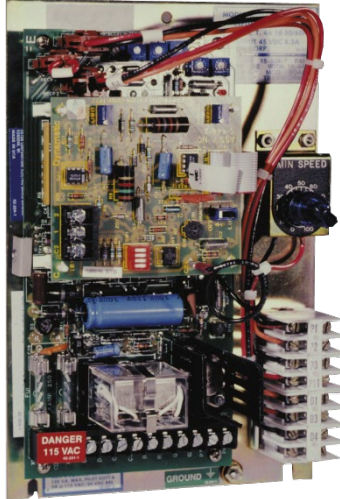


## CONTROLLERS

### Model 4000



#### Description

The Model 4000 Dynamatic Analog controller is a complete controller on one printed circuit board. Input is 115 VAC, CT., 1 phase, 50/60 Hz. Output is 4.3 Amp, 45 VDC. It is available for use with Dynamatic Air-Cooled Drives, rated .25 through 20 horsepower. This controller has a power relay and several "on-board" standard modifications, such as speed and torque control, fixed and spring set braking and linear acceleration. An on-board 4-element DIPswitch programs these modifications. Optional field modifications are available (one per controller) either factory installed or to be added later in the field as required. They include brake circuits, cascade, follower circuits, jogging, threading, torque/speed control, current limit, dancer and Mutuatrol. These additional boards are simply added using standoffs and a ribbon connector with plug. The controller is available in a NEMA 13 oil-tight enclosure with operator's elements or as an open panel mounting without operator's elements.

#### Features & Benefits

- Provides soft starts using a linear acceleration circuit, adjustable from 3-90 seconds.
- Accurate speed control from a closed loop keeps drive output speed within 0.5% for load changes from 0-100%
- Ensures consistent operation as 0.5% speed regulation is standard.
- On-board selectable programmable modifications are available for application versatility.
- Small wall mount enclosure is complete with operator's elements or panel mount.
- Loss of reference protections prevents runaway speeds.
- Short circuit and ground fault protection by fused input, isolates controller components from short circuits.
- Transient suppression by input suppressor prevents controller damage due to transient spikes.

## CONTROLLERS

### Model 4000 Specifications

<b>4000 Controller</b>	<p>Units used with</p> <p>Horsepower range</p> <p>Input power, maximum</p> <p>Output power, maximum</p> <p>Speed regulation, no load to full load change</p> <p>Enclosures</p> <p>Built-in modifications</p> <p>Field modifications (1 per unit)</p> <p>Operator devices (on controller)</p> <p>Closed loop speed control</p> <p>Controller protective features</p> <p>Line regulation for +/-10% input line voltage change</p> <p>Thermal drift per degree C</p> <p>Minimum regulated speed range</p> <p>Maximum ambient</p>	<p>Fractional HP Drives AS-14 - 25 Drives AT-140 -250</p> <p>.25 - 20 HP - Standard</p> <p>115 VAC -10%, +20%, Center Tapped (CT), 1 phase, 50/60 Hz, 460 VA</p> <p>45 VDC, 4.3 Amps, 194 watts</p> <p>0.5% Standard</p> <p>Panel Mount – Standard NEMA 13 - Optional</p> <p>Linear acceleration, fixed braking, torque control</p> <p>Brake circuits, cascade, follower circuits, jogging, threading, torque/speed control, current limit, dancer and Mutuatrol - Optional</p> <p>Start and Stop push buttons and Run Speed potentiometer - Standard</p> <p>Standard</p> <p>Input fuses, low line voltage, line transients, isolated signal circuits, output over-current</p> <p>+/-0.1%</p> <p>+/-0.05%</p> <p>50 RPM</p> <p>104° F (40° C) enclosed 149° F (65° C) panel mount</p>
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## CONTROLLERS

### Model 4000 Ordering Information

#### Completely Assembled Controllers

The Model 4000 is supplied as a panel-mounted controller or in a NEMA 13 enclosure. A power relay with a set of NO contacts, wired to a terminal strip for customer use, is a standard feature. The input power to the controller is provided either by a motor winding in the drive or a separate 115 VAC, CT input transformer. The Model 4000 controller has the operator controls mounted on the cover of the enclosure. Separate operator's stations are available upon request from the factory. The modified controllers below include the basic speed controller and mounting of the modification board. The controllers below are completely assembled. For applications where downtime is critical, spare modification board part numbers are also supplied on the next page.

A complete NEMA 13 enclosed controller consists of a NEMA 13 Enclosure with cover and, when applicable, a modification board. The base is an enclosure containing the basic printed circuit board. The cover includes oil-tight operator's elements when required.

**NOTE: MODIFIED CONTROLLERS INCLUDE THE BASIC SPEED CONTROLLER**

**4000 Controller Selection Table**

Description	Complete Controllers & Modifications	
	Open Panel Mount	NEMA 13 Enclosure
	Part Number	Part Number
Basic Speed Controller	15-000533-1001	15-000551-1001
Main Control – PCB Only – <b>Unassembled</b>	<b>Not Panel Mounted</b>	15-000530-1005
<b>Modified Controllers:</b>		
Accel/Decel, Linear	15-000533-1025	15-000551-1025
Accel/Decel, Linear & Separately Adjustable Jog	15-000533-1025	15-000551-1026
Braking, Adjustable	15-000533-1002	15-000551-1002
Braking, Adjustable & Jog at Run Speed	15-000533-1004	15-000551-1004
Cascade, Man/Auto	15-000533-1008	15-000551-1008
Dancer Position (Potentiometer sold separately (See Page 114))	15-000533-1016	15-000551-1016
Dancer Position & Mutuatrol	15-000537-1001	NA
Follower, Instrument Signal, Man/Auto		
a. Ratio pot internal	15-000533-1010	15-000551-1010
b. Ratio pot external	15-000533-1011	15-000551-1011
Follower, Tachometer, Man/Auto	15-000533-1009	15-000551-1009
Jog at Run Speed	15-000533-1003	15-000551-1003
Jog, Separately Adjustable	15-000533-1005	15-000551-1005
Mutuatrol	15-000533-1017	15-000551-1017
Mutuatrol & Jog at Run Speed	15-000533-1018	15-000551-1018
Threading		
a. Thread pot internal	15-000533-1006	15-000551-1006
b. Thread pot external	15-000533-1007	15-000551-1007
Torque Control	15-000533-1012	15-000551-1012
Torque/Speed Control	15-000533-1013	15-000551-1013
Torque Limit (includes 15-203-3 Current Transformer)	15-000533-1014	15-000551-1014
Torque Limit & Jog at Run Speed	15-000533-1015	15-000551-1015
Blank Cover Control	NA	15-000551-1030

## CONTROLLERS

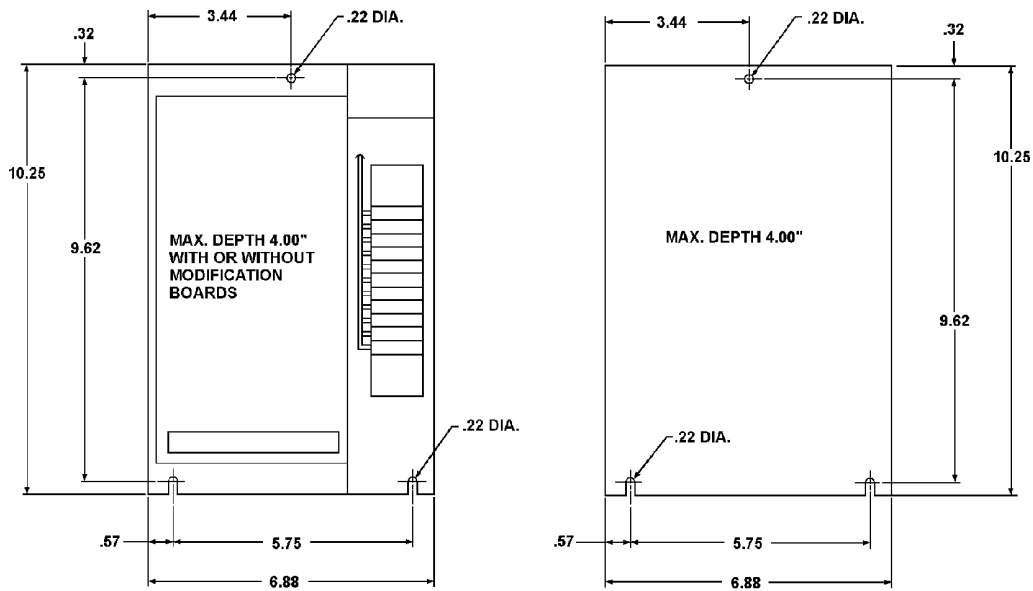
### Model 4000 Ordering Information

#### Spare Modification Boards Selection Table

Description	Modification Board Part Number
Basic Speed Controller	--
Accel/Decel, Linear	15-000446-1004
Accel/Decel & Adjustable Jog	15-000446-1004
Braking, Adjustable	15-000444-1004
Braking, Adjustable & Jog at Run Speed	15-000444-1004
Cascade, Man/Auto	15-000444-1003
Dancer Position (order Dancer Pot, No.15-393-715)	15-000444-1007
Follower, Instrument Signal, Man/Auto	
a. Ratio pot internal	15-000446-1005
b. Ratio pot external	15-000446-1005
Follower, Tachometer, Man/Auto	15-000444-1001
Jog at Run Speed	NA
Jog, Separately Adjustable	15-000444-1003
Mutuatrol	15-000446-1002
Mutuatrol & Jog at Run Speed	15-000446-1002
Threading	
a. Thread Pot Internal	15-000444-1003
b. Thread Pot External	15-000444-1003
Torque Control	NA
Torque/Speed Control	15-000444-1005
Torque Limit (includes a 15-203-3 Current Transformer)	15-000445-1001
Torque Limit & Jog at Run Speed	15-000445-1001
Blank Cover Controller	--

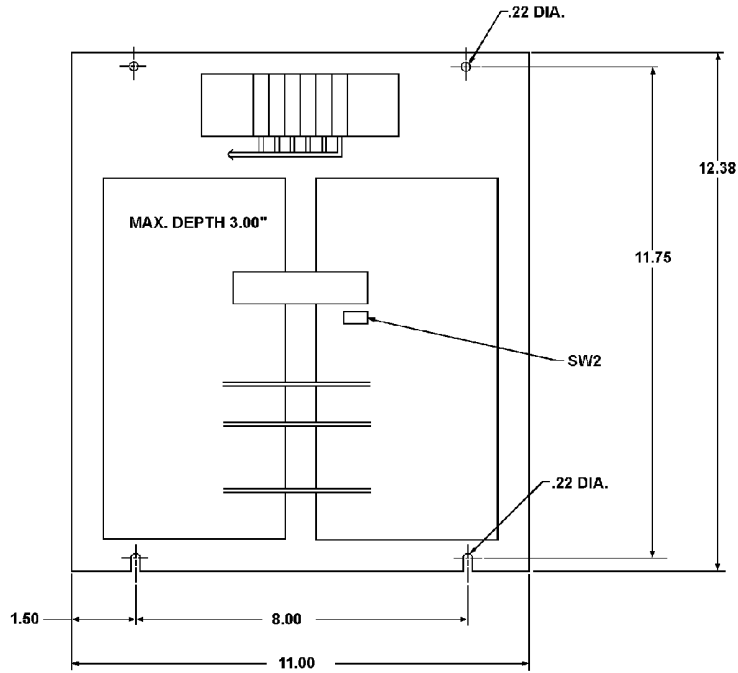
**CONTROLLERS**

**Models 4000 and 4050 Panel Mount Outline Drawings**



**MODEL 4000**

**MODEL 4050**



**MODEL 4000  
 WITH DANCER POSITION & MUTUATROL**

DIMENSIONS ARE IN INCHES