



## Electronic Multi-Function Relays

**KZT 91 KM for multi-voltage 24 to 240 V AC/DC**

**KZT 91 KD for dual-voltage 24 V AC/DC and 230 V AC**, voltage selection by means of a DIP-switch

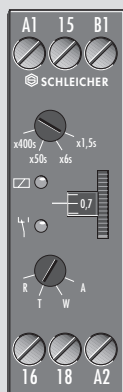
**KZT 91 K for single voltage**

**4 functions: ON-delay (AV), OFF-delay (RV), interval ON (EW), repeat cycle (TP)**

**1 setting range: divided into 4 time ranges**

**Contact equipment: 1 timed changeover**

### KZT 91 KM, ...



### Function

AV, RV, EW and TP (see page K 2/3).

The setting of the functions and time ranges is done on the timer's front by means of selector switches. The time setting within a range is carried out with the aid of a thumbwheel.

On the KZT 91 KD the voltage can be selected with the DIP-switch situated on the rear of the item (factory preset at 220 V AC).

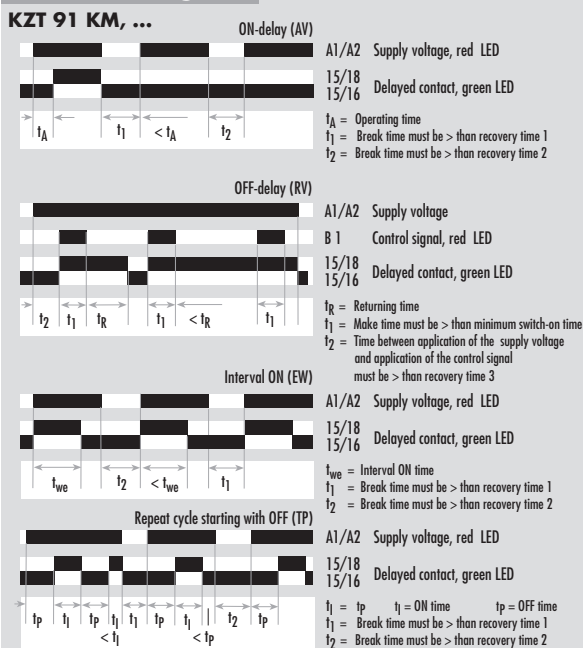
### Product Description

The electronic multi-function relays KZT 91... are available in 1 setting range, divided into 4 time ranges.

Setting Range	Time Range
<b>0,15 s bis 400 s</b> divided into :	0,15 to 1,5 s
	0,6 to 6 s
	5 to 50 s
	40 to 400 s
or <b>1,5 s bis 60 min</b> divided into:	1,5 to 15 s
	0,1 to 1 min
	0,8 to 8 min
	6 to 60 min

### Function Diagram

FD 0106/1-4

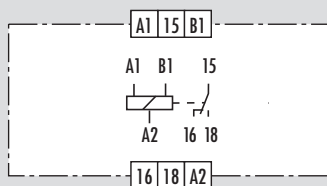


Type	Standard voltage	Special voltage	Price Code
KZT 91 KM 400 s KZT 91 KM 60 min	24 to 240 V AC/DC 50 to 60 Hz		<b>K 2/7.1</b>
KZT 91 KD 400 s KZT 91 KD 60 min	24 V AC/DC and 220 to 240 V AC 50 to 60 Hz		<b>K 2/7.2</b>
KZT 91 K 400 s KZT 91 K 60 min	24 V AC/DC 110 to 127 V AC 220 to 240 V AC 50 to 60 Hz	42 V AC/DC 48 V AC/DC 60 V AC/DC 50 to 60 Hz	<b>K 2/7.3</b>

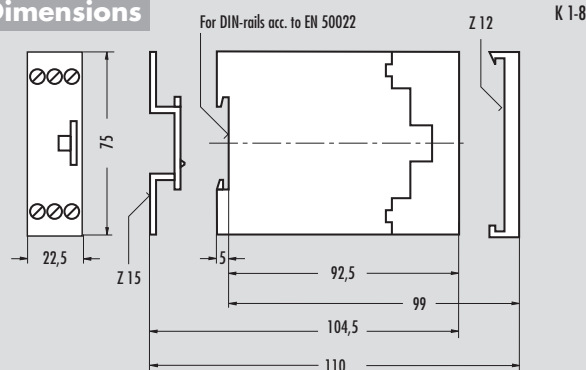
### Connection Diagram

KS 0220/1

**KZT 91 KM, ...**



### Dimensions





## TECHNICAL DATA

**FUNCTION** according to DIN VDE 0435 Part 1 110:04.89

	Point 3.12
	Point 3.16
	Point 3.4
	Point 3.9
Function display	
Function diagram	

### POWER SUPPLY

Rated voltage $U_N$	V AC/DC
Rated voltage $U_N$	V AC
Rated consumption at 50 Hz and $U_N$ (AC)	VA
Rated consumption at 50 Hz and $U_N$ (AC)	W
Rated consumption DC	W
Starting current inrush	A/ms
Rated frequency	Hz
Operating voltage range	
Rated current of the energizing quantity (B1)	mA

### TIME CIRCUIT

Time setting/Number of time ranges	
2 setting ranges available	
	s
	s
	s/min
	min
	ms
	ms
	% $U_N$
Recovery time 1/2/3	
Minimum switch-ON time	
Release value	
Repeat cycle starting with	
Permissible parallel load	
Internal rectifier	
Average of the error	%
Dispersion	% ± 10 ms
Influence of the energizing quantity or supply voltage	%/ % $\Delta U_N$
Influence of the ambient temperature	%/K

### OUTPUT CIRCUIT

Contact equipment	
Contact material	
Switching voltage $U_n$	V AC/DC
Maximum continuous current $I_n$	A
Application category according to EN 60947-5-1:1991	
Permissible switching frequency	switching cycles/h
Mechanical service life	switching cycles
Response time	ms
Release time	ms

### GENERAL DATA

Creepage and clearance distances between circuits nach DIN VDE 0110-1:04.97: Rated surge voltage	kV
Over voltage category	
Contamination level	
Design voltage	V AC
Test voltage $U_{eff}$ 50 Hz acc. to DIN VDE 0110-1, Tabelle A.1	kV
Protection class housing/terminals acc. to DIN VDE 0470 Teil 1:11.92	
Radiated noise	
Noise immunity	

Ambient temperature, working range	°C
Dimensions	
Connection diagram	
Weight	kg
Accessories	
Approvals	

### GENERAL TECHNICAL SPECIFICATIONS

## KZT 91 KM

Multi-function relay for multi-voltage

ON-delay time relay
OFF-delay time relay with auxiliary supply voltage
Interval ON time relay
Repeat cycle time relay
1 LED green, 1 LED red
FD 0106/1 to 4

### 24 to 240

7,5
1,9
1,9
-
50 to 60
0,8 to 1,1 x $U_N$
≤ 1

analog/4
1. setting range 0,15 to 400 s divided into: 0,15 to 1,5; 0,6 to 6; 5 to 50; 40 to 400 or
2. setting range 1,5 s to 60 min divided into: 1,5 s to 15 s; 0,1 min to 1 min; 0,8 to 8; 6 to 60
ca. 50/ca. 50/-
ca. 20
≥ 10; permiss. line inductivity 0,2 μF
OFF
yes; B1 no
no; B1 yes
diagram 4, page i.5
± 0,5
≤ 0,02
≤ 0,025

1 timed changeover
Ag-alloy; gold-plated
230/230
5
AC-15 $U_e$ 230 V AC, $I_e$ 2 A
DC-13 $U_e$ 24 V DC, $I_e$ 2 A
3600
20 x 10 <sup>6</sup>
ca. 20
ca. 25

4
III
3 outside, 2 inside
250
2,21
IP 30/IP 20
EN 50081-1:03.93, -2:03.94
EN 50082-2:1995

-20 to + 60
K 1-8
KS 0220/1
0,12
cover Z 12, seal Z 13, adaptor Z 15
page i.4

page i.5

## KZT 91 KD

Multi-function relay for dual-voltage with switchable supply voltages

ON-delay time relay
OFF-delay time relay with auxiliary supply voltage
Interval ON time relay
Repeat cycle time relay
1 LED green, 1 LED red
FD 0106/1 to 4

### 24

### 220 to 240

1,8	8,4
1,5	1,1
1,0	
1,5/2	0,7/0,5
50 to 60	
0,8 to 1,1 x $U_N$	
≤ 3	

analog/4
1. setting range 0,15 to 400 s divided into: 0,15 to 1,5; 0,6 to 6; 5 to 50; 40 to 400 or
2. setting range 1,5 s to 60 min divided into: 1,5 s to 15 s; 0,1 min to 1 min; 0,8 to 8; 6 to 60
ca. 60/ca. 70/ca. 3000
ca. 20
≥ 15
OFF
yes; B1 no
no; B1 yes
diagram 4, page i.5
± 0,5
≤ 0,02
≤ 0,025

1 timed changeover
Ag-alloy; gold-plated
230/230
5
AC-15 $U_e$ 230 V AC, $I_e$ 2 A
DC-13 $U_e$ 24 V DC, $I_e$ 2 A
3600
20 x 10 <sup>6</sup>
ca. 25
ca. 20

4
III
3 outside, 2 inside
250
2,21
IP 30/IP 20
EN 50081-1:03.93, -2:03.94
EN 50082-2:1995

-20 to + 60
K 1-8
KS 0220/1
0,12
cover Z 12, seal Z 13, adaptor Z 15
page i.4

page i.5



## TECHNICAL DATA

**FUNCTION** according to DIN VDE 0435 Part 1 110:04.89

	Point 3.12	ON-delay time relay
	Point 3.16	OFF-delay time relay with auxiliary supply voltage
	Point 3.4	Interval ON time relay
	Point 3.9	Repeat cycle time relay
Function display		1 LED green, 1 LED red
Function diagram		FD 0106/1 bis 4

### POWER SUPPLY

Rated voltage $U_N$	V AC/DC	<b>24</b>   <b>42</b>   <b>48</b>   <b>60</b>   <b>110-127</b>   <b>220-240</b>
Rated voltage $U_N$	V AC	
Rated consumption at 50 Hz and $U_N$ (AC)	VA	2,4   2,2   2,3   1,7   4,7   8,0
Rated consumption at 50 Hz and $U_N$ (AC)	W	1,4   1,6   1,8   1,5   1,6   1,7
Rated consumption DC	W	1,0   1,1   1,2   1,2
Starting current inrush	A/ms	1,5/2   0,8/1   0,6/1   0,8/5   1/0,5   0,7/0,5
Rated frequency	Hz	50 to 60
Operating voltage range		0,8 to 1,1 x $U_N$
Rated current of the energizing quantity (B1)	mA	≤ 3

### TIME CIRCUIT

Time setting/Number of time ranges		analog/4
2 setting ranges available		1. setting range 0,15 to 400 s
	s	divided into:
	s	0,15 to 1,5; 0,6 to 6; 5 to 50;
		40 to 400 or
		2. setting range 1,5 s to 60 min
		divided into:
	s/min	1,5 s to 15 s; 0,1 min to 1 min;
	min	0,8 to 8; 6 to 60
Recovery time 1/2/3	ms	ca. 150/ca. 300/ca. 3000
Minimum switch-ON time	ms	ca. 20
Release value	% $U_N$	≥ 15
Repeat cycle starting with		OFF
Permissible parallel load		yes
Internal rectifier		yes
Average of the error	%	diagram 4, page i.5
Dispersion	% ± 10 ms	≤ ± 0,5
Influence of the energizing quantity or supply voltage	%/% $\Delta U_N$	≤ 0,02
Influence of the ambient temperature	%/K	≤ 0,025

### OUTPUT CIRCUIT

Contact equipment		1 timed changeover
Contact material		Ag-alloy; gold-plated
Switching voltage $U_n$	V AC/DC	230/230
Maximum continuous current $I_n$	A	5
Application category according to EN 60947-5-1:1991		AC-15 $U_e$ 230 V AC, $I_e$ 2 A
		DC-13 $U_e$ 24 V DC, $I_e$ 2 A
Permissible switching frequency	switching cycles/h	3600
Mechanical service life	switching cycles	20 x 10 <sup>6</sup>
Response time	ms	ca. 70
Release time	ms	ca. 150

### GENERAL DATA

Creepage and clearance distances between circuits according to DIN VDE 0110-1:04.97: Rated surge voltage	kV	4
Over voltage category		III
Contamination level		3 outside, 2 inside
Design voltage	V AC	250
Test voltage $U_{eff}$ 50 Hz acc. to DIN VDE 0110-1, Table A.1	kV	2,21
Protection class housing/terminals acc. to DIN VDE 0470 Sec. 1:11.92		IP 30/IP 20
Radiated noise		EN 50081-1:03.93, -2:03.94
Noise immunity		EN 50082-2:1995

Ambient temperature, working range	°C	-20 to + 60
Dimensions		K 1-8
Connection diagram		KS 0220/1
Weight	kg	0,12
Accessories		cover Z 12, seal Z 13, adaptor Z 15
Approvals		page i.4

### GENERAL TECHNICAL SPECIFICATIONS

## KZT 91 K

Multi-function relay for single voltage

ON-delay time relay  
 OFF-delay time relay with auxiliary supply voltage  
 Interval ON time relay  
 Repeat cycle time relay  
 1 LED green, 1 LED red  
 FD 0106/1 bis 4

	24	42	48	60	110-127	220-240
Rated voltage $U_N$						
Rated voltage $U_N$						
Rated consumption at 50 Hz and $U_N$ (AC)	2,4	2,2	2,3	1,7	4,7	8,0
Rated consumption at 50 Hz and $U_N$ (AC)	1,4	1,6	1,8	1,5	1,6	1,7
Rated consumption DC	1,0	1,1	1,2	1,2		
Starting current inrush	1,5/2	0,8/1	0,6/1	0,8/5	1/0,5	0,7/0,5
Rated frequency	50 to 60					
Operating voltage range	0,8 to 1,1 x $U_N$					
Rated current of the energizing quantity (B1)	≤ 3					

analog/4  
 1. setting range 0,15 to 400 s  
 divided into:  
 0,15 to 1,5; 0,6 to 6; 5 to 50;  
 40 to 400 or  
 2. setting range 1,5 s to 60 min  
 divided into:  
 1,5 s to 15 s; 0,1 min to 1 min;  
 0,8 to 8; 6 to 60  
 ca. 150/ca. 300/ca. 3000  
 ca. 20  
 ≥ 15  
 OFF  
 yes  
 yes  
 diagram 4, page i.5  
 ≤ ± 0,5  
 ≤ 0,02  
 ≤ 0,025

1 timed changeover  
 Ag-alloy; gold-plated  
 230/230  
 5  
 AC-15  $U_e$  230 V AC,  $I_e$  2 A  
 DC-13  $U_e$  24 V DC,  $I_e$  2 A  
 3600  
 20 x 10<sup>6</sup>  
 ca. 70  
 ca. 150

4  
 III  
 3 outside, 2 inside  
 250  
 2,21  
 IP 30/IP 20  
 EN 50081-1:03.93, -2:03.94  
 EN 50082-2:1995

-20 to + 60  
 K 1-8  
 KS 0220/1  
 0,12  
 cover Z 12, seal Z 13,  
 adaptor Z 15  
 page i.4

page i.5