

# Time Control Technique

## MINITIMER

Timer, Release Delayed

AA 7666, EC 7666, EF 7666, EH 7666



- According to IEC/EN 61 812-1
- Delay up to 60 h
- 6 time ranges on one unit, adjustable at front side
- Repeat accuracy  $\leq \pm 0.5 \%$   
( $\leq \pm 1 \%$  for the range 3 and 6 s)
- Time lapse display
- Switching position display (except for EH 7666)
- With instantaneous contact
- No voltage safe
- EF 7666: front side protected against beam water, IP 65
- AA 7666: width 45 mm
- EC 7666: front size 48 x 72 mm
- EF 7666: front size 72 x 72 mm
- EH 7666: front size 96 x 96 mm

### Approvals and Markings



### Applications

Time dependent controls

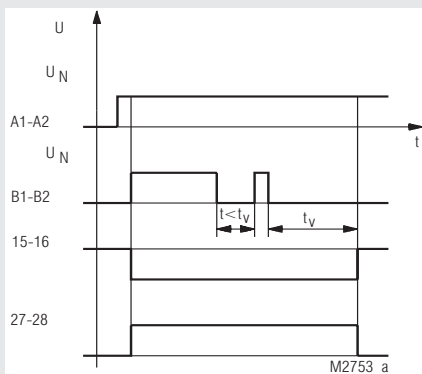
### Indicators

- Time display: via red pointer at scale of the device
- Switching position: red sign when NO contacts are closed (not for EH 76669)
- Time range display: final scale value in a window

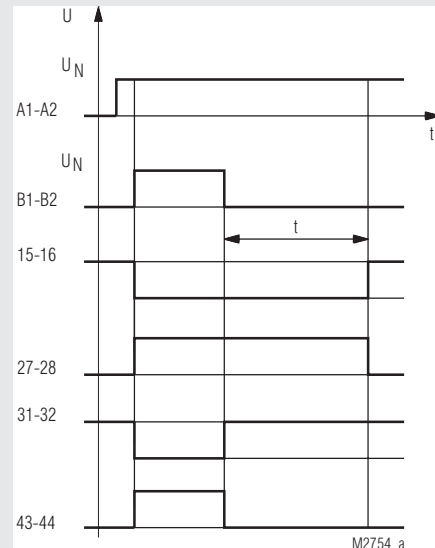
### Notes

The frequency changing switch 50 / 60 Hz is located on the bottom side of the unit.

### Function Diagrams

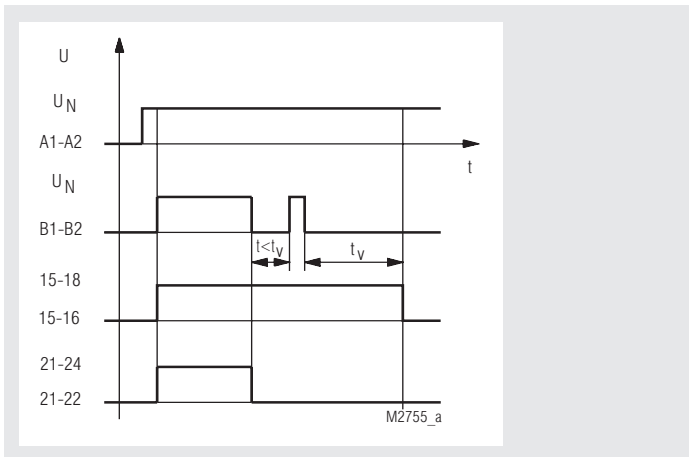


AA 7666.21, EC 7666.21, EH 7666.21



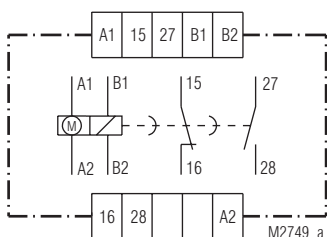
EF 7666.24

## Function Diagram

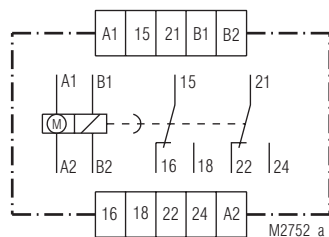


AA 7666.32, EF 7666.32

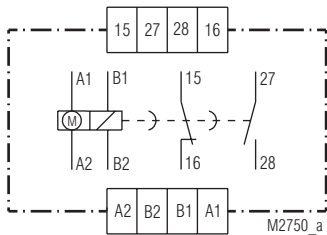
## Circuit Diagrams



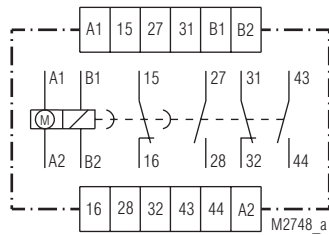
AA 7666.21



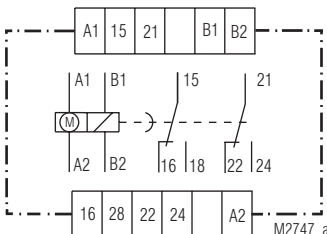
AA 7666.32



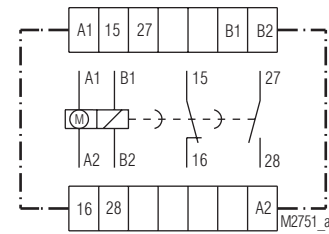
EC 7666.21



EF 7666.24



EF 7666.32



EH 7666.21

## Connection Terminals

Terminal designation	Signal description
A1, A2	Operating voltage $U_N$
B1, B2	Control 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:

6-range models  
 0.15 ... 3 s 1.5 ... 30 s 15 ... 300 s  
 0.4 ... 10 s 4 ... 100 s 40 ... 1000 s  
 or  
 0.15 ... 3 s 0.15 ... 3 min 0.15 ... 3 h  
 1.5 ... 30 s 1.5 ... 30 min 1.5 ... 30 h  
 or  
 0.2 ... 6 s 0.2 ... 6 min 0.2 ... 6 h  
 2 ... 60 s 2 ... 60 min 2 ... 60 h

#### Time setting:

infinite with black (white) setting pointer on absolute scale

#### Recovery time:

< 150 ms

#### Repeat accuracy:

$\leq \pm 0.5\%$  of max. scale value  
 (at 3 and 6 s  $\pm 1\%$ )

EH 7666, DC-version:

$\leq \pm 3\%$  of the max. scale value

### Input

#### Nominal voltage $U_N$ :

AC 24, 110, 230, 240 V

#### Special voltages

AA 7666:

AC 12, 400, 415 V

EH 7666:

DC 12, 24, 48, 60 V

#### Voltage range:

0.8 ... 1.1  $U_N$

#### Nominal consumption:

AC 7 VA

DC 12 V 5 W

DC 24 V 5 W

DC 48 V 7 W

#### Nominal frequency:

50 / 60 Hz to e selected

#### Frequency range:

$\pm 5\%$   $f_N$

#### Frequency influence:

reverse proportional

### Output

#### Contacts

AA 7666.21,

EC 7666.21,

EF 7666.21,

EH 7666.21:

1 NC contact, delayed

1 NO contact, delayed

EF 7666.24:

1 NO contact, instantaneous

1 NC contact, instantaneous

1 NC contact, delayed

1 NO contact, delayed

EF 7666.32:

1 changeover contact, delayed

1 changeover contact, instantaneous

#### Contact material:

AgNi + 0.2  $\mu$ m Au

#### Measured nominal voltage:

AC 250 V

#### Operate time of contacts:

< 35 ms

#### Release time:

< 60 ms

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

4 A

#### 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

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

## Technical Data

### 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

inputs: 4 kV / 2 IEC 60 664-1

in-/output: 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

**Degree of protection:** IEC/EN 60 529

AA 7666:

Housing: IP 40

Terminals: IP 20

EC 7666, EH 7666:

Housing-front: IP 40

Housing: IP 30

Terminals: IP 10

EF 7666:

Housing-front: IP 65

**Housing:** Thermoplast with V0 behaviour  
according to UL subject 94

**Vibration resistance:** Amplitude 0.35 mm

frequency 10...55Hz, IEC/EN 60 068-2-6

20 / 055 / 04; A/B/C IEC/EN 60 068-1

DIN 46 199-5

**Climate resistance:** EN 50 005

**Terminal arrangement:**

**Terminal designation:**

**Wire connection:** 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

**Wire fixing:** Flat terminals with self-lifting

clamping piece IEC/EN 60 999-1

**Fixing torque:** 0.8 Nm

### Mounting

AA 7666: DIN rail IEC/EN 60 715

EC 7666, EF 7666, EH 7666: flush mounting

### Weight

AA 7666: 320 g

EC 7666: 320 g

EF 7666: 400 g

EH 7666: 450 g

## Dimensions

### Width x height x depth

AA 7666: 45 x 77 x 127 mm

EC 7666: 48 x 72 x 120 mm

EF 7666: 72 x 72 x 128 mm

EH 7666: 96 x 96 x 138 mm

### Front panel cut-out

EC 7666: 44 x 67 mm

EF 7666: 67 x 67 mm

EH 7666:  $\varnothing 91^{+1}$  mm

### Front surface

EC 7666: 48 x 72 mm

EH 7666: 72 x 72 mm

EH 7666: 96 x 96 mm

## Standard Type

AA 7666.32 AC 230 V 50/60 Hz 0.15 s ... 30 h

Article number: 0025127

• Time range: 0.15 s ... 30 h

• Nominal voltage  $U_N$ : AC 230 V

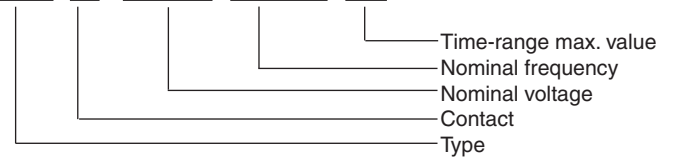
• Output: 1 changeover contact, delayed

1 changeover contact, instantaneous

• Width: 45 mm

## Ordering Example

AA 7666 .32 AC 230 V 50 / 60 Hz 30 h



## Accessories

### for EC 7666:

ZS 700.06: Lockable cover  
Article number: 0004057

ET 7001.407.034: Plug-in-socket for EC 7666.21  
Article number: 0004072

### for EF 7666:

ZS 700.07: Lockable cover  
Article number: 0004058

ET 7616-0-22: Sealing ring for sealing  
at the front side  
Article number: 0045909

