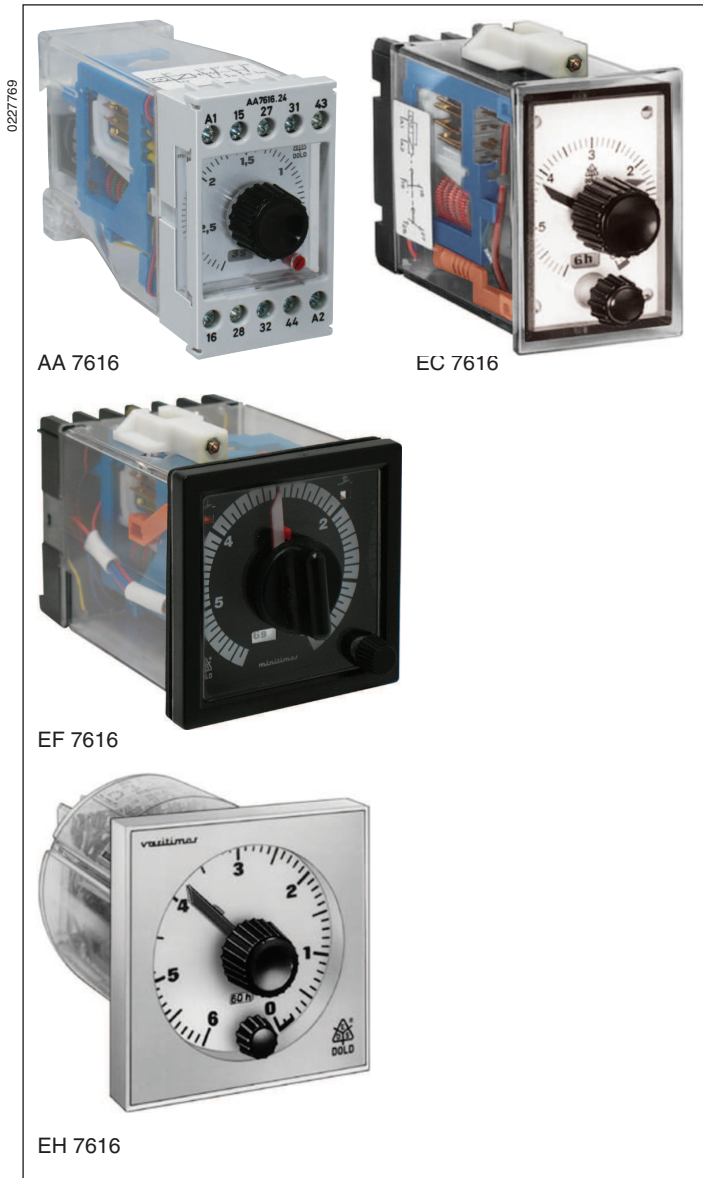


## MINITIMER

Timer, On Delayed

AA 7616, EC 7616, EF 7616, EH 7616



- According to IEC/EN 61 812-1
- Delay up to 60 h
- 6 switchable time ranges, adjustable on front side
- Repeat accuracy  $\leq \pm 0.5\%$  ( $\leq \pm 1\%$  for ranges 3 s and 6 s)
- Time lapse display
- Switching position display (except for EH 7616)
- With instantaneous contact
- Available no-voltage safe
- EF 7616: front side, protected against beam water, IP 65
- AA 7616: width 45 mm
- EC 7616: front surface 48 x 72 mm
- EF 7616: front surface 2 x 72 mm
- EH 7616: front surface 96 x 96 mm

### Approvals and Marking



### Application

Time dependent controls

### Function

#### Quick start:

For short times, the quick start is recommendable for a higher repeat accuracy. Here the version AA 7616.32 is necessary. The terminals A1-A2 always remain at nominal voltage (synchronous motor is continuously operating). Time elapse starts when connecting nominal voltage to B1-B2

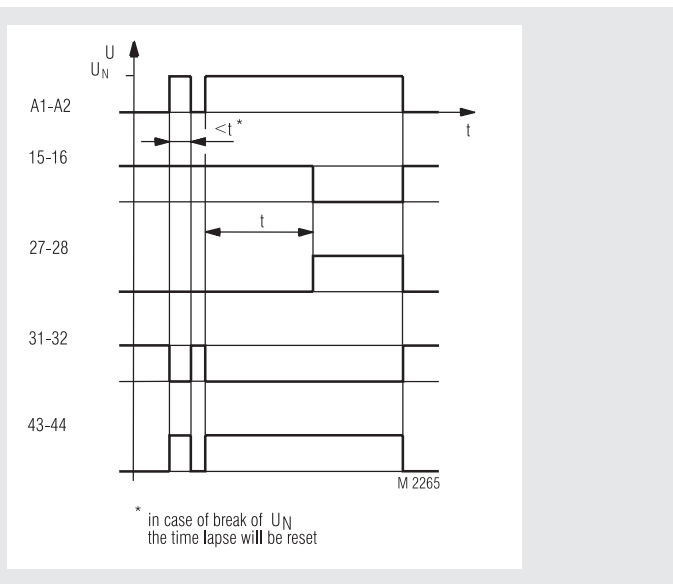
#### Frequency selection:

The frequency change-over 50/60Hz is done by moving a switch on the back side of the device with a screw driver

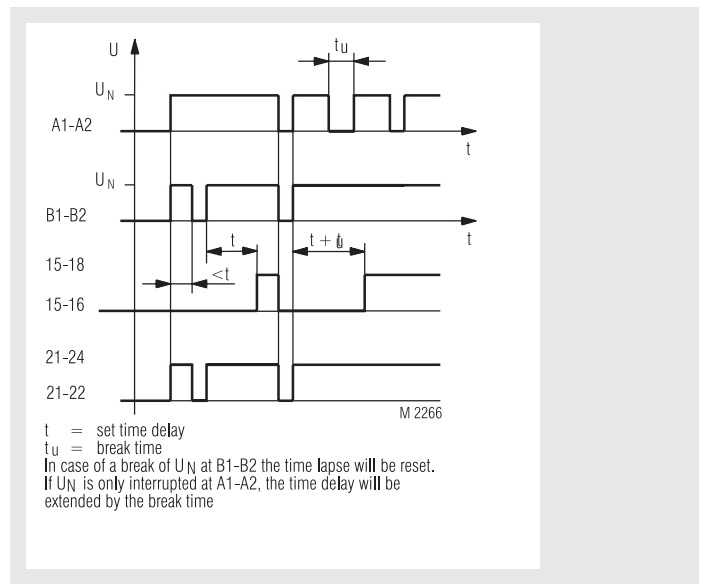
**Timer AA 7616.\_\_/100, EC 7616.\_\_/100, EF 7616.\_\_/100, EH 7616.\_\_/100 delay on make, no-voltage save**

When energizing the clutch it will be locked by a barrier, so that in case of a voltage loss. The already expired time remains stored; also the non-delayed contacts remain in the closed position. After elapse of the set time, the barrier will be opened and the delayed contacts will be actuated. If the set-time should start again after a stop of the time lapse, the time setting in the no-voltage condition has to be turned down to 0 and back again to the pre-set time value.

### Function Diagrams

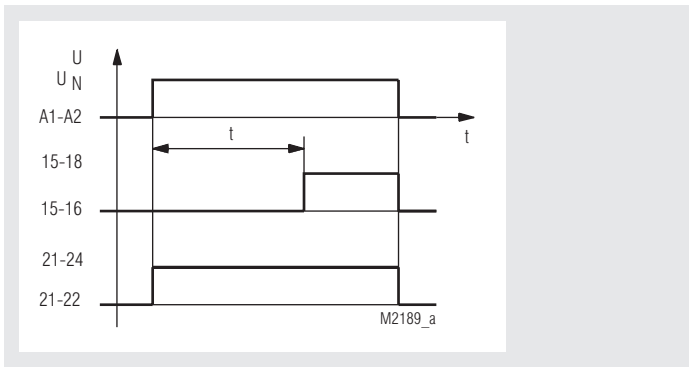


AA 7616.24

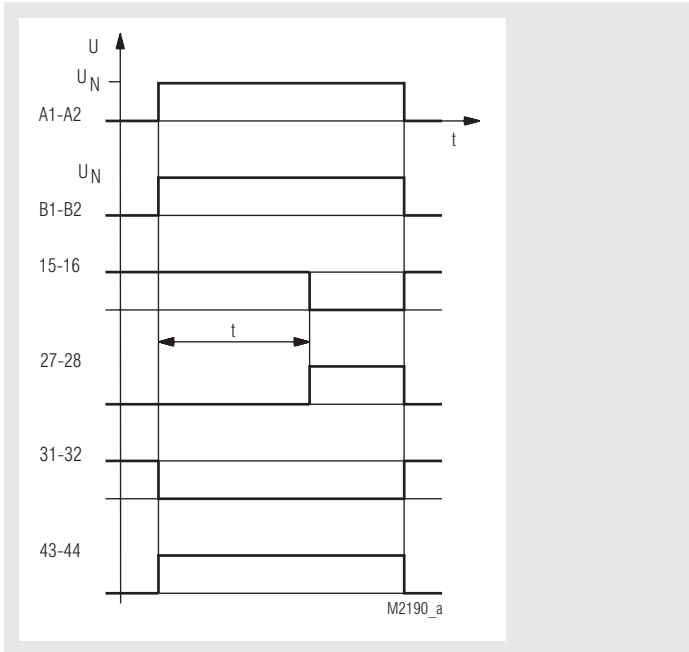


AA 7616.32

## Function Diagrams

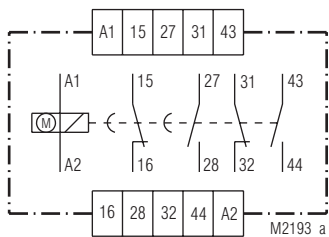


EC 7616.32

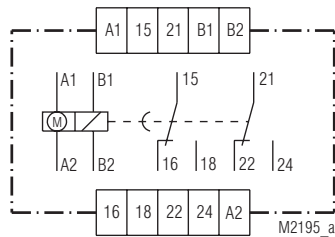


EF 7616.24, EH 7616.24

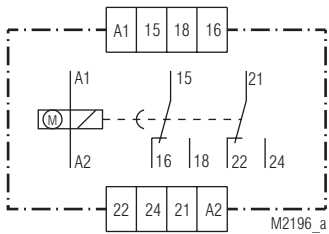
## Circuit Diagrams



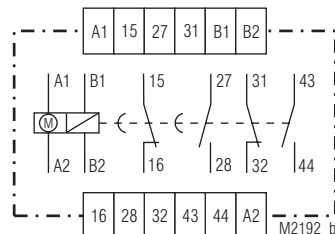
AA 7616.24



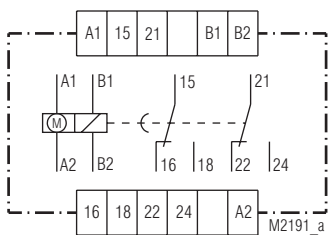
AA 7616.32



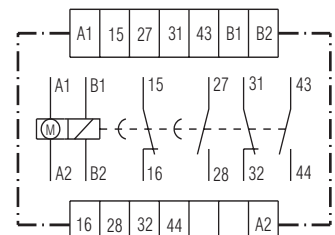
EC 7616.32



EF 7616.24



EF 7616.32



EH 7616.24

## Indication

Time display: via red pointer at device-scale  
Red sign: visible, when NO contacts closed (not for EH 7616)

## Technical Data

### Time circuit

**Time range:** 6-range-versions  
0.15 ... 3 s 1.5 ... 30 s 15 ... 300 s  
2 ... 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  
infinite via black (white) setting pointer on absolute scale

### Time setting:

**Recovery time:** 150 ms  
**Repeat accuracy:**  $\pm 0.5\%$  of the max. scale value (for 3 and 6 s  $\leq \pm 1\%$ )  
EH 7616, DC-version:  $\pm 3\%$  of the max. scale value

## Input

**Nominal voltage  $U_N$ :** AC 24, 42, 110, 127, 230, 240 V

### Special voltages

AA 7616: AC 12, 400, 415 V  
EH 7616: DC 12, 24, 48, 60\*, 110\*, 230\* V  
\*) with external series resistors

### 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  
DC 60 V 10 W  
DC 110 V 13 W  
DC 230 V 18 W

### Nominal frequency:

50 / 60 Hz switchable

### Frequency range:

$\pm 5\%$   $f_N$

### Frequency influence:

reverse proportional

## Output

### Contacts

AA 7616.24, EF 7616.24, EH 7616.24:  
1 NC contact, delayed  
1 NC contact, instantaneous  
1 NO contact, delayed  
1 NO contact, instantaneous

AA 7616.32, EC 7616.32, EF 7616.32:

1 changeover contact, delayed  
1 changeover contact, instantaneous

### Operate time of contacts:

< 35 ms  
< 60 ms  
4 A

### Release time:

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

### Switching capacity

to AC 15: 3 A / AC 230 V IEC/EN 60 947-5-1  
to AC 15 at 3 A, AC 230 V: IEC/EN 60 947-5-1

### Electrical life

to AC 15 at 1 A, AC 230 V: 1 x 10<sup>5</sup> switching cycles

### Permissible switching frequency:

3 000 switching cycles / h

### Short circuit strength

### max. fuse rating:

10 A 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:

- 20 ... + 55°C

### Clearance and creepage distances

rated impuls voltage / pollution degree:

4 kV / 2

IEC 60 664-1

Technical Data		
<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:	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
<b>Degree of protection</b>		IEC/EN 60 529
AA 7616:	Housing: IP 40	
	Terminals: IP 20	
EC, EH 7616:	Housing-front: IP 40	
	Housing: IP 30	
	Terminals: IP 10	
EF 7616:	Housing-front: IP 65	
<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	
<b>Climate resistance:</b>	20 / 055 / 04; A/B/C IEC/EN 60 068-1	
<b>Terminal arrangement:</b>	DIN 46 199-5	
<b>Terminal designation:</b>	EN 50 005	
<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>Mounting</b>		
AA 7616:	DIN rail	IEC/EN 60 715
<b>Flush mounting</b>		
EC 7616, EF 7616, EH 7616:	2 clamps with screws	
<b>Weight:</b>		
AA 7616:	320 g	
EC 7616:	320 g	
EF 7616:	400 g	
EH 7616:	450 g	

## Dimensions

### Width x height x depth

AA 7616:	45 x 77 x 127 mm
EC 7616:	48 x 72 x 120 mm
EF 7616:	72 x 72 x 128 mm
EH 7616:	96 x 96 x 138 mm

### Front panel cut-out

EC 7616:	44 x 67 mm
EF 7616:	67 x 67 mm
EH 7616:	∅ 91 <sup>+1</sup> mm

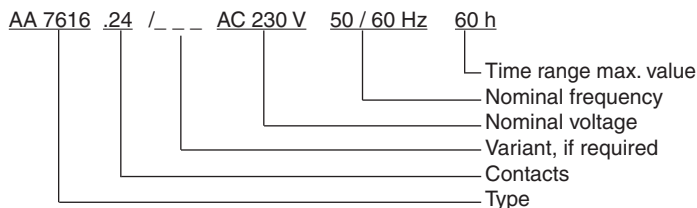
### Front surface

EC 7616:	48 x 72 mm
EF 7616:	72 x 72 mm
EH 7616:	96 x 96 mm

Standard Type		
AA 7616.24 AC 230 V 50/60 Hz 0.15 s ... 30 h		
Article number:	0000678	stock item
• Time range:	0.15 s ... 30 h	
• Nominal voltage U <sub>N</sub> :	AC 230 V	
• Output:	1 NC contact, delayed 1 NC contact, instantaneous 1 NO contact, delayed 1 NO contact, instantaneous	
• Width:	45 mm	

Variants	
AA 7616.___/100:	no-voltage safe
AA 7616.___/102:	switchable from auto-reset to no-voltage safe version
AA 7616.24/103:	with switchable no-voltage safe function holding current ≥ 5 mA
EC 7616.___/100:	no-voltage safe
EF 7616.___/100:	no-voltage safe
EH 7616.___/100:	no-voltage safe

## Ordering example for variants



Accessories	
<b>for EC 7616:</b>	
ZS 700.06:	Lockable cover Article number: 0004057
ET 7001.407.034:	Plug-in-socket for EC 7616.21 Article number: 0004072
<b>for EF 7616:</b>	
ZS 700.07:	Lockable cover Article number: 0004058
ET 7616-0-22:	Sealing ring for sealing at the front side Article number: 0045909

