# Multifunction LCD Timer with Backlight TDMS

IMO

Programmable eight-function timer with seven time ranges from 0.001 sec to 9999 hours

- Key protect feature to prevent unauthorised timing mode change
- Display can be programmed to time UP or DOWN
- 100-240VAC or 24VAC/DC versions
- Backlit liquid crystal display of elapsed/remaining time and set time
- Two fully independent set times in recycling mode
- Long-life lithium battery for changing, displaying or storing the set time while power is off
- Universal contact or solid-state input terminals
- Signal inputs for start/gate and reset
- 48-DIN size with plug-in octal base
- Sockets available for panel, surface or DIN-rail mounting
- UL and CSA approved


## Options and ordering codes

**TDMS**

| | |
|---|---|
| 24VAC/DC | **voltage** |
| 100-240VAC | |

## Specification

| | | |
|---|---|---|
| Display | | 2 x 4 digit LCD with backlight |
| Accuracy (timing modes)<br>Setting error<br>Repeat accuracy<br>Variation due to voltage change<br>Variation due to temperature change | | <br><br>0.01%±20ms in total or less (for a signal start)<br>0.01%±50ms in total or less (for a power supply start) |
| Signal inputs | Type | Volt-free input |
| | Contact resistance allowable | 1kΩmax for contact closed, 100kΩ min. for contact open |
| | Residual voltage allowable | 2V max for input ON |
| | Reset pulse width | 1ms on 9.999 sec range, 20ms on all other ranges |
| Reset time | By turning off power | 0.5 sec or less |
| | By signal input or manual reset | 20ms or less |
| Mechanical life | | 50 million operations (18000 ops/hour) |
| Electrical life | | 100,000 operations at 5A 250V AC/30V DC resistive load (1800 ops/hour) |
| Allowable operating voltage range | | 0.85 to 1.1 times input voltage range |
| Contact ratings | | SPCO 5A at 250V AC/30V DC resistive load |
| Supply frequency for AC voltage | | 50/60Hz |
| Power consumption | | Approx 1.5VA at 240V AC 50Hz, 0.8W at 24V DC |
| Operating temperature | | –10 to +55˚C (avoid ice on timer) |
| Storage temperature | | –25 to +65˚C (avoid ice on timer) |
| Humidity | | 35-85% r.h. (non-condensing) |
| Insulation resistance | | 100MΩ or more at 500V DC megger |
| Dielectric strength | | 2000VAC rms 1min between current carrying parts and non current carrying parts |
| Vibration | | Mechanical/malfunction durability: 10-55Hz, 0.75mm double amplitude |
| Shock | | Mechanical durability: 500m/s2 (approx. 50G) |
| | | Malfunction durability: 100m/s2 (approx. 10G) |
| Surge resistance | | ±4500V (±500V for 24V AC/DC model) 1.2x50μs applied twice according to JEC212 |
| Noise resistance | | ±2000V by noise simulator Insx1μs noise wave, 0 to 360˚ phase, 1 min, applied twice |
| Static electricity resistance | | Mechanical durability: 15kV, malfunction durability: 8kV |
| Timing ranges | | 0.001 to 9.999 secs<br>0.01 to 99.99 secs<br>0.1 sec to 999.9 secs<br>1 sec to 9999 secs<br>1 sec to 99 min 59 secs<br>1 min to 99 hrs 59 mins<br>1 hr to 9999 hrs |
| Protection rating | | IP54 |
| Weight | | 120g approx. |

# Multifunction LCD Timer with Backlight
# TDMS continued

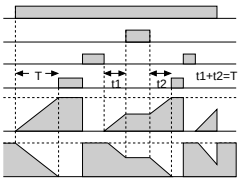
## Programmable for eight timing functions

| | |
|---|---|
| Mode No. 1 | On-delay |
| Mode No. 2 | Signal off-delay |
| Mode No. 3 | Interval (one-shot) |
| Mode No. 4 | Symmetrical re-cycling |
| Mode No. 5 | Signal on-delay |
| Mode No. 6 | On-delay (Power off pause) |
| Mode No. 7 | On-delay integrating |
| Mode No. 8 | Asymmetrical re-cycling |

## Timer

Mode No. 1
On-delay

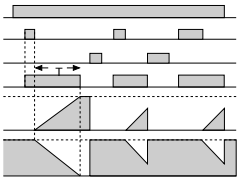
Power 2-7
Start/Gate 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN




Mode No. 2
Signal off-delay

See notes A and B

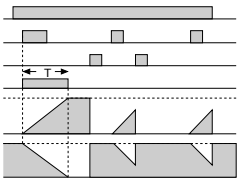
Power 2-7
Start 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN




Mode No. 3
Interval (one-shot)

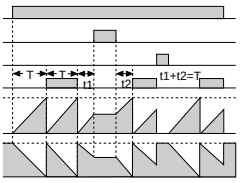
See note A

Power 2-7
Start 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN




Mode No. 4
Symmetrical
re-cycling

Power 2-7
Start/Gate 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN

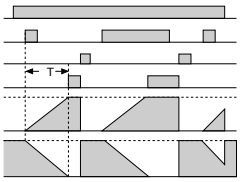



Notes:

A In modes 2 and 3, after the time is up and the output turns off, a reset signal is not required before another start signal is given. The start signal itself will also effect a reset first.

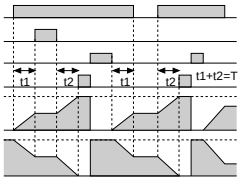
Mode No. 5
Signal on-delay

Power 2-7
Start 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN



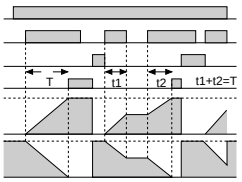

Mode No. 6
On-delay
(power-off pause)

Power 2-7
Start/Gate 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN



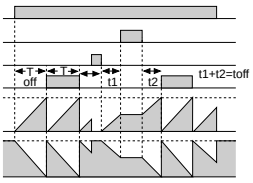

Mode No. 7
On-delay
integrating

Power 2-7
Start/Gate 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN




Mode No. 8
Asymmetrical
re-cycling

Power 2-7
Start/Gate 1-4
Reset 1-3
Output 6-8
UP
DISPLAY
DOWN

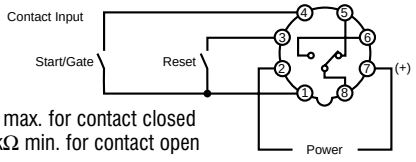



Notes:

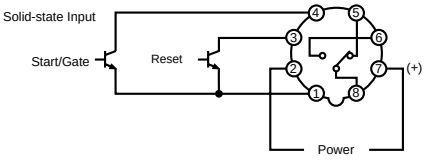
B In mode 2, if another start signal is applied before timing is up, the elapsed time resets and starts again, without the output turning off. Further, repeated start signals within the elapsed time can prevent the output turning off indefinitely. Therefore, the TDMS can be used in conjunction with IMO sensors to detect that machine shafts have stopped rotating before maintenance is carried out. Contact IMO for details.

## Wiring diagrams

The TDMS has universal contact/solid-state inputs:




Note: 1kΩ max. for contact closed
100kΩ min. for contact open




Note: Signal inputs approx. 6VDC open circuit and approx. 2mA when short-circuited

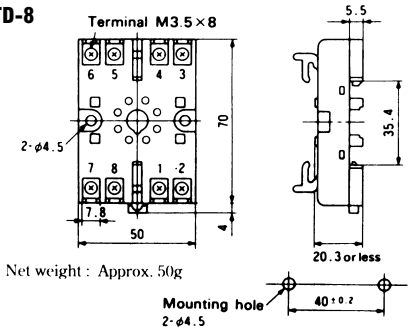
When powering the 24VAC/DC mode using DC, the supply positive lead should be connected to terminal 7.

# Multifunction LCD Timer with Backlight TDMS continued

## Sockets

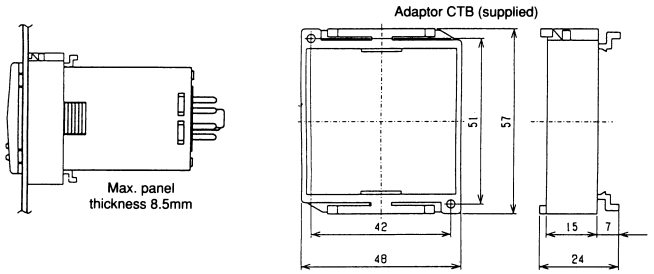
### Surface/DIN rail mounting – screw terminal

**STD-8**

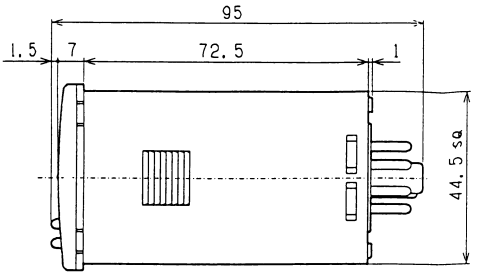



Net weight : Approx. 50g

## Flush mounting



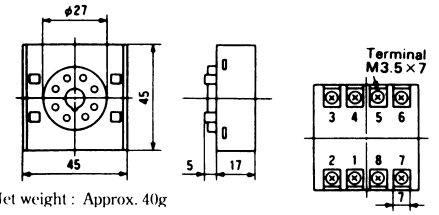

## Dimensions (mm)




Net weight approx 120g

### Screw terminal

**STF-8**




Net weight : Approx. 40g

### solder terminal