

# Time control technique

## Multifunction relay BC 7935, BC 7935N multitimer

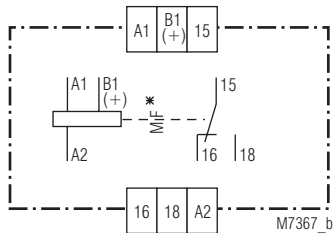
**BC 7935N with Box terminals**



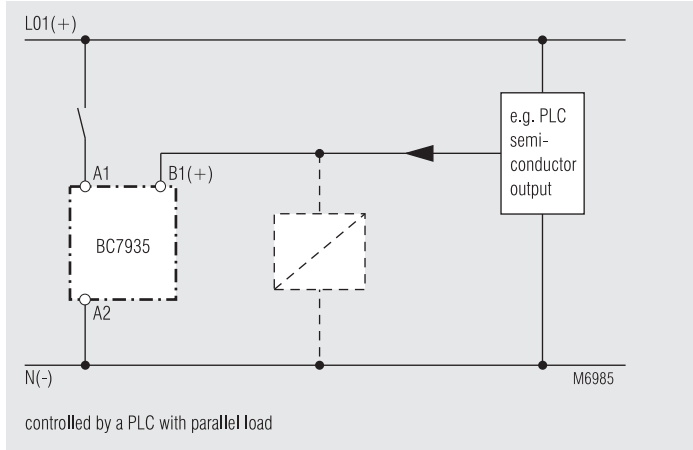
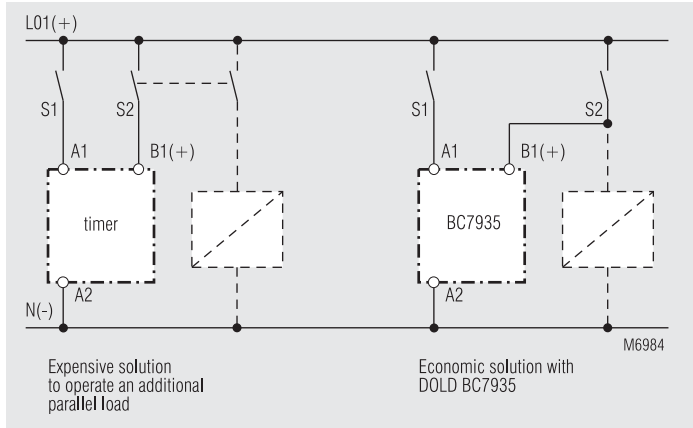
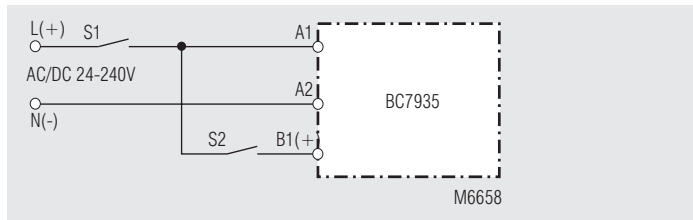
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- According to IEC/EN 61 812-1
- 8 functions selectable by rotational switch:
  - AV - operate delay
  - EW - fleeting on make
  - IE - delayed pulse function
  - BE - flasher start with impulse
  - RV - release delay
  - IF - pulse forming
  - AW - 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, BE
- Time ranges up to 300 h
- AC/DC 24 ... 240 V
- 1 changeover contact
- LED indicators for voltage supply and contact position, flashing function during elapse of time
- BC 7935N, Wire connection: also 2 x 1,5 mm<sup>2</sup> stranded ferruled (isolated), DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm<sup>2</sup> stranded ferruled DIN 46 228-1/-2/-3
- Width 22,5 mm

### Circuit diagrams



### Connection examples



### Approvals and marking



### 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 input B1(+) according to the connection diagram.  
 At the functions AV,EW,IE, BE the timing cycle can be stopped by closing S2 (see diagram). When opening S2 the timing cycles continues.

### Technical data

#### Time circuit

<b>Time ranges:</b>	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	

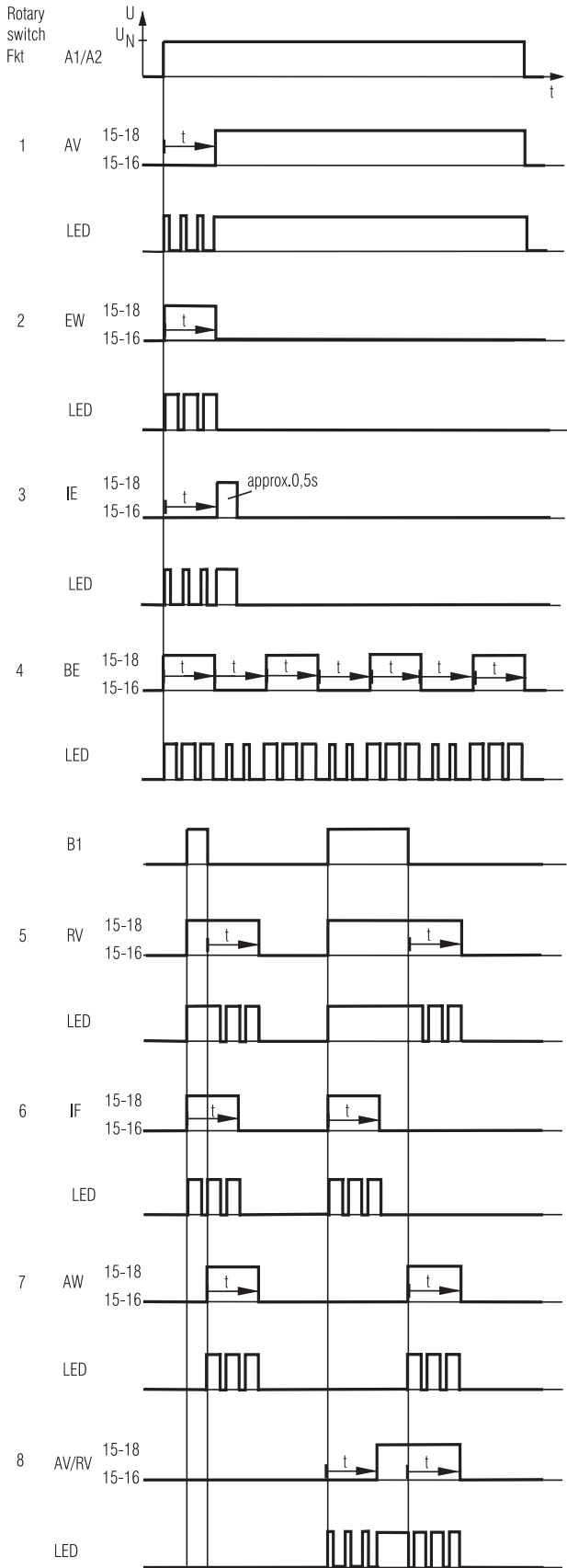
**Time setting:** infinitely variable 1:20  
**Recovery time:** 50 ms  
**Repeat accuracy:** 2 %  
**Voltage influence:** ≤ 1 %  
**Temperature influence:** 0,05 % / K

### Input

<b>Nominal voltage U<sub>N</sub></b>	AC/DC 24 ... 240 V, DC 12 V			
<b>A1 / A2, B1(+) / A2:</b>	0,8 ... 1,1 U <sub>N</sub>			
<b>Voltage range:</b>	0,8 ... 1,1 U <sub>N</sub>			
<b>Nominal consumption:</b>	AC		DC	
	24 V	240 V	24 V	240 V
	0,8 VA	1,4 VA	0,8 W	1,8 W
<b>Nominal frequency:</b>	50 / 60 Hz			
<b>Release voltage:</b>	AC: ≥ 15 % U <sub>N</sub> , DC: ≥ 5 % U <sub>N</sub>			
<b>Min. ontime of control input B1:</b>	AC 30 ms, DC 10 ms			

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



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AV = operate delay  
 EW = fleeting on make  
 IE = delayed pulse function  
 BE = flasher start with impulse  
 RV = release delay  
 IF = pulse forming  
 AW = fleeting on break  
 AV/RV = Operate / release delay

## Technical data

### Output

#### Contacts

BC 7935.81, BC 7935N.81: 1 changeover contact  
 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 1 A, AC 230 V: IEC/EN 60 947-5-1

typ. 500 000 switching cycles

#### Short circuit strength

max. fuse rating: 4 A gL IEC/EN 60 947-5-1

Mechanical life:  $10^8$  switching cycles

### General data

#### Operating mode:

Continuous operation

#### Temperature range:

0 ... + 60°C

#### Clearance and creepage distances

overvoltage category /  
 contamination level:

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:

2 kV IEC/EN 61 000-4-4

Surge voltages

between

wires for power supply:

1 kV IEC/EN 61 000-4-5

between wire and ground:

2 kV IEC/EN 61 000-4-5

Interference suppression:

Limit value class B EN 55 011

#### Degree of protection:

Housing: IP 40 IEC/EN 60 529

Terminals: IP 20 IEC/EN 60 529

#### Housing:

Thermoplastic with V0 behaviour  
 to UL subject 94

#### Vibration resistance:

Amplitude 0,35 mm IEC/EN 60 068-2-6  
 frequency 10 ... 55 Hz

#### Climate resistance:

0 / 060 / 04 IEC/EN 60 068-1

#### Terminal arrangement:

DIN 46 199-5

#### Terminal designation:

EN 50 005

#### Wire connection

BC 7935:

1 x 4 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

BC 7935N:

1 x 4 mm<sup>2</sup> solid or  
 1 x 2,5 mm<sup>2</sup> stranded ferruled (isolated)  
 or  
 2 x 1,5 mm<sup>2</sup> stranded ferruled (isolated)  
 DIN 46 228-1/-2/-3/-4 or  
 2 x 2,5 mm<sup>2</sup> stranded ferruled  
 DIN 46 228-1/-2/-3

#### Wire fixing:

BC 7935:

Flat terminals with self-lifting  
 clamping piece IEC/EN 60 999-1

BC 7935N:

Terminal screws M 3,5

Box terminal with wire protection

#### Mounting:

DIN rail

IEC/EN 60 715

#### 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
- Nominal voltage  $U_N$ : AC/DC 24 ... 240 V
- Width: 22,5 m

### Ordering example

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

- └ Nominal frequency
- └ Nominal voltage
- └ Contacts
- └ BC 7935N: front colour grey, with box terminals
- └ BC 7935: front colour orange, with flat terminals

