

## SPECIFICATIONS

### SUPPLY

<b>SUPPLY TERMINALS</b>	A1 - A2
<b>VOLTAGE RANGE</b>	AC/DC 12-240V (AC 50-60 Hz)
<b>POWER INPUT (MAX)</b>	2.5VA/1.5W
<b>SUPPLY VOLTAGE TOLERANCE</b>	-15%; +10%
<b>SUPPLY INDICATION</b>	Green LED

### TIME CIRCUIT

<b>NUMBER OF FUNCTIONS</b>	10
<b>TIME RANGES</b>	50ms - 30 days
<b>TIME SETTING</b>	Rotary Switches and Potentiometer
<b>TIME DEVIATION*</b>	5% - mechanical setting
<b>REPEAT ACCURACY</b>	0.2% - set value stability
<b>TEMPERATURE COEFFICIENT</b>	0.01%/°C, at = 20°C 0.01%/°F, at = 68°F

### OUTPUT

<b>NUMBER OF CONTACTS</b>	3
<b>CONTACT FORM 1</b>	SPDT

### CURRENT RATING

<b>OUTPUT (55°C)</b>	16A/AC1 or 16A General Purpose at 250VAC
<b>OUTPUT (40°C)</b>	Pilot Duty B300

<b>BREAKING CAPACITY</b>	4000VA/AC1, 384W/DC1
<b>ELECTRICAL LIFE (AC1)</b>	100,000 ops.
<b>CONTACT FORM 2 (3)</b>	DPDT

### CURRENT RATING

<b>OUTPUT (55°C)</b>	8A/AC1 or 8A General Purpose at 250VAC
<b>OUTPUT (40°C)</b>	Pilot Duty B300

<b>BREAKING CAPACITY</b>	2000VA/AC1, 192W/DC1
<b>ELECTRICAL LIFE (AC1)</b>	50,000 ops.
<b>SWITCHING VOLTAGE</b>	250VAC / 24VDC
<b>POWER DISSIPATION (MAX)</b>	2.4W
<b>OUTPUT INDICATION</b>	Multifunction Red LED
<b>MECHANICAL LIFE</b>	10,000,000 ops.

### CONTROL

<b>CONTROL TERMINALS</b>	A1-S
<b>LOAD BETWEEN S-A2</b>	Yes
<b>IMPULSE LENGTH</b>	min. 25 ms/max. unlimited
<b>RESET TIME</b>	max. 150 ms

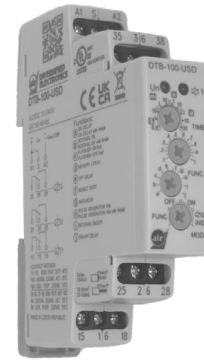
### OTHER INFORMATION

<b>OPERATING TEMPERATURE</b>	-20 to +55°C (-4°F to 131°F)
<b>STORAGE TEMPERATURE</b>	-30 to +70°C (-22°F to 158°F)
<b>OPERATING POSITION</b>	Any

### DIELECTRIC STRENGTH

<b>SUPPLY - OUTPUT 1</b>	4kV AC
<b>SUPPLY - OUTPUT 2 (3)</b>	1kV AC
<b>OUTPUT 1 - OUTPUT 2</b>	1kV AC
<b>OUTPUT 2 - OUTPUT 3</b>	1kV AC

<b>MOUNTING</b>	DIN rail EN 60715
<b>PROTECTION DEGREE</b>	IP40 front panel / IP20 terminals
<b>OVERVOLTAGE CATEGORY</b>	III
<b>POLLUTION DEGREE</b>	2
<b>MAX CABLE SIZE (MM<sup>2</sup>)</b>	solid wire max. 1x 2.5 or 2 x 1.5 with sleeve max. 1 x 2.5 (AWG 12)
<b>DIMENSIONS</b>	90 x 17.6 x 64mm 3.5" x 0.7" x 2.5"
<b>WEIGHT</b>	85g (3oz)
<b>STANDARDS</b>	EN 61812-1

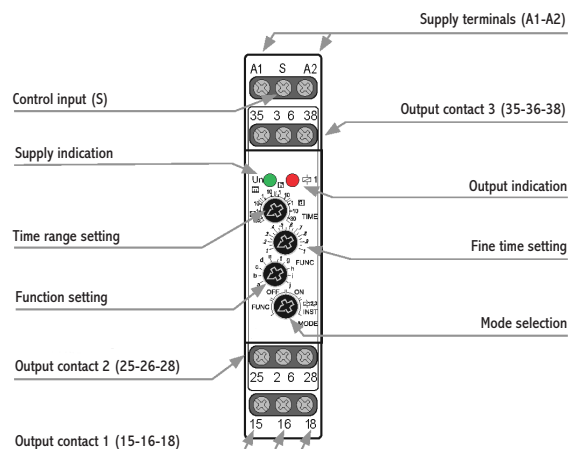


## Multifunction Time Relay w/ Inhibit Delay

- 10 Functions
- Time Ranges 50ms - 30 days
- Universal Supply Voltage
- Slim, Space-saving Design
- DIN Rail Mount
- 3 Discrete Relay Outputs

- Multifunction time relay for universal use in automation, control and regulation or in house installations.
- Time scale divided into 10 ranges: 50ms - 0.5s / 0.1s - 1s / 1s - 10s / 0.1min - 1min / 1min - 10min / 0.1hr - 1hr / 1hr - 10hrs / 0.1 days - 1 day / 1 day - 10 days / 3 days - 30 days.
- All functions initiated by the supply voltage, except for the flasher function, can use the control input to inhibit the delay.
- Mode selection - according to the set function, permanently closed, permanently open, switching of the second output contact according to supply voltage.
- Multifunction red LED flashes or shines depending on the operating status.
- Primary 16A rated contacts are delayed, but the two secondary 8A rated contacts can be set to delayed or instantaneous.

## DESCRIPTION

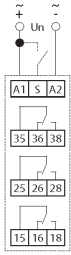


## ORDERING INFORMATION

PART NO.	DESCRIPTION
DTB100USD	DIN rail mounted Multifunction Time Relay with Inhibit Delay

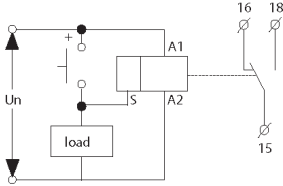
\*for adjustable delay <100ms, a time deviation of ±10ms applies

### TERMINAL CONNECTIONS

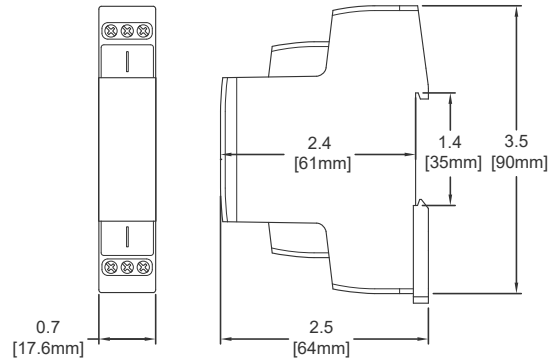


**DTB100USD:**  
The potential difference between the supply terminals (A1-A2), output contact 2 (25-26-28) and output contact 3 (35-36-38) must be a maximum of 250VAC rms/DC.

**Possibility to connect load onto controlling input**  
It is possible to connect the load (e.g.: contactor) between terminals S-A2, without any interruption of correct relay function.

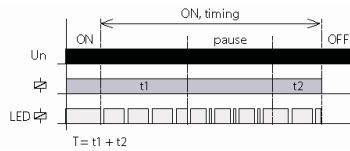
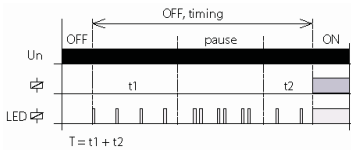


### DIMENSIONS



### INDICATION OF OPERATING STATES

Examples of status LED operation



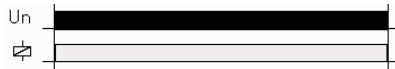
### MODE SELECTION

**FUNC. Settings Function Mode**  
The desired function a-j is set with the FUNC rotary switch.

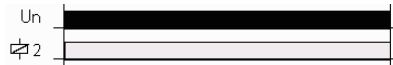
**OFF. Output contact open mode**



**ON Output contact closed mode**

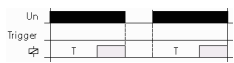


**2,3 INST. Second and third output contact instantaneous**

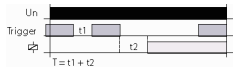


The second output contact switches according to the supply voltage. The first output contact switches according to the function (a-j) set by the trimmer FUNC.

## TIMING DIAGRAMS

**a. ON DELAY**

When the supply voltage is applied, the time delay T begins. When the timing is complete, the relay closes and this condition continues until the supply voltage is disconnected.

**ON DELAY with Inhibit**

If the control contact is closed and the supply voltage is connected, the relay is opened and timing does not start until the control contact opens. When the timing is complete, the relay closes. If the control contact is closed during timing, the timing is interrupted and continues only after the control contact opens.

**b. INTERVAL ON**

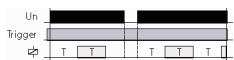
After supply voltage relay closes and starts the delay time T. After the end of the timing relay opens and this state lasts until the supply voltage is disconnected.

**INTERVAL ON with Inhibit**

If the control contact is closed and the supply voltage is connected, the relay will close and the timing will start only after the control contact has been opened. When the timing is complete, the relay opens. If the control contact is closed during timing, the timing is interrupted and continues only after the control contact opens.

**c. FLASHER - ON FIRST**

After supply voltage relay closes and starts the delay time T. After the end of the timing relay opens and again runs delay time T. When the timing is complete, the relay closes again and the sequence is repeated until the supply voltage is disconnected. If the control contact is closed during timing, this does not affect the operation of the cycler.

**FLASHER - OFF FIRST**

If the control contact is closed during timing; this does not affect the operation of the cycler. If the control contact is closed and the supply voltage is connected, the cycler starts with a pause (relay open).

**d. MEMORY LATCH**

When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes. The status does not change when the control contact is opened. When the control contact is closed again, the relay opens. Each time the control contact is closed, the relay changes status.

**e. OFF DELAY**

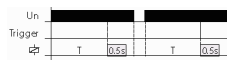
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes. When the control contact opens, the time delay T begins. If the control contact is closed during timing, the time is reset and the relay remains closed. When the control contact opens, the time delay T starts again and opens when the relay closes.

**f. SINGLE SHOT**

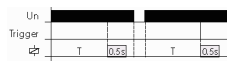
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. Closing the control contact during timing is ignored.

**g. WATCHDOG**

When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. Closing the control contact during timing triggers a new time delay T - the relay closing time is thus increased.

**h. PULSE GENERATOR 0.5s**

After the supply voltage has been applied, the time delay T begins. When the timing is complete, the relay closes for a fixed time (0.5s).

**PULSE GENERATOR 0.5s with Inhibit**

After supply voltage starts the time delay T. By closing timing of the control contact during timing is suspended. When the control contact opens, the time interval is completed and the relay closes for a fixed time (0.5s).

**i. INTERVAL ON/OFF**

When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. When the control contact is opened, the relay closes and the time delay T begins. If the control contact is open during timing, the relay remains closed for 2T. When the timing is complete, the relay opens. Any other change of control contact status during timing is ignored.

**j. ON/OFF DELAY**

When the supply voltage is applied, the relay is open. If control contact is closed, time delay T starts. When the control contact is opened, a new time delay T begins. If the control contact is open during timing, the relay closes at the end of the timing and opens the relay after the new time delay. Any other change of control contact status during timing is ignored.