IMO

DIN Timers TD

17.5mm or 22.5mm DIN rail mounting Electronic Timers

▌ Wide coil operation, 24V to 320V AC/DC

▌ Multi Time range / Multi function

▌ ON-Delay, OFF-Delay, Asymetrical, Star/Delta versions

▌ Perfect to fit in Modular Enclosure

▌ Protection against over voltage and reverse polarity

▌ Self-Extinguishing plastic housing

Options and ordering codes

TD	**M10**

DIN rail mount timers	**TD**

Multi-function	**M10**
Asymetical 5 function	**AS**
Star/Delta 20-500ms	**SD1**

Specification

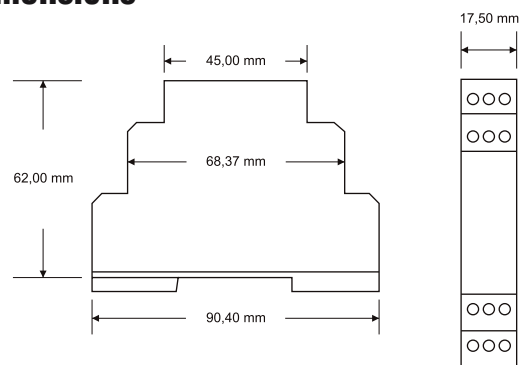|	TDM10	TDAS	TDSD1
Operation modes	A,B,C,D,E,F,G,H,I,K	ND,FD,NFD,Fon, Foff	Star Delta
Time range	0.1sec - 10 days	0.1sec - 10 days	λ1-30sec / λ△20-500ms
Accuracy	30ppm		
Supply voltage	24-300V AC/DC, +/-10%, 45-65Hz		150-500VAC 45-65 Hz
Nominal power consumption	24-320VDC max 1W ; 24VAC 2.5VA, 48VAC 4.46VA ; 110VAC 1.76 VA ; 220VAC 2.53 VA		
Input signal Control contact must be 90% of A1-A2	Power On - contact control	Power On	Power On
Contact configuration	1 C/O contact	1 C/O contact	2 independent C/O contact
Control output	10A @ 250VAC / 3A @ 30VDC		
Life expectancy Electrical Mechanical	5×10^4 (5 A @ 250 V AC) 10^7 operations		
Allowable ambient Storage temperature Operating	-40 to +85 deg C -25 to +70 deg C		
IP rating	IP20		
Terminals	2.5mm² Stranded, 4mm² Solid or 2x1.5mm² Solid		
Guarantee / Certification	2 years / CE / UL / cUL		

DIN Timers TDM10

▋ Multi-function time delay

▋ Multi-time range

▋ Compact design

▋ Universal voltage input 24~300V AC/DC

▋ Single module size

Specification

	TDM10
Adjustable values / Time Range	1 second
	10 second
	100 second
	1 minute
	10 minute
	1 hour
	10 hour
	100 hour
	1 day
	10 day
Multiplier	0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1

Dimensions

17,50 mm

45,00 mm

68,37 mm

62,00 mm

90,40 mm

Indication Lights Legend

LED	State	Description
On/t	ON	Power ON
	OFF	Power OFF
Relay output	ON	Output relay energised
	OFF	Output relay de-energised
M1, M2		M1, M2 are used to indicate which function is currently used, see charts page 3 for more details

Time Settings

Time range selector switch selects full scale time range. The t multiplier selector switch provides fine adjustment of time value, t, within the full scale time range. Selector switch positions are latched upon startup to avoid accidental changes during operation. Therefore changing selector switch positions have no effect when the device is operational. The below example shows how to set a t value.
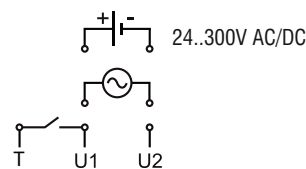
Time range

t multiplier
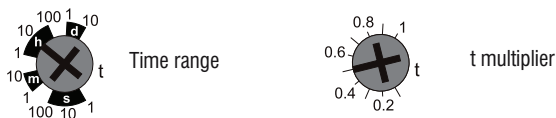
In the above figure: t=10h x 0.5 = 5 hour

Note: All the pot values are digitilised. Cannot be set to mid values.

Connections

Power Input

24..300V AC/DC
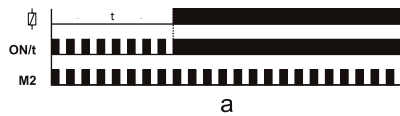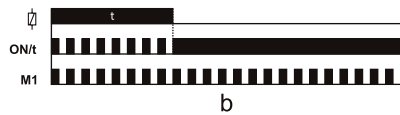
T   U1   U2

Relay

1

2   3
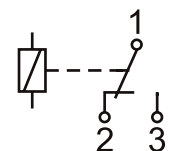
DIN Timer TDM10 continued

Mode functions

A On Delay

On application of supply voltage to terminals U1 and U2 (M2 LED flashing) the set time period t starts to run. On completion of time t, the output Relay energises. Power off reset
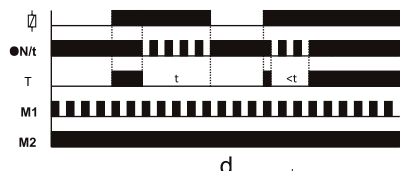
B Off Delay

On application of supply voltage to terminals U1 and U2 (M1 LED flashing) the output Relay is energized and the time period t starts to run. On completion of time t, the output Relay de-energises. Power off reset
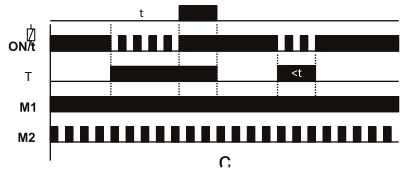
C On Delay with Control Signal

Supply to the unit's terminals U1 and U2 must be continuous (M1 LED On and M2 LED flashing). The output Relay is initially de-energized. Connection of U1 to T, triggers the timer and the output Relay is energised after the set time t has elapsed.
The Relay remains energized as long as there is a contact connection between U1 and T, opening the contact resets and de-energises the output Relay.

D Off Delay with Control Signal

Supply to the unit's terminals U1 and U2 must be continuous (M2 LED On and M1 LED flashing). Connection of U1 to T energizes the output Relay, then on opening the U1-T connection the set time period t starts running, when elapsed the output Relay is de-energized. Reconnect of U1 to T restarts the time delay and the output Relay will remain energized if the time period has not elapsed.
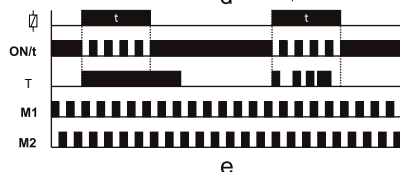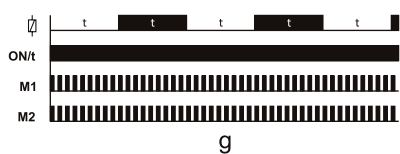
E Rising edge triggered Off Delay

Supply to the unit's terminals U1 and U2 must be continuous (energizes asynchronous flashing of M1 and M2 LEDs). On closure of contact between U1 and T the output Relay energizes and starts the set timing period t, after t has elapsed the output Relay is de-energized. Changes to the T input will be ignored during the timing period t.
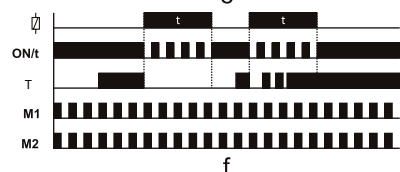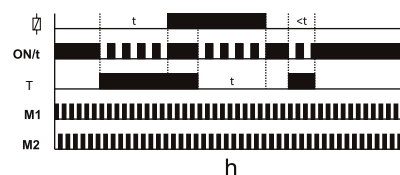
F Falling edge triggered Off Delay

Supply to the unit's terminals U1 and U2 must be continuous (synchronous flashing of M1 and M2 LEDs). On closure and opening of the connection between U1 and T the output Relay energizes and the set timing period t starts after this has elapsed the output Relay will de-energize. Changes to the T input will be ignored during the timing period t.

G Off Flasher

On application of supply voltage to U1 and U2 (synchronous flashing of M1 and M2 LEDs) starts the set timing period t with the output Relay initially de-energized, it is energised after the set time t has elapsed then de-energized for time period t. The process repeats, until supply is removed.

H On and Off Delay with Control Input

Supply to the unit's terminals U1 and U2 must be continuous (asynchronous flashing of M1 and M2 LEDs). On closure of a connection between U1 and T the set timing period t starts, when elapsed the output Relay energizes, after which on opening of this connection the timing period t starts again and output Relay is de-energized after the set time t has elapsed.

I Adjustable Pulse Output with Control Input

Supply to the unit's terminals U1 and U2 must be continuous (M1 LED flashing slowly). Connection of U1 to T triggers the timer and energizes the output Relay, changes to the T input will be ignored during the time period t. The Relay is then de-energized after the set time t has elapsed.
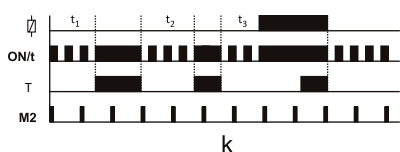
K On Delay With memory

Supply to the unit's terminals U1 and U2 must be continuous (M2 LED flashing slowly). With no connection between U1 and T on application of the supply output Relay will energize after time period t. If there is a connection made between U1 and T during the time period t the count is delayed until such a time that this connection is opened, and then the count continues to relay energising. Once the set time t has elapsed making and breaking the connection between U1 and T restarts the process.

$$t = t_1 + t_2 + t_3$$

■ On
□ Off

TDAS

Mode functions

1 - On Delay (ND)
The output relay is initially de-energized and energized after an adjustable time delay, t_{off}.

2 - Off Delay (FD)
The output relay is initially energized and de-energized after an adjustable time delay, t_{on}.

3 - On - Off Delay (NFD)
The output relays is initially de-energized and energized after an adjustable time delay, t_{off}, and stays energized for an adjustable period, t_{on}, and then de-energized.

4 - On Flasher (Fon)
The output relays is initially energized and de-energized after an adjustable time delay, t_{on}, and stays de-energized for an adjustable period, t_{off}, and then energized. This loop is repeated until the device is powered off.

5 - Off Flasher (Foff)
The output relay is initially de-energized and energized after an adjustable time delay, t_{off}, and stays energized for an adjustable period, t_{on}, and then de-energized. This loop is repeated until the device is powered off.
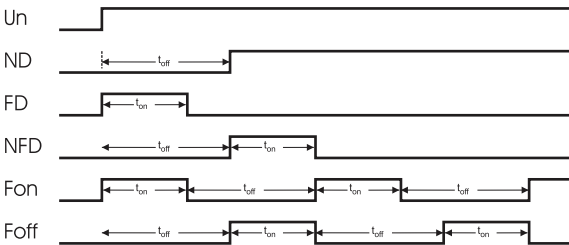
Time Settings

Time range knob selects full scale time range. The t_{on} and t_{off} multiplier knobs provide fine adjustment of t_{on} and t_{off} time values within the full scale time range. Knob positions are latched upon startup to avoid accidental changes during operation. Therefore changing knob positions have no effect when the device is operational. The below example shows how to set particular t_{on} and t_{off} values.
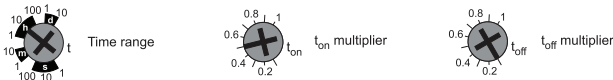
In the above figure :

t_{on} = 10h x 0.5 = 5 hour t_{off} =10h x 0.1 = 1 hour

Note: All the pot values are digitized. Cannot be set to mid values.

Specification

	TDAS
Adjustable values / Time Range	1 second
	10 second
	100 second
	1 minute
	10 minute
	1 hour
	10 hour
	100 hour
	1 day
	10 day
Multiplier	0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1

Indication Lights Legend

LED	State	Description
On/t	On	Power on
	Off	Power off
Relay Output	On	Output relay energized
	Off	Output relay de-energized
M1, M2	On	On-Off delay mode
	M2 flashing, M1 off	On delay mode
	M1 flashing, M2 off	Off delay mode
	Flash sequentially	On flasher mode
	Flash simultaneously	Off flasher mode

Dimensions

Connections

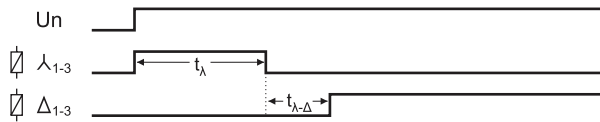Power Input   Relay

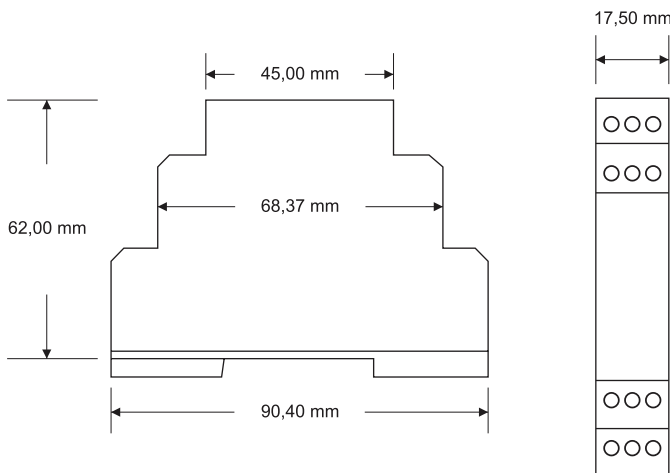
DC 24-300V DC

AC 24-300V AC
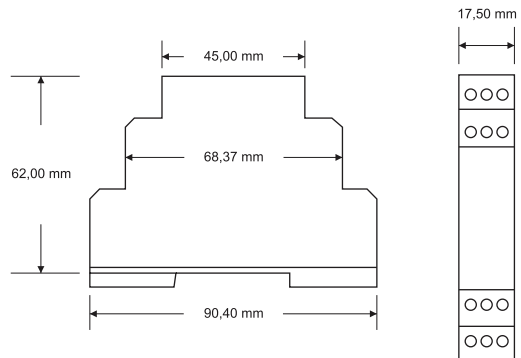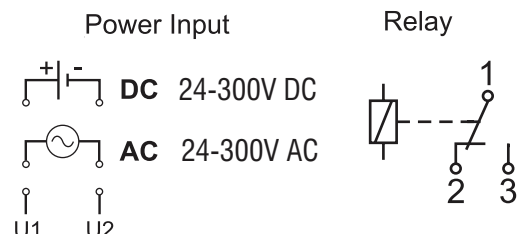
TDSD1

Mode Functions

TDS1 star-delta starter is used for take-off starting method used in electrical motors. When energy applied from U1 and U2 terminals, star contacts will be energised until the end of the adjustable t_λ time. Later, at the end of the adjusted wait time $t_{\lambda-\Delta}$, delta contacts will be energised until the device powered off.

Dimensions

17,50 mm

45,00 mm

68,37 mm

62,00 mm

90,40 mm

Connections

λ **RELAY**   Δ **RELAY**   **POWER**

AC 150-500V