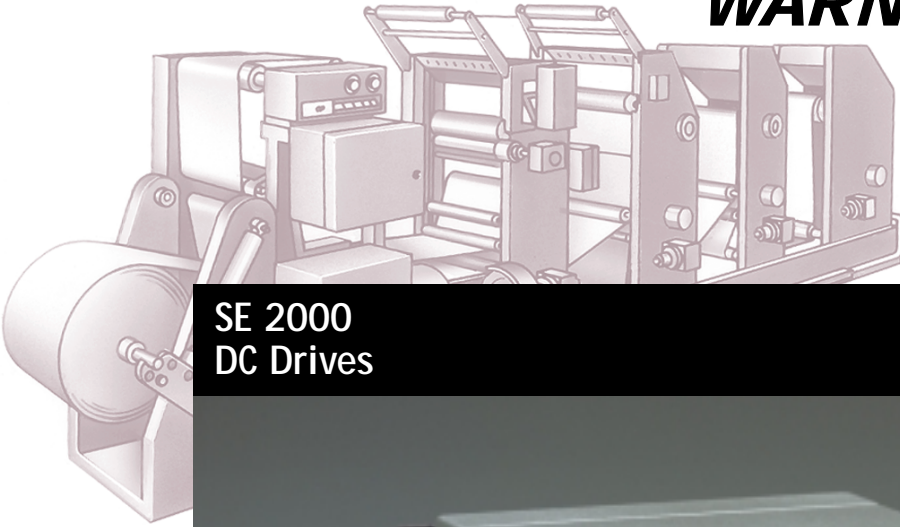
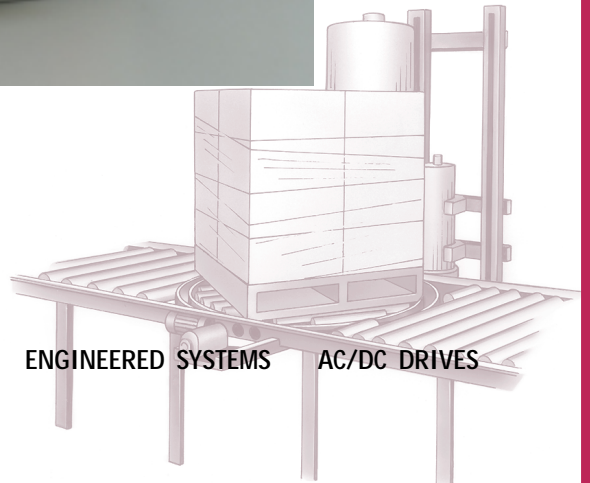
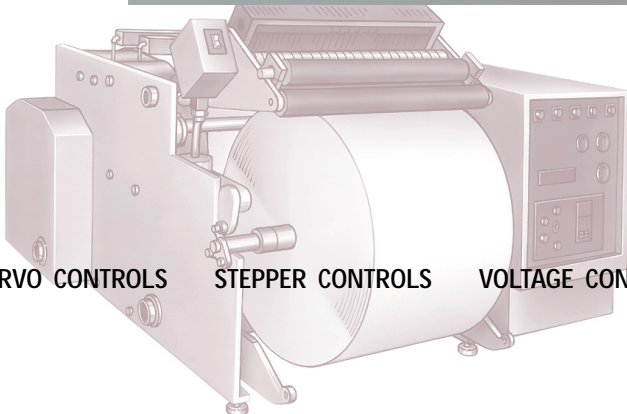


WARNER ELECTRIC®



SE 2000
DC Drives



SERVO CONTROLS

STEPPER CONTROLS

VOLTAGE CONDITIONING

ENGINEERED SYSTEMS

AC/DC DRIVES

People Finding A Better Way®

ADDITIONAL WARNER ELECTRIC DC DRIVES & CONTROLS



BRONCO® II and Washdown Series DC Drives

Designed for tough rugged applications, BRONCO® II DC Drives feature speed regulation $\pm 0.5 - 1\%$, dual voltage input (115/230 VAC), output 90 or 180 VDC, $\frac{1}{4}$ to 2 HP, circuit protection, torque control, local or remote operator control, open chassis, field programmable jumpers, control relay with 3-wire start/stop circuit, jog at potentiometer speed, cast aluminium enclosure – NEMA 4, NEMA 12, and NEMA 4X. Maximum and minimum speed adjustments.



QUADRALINE 7000 DC Drives

Designed for full wave, regenerative applications, the Quadraline 7000 is designed for either permanent magnet or wound field DC motors from $\frac{1}{4}$ to 5 HP. It features fullwave 4-quadrant operation, seven selectable performance features, electronic reversing and seven control adjustments, positioning accuracy. Chassis or NEMA 4/12 enclosures available and UL listed.



M4000 Digital 3-Phase DC Drives

The M4000 Series Digital 3-Phase DC Drive is a programmable, microprocessor based variable speed DC drive. It allows keypad control of each parameter. Digital readout provides on-line monitoring of drive operation. Ideal for many drive applications including wire and cable, packaging/converting, machinery and material handling. Improved circuit board technology has added standard features, including serial communications and a field-weakening controller for constant power and extended speed range applications.



DS9000 Digital Drive Speed Controller

The DS9000 Digital Speed Controller features long term speed accuracy, control and stability. It offers 16-bit microprocessor based, AC or DC drive control, $\pm .01\%$ accuracy, digital master or follower, analog or digital input, and two selectable sets of programmable parameters. Front panel controls include a 4-digit LED readout, keypad controls and four LED status indicators.

***Contact Warner Electric for information on our complete line of AC Drives.**

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Features and Benefits

Standard Features

SE2000 series

Non-regenerative, DC drives are designed to control shunt wound or permanent magnet field DC motors from 1/4 to 5 HP.

Isolation


Isolated 4–20mA or 0–10 VDC control signal. Control circuit is isolated from main circuit potential for improved safety and use in multi-motor systems.

Tachometer generator feedback

For improved speed regulation, unit will accept feedback from an analog tach generator or digital pulse tach generator or magnetic pickup.

Full wave power conversion circuit with two SCR's and three diodes providing NEMA Code K, DC armature supply insures optimum motor performance, cooler motor operation and longer life.

 Listed

 Listed for use in Canada

Circuit protection

Transient voltage protection by MOV. All models except Power Unit have AC circuit breaker for line protection.

Chassis unit

Dead front and back construction. Hinged cover provides easy access to all components.

Jog

Jog at separately adjustable speed.

Diagnostic Status

- Power on LED
- Trip LED
- Torque Limit LED
- Run LED
- Field Loss LED

Torque and Slope Control

Precise setting of motor torque and slope control to give increasing torque/decreasing speed characteristic above fixed torque limit for simple center winder applications.

Control relay with three wire Start/Stop circuit. All models have control relay to prevent automatic restart after power outage for increased safety (may be reconnected for line start operation if required).

Field Supply with Field Loss Circuit.

Overcurrent Protection

Timed overcurrent trip circuit for motor protection.

AC Supply Frequency

- Allows drive to be operated on 50 Hz or 60 Hz supply.
- Enclosed models meet NEMA 4/12 specifications.



Selectable Programming

Jumper selectable to program drives for specific motor or application:

Voltage

Selects 115 or 230 VAC supply
Armature voltage 90 or 180 VDC

Current Scaling

Selects 5 current ranges of motor HP

Acceleration/Deceleration Time

Selects range of adjustment control to 30 seconds

Torque or Speed Control

Selects mode of either motor speed or motor torque controlled by operator's potentiometer

Overcurrent Trip

Timed, instantaneous or disabled

- 1.0 seconds
- 60 seconds
- No trip

Field Loss Protection

For shunt wound motors

Internal/External Pre-Set Jog

Allows jog speed to be set internally or externally

Motor Speed Regulating Feedback

- By armature voltage; $\pm 2\%$ speed regulation
- By 7 VDC/1000RPM analog tachometer; $\pm 0.5\%$ speed regulation
- By 50 VDC/1000RPM analog tachometer; $\pm 0.5\%$ speed regulation
- By 60 PPR digital tachometer, $\pm 0.5\%$ speed regulation
- By 120 PPR digital tachometer, $\pm 0.5\%$ speed regulation

Adjustments

Customer adjustments match control to application.

Maximum Speed

Limits speed available to operator

Minimum Speed

Minimum motor speed

IR Compensation

Improves motor speed regulation in armature feedback mode

Acceleration

Sets time to reach full speed

Deceleration

Sets time to decelerate to zero speed

Torque

Sets motor torque available (current limit)

Slope

Produces increasing torque as speed decreases

Jog

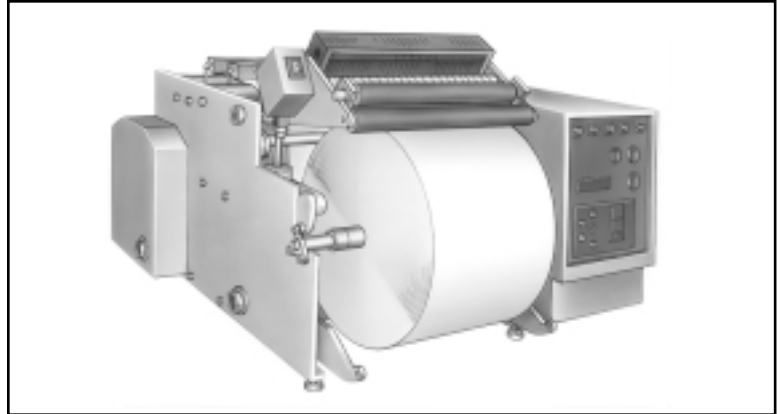
Sets separate jog speed

Features and Benefits

Applications

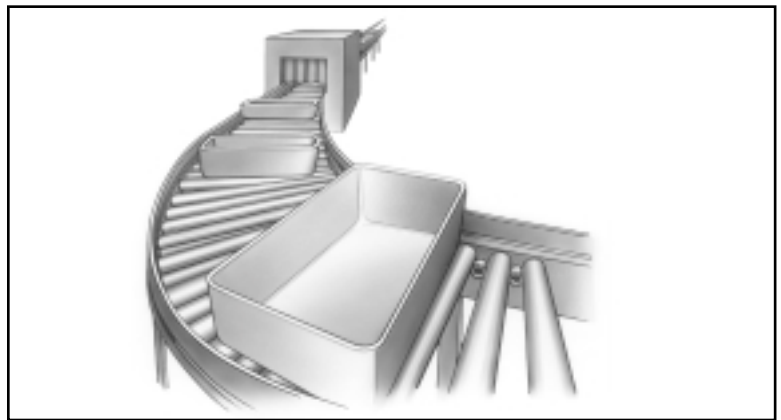
Winders

- Torque control
- Smooth, adjustable acceleration rate
- Slope Adjustment
- Provides constant tension



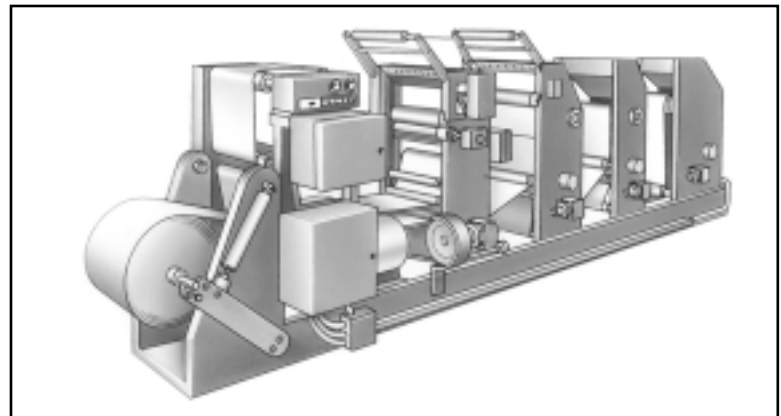
Conveyors

- Controlled stops and rapid braking
- Bi-directional control
- Remote control



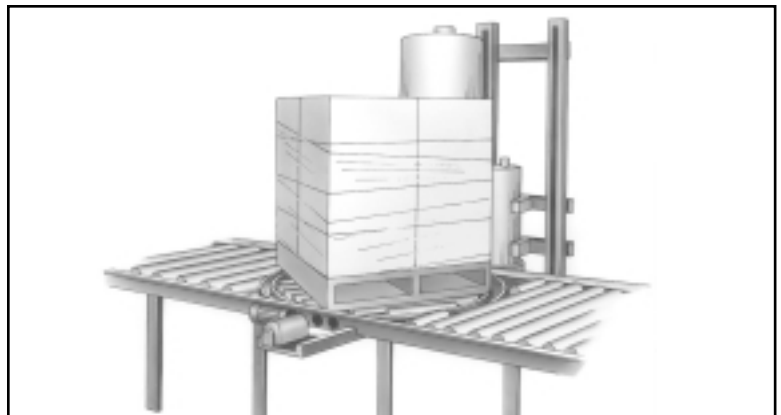
Printing Presses

- Dynamic braking
- Controlled adjustable acceleration and deceleration
- Automatic or manual speed control.



Stretch Wrap Machines

- Torque control
- Speed control
- Local or remote operation



Models

Power Unit

Consists of control board, SCR power bridge, and terminals.

Basic On-Off

Power Unit with single pole AC line circuit breaker. Two pole breaker is standard on all 3–5 HP models and all enclosed models.

Run-Brake Model

Models include motor contactor and dynamic braking.

Reversing-Brake

Models include forward and reversing contactors with anti-plugging and dynamic braking.

Options

2 Pole Circuit Breaker

Enables both input lines to be disconnected. Required by some local Electrical Codes (std. on 3 & 5 HP models and on all enclosed units).

Enhanced Process Follower

Speed control by external signal, 4–20mA, 10–50mA, 0–14 VDC, 0–100 VDC.

Digital Signal Follower

Speed control by external digital pulse signal from MTK magnetic pick-up, Hall Effect sensor or encoder.

Controlled Deceleration Stop

Drive follows deceleration ramp on Stop command. Two stopping modes are available—Ramp or Dynamic Braking if additional Stop button is used.

Fault Module

Shuts down drive and provides output signal if Tach Loss, Field Loss or Overcurrent failures occur.

External Torque/Slope

Allows the motor torque and slope control to be externally adjusted.

Performance Characteristics

Speed Range	30:1 (arm fdbk) 50:1 (tach fdbk)
Speed Regulation (As % of motor base speed) for 95% load change	
Armature Voltage	± 2%
Tachometer Feedback	± 0.5% (depending on tach generator)
Acceleration/Deceleration	
Range A	By current limit
Range B	3–30 seconds
Range C	0.3–3 seconds

Operating Conditions

Ambient Temperature	
Chassis Model	55°C
Enclosed Model	40°C
Relative Humidity	95% non condensing
Altitude	To 3300 ft. (1000m)

Adjustments

Current Range (Torque)	15–150%
Maximum Speed	70–105% of motor base speed
Acceleration	0.3 to 30 seconds
Deceleration	0.3 to 30 seconds
Minimum Speed	0–30% of motor base speed
Preset Jog	0–100% of motor base speed
IR Compensation	Improves load regulation in armature feedback mode
Torque Slope	Increasing torque to decreasing speed relationship above a fixed torque limit

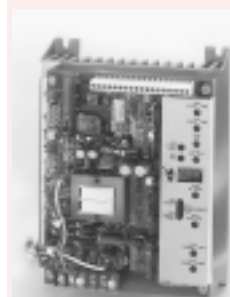
Ratings

Horsepower Range	
115 VAC	1/4–1 HP
230 VAC	1/2–5 HP in two models
AC Line Input Voltage	115 or 230 V ±10%
AC Line Frequency	50/60 Hz ± 2 Hz, Single Phase
DC Output Voltage	
115 VAC Supply	
Armature	0–90 VDC
Field	50/100 VDC
230 VAC Supply	
Armature	0–180 VDC
Field	100/200 VDC
Service Factor	1.0
Duty	Continuous
Max. Load Capacity	150% for 1 min.
Line Protection	Circuit Breaker (except Power Unit)
Speed Reference Signal Voltage	0–10 VDC
	4–20mA grounded or ungrounded
Feedback Signal	0–14 VDC from 7V/1000 tach generator
	0–85 VDC from 50V/1000 tach generator
	60 PPR from MTK magnetic pickup
	120 PPR from MTK magnetic pickup

Current Range

SE2002	2, 3, 4, 6, 10 amps DC nominal
SE2005	5, 7.5, 10, 15, 25 amps DC nominal

Specifications



SE2005



SE2102



SE2222



SE2342

How To Order

In determining the components that comprise a drive system, the following selections must be made for features and options.



1. DC Drive

- A. Select HP and AC input voltage.
- B. Select power unit, chassis or enclosed model. If enclosed model, determine if it will have a blank front cover or include operators controls.
- C. Select option boards to be included.



2. DC Motor

- A. With the AC input voltage selected in step 2, confirm motor voltages:

AC Input Voltage	Motor Voltage Arm/Field
115 VAC	90V Arm/100V Field
230 VAC	180V Arm/200V Field

- B. Select PM or shunt wound motor.
- C. Select enclosure type (TEFC or TENV), and C-Face.
- D. Add a tachometer if required.

4. Isolation Transformer

- A. Select the KVA of the transformer when required by adding the total HP of all drives to be used.
- B. Determine model number by selecting primary input voltage and secondary output voltage.

5. Options/Accessories

- A. Select options that will be required for your application. This could include speed and/or load meters.
- B. Options may be mounted by the factory or field installed.

Example:

A center driven winder requires a 3 HP DC Motor to provide a torque controlled wind with some taper. The user would like the operator control local with the motor control. His plant supply is 460 VAC.

Item	Qty	Part No.
1	1	SE2235
2	1	MOK2110100
3	1	Not required
4	0	TRS42-075
5	0	None required



3. Remote Operators Station (ROS)

- A. If a ROS is required, which operations are to be included.
- B. Select the NEMA rating of the enclosure.

Selection Information

Models	Input Line Voltage	HP	Model Numbers		
Power Unit Consists of control board SCR power bridge and terminals.	115 VAC 1 Phase 230 VAC	1/4–1 1/2–2	SE2002		
	230 VAC 1 Phase	3–5	SE2005		
			Chassis	NEMA 4/12	NEMA 4/12 with Operators
Basic On-Off Power Unit with single pole AC line circuit breaker.	115 VAC 1 Phase 230 VAC	1/4–1 1/2–2	SE2102	SE2122	SE2132
	230 VAC 1 Phase	3–5	SE2105	SE2125	SE2135
Run-Brake Model Models include motor contactor and dynamic braking, with AC line circuit breaker.	115 VAC 1 Phase 230 VAC	1/4–1 1/2–2	SE2202	SE2222	SE2232
	230 VAC 1 Phase	3–5	SE2205	SE2225	SE2235
Reversing-Brake Models include forward and reversing contactors with anti-plugging and dynamic braking, with AC line circuit breaker.	115 VAC 1 Phase 230 VAC	1/4–1 1/2–2	SE2302	SE2322	SE2342
	230 VAC 1 Phase	3–5	SE2305	SE2325	SE2345

Options

Description	Factory Installed M/N Suffix	Field Installed Kits M/N
2 Pole Circuit Breaker —Enables both input lines to be disconnected. Required by some local Electrical Codes.	-1*	SE2999-1*
Enhanced Processor Follower —Speed control by external signal, 4–20mA, 10–50mA, 0–14 VDC, 0–100 VDC.	-2**	SE2999-2**
Digital Signal Follower —Speed control by external digital pulse signal from magnetic pick-up, Hall Effect sensor, or encoder.	-3**	SE2999-3**
Controlled Decel Stop —Drive follows deceleration ramp on stop command.	-4**	SE2999-4**
Fault Module —Shuts down drive and provides output signal if tach loss, field loss or overcurrent failures occur.	-5**	SE2999-5**
External Torque/Slope —Allows the motor torque and slope control to be externally adjusted.	-6**	SE2999-6**

* This option applies to 2HP chassis models only

** Any two of these options may be applied to any model except power units

Notes:

- **standard features:** 3 wire start-stop logics, isolated input, 4–20mA/0–10 VDC control input, jumper selectable, internal/external jog, accel/ decel range, over current trip, field loss, analog or digital tachometer feedback, adjustable pre-set jog, accel, decel, min speed, max speed, IR comp, torque limit, torque slope, LED indication for field loss, run, power on, overcurrent trip, torque limit.
- **POWER UNIT:** Includes standard features only.
- **BASIC ON-OFF:** Includes standard features, chassis base and AC line circuit breaker.†
- **RUN-BRAKE:** Includes standard features, chassis base, armature contactor, dynamic braking and AC line circuit breaker.†
- **REVERSING-BRAKE:** Includes standard features, chassis base, forward and reverse armature contactors, anti-plug circuitry, dynamic braking and AC line circuit breaker.†
- **NEMA 4/12:** Enclosed units include door mounted AC line circuit breaker and power on indicator.†
- **NEMA 4/12 WITH OPERATOR CONTROL:** Enclosed units include door mounted AC line circuit breaker and power on indicator, start, stop, run/jog, auto/man, switches and speed potentiometer for the basic on-off or run-brake models; a forward start and reverse start function is included on reversing brake models.†

† Two pole breaker is standard on all 3–5 HP models and all enclosed models.

Options Enhanced Process Follower

1. General Description

The Enhanced Process Follower option module increases the SE 2000 following capacity by adding 0-14VDC, 10-50mA input signal capability as well as gain and zeroing adjustments and the ability to apply direct or inverse signals.

2. Specifications

- A. Input Signal:
 - 0-10 VDC DC, 4-20 mA DC input impedance 50 ohm
 - 0-14 VDC DC, 10-50 mA DC input impedance 20 ohm, 0-100 VDC
- B. Output Signal: 0-10 VDC

3. Input Connections

Connect input reference to TB5 with polarity as shown. Minimum voltage or current to TB5-1 and maximum voltage or current to TB5-2.

4. Jumper/Switch Selection

- A. Select correct switch position of SW2 for the input signal being used. All other switches must be in the OFF position.

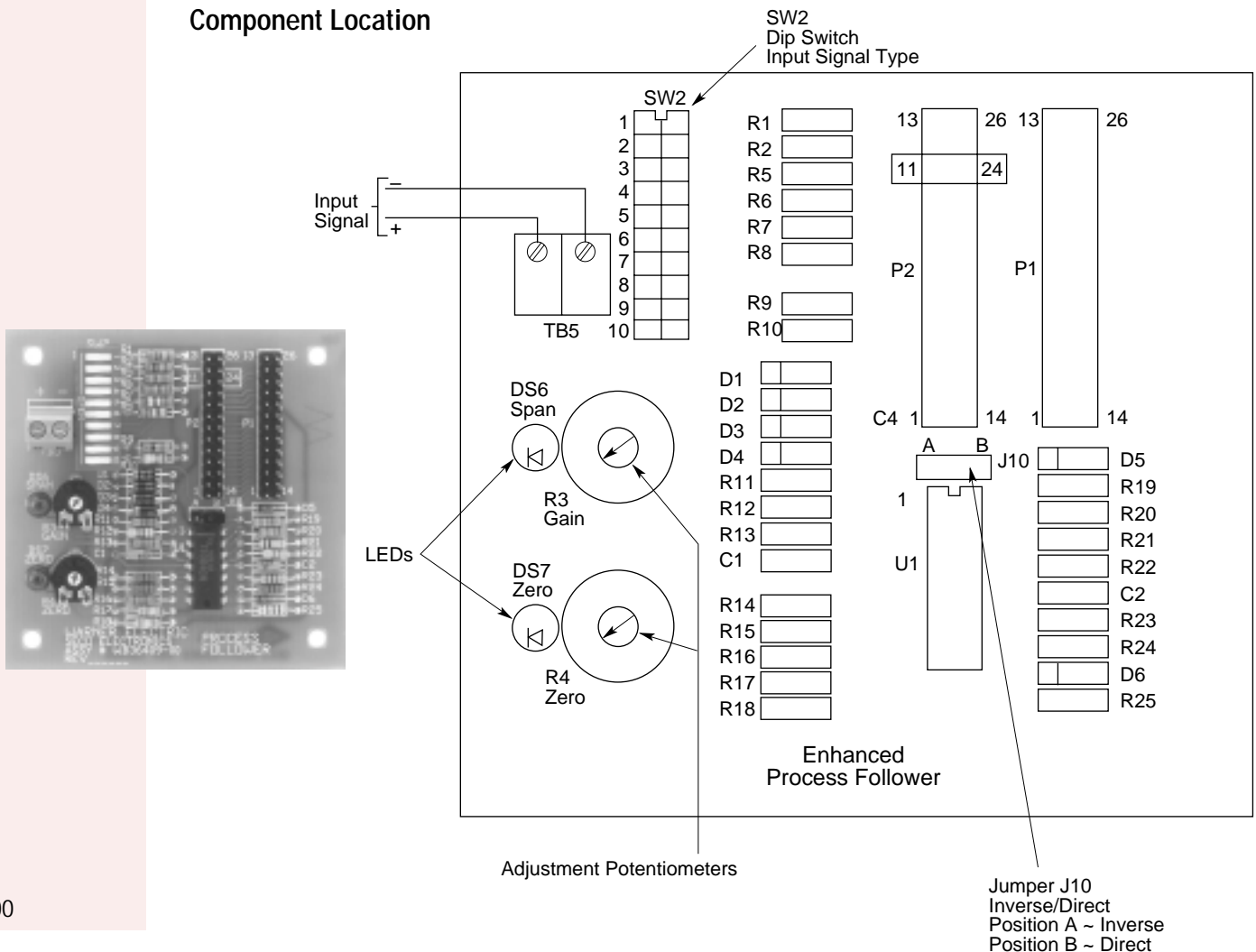
Input Signal	SW2 Switch Selection
0-100 VDC	Positions 1 & 2 On
0- 14 VDC	3 & 4 On
0- 10 VDC	5 & 6 ON
0- 50 mA	7, 8 & 9 ON
4- 20 mA	7, 8 & 10 ON

- B. Jumper J10, Inverse/Direct Mode

This feature allows either Direct or Inverse operation. In Direct mode the minimum voltage or current input produces the minimum motor speed. Maximum voltage or current input, will provide maximum motor speed. In Inverse mode, minimum input reference produces maximum output speed and maximum input produces minimum output speed.

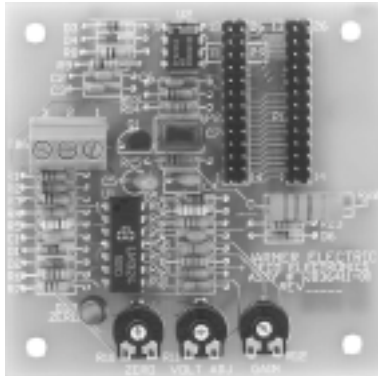
Mode	Drive Operation		
	Jumper Position	Input Signal	Motor RPM
Direct	B	0 VDC	0 RPM
		10 VDC	1750 RPM
Inverse	A	0 VDC	1750 RPM
		10 VDC	0 RPM

Component Location



1. General Description

The digital Signal Follower option adds the ability to follow a reference signal generated by magnetic pulse tach pick-up, Hall Effect sensor, or an encoder.



2. Specifications

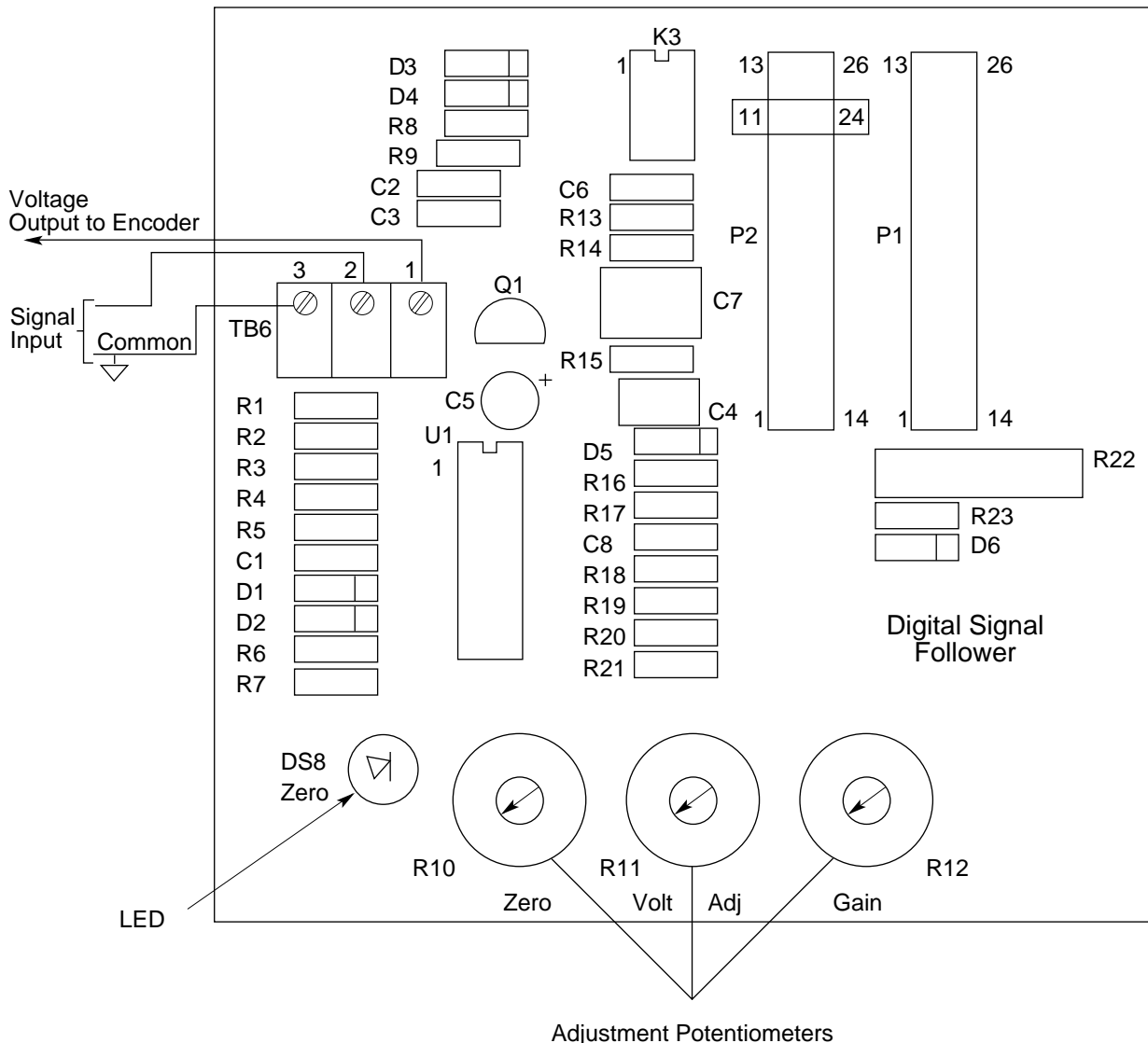
- A. Input Signal: Designed primarily for 60 pulse per revolution magnetic pulse tachometers. (SECO's MTK series.) Minimum and maximum frequency range for full voltage output is 1200 Hz to 3600 Hz. Minimum to maximum voltage input range is 0.1V to 100V. In addition to magnetic pulse tachometers, encoders and Hall Effect devices can be used.
- B. Output Signal: 0 to 10 VDC

3. Input Connections

- Magnetic Pulse Tachometer
 - TB6 Position 2 - Feedback Signal Input
 - Position 3 - Common
- Hall Effect devices, Encoders
 - TB6 Position 1 - Voltage Source (+5 - +12V) @ 20 mA
 - Position 2 - Feedback Signal Input
 - Position 3 - Common

Options Digital Signal Follower

Component Location



Options Controlled Decel Stop

1. General Description

When it is necessary for the motor to follow a deceleration rate on a stop command this option is applied. Additionally, two stopping modes are available—Ramp or Dynamic Braking if an additional stop push button is used.

To help understand the difference between the standard model and this option, refer to the following information.

Without the Controlled Deceleration Stop option, a linear deceleration rate, as set by the deceleration pot, is achieved only by reducing the reference input to a lower level.

As in all non-regenerative DC motor controllers, the minimum adjustable deceleration time is the coast-to-rest time. The deceleration adjustment allows you to extend the time the motor

takes to reach a slower speed or stop.

If the Stop Input 1 was initiated during the linear deceleration, as initiated by Stop Input 2, the coast-to-rest or dynamic braking mode would override the deceleration ramp and become the method of stopping the motor.

2. Specifications

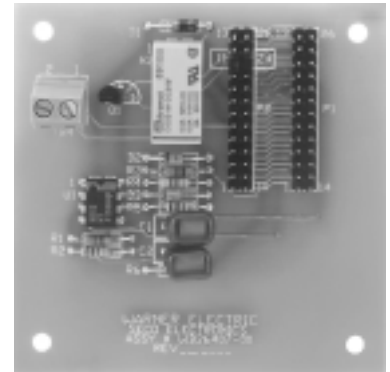
The Controlled Deceleration Stop option expands the selection of stopping modes for the SE2000 by using two stop pushbuttons.

3. Connection

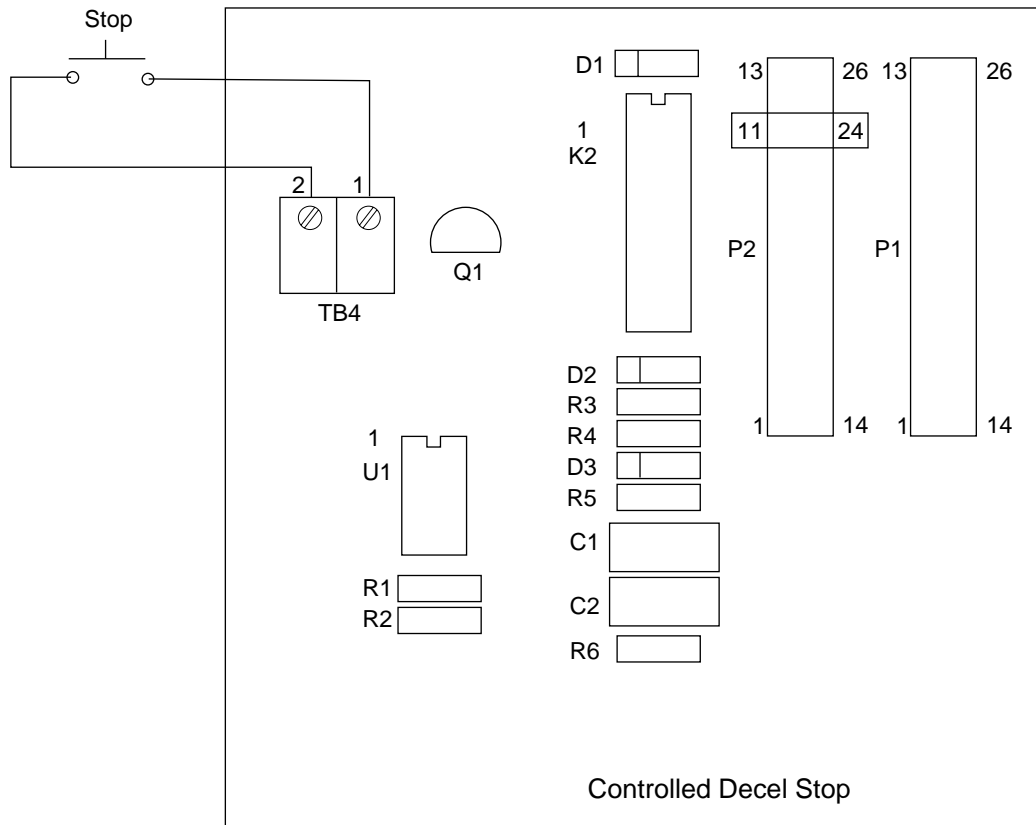
A normally-open momentary contact Stop pushbutton or contact is connected to TB4, positions 1 and 2.

Stopping Mode When Stop Is Activated

Drive Model	Standard Model	Standard Model with Option	
—		Stop Input 1	Stop Input 2
Power Unit On-Off	Coast-to-Rest	Coast-to-Rest	Linear Decel (Set by Decel Pot)
Run-Brake Reversing Brake	Dynamic Braking	Dynamic Braking	Linear Decel (Set by Decel Pot)



Component Location



1. General Description

The fault Module option provides output signals with shutdown protection in the event of tachometer loss, field loss or over current.

2. Specifications

The Fault Module includes three types of drive fault detection protection.

- Overcurrent – Inverse Time Overcurrent
- Field Loss – Detects Loss of Field Current
- Tach Loss – Detects Loss of Tach Feedback

Fault Trip Indication – LED Indicator/Trip Relay

- Overcurrent Trip LED
- Field Loss LED
- Tach Loss LED
- Fault Indication – Form C Relay Contacts, relay picked up during a fault

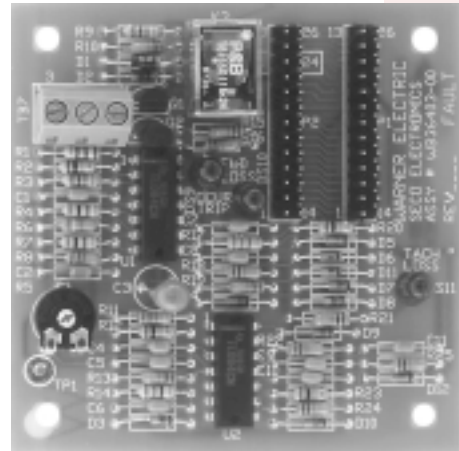
Once a fault trip has occurred, the drive will be inhibited and the motor will coast-to-rest. The specific Fault LED and Fault Indication Relay will be maintained until the STOP input is operated or AC power is disconnected.

3. Connections

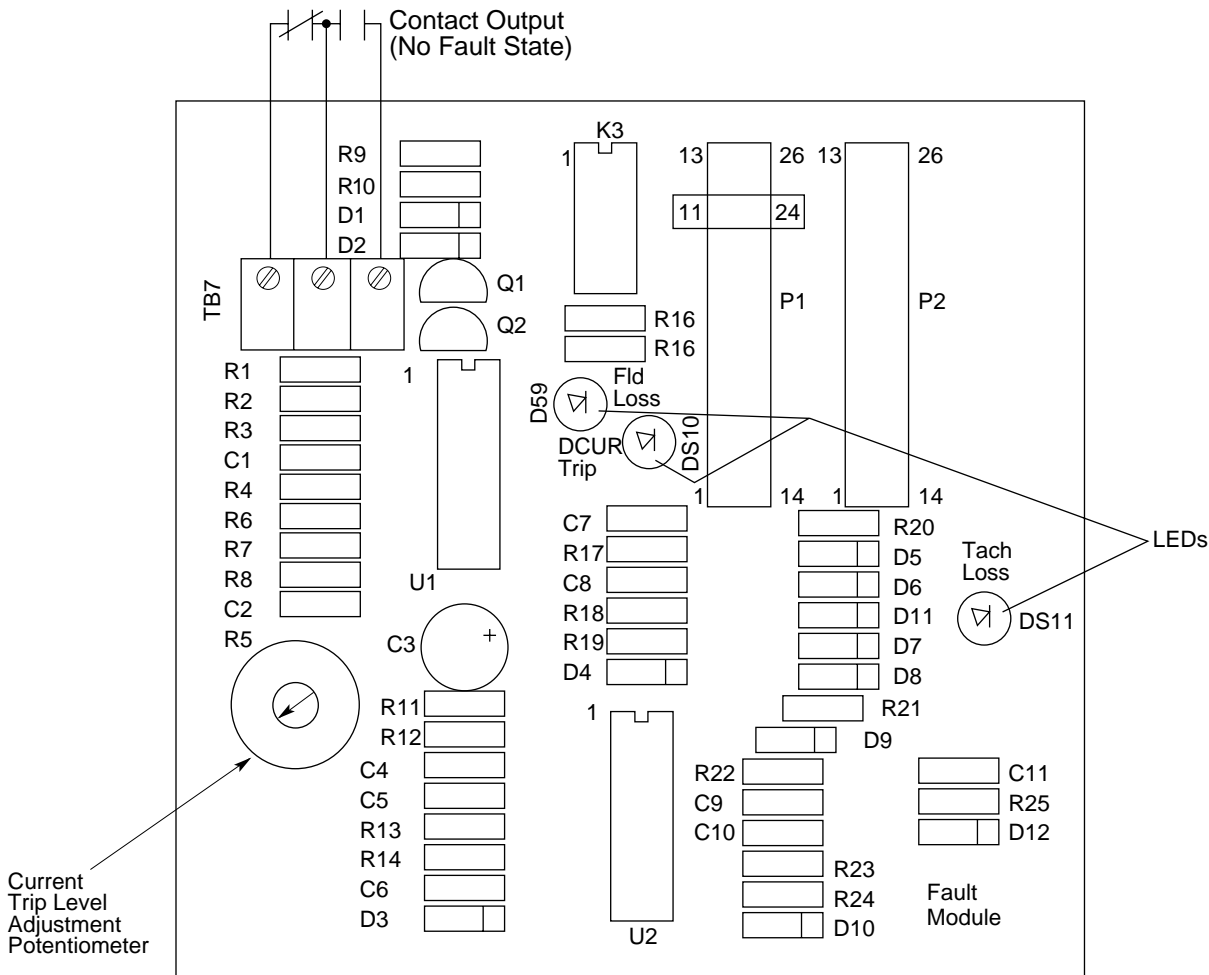
The Fault Indication Relay, K3, is accessible via TB7, Terminals 1,2, and 3.

TB7	1 N.O.
	2 COM
	3 N.C.

Options Fault Module



Component Location



Remote Operator Stations

Remote Operator Stations (ROS)

Function	Model Number	Model Number Suffix for 10 Turn Speed Pot
Start Pushbutton (1) Stop Pushbutton Single Turn Speed Pot	R8005	-10
Forward Pushbutton (1) Reverse Pushbutton Stop Pushbutton Single Turn Speed Pot	R8006	-10
Start Pushbutton (1) Stop Pushbutton Single Turn Speed Pot Auto-Manual Speed Selector Switch	R8011	-10
Start-Stop, (2) Run-Jog, Forward-Reverse, Auto-Man Toggle Switches w/ Single Turn Speed Pot	R1000	N/A
Start-Stop, (2) Run-Jog, Auto-Man Toggle Switches w/ Single Turn Speed Pot	R1001	N/A
Start-Stop, (2) Run-Jog, Forward-Reverse Toggle Switches w/ Single Turn Speed Pot	R1002	N/A

Note:

(1) NEMA 12 with wiring operators

(2) NEMA 4/12 with wiring to terminal strip

Isolation Transformers

Isolation Transformers

Single phase NEMA I Enclosed, Dry Type, No Taps, 60 Hz, Type G

HP	KVA	Primary Voltage	Secondary Voltage	Model Number
1/4	1/2	120/240	120/240	TRS21-005
1/2	1	120/240	120/240	TRS21-010
3/4	1 1/2	120/240	120/240	TRS21-015
1	2	120/240	120/240	TRS21-020
1 1/2	3	240/480	120/240	TRS42-030
2	5	240/480	120/240	TRS42-050
3	7 1/2	240/480	120/240	TRS42-075
5	10	240/480	120/240	TRS42-100

How to Order

Selection charts for DC motors, available from SECO, are listed on the following pages. For more complete specifications and dimensional information, contact Warner Electric Motors and Controls customer service.

Motor chart specify:

Horsepower
 Motor Type (Manufacturer)
 B=Baldor
 G=General Electric
 Frame Size
 Motor Enclosure
 TE=Totally Enclosed
 TEFC=Fan Cooled
 TENV=Non Ventilated
 'C' Face Size
 (For use with Single Phase
 Controllers only)
 Armature Voltage
 Model Number
 Motor with Tachometer
 (mounted)
 Motor without Tachometer
 Tachometer Kit

Non-Listed Motors

Non-listed motors are available, but specific information is required.

1. Motor horsepower
2. RPM
3. Frame size
4. Volts, armature
5. Volts, field or PM
6. Enclosure
7. Conduit location, F1, F2 etc.
8. Thermostat
9. Accessory endshield
10. 'C' face
11. Delivery requirements
12. Special application or environmental considerations.

Standard DC Motors



Standard DC Motors

DC Motors

1/4 to 1 Horsepower 90 VDC Armature – PERMANENT MAGNET FIELD – 1750 RPM – Totally Enclosed

HP	Motor Type	Frame Size	Enclosure	NEMA 'C' Face	Model Number		7 VDC Tachometer Kit
					Motor without Tachometer	Motor with 7 VDC/1000 RPM Tachometer (mounted)	
1/4	G	56HAA	NV	56C	MOD6110210	N/A	N/A
	B	320P	NV	56C	MOD6211200	MOD6211231	TAC 4001-13
1/2	G	56KAA	FC	56C	MOF6210210	N/A	N/A
	B	336P	NV	56C	MOF6211200	MOF6211231	TAC 4001-13
3/4	G	56PAA	FC	56C	MOG6210210	N/A	N/A
	B	428P	FC	56C	MOG6211100	MOG6211131	TAC 4001-00
1	G	56SAA	FC	56C	MOH6210210	N/A	N/A
	B	435P	FC	56C	MOH6211100	MOH6211131	TAC 4001-00

Note: All motors are capable of 20:1 constant torque speed range.

DC Motors

1/2 to 5 Horsepower 180 VDC Armature – PERMANENT MAGNET FIELD – 1750 RPM – Totally Enclosed

HP	Motor Type	Frame Size	Enclosure	NEMA 'C' Face	Model Number		7 VDC Tachometer Kit
					Motor without Tachometer	Motor with 7 VDC/1000 RPM Tachometer (mounted)	
1/2	G	56KAA	FC	56C	MOF7210210	N/A	N/A
	B	336P	NV	56C	MOF7111100	MOF7111131	TAC 4001-13
3/4	G	56PAA	FC	56C	MOG7210210	N/A	N/A
	B	336P	NV	56C	MOG7211100	MOG7211131	TAC 4001-10
1	G	146ATC	FC	140TC	MOH7210800	MOH7210831	TAC 4004-02
	G	56SAA	FC	56C	MOH7210210	N/A	N/A
	B	435P	FC	56C	MOH7211100	MOH7211131	TAC 4001-00
1-1/2	B	536P	FC	140TC	MOI7211100	MOI7211131	TAC 4007-01
	G	148ATC	FC	140TC	MOI7210800	MOI7210831	TAC 4004-02
2	B	548P	FC	140TC	MOJ7211100	MOJ7211131	TAC 4007-01
	G	149ATC	FC	140TC	MOJ7210800	MOJ7210831	TAC 4004-02
3	G	1412ATC	FC	140TC	MOK7210800	MOK7210831	TAC 4004-02
	B	649P	FC	180TC	MOK7211100	MOK7211131	TAC 4001-15
5	B	681P	FC	180TC	MOL7211100	MOL7211131	TAC 4001-15

Note: All motors are capable of 20:1 constant torque speed range.

DC Motors

1/4 to 1 Horsepower 90 VDC Armature – 100/50 VDC SHUNT WOUND FIELD – 1750 RPM – Totally Enclosed

HP	Motor Type	Frame Size	Enclosure	NEMA 'C' Face	Model Number		7 VDC Tachometer Kit
					Motor without Tachometer	Motor with 7 VDC/1000 RPM Tachometer (mounted)	
1/4	B	413D	FC	56C	MOD1211700	MOD1211731	TAC 4001-00
1/2	B	420D	FC	56C	MOF1211700	MOF1211731	TAC 4001-00
3/4	B	428D	FC	56C	MOG1211700	MOG1211731	TAC 4001-00
1	B	535D	FC	56C	MOH1211700	MOH1211731	TAC 4007-00

Note: All motors are capable of 20:1 constant torque speed range.

DC Motors

1/2 to 5 Horsepower 180 VDC Armature – 200/100 VDC SHUNT WOUND FIELD – 1750 RPM – Totally Enclosed

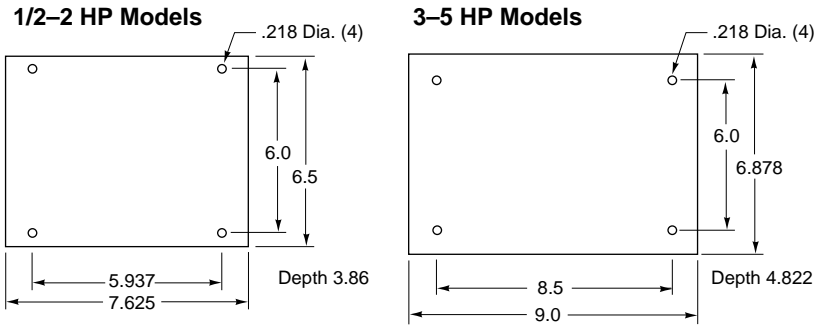
HP	Motor Type	Frame Size	Enclosure	NEMA 'C' Face	Model Number		7 VDC Tachometer Kit
					Motor without Tachometer	Motor with 7 VDC/1000 RPM Tachometer (mounted)	
1/2	B	420D	FC	56C	MOF2211700	MOF2211731	TAC 4001-00
3/4	B	428D	FC	56C	MOG2211700	MOG2211731	TAC 4001-00
1	G	146ATC	FC	140TC	MOH2210800	MOH2210831	TAC 4001-02
	B	535D	FC	56C	MOH2211800	MOH2211831	TAC 4007-01
	G	L182ACY	NV	180C	MOH2110100	MOH2110131	TAC 4002-03
1-1/2	G	148ATC	FC	140TC	MOI2210800	MOI2210831	TAC 4004-02
	G	L186ACY	NV	180C	MOI2110100	MOI2110131	TAC 4002-03
	B	636D	FC	180C	MOI2211400	MOI2211431	TAC 4001-15
2	G	149ATC	FC	140TC	MOJ2210800	MOJ2210831	TAC 4004-02
	B	646D	FC	180C	MOJ2211400	MOJ2211431	TAC 4001-15
	G	L186ACY	NV	180C	MOJ2110100	MOJ2110131	TAC 4002-03
3	G	189ATC	NV	180TC	MOK2110100	MOK2110131	TAC 4002-03
	G	1412ATC	FC	140C	MOK2210800	MOK2210831	TAC 4004-02
	B	7544D	FC	210C	MOK2211100	MOK2211131	TAC 4001-06
5	G	CD2110ACY*	NV	210C	MOL2110700	MOL2110731	TAC 4002-03
	B	9143D*	FC	256UCZ	MOL2211100	MOL2211131	TAC 4001-08

*These motors have 1-1/8" shaft diameter.

Note: All motors are capable of 20:1 constant torque speed range.

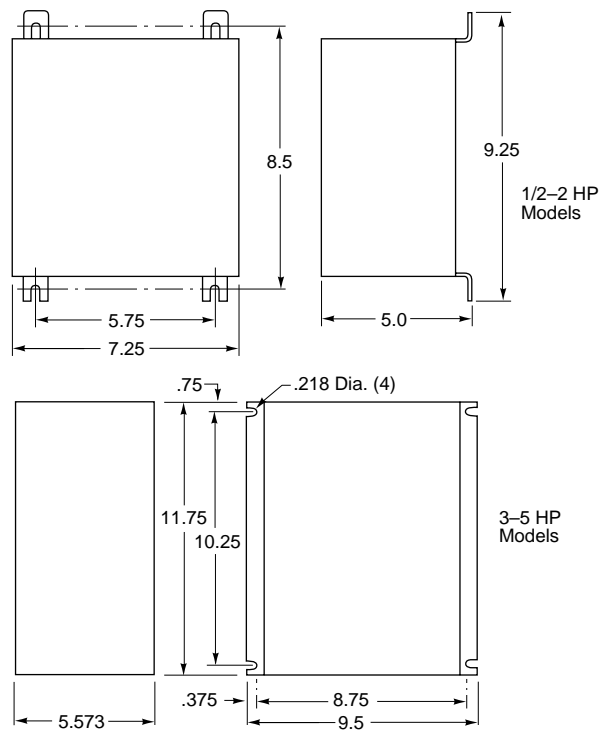
Dimensions

Power Unit



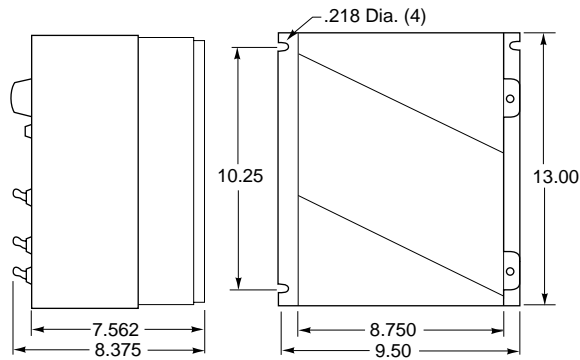
Chassis

Basic On-Off or Run Brake Models
 Reversing Brake Models
 1/2-2 HP Models
 3-5 HP Models



Connections

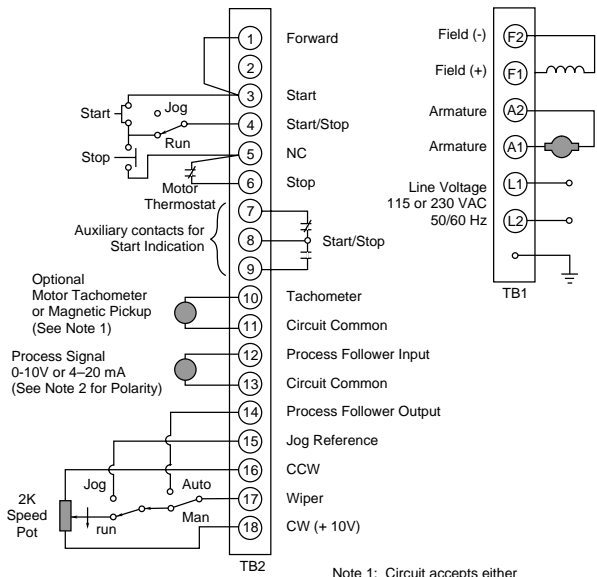
Enclosed Unit - All Models



Dimensions in inches

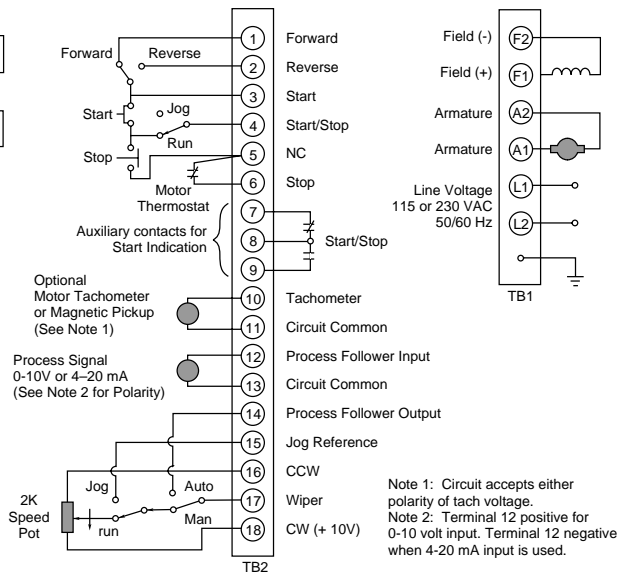
SE2000

Basic On-Off or Run Brake Models



Note 1: Circuit accepts either polarity of tach voltage.
 Note 2: Terminal 12 positive for 0-10 volt input. Terminal 12 negative when 4-20 mA input is used.

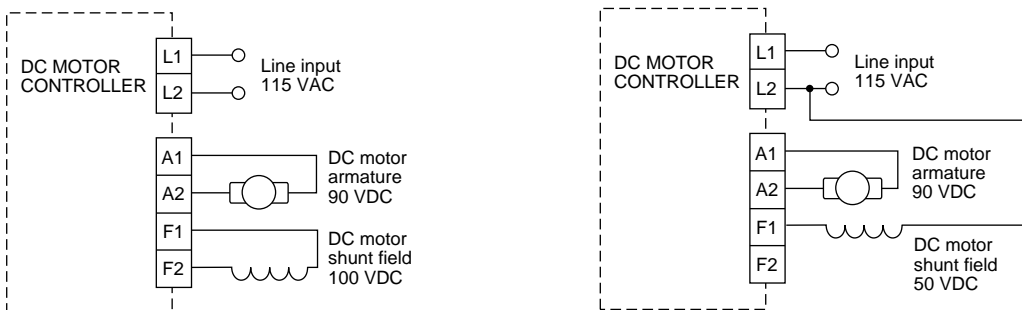
Reversing Brake Models



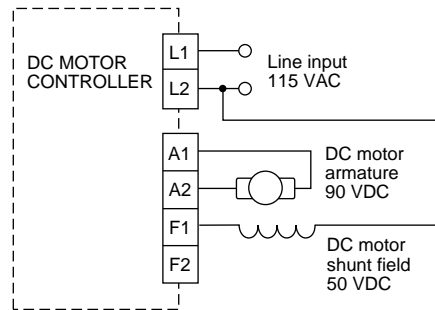
Three Wire Start/Stop with Reversing, Tachometer, Run/Jog, Auto/Man and Motor Thermostat.

Connection Diagrams

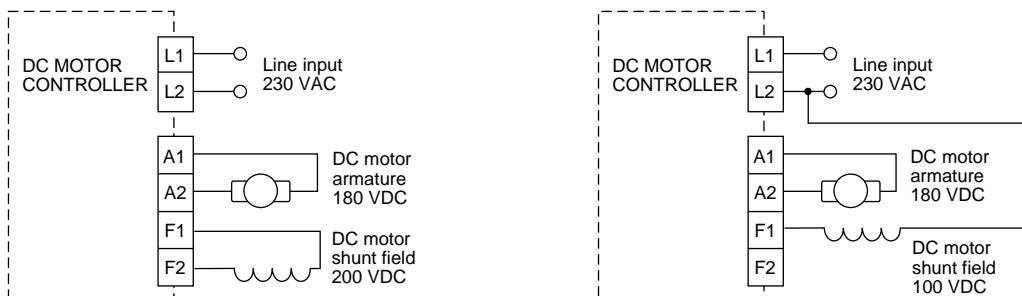
Shunt Field Connections



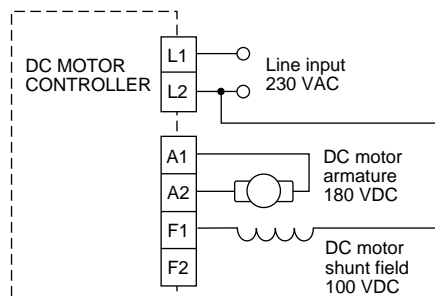
Connections for a DC motor with a 90 VDC armature and 100 VDC shunt field.



Connections for a DC motor with a 90 VDC armature and 50% VDC shunt field.

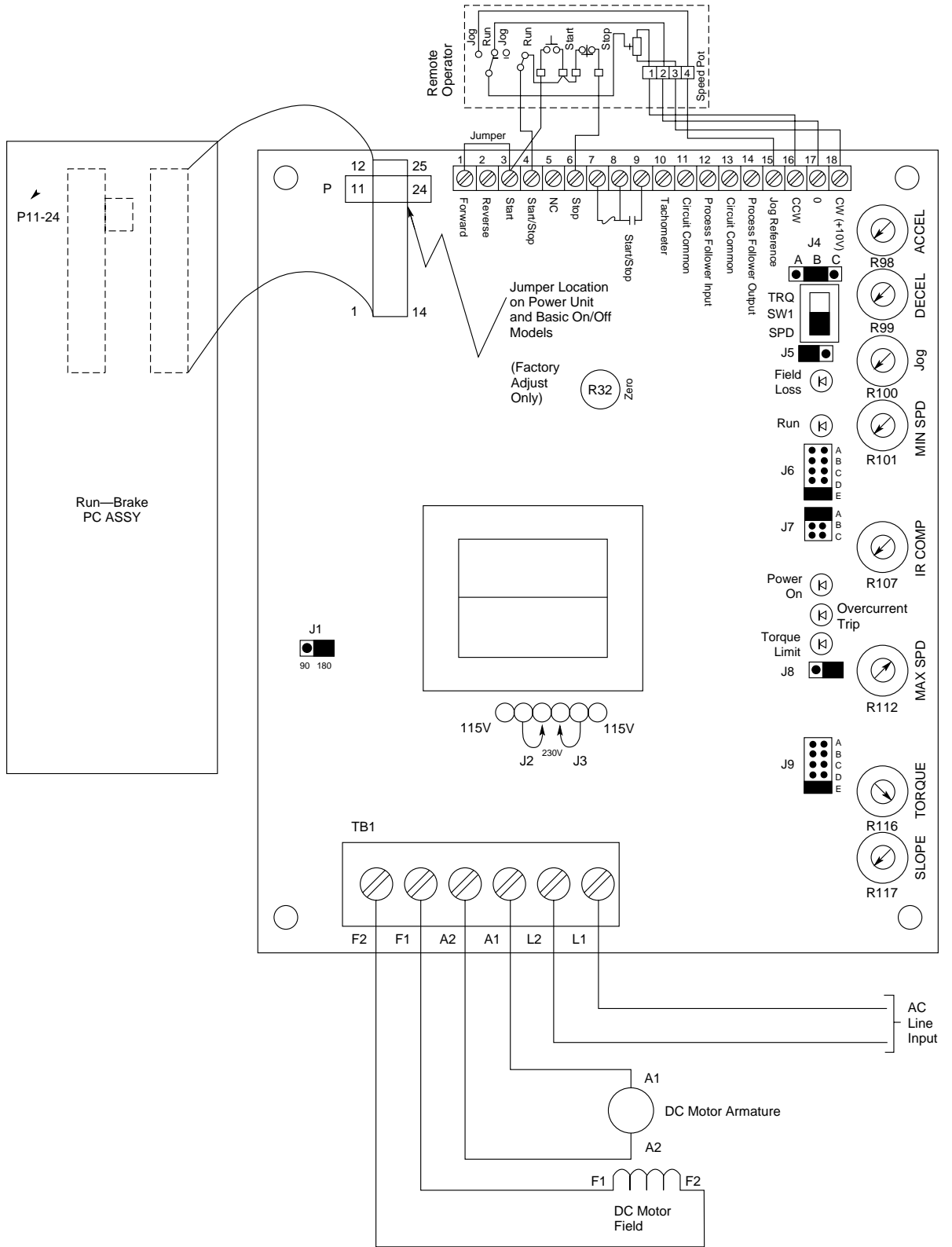


Connections for a DC motor with a 180 VDC armature and 200 VDC shunt field.



Connections for a DC motor with a 180 VDC armature and 100 VDC shunt field.

Jumper and Adjustment Locations



Recommended Spare Parts

Description	Warner Electric Part Number	
	1/4-2 HP Models	3-5 HP Models
Control Board Assembly* ●▲◆■○	SPC36269	SPC36269
SCR Module ●▲◆■○	ATY4001-03	ATY4008-00
Circuit Breaker ▲◆■○	Chassis ASW4045-00 (Single Pole) Enclosed ASW4045-01 (Double Pole)	ASW4051-00 (Double Pole) (All Models)
Motor Contactor Card ◆	SPB36401-00	SPB36429-00
Reversing Contactor Card ■	SPB36401-01	SPB36429-01
Motor Contactor(s) ◆	On card	ARE3001-05
Dynamic Braking Resistor ◆■	PRE2025-01 224714-001	PRE2025-00 224714-100
Power On Lamp ○	ALI1025-00 226723-000	ALI1025-00 226723-000
Clear Lamp Lens ○	ALI1024-00 226722-000	ALI1024-00
Lamp Holder ○	ALI1028-00 226647-000	ALI1028-00
Rubber Boot Kit ○	HMI1026-03 226579-003	HMI1026-03
Water Tight Nut ○	HMI1012-00 224638-000	HMI1012-00
Potentiometer Knob ○	HKN1001-00 224539-000	HKN1001-00
Toggle Switch Boot ○	HMI1103-00 224639-000	HMI1103-00

Product Type Code

- Power Unit
- ▲ Basic On-Off
- ◆ RUN-BRAKE
- REV-BRAKE
- Enclosed

*Note

When replacing the control board assembly, it is essential that all of the set-up jumpers on the new board are identical with those on the board being replaced. It may also be necessary to adjust the potentiometers on the new board for correct operation.

Recommended Spare Parts

Service

Service

It is intended that the SE 2000 should be serviced by replacing major sub-assemblies. The Replacement Parts List lists all of the sub-assemblies required to service SE 2000 drives. It is recommended that users keep these parts readily available to support the drive's critical applications.

For additional assistance or the name of your closest authorized service center, contact Warner Electric Motors and Controls customer service at 800-787-3532.

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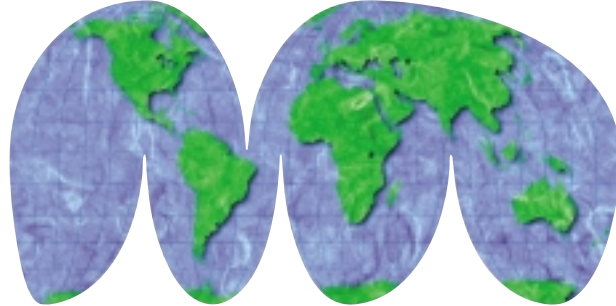
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