

# Time Control Technique

## MULTITIMER Multifunction Relay BA 7811

Translation  
of the original instructions



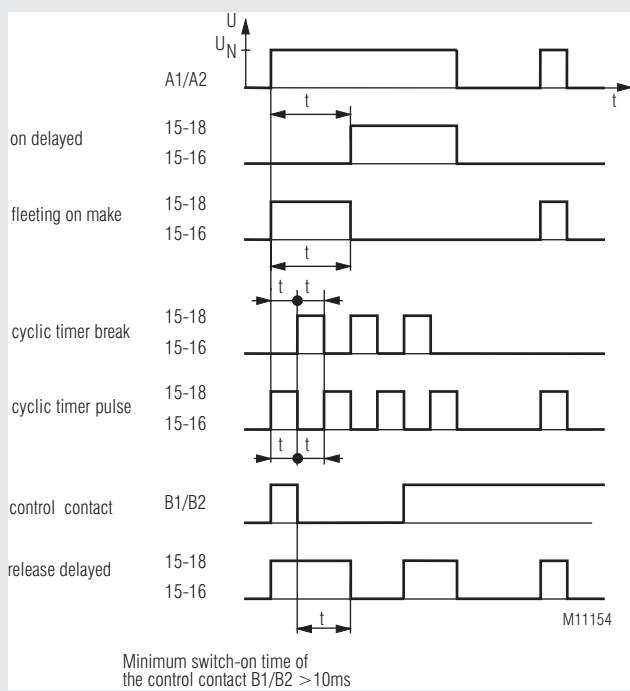
### Your Advantage

- Adjustable on front side via absolute scale
- High switching capacity

### Features

- According to IEC/EN 61812-1
- Programmable via rotary switch for
  - On delay (AV)
  - Release delay (RV)
  - Fleeting on make (EW)
  - Cyclic timer / start with break (TP)
  - Cyclic timer / start with pulse (TI)
- 4 time ranges from 0.05 ... 1000 s or 0.05 ... 1000 min
- Decadic time ranges
- 1 or 2 changeover contacts
- LED indicators for power supply and state of contact
- Width: 45 mm

### Function Diagram



### Approvals and Markings



### Applications

Time dependent controls, process controls

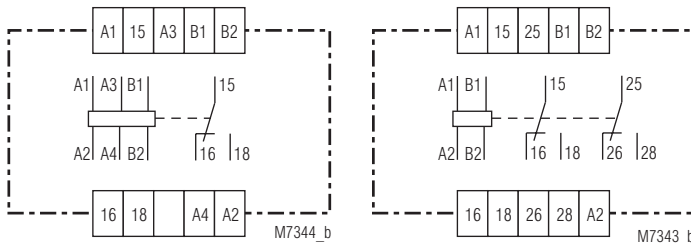
### Indicators

- Red LED: On, when supply connected
- Green LED: On, when corresponding output relay is active

### Notes

A voltage free control contact is required for the release delay. The device switches as a cyclic timer with a pulse/pause ratio of 1:1 and can also be used as a flasher relay with a short time setting.

### Circuit Diagrams



BA 7811.81  
A1/A2: AC 110 - 220 V  
A3/A4: AC/DC 24 - 60 V  
B1/B2: Control contacts for release delay

BA 7811.82  
A1/A2: Operation voltage  
B1/B2: Control contacts for release delay

### Connection Terminals

Terminal designation	Signal description
A1, A2	Power supply AC
A3, A4	Power supply AC/DC
B1, B2	Control contacts for release delay
15, 16, 18	Changeover contacts (output relay)
25, 26, 28	Changeover contacts (2. output relay)

## Technical Data

### Time Circuit

<b>Time ranges:</b>	0.05 ... 1 s or 0.05 ... 1 min
	0.5 ... 10 s or 0.5 ... 10 min
	5 ... 100 s or 5 ... 100 min
	50 ... 1000 s or 50 ... 1000 min
<b>Time setting:</b>	Infinite
<b>Recovery time:</b>	≤ 20 ms
<b>Repeat accuracy:</b>	≤ ± 1 % of setting value ± 10 ms
<b>Voltage influence:</b>	< 0.5 %
<b>Temperature influence:</b>	± 0.1 % / K

### Input

<b>Nominal voltage <math>U_N</math></b>	At devices with 1 changeover contact: AC/DC 24 ... 60 V <b>and</b> AC 110 ... 230 V
	At devices with 2 changeover contacts: AC/DC 24 ... 60 V <b>or</b> AC 110 ... 230 V
	0.8 ... 1.1 $U_N$
<b>Voltage range:</b>	
<b>Minimum switch-on time of the control contact B1 / B2:</b>	≥ 10 ms
<b>Nominal consumption:</b>	≤ 4 VA
<b>Nominal frequency:</b>	50 / 60 Hz
<b>Frequency range:</b>	± 5 % $f_N$

### Output

<b>Contacts</b>	
BA 7811.81:	1 changeover contact, delayed
BA 7811.82:	2 changeover contacts, delayed
<b>Contact material:</b>	AgNi + 0.2 µm Au
<b>Measured nominal voltage:</b>	AC 250 V
<b>Thermal current <math>I_{th}</math>:</b>	10 A
<b>Switching capacity</b>	
To AC 15	
BA 7811.81	
NO contact:	10 A / AC 230 V IEC/EN 60947-5-1
NC contact:	5 A / AC 230 V IEC/EN 60947-5-1
BA 7811.82	
NO contact:	2 A / AC 230 V IEC/EN 60947-5-1
NC contact:	1 A / AC 230 V IEC/EN 60947-5-1
<b>Electrical life</b>	IEC/EN 60947-5-1
To AC 15 at 3 A, AC 230 V	
BA 7811.81:	3 x 10 <sup>5</sup> switching cycles
To AC 15 at 2 A, AC 230 V	
BA 7811.82:	1.5 x 10 <sup>5</sup> switching cycles
<b>Permissible switching frequency:</b>	6000 switching cycles / h
<b>Short circuit strength</b>	
<b>Max. fuse rating:</b>	4 A gG / gL IEC/EN 60947-5-1
<b>Mechanical life:</b>	
BA 7811.81:	30 x 10 <sup>6</sup> switching cycles
BA 7811.82:	50 x 10 <sup>6</sup> switching cycles

### General Data

<b>Nominal operating mode:</b>	Continuous operation
<b>Temperature range:</b>	
Operation:	- 20 ... + 60 °C
Storage:	- 20 ... + 60 °C
<b>Altitude:</b>	< 2000 m
<b>Clearance and creepage distance</b>	
Rated impulse voltage / pollution degree:	4 kV / 2 IEC 60664-1
<b>EMC</b>	
Electrostatic discharge (ESD):	8 kV (air) IEC/EN 61000-4-2
HF irradiation:	10 V/m IEC/EN 61000-4-3
Fast transients	
On wires for power supply:	4 kV IEC/EN 61000-4-4
On control input:	2 kV IEC/EN 61000-4-4
Surge voltage	
Between	
wires for power supply:	2 kV IEC/EN 61000-4-5
Between wire and ground:	4 kV IEC/EN 61000-4-5
HF-wire guided:	10 V IEC/EN 61000-4-6
Interference suppression:	Limit value class B EN 55011

## Technical Data

### Degree of protection

Housing:	IP 40 IEC/EN 60529
Terminals:	IP 20 IEC/EN 60529
<b>Housing:</b>	Thermoplastic with V0 behaviour acc. to UL subject 94
<b>Vibration resistance:</b>	Amplitude 0.35 mm, frequency 10 ... 55 Hz, IEC/EN 60068-2-6
<b>Climate resistance:</b>	20 / 060 / 04 IEC/EN 60068-1
<b>Terminal arrangement:</b>	DIN 46199-5
<b>Terminal designation:</b>	EN 50005
<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 46228-1/-2/-3/-4
<b>Wire fixing:</b>	Flat terminals with self-lifting clamping piece IEC/EN 60999-1
<b>Fixing torque:</b>	0.8 Nm
<b>Mounting:</b>	DIN rail IEC/EN 60715
<b>Weight:</b>	320 g

### Dimensions

<b>Width x height x depth:</b>	45 x 73 x 133 mm
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### Standard Type

BA 7811.81 AC/DC 24 ... 60 V + AC 110 ... 230 V 50 / 60 Hz 1000 s
Article number: 0022010
• 4 time ranges from 0.05 ... 1000 s
• Nominal voltage $U_N$ : AC/DC 24 ... 60 V + AC 110 ... 230 V
• Output: 1 Wechsler, verzögert
• Width: 45 mm

### Ordering Example

BA 7811 .82 AC/DC 24 ... 60 V 50 / 60 Hz 1000 s	
	Timerangemax.value
	Nominal frequency
	Nominal voltage
	Contacts
	Type

### Accessories

ET 4762-5	Adapter for screw fixing Article number: 0023119
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