Timers - Multifunction

K3ZM11

KAPPA series

14 functions

16 time ranges

2 change-over contacts

Supply voltage 24V a.c./d.c. and 110-240V a.c.

Width 38 mm

Installation design

Read and understand these instructions before installing, operating or maintaining the equipment.

Danger!
Never carry out work on live parts! Danger of fatal injury! The product must not be used in case of obvious damage. To be installed by an authorized person.

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
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
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
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 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 screw terminal socket 11-pols in accordance with IEC 60067-1-18a (type R11X or ES12)
Mounting position: any

5. Input circuit

Supply voltage:	
24V d.c.	Pins S2(+) - S7
24V a.c.	Pins S2 - S7
110 - 240V a.c.	Pins S2 - S10
Tolerance:	
24V d.c.	±10%
24V a.c.	-15% to +10%
110 - 240V a.c.	-15% to +10%
Rated consumption:	
24V a.c./d.c.	0,8VA (0,6W)
110V a.c.	2,5VA (0,7W)
240V a.c.	20VA (1W)
Rated frequency:	a.c. 48 to 63Hz
Duty cycle:	100%
Duty cycle:	100%
Reset time:	100ms
Residual ripple to d.c.:	10%
Drop-out voltage:	>30% of the supply voltage
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

6. Output circuit

2 potential free change-over contacts:	Pins S1 - S3 - S4, S8 - S9 - S11
Rated voltage:	250V a.c.
Contact material:	AgNi
Switching capacity:	1250VA (5A / 250V a.c.)
If the distance between the devices is less than 5mm.	
Switching capacity:	2000VA (8A / 250V a.c.)
If the distance between the devices is greater than 5mm.	
Fusing:	8A fast acting
Prospective current value:	$1000A_{EFF}$
Mechanical life:	20×10^6 operations
Electrical life:	2×10^5 operations at 1000VA resistive load
Switching frequency:	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 input

Input not potential free:	pins S2-S5
Loadable:	yes
Line length:	max. 10m
Trigger level (sensitivity):	automatic adaption to supply voltage
Min. control pulse length:	d.c. 50ms / a.c. 100ms

8. Insulation data

Insulation:	Basic insulation
Dielectric test voltage:	1640V

9. Accuracy

Base accuracy:	±5% of maximum scale value
Adjustment accuracy:	<5% of maximum scale value
Repetition accuracy:	<5% or ±100ms
Voltage influence:	-
Temperature influence:	≤0.05% / °C

10. Ambient conditions

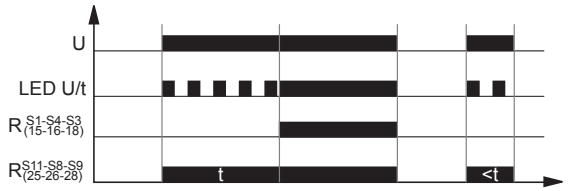
Ambient temperature:	-25 to +55°C
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree:	2 (in accordance with IEC 60664-1)

Functions

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

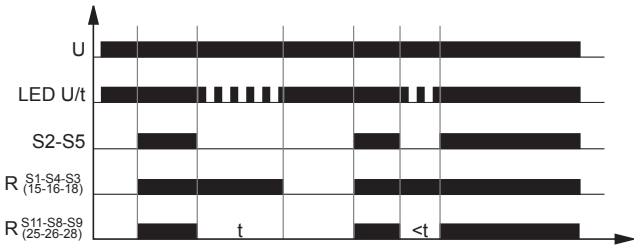
ON delay (E11)

When the supply voltage U is applied, the instantaneous contact $R_{S11-S8-S9}$ switches into on-position and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the delayed contact $R_{S1-S3-S4}$ switches into on-position (yellow LED R 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 U/t illuminated). When the control contact S2-S5 is closed, both contacts switch into on-position (yellow LED R illuminated). If the control contact is opened, the instantaneous contact $R_{S11-S8-S9}$ switches into off-position and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the delayed contact $R_{S1-S3-S4}$ switches into off-position (yellow LED R 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)

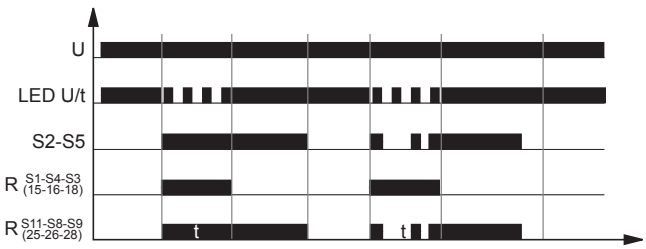
The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S2-S5 is closed, the instantaneous contact $R_{S11-S8-S9}$ switches into on-position and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the delayed contact $R_{S1-S3-S4}$ switches into on-position (yellow LED R 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 $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the delayed contact $R_{S1-S3-S4}$ switches into off-position (yellow LED R not illuminated). This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the interval t has expired, both contacts switch into off-position. The interval already expired is erased and is restarted when the supply voltage is next applied.

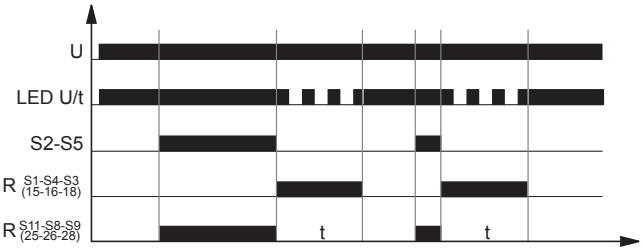
Single shot leading edge with control contact (Ws11)

The supply voltage U must be constantly applied to the device (green U/t LED illuminated). When the control contact S2-S5 is closed, both contacts $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the delayed contact $R_{S1-S3-S4}$ switches into off-position (yellow LED R not illuminated). The instantaneous contact $R_{S11-S8-S9}$ 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.

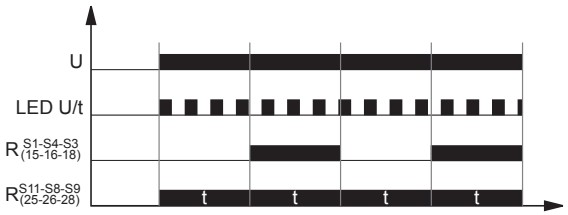


Single shot trailing edge with control contact (Wa11)

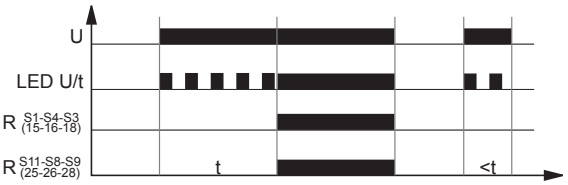
The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S2-S5 is closed the instantaneous contact $R_{S11-S8-S9}$ switches into on-position. When the control contact S2-S5 is opened, the instantaneous contact switches into off-position, the delayed contact $R_{S1-S3-S4}$ switches into on-position (yellow LED R illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the delayed contact switches into off-position (yellow LED R 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.



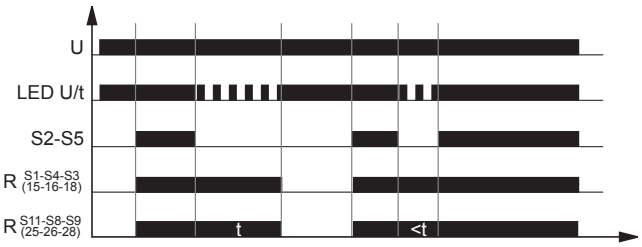
Flasher pause first (Bp11)
When the supply voltage U is applied, the instantaneous contact $R_{S11-S8-S9}$ switches into on-position and the set interval t begins (green LED U/t flashes). After the interval t has expired, the delayed contact $R_{S1-S3-S4}$ switches into on-position (yellow LED R illuminated) and the set interval t begins again. After the interval t has expired, the delayed contact switches into off-position (yellow LED R 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 U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R 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.



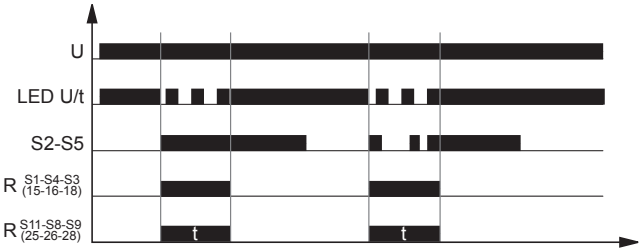
OFF delay with control contact (R20)
The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S2-S5 is closed, the output relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R illuminated). If the control contact is opened, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relays switch into off-position (yellow LED R 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.



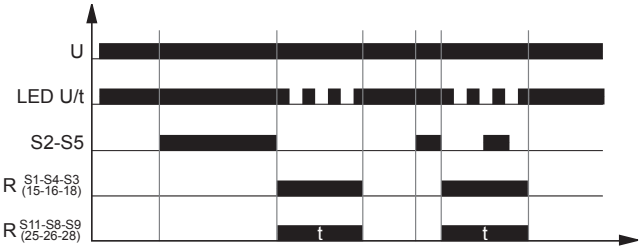
ON delay with control contact (Es20)
The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S2-S5 is closed, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R 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 relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R 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 relays switch into off-position (yellow LED R 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 relays switch into off-position. The interval already expired is erased and is restarted when the supply voltage is next applied.

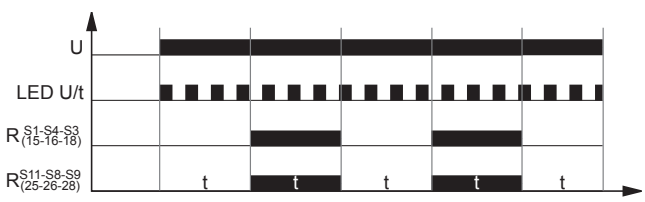
Single shot leading edge with control contact (Ws20)
The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S2-S5 is closed, the output relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relays switch into off-position (yellow LED R 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 U/t illuminated). Closing the control contact S2-S5 has no influence on the condition of the output relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$. When the control contact is opened, the output relays switch into on-position (yellow LED R 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 relays switch into off-position (yellow LED R 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.

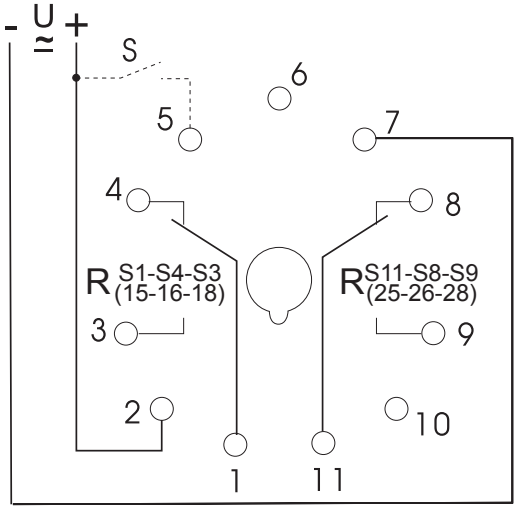


Flasher pause first (Bp20)
When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired, the output relays $R_{S1-S3-S4}$ and $R_{S11-S8-S9}$ switch into on-position (yellow LED R illuminated) and the set interval t begins again. After the interval t has expired, the output relays switch into off-position (yellow LED R not illuminated). The output relays are triggered at a ratio of 1:1 until the supply voltage is interrupted.

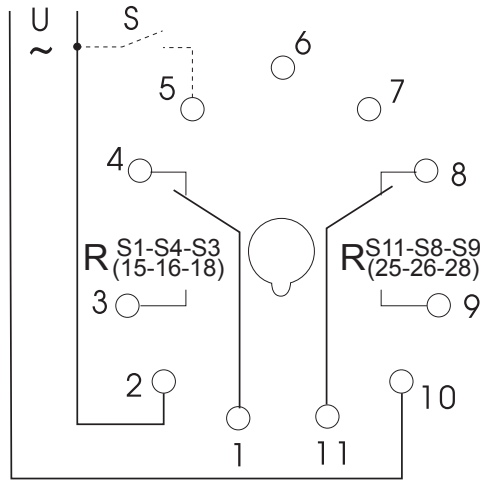


Connections

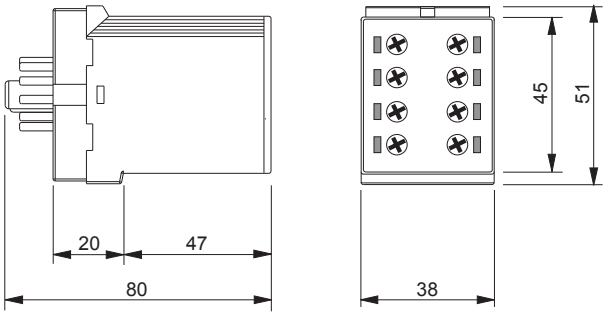
24V a.c./d.c.



110-240V a.c.



Dimensions



Ordering information

Type	Functions	Supply Voltage	Part. No.
K3ZM11 24V AC/DC 110-240V AC	E11, R11, Es11, Wu11, Ws11, Wa11, Bp11 E20, R20, Es20, Wu20, Ws20, Wa20, Bp20	24V a.c./d.c. 110-240V a.c.	135500

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