MINITIMER
Timer, On Delayed
AA 7616, EC 7616, EF 7616, EH 7616

0227769



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 ≤ ± 0.5 % (≤ ± 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 Markings

CE

Applications

Time dependent controls

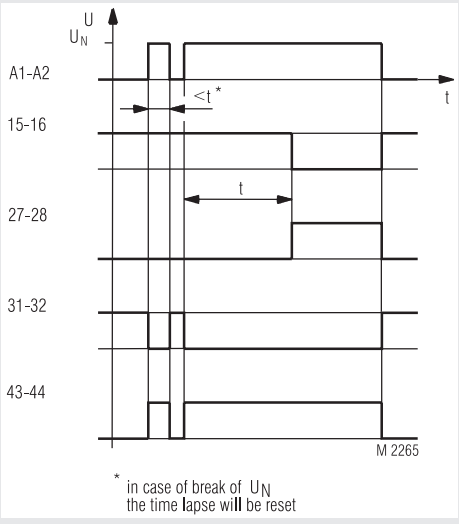
Function

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

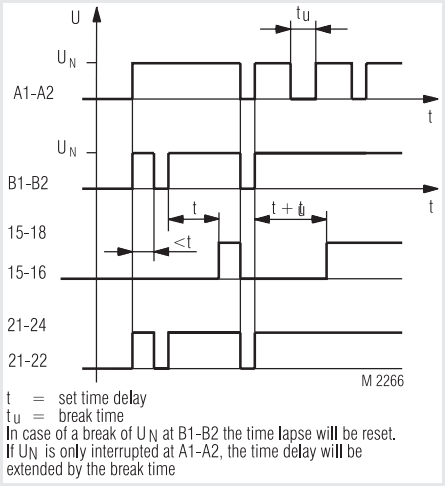
Frequency selection:
The frequency change-over 50/60Hz is done by moving a switch on the back side of the device with a screw driver

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



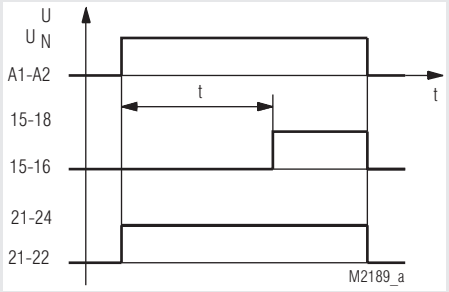
AA 7616.24



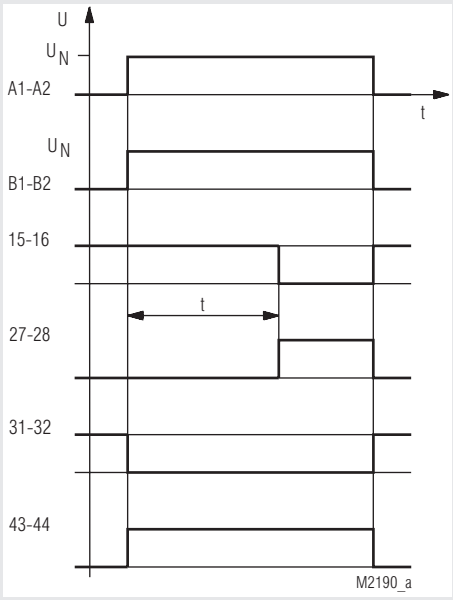
AA 7616.32

All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.

Function Diagram

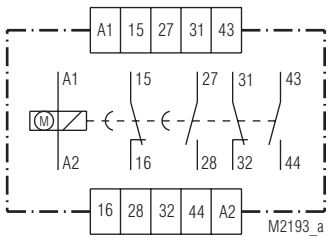


EC 7616.32

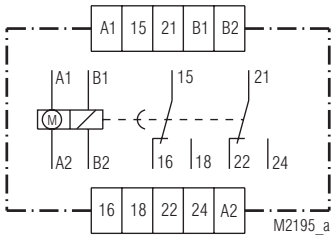


EF 7616.24, EH 7616.24

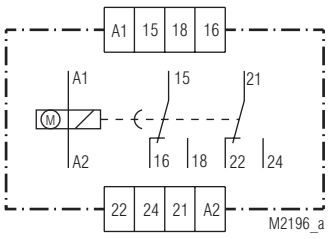
Circuit Diagrams



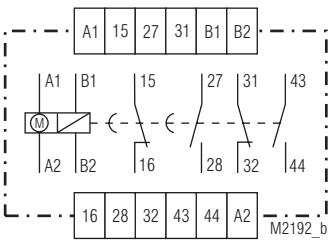
AA 7616.24



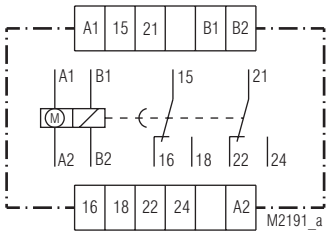
AA 7616.32



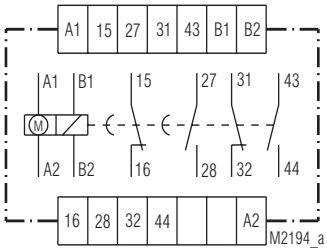
EC 7616.32



EF 7616.24



EF 7616.32



EH 7616.24

Connection Terminals

Terminal designation	Signal description
A1, A2	Control- / operating voltage U_N (for versions without B1, B2) Operating voltage U_N (for versions with B1, B2)
B1, B2	Control voltage U_N
15, 16	NC contact, delayed
27, 28	NO contact, delayed
31, 32	NC contact, instantaneous
33, 34;	NO contact, instantaneous
15, 16, 18	C/O delayed
21, 22, 24	C/O contact instantaneous

Indicators

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
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 via black (white) setting pointer on absolute scale
Recovery time: 150 ms
Repeat accuracy: ≤ ± 0.5 % of the max. scale value (for 3 and 6 s ≤ ± 1 %)
EH 7616, DC-version: ≤ ± 3 % of the max. scale value

Input

Nominal voltage U_N: AC 24, 110, 230, 240 V
Special voltages
AA 7616: AC 12, 400, 415 V
EH 7616: DC 12, 24, 48 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 switchable
Frequency range: ± 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

Contact material: AgNi + 0.2 µm 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 IEC/EN 60 947-5-1
to AC 15 at 3 A, AC 230 V: 1 x 10^5 switching cycles
to AC 15 at 1 A, AC 230 V: 5 x 10^5 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 10^6 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:	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 7616:		
Housing:	IP 40	
Terminals:	IP 20	
EC, EH 7616:		
Hosuing-front:	IP 40	
Housing:	IP 30	
Terminals:	IP 10	
EF 7616:		
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
Climate resistance:	20 / 055 / 04; A/B/C	IEC/EN 60 068-1
Terminal arrangement:	DIN 46 199-5	
Terminal designation:	EN 50 005	
Wire connection:	2 x 2.5 mm² solid or 2 x 1.5 mm² 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 7616:	DIN rail	IEC/EN 60 715
Flush mounting		
EC 7616, EF 7616, EH 7616:	2 clamps with screws	
Weight:		
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:	ø 91^{+1} mm
Front surface	
EC 7616:	48 x 72 mm
EF 7616:	72 x 72 mm
EH 7616:	96 x 96 mm

Standard Type

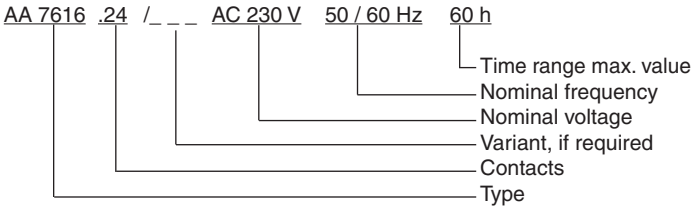
AA 7616.24 AC 230 V 50/60 Hz 0.15 s ... 30 h

Article number:	0000678
• Time range:	0.15 s ... 30 h
• Nominal voltage U_N:	AC 230 V
• Output:	1 NC contact, delayed 1 NC contact, instantaneous 1 NO contact, delayed 1 NO contact, instantaneous
• Width:	45 mm

Variant

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

for EC 7616:

ZS 700.06:	Lockable cover Article number: 0004057
ET 7001.407.034:	Plug-in-socket for EC 7616.21 Article number: 0004072

for EF 7616:

ZS 700.07:	Lockable cover Article number: 0004058
ET 7616-0-22:	Sealing ring for sealing at the front side Article number: 0045909