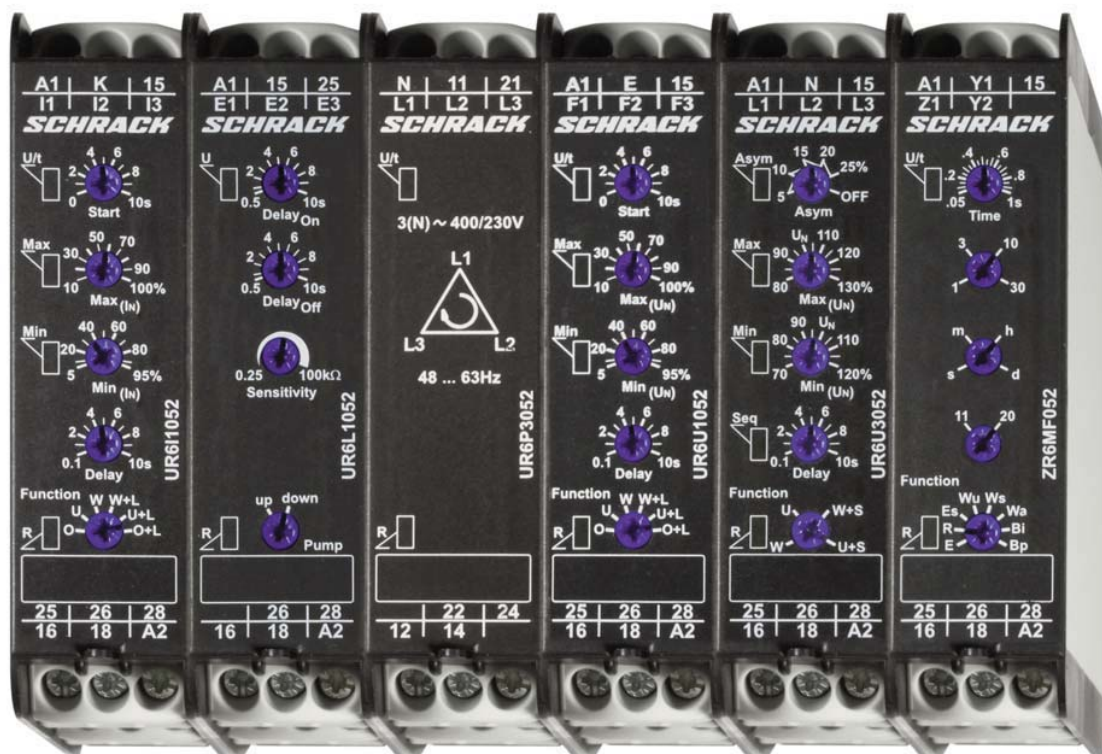


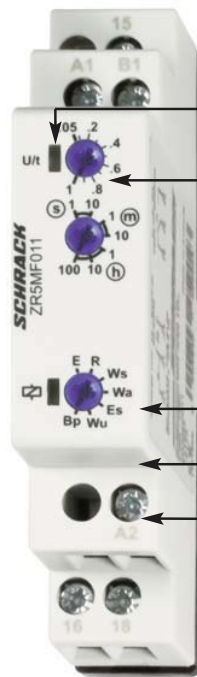
# TIME- AND MONITORING RELAYS

## TIME- AND MONITORING RELAYS



## MEASURING AND MONITORING RELAYS

### SERIES 5



OPERATION DISPLAY

LARGE TIME RANGE 50 ms – 100 h

MANY FUNCTIONS

45 mm CAP DIMENSION

MULTI-VOLTAGE 12 or 24 V~/DC – 240 V~/DC

### SERIES 6



INDUSTRIAL DESIGN

WIDTH 22.5 mm

MANY FUNCTIONS, E.G.:

- Monitoring of phase sequence and phase failure
- Detection of neutral wire break
- Windows function
- 16.6 – 400 Hz
- Thermal resistor relay
- Delayed contacts possible
- Time range of timer relay: 1 s to 30 days

## TIME RELAY ZR5E0011



### SCHRACK-INFO

Wide input voltage range  
1 change over contact  
Width 17,5 mm  
Installation design

### TECHNICAL DATA

#### 1. Functions

The function has to be set before connecting the relay to the supply voltage.

E ON delay

#### 2. Time ranges

Time range	Adjustment range
1 s	50 ms
10 s	500 ms
1 min	3 s
10 min	30 s
1 h	3 min
10 h	30 min
100 h	5 h

#### 3. Indicators

Green LED U/t ON: indication of supply voltage  
Green LED U/t flashes: indication of time period  
Yellow LED R ON/OFF: indication of relay outputs

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-rail TS 35 according to EN 50022  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
Tightening torque: max. 1 Nm  
Terminal capacity:  
1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
1 x 4 mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage: Terminals A1(+)-A2  
Types ZR5..24-240 V AC/DC: 24 to 240 V AC/DC  
Tolerance: 24 V-15% to 240 V+10%  
Rated consumption: 4 VA (1.5 W)  
Rated frequency: AC 48 to 63 Hz  
Duty cycle: 100%  
Reset time: 100 ms  
Residual ripple for DC: 10%  
Drop-out voltage: >30% of minimum rated supply voltage  
Overvoltage category: III (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 6. Output circuit

1 potential free change over contact  
Rated voltage: 250 V AC  
Switching capacity: 2000 VA (8 A / 250V)  
Fusing: 8 A fast acting  
Mechanical life: 20 x 10<sup>6</sup> operations  
Electrical life: 2 x 10<sup>5</sup> operations  
at 1000 VA resistive load  
Switching frequency: max. 60/min at 100 VA resistive load  
max. 6/min at 1000 VA resistive load  
(according to IEC 947-5-1)  
Overvoltage category: III. (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 7. Control input

Input not potential free: Terminals A1-B1  
Loadable: yes  
Max. line length: 10m  
Trigger level (sensitivity): automatic adaption to supply voltage  
Min. control pulse length: DC 50 ms / AC 100 ms

#### 8. Accuracy

Base accuracy: ±1% of maximum scale value  
Adjustment accuracy: <5% of maximum scale value  
Repetition accuracy: <0.5% or ±5 ms  
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: 2, if built in 3  
(according to IEC 664-1)  
Vibration resistance: 10 to 55 Hz 0.35 mm  
(according to IEC 68-2-6)  
Shock resistance: 15 g 11 ms  
(according to IEC 68-2-27)

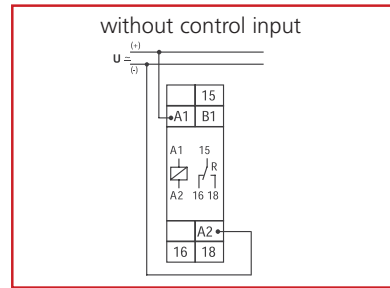
## FUNCTIONS

### ON delay (E)

When the supply voltage  $U$  is applied, the set interval  $t$  begins (green LED  $U/t$  flashes). After the interval  $t$  has expired (green LED  $U/t$  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.



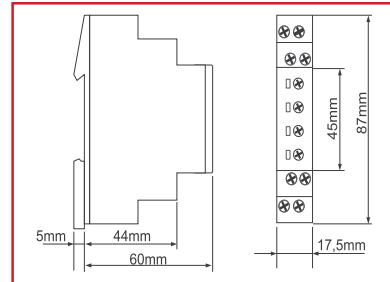
## CONNECTIONS



## WEIGHT

Single packing: 72 g

## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Single function time relay E (ON delay), 24-240VAC, 1 change over, 8A/250V	9004840459029		<b>ZR5E0011</b>



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## TIME RELAY ZR5R0011



### SCHRACK-INFO

Wide input voltage range  
1 change over contact  
Width 17,5 mm  
Installation design

### TECHNICAL DATA

#### 1. Functions

The function has to be set before connecting the relay to the supply voltage.

R OFF delay

#### 2. Time ranges

Time range	Adjustment range	
1 s	50 ms	1 s
10 s	500 ms	10 s
1 min	3 s	1 min
10 min	30 s	10 min
1 h	3 min	1 h
10 h	30 min	10 h
100 h	5 h	100 h

#### 3. Indicators

Green LED U/t ON: indication of supply voltage  
Green LED U/t flashes: indication of time period  
Yellow LED R ON/OFF: indication of relay outputs

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-rail TS 35 according to EN 50022  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
Tightening torque: max. 1 Nm  
Terminal capacity:  
1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
1 x 4 mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage: Terminals A1(+)-A2  
Types ZR5..24-240 V AC/DC: 24 to 240 V AC/DC  
Tolerance: 24 V-15% to 240 V+10%  
Rated consumption: 4 VA (1.5 W)  
Rated frequency: AC 48 to 63 Hz  
Duty cycle: 100%  
Reset time: 100 ms  
Residual ripple for DC: 10%  
Drop-out voltage: >30% of minimum rated supply voltage  
Overvoltage category: III (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 6. Output circuit

1 potential free change over contact  
Rated voltage: 250 V AC  
Switching capacity: 2000 VA (8 A / 250V)  
Fusing: 8 A fast acting  
Mechanical life: 20 x 10<sup>6</sup> operations  
Electrical life: 2 x 10<sup>5</sup> operations  
at 1000 VA resistive load  
Switching frequency: max. 60/min at 100 VA resistive load  
max. 6/min at 1000 VA resistive load  
(according to IEC 947-5-1)  
Overvoltage category: III. (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 7. Control input

Input not potential free: Terminals A1-B1  
Loadable: yes  
Max. line length: 10m  
Trigger level (sensitivity): automatic adaption to supply voltage  
Min. control pulse length: DC 50 ms / AC 100 ms

#### 8. Accuracy

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

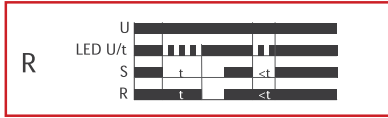
#### 9. Ambient conditions

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: 2, if built in 3  
(according to IEC 664-1)  
Vibration resistance: 10 to 55 Hz 0.35 mm  
(according to IEC 68-2-6)  
Shock resistance: 15 g 11 ms  
(according to IEC 68-2-27)

## FUNCTIONS

### OFF delay (R)

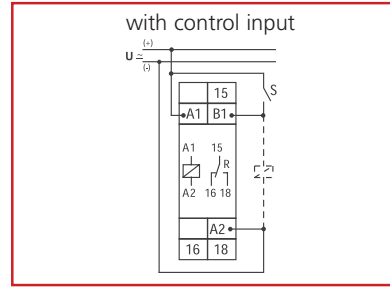
The supply voltage  $U$  must be constantly applied to the device (green LED  $U/t$  illuminated). When the control contact  $S$  is closed, the output relay  $R$  switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED  $U/t$  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.



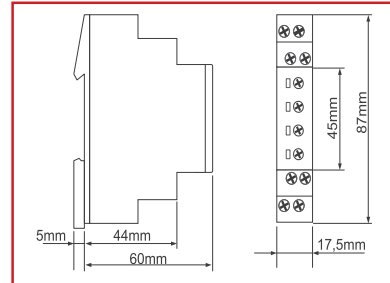
## WEIGHT

Single packing: 72 g

## CONNECTIONS



## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Single function time relay R (OFF delay), 24-240VAC, 1 change over, 8A/250V	9004840459050		ZR5R0011



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## TIME RELAY ZR5ER011



### SCHRACK-INFO

2 functions  
7 time ranges  
Wide input voltage range  
1 change over contact  
Width 17,5 mm  
Installation design

### TECHNICAL DATA

#### 1. Functions

The function has to be set before connecting the relay to the supply voltage.

E ON delay  
R OFF delay

#### 2. Time ranges

Time range	Adjustment range	
1 s	50 ms	1 s
10 s	500 ms	10 s
1 min	3 s	1 min
10 min	30 s	10 min
1 h	3 min	1 h
10 h	30 min	10 h
100 h	5 h	100 h

#### 3. Indicators

Green LED U/t ON: indication of supply voltage  
Green LED U/t flashes: indication of time period  
Yellow LED R ON/OFF: indication of relay outputs

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-rail TS 35 according to EN 50022  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
Tightening torque: max. 1 Nm  
Terminal capacity:  
1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
1 x 4 mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage: Terminals A1(+)-A2  
Types ZR5..24-240 V AC/DC: 24 to 240 V AC/DC  
Tolerance: 24 V-15% to 240 V+10%  
Rated consumption: 4 VA (1.5 W)  
Rated frequency: AC 48 to 63 Hz  
Duty cycle: 100%  
Reset time: 100 ms  
Residual ripple for DC: 10%  
Drop-out voltage: >30% of minimum rated supply voltage  
Overvoltage category: III (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 6. Output circuit

1 potential free change over contact  
Rated voltage: 250 V AC  
Switching capacity: 2000 VA (8 A / 250V)  
Fusing: 8 A fast acting  
Mechanical life: 20 x 10<sup>6</sup> operations  
Electrical life: 2 x 10<sup>5</sup> operations  
at 1000 VA resistive load  
Switching frequency: max. 60/min at 100 VA resistive load  
max. 6/min at 1000 VA resistive load  
(according to IEC 947-5-1)  
Overvoltage category: III. (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 7. Control input

Input not potential free: Terminals A1-B1  
Loadable: yes  
Max. line length: 10m  
Trigger level (sensitivity): automatic adaption to supply voltage  
Min. control pulse length: DC 50 ms / AC 100 ms

#### 8. Accuracy

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

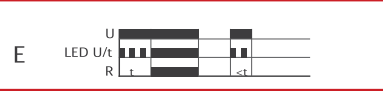
#### 9. Ambient conditions

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: 2, if built in 3  
(according to IEC 664-1)  
Vibration resistance: 10 to 55 Hz 0.35 mm  
(according to IEC 68-2-6)  
Shock resistance: 15 g 11 ms  
(according to IEC 68-2-27)

## FUNCTIONS

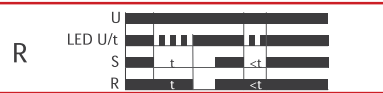
### ON delay (E)

When the supply voltage  $U$  is applied, the set interval  $t$  begins (green LED  $U/t$  flashes). After the interval  $t$  has expired (green LED  $U/t$  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 (R)

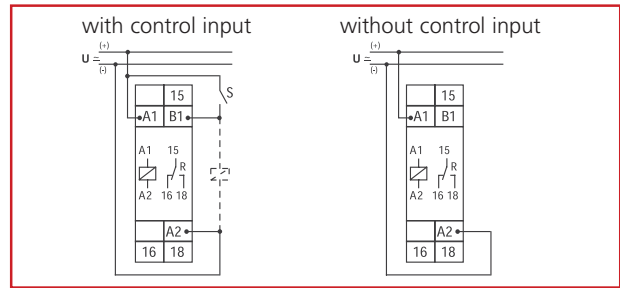
The supply voltage  $U$  must be constantly applied to the device (green LED  $U/t$  illuminated). When the control contact  $S$  is closed, the output relay  $R$  switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval  $t$  begins (green LED flashes). After the interval  $t$  has expired (green LED  $U/t$  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.



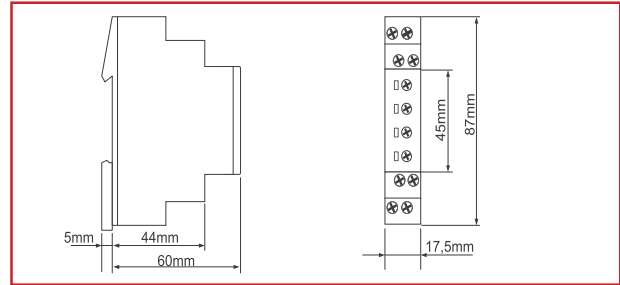
## WEIGHT

Single packing: 72 g

## CONNECTIONS



## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Double function time relay E (ON delay) + R (OFF delay), 24-240VAC, 1 change over, 8A/250V	9004840459036		<b>ZR5ER011</b>



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## MULTIFUNCTION TIME RELAY ZR5MF011



### SCHRACK-INFO

- Timers multifunctional
- Up to 7 functions
- 7 time ranges
- Wide input voltage range
- 1 change over contact
- Width 17,5 mm
- Installation design

### TECHNICAL DATA

#### 1. Functions

The functions has to be set before connecting the relay to the supply voltage.

E	ON delay
R	OFF delay
Ws	Single shot leading edge with control input
Wa	Single shot trailing edge with control input
Es	ON delay with control input
Wu	Single shot leading edge voltage controlled
Bp	Flasher pause first

#### 2. Time ranges

Time range	Adjustment range	
1 s	50 ms	1 s
10 s	500 ms	10 s
1 min	3 s	1 min
10 min	30 s	10 min
1 h	3 min	1 h
10 h	30 min	10 h
100 h	5 h	100 h

#### 3. Indicators

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

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
 Mounted on DIN-rail TS 35 according to EN 50022  
 Mounting position: any  
 Shockproof terminal connection according to VBG 4 (PZ1 required),  
 IP rating IP20  
 Tightening torque: max. 1 Nm  
 Terminal capacity:  
 1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
 1 x 4 mm<sup>2</sup> without multicore cable end  
 2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
 2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage:	terminals A1(+)-A2
Type ZR5MF025	12 to 240 V AC/DC
Tolerance:	12 V-10% to 240 V+10%
Rated consumption:	4 VA (1.5 W)
Rated frequency:	AC 48 to 63 Hz
Duty cycle:	100%
Reset time:	100 ms
Residual ripple for DC:	10%
Drop-out voltage:	>30% of minimum rated supply voltage

Overvoltage category:	III (according to IEC 60664-1)
Rated surge voltage:	4kV

#### 6. Output circuit

1 potential free change over contact	
Rated voltage:	250 V AC
Switching capacity:	2000 VA (8 A / 250 V)
Fusing:	8 A fast acting
Mechanical life:	20 x 10 <sup>6</sup> operations
Electrical life:	2 x 10 <sup>5</sup> operations
	at 1000 VA resistive load
Switching frequency:	max. 60/min at 100VA resistive load
	max. 6/min at 1000VA resistive load
	(according to IEC 947-5-1)

Overvoltage category:	III. (according to IEC 60664-1)
Rated surge voltage:	4kV

#### 7. Control input

Input not potential free:	terminals A1-B1
Loadable:	yes
Max. line length:	10m
Trigger level (sensitivity):	automatic adaption to supply voltage
Min. control pulse length:	DC 50 ms / AC 100 ms

#### 8. Accuracy

Base accuracy:	±1% of maximum scale value
Adjustment accuracy:	<5% of maximum scale value
Repetition accuracy:	<0.5% or ±5 ms
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:	2, if built in 3 (according to IEC 664-1)
Vibrations resistance:	10 to 55 Hz 0.35 mm (according to IEC 68-2-6)
Shock resistance:	15 g 11 ms (according to IEC 68-2-27)

## FUNCTIONS

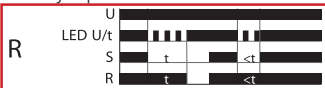
### ON delay (E)

When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t 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 (R)

The supply voltage U must be constantly applied to the device (green LED U/t 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 U/t flashes). After the interval t has expired (green LED U/t 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.



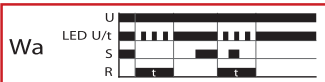
### Single shot leading edge with control input (Ws)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (green LED U/t illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t 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 input (Wa)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). Closing the control contact S has no influence on the condition of the output 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 U/t flashes). After the interval t has expired (green LED U/t 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 input (Es)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t 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 (Wu)

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 U/t flashes). After the interval t has expired (green LED U/t 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 is erased and is restarted when the supply voltage is next applied.

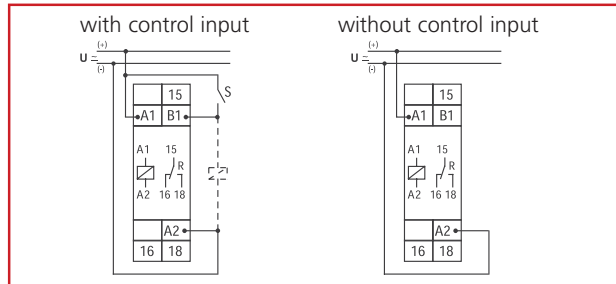


### Flasher pause first (Bp)

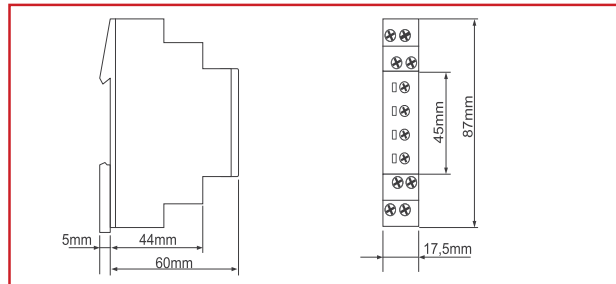
When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval t has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.



## CONNECTIONS



## DIMENSIONS



## WEIGHT

Single packing: 72 g

DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Multifunction time relay E, R, Ws, Wa, Es, Wu, Bp, 12-240VAC, 1 change over, 8A/250V	9004840459043		ZR5MF011

## MULTIFUNCTION TIME RELAY ZR5MF025



### SCHRACK-INFO

- Timers multifunctional
- Up to 7 functions
- 7 time ranges
- Wide input voltage range
- 2 change-over contacts
- Width 35 mm
- Installation design

### TECHNICAL DATA

#### 1. Functions

The functions has to be set before connecting the relay to the supply voltage.

E	ON delay
R	OFF delay
Ws	Single shot leading edge with control input
Wa	Single shot trailing edge with control input
Es	ON delay with control input
Wu	Single shot leading edge voltage controlled
Bp	Flasher pause first

#### 2. Time ranges

Time range	Adjustment range	
1 s	50 ms	1 s
10 s	500 ms	10 s
1 min	3 s	1 min
10 min	30 s	10 min
1 h	3 min	1 h
10 h	30 min	10 h
100 h	5 h	100 h

#### 3. Indicators

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

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
 Mounted on DIN-rail TS 35 according to EN 50022  
 Mounting position: any  
 Shockproof terminal connection according to VBG 4 (PZ1 required),  
 IP rating IP20  
 Tightening torque: max. 1 Nm  
 Terminal capacity:  
 1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
 1 x 4 mm<sup>2</sup> without multicore cable end  
 2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
 2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage:	terminals A1(+)-A2
Type ZR5MF025	12 to 240 V AC/DC
Tolerance:	12 V-10% to 240 V+10%
Rated consumption:	6 VA (2 W)
Rated frequency:	AC 48 to 63 Hz
Duty cycle:	100%
Reset time:	100 ms
Residual ripple for DC:	10%
Drop-out voltage:	>30% of minimum rated supply voltage

Overvoltage category:	III (according to IEC 60664-1)
Rated surge voltage:	4kV

#### 6. Output circuit

2 potential free change over contacts	
Rated voltage:	250 V AC
Switching capacity:	2000 VA (8 A / 250 V)
Fusing:	8 A fast acting
Mechanical life:	20 x 10 <sup>6</sup> operations
Electrical life:	2 x 10 <sup>5</sup> operations
	at 1000 VA resistive load
Switching frequency:	max. 60/min at 100VA resistive load
	max. 6/min at 1000VA resistive load
	(according to IEC 947-5-1)

Overvoltage category:	III. (according to IEC 60664-1)
Rated surge voltage:	4kV

#### 7. Control input

Input not potential free:	terminals A1-B1
Loadable:	yes
Max. line length:	10m
Trigger level (sensitivity):	automatic adaption to supply voltage
Min. control pulse length:	DC 50 ms / AC 100 ms

#### 8. Accuracy

Base accuracy:	±1% of maximum scale value
Adjustment accuracy:	<5% of maximum scale value
Repetition accuracy:	<0.5% or ±5 ms
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:	2, if built in 3 (according to IEC 664-1)
Vibrations resistance:	10 to 55 Hz 0.35 mm (according to IEC 68-2-6)
Shock resistance:	15 g 11 ms (according to IEC 68-2-27)

## FUNCTIONS

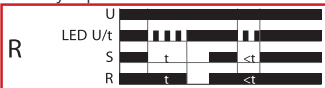
### ON delay (E)

When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t 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 (R)

The supply voltage U must be constantly applied to the device (green LED U/t 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 U/t flashes). After the interval t has expired (green LED U/t 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.



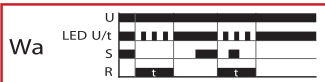
### Single shot leading edge with control input (Ws)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (green LED U/t illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t 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 input (Wa)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). Closing the control contact S has no influence on the condition of the output 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 U/t flashes). After the interval t has expired (green LED U/t 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 input (Es)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t 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 (Wu)

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 U/t flashes). After the interval t has expired (green LED U/t 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 is erased and is restarted when the supply voltage is next applied.

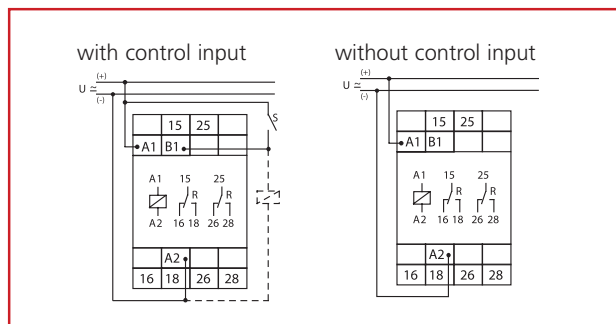


### Flasher pause first (Bp)

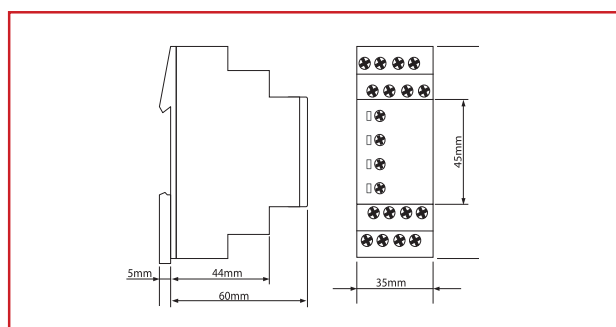
When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval t has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.



## CONNECTIONS



## DIMENSIONS



## WEIGHT

Single packing: 106g

DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Multifunction time relay, 12-240VAC, 2 change over, 8A/250V	9004840507287		ZR5MF025

## MULTIFUNCTION TIME RELAY ZR6MF052



- 16 functions
- 16 time ranges
- Connection of remote potentiometer possible
- Zoom voltage 24 to 240V AC/DC
- 2 change-over contacts
- Width 22.5 mm
- Industrial design

### TECHNICAL DATA

#### 1. Functions

1 delayed contact (terminals 15-16-18) and  
1 instantaneous contact (terminals 25-26-28)

E11	ON delay
R11	OFF delay with control contact
Es11	ON delay with control contact
Wu11	Single shot leading edge voltage controlled
Ws11	Single shot leading edge with control contact
Wa11	Single shot trailing edge with control contact
Bi11	Flasher pulse first
Bp11	Flasher pause first

2 delayed contacts

E20	ON delay
R20	OFF delay with control contact
Es20	ON delay with control contact
Wu20	Single shot leading edge voltage controlled
Ws20	Single shot leading edge with control contact
Wa20	Single shot trailing edge with control contact
Bi20	Flasher pulse first
Bp20	Flasher pause first

#### 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 DIN-Rail TS 35 according to EN 60715  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
Tightening torque: max. 1Nm  
Terminal capacity:  
1 x 0.5 bis 2.5 mm<sup>2</sup> with/without multicore cable end  
1 x 4 mm<sup>2</sup> without multicore cable end  
2 x 0.5 bis 1.5 mm<sup>2</sup> with/without multicore cable end  
2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage:	24 to 240V AC/DC	terminals A1-A2 (galvanically separated)
Tolerance:	24 to 240V DC	-20% to +25%
	24 to 240V AC	-15% to +10%
Rated frequency:	24 to 240V AC	48 to 400Hz
	48 to 240V AC	16 to 48Hz
Rated consumption:		4.5VA (1W)
Duration of operation:		100%
Reset time:		500ms
Wave form for AC:		Sinus
Residual ripple for DC:		10%
Drop-out voltage:		>15% of the supply voltage
Overvoltage category:		III (in accordance with IEC 60661-1)
Rated surge voltage:		4kV

## 6. Output circuit

2 potential free change-over contacts  
 Rated voltage: 250V AC  
 Switching capacity (distance <5mm): 750VA (3A / 250V AC)  
 Switching capacity (distance >5mm): 1250VA (5A / 250V AC)  
 Fusing: 5A 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  
 (in accordance with IEC 60947-5-1)  
 Overvoltage category: III (in accordance with IEC 60664-1)  
 Rated surge voltage: 4kV

## 7. Control contact

Activation: bridge Y1-Y2  
 Potential free: yes, basic isolation against input and output circuit  
 Loadable: no  
 Control voltage: max. 5V  
 Short circuit current: max. 1mA  
 Line length: max. 10m  
 Control pulse length: min. 50ms

## 8. Remote potentiometer (not included)

The internal potentiometer is de-activated when a remote potentiometer is connected!

Connections: 1M $\Omega$  potentiometer (type Rondo R2), terminals Z1-Y2  
 Line type: twisted pair  
 Control voltage: max. 5V  
 Short circuit current: max.  $\mu$ A  
 Line length: max. 5m

## 9. Accuracy

Base accuracy:  $\pm 1\%$  (of maximum scale value) using 1M $\Omega$  remote potentiometer  
 Frequency response: -  
 Adjustment accuracy:  $\leq 5\%$  (of maximum scale value) using 1M $\Omega$  remote potentiometer  
 Repetition accuracy: <0.5% or  $\pm 5$ ms  
 Voltage influence: -  
 Temperature influence:  $\leq 0.01\%$  /  $^{\circ}\text{C}$

## 10. Ambient conditions

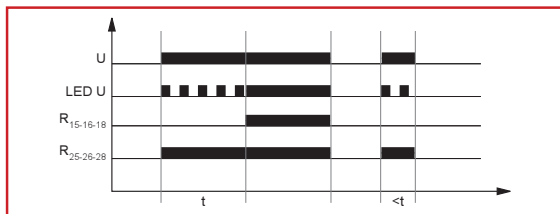
Ambient temperature: -25 to +55 $^{\circ}\text{C}$  (in accordance with IEC 60068-1)  
 -25 to +40 $^{\circ}\text{C}$  (in accordance with UL 508)  
 Storage temperature: -25 to +70 $^{\circ}\text{C}$   
 Transport temperature: -25 to +70 $^{\circ}\text{C}$   
 Relative humidity: 15% to 85% (in accordance with IEC 60721-3-3 class 3K3)  
 Pollution degree: 3 (in accordance with IEC 60664-1)  
 Vibration resistance: 10 to 55Hz 0.35 mm (in accordance with IEC 60068-2-6)  
 Shock resistance: 15g 11ms (in accordance with IEC 60068-2-27)

## FUNCTIONS

The internal potentiometer is de-activated when a remote-potentiometer is connected !The function has to be set before connecting the relay to the supply voltage.

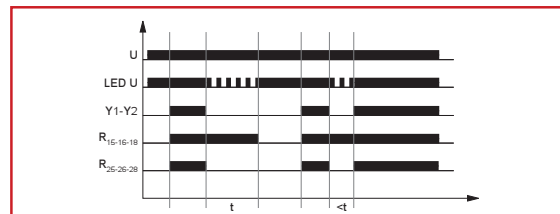
### ON delay (E11)

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.



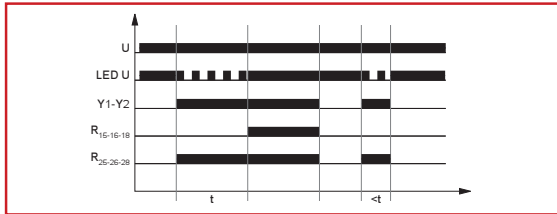
### OFF delay with control contact (R11)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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.



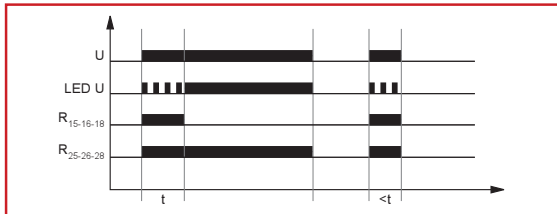
## ON delay with control contact (Es11)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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.



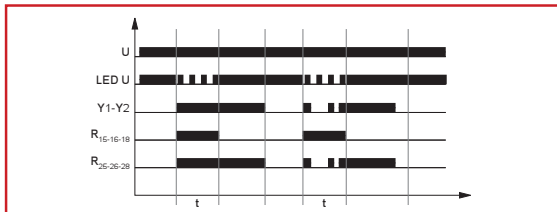
## Single shot leading edge voltage controlled (Wu11)

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.



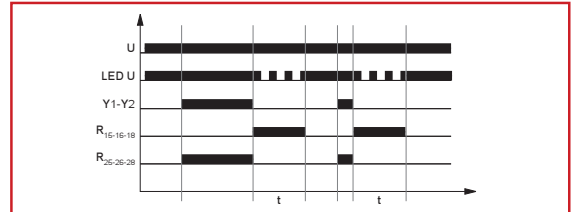
## Single shot leading edge with control contact (Ws11)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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.



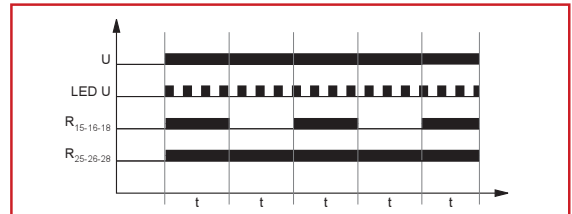
## Single shot trailing edge with control contact (Wa11)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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.



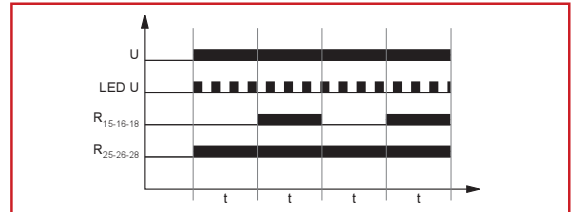
## Flasher pulse first (Bi11)

When the supply voltage U is applied, the instantaneous contact and the delayed contact switch into on-position (yellow LED illuminated) and the set interval t begins (green LED flashes). After the interval t has expired, the delayed contact switches into off-position (yellow LED not illuminated) and the set interval t begins again. The delayed contact is triggered at a ratio of 1:1 until the supply voltage is interrupted.



## Flasher pause first (Bp11)

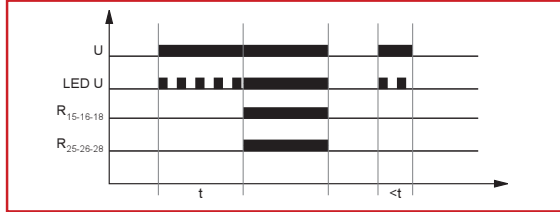
When the supply voltage U is applied, the instantaneous contact switches into on-position and the set interval t begins (green LED flashes). After the interval t has expired, the delayed contact switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval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





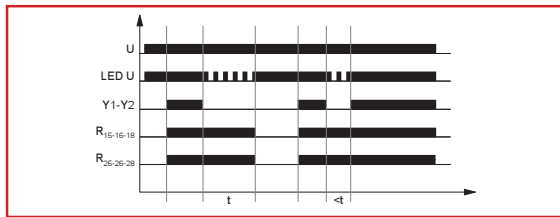
## ON delay (E20)

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.



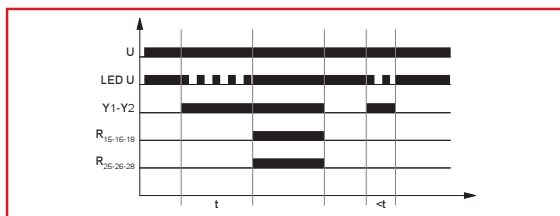
## OFF delay with control contact (R20)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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.



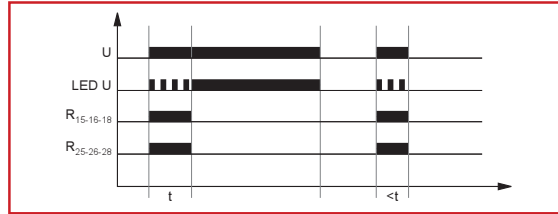
## ON delay with control contact (Es20)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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.



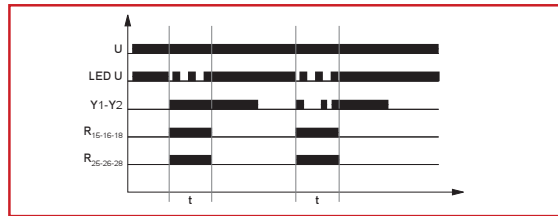
## Single shot leading edge voltage controlled (Wu20)

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.



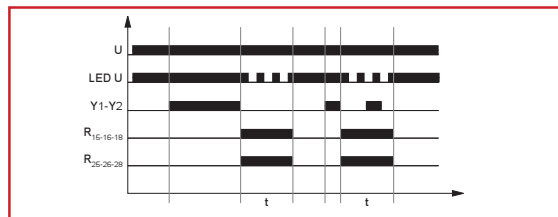
## Single shot leading edge with control contact (Ws20)

The supply voltage U must be constantly applied to the device (green LED illuminated). When the control contact Y1-Y2 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)

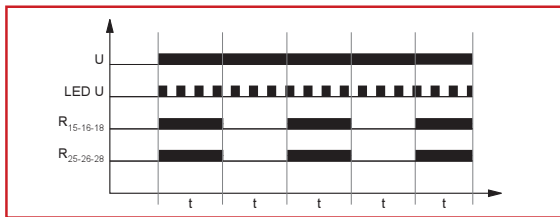
The supply voltage U must be constantly applied to the device (green LED illuminated). Closing the control contact Y1-Y2 has no influence on the condition of the output relay R. When the control contact is opened, the output relay switches into on-position (yellow LED illuminated) and the set interval 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.



# TIME RELAYS

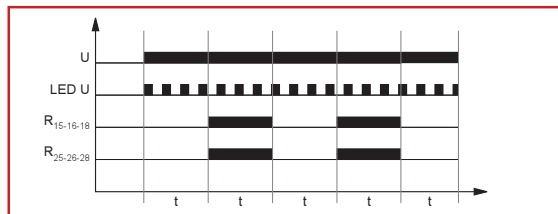
## Flasher pulse first (Bi20)

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, the output relay switches into off-position (yellow LED not illuminated) and the set interval t begins again. The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.

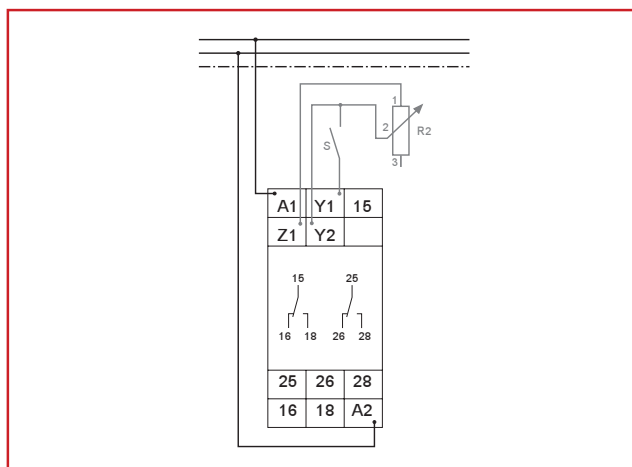


## Flasher pause first (Bp20)

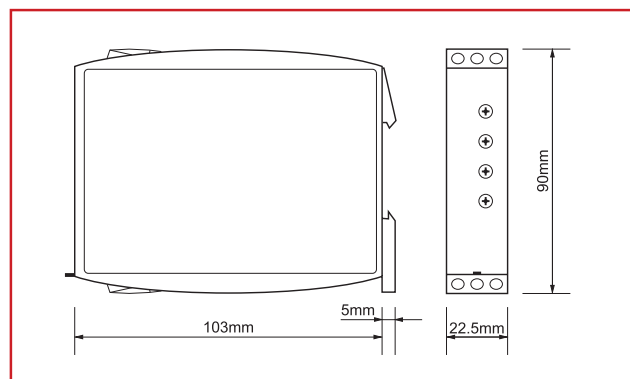
When the supply voltage U is applied, the set interval t begins (green LED flashes). After the interval t has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval t has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.



## CONNECTIONS



## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Multifunction time relay, 2 change over, 24-240V AC/DC, industrial design	9004840557466		<b>ZR6MF052</b>



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## FLASHER TIME RELAY ZR5B0011



### SCHRACK-INFO

- Asymmetric flasher
- 7 time ranges
- Wide input voltage range
- 1 change over contact
- Width 17,5 mm
- Installation design

### TECHNICAL DATA

#### 1. Functions

lp Asymmetric flasher pause first  
li Asymmetric flasher pulse first  
(A1-B1 bridged)

#### 2. Time ranges

Time range	Adjustment range	
1 s	50 ms	1 s
10 s	500 ms	10 s
1 min	3 s	1 min
10 min	30 s	10 min
1 h	3 min	1 h
10 h	30 min	10 h
100 h	5 h	100 h

#### 3. Indicators

Green LED U/t ON: indication of supply voltage  
Green LED U/t slow flashing: indication of time period t1  
Green LED U/t fast flashing: indication of time period t2  
Yellow LED R ON/OFF: indication of relay output

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-rail TS 35 according to EN 50022  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required),  
IP rating IP20  
Tightening torque: max. 1 Nm  
Terminal capacity:  
1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
1 x 4 mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage: Terminals A1(+)-A2  
Type ZR5B0011  
12-240 V AC/DC: 12 to 240 V AC/DC  
Tolerance: 12 V-10% to 240 V+10%  
Rated consumption: 4 VA (1.5 W)  
Rated frequency: AC 48 to 63 Hz  
Duty cycle: 100%  
Reset time: 100 ms  
Residual ripple for DC: 10%  
Drop-out voltage: >30% of minimum rated supply voltage  
Overvoltage category: III (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 6. Output circuit

1 potential free change over contact  
Rated voltage: 250 V AC  
Switching capacity: 2000 VA (8 A / 250 V)  
Fusing: 8 A fast acting  
Mechanical life: 20 x 10<sup>6</sup> operations  
Electrical life: 2 x 10<sup>5</sup> operations  
at 1000 VA resistive load  
Switching frequency: max. 60/min at 100 VA resistive load  
max. 6/min at 1000 VA resistive load  
(according to IEC 947-5-1)  
Overvoltage category: III. (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 7. Control input

Input not potential free: Terminals A1-B1  
Loadable: yes  
Max. line length: 10 m  
Trigger level (sensitivity): automatic adaption to supply voltage  
Min. control pulse length: DC 50 ms / AC 100 ms

#### 8. Accuracy

Base accuracy: ±1% of maximum scale value  
Adjustment accuracy: <5% of maximum scale value  
Repetition accuracy: <0.5% or ±5 ms  
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: 2, if built in 3  
(according to IEC 664-1)  
Vibration resistance: 10 to 55 Hz 0.35 mm  
(according to IEC 68-2-6)  
Shock resistance: 15 g 11 ms  
(according to IEC 68-2-27)

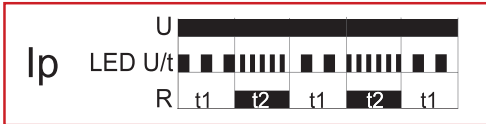
# TIME RELAYS

## FUNCTIONS

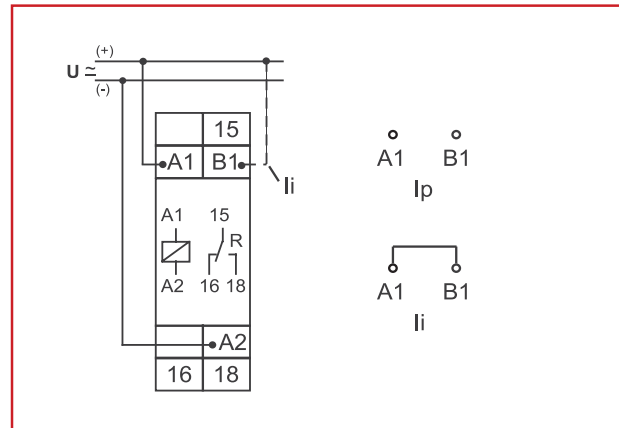
### Asymmetric flasher pause first (Ip)

When the supply voltage  $U$  is applied, the set interval  $t_1$  begins (green LED  $U/t$  flashes slowly). After the interval  $t_1$  has expired, the output relay  $R$  switches into on-position (yellow LED illuminated) and the set interval  $t_2$  begins (green LED  $U/t$  flashes fast). After the interval  $t_2$  has expired, the output relay switches into off-position (yellow LED not illuminated).

The output relay is triggered at the ratio of  $t_1:t_2$  until the supply voltage is interrupted.



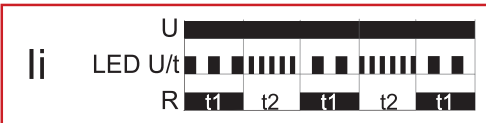
## CONNECTIONS



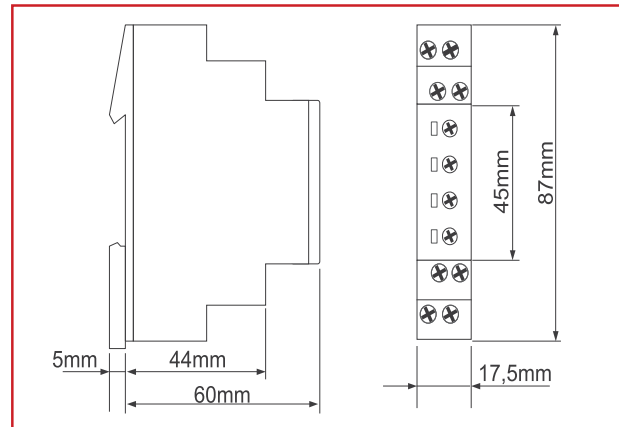
### Asymmetric flasher pulse first (li)

When the supply voltage  $U$  is applied, the output relay  $R$  switches into on-position (yellow LED illuminated) and the set interval  $t_1$  begins (green LED  $U/t$  flashes slowly). After the interval  $t_1$  has expired, the output relay switches into off-position (yellow LED not illuminated) and the set interval  $t_2$  begins (green LED  $U/t$  flashes fast). After the interval  $t_2$  has expired, the output relay switches into on-position (yellow LED illuminated).

The output relay is triggered at the ratio of  $t_1:t_2$  until the supply voltage is interrupted.



## DIMENSIONS



## WEIGHT

Single packing: 72 g

DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Flasher time relay, 12-240VAC, 1 change over, 8A/250V	9004840459012		ZR5B0011



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## PULSE TIME RELAY ZR5B0025



### SCHRACK-INFO

- Asymmetric flasher, 2-time multifunction
- 7 Time ranges
- Wide input voltage range
- 2 change-over contacts
- Width 35 mm
- Installation design

### TECHNICAL DATA

#### 1. Functions

The function has to be set before connecting the relay to the supply voltage.

Ip	Asymmetric flasher pause first
li	Asymmetric flasher pulse first
ER	ON delay and OFF delay with control contact
EWu	ON delay single shot leading edge voltage controlled
EWs	ON delay single shot leading edge with control contact
WsWa	Single shot leading and single shot trailing edge with control contact
Wt	Pulse sequence monitoring

#### 2. Time ranges

Time range	Adjustment range	
1 s	50 ms	1 s
10 s	500 ms	10 s
1 min	3 s	1 min
10 min	30 s	10 min
1 h	3 min	1 h
10 h	30 min	10 h
100 h	5 h	100 h

#### 3. Indicators

Green LED U/t ON:	indication of supply voltage
Green LED U/t slow flashing:	indication of time period t1
Green LED U/t fast flashing:	indication of time period t2
Yellow LED ON/OFF:	indication of relay output

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
 Mounted on DIN-rail TS 35 according to EN 50022  
 Mounting position: any  
 Shockproof terminal connection according to VBG 4 (PZ1 required),  
 IP rating IP20  
 Tightening torque: max. 1 Nm  
 Terminal capacity:  
 1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
 1 x 4 mm<sup>2</sup> without multicore cable end  
 2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
 2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage:	terminals A1(+) - A2
Types ZR5B0025	
12-240 V AC/DC:	12 to 240 V AC/DC
Tolerance:	12 V-10% to 240 V+10%
Rated frequency:	48 to 63 Hz
Rated consumption:	6 VA (2 W)
Duration of operation:	100%

Reset time:	100 ms
Residual ripple of DC:	-
Drop-out voltage:	>30% of the supply voltage
Overvoltage category:	III (according to IEC 60664-1)
Rated surge voltage:	4 kV

#### 6. Output circuit

2 potential free change over contacts	
Rated voltage:	250 V AC
Switching capacity:	2000 VA (8 A / 250 V)
Fusing:	8 A fast acting
Mechanical life:	20 x 10 <sup>6</sup> operations
Electrical life:	2 x 10 <sup>5</sup> operations at 1000 VA resistive load
Switching frequency:	max. 60/min at 100 VA resistive load max. 6/min at 1000 VA resistive load (according to IEC 947-5-1)
Overvoltage category:	III (according to IEC 60664-1)
Rated surge:	4 kV

#### 7. Control input

Input not potential free:	terminals A1-B1
Loadable:	yes
Max. line length:	10 m
Trigger level (sensitivity):	automatic adaption to supply voltage
Max. control pulse length:	DC 50 ms / AC 100 ms

#### 8. Accuracy

Base accuracy:	±1% of maximum scale value
Adjusting accuracy:	≤5% of maximum scale value
Repetition accuracy:	<0.5% or ±5 ms
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:	2, if built in 3 (according to IEC 664-1)
Vibration resistance:	10 to 55 Hz 0.35 mm (according to IEC 68-2-6)
Shock resistance:	15 g 11 ms (according to IEC 68-2-27)

## FUNCTIONS

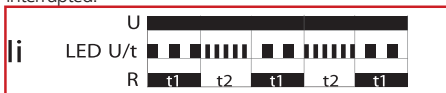
### Asymmetric flasher pause first (Ip)

When the supply voltage U is applied, the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at the ratio of t1:t2 until the supply voltage is interrupted.



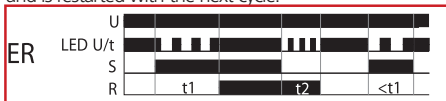
### Asymmetric flasher pulse first (Ii)

When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay switches into off-position (yellow LED not illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into on-position (yellow LED illuminated). The output relay is triggered at the ratio of t1:t2 until the supply voltage is interrupted.



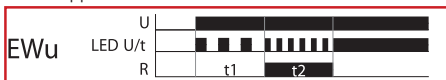
### ON delay and OFF delay with control contact (ER)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay R switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into off-position (yellow LED not illuminated). If the control contact is opened before the interval t1 has expired, the interval already expired is erased and is restarted with the next cycle.



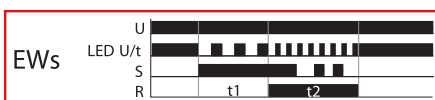
### ON delay and single shot leading edge voltage controlled (EWu)

When the supply voltage U is applied, the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into off-position (yellow LED not illuminated). If the supply voltage is interrupted before the interval t1+t2 has expired, the interval already expired is erased and is restarted when the supply voltage is next applied.



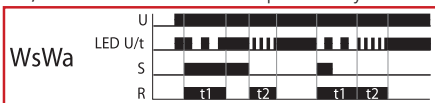
### ON delay and single shot leading edge with control contact (EWs)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, 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.



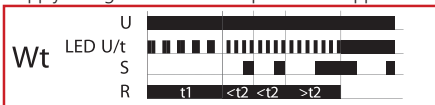
### Single shot leading and single shot trailing edge with control contact (WsWa)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (yellow LED illuminated) and the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay R switches into off-position (yellow LED not illuminated). If the control contact is opened, the output relay again switches into on-position (yellow LED illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times.

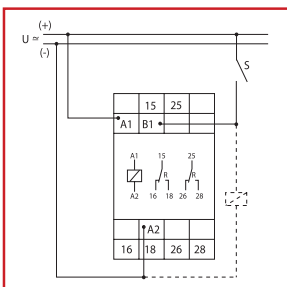


### Pulse sequence monitoring (Wt)

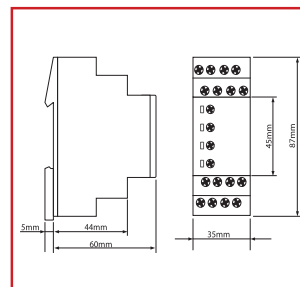
When the supply voltage U is applied, the set interval t1 begins (green LED U/t flashes slowly) and the output relay R switches into on-position (yellow LED illuminated). After the interval t1 has expired, the set interval t2 begins (green LED U/t flashes fast). So that the output relay R remains in on-position, the control contact S must be closed and opened again within the set interval t2. If this does not happen, the output relay R switches into off-position (yellow LED not illuminated) and all further pulses at the control contact are ignored. To restart the function the supply voltage must be interrupted and reapplied.



## CONNECTIONS



## DIMENSIONS



## WEIGHT

Single packing:

106g

DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Pulse time relay, 7 functions, 12-240VAC, 2 change over, 8A/250V	9004840507263		ZR5B0025

## STAR-DELTA-RELAY ZR5SD025



### SCHRACK-INFO

- Star-Delta start up
- 2 change-over contacts
- Wide input voltage range
- Width 35 mm
- Installation design

### TECHNICAL DATA

#### 1. Functions

S Star-delta start up

#### 2. Time ranges

Start-up time

Time range	Adjustment range	
10 s	500 ms	10 s
30 s	1500 ms	30 s
1 min	3 s	1 min
3 min	9 s	3 min

Transit time (fixed)

40 ms  
60 ms  
80 ms  
100 ms

#### 3. Indicators

Green LED U/t ON: indication of supply voltage  
delta-contactor in on-position  
(terminals 25-28)

Green LED U/t flashes: indication of time period star time

Yellow LED R ON/OFF: indication of star contactor  
(terminals 15-18)

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-rail TS 35 according to EN 50022  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required),  
IP rating IP20  
Tightening torque: max. 1 Nm  
Terminal capacity:  
1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
1 x 4 mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage: terminals A1(+)-A2  
Type ZR5SD025 12 to 240 V AC/DC  
Tolerance: 12 V-10% to 240 V+10%  
Rated consumption: 4 VA (1.5 W)  
Rated frequency: AC 48 to 63 Hz  
Duty cycle: 100%

Reset time: 100 ms  
Residual ripple of DC: 10%  
Drop-out voltage: >30% of the supply voltage  
Overvoltage category: III (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 6. Output circuit

2 potential free change over contacts  
Rated surge: 250 V AC  
Switching capacity: 2000 VA (8 A / 250 V)  
Fusing: 8 A fast acting  
Mechanical life: 20 x 10<sup>6</sup> operations  
Electrical life: 2 x 10<sup>5</sup> operations  
at 1000 VA resistive load  
Switching frequency: max. 60/min at 100 VA  
resistive load  
max. 6/min at 1000 VA  
resistive load  
(according to IEC 947-5-1)  
Overvoltage category: III. (according to IEC 60664-1)  
Rated surge voltage: 4 kV

#### 7. Accuracy

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

#### 8. 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  
Klasse 3K3)  
Pollution degree: 2, if built in 3  
(according to IEC 664-1)  
Vibration resistance: 10 to 55 Hz 0.35 mm  
(according to IEC 68-2-6)  
Shock resistance: 15 g 11 ms  
(according to IEC 68-2-27)

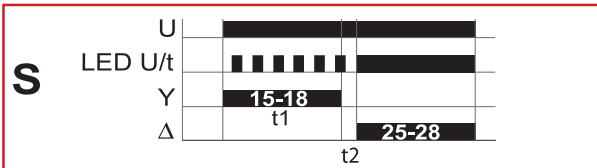


# TIME RELAYS

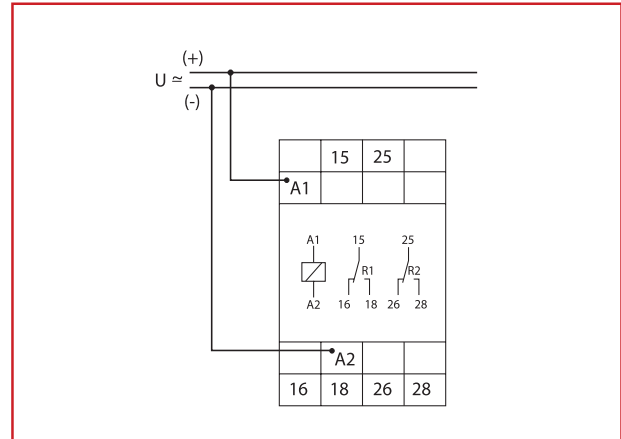
## FUNCTIONS

### Star-delta start up

When the supply voltage U is applied, the star-contact switches into on-position (yellow LED illuminated) and the set star-time t1 begins (green LED U/t flashes). After the interval t1 has expired (green LED U/t illuminated), the star-contact switches into off-position (yellow LED not illuminated) and the set transit-time t2 begins. After the interval t2 has expired, the contact for the delta-contactor switches into on-position. To restart the function, the supply voltage must be interrupted and reapplied.



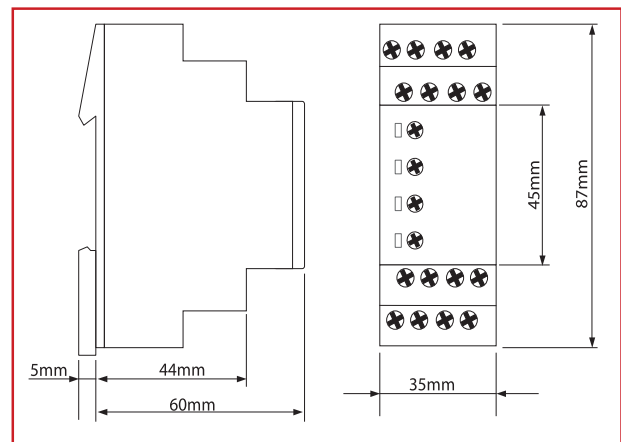
## CONNECTIONS




## WEIGHT

Single packing: 106 g

## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Star-delta-relay, 12-240VAC, 2 change over	9004840507300		<b>ZR5SD025</b>



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## STAR-DELTA-RELAY ZR6SD052



- Star-Delta start-up
- Supply voltage selectable via power modules
- 2 change-over contacts
- Width 22.5 mm
- Industrial design

### TECHNICAL DATA

#### 1. Functions

S

Star-Delta start-up

#### 2. Zeitbereiche

Start-up time

Time range

Adjustment range

10s

500ms

1s

3s

1500ms

30s

1min

3s

1min

3min

9s

3min

Transit time

Time range (fixed)

40ms

60ms

80ms

100ms

#### 3. Indicators

Green LED ON:

indication of supply voltage  
delta-contactor in on-position  
(terminals 25-28)

Green LED flashes:

indication of star-time

Yellow LED ON/OFF:

indication of star-contactor  
(terminals 15-18)

#### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40

Mounted on DIN-Rail TS 35 according to EN 50022

Mounting position: any

Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20

Tightening torque: max. 1Nm

Terminal capacity:

1 x 0.5 bis 2.5 mm<sup>2</sup> with/without multicore cable end1 x 4 mm<sup>2</sup> without multicore cable end2 x 0.5 bis 1.5 mm<sup>2</sup> with/without multicore cable end2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

#### 5. Input circuit

Supply voltage:

12 to 400V AC

Tolerance:

Rated frequency:

Rated consumption:

Duration of operation:

Reset time:

Residual ripple for DC:

Drop-out voltage:

Overvoltage category:

Rated surge voltage:

terminals A1-A2 (galvanically  
separated) selectable via power  
modules TR2

according to specification of  
power module

according to specification of  
power module

2VA (1.5W)

100%

100ms

-

&gt;30% of the supply voltage

III (in accordance with  
IEC 60664-1)

4kV

#### 6. Output circuit

2 potential free change-over contacts

Rated voltage: 250V AC

Schaltleistung: 750VA (3A / 250V AC)

If the *distance* between the devices is *less than 5mm!*

Switching capacity: 1250VA (5A / 250V AC)

If the *distance* between the devices is *greater than 5mm!*

Fusing: 5A fast acting

Mechanical life: 20 x 10<sup>6</sup> operationsElectrical Life: 2 x 10<sup>5</sup> operations at 1000VA

resistive load

Switching frequency: max. 60/min bei 100VA

resistive load

max. 6/min bei 1000VA

resistive load (in accordance with  
IEC 60947-5-1)

Overvoltage category:

Rated surge voltage:

III (in accordance with IEC 60664-1)  
4kV

#### 7. Accuracy

Base accuracy: ±1% (of maximum scale value)

Frequency response:

Adjustment accuracy: ≤5% (of maximum scale value)

Repetition accuracy: &lt;0.5% or ±5ms

Voltage influence:

temperature influence: ≤0.01% / °C

# TIME RELAYS

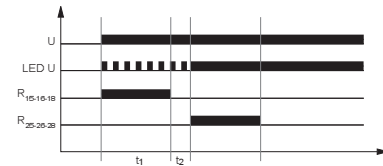
## 8. Ambient conditions

Ambient temperature:	-25 to +55°C (in accordance with IEC 60068-1)
	-25 to +40°C (in accordance with UL 508)
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree:	3 (in accordance with IEC 60664-1)
Vibration resistance:	10 to 55Hz 0.35mm (in accordance with IEC 60068-2-6)
Shock resistance:	15g 11ms (in accordance with IEC 60068-2-27)

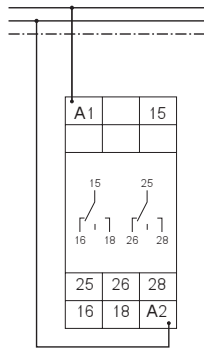
## FUNCTIONS

### Star-Delta start-up (S)

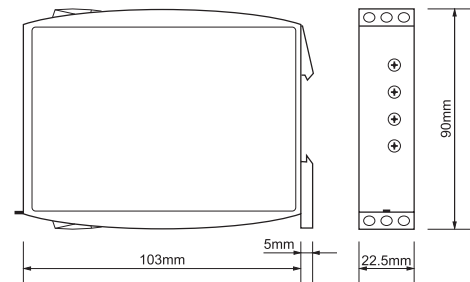
When the supply voltage U is applied, the star-contact switches into on-position (yellow LED illuminated) and the set star-time t1 begins (green LED flashing). After the interval t1 has expired (green LED illuminated) the star-contact switches into off-position (yellow LED not illuminated) and the set transit-time t2 begins. After the interval t2 has expired the delta-contact switches into on-position. To restart the function the supply voltage must be interrupted and re-applied.



## CONNECTIONS



## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Star-delta-relay, 2 change over, industrial design	9004840557459		ZR6SD052



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## EMERGENCY LIGHT TEST RELAY ZR5RT011



- Timer for automatic test of emergency lights
- Integrated test key
- 1 change over contact
- Width 17.5 mm
- Installation design

## TECHNICAL DATA

### 1. Functions

Ws Single shot leading edge with control contact

### 2. Time ranges

Time range reversible between 10min, 30min, 60min, 90min, 2h and 3h

### 3. Indicators

Green LED U/t ON: indication of supply voltage  
 Green LED U/t flashes: indication of time period t  
 Green LED U/t flashes fast: abort of time period t  
 Yellow LED ON/OFF: indication of relay output

### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP 40  
 Mounted on DIN-rail TS 35 according to EN 60715  
 Mounting position: any  
 Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
 Tightening torque: max. 1Nm  
 Terminal capacity:  
 1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end  
 1 x 4 mm<sup>2</sup> without multicore cable end  
 2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end  
 2 x 2.5 mm<sup>2</sup> flexible without multicore cable end

### 5. Input circuit

Supply voltage: 230V AC  
 Terminals: L-N  
 Tolerance: -15% to +10%  
 Rated frequency: 48 to 63Hz  
 Rated consumption: 2VA (1.0W)  
 Duty cycle: 100%  
 Reset time: 500ms  
 Ripple and noise at DC: -  
 Drop out voltage: >30% of supply voltage  
 Overvoltage category: III (in accordance with IEC 60664-1)  
 Rated surge voltage: 4kV

### 6. Output circuit

1 change over contact

#### NORMALLY OPEN CONTACT

Terminals: L-18  
 Rated voltage: 250V AC  
 Switching capacity: 1250VA (5A / 250V AC)

#### NORMALLY CLOSED CONTACT

Terminals: L-16  
 Rated voltage: 250V AC  
 Switching capacity: 2500VA (10A / 250V AC)  
 If the distance between the devices is less than 5mm!

Switching capacity: 4000VA (16A / 250V AC)  
 If the distance between the devices is greater than 5mm!  
 Start-up peak (20ms): 80A

Mechanical life: 30 x 10<sup>6</sup> operations  
 Electrical life:  
 Resistive load: 10<sup>5</sup> operations at 16A 250V  
 Lamp load: 80.000 operations at 1000W 250V

### 7. Accuracy

Base accuracy: ±5%  
 Adjustment accuracy: -  
 Repetition accuracy: <2%  
 Voltage influence: -  
 Temperature influence: ≤1%

### 8. Ambient conditions

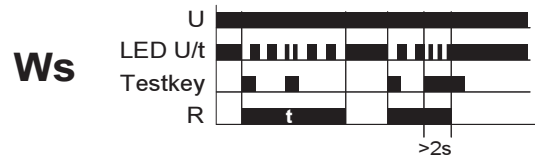
Ambient temperature: -25 to +55°C  
 Storage temperature: -25 to +70°C  
 Transport temperature: -25 to +70°C  
 Relative humidity: 15% to 85% (in accordance with IEC 60721-3-3 class 3K3)  
 Pollution degree: 2, if built in 3 (in accordance with IEC 60664-1)

# TIME RELAYS

## FUNCTIONS

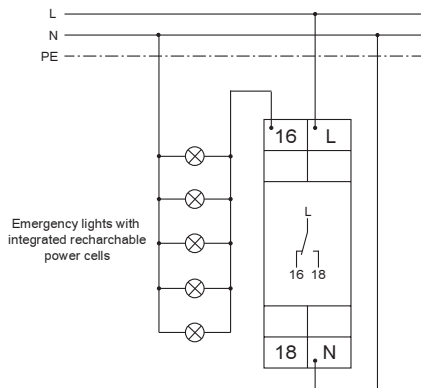
### Single shot leading edge with control contact (Ws)

The supply voltage U must be constantly to the device (green LED U/t illuminated). Pressing the integrated test key forces the output relay R to switch into on-position (yellow LED illuminated), so the emergency lights are disconnected from the mains and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the output relay R switches into off-position (yellow LED not illuminated) and the emergency lights are reconnected to the mains. During the interval, the test key can be operated any number of times. Prolonged pressure on the test key (>2s) aborts the running test interval (green LED U/t flashes fast) and a further cycle can be started.

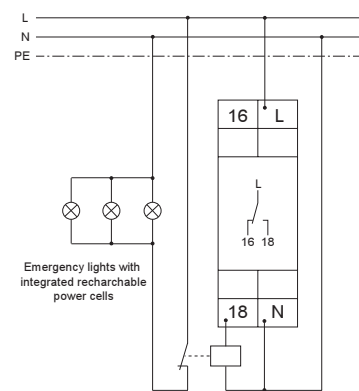


## CONNECTIONS

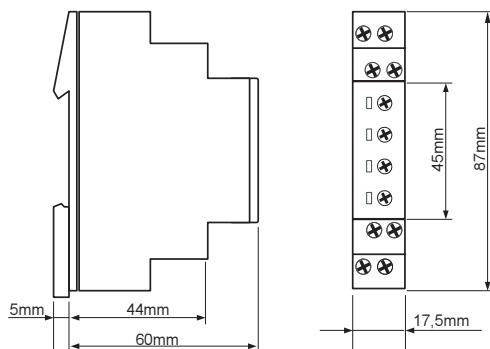
Direct connection of emergency lights ( $I < 16A$ )



Switching emergency lights with contactor ( $I > 16A$ )



## DIMENSIONS



DESCRIPTION	EAN CODE	AVAILABLE	ORDER NO.
Emergency light test relay	9004840557374		<b>ZR5RT011</b>