

- ▶ Plug-in housing
- ▶ Width 38mm
- ▶ 16 functions
- ▶ 16 time ranges
- ▶ 2 change over contacts



## ▶ Technical data

### ▶ 1. Functions

- 1 delayed contact (pins S1-S3-S4) and 1 instantaneous contact (pins S8-S9-S11)
- E11 ON delay
- R11 OFF delay with control contact
- Ws11 Single shot leading edge with control contact
- Wa11 Single shot trailing edge with control contact
- Es11 ON delay with control contact
- Wu11 Single shot leading edge voltage controlled
- Bp11 Flasher pause first
- Wt11 Pulse detection

- 2 delayed contacts
- E20 ON delay
- R20 OFF delay with control contact
- Ws20 Single shot leading edge with control contact
- Wa20 Single shot trailing edge with control contact
- Es20 ON delay with control contact
- Wu20 Single shot leading edge voltage controlled
- Bp20 Flasher pause first
- Wt20 Pulse detection

### ▶ 2. Time ranges

| Time range | Adjustment range |       |
|------------|------------------|-------|
| 1s         | 50ms             | 1s    |
| 3s         | 150ms            | 3s    |
| 10s        | 500ms            | 10s   |
| 30s        | 1500ms           | 30s   |
| 1min       | 3s               | 1min  |
| 3min       | 9s               | 3min  |
| 10min      | 30s              | 10min |
| 30min      | 90s              | 30min |
| 1h         | 3min             | 1h    |
| 3h         | 9min             | 3h    |
| 10h        | 30min            | 10h   |
| 30h        | 90min            | 30h   |
| 1d         | 72min            | 1d    |
| 3d         | 216min           | 3d    |
| 10d        | 12h              | 10d   |
| 30d        | 36h              | 30d   |

### ▶ 3. Indicators

- Green LED ON: indication of supply voltage
- Green LED flashes: indication of time period
- Yellow LED ON/OFF: indication of relay output

### ▶ 4. Mechanical design

- Self-extinguishing plastic housing, IP rating IP40
- Mounted on screw terminal socket 11 poles according to IEC 67-1-18a (Type R11X or ES12)
- Mounting position: any

### ▶ 5. Input circuit

- Supply voltage:
  - 24V DC pins S2(+)-S7
  - 24V AC pins S2-S7
  - 110 to 240V AC pins S2-S10

- Voltage range:
  - 24V DC ±10%
  - 24V AC -15% to +10%
  - 110 to 240V AC -15% to +10%
- Rated frequency: 48 to 63Hz
- Rated consumption:
  - 24V AC/DC 1.5VA (1W)
  - 110V AC 2VA (1W)
  - 230V AC 8VA (1.3W)
- Duration of operation: 100%
- Reset time: 100ms
- Residual ripple for DC: 10%
- Drop-out voltage: >30% of the supply voltage

### ▶ 6. Output circuit

- 2 potential free change over contacts
- Switching capacity (distance < 5mm): 1250VA (5A / 250V AC)
- Switching capacity (distance > 5mm): 2000VA (8A / 250V AC)
- Fusing: 8A fast acting
- Mechanical life: 20 x 10<sup>6</sup> operations
- Electrical life: 2 x 10<sup>5</sup> operations at 1000VA resistive load
- Switching frequency: max. 60/min at 100VA resistive load max. 6/min at 1000VA resistive load (according to IEC 947-5-1)
- Insulation voltage: 250V AC (according to IEC 664-1)
- Surge voltage: 4kV, overvoltage category III (according to IEC 664-1)

### ▶ 7. Control contact

- Connections: not potential free, pins S2-S5
- Loadable: yes, parallel load min. 1VA (0.5W) pins S5-S10
- Line length: max. 10m
- Control pulse length: DC min. 50ms AC min. 50ms

### ▶ 8. Accuracy

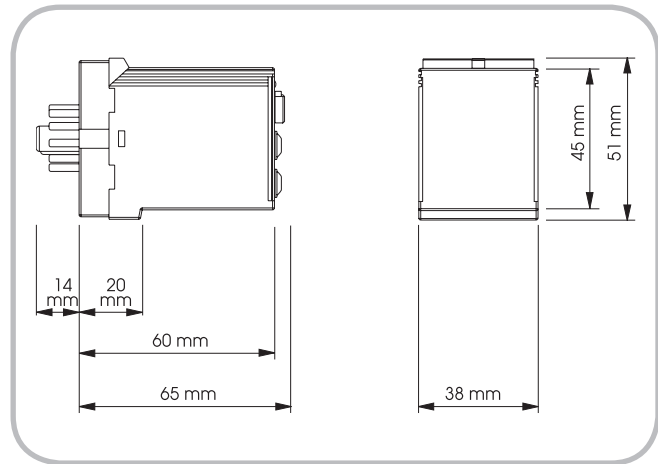
- Base accuracy: ±1% (of maximum scale value)
- Adjustment accuracy: ≤5% (of maximum scale value)
- Repetition accuracy: <0.5% or ±5ms
- Voltage influence: -
- Temperature influence: ≤0.01% / °C

### ▶ 9. Ambient conditions

- Ambient temperature: -25 to +55°C (according to IEC 68-1)
- Storage temperature: -25 to +70°C
- Transport temperature: -25 to +70°C
- Relative humidity: 15% to 85% (according to IEC 721-3-3 class 3K3)
- Pollution degree: 3 (according to IEC 664-1)

## Technical data

### 10. Dimensions

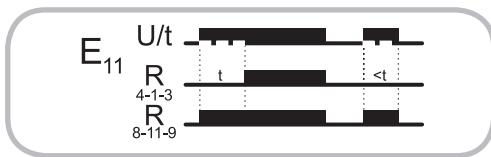


## Functions

### ON delay (E11)

When the supply voltage  $U$  is applied, the instantaneous contact switches into on-position and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the delayed contact switches into on-position (yellow LED illuminated). This status remains until the supply voltage is interrupted.

If the supply voltage is interrupted before the expiry of the interval  $t$ , the interval already expired is erased and is restarted when the supply voltage is next applied.

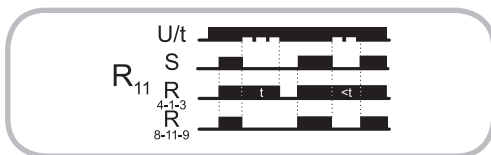


### OFF delay with control contact (R11)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed, both contacts switch into on-position (yellow LED illuminated). If the control contact is opened, the instantaneous contact switches into off-position and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the delayed contact switches into off-position (yellow LED not illuminated).

If the control contact is closed again before the interval  $t$  has expired, the interval already expired is erased and is restarted with the next cycle.



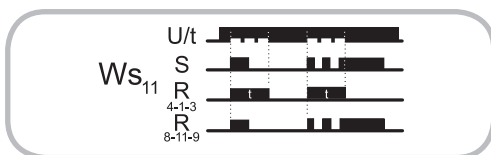
### Single shot leading edge with control contact (Ws11)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed, both contacts switch into on-position (yellow LED illuminated) and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the delayed contact switches into off-position (yellow LED not illuminated). The instantaneous contact remains in on-position, until the control contact is opened again.

During the interval, the control contact (and the instantaneous contact) can be operated any number of times.

A further cycle can only be started when the cycle run has been completed.



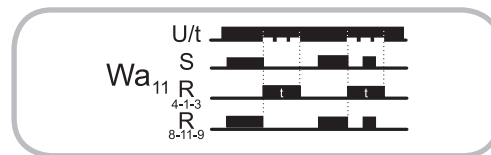
### Single shot trailing edge with control contact (Wa11)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed the instantaneous contact switches into on-position. When the control contact is opened, the instantaneous contact switches into off-position, the delayed contact switches into on-position (yellow LED illuminated) and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated), the delayed contact switches into off-position (yellow LED not illuminated).

During the interval, the control contact (and the instantaneous contact) can be operated any number of times.

A further cycle can only be started when the cycle run has been completed.

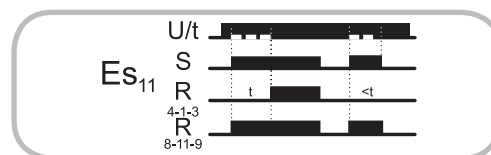


### ON delay with control contact (Es11)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed, the instantaneous contact switches into on-position and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the delayed contact switches into on-position (yellow LED illuminated). This status remains until the control contact is opened again.

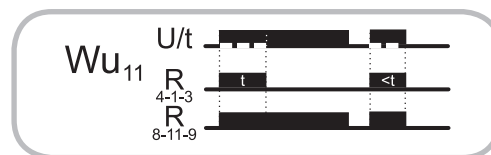
If the control contact is opened before the interval  $t$  has expired, the interval already expired is erased and is restarted with the next cycle.



### Single shot leading edge voltage controlled (Wu11)

When the supply voltage  $U$  is applied, both contacts switch into on-position (yellow LED illuminated) and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the delayed contact switches into off-position (yellow LED not illuminated). This status remains until the supply voltage is interrupted.

If the supply voltage is interrupted before the interval  $t$  has expired, the both contacts switch into off-position. The interval already expired is erased and is restarted when the supply voltage is next applied.

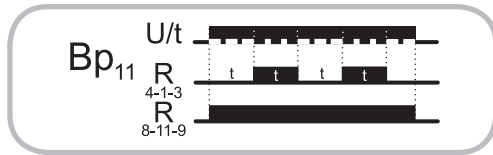


## Functions

### Flasher pause first (Bp11)

When the supply voltage  $U$  is applied, the instantaneous contact switches into on-position and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired, the delayed contact switches into on-position (yellow LED illuminated) and the set interval  $t$  begins again. After the interval  $t$  has expired, the delayed contact switches into off-position (yellow LED not illuminated).

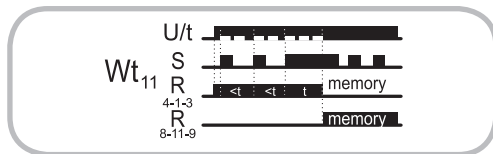
The delayed contact is triggered at a ratio of 1:1 until the supply voltage is interrupted.



### Pulse detection (Wt11)

When the supply voltage  $U$  is applied (green LED illuminated), the delayed contact switches into on-position (yellow LED illuminated). When the control contact  $S$  is closed, the set interval  $t$  begins (green LED flashes). So that the delayed contact remains in on-position, the control contact must be opened and closed again within the set interval  $t$ . If this does not happen, the delayed contact switches into off-position, the instantaneous contact switches into on-position and all further pulses at the control contact are ignored.

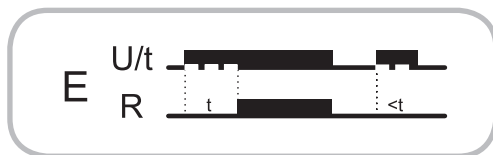
To restart the function the supply voltage must be interrupted and re-applied.



### ON delay (E20)

When the supply voltage  $U$  is applied, the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the output relay  $R$  switches into on-position (yellow LED illuminated). This status remains until the supply voltage is interrupted.

If the supply voltage is interrupted before the expiry of the interval  $t$ , the interval already expired is erased and is restarted when the supply voltage is next applied.

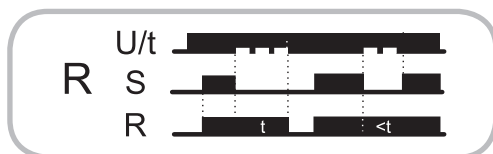


### OFF delay with control contact (R20)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed, the output relay  $R$  switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the output relay switches into off-position (yellow LED not illuminated).

If the control contact is closed again before the interval  $t$  has expired, the interval already expired is erased and is restarted with the next cycle.



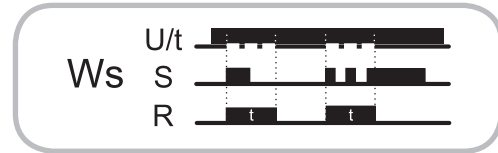
### Single shot leading edge with control contact (Ws20)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed, the output relay  $R$  switches into on-position (yellow LED illuminated) and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the output relay switches into off-position (yellow LED not illuminated).

During the interval, the control contact can be operated any number of times.

A further cycle can only be started when the cycle run has been completed.



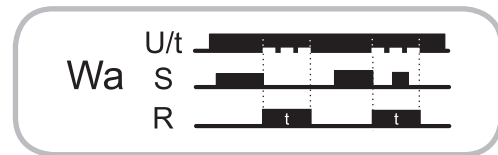
### Single shot trailing edge with control contact (Wa20)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

Closing the control contact  $S$  has no influence on the condition of the output relay  $R$ . When the control contact is opened, the output relay switches into on-position (yellow LED illuminated) and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated), the output relay switches into off-position (yellow LED not illuminated).

During the interval, the control contact can be operated any number of times.

A further cycle can only be started when the cycle run has been completed.



### ON delay with control contact (Es20)

The supply voltage  $U$  must be constantly applied to the device (green LED illuminated).

When the control contact  $S$  is closed, the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the output relay  $R$  switches into on-position (yellow LED illuminated). This status remains until the control contact is opened again.

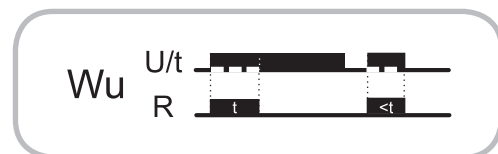
If the control contact is opened before the interval  $t$  has expired, the interval already expired is erased and is restarted with the next cycle.



### Single shot leading edge voltage controlled (Wu20)

When the supply voltage  $U$  is applied, the output relay  $R$  switches into on-position (yellow LED illuminated) and the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED illuminated) the output relay switches into off-position (yellow LED not illuminated). This status remains until the supply voltage is interrupted.

If the supply voltage is interrupted before the interval  $t$  has expired, the output relay switches into off-position. The interval already expired is erased and is restarted when the supply voltage is next applied.

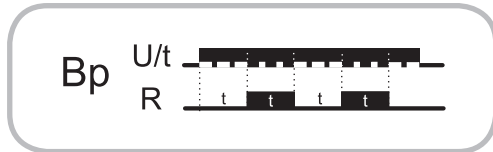


## Functions

### Flasher pause first (Bp20)

When the supply voltage  $U$  is applied, the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired, the output relay  $R$  switches into on-position (yellow LED illuminated) and the set interval  $t$  begins again. After the interval  $t$  has expired, the output relay switches into off-position (yellow LED not illuminated).

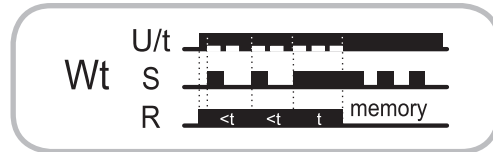
The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.



### Pulse detection (Wt20)

When the supply voltage  $U$  is applied (green LED illuminated), the output relay  $R$  switches into on-position (yellow LED illuminated). When the control contact  $S$  is closed, the set interval  $t$  begins (green LED flashes). So that the output relay remains in on-position, the control contact must be opened and closed again within the set interval  $t$ . If this does not happen, the output relay switches into off-position and all further pulses at the control contact are ignored.

To restart the function the supply voltage must be interrupted and re-applied.



## Connections

