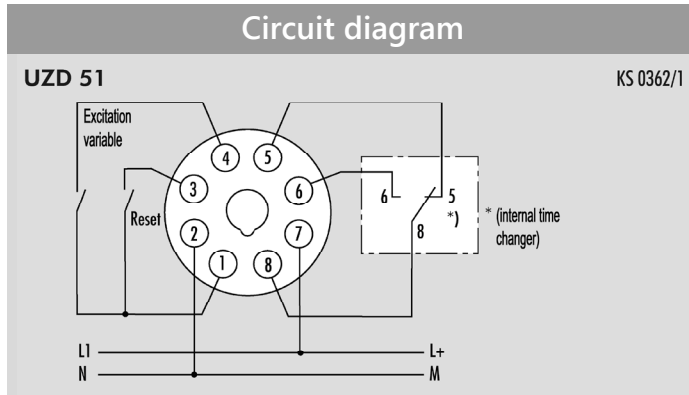


### Digital multi-function multi-range relay

- Multi-voltage for AC 100 to 240 V, Mono-voltage for AC/DC 24 V
- 8 functions
- 2 color high-contrast LCD displays
- Setting range digital 0.001 s to 999.9 h split into 8 time ranges
- Zero-voltage secure
- 1 timed change-over contact



### Function

The selection of the individual function and the time range is by a dual in-line switch that is located on the right-hand side wall of the equipment. The time selection is carried out on the front. The set target value is displayed digitally with a four-digit yellow LCD display and the individual actual value is displayed digitally with a four-digit red LCD display. The set value settings are retained even if the power supply drops out and is reinstated.

#### Setting the function, the time range and the time preselection 1. Setting the function and the time range

The new settings become active after switching off and on again of the power supply.

### Time ranges

Setting range 0.001 s to 999.9 h split into:

0.001 s ... 999.9 s	10 s ... 99 min 59 s
0.01 s ... 99.99 s	0.1 min ... 999.9 min
0.1 s ... 999.9 s	1 min ... 99 h 59 min
1 s ... 9999 s	0.1 h ... 999.9 h

#### Dual in-line switch

	Range	Dual in-line switch	
		OFF	ON
1			
2	Functions	See Table 1	
3			
4	Minimum on time	20 ms	1 ms
5	Setting time sequence	additive	subtractive
6			
7	Time ranges	See Table 2	
8			

### Notes

- Set the function and time range before installing the unit.
- We recommend using the LOCK button to prevent inadvertent resetting of the set values.
- Adjusting the set value during the time sequence is not permitted.
- Gold-plated contacts should be used to ensure perfect switching.
- Switching by transistor is possible; see technical data.

### Accessories

Plug mount	AT8-DF8S	for DIN rail
Plug mount	AT8-RR	for operating panel mount

Table 1: Setting the function

Switch number			Mod e	Functions
1	2	3		
ON	ON	ON	A:	response delay (AV)
OFF	OFF	OFF	A2:	response delay (AV)
ON	OFF	OFF	B:	response delay (AV) by excitation parameter
OFF	ON	OFF	C:	fallback delay (RV) with excitation parameter
ON	ON	OFF	D:	switch-on wiper (EW) with excitation parameter
OFF	OFF	ON	E:	response delay (AV) (impulse switching)
ON	OFF	ON	F:	clock generator starting with pause (TP)
OFF	ON	ON	G:	response delay (AV) (time addition or subtraction)

Table 2: Setting the time range

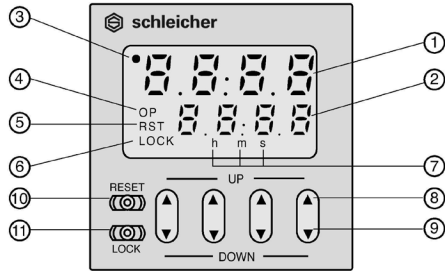
Switch number			Time range	
6	7	8		
ON	ON	ON	0.00 s	to 9.999 s
OFF	OFF	OFF	0.01 s	to 99.99 s
ON	OFF	OFF	0.1	to 999.9 s
OFF	ON	OFF	1	to 9999 s
ON	ON	OFF	10 s	to 99 min 59 s
OFF	OFF	ON	0.1 min	to 999.9 min
ON	OFF	ON	1 min	to 99 h 59 min
OFF	ON	ON	0.1 h	to 999.9 h

**Function**

**2. Setting the time preselection**

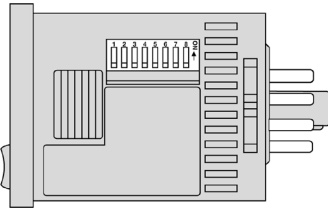
Time preselection is carried out using the four buttons on the front.

Front view

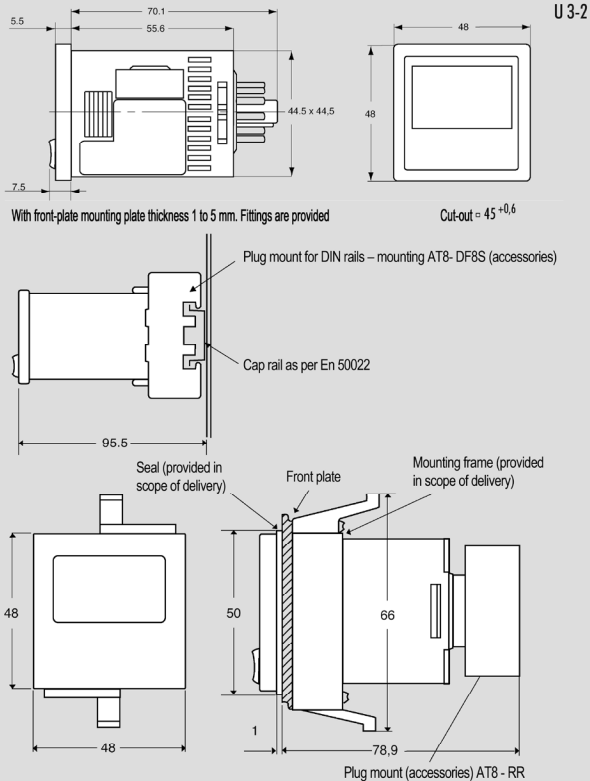


- 1 - LCD display for the specific actual value
- 2 - LCD display for the set value
- 3 - LED display that flashes when time running
- 4 - Display, output excited
- 5 - Display, reset input switched
- 6 - Display, blocked input
- 7 - Display of set time range
- 8 - UP button, additive change of set value
- 9 - DOWN button, subtractive change of set value
- 10 - RESET button, deletes the actual value and resets the output
- 11 - LOCK button, blocks the RESET, the UP and the DOWN buttons

Dual in-line switch



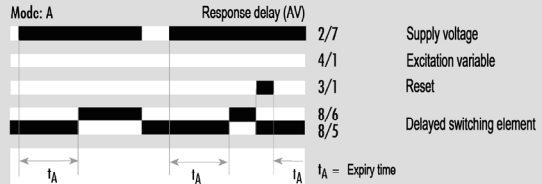
**Dimension diagram**



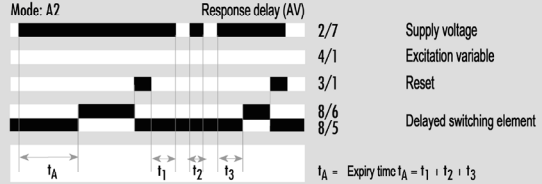
**Function diagrams**

**UZD 51**

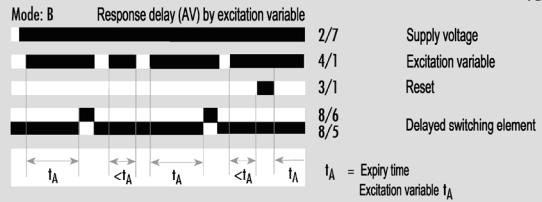
FD 0239-5/1



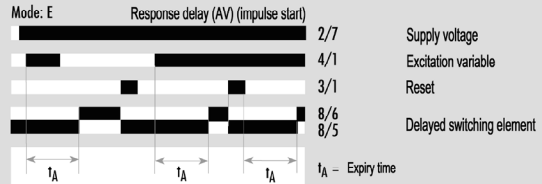
FD 0239-5/2



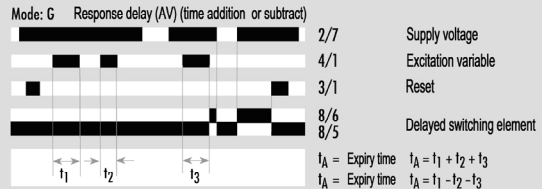
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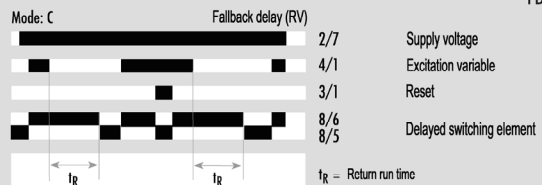
FD 0239-5/4



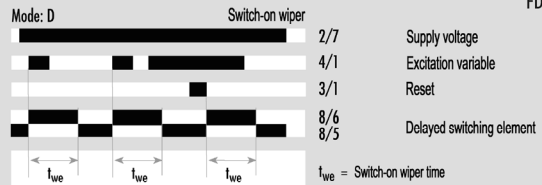
FD 0239-5/5



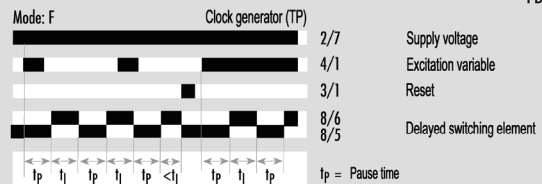
FD 0239-5/6



FD 0239-5/7



FD 0239-5/8



Reset by connection 3/1 or RESET button on front plate

Technical data		UZD 51
Function type according to IEC 60050 (445)		Multi-function relay with 8 functions for multi or mono voltage - response delayed time relay - fallback delayed time relay with power supply - switch-on wiper - clock generator
Function display		4 digit red LCD display for actual value, character height 7 mm, 4 digit yellow LCD display for set value, character height 5.5 mm, Text fade-in
Function diagrams		FD 0239-5/1 to 8
<b>Power supply circuit</b>		
Rated voltage $U_N$	AC/DC	24 V AC 100 to 240 V
Rated consumption at 50 Hz and $U_N$	AC	10 VA
Rated output	DC	3 W
Rated frequency		50 to 60 Hz
Operating voltage range		0.85 to 1.1 x $U_N$
Residual ripple of the rated voltage $U_N$		≤ 20 %
<b>Time circuit</b>		
Electrical isolation from power supply circuit		nein
Time setting / number of time ranges		4-digit digital / 8
Available setting range		See table "Time ranges"
Setting the time sequence (adjustable)		additive, subtractive
Clock start		Pause
Repeatability		± 0.005 % + 50 ms
Setting acuity		± 0.005 % + 50 ms
Influence of excitation or power supply		± 0.005 % + 50 ms
Minimum ON time(adjustable) Reset / excitation parameter		20 ms / 1 ms (only with transistor starting)
Recovery time		≤ 100 ms
Transistor starting (open collector)of connections 3 or 4		VCEO 20 V min., IC 20 mA, ICBO 6 µA max
Input voltage		12 to 40 V DC
Maximum input resistance (switched condition)		≤ 1 kΩ
Minimum input resistance (open condition)		≥ 100 kΩ
Maximum residual voltage (switched condition)		≤ 2 V
<b>Output circuit</b>		
Contact assignment		1 timed change-over contact
Contact material		Ag alloy, gold-plated
Switching voltage $U_s$		230/30 V AC/DC
Max. continuous current $I_n$		5 A
Application category according to EN 60947-5-1:1991		AC-15: $U_e$ 250 V AC, $I_e$ 0.75 A DC-13: $U_e$ 30 V DC, $I_e$ 2 A
Permissible switching frequency		≤ 3600 switching cycles/h
Mechanical life		20 x 10 <sup>6</sup> switching cycles
Electrical life		1 x 10 <sup>6</sup> switching cycles
<b>General information</b>		
Creepage distances and clearances between the circuits		according to DIN VDE 0110-1:04.97
Rated impulse voltage		4 kV
Overvoltage category		III
Degree of pollution		3 outside, 2 inside
Rated voltage		300 V AC
Test voltage $U_{eff}$ 50 Hz according to DIN VDE 0110-1, table A.1		2.21 kV
Protection degree housing/terminal according to DIN VDE 0470 sec. 1:11.92		IP 66 ((only with rubber seal) / IP 20
Noise immunity according to IEC 61000-4		Test severity 3
Ambient temperature, operating range		-10 to +55 °C
Dimension diagram		U 3-1
Circuit diagram		KS 0362/1
Weight		0.11 Kg
Accessories		Plug mounts AT8-DF8S, AT8-RR

### Overview of devices / Part numbers

Type	ON-delay time	Rated voltage	Part No.
UZD 51	See table "Time ranges"	AC/DC 24 V 50-60 Hz	R2.063.0019.0
		AC 110-240 V 50-60 Hz	R2.063.0029.0