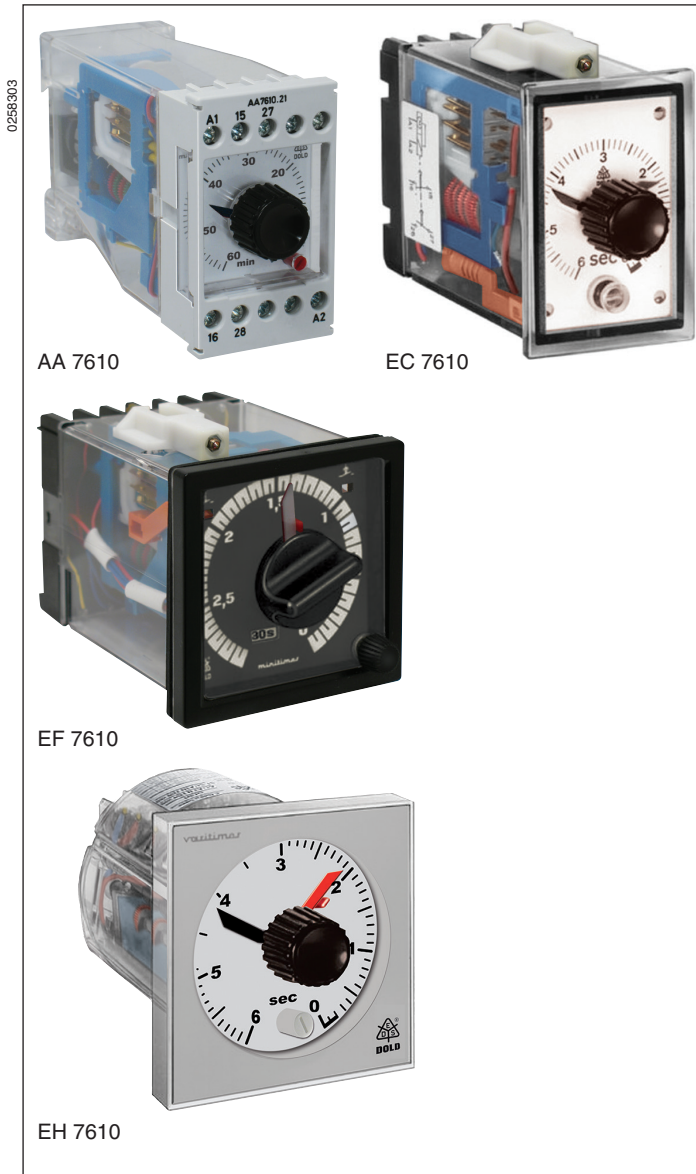


# Time Control Technique

## MINITIMER

Timer, On Delayed

AA 7610, EC 7610, EF 7610, EH 7610



- According to IEC/EN 61 812-1
- Delay up to 60 h
- Repeat accuracy  $\leq \pm 0.5\%$   
( $\leq \pm 1\%$  at range 6 s)
- Time display
- Delayed and instantaneous contact
- As option no-voltage safe version
- AA 7610: 45 mm
- EC 7610: front surface 48 x 72 mm
- EF 7610: front surface 72 x 72 mm
- EH 7610: front surface 96 x 96 mm

### Approvals and Markings



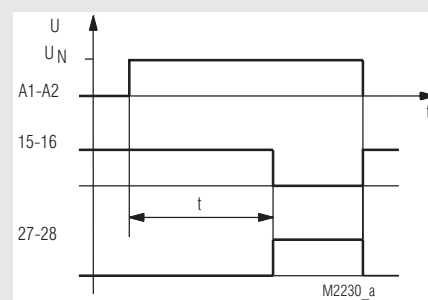
### Applications

Time dependent controls

### Indicators

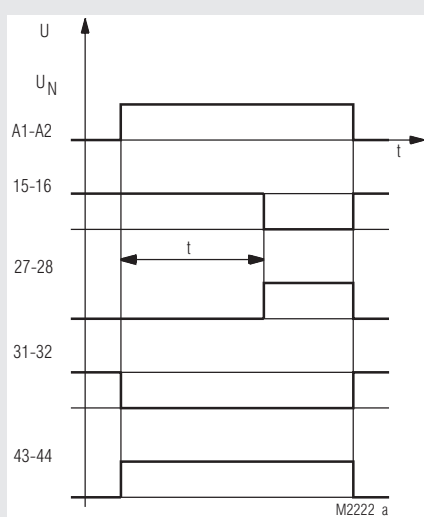
Time display: via red pointer at device-scale  
Switch position display: via sign

### Function Diagram

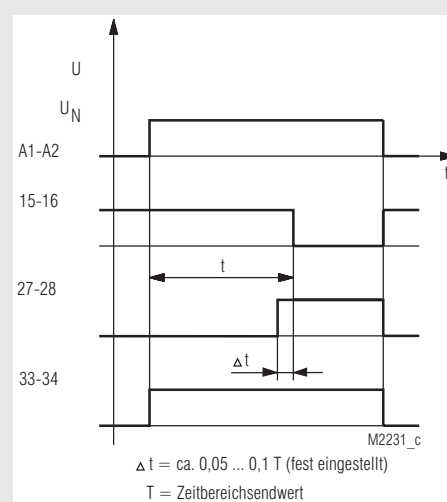


AA 7610.21

### Function Diagram

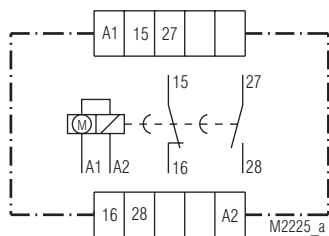


EF 7610.24

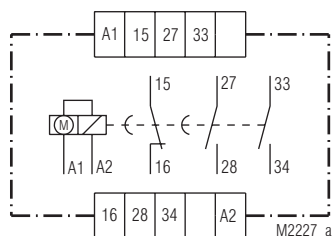


AA 7610.22/034

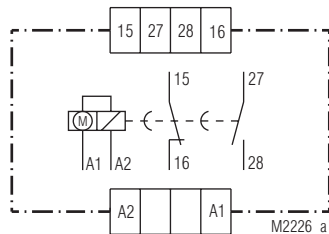
## Circuit Diagrams



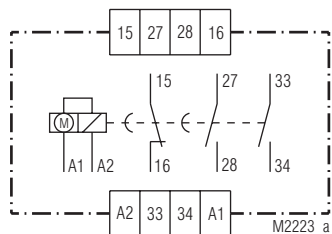
AA 7610.21



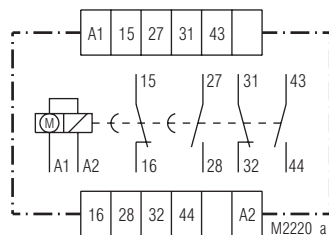
AA 7610.22/034



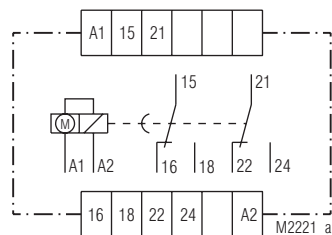
EC 7610.21



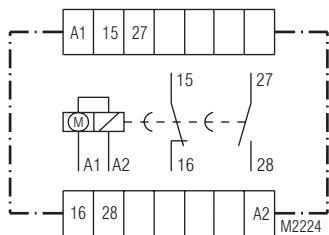
EC 7610.22/034



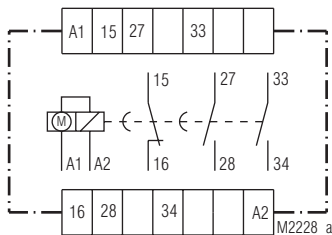
EF 7610.24



EF 7610.32



EH 7610.21



EH 7610.22/034

## Connection Terminals

Terminal designation	Signal description
A1, A2	Control- / operating voltage $U_N$
15, 16	NC contact delayed
27, 28	NO contact delayed
31, 32	NC contact instantaneous
33, 34; 43, 44	NO contact instantaneous
15, 16, 18	C/O delayed
21, 22, 24	C/O contact instantaneous

## Technical Data

### Time circuit

#### Time ranges:

0.2 ... 6 s  
2 ... 60 s  
0.2 ... 6 min  
2 ... 60 min  
0.2 ... 6 h  
2 ... 60 h

#### Time setting:

infinite via black setting pointer on absolute scale

#### Recovery time:

< 150 ms

#### Repeat accuracy:

<  $\pm 0.5\%$  of the max. scale value  
( $< \pm 1\%$  at range 6 s)

### Input

#### Nominal voltage $U_N$ :

AC 24, 110, 230, 240 V

#### Voltage range:

0.8 ... 1.1  $U_N$

#### Nominal consumption:

5 VA

#### Nominal frequency:

50 / 60 Hz

#### Frequency range:

$\pm 5\%$

### Output

#### Contacts

AA 7610.21, EC 7610.21 u.

EH 7610.21:

1 NC contact, delayed

1 NO contact, delayed

EF 7610.24:

1 NC contact, delayed

1 NO contact, delayed

1 NC contact, instantaneous

1 NO contact, instantaneous

EF 7610.32:

1 C/O contact, delayed

1 C/O contact, instantaneous

#### Contact material:

AgNi + 0.2  $\mu\text{m}$  Au

#### Measured nominal voltage:

AC 250 V

#### Operate time of contacts:

< 35 ms

#### Release time:

< 60 ms

#### Thermal current $I_{th}$ :

4 A

(10 A at 20°C and  $U_N$ )

#### Switching capacity

to AC 15:

3 A / AC 230 V

IEC/EN 60 947-5-1

#### Electrical life

to AC 15 at 3 A, AC 230 V:

1 x 10<sup>5</sup> switching cycles

IEC/EN 60 947-5-1

to AC 15 at 1 A, AC 230 V:

5 x 10<sup>5</sup> switching cycles

#### Permissible

#### switching frequency:

3 000 switching cycles / h

#### Short circuit strength

#### max. fuse rating:

10 A gG / gL

IEC/EN 60 947-5-1

#### Mechanical life:

> 30 x 10<sup>6</sup> switching cycles or > 15 000 h

### General Data

#### Operating mode:

Continuous operation

#### Temperature range

Operation:

- 20 ... + 55 °C

Storage:

- 20 ... + 65 °C

#### Altitude:

< 2,000 m

#### Clearance and creepage distances

rated impulse voltage /

pollution degree:

4 kV / 2

IEC 60 664-1

#### 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:

4 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	
<b>Degree of protection:</b>	IEC/EN 60 529
EC 7610, EF 7610, EH 7610:	
Housing -front side:	IP 40
Housing:	IP 30
Klemmen:	IP 10
AA 7610:	
Housing:	IP 40
Terminals:	IP 20
<b>Housing:</b>	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 20 / 055 / 04; A/B/C IEC/EN 60 068-1
<b>Climate resistance:</b>	EN 50 005
<b>Terminal designation:</b>	
<b>Wire connection:</b>	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>Fixing torque:</b>	0.8 Nm
<b>Mounting</b>	
AA 7610:	DIN rail IEC/EN 60 715
<b>Flush mounting</b>	
EC 7610, EF 7610, EH 7610:	2 clamps with screws
<b>Weight:</b>	
AA 7610:	320 g
EC 7610:	320 g
EF 7610:	400 g
EH 7610:	460 g

#### Dimensions

##### Width x height x depth

AA 7610:	45 x 77 x 125 mm
EC 7610:	48 x 72 x 120 mm
EF 7610:	72 x 72 x 128 mm
EH 7610:	96 x 96 x 138 mm

##### Front panel cut-out

EC 7610:	44 x 67 mm
EF 7610:	67 x 67 mm
EH 7610:	ø 91 <sup>+1</sup> mm

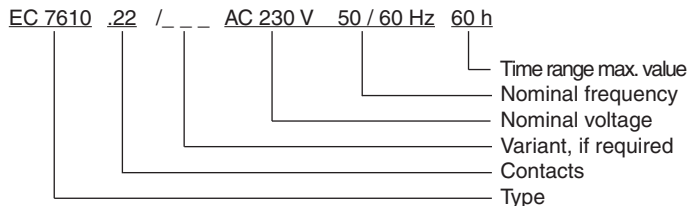
#### Standard Type

AA 7610.21	AC 230 V	50/60 Hz	60 min
Article number:	0000661		
• Output:	1 NC contact, delayed 1 NO contact, delayed		
• Nominal voltage U <sub>N</sub> :	AC 230 V		
• Time range:	2 ... 60 min		
• Width:	45 mm		

#### Variants

AA 7610.22/034:	According to VDE 0116 with pre contact: delayed, closing
EC 7610.22/034:	According to VDE 0116 with pre contact: delayed, closing
EF 7610.32/100:	no-voltage safe
EH 7610.22/034:	According to VDE 0116 with pre contact: delayed, closing

#### Ordering example for variants



#### Accessories

##### for EC 7610:

ZS 700.06:	Lockable cover Article number: 0004057
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##### ET 7001.407.034:

Plug-in-socket for EC 7610.21 Article number: 0004072
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##### for EF 7610:

ZS 700.07:	Lockable cover Article number: 0004058
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##### ET 7616-0-22:

Sealing ring for sealing at the front side Article number: 0045909
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