TRC600 SERIES 1/8 - 2 HP
Regen DC Motor Control

General Description

The Carotron TROOPER® IV TRC600 Series regenerative industrial motor control provides full range – four quadrant – speed control of shunt wound or permanent magnet D.C. motors from 1/8 to 2 horsepower. Bi-directional current control operation is also possible.

Though designed for economy, the TROOPER® IV 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® IV 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.

FLY1063-00 Rev. -, 8/1/2025

Standard Features

- 115VAC or 230VAC input w/line fuses
- Armature or tachometer feedback
- Forward & Reverse Accel settings, two ranges: 1-4 or 4-25 Sec.
- Summing Reference Input
- Accel/Decel output
- Selectable 2 wire or 3 wire Start/Stop
- Selectable Stop method
  - Coast to Stop
  - Decel to Stop
  - Rapid Stop (current limit Stop)
- Voltage controlled Current Limit (5VDC = 100%)
- Inner current loop for fast and stable response under varying load conditions
- IC regulated power supplies and temperature stable components
- Standard NEMA 4, UL Type 4, watertight rating on enclosed model
- Switch selectable speed feedback to allow use of armature voltage or D.C. tachometer
- Start, Stop and Jog sequencing logic in all models
- Five jumper selectable armature current ranges
- Power On/Off switch on enclosed model for local safety power disconnect
- Membrane switch panel with Start, Stop and Jog pushbuttons on enclosed model

Specifications

A.C. INPUT

- 115VAC±10%, 50/60 Hz±2Hz
- 230VAC±10%, 50/60 Hz±2Hz

ARMATURE OUTPUT

- 90VDC (115VAC input)
- 0-180VDC (230VAC input)

FIELD OUTPUT

- 50VDC or 100VDC @ 1A (115VAC input)
- 100VDC or 200VDC @ 1A (230VAC input)

HORSEPOWER RANGE

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

CURRENT RANGES

- 1.5, 3, 5, 8, 10A

SPEED REGULATION

- Armature: ± 1% of base speed
- Tachometer: ±0.5% of base speed

TORQUE REGULATION

- ± 1% of range selected

SPEED RANGE

- 20:1 based on typical motor ratings

TEMPERATURE RANGE

- 0 - 55°C for chassis unit
- 0 - 40°C for enclosed unit

ADJUSTMENTS

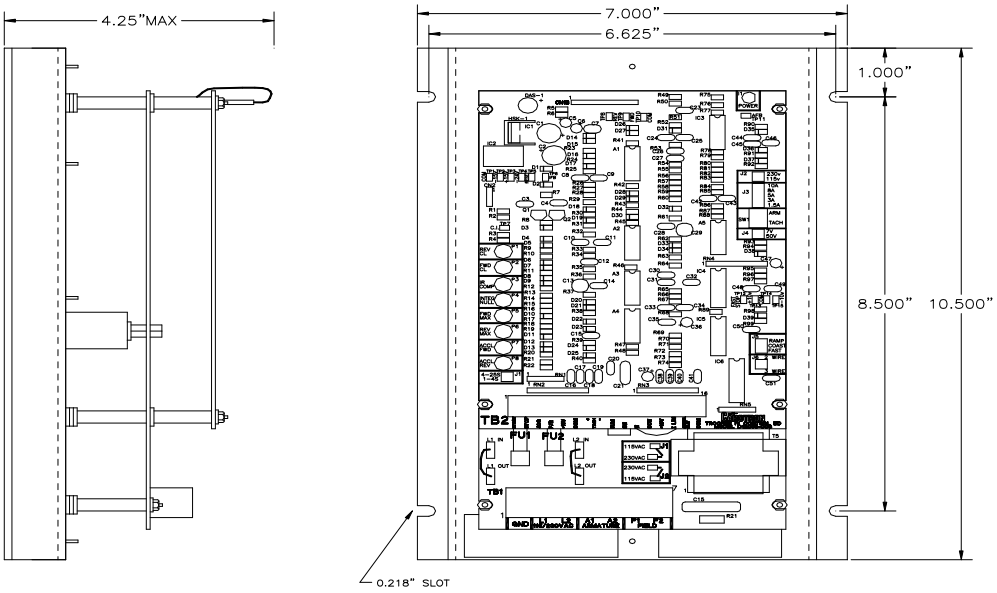
- MAX
  - 60-110% of rated armature voltage
- CL (Current Limit)
  - 0-150% of current range
- ACCEL
  - 1-4s or 4-25s
- DEADBAND
  - 0-0.2V of Vel Loop Output
- IR COMP
  - Range set by ARM jumper

Standard Models and Descriptions

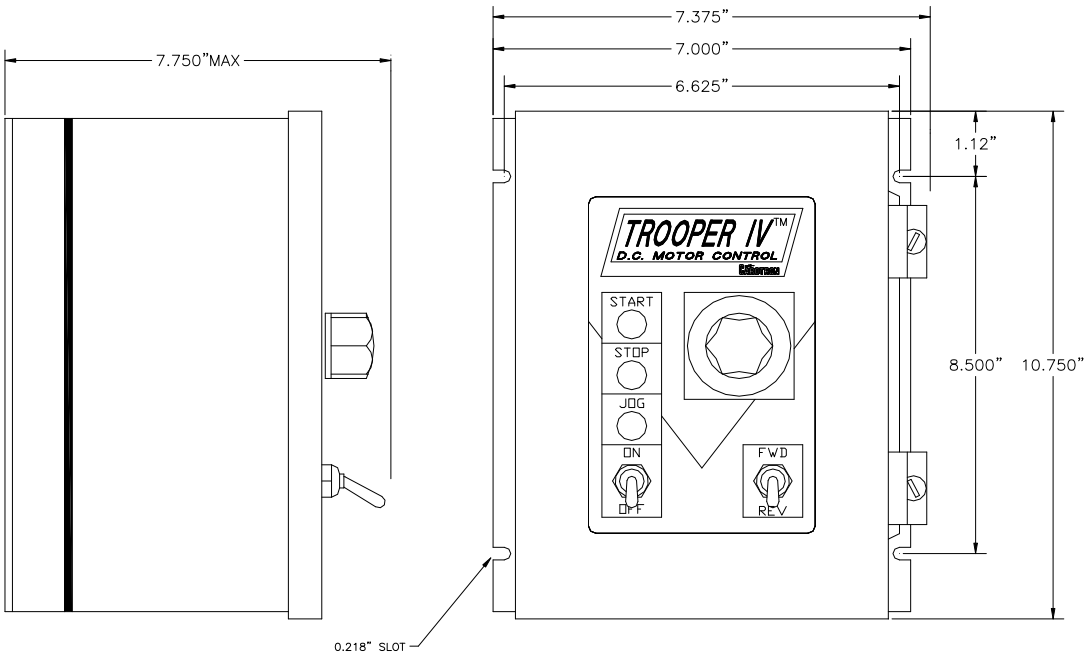
115VAC Input	230VAC Input	Model Number	Description
1/8 – 1 HP	1/4 – 2 HP	TRC602-000	Chassis Model
1/8 – 1 HP	1/4 – 2 HP	TRC602-E00	NEMA 4 Enclosed Model with Start, Stop, & Jog pushbuttons, Speed Pot., Direction and Power Switches

Dimensions

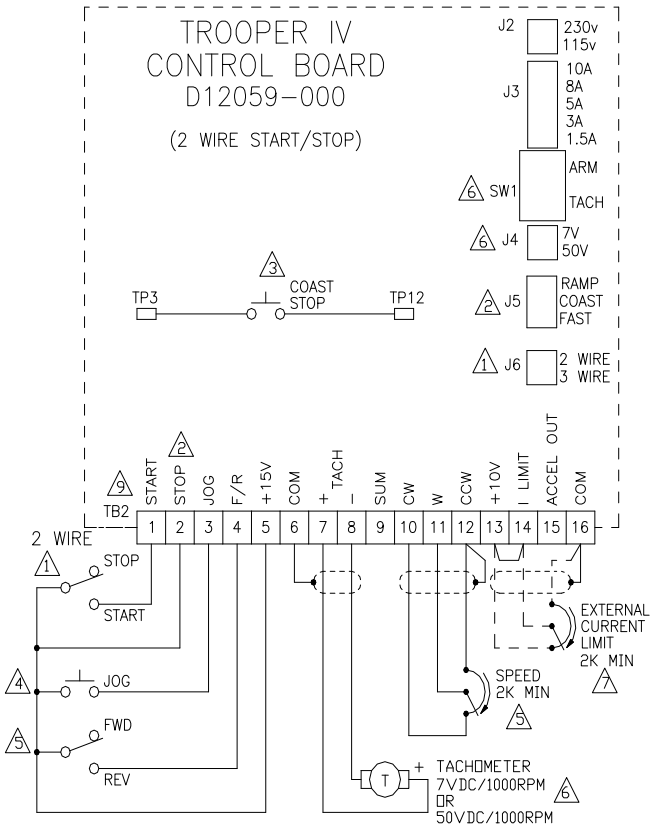
Chassis Model

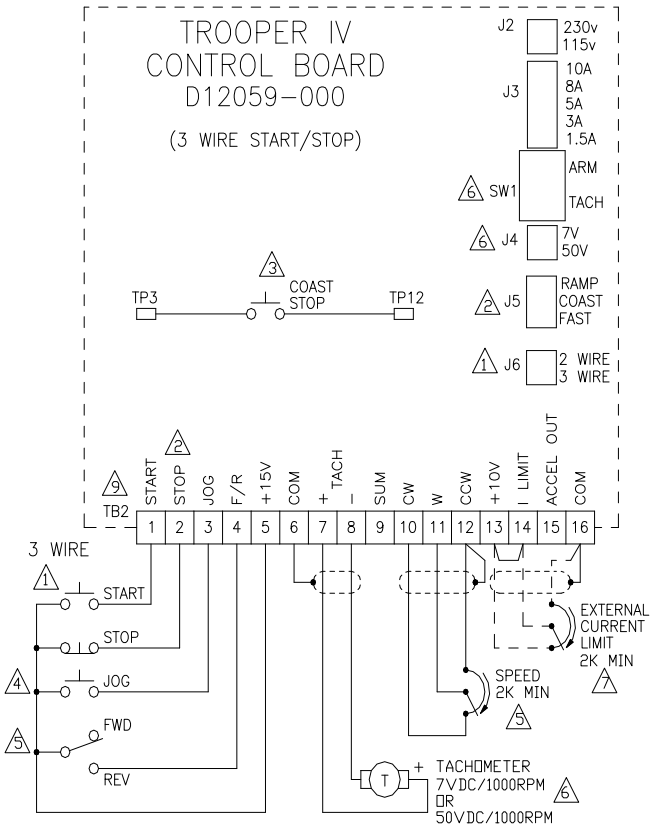


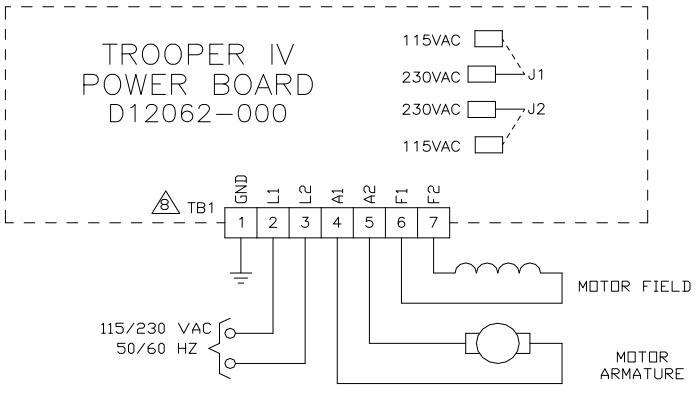
Enclosed Model



Connections







NOTES:

1. START/STOP CONFIGURATION IS DETERMINED BY J6 POSITION:
   J6 - 2 WIRE = START/STOP BY MAINTAINED CONTACT
   J6 - 3 WIRE = START/STOP BY MOMENTARY CONTACT
2. TB2 STOP MODE IS DETERMINED BY J5 POSITION:
   J5 - RAMP = REGEN TO STOP WITH DECEL RAMP
   J5 - COAST = COAST TO STOP
   J5 - FAST = REGEN TO STOP WITH NO RAMP
3. MOMENTARY CONTACT CLOSURE BETWEEN +15V (TP3 OR TB2-5) & TP12 CAUSES COAST TO STOP REGARDLESS OF J5 POSITION.
4. JOG IS BY MAINTAINED CONTACT @ 35% BASE SPEED.
5. FWD/REV SWITCH CONTROLS THE POLARITY OF TB2-10 SPEED POT SUPPLY: FWD = POSITIVE, REV = NEGATIVE.
6. OPTIONAL DC TACHOMETER FOR IMPROVED SPEED REGULATION: SET SW1 TO TACH, SET J4 TO MATCH TACH VOLTAGE.
7. OPTIONAL EXTERNAL CURRENT LIMIT POT: JUMPER TB2-13 TO 14 IF NOT REQUIRED.
8. TB1 SCREW TORQUE: 7.0 LB-IN (0.79 N-M).
9. TB2 SCREW TORQUE: 4.4 LB-IN (0.5 N-M).