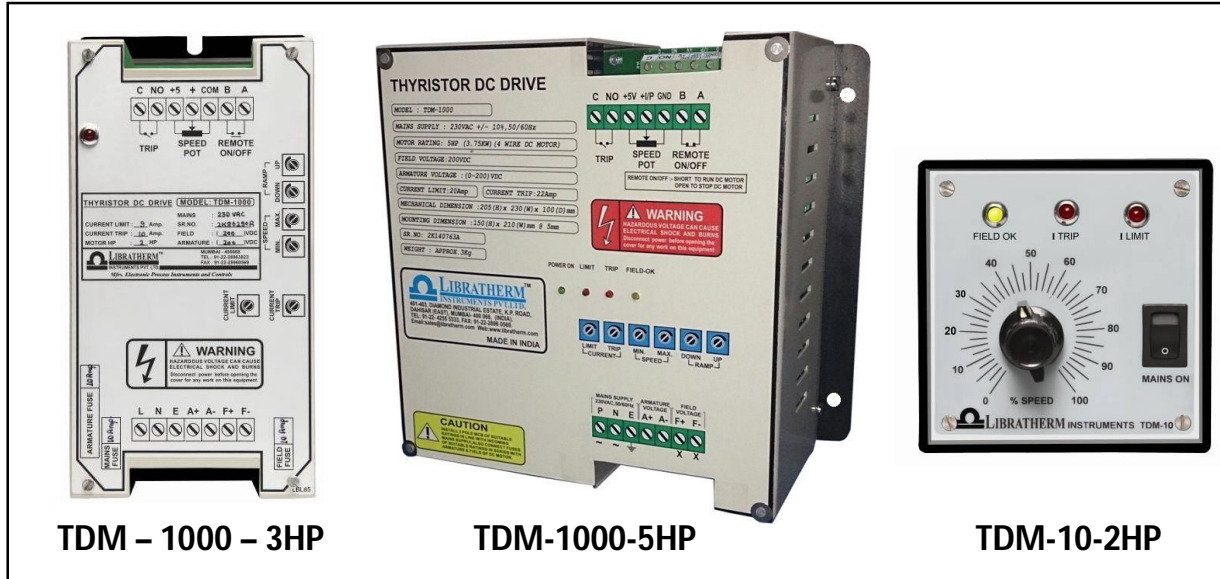


Thyristorized DC Motor Controllers

TDM-1000 (¼ HP to 5 HP) & TDM-10 (¼ HP to 3 HP)

(Product code 22.1 to 22.2)



Model Wise Description:

| Sr.No | Model | Product Description | Size (mm.) h x w x d |
|-------|----------|---|--|
| 22.1 | TDM-1000 | D.C. Drive (Modular Design-Single Phase) ¼ HP to 1 HP, 2 HP, 3 HP, 5HP with isolated speed control signal | 230 x 180 x 80 (3HP) 230 x 210 x 100 (5 HP) |
| 22.2 | TDM-10 | D.C. Drive (Panel mounting type) (1/4 HP to 2 HP) | 96 x 96 x 160 |

Description:

Libratherm offers variable speed DC drive or DC motor controller, Model **TDM-1000 & TDM-10**, which is rugged, compact and fully solid-state controller designed to drive either PMDC - permanent magnet DC motors or 4 wire - excited field DC motors. The motor speed can be varied through a single turn potentiometer or through an external analog control signal of (0-5) VDC, (0-10) VDC or (4-20) mA. The drive operates on 230/110VAC. The speed regulation is achieved by armature voltage feed back. Several other control and standard protection features are soft start, maximum speed set, minimum speed set, field failure, overload protection, remote on / off etc.

Two different models are available, one is TDM-1000, which is a modular design and can be mounted inside the panle. TDM-1000 has optically isolated control input, remote start/stop contact input, motor type selection facility through jumper (Either PMDC or 4 wire). Second Model TDM-10, is ¼ DIN panel mounting type with speed control using front panel potentiometer.

The drive is designed using the solid-state components and is available in the modular form to suit OEM's applications. The drive is also available in the stand-alone control panel form along with accessories like RPM / voltmeter, current meter, start / stop and forward / reverse RELAY logic, indicating lamps, speed potentiometer etc.

Features:

- ❖ Fully solid-state design.
- ❖ Linear variation of speed.
- ❖ Suitable for 1/4 HP to 5 HP / single phase (4-wire or PMDC motors).
- ❖ Adjustable maximum and minimum Speed.
- ❖ Built in Current Limit / over Load Trip and Field Failure Protection.
- ❖ Control signal is optically isolated in modular design.
- ❖ Accepts speed control signal of (0-5) VDC, (0-10) VDC or (4-20) mA, hence suitable for machine automation.
- ❖ 1/4 DIN Size (TDM-10)
- ❖ Operates on 230VAC

Applications:

- ◆ Suitable for small machines in Plastic, Packaging and Pharmaceutical industries.
- ◆ Applications where smooth steady and fine DC motor speed control is required.

Technical Specifications:

| ELECTRICAL: | |
|--|---|
| Operating Supply Voltage | 230 VAC / 110 VAC, 50 Hz, +/- 10%. |
| DC Output Voltage | 1) Armature: 0 to 200VDC Field: 200 VDC fixed @ 230VAC. 2) Armature : 0 to 100VDC Field : 100 VDC fixed @ 115VDC |
| Motor Load in HP | 0.25 to 3 HP (TDM-10) With Armature / Field or PMDC 0.25 to 5 HP (TDM-1000) With Armature / Field or PMDC |
| Speed Control Signal | (0-5) VDC, (0-10) VDC, (4-20) mA optically isolated or through 10K single turn potentiometer. |
| Operating Temperature | 0 °C to 70 °C. |
| Maximum Current Rating | 25% of the rated value (continuous). |
| Front Panel LED Indication | For Power ON, Current Limit and Trip Relay |
| Isolation | DC control signal are optically isolated from Field/Armature voltage (hence safe to interface with PLC PID controller, etc.) |
| Over Load / Over Voltage Protection | Using Current Limit and Trip features and individual Fuse protection for Armature and Field winding. Potential free TRIP contact is available on the terminals. |
| SPEED REGULATION: | |
| By Armature Feedback | +/- 10% of set speed. |
| Current Limit | 50 to 150% of the rated value (adjustable in TDM-1000). |
| Maximum Speed | 50 to 100% of the rated value (adjustable in TDM-1000). |
| Acceleration / Retardation | 0 to 15 seconds (adjustable soft start/stop in TDM-1000) and fixed in TDM-10. |
| Remote Start/Stop | Provision for external potential free input contact for starting and stopping the motor. |

| MECHANICAL: | |
|--------------------|---|
| Size | 230 x 180 x 80 mm (TDM-1000) 96 x 96 x 160 mm (TDM-10) |
| Mounting | TDM-1000 can be mounted on the flat surface inside the control panel using 4 screws. TDM-10 can be mounted on the front panel. |
| Weight | Approx. 2.5 Kg (TDM-1000) Approx. 1.0 Kg (TDM-10) |

Ordering Information:

| MODEL | A- CONTROL INPUT SIGNAL | B- HORSE POWER or KW of Motor | C - Motor Type | D- SUPPLY |
|-----------------|---|---|---|--|
| TDM-1000 | A1- (0-5 VDC) A2- (0-10 VDC) A3- (4-20 mA) A4- (10K pot) | B1- (1 HP / 750W) B2- (2 HP / 1.5KW) B3- (3 HP / 2.25KW) B4- (5 HP / 3.75KW) | C1 - 4 wire (Armature + Field) C2- PMDC | D1- (230 VAC) D2- (110 VAC) |
| TDM-10* | | | | |

* TDM-10 is applicable for option A4, B1/ B2, and C1/ C2, D1/D2

Examples:

| MODEL | A- CONTROL INPUT SIGNAL | B- HORSE POWER or KW of Motor | C - Motor Type | D- SUPPLY |
|----------|-------------------------|-------------------------------|----------------|-----------|
| TDM-1000 | A3 | B3 | C1 | D1 |
| TDM-1000 | A2 | B2 | C2 | D1 |
| TDM-10 | A4 | B1 | C1 | D2 |

| Example | Ordering Code | Description |
|---------|-----------------------|---|
| 1 | TDM-1000 -A3-B3-C1-D1 | This is DC motor controller, suitable for 3 HP, 4 wire DC motor with speed control using 4-20mA signal and operating on 230VAC supply. |
| 2 | TDM-1000 -A2-B2-C2-D1 | This is DC motor controller, suitable for 2 HP, PMDC motor with speed control using 0-10V signal and operating on 230VAC supply. |
| 3 | TDM-10-A4-B1-C1-D2 | This is DC motor controller, suitable for 1 HP 4 wire DC motor with speed control using front panel potentiometer and operating on 110VAC supply. |