

TROOPER®

TDP500 SERIES 1/8 - 3 HP DC Motor Controls

General Description

The TROOPER TDP500 Series of DC motor controls is an economical alternative for your speed or torque control applications. Though designed for economy, the TROOPER Series still provides the quality and performance many have come to know as a trademark of all CAROTRON products. Packed with features generally only available in more expensive controllers, the TROOPER is a very attractive addition to the CAROTRON family.

Two basic models are offered one in a compact chassis and one in a NEMA 4 watertight enclosure.

Sixteen models provide full range speed or torque control of shunt wound or permanent magnet type D.C. motors from 1/8 to 3 HP. Various models are offered with options that add torque/taper control, manual reversing with torque/taper or process follower isolation for both chassis and enclosed models.

60 PPR encoder or pulse tachometer feedback is another key standard feature in the TROOPER series. This feature allows frequency signals required for process monitoring to be used to improve speed regulation and simplify system requirements.



Standard Features

- Standard NEMA 4, UL Type 4, watertight rating for all enclosed models
- Jumper selectable speed feedback to allow use of armature voltage, D.C. tachometer, or 60 pulse encoder (Reversing models will not operate in D.C. TACH feedback)
- Start, Stop and Jog sequencing logic in all models
- Five jumper selectable armature current ranges
- Quality components such as I.C. regulators, metal film resistors, and cermet potentiometers for temperature stable operation
- Inner current loop for fast stable response under varying load conditions
- Power On/Off switch on all enclosed models for local safety power disconnect
- Membrane switch panel with Start, Stop and Jog pushbuttons for all enclosed models
- Torque/Taper models with provision for external torque pot. available in chassis or enclosed versions
- Manual reversing models with Torque/Taper are available in chassis or enclosed versions
- Process follower models are offered that give manual/auto functions and isolated 0-10 VDC or 4-20 mA input to the drive for speed control in the auto mode
- UL listing on 1/4 to 3 HP models

Specifications

TDP 502 Models

A.C. INPUT

115 VAC \pm 10%, 50/60 Hz \pm 2 Hz
230 VAC \pm 10%, 50/60 Hz \pm 2 Hz

ARMATURE OUTPUT

0- 90 VDC for 115 VAC input
0-180 VDC for 230 VAC input

FIELD OUTPUT

100 VDC @ 1 Amp for 115 VAC input
200 VDC @ 1 Amp for 230 VAC input

HORSEPOWER RANGE

1/8 - 1 HP @ 90 VDC
1/4 - 2 HP @ 180 VDC

TDP 503 Models

A.C. INPUT

230 VAC \pm 10%, 50/60 Hz \pm 2 Hz

ARMATURE OUTPUT

0-180 VDC

FIELD OUTPUT

200 VDC @ 1 Amp

HORSEPOWER RANGE

1/2 - 3 HP @ 180 VDC

All Models

ENCODER SUPPLY

50mA @ 12 VDC

JOG SPEED

20% of base speed

CURRENT LIMIT

150% of current range selected

ADJUSTMENTS

MIN:

- 0 to 25% of full speed (Speed Mode)
- 0 to 10% of rated torque (Torque Mode)

MAX:

- -20 to +10% of full speed (Speed Mode)
- -20 to +10% of rated torque (Torque Mode)

IR COMPENSATION:

Range set by current range jumper

ACCEL:

Independently adjustable from 1 to 25 seconds

TORQUE:

(Torque/Taper Option Only) : Sets tension level for core diameter

TAPER:

(Torque/Taper Option Only): Sets tension level for full package diameter

SPEED REGULATION

20 to 1 speed range

ARMATURE FEEDBACK:

\pm 1% of base speed

TACHOMETER FEEDBACK:

(7V/1000 RPM): \pm 0.5% of base speed

(Non-reversing models only)

ENCODER FEEDBACK:

(60 PPR): \pm 0.5% of base speed

TORQUE REGULATION

\pm 2% of range selected

TEMPERATURE RANGE

0 - 55°C for chassis units

0 - 40°C for enclosed units

Standard Models and Descriptions

115 VAC input	230 VAC input	Model number	Description	Approx. Shpg. Wt.	Dim.	Conn.
1/8 - 1 HP	1/4 - 2 HP	TDP502-000	Chassis Only, basic model	4 lbs.	Fig. B.1	Fig. B.5
-	1/2 - 3 HP	TDP503-000	Chassis Only, basic model	6 lbs.	Fig. B.3	Fig. B.9
1/8 - 1 HP	1/4 - 2 HP	TDP502-00T	Chassis Only With Torque/ Taper	4 lbs.	Fig. B.1	Fig. B.6
-	1/2 - 3 HP	TDP503-00T	Chassis Only With Torque/ Taper	6 lbs.	Fig. B.3	Fig. B.10
1/8 - 1 HP	1/4 - 2 HP	TDP502-0RT	Chassis Only With Torque/ Taper and Manual Reversing	4 lbs.	Fig. B.1	Fig. B.7
-	1/2 - 3 HP	TDP503-0RT	Chassis Only, With Torque /Taper and Manual Reversing	6 lbs.	Fig. B.3	Fig. B.11
1/8 - 1 HP	1/4 - 2 HP	TDP502-0PF	Chassis) Only With Process Follower (0-10VDC & 4-20mA)	4 lbs.	Fig. B.1	Fig. B.8
-	1/2 - 3 HP	TDP503-0PF	Chassis only With Process Follower (0-10VDC & 4-20mA)	6 lbs.	Fig. B.3	Fig. B.12
1/8 - 1 HP	1/4 - 2 HP	TDP502-E00	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch	8 lbs.	Fig. B.2	Fig. B.5
-	1/2 - 3 HP	TDP503-E00	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch	10 lbs.	Fig. B.4	Fig. B.9
1/8 - 1 HP	1/4 - 2 HP	TDP502-E0T	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch and Torque /Taper	8 lbs.	Fig. B.2	Fig. B.6
-	1/2 - 3 HP	TDP503-E0T	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch and Torque /Taper	10 lbs.	Fig. B.4	Fig. B.10
1/8 - 1 HP	1/4 - 2 HP	TDP502-ERT	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch, Manual Reverse and Torque/Taper	8 lbs.	Fig. B.2	Fig. B.7
-	1/2 - 3 HP	TDP503-ERT	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch, Manual Reverse and Torque/Taper	10 lbs.	Fig. B.4	Fig. B.11
1/8 - 1 HP	1/4 - 2 HP	TDP502-EPF	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch, Auto/Man Switch and Process Follower (0-10VDC & 4-20mA)	8 lbs.	Fig. B.2	Fig. B.8
-	1/2 - 3 HP	TDP503-EPF	NEMA 4 Enclosed Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch, Auto/Man Switch and Process Follower (0-10VDC & 4-20mA)	10 lbs.	Fig. B.4	Fig. B.12

Dimensions

2HP Chassis Models

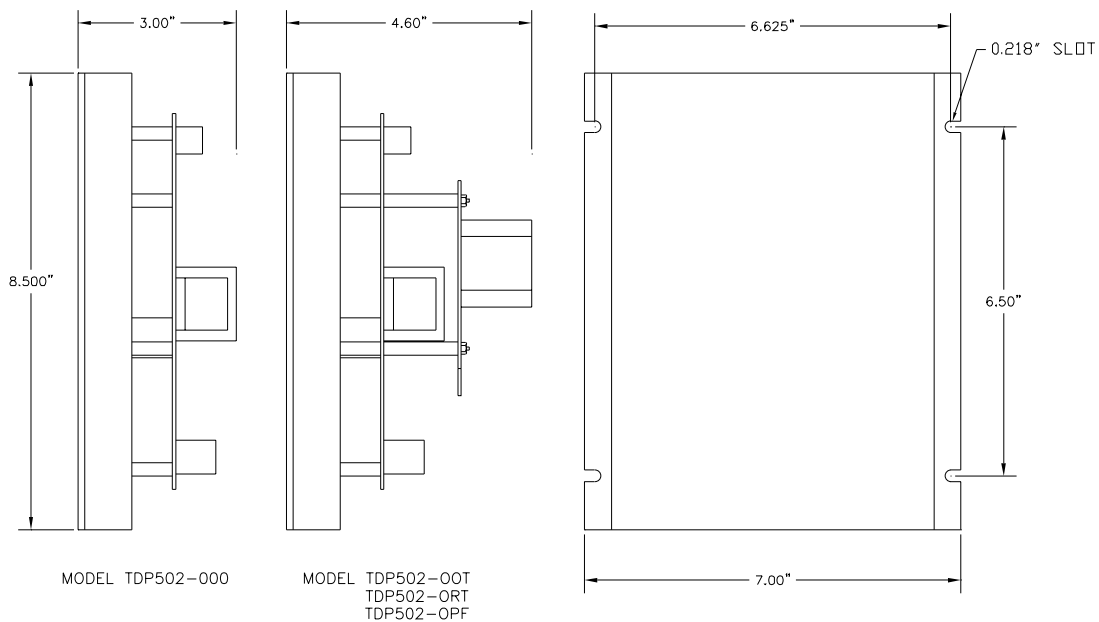


Fig. B.1

2HP Enclosed Models

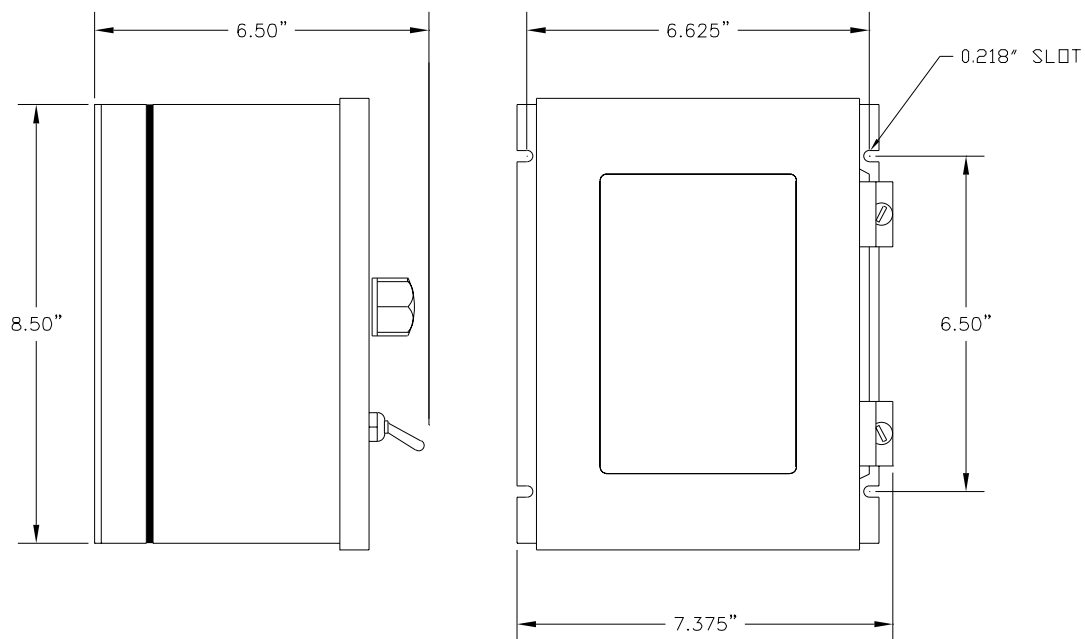


Fig. B.2

Dimensions

3HP Chassis Models

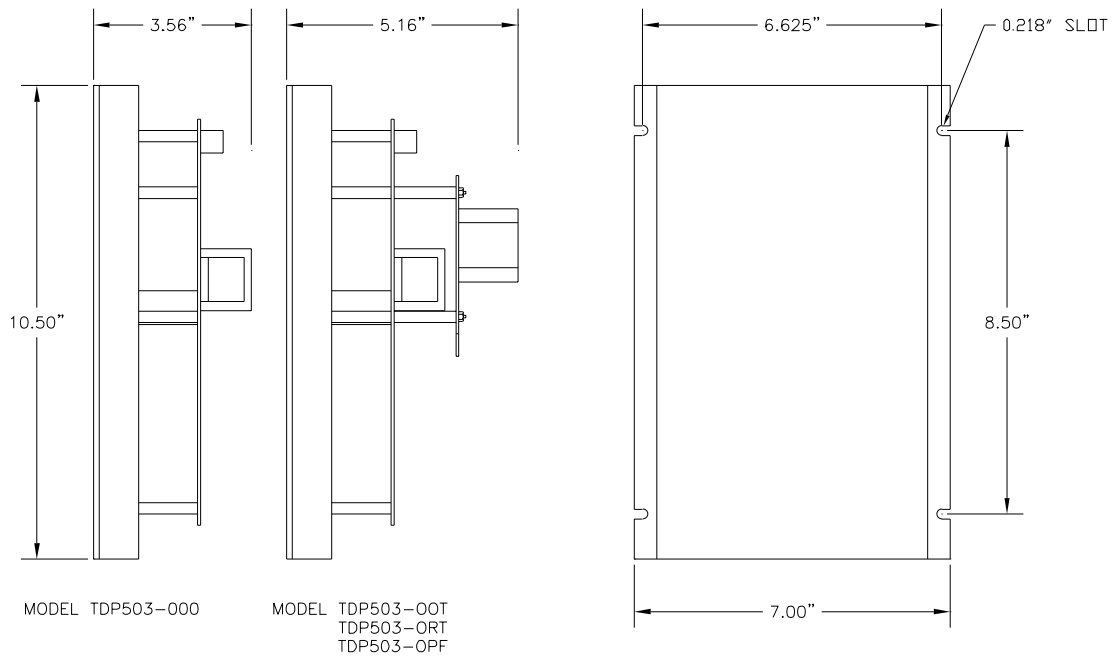


Fig. B.3

3HP Enclosed Models

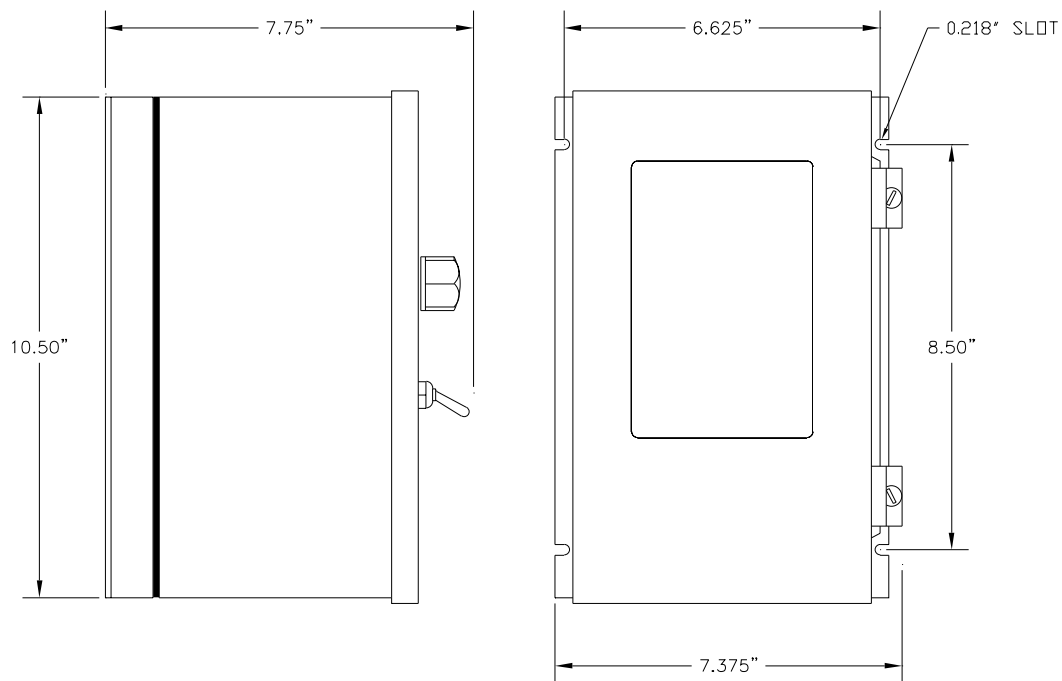


Fig. B.4

Connections

Models TDP502-000 and TDP502-E00

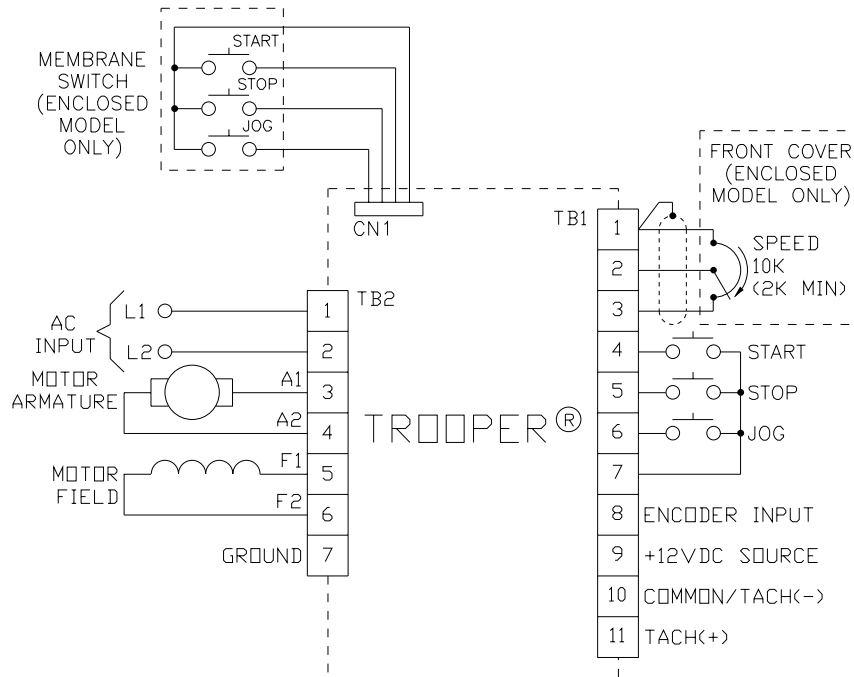


Fig. B.5

Models TDP502-00T and TDP502-E0T

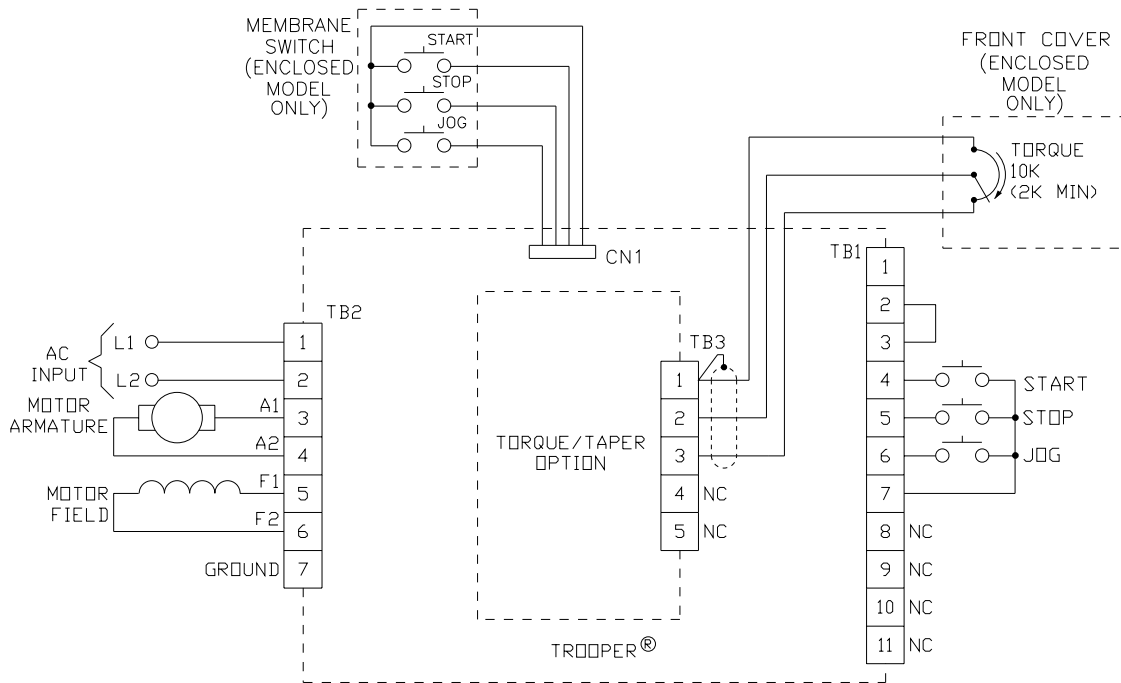


Fig. B.6

Connections

Models TDP502-0RT and TDP502-ERT

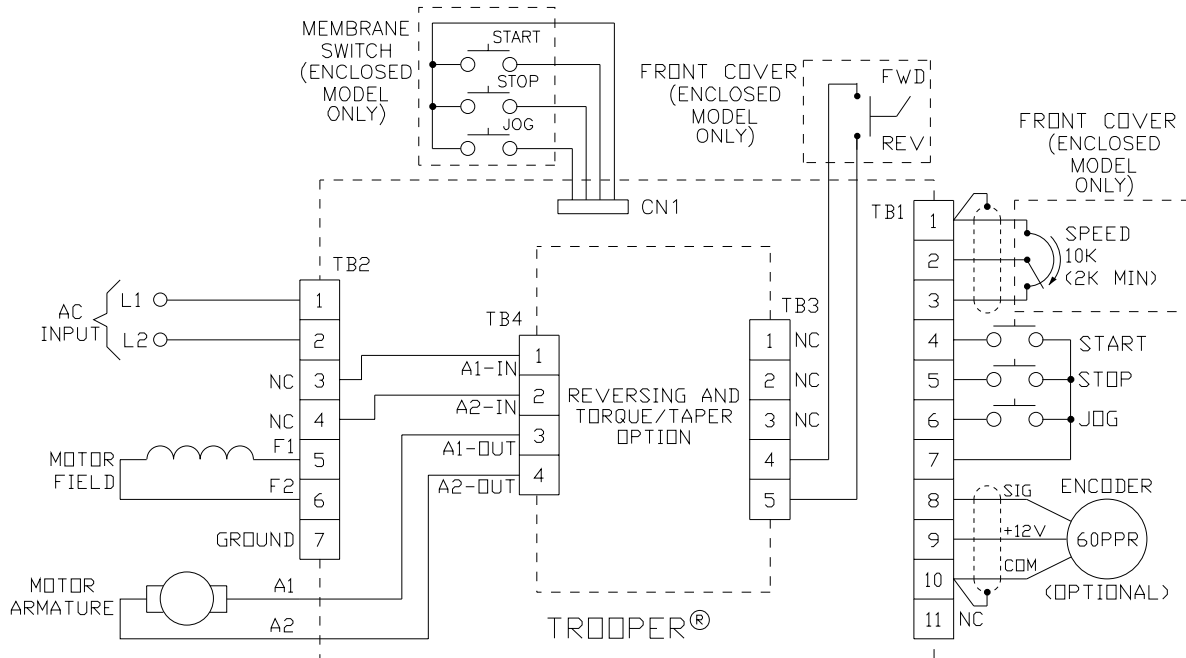


Fig. B.7

Models TDP502-0PF and TDP502-EPF

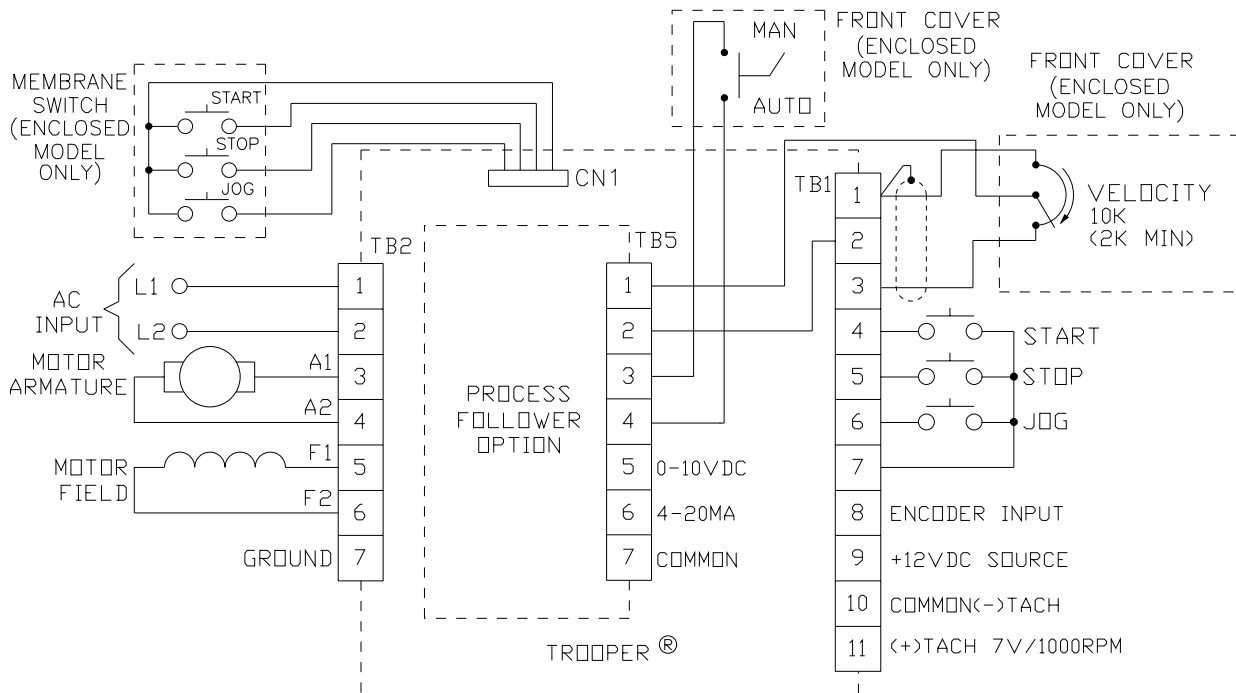


Fig. B.8

Connections

Models TDP503-000 and TDP503-E00

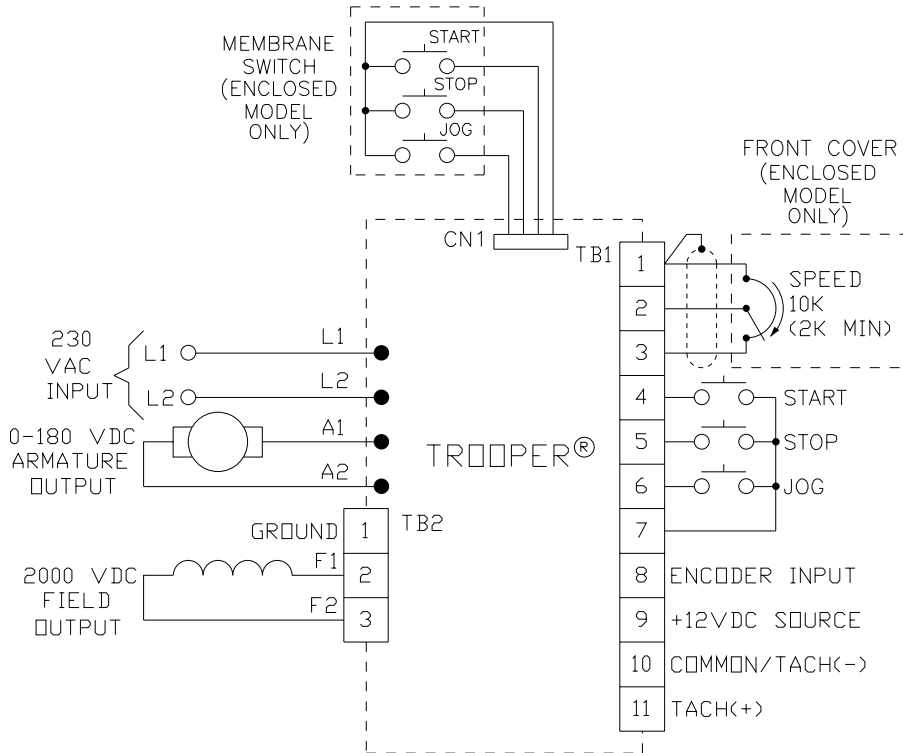


Fig. B.9

Models TDP503-00T and TDP503-E0T

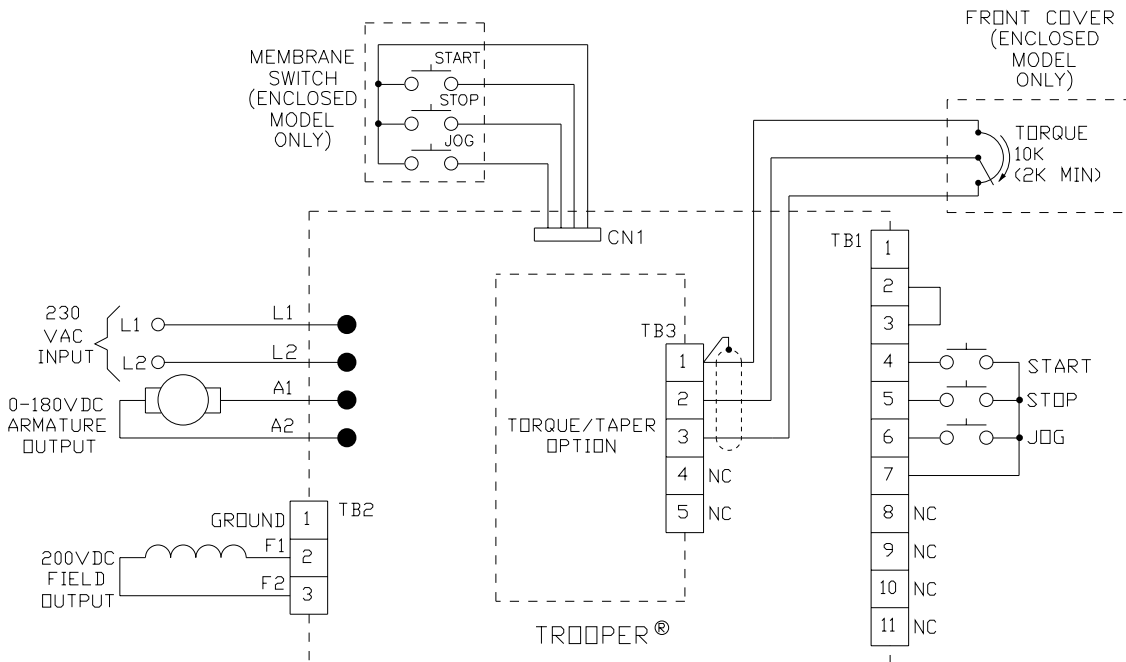


Fig. B.10

Connections

Models TDP503-0RT and TDP503-ERT

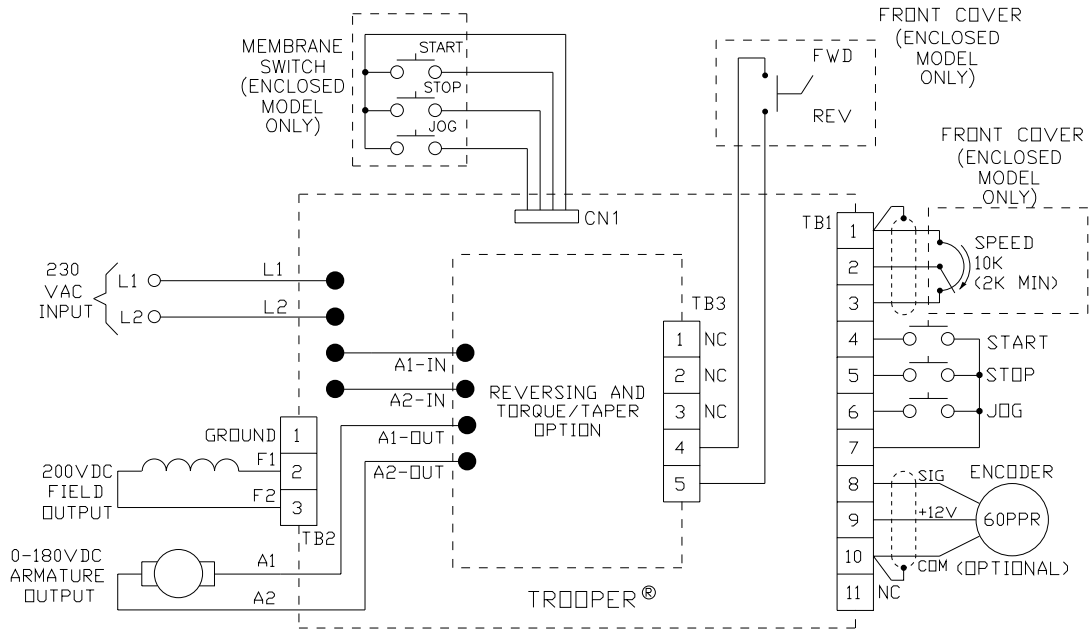


Fig. B.11

Models TDP503-0PF and TDP503-EPF

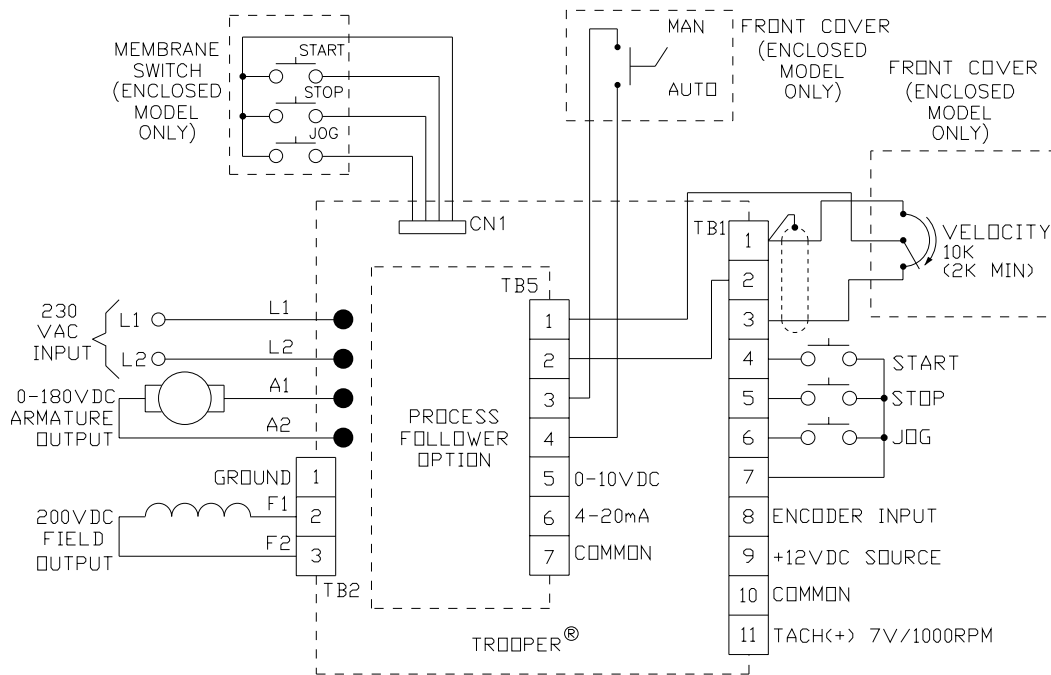


Fig. B.12