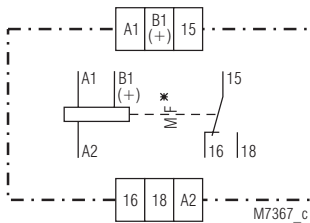




Product Description

The BC 7935N multifunction time relay is used to control time-dependent functions. One of 8 functions can be selected by means of a rotary switch. The device is characterised by its large, continuously adjustable time range.

Circuit Diagram



Connection Terminals

Terminal designation	Signal description
A1, A2	Operating voltage
15, 16, 18	1 changeover contact
B1(+)	Control input B1

- According to IEC/EN 61812-1
- 8 functions selectable by rotational switch:
 - AV - Operate delay
 - EW - Fleeting on make
 - IE - Delayed pulse function
 - BI - Flashing function symmetrical, start with pulse
 - RV - Release delay
 - IF - Pulse forming
 - AW - Fleeting on break
 - AV/RV - Operate / release delay
- With 10 time ranges up to 300 h selectable by rotational switch
- Time addition via control input B1 for the functions AV, EW, IE, BI
- Operating voltage AC/DC 24 ... 240 V, DC 12 V
- 1 changeover contact
- LED indicators for voltage supply and contact position, flashing function during elapse of time
- Width 22.5 mm

Approvals and Markings



Applications

Time-dependent controllers

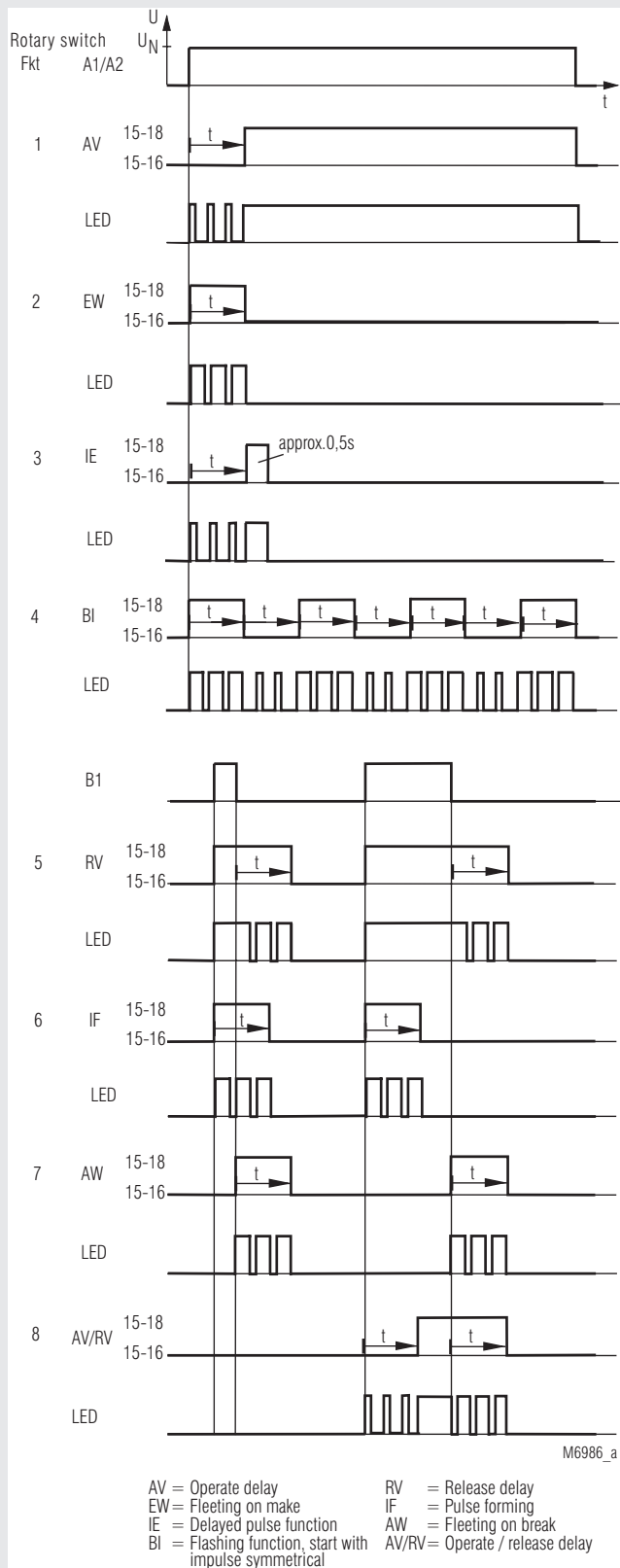
Indicators

Green LED:	On, when supply connected.
Yellow LED:	On, when output relay active. Flashes during time delay, pulse-pause-ratio indicates the state of the output relay (see Function Diagramm).

Notes

The functions RV, IF, AW, AV/RV have to be controlled by control input B1(+) according to the connection diagram.
At the functions AV,EW,IE, BI the timing cycle can be stopped by closing control input B1(+). When control input B1(+) is opened, the timing cycles continues (time addition).

Function Diagram



Technical Data

Time Circuit

Time ranges:	0.05 ... 1 s	1.5 ... 30 min
	0.15 ... 3 s	15 ... 300 min
	0.5 ... 10 s	1.5 ... 30 h
	1.5 ... 30 s	15 ... 300 h
	5 ... 100 s	
	15 ... 300 s	

selectable by switch (ZB)
Time setting: Stepless 1:20
Setting accuracy: $\pm 10\%$
Recovery time: ≤ 50 ms
Repeat accuracy: $\leq 2\%$
Voltage influence: $\leq 1\%$
Temperature influence: 0.05 % / K

Input

Operating voltage U_N

A1 / A2, B1(+)/A2: AC/DC 24 ... 240 V, DC 12 V

Voltage range:

0.8 ... 1.1 U_N

Nominal consumption:

AC		DC		
24 V	240 V	12 V	24 V	240 V
1.1 VA	4.1 VA	0.4 W	0.93 W	1.95 W

Nominal frequency:

50 / 60 Hz

Release voltage:

$\geq 10\% U_N$

Min. ontime of control (input B1):

AC: 30 ms, DC: 10 ms

Output

Contacts:

1 changeover contact

Contact material:

AgNi

Measured nominal voltage:

AC 250 V

Thermal current I_{th} :

4 A

Switching capacity

To AC 15: 3 A / AC 230 V IEC/EN 60947-5-1

To DC 13: 2 A / DC 24 V IEC/EN 60947-5-1

Electrical life

To AC 15 at 1 A, AC 230 V: Typ. $1.5 \cdot 10^5$ switching cycles

To DC 13 at 1 A, AC 24 V: Typ. $1.0 \cdot 10^5$ switching cycles

Permissible switching frequency: 36000 switching cycles / h

Short circuit strength

max. fuse rating: 4 A gG / gL IEC/EN 60947-5-1

Mechanical life:

10^8 switching cycles

General Data

Operating mode:

Continuous operation

Temperature range:

Operation: 0 ... +60 °C

Storage: -40 ... +60 °C

Relative air humidity:

93 % at 40 °C

Altitude:

≤ 2000 m

Clearance and creepage distances

Rated impulse voltage / pollution degree: 4 kV / 2 (basis insulation) IEC 60664-1

Overvoltage category:

III

Insulation test voltage:

2.5 kV; 1 min (type test)

EMC:

EN 61812-1 (Industrial environments)

Electrostatic discharge: 6 kV (air) IEC/EN 61000-4-2

HF irradiation: 10 V/m IEC/EN 61000-4-3

Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages

Between wires for power supply: 1 kV IEC/EN 61000-4-5

Between wire and ground: 2 kV IEC/EN 61000-4-5

HF-wire guided: 10 V IEC/EN 61000-4-6

Interference suppression: Limit value class B EN 55011

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing:

Thermoplastic with V0 behaviour to UL subject 94

Vibration resistance:

Amplitude 0.35 mm IEC/EN 60068-2-6
frequency 10 ... 55 Hz

Climate resistance:

0 / 060 / 04 IEC/EN 60068-1

Terminal arrangement:

DIN 46199-5

Terminal designation:

EN 50005

Technical Data

Wire connection:	1 x 4 mm ² solid or 1 x 2.5 mm ² stranded ferruled (isolated) or 2 x 1.5 mm ² stranded ferruled (isolated) DIN 46228-1/-2/-3/-4 or 2 x 2.5 mm ² stranded ferruled DIN 46228-1/-2/-3
Wire fixing:	Terminal screws M 3.5 Box terminal with wire protection
Fixing torque:	0.8 Nm
Mounting:	DIN rail IEC/EN 60715
Weight:	105 g

Dimensions

Width x height x depth: 22.5 x 84 x 97 mm

Standard Type

BC 7935N.81 AC/DC 24 ... 240 V 50/60 Hz

Article number: 0052778

- Front colour grey, with box terminals
- Output: 1 changeover contact
- Operating voltage U_N : AC/DC 24 ... 240 V
- Width: 22.5 mm

Ordering Example

BC 7935N	.81	AC/DC 24 ... 240 V	50 / 60 Hz
		└─ Nominal frequency	
		└─ Operating voltage	
		└─ Contacts	
		└─ Type	

Connection Examples

