BLAZER®

BDP400 SERIES 1/4 - 5 HP DC Motor Controls

General Description

Take a closer look at the full featured BLAZER BDP400 Series by Carotron Inc. Finally, a real alternative in packaged DC drives. We have taken our standard of reliable, economical, and performance oriented D.C. drives and loaded them with an unprecedented list of standard features that make them attractive for a wide range of applications.

One very important feature of the BLAZER BDP400 Series is control circuit isolation. The control circuit of each model is completely isolated from the power circuit. This isolation protects reference circuits and feedback circuits from possible damage due to accidental shorts to ground. Also this standard isolation greatly simplifies master reference, tachometer follower, and process control applications.

Another primary feature is A.C. line contactors for safety disconnect during normal stop conditions. Logic in the BLAZER control circuit assures that current flow to the motor has ceased prior to de-energizing the contactors. This reduces electrical stress and increases contactor life.

Encoder or pulse tachometer feedback is another key standard feature in the BLAZER BDP400 Series. This feature allows frequency signals required for process monitoring to be used to improve speed regulation and simplify system requirements. Other standard feedback methods available in each model are armature voltage or 7 and 50 VDC tachometers.

An accessory drive circuit monitor, Model DCM100-000, is available to assist in set-up and troubleshooting by plugging into the control board to easily access 20 separate signals.

Additional features of the BLAZER SERIES are listed on the following pages. As you can see, these units are loaded with innovative features that can simplify your drive applications.

Standard Features

- Isolation amplifier for providing isolated armature current feedback
- Impedance isolation, 5 Meg Ohms, for armature voltage feedback isolation
- AC line contactors for safety disconnect in stopped condition
- Digital logic for sequencing Start, Stop and Jog operation for dry circuit switching of line contactors to extend contactor life
- AC line fuses for circuit protection
- Independently adjustable linear Accel and Decel, 1 to 60 seconds
- Jumper selectable armature voltage, tachometer voltage (7 to 50 VDC/1000 RPM), or encoder (60 or 300 PPR) feedback
- Encoder power supply, +12 VDC @ 100 mA, terminal strip accessible
- Tachometer and encoder feedback are insensitive to direction of motor rotation
- Inner current loop for fast stable response
- Hard firing, high frequency, multi-pulse gating circuit for reliable SCR firing over a wide range of speed and load characteristics
- Armature current range selectable by jumper
- Velocity or torque mode operation selectable
- Built-in Torque/Taper control function with provision for external torque pot.
- Jog Delay to allow rapid jogging without de-energizing the line contactor to extend contactor life
- Internal Jog pot. for adjustment of Jog Speed
- Jumper selection to allow summing input to be clamped or not clamped in the Jog Mode
- Auto Mode for 4 to 20 mA input for process
- Summing input with on board trim pot. to allow voltage summing with speed reference
- Terminal strip access to Accel/Decel output, Velocity Loop output and Current Loop input for systems interface
- Depluggable signal input terminals for all customer connections
- Dynamic braking (models with D.B. only)
- Power On/Off switch (enclosed models only)
- Membrane switch control panel for Start, Stop and Jog pushbuttons (enclosed models with control panel only)

Specifications

BDP402 Models

A.C. INPUT
- 115 VAC ± 10%, 50/60 Hz ± 2 Hz
- 230 VAC ± 10%, 50/60 Hz ± 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
- 1/4 - 1 HP @ 90 VDC
- 1/4 - 2 HP @ 180 VDC

BDP405 Models

A.C. INPUT
- 230 VAC ± 10%, 50/60 Hz ± 2 Hz

ARMATURE OUTPUT
- 0-180 VDC

FIELD OUTPUT
- 200 VDC @ 1 Amp

HORSEPOWER RANGE
1/2 - 5 HP @ 180 VDC

All Models

SPEED REGULATION
- Armature feedback: ±2.0% of base speed
- Tachometer or Encoder Feedback: ±0.5% of base speed

TORQUE REGULATION
- ±2% of current range selected

TEMPERATURE RANGE
- 0 - 55 C for chassis units
- 0 - 40 C for enclosed units

ADJUSTMENTS
- Min Speed: 0 to 25% of rated armature voltage
- Max Speed: 70 to 110% of rated armature voltage
- Jog Speed: 0 to 25% of rated armature voltage
- Sum Trim: 0 to 150% of summing input
- Acceleration: 1 - 60 seconds
- Deceleration: 1 - 60 seconds
- Current Limit: 0 - 150% of current range selected
- IR Compensation: Range set by current limit jumper
- Torque (Torque/Taper Mode): sets tension level for core diameter
- Taper (Torque/Taper Mode): sets tension level for full package diameter
- Offset (Auto-Mode): nulls auto circuit with minimum process signal input
- Gain (Auto-Mode): sets speed with maximum process signal input

SPEED RANGE
- 20:1 motor dependent

Standard Models and Descriptions

115 VAC input	230 VAC input	Model number	Description	Approx. Shpg. Wt.	Dim.	Conn.
1/4 - 1 HP	1/2 - 2 HP	BDP402-000	Chassis Only, basic model	8 lbs.	Fig. D.1	Fig. D.5
-	1/2 - 5 HP	BDP405-000	Chassis Only, basic model	20 lbs.	Fig. D.3	Fig. D.6
1/4 - 1 HP	1/2 - 2 HP	BDP402-E00	NEMA 12 Enclosed Model with Power On/Off Switch	15 lbs.	Fig. D.2	Fig. D.5
-	1/2 - 5 HP	BDP405-E00	NEMA 12 Enclosed Model with Power On/Off Switch	30 lbs.	Fig. D.4	Fig. D.6
1/4 - 1 HP	1/2 - 2 HP	BDP402-E0C	NEMA 12 Enclosed Model with Speed Pot, Start PB, Stop PB, Jog PB and Power On/Off Switch	15 lbs.	Fig. D.2	Fig. D.5
-	1/2 - 5 HP	BDP405-E0C	NEMA 12 Enclosed Model with Speed Pot, Start PB, Stop PB, Jog PB and Power On/Off Switch	30 lbs.	Fig. D.4	Fig. D.6
1/4 - 1 HP	1/2 - 2 HP	BDP402-0B0	Run-Brake Model Chassis Only	8 lbs.	Fig. D.1	Fig. D.5
-	1/2 - 5 HP	BDP405-0B0	Run-Brake Model Chassis Only	20 lbs.	Fig. D.3	Fig. D.6
1/4 - 1 HP	1/2 - 2 HP	BDP402-EB0	NEMA 12 Enclosed Run-Brake Model withPower On/Off Switch	15 lbs.	Fig. D.2	Fig. D.5
-	1/2 - 5 HP	BDP405-EB0	NEMA 12 Enclosed Run-Brake Model withPower On/Off Switch	30 lbs.	Fig. D.4	Fig. D.6
1/4 - 1 HP	1/2 - 2 HP	BDP402-EBC	NEMA 12 Enclosed Run-Brake Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch	15 lbs.	Fig. D.2	Fig. D.5
-	1/2 - 5 HP	BDP405-EBC	NEMA 12 Enclosed Run-Brakel with Model with Start PB, Stop PB, Jog PB, Speed Pot and Power On/Off Switch	30 lbs.	Fig. D.4	Fig. D.6

Dimensions

2HP Chassis Models

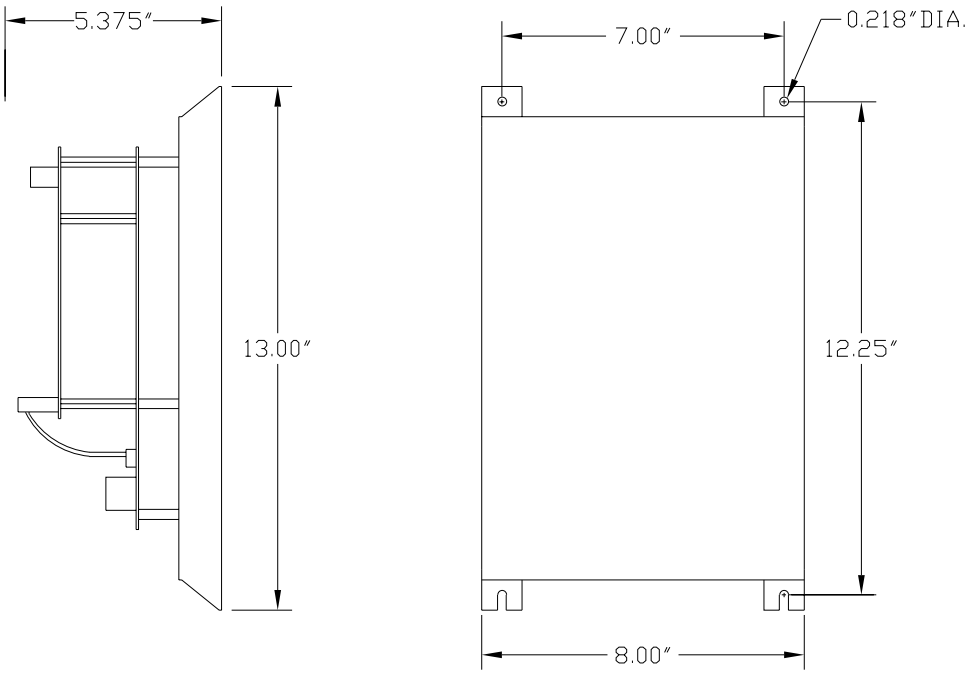

Fig. D.1

2HP Enclosed Models

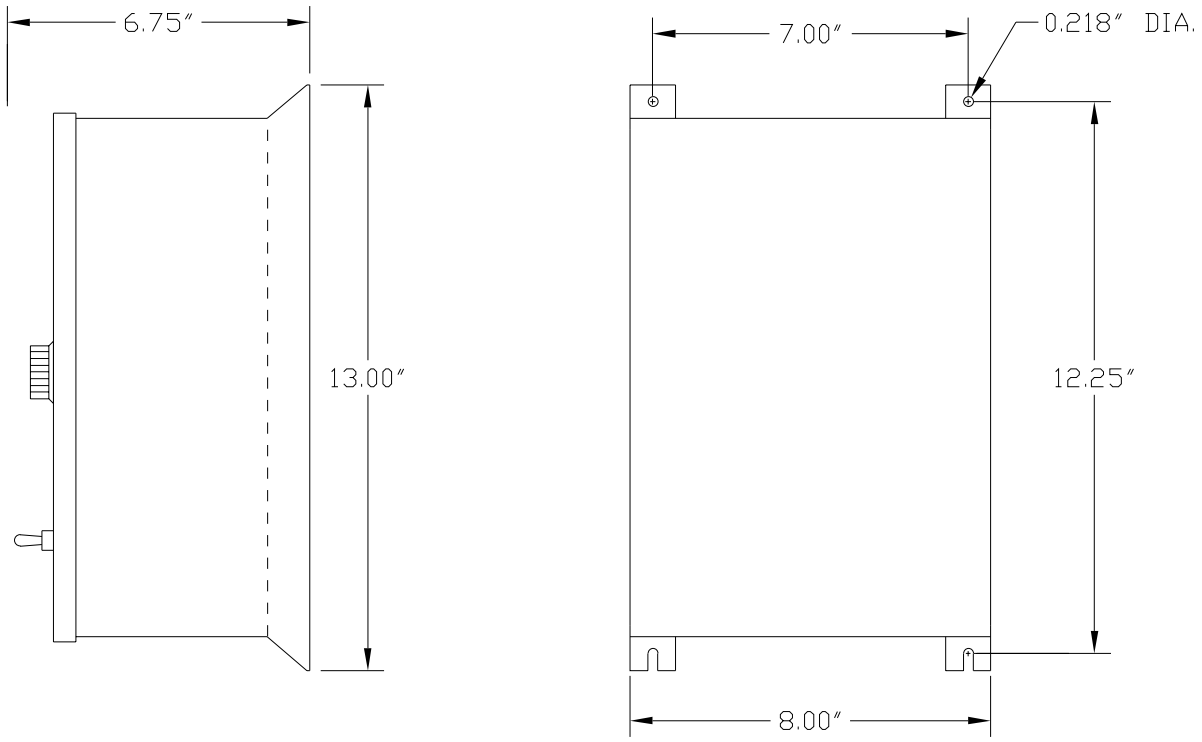

Fig. D.2

5 HP Chassis Models

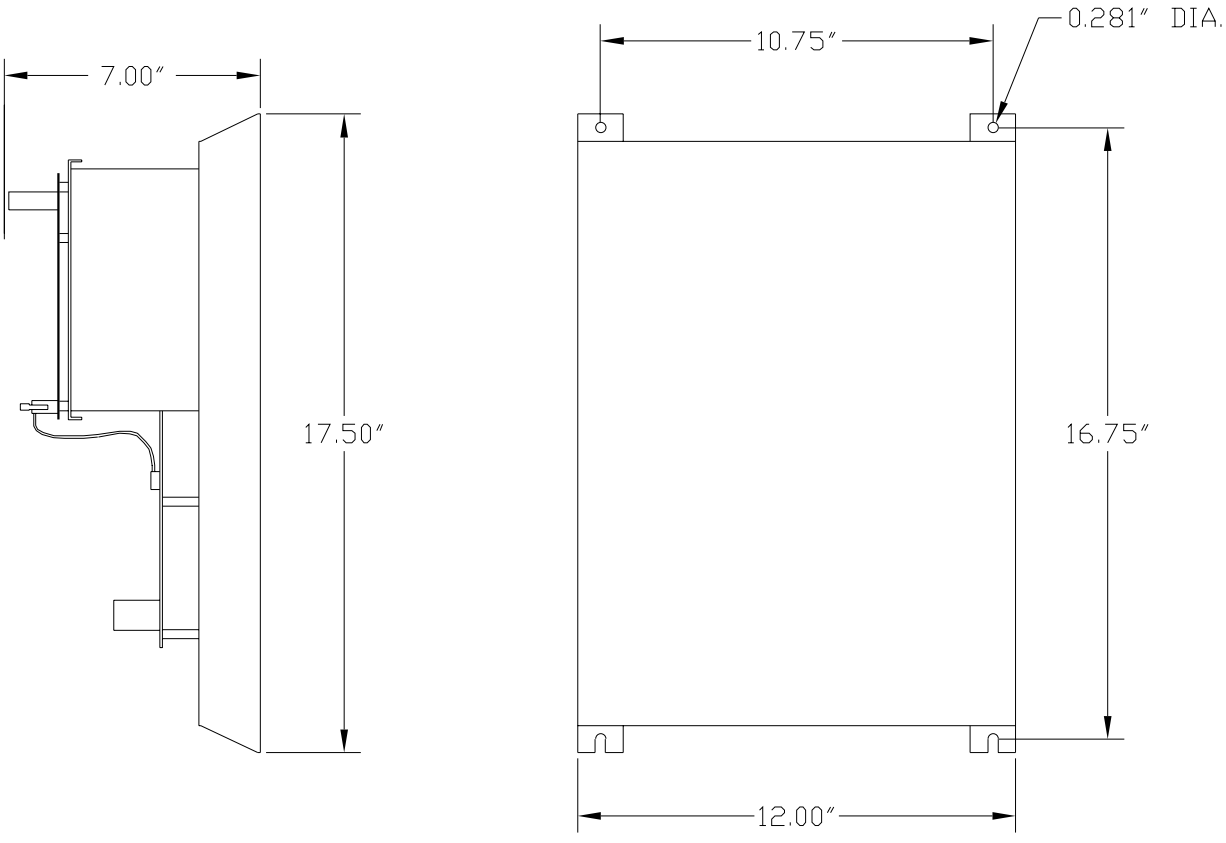

Fig. D.3

Dimensions

5 HP Enclosed Models

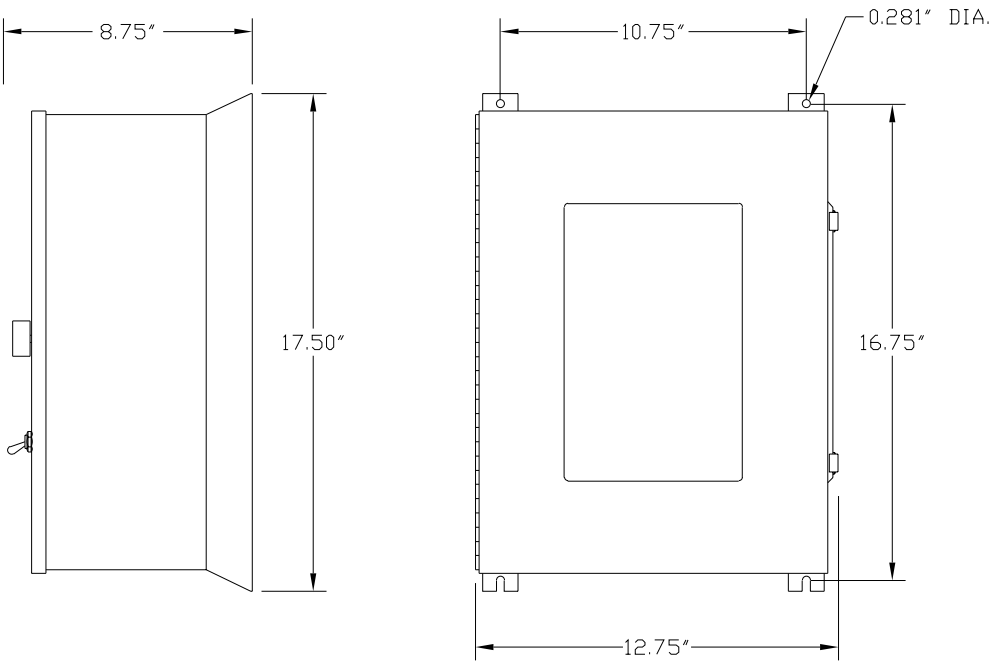

Fig. D.4

Connections

2 HP Models

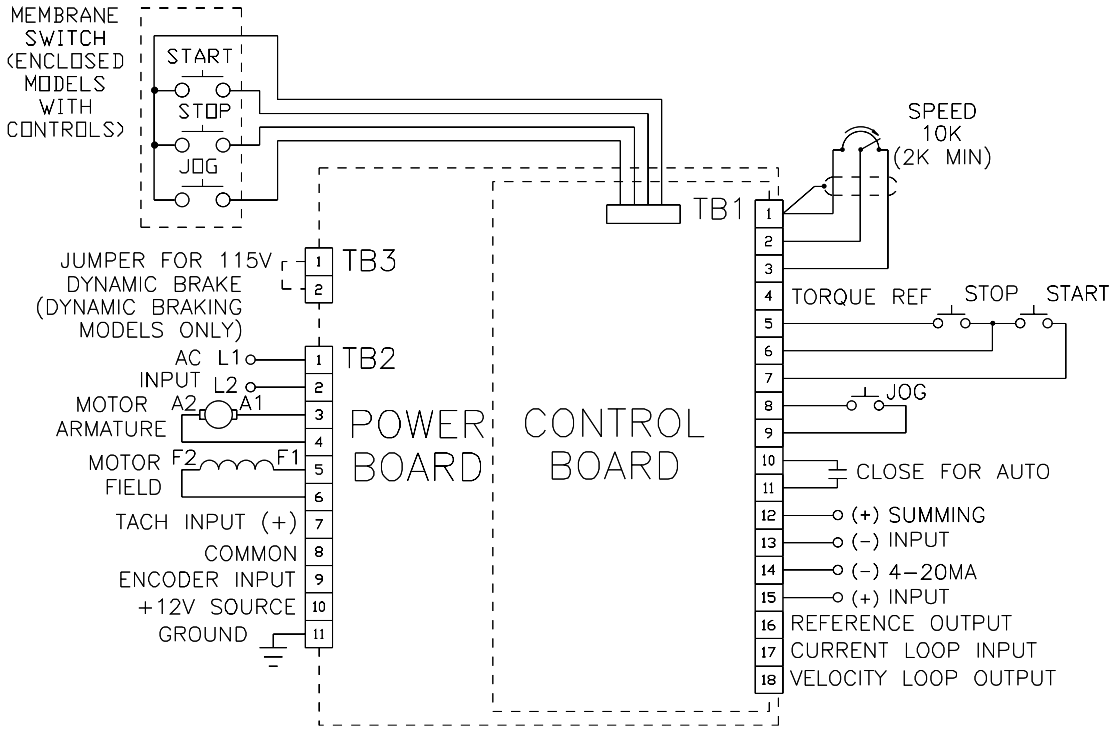

Fig. D.5

5 HP Models

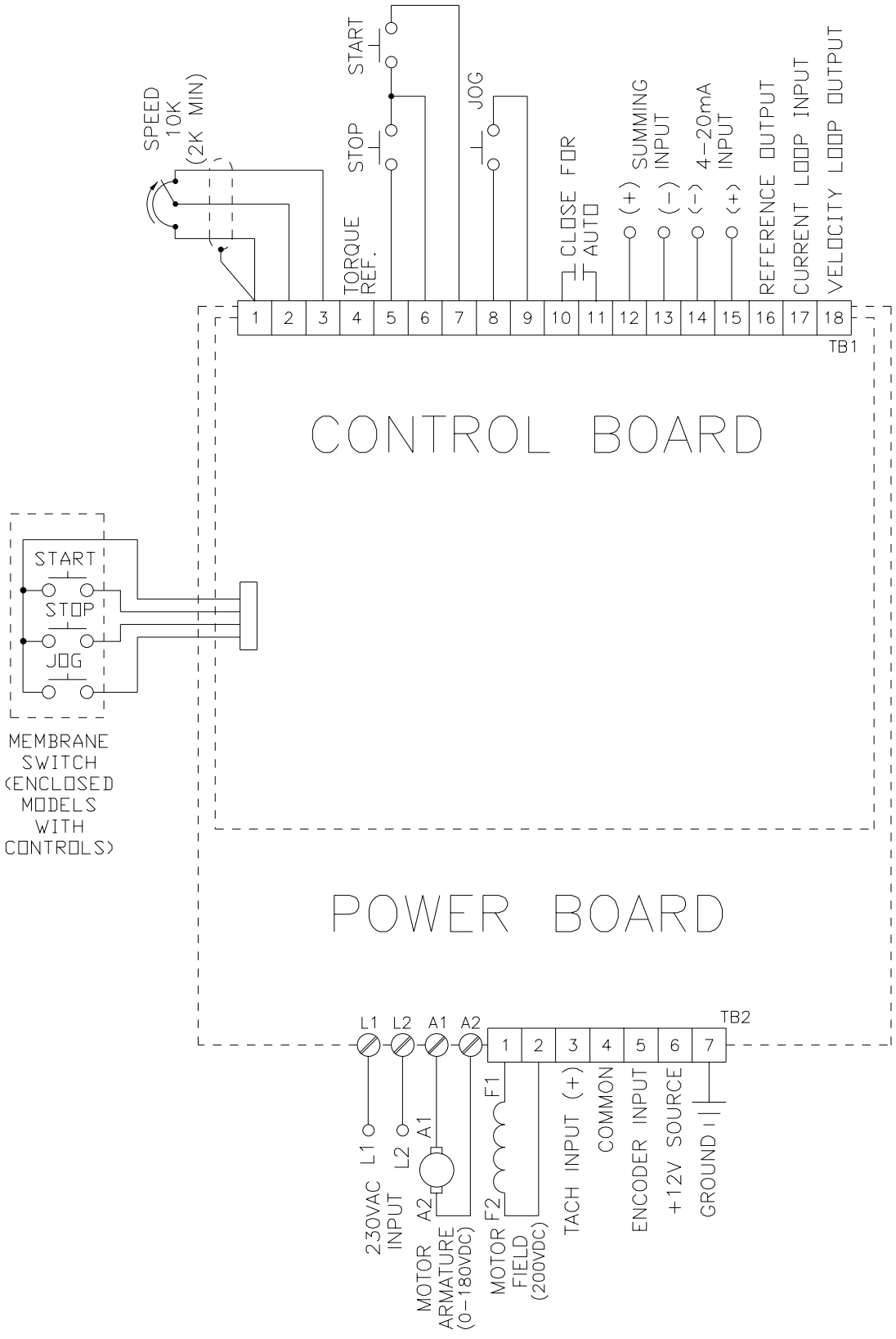

Fig. D.6