

ADP100

Series 1/4-5 HP Non-Regenerative DC Motor Controls

General Description

The Adaptable Drive Package ADP100 Series of D.C. motor controls provides a full range of speed and torque control for 1/4 - 5 HP shunt wound and permanent magnet D.C. motors. Designed for quality and performance, these drives are targeted for the OEM and Panel Builder to meet their system requirements. Two units cover the full horsepower range.

The NEMA type K single phase power bridge is precisely controlled to give the best in speed and torque regulation. Quality components, conservative heat sinking, inner current loop design, unique high frequency gating, and modular construction all combine to produce dependability, simplified installation, and competitive pricing.

The Adaptable Drive Package ADP100 Series of D.C. motor controls are also offered in models for Run-Brake and Contactor Reversing operation. Six models in two physical sizes cover a horsepower range from 1/4 to 5 HP.

Each model is supplied chassis-only complete with an ADP102 or ADP105 motor control installed on the option chassis. In each horse-power range, the Run-Brake models are physically interchangeable with the Contactor Reversing models



Standard Features

- Common control board for both models
- Low profile chassis design
- Independently adjustable linear ACCEL and DECEL
- A single ENABLE input for start and stop
- Inner current loop for fast stable response to changing load conditions
- Metal film resistors and cermet pots. for temperature stability
- Transformer power supply with IC regulators
- High frequency multi-pulse gating for reliable control at high speeds
- Wide range of resistance for speed potentiometer
- Independent MIN and MAX speed adjustments
- Adjustable current limit
- Adjustable IR compensation
- 110 quick connect terminals for test points and circuit access
- Snubber and line MOV for transient protection
- 50 or 60 Hz operation
- Electrically isolated SCR power bridge allows chassis to serve as heat sink
- Easy conversion from speed to torque regulator for versatility of application
- +10 VDC reference input for full speed

Specifications

A.C. INPUT

115 VAC \pm 10%, 50/60 HZ \pm 2 HZ (ADP102 only)
230 VAC \pm 10%, 50/60 HZ \pm 2 HZ

HORSEPOWER RANGE

Model ADP102: 1/4 - 1 HP @ 90 VDC 1/2 - 2 HP @ 180 VDC
Model ADP105: 3 - 5 HP @ 180 VDC

ARMATURE OUTPUT

Model ADP102: 0- 90 VDC @ 11 amps continuous
0- 180 VDC @ 11 amps continuous
Model ADP105: 0- 180 VDC @ 25 amps continuous

FIELD OUTPUT

100 VDC @ 1 amp max. for 115 VAC input
200 VDC @ 1 amp max. for 230 VAC input

SPEED REGULATION

Armature feedback: \pm 2.0% of base speed
Tachometer feedback: \pm 0.5% of base speed

TORQUE REGULATION

\pm 2% of range selected

TACHOMETER FEEDBACK

7 VDC/1000 RPM tach with 1750 base speed motor

AMBIENT TEMPERATURE

Chassis model: 0 to 55 degrees C
Enclosed model: 0 to 40 degrees C

ADJUSTMENTS

Minimum:
0 to 25% of speed (speed mode)
0 to 10% of rated current (torque mode)

Maximum:

-20 to +10% of base speed (speed mode)
-20 to +10% of rated current (torque mode) IR

Compensation:

Range set by current range jumper

Current limit:

0 to 150% of current range

ACCEL AND DECEL:

Linear, independently adjustable 2 ranges,
1 - 5 sec. or 4 - 40 sec

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	ADP102-000	Chassis Only, Basic model	3 lbs.	Fig. C.1	Fig. C.7
-	3 - 5 HP	ADP105-000	Chassis Only, Basic model	8 lbs.	Fig. C.2	Fig. C.8
1/4 - 1 HP	1/2 - 2 HP	ADP102-E01	NEMA 1 Enclosed Motor Control with Speed Pot, Line Fuses, and Power On/Off Switch	17 lbs.	Fig. C.5	Fig. C.7
-	3 - 5 HP	ADP105-E02	NEMA 1 Enclosed Motor Control with Speed Pot, Line Fuses, and Power On/Off Switch	38 lbs.	Fig. C.5	Fig. C.8
1/4 - 1 HP	-	ADP102-BC1	Run-Brake Model Chassis Only	10 lbs.	Fig. C.3	Fig. C.9
-	1/2 - 2 HP	ADP102-BC2	Run-Brake Model Chassis Only	11 lbs.	Fig. C.3	Fig. C.9
-	3 - 5 HP	ADP105-BC2	Run-Brake Model Chassis Only	17 lbs.	Fig. C.4	Fig. C.11
1/4 - 1 HP	-	ADP102RC1	Contacting Reversing with D. B. Model, Chassis Only	11 lbs.	Fig. C.3	Fig. C.10
-	1/2 - 2 HP	ADP102-RC2	Contacting Reversing with D. B. Model, Chassis Only	12 lbs.	Fig. C.3	Fig. C.10
-	3 - 5 HP	ADP105-RC2	Contacting Reversing with D. B. Model, Chassis Only	17 lbs.	Fig. C.4	Fig. C.12

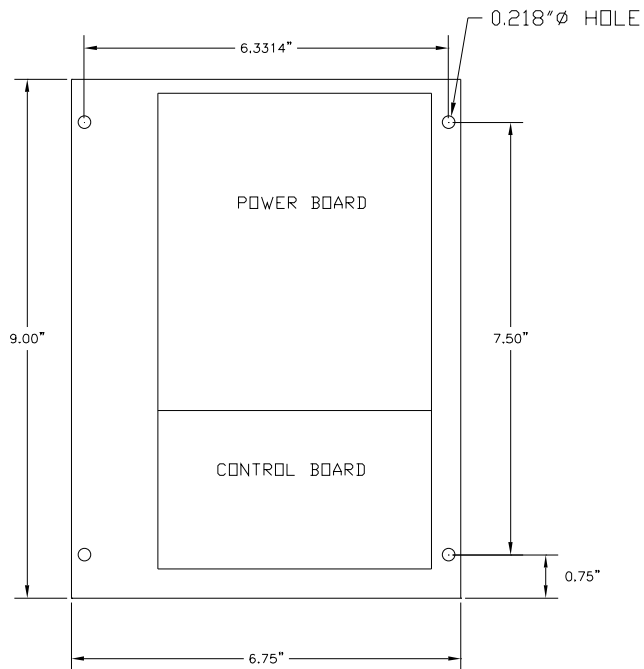
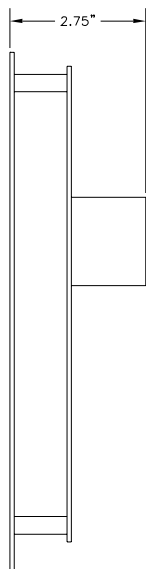
Options for ADP100 Motor Controls

Option Number	Description	Compatible with these Models	Approx. Shpg. Wt.	Dim.	Conn.
ADP100-000	Torque/Taper Option Card	All ADP100 Series	1 lbs.	Fig. C.6	Fig. C.13
ADP100-E10	NEMA 1 Enclosure Option, No Operators	ADP102-BC1, ADP102-BC2 ADP102-RC1, ADP102-RC2	22 lbs.	Fig. C.5	Fig. C.9 Fig. C.10
ADP100-E11	NEMA 1 Enclosure Option with Start, Stop, and Speed Pot	ADP102-BC1, ADP102-BC2	23 lbs.	Fig. C.5	Fig. C.9
ADP100-E12	NEMA 1 Enclosure Option with Forward, Stop, Reverse and Speed Pot	ADP102-RC1, ADP102-RC2	23 lbs.	Fig. C.5	Fig. C.10
ADP100-E20	NEMA 12 Enclosure Option, No Operators	ADP102-BC1, ADP102-BC2 ADP102-RC1, ADP102-RC2	33 lbs.	Fig. C.	Fig. C.9 Fig. C.10
ADP100-E21	NEMA 12 Enclosure Option with Start, Stop and Speed Pot	ADP102-BC1, ADP102-BC2	34 lbs.	Fig. C.5	Fig. C.9
ADP100-E22	NEMA 12 Enclosure Option with Forward, Stop, Reverse and Speed Pot	ADP102-RC1, ADP102-RC2	34 lbs.	Fig. C.5	Fig. C.10
ADP100-E30	NEMA 1 Enclosure Option No Operators	ADP105-BC2, ADP105-RC2	35 lbs.	Fig. C.5 Fig. C.12	Fig. C.11
ADP100-E31	NEMA 1 Enclosure Option with Start, Stop, and Speed Pot	ADP105-BC2	36 lbs.	Fig. C.5	Fig. C.11
ADP100-E32	NEMA 1 Enclosure Option with Forward, Stop, Reverse and Speed Pot	ADP105-RC2	36 lbs.	Fig. C.5	Fig. C.12
ADP100-E40	NEMA 12 Enclosure Option, No Operators	ADP105-BC2, ADP105-RC2	45 lbs.	Fig. C.5	Fig. C.11
ADP100-E41	NEMA 1 Enclosure Option with Start, Stop, and Speed Pot	ADP105-BC2	46 lbs.	Fig. C.5	Fig. C.11
ADP100-E42	NEMA 1 Enclosure Option with Forward, Stop, Reverse and Speed Pot	ADP105-RC2	46 lbs.	Fig. C.5	Fig. C.12

Note: Options may be mounted and wired to standard models if specified at time of order.

Dimensions

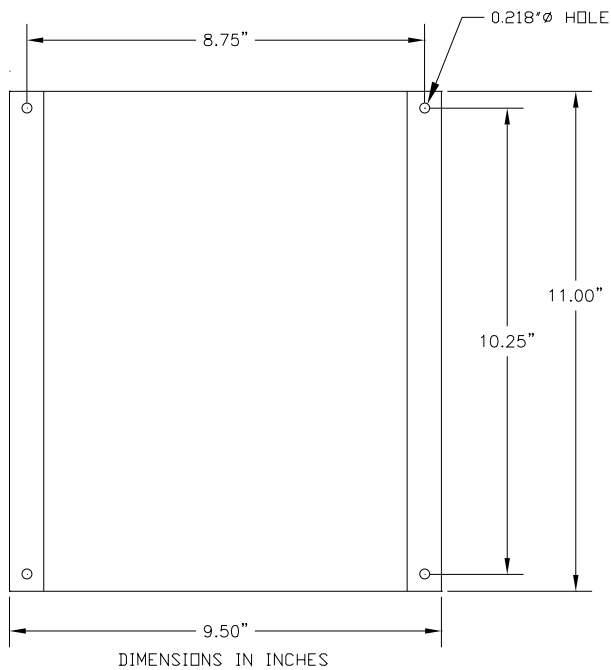
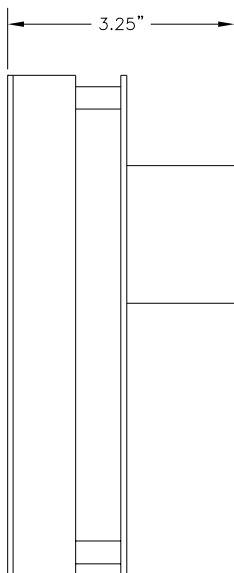
ADP102-000



DIMENSIONS IN INCHES

Fig. C.1

ADP105-000



DIMENSIONS IN INCHES

Fig. C.2

Dimensions

ADP102 Contactor Models

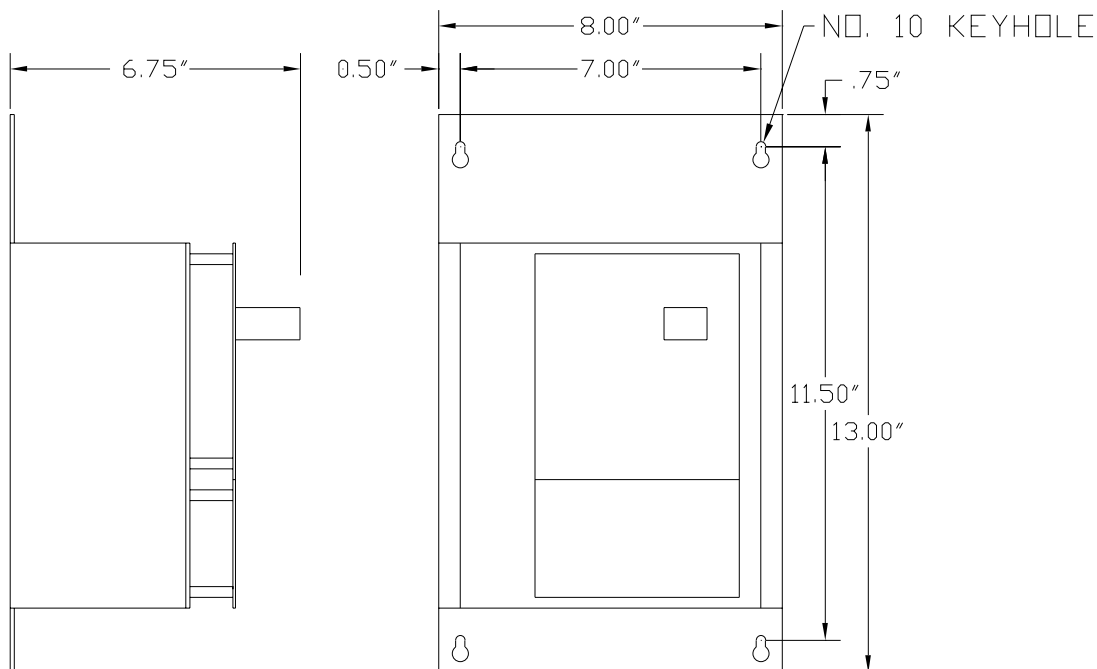


Fig. C.3

ADP105 Contactor Models

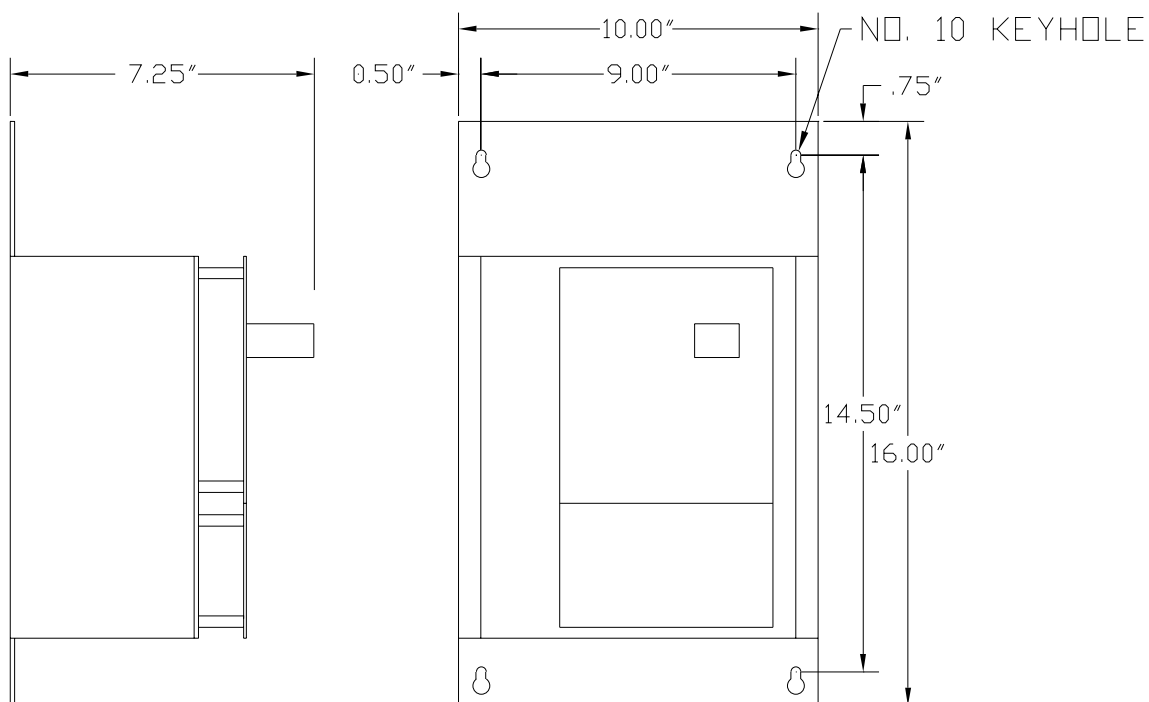


Fig. C.4

Dimensions

Enclosure Options

DIMENSION CHART						
MODEL NUMBER	A	B	C	D	E	F
E01	9	13	6	6.00	14.00	0.31
E02	16	18	9	10.00	19.00	0.43
E10,E11,E12	12	16	9	9.00	17.00	0.43
E20	16	20	9.5	10.00	21.25	0.44
E21,E22	16	20	11	10.00	21.25	0.44
E30,E31,E32	16.2	20.1	10	11.00	21.00	0.43
E40	20	24	9.5	14.00	25.25	0.44
E41,E42	20	24	11	14.00	25.25	0.44

ALL DIMENSIONS IN INCHES

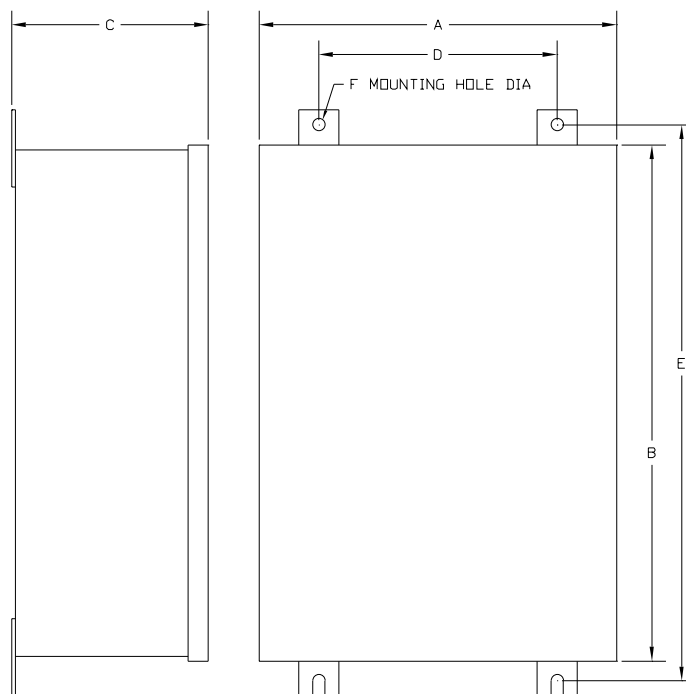


Fig. C.5

Torque/Taper Option

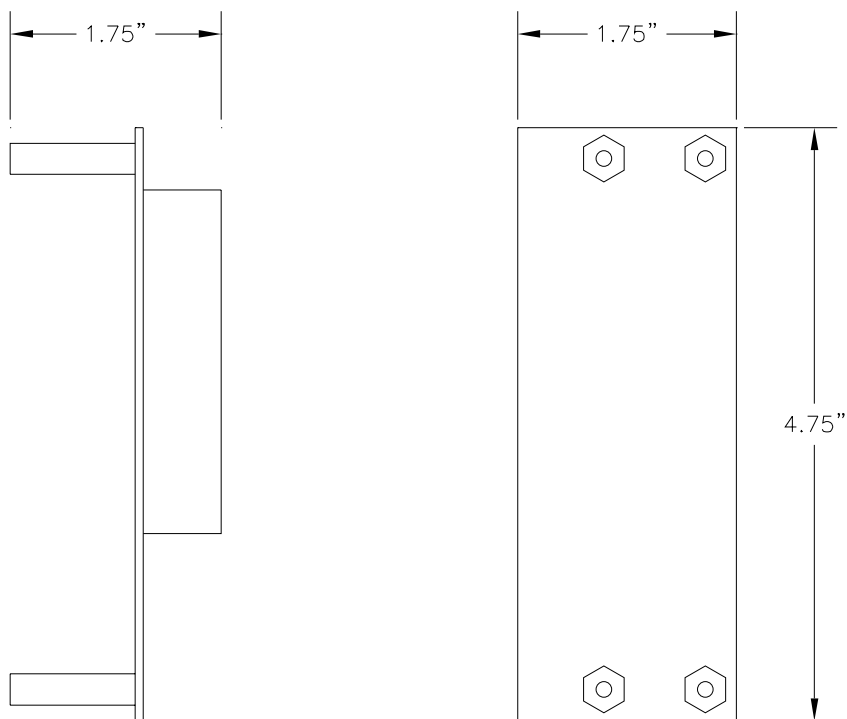
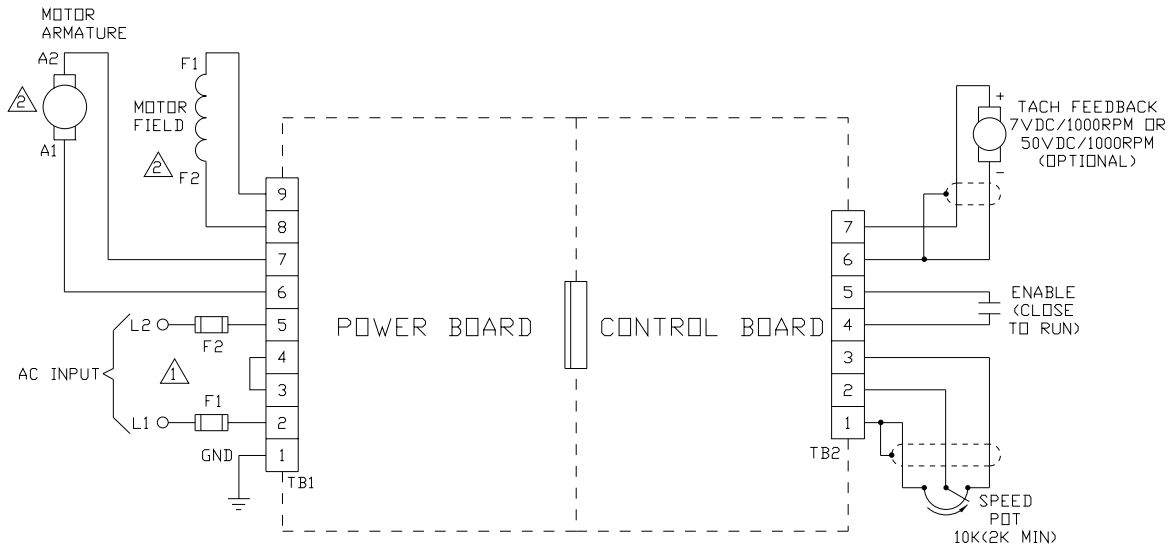


Fig. C.6

Connections

ADP102-000



NOTES:

- ⚠ CONNECTIONS SHOWN FOR 230VAC. FOR 120VAC, REMOVE JUMPER 3 TO 4 & JUMPER 3 TO 2 & 4 TO 5. ALSO MOVE J1 FROM 230 TO 115. FUSE PER MANUAL.
- ⚠ USE PROPER MOTOR RATING PER CHART:

INPUT	RANGE	ARMATURE	FIELD
115VAC	1/4-1 HP	0-90VDC	100VDC
230VAC	1/2-2 HP	0-180VDC	200VDC

Fig. C.7

ADP105-000

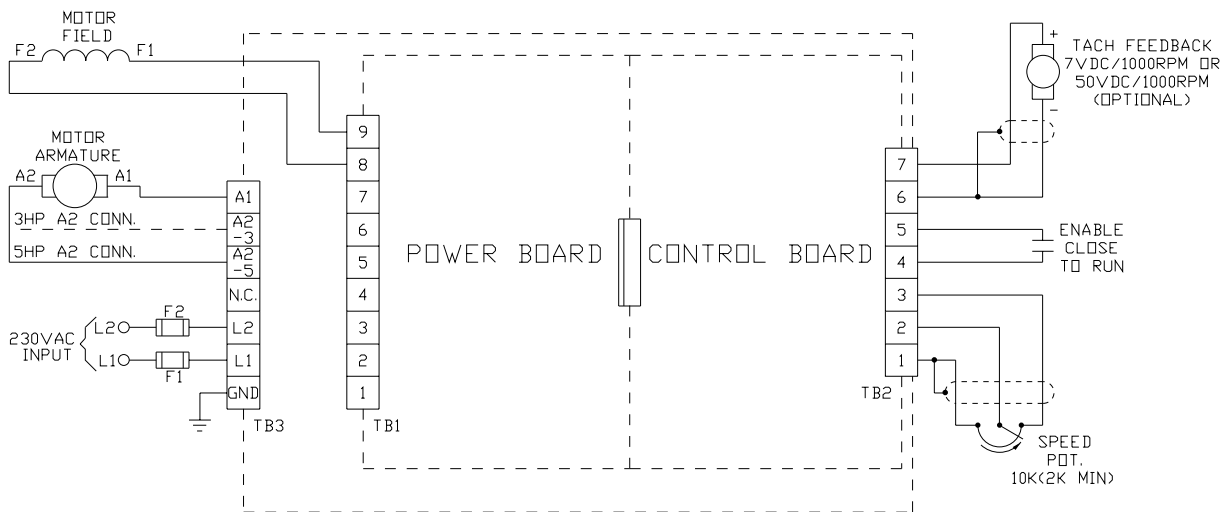


Fig. C.6

ADP102 Run/Brake Models

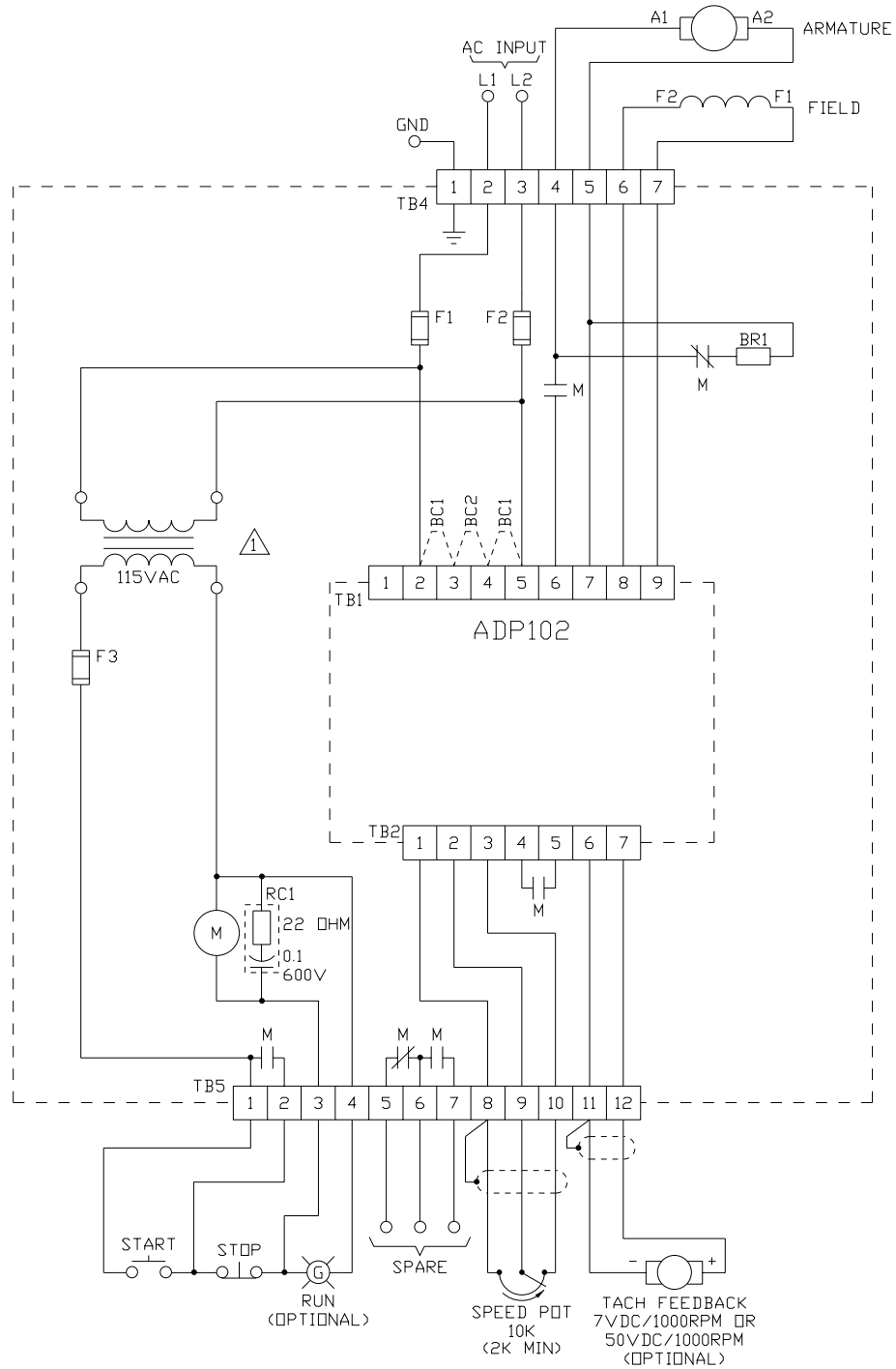


Fig. C.9

Connections

ADP105-RC2

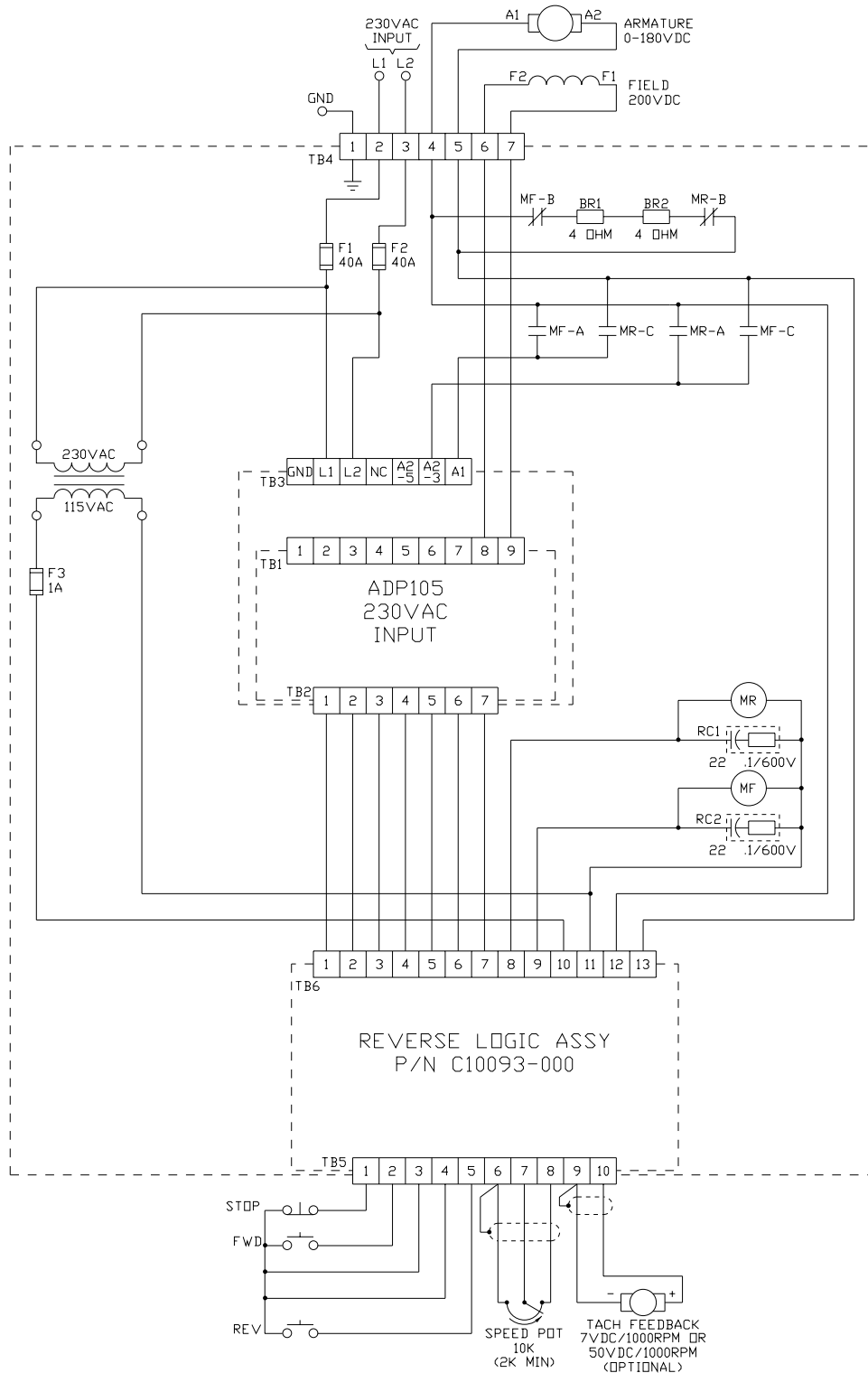


Fig. C.12

Torque/Taper Option

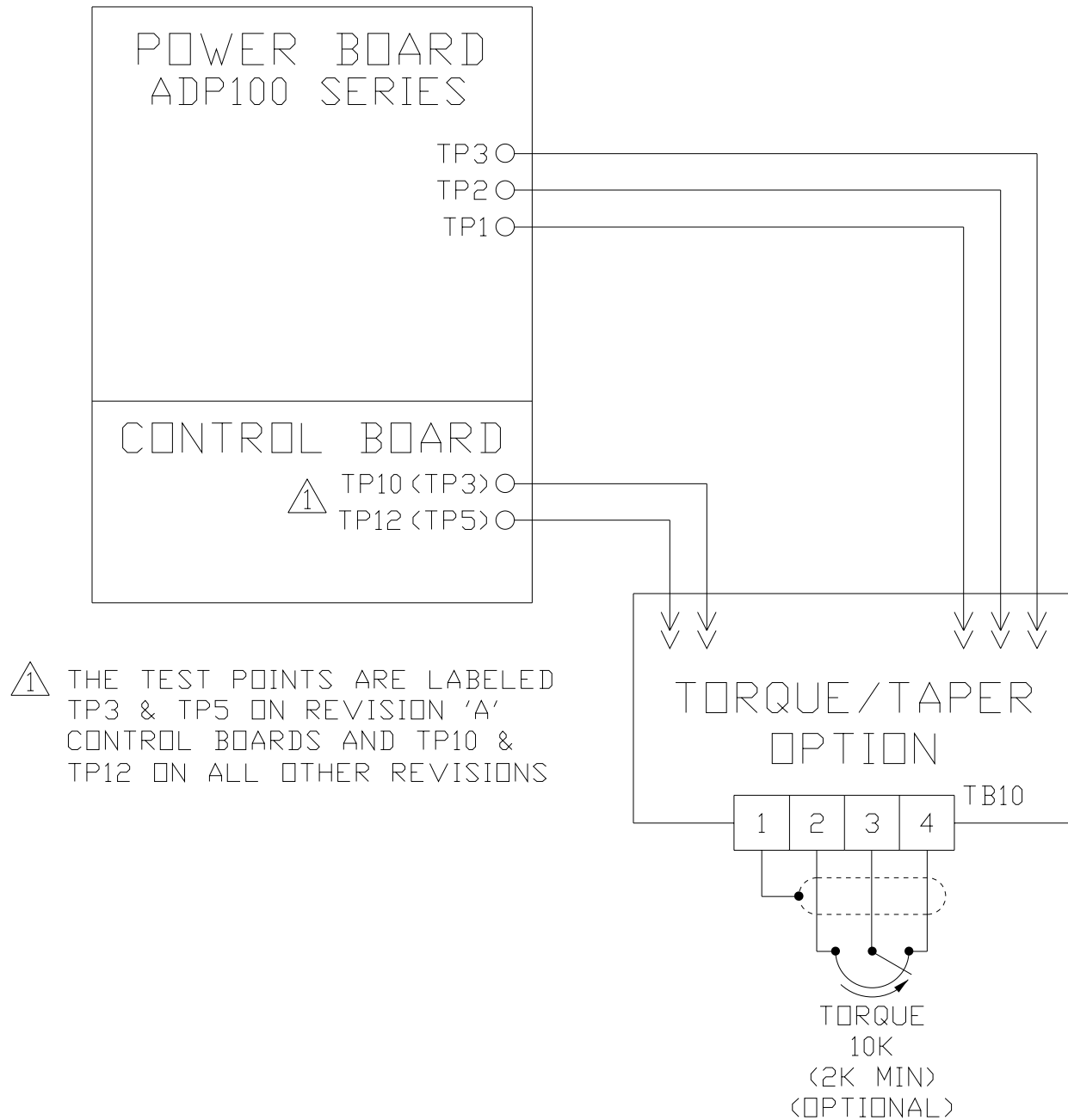


Fig. C.13