



## Universal Time Relays

### UZD 1001, UZD 1002 for single voltage

14 functions: see Table

Digital setting range 0,001 s to 99 h 59 min 59 s, divided into 2 time ranges

Two setting ranges independent one from the other, optionally with pre-contact or instantaneous contact

Contact equipment : UZD 1001 = 1 timed and 1 instantaneous or 2 timed changeover (selectable),  
UZD 1002 = 2 semi-conductor outputs

### UZD 1001, ...

48 x 48



### Function

AV, RV, EW, TI, (see page U 4/3).

The functions are selected at the rear on terminals Y1 to Y6 using wire jumpers (see: Settings).

Operation and time preselection are carried out on the housing front with the aid of 4 pushbuttons. Two relay or semi-conductor outputs are available. Different values within a time range can be preselected for both outputs. The main time function is always assigned to output 1.

Where the preselected time for output 2 is equal to or longer than the time for output 1, output 2 acts as an instantaneous contact. If it is even shorter than that selected for output 1, output 2 acts as a pre-contact.

Example:

Time setting for output 1 = 99 s  
Time setting for output 2 = 10 s

i.e. output 2 is energized 10 s before output 1.

A fundamental distinction can be made between a storing and a non-storing function. In case of a non-storing function, the time already expired prior to a failure of the supply voltage will be cancelled on re-energization. With storing function the time already expired prior to a failure of the supply voltage will be stored; upon re-energization the elapsing of the time will continue from the point at which it was interrupted.

In the case of failure of the supply voltage, the already energized outputs are de-energized. They regain their original status after the supply voltage is restored. Memories used are non-volatile semi-conductor type (EEPROM).

The selected set value is indicated digitally on a 6-digit LCD-display (with 7-segments).

The corresponding actual value is indicated digitally on the LCD-display during the timing operation where the set value is also shown.

### UZD 1001, UZD 1002 functions :

- ON-delay with instantaneous output, non-storing (AV)
- ON-delay with pre-contact output, non-storing (AV)
- ON-delay with instantaneous output, storing (AV)
- ON-delay with pre-contact output, storing (AV)
- OFF-delay with instantaneous output, non-storing (RV)
- OFF-delay with pre-contact output, non-storing (RV)
- OFF-delay with instantaneous output, storing (RV)
- OFF-delay with pre-contact output, storing (RV)
- Interval-ON with instantaneous output, non-storing (EW)
- Interval-ON with pre-contact output, non-storing (EW)
- Interval-ON with instantaneous output, storing (EW)
- Interval-ON with pre-contact output, storing (EW)
- Repeat cycle starting with ON, non-storing (TI)
- Repeat cycle starting with ON, storing (TI)

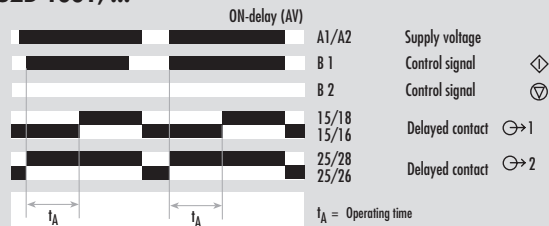
### Note

- ▶ The time range cannot be altered during the timing operation. A modification only becomes effective at the next timing operation.
- ▶ Times can be added using the stop-input.
- ▶ Where the device is programmed as a repeat cycle time relay, output 1 and 2 have alternating functions.

### Function Diagram

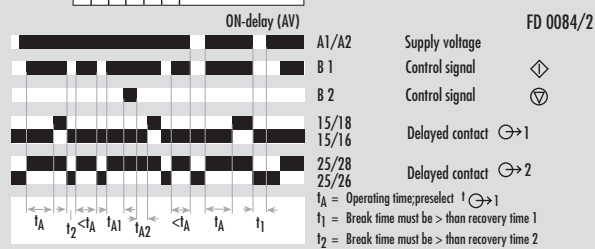
FD 0084/1 to 3

#### UZD 1001, ...



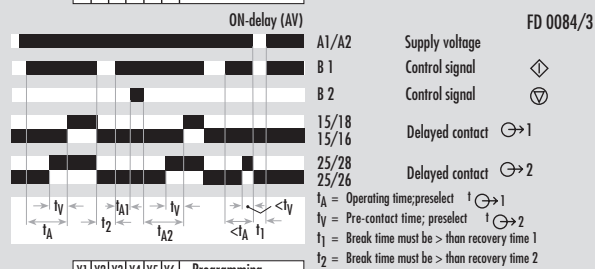
Y1	Y2	Y3	Y4	Y5	Y6	Programming
						ON-delay

Preselect:  $\odot 2 \geq \odot 1$



Y1	Y2	Y3	Y4	Y5	Y6	Programming
						ON-delay

Preselect:  $\dagger \odot 2 \geq \dagger \odot 1$



Y1	Y2	Y3	Y4	Y5	Y6	Programming
						ON-delay

$t_A = \sum_{i=1}^n t_{i,AX}$

Preselect:  $\dagger \odot 2 < \dagger \odot 1$

Continued on page 8



## Product Description

The universal time relays UZD ... are available with 1 setting range, divided into 2 time ranges. The selection of the time ranges is carried out on the item's front.

### Setting Range

**0,001 s to 999,999 s**  
or  
**1 s to 99 h 59 min 59 s**

Type	Standard Voltage	Price Code
UZD 1001 99,99 h	24 V AC 118 V AC 230 V AC 50 to 60 Hz	<b>U 4/6.1</b>
UZD 1002 99,99 h	24 DC	<b>U 4/6.2</b>

## Accessories

Lockable cover V 5  
Additional front frame Z 19-1 for panel cutout □ 68

Price code for accessories (see page U 4/36).

## Indications



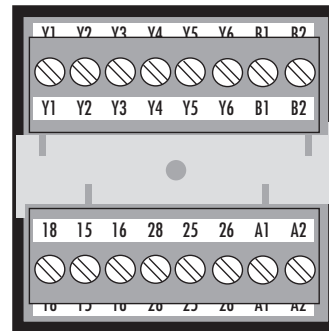
- Indication: output 2 energized
- Indication of the selected time range 0,001 s to 999,999 s
- 6-digit LCD-display for selected set value, or for the corresponding actual value during the timing operation
- Point indicating the division between s and ms



- Indication: output 1 and 2 energized
- Indication of the selected time range 1 s to 99 h 59 min 59 s
- 6-digit LCD-display for selected set value, or for the corresponding actual value during the timing operation
- Point indicating the division between h, min and s

## Settings

The functions are selected at the rear on terminals Y1 to Y6 using wire jumpers.



Function	Jumpers
ON-delay with instantaneous contact, non-storing	Y2/Y3
ON-delay with pre-contact, non-storing	Y2/Y3
ON-delay with instantaneous contact, storing	Y1/Y2 and Y2/Y3
ON-delay with pre-contact, storing	Y1/Y2 and Y2/Y3
OFF-delay with instantaneous contact, non-storing	Y2/Y4
OFF-delay with pre-contact, non-storing	Y2/Y4
OFF-delay with instantaneous contact, storing	Y1/Y2 and Y2/Y4
OFF-delay with pre-contact, storing	Y1/Y2 and Y2/Y4
Interval-ON with instantaneous contact, non-storing	Y2/Y5
Interval-ON with pre-contact, non-storing	Y2/Y5
Interval-ON with instantaneous contact, storing	Y1/Y2 and Y2/Y5
Interval-ON with pre-contact, storing	Y1/Y2 and Y2/Y5
Repeat cycle starting with ON, non-storing	Y2/Y6
Repeat cycle starting with ON, storing	Y1/Y2 and Y2/Y6

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## Pushbutton Functions

↻1 and ↻2 pushbuttons

Press ↻1 : display of the preselected set value for output 1  
Press ↻2 : display of the preselected set value for output 2

←↻ -pushbutton

With actuated pushbutton ↻1 or ↻2 and actuation of pushbutton ←↻, progressive preselection of the display digit. Selected digit flashes.

↻↑ -pushbutton

With pushbuttons ↻1 or ↻2 still actuated, the selected display digit can be progressively altered with pushbutton ↻↑. Where no digit has been preselected, pushbutton ↻↑ switches to the other time range.

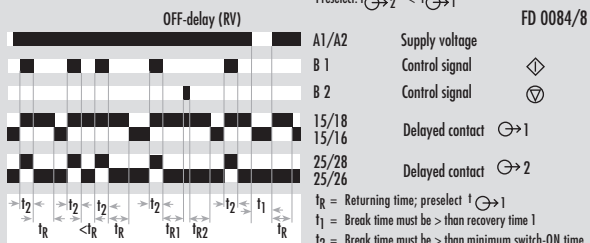
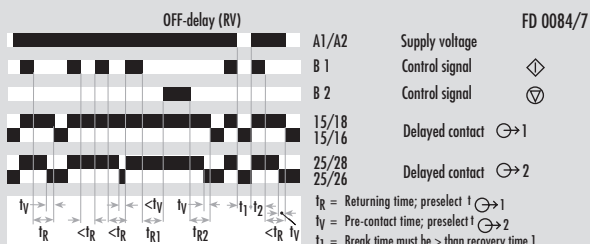
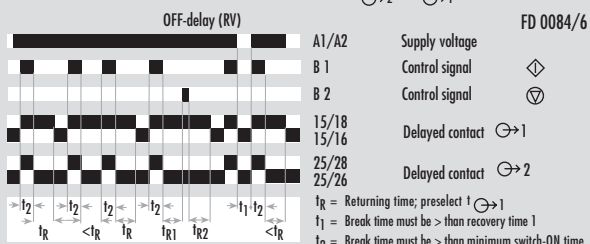
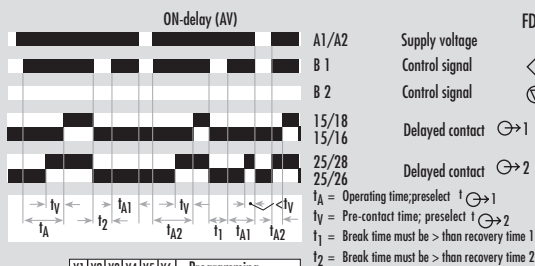
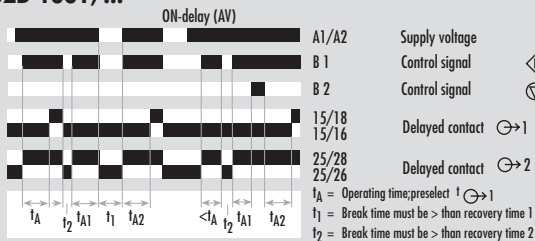


# Electronic Time Relays

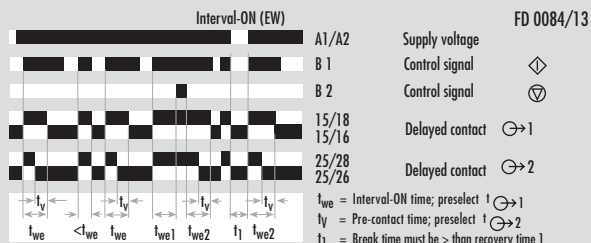
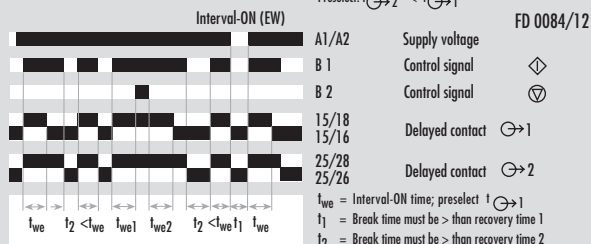
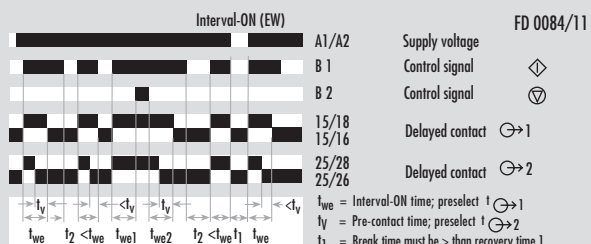
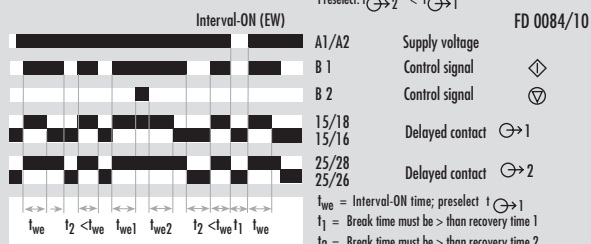
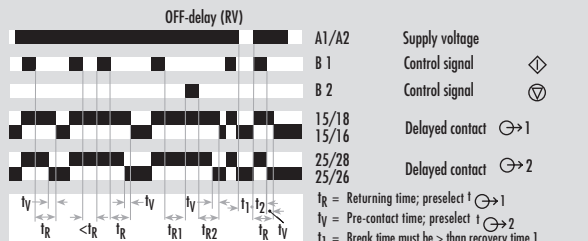
## Function Diagram

FD 0084/4 to 8

### UZD 1001, ...



FD 0084/9 to 13



Continued on the next page

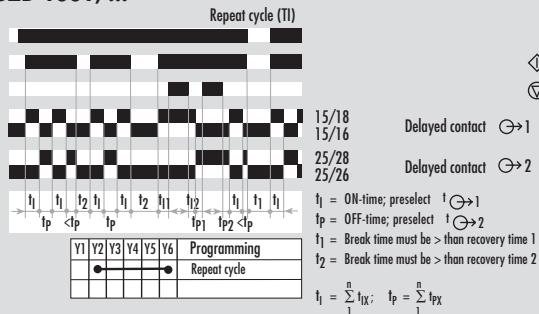


# Electronic Time Relays

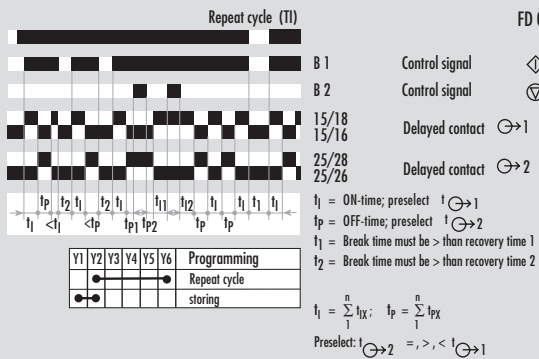
## Function Diagram

FD 0084/14 to 15

### UZD 1001, ...



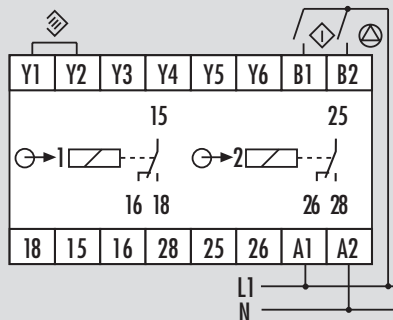
FD 0084/15



## Connection Diagram

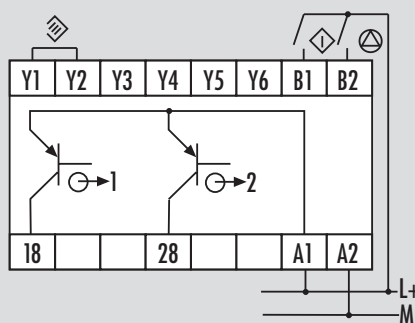
KS 0251/1

### UZD 1001



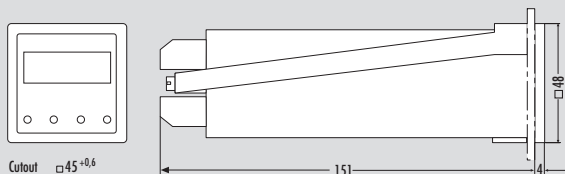
### UZD 1002

KS 0252/1



## Dimensions

U 2-1





# Electronic Time Relays

## 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
Rated voltage $U_N$	V DC
Rated consumption at 50 Hz and $U_N$ (AC)	VA
Rated consumption at 50 Hz and $U_N$ (AC)	W
Rated consumption DC	W
Rated frequency	Hz
Operating voltage range	
Rated current of the energizing quantity (B1/B2)	mA
Response time/Release time	ms
Recovery time 1	ms
Release value	% $U_N$

### TIME CIRCUIT

Time setting/Number of time ranges	
Available setting range	
	s
	s/min
Response time of the control signal (B1/B2)	ms
Release time of the control signal (B1/B2)	ms
Recovery time 2/Minimum switch-ON time	ms
Release value	% $U_N$
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
Rated current for semi-conductor output	mA
Max. conducting-state voltage/Max. reverse voltage	V
Free wheeling diode/Thermal release	

### GENERAL DATA

Creepage and clearance distances between circuits acc. to 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, Table A.1	kV
Protection class housing/terminals acc. to DIN VDE 0470 Sec. 1:11.92	
Radiated noise	
Noise immunity	

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

### GENERAL TECHNICAL SPECIFICATIONS

## UZD 1001

Universal time relay with 14 functions for single voltage  
ON-delay time relay  
OFF-delay time relay with auxiliary supply  
Interval-ON time relay  
Repeat cycle  
6-digit LCD-display, digit size 6 mm, 2 bars and decimal point indicator  
FD 0084/1 to 15

	24	118	230
	3,5	3,3	3,6
	3,0	2,9	3,1
	50 to 60		
	0,85 to 1,1 x $U_N$		
	10 at 24 V, 2 at 118 V, 1 at 230 V		
	≤ 450/≤ 30		
	< 1500		
	≥ 15		

6-digit digital/2	
0,001 s to 99 h 59 min 59 s	
divided into:	
0,001 to 999,999	
1 s to 99 h 59 min 59 s	
≤ 25	
≤ 30	
ca. 20/ca. 20	
≥ 15	
yes	
no	
≤ 0,005 ± 1 ms	
≤ 0,005	
≤ 0,001	
≤ 0,001	

1 timed and 1 instant. or 2 changeover	
Ag Cd O; 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	
50 x 10°	
ca. 10	
ca. 4	

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	
U 2-1	
KS 0251/1	
0,33	
lockable cover V 5, additional front frame Z 19	
page i.4	

page i.5

## UZD 1002

Universal time relay with 14 functions for single voltage  
ON-delay time relay  
OFF-delay time relay with auxiliary supply  
Interval-ON time relay  
Repeat cycle  
6-digit LCD-display, digit size 6 mm, 2 bars and decimal point indicator  
FD 0084/1 to 15

	24
	2,8
	0,8 to 1,1 x $U_N$
	ca. 10
	≤ 450/≤ 30
	< 1500
	≥ 15

6-digit digital/2	
0,001 s to 99 h 59 min 59 s	
divided into:	
0,001 to 999,999	
1 s to 99 h 59 min 59 s	
≤ 1	
≤ 1	
≤ 1/≤ 1	
≥ 15	
yes	
no	
≤ 0,005 ± 1 ms	
≤ 0,005	
≤ 0,001	
≤ 0,001	

2 semi-conductor outputs	
-	
-	
-	
-	
-	
-	
-	
-	
150, current limiting ≥ 200	
2,5/45	
no/yes	

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

-20 to + 60	
U 2-1	
KS 0252/1	
0,25	
lockable cover V 5, additional front frame Z 19	
page i.4	

page i.5

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