REVISIONS

REV	DC NO.	DESCRIPTION	DATE	APPROVED
A	N/A	RE-FORMATTED FOR ATC-DEI	5-28-24	

DRAWN BY:		MARSH BELLOFRAM P.O. BOX 305 ST. ROUTE 2 NEWELL, WV 26050	
CHECKED BY:		TITLE OF PRODUCT INSTRUCTIONS DTB100USD Multifunction Time Relay w/ Inhibit Delay	
APPROVED BY:			
		PART NO. DTB100USD	REVISION A
ISSUE DATE:		NUMBER OF SHEETS IN THE BODY: 2	

DIVERSIFIED ELECTRONICS

DTB-100-USD

https://rebrand.ly/DTB_PDP

c UL us LISTED E55826

DTB100USD

Multifunction Time Relay w/ Inhibit Delay

ATC & DIVERSIFIED ELECTRONICS
8019 Ohio River Blvd.
Newell, WV 26050
Tel: 304-387-1200
www.atcdiversified.com

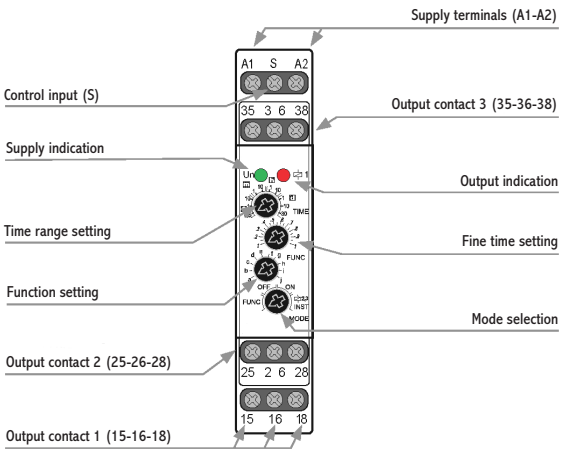
Made in Czech Republic

REV. A 5.28.24

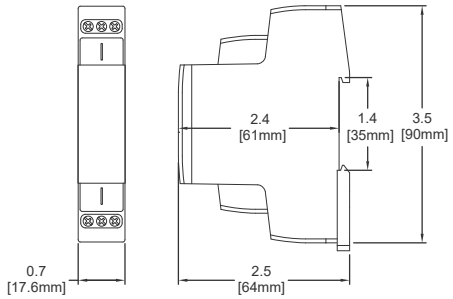
Characteristics

- Multifunction time relay for universal use in automation, control and regulation or in house installations.
- 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.
- Universal supply voltage AC/DC 12-240V.
- Time scale 50ms - 30 days divided into 10 ranges: (50ms - 0.5s / 0.1s - 1s / 1s - 10s / 0.1min - 1min / 1min - 10min / 0.1hr - 1hrs / 1hrs - 10hrs / 0.1 days - 1 day / 1 day - 10 days / 3 days - 30 days).
- Output contacts: 1x changeover / SPDT 16A, 2x changeover / DPDT 8A
- Multifunction red LED flashes or shines depending on operating status.

Description



Dimensions

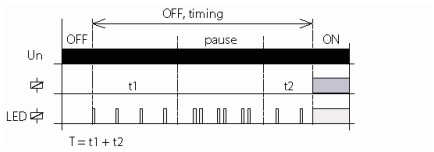


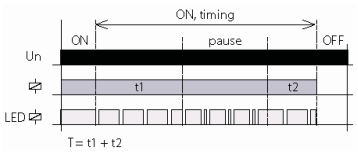
More accurate setting of timing for long periods of time

Example of time setting for an 8-hour period:
For rough setting use time scale 1-10s on the potentiometer.
For fine time setting aim for 8s on potentiometer, then re-check accuracy (using stopwatch, etc).
On rough time setting, set potentiometer to originally desired scale 1-10 hours, leave the fine setting as it is.

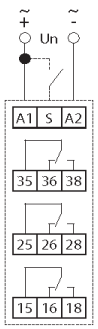
Indication of Operating States

Examples of status LED operation



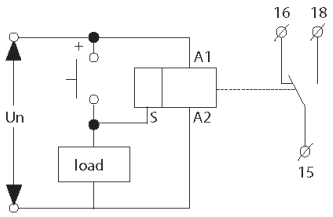


Connection



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.

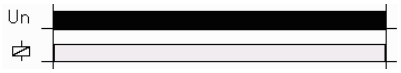


Relay mode selection

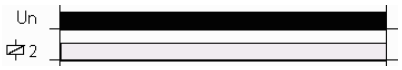
FUNC. Settings Function Mode
The desired function a-j is set with the FUNC rotary switch.

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.

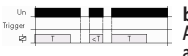
Technical parameters

SUPPLY	
SUPPLY TERMINALS	A1 - A2
VOLTAGE RANGE	AC/DC 12-240V (AC 50-60 Hz)
POWER INPUT (MAX)	2.5VA/1.5W
SUPPLY VOLTAGE TOLERANCE	–15%; +10%
SUPPLY INDICATION	Green LED
TIME CIRCUIT	
NUMBER OF FUNCTIONS	10
TIME RANGES	50ms - 30 days
TIME SETTING	Rotary Switches and Potentiometer
TIME DEVIATION	5% - mechanical setting
REPEAT ACCURACY	0.2% - set value stability
TEMPERATURE COEFFICIENT	0.01%/°C, at = 20°C 0.01%/°F, at = 68°F
OUTPUT	
NUMBER OF CONTACTS	3
CONTACT FORM 1	SPDT
CURRENT RATING	
OUTPUT (55°C)	16A/AC1 or 16A General Purpose at 250VAC
OUTPUT (40°C)	Pilot Duty B300
BREAKING CAPACITY	4000VA/AC1, 384W/DC1
ELECTRICAL LIFE (AC1)	100,000 ops.
CONTACT FORM 2 (3)	DPDT
CURRENT RATING	
OUTPUT (55°C)	8A/AC1 or 8A General Purpose at 250VAC
OUTPUT (40°C)	Pilot Duty B300
BREAKING CAPACITY	2000VA/AC1, 192W/DC1
ELECTRICAL LIFE (AC1)	50,000 ops.
SWITCHING VOLTAGE	250VAC / 24VDC
POWER DISSIPATION (MAX)	2.4W
OUTPUT INDICATION	Multifunction Red LED
MECHANICAL LIFE	10,000,000 ops.
CONTROL	
CONTROL TERMINALS	A1-S
LOAD BETWEEN S-A2	Yes
IMPULSE LENGTH	min. 25 ms/max. unlimited
RESET TIME	max. 150 ms
OTHER INFORMATION	
OPERATING TEMPERATURE	-20 to +55°C (-4°F to 131°F)
STORAGE TEMPERATURE	-30 to +70°C (-22°F to 158°F)
OPERATING POSITION	Any
DIELECTRIC STRENGTH	
SUPPLY - OUTPUT 1	4kV AC
SUPPLY - OUTPUT 2 (3)	1kV AC
OUTPUT 1 - OUTPUT 2	1kV AC
OUTPUT 2 - OUTPUT 3	1kV AC
MOUNTING	DIN rail EN 60715
PROTECTION DEGREE	IP40 front panel / IP20 terminals
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	2
MAX CABLE SIZE (MM^2)	solid wire max. 1x 2.5 or 2 x 1.5 with sleeve max. 1 x 2.5 (AWG 12)
DIMENSIONS	90 x 17.6 x 64mm 3.5˝ x 0.7˝ x 2.5˝
WEIGHT	85g (3oz)
STANDARDS	EN 61812-1

Functions

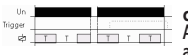
a. ON DELAY
When the supply voltage is applied, the time delay T begins. When the timing is complete, the relay closes and this condition continues until the supply voltage is disconnected.

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.



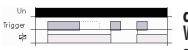
b. INTERVAL ON
After supply voltage relay closes and starts the delay time T. After the end of the timing relay opens and this state lasts until the supply voltage is disconnected.

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.



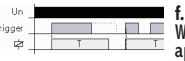
c. FLASHER - ON FIRST
After supply voltage relay closes and starts the delay time T. After the end of the timing relay opens and again runs delay time T. When the timing is complete, the relay closes again and the sequence is repeated until the supply voltage is disconnected. If the control contact is 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.

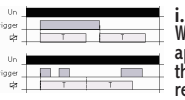


f. SINGLE SHOT
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. Closing the control contact during timing is ignored.

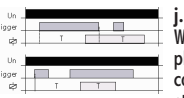
g. WATCHDOG
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. Closing the control contact during timing triggers a new time delay T - the relay closing time is thus increased.

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.

Warning

The device is designed for single-phase main installations of AC/DC 12-240V and must be installed in accordance with applicable local, state, and national regulations and standards. Installation, connection, setting, and servicing should be performed by qualified electrical staff only, who have been trained in these instructions and the functions of the device. This device contains protection against over-voltage peaks and disturbances in the supply. For the correct functioning of this device's protection, suitable higher-degree protections (A, B, C) must be installed upstream. According to standards, the elimination of disturbances must be ensured. Before installation, the main switch must be in the "OFF" position, and the device should be de-energized. Do not install the device near sources of excessive electromagnetic interference. For proper installation in cases of permanent operation and higher ambient temperatures, ensure adequate air circulation so that the maximum operating temperature of the device is not exceeded. For installation and adjustment, use a screwdriver approximately 2 mm in size. Proper functioning also depends on the methods of transportation, storage, and handling. If you notice signs of damage, deformation, malfunction, or missing parts, do not install the unit and notify your seller immediately. After use, properly discard according to local, state, and national regulations and standards.