

# Dynatec® Controls

## Description

Dynacorp® offers a wide range of clutch/brake controls, which are used throughout the manufacturing and processing industries. These controls employ modern solid-state technology to provide optimum clutch/brake performance and ease of installation.

## Section Index

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Control Functions and Benefits ..... See Chart Below

Products Complete information is shown for each product, including: a description of functions/features, specifications, dimensions, and part numbers for ordering

## Models

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\* Warner® Interchange

## Dynatec® Series Selection Guide

Model	Input Voltage AC	Channel 1 Output Voltage DC	Channel 2 Output Voltage DC	Maximum Current	Contact Cold Switching	Status LED's	Opto-isolated DC Switching	Anti-Overlap	Torque Adjust	Over-excite	Soft Start Soft Stop	Page No.
D2950	115	90	90	1A	●	●	●	●		●		K-2
D2750	115	90	90	1A	●	●	●	●			●	K-4
D2550	115	90	90	1A	●	●	●	●				K-6
D2100	115	90	90	2A	●	●						K-8
D2110	230	90	90	2A	●	●						K-8
D2101*	115	90	90	2A	●	●						K-10
D2111*	230	90	90	2A	●	●						K-10
D2650	115	0-90 adj	0-90 adj	1A	●	●		●	●			K-12

\* Warner® Interchange



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# Dynatec® Controls

## Dynatec® 2950 Control

### Dual Channel Overexcite Clutch/Brake Control



#### Description

The Dynatec® 2950 (D2950) is a solid-state digital Overexcite (OE) clutch/brake controller, designed to operate 90 VDC clutch/brake (C/B) coils with current loads of up to 1.0 amp; Din rail mounting for ease of installation.

This controller operates one or two C/B coils with an adjustable anti-overlap circuit and OE.

The D2950 incorporates voltage protection on the AC input. When transient voltage spikes or notching is present on AC lines, an isolation transformer is required to filter the incoming power to the D2950.

#### Specifications

##### Power Input

Voltage: 115 VAC  
Current: 1.5 amp  
Frequency: 50/60 Hz  
Fusing: Customer-supplied 2 amp

##### Power Output

Voltage: 90 VDC (105 V actual)  
Overexcite Pulse: 325 VDC  
Current: 1.0 Max.


##### D2950 Dimensions

Weight: 17 Oz.  
Overall: 3.94" W. x 2.76" H. x 5.28" D.  
Mounting: Din rail

##### Temperature

Operating: 0° to 65°C (32° to 149°F)

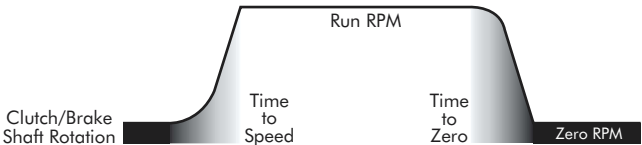
#### Features

- Meets  Certification
- Adjustable clutch/brake "on" delay  
Anti-overlap potentiometer  
0 to 100 ms
- Status/Diagnostic lights:  
Clutch On  
Brake On
- Selective input switching logic  
Cold contact, 3 - 30 VDC or 115 VAC
- Outputs (2) 1 amp Max load
- Use with all Dynacorp® 90 V products, except 308HQ, 310HQ, and 312HQ models.

Input Logic	Part No.
115 VAC, 50/60 Hz	214277-040-2211
3-30 VDC	214277-040-2212
Contact Closure	214277-040-2213

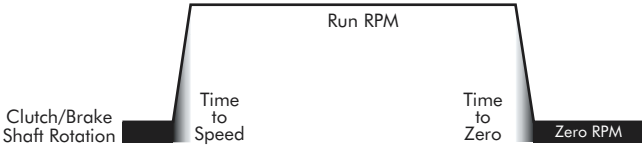
### D2950 Overexcite

Overexcite produces a 270 VDC spike to the clutch or brake. This graph displays RPM curve of clutch brake package with No Overexcite.



Clutch/Brake Shaft RPM Curve using Conventional Control

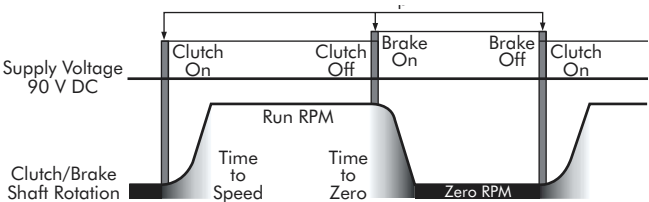
The Dynatec® 2950 incorporates an Overexcite feature. The results of Overexcite are displayed in the graph. The clutch and brake coils are saturated much faster, allowing for quick positive engagement, producing higher start/stop accuracy, while reducing friction heat.



Clutch/Brake Shaft RPM Curve using Dynacorp® Control with Overexcite

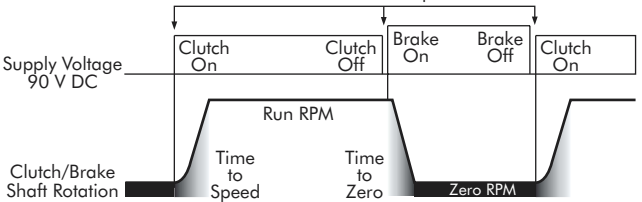
### D2950 Anti-Overlap

When using conventional controls where the output voltage is switched by a relay contact, overlap occurs when you see the arching across the contacts. This indicates that just for an instant the brake and clutch are both engaged. This graph represents overlap. The effect of this is excessive wear and heat to the clutch/brake system.



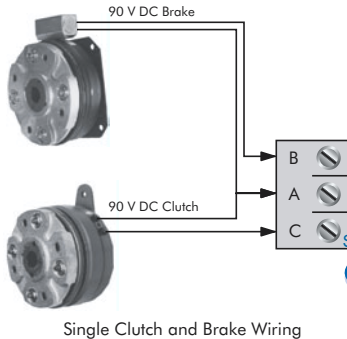
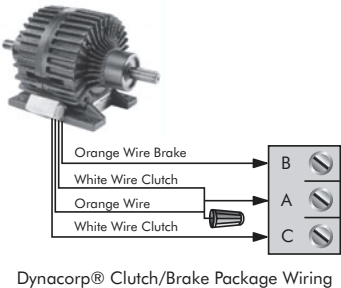
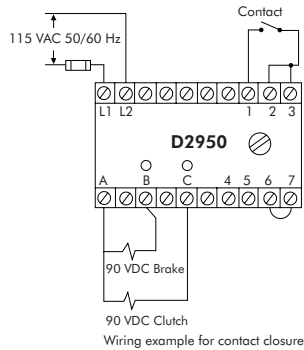
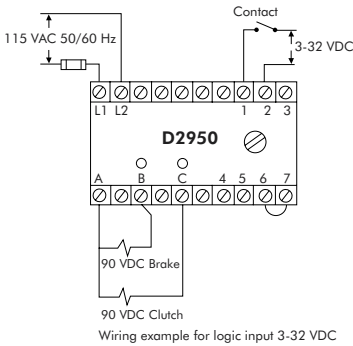
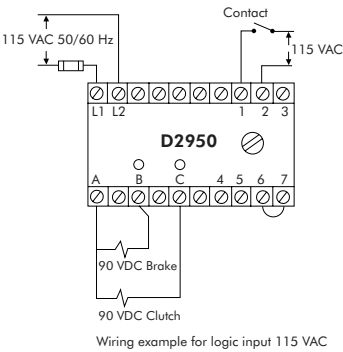
Clutch/Brake Shaft RPM Curve using Conventional Control

The Dynatec® 2950 incorporates MOV's and an adjustable time delay logic that will prevent the effects of overlap. This graph illustrates the effects of anti-overlap. Notice the difference between the RPM curves. You have a shorter time to speed and time to zero, and the switching is more precise, creating less heat. These controls can actually operate the clutch/brake system at higher cycle rates, with better repeatability and less heat than conventional controls.



Clutch/Brake Shaft RPM Curve using Dynacorp® Control with Anti-Overlap

### D2950 Wiring Information



# Dynatec® Controls

## Dynatec® 2750 Control

### Accel/Decel Dual Channel Clutch/Brake Control



#### Description

The Dynatec® 2750 (D2750) is a solid-state, digitally designed accel/decel clutch/brake controller, engineered to precisely operate 90 VDC clutch/brake (C/B) coils with current loads of up to 1.0 amp and din rail mounting for ease of installation.

This controller operates one or two coils, incorporating an anti-overlap circuit.

The D2750 controller employs technology to ensure long life and reliable service: The D2750 incorporates voltage protection on the AC input. When transient voltage spikes or notching is present on AC lines, an isolation transformer is required to filter the incoming power to the D2750.

#### Specifications

##### Power Input

Voltage	115 VAC
Current	1.5 amp
Frequency	50/60 HZ
Fusing	Customer-supplied 2 amp

##### Power Output

Voltage	0-90 VDC
Current	1.0 amp Max.


##### D2750 with Subpanel Dimensions

Weight	18 oz.
Overall	2.76" H. x 3.94" H. x 5.28" D.

##### Temperature

Operating:	0° to 65°C (32° to 149°F)
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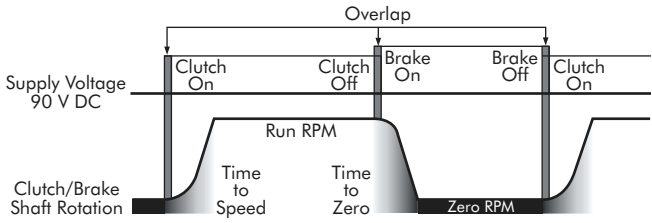
#### Features

- Meets  Certification
- Soft-Start and Soft-Stop (Ramps output from 0-2 seconds)
- Anti-Overlap Circuit
- 115 VAC Input
- Selective Input Switching Logic Contact or Opto-Isolated 3-30 VDC or 115 VAC
- Status/Diagnostic lights:
  - Clutch On
  - Brake On

Input Logic	Part No.
115 VAC, 50/60 Hz	214257-040-2230
3-30 VDC	214257-040-2231
Contact Closure	214257-040-2232

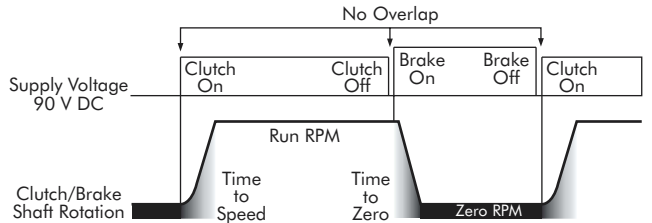
### D2750 Anti-Overlap

When using conventional controls where the output voltage is switched by a relay contact, overlap occurs when you see the arching across the contacts. This indicates that just for an instant the brake and clutch are both engaged. This graph represents overlap. The effect of this is excessive wear and heat to the clutch/brake system.



Clutch/Brake Shaft RPM Curve using Conventional Control

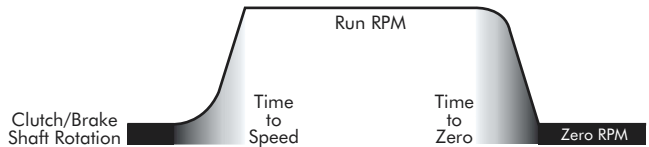
The Dynatec® 2750 incorporates MOV's and time delay logic that will prevent the effects of overlap. This graph illustrates the effects of anti-overlap. Notice the difference between the RPM curves. You have a shorter time to speed and time to zero, and the switching is more precise, creating less heat. These controls can actually operate the clutch/brake system at higher cycle rates, with better repeatability and less heat than conventional controls.



Clutch/Brake Shaft RPM Curve using Dynacorp® Control with Anti-Overlap

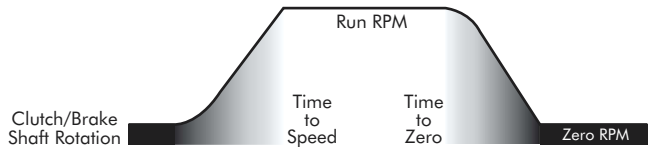
### D2750 Soft-Start/Soft-Stop

This feature is used to cushion the engagement of the clutch and brake by ramping the voltage. This graph displays the RPM curve of a clutch brake package with No Soft-Start/Soft-Stop.



Clutch/Brake Shaft RPM Curve using Conventional Control

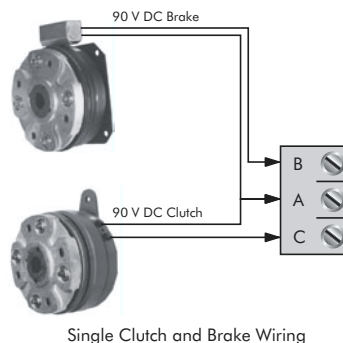
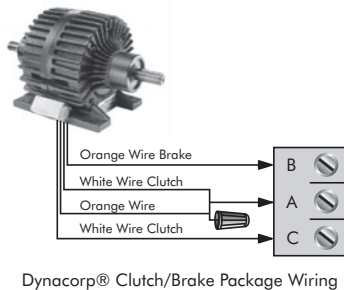
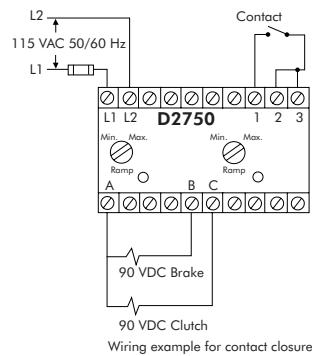
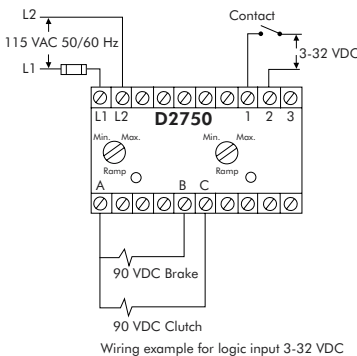
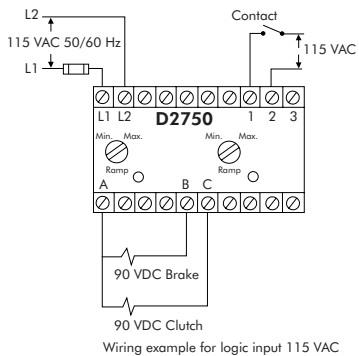
The Dynatec® 2750 incorporates a Soft-Start/Soft-Stop feature. This illustration displays the voltage ramping up and ramping down. The ramp time is adjustable by turning the Soft-Start potentiometer for clutch and Soft-Stop for brake and can be adjusted from 0 to 2 seconds, which is the elapsed time from 0 to 90 VDC. There are several factors that are taken into consideration when using this feature: Inertia, Cycle Rate, RPM and Load Torque.



Clutch/Brake Shaft RPM Curve using a Dynacorp® Control with Soft-Start and Soft-Stop

Adjust the clutch or brake potentiometer to the desired ramp time.

### D2750 Wiring Information



# Dynatec® Controls

## Dynatec® 2550 Control

### Dual Channel Anti-Overlap Clutch/Brake Control



#### Description:

The Dynatec® 2550 (D2550) is a solid-state anti-overlap clutch/brake controller, engineered to operate 90 VDC clutch/brake (C/B) coils with current loads up to 1.0 amp; Din rail mounting for ease of installation.

This controller operates one or two coils, incorporating an anti-overlap circuit.

The D2550 incorporates voltage protection on the AC input. When transient voltage spikes or notching is present on AC lines, an isolation transformer is required to filter the incoming power to the D2550.

#### Specifications

##### Power Input

Voltage	115 VAC
Current	1.5 amp
Frequency	50/60 HZ
Fusing	Customer-supplied 2 amp

##### Power Output

Voltage	90 VDC
Current	1.0 amp Max.


##### D2550 with Sub-Panel Dimensions

Weight	15 oz.
Overall	2.76" H. x 1.97" W. x 4.30" D.

##### Temperature

Operating	0° to 65°C (32° to 149°F)
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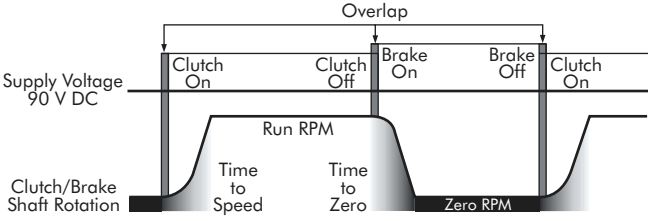
#### Features:

- Meets  Certification
- Anti-Overlap Circuit
- 115 VAC Input
- Selective Input Switching Logic  
Cold Contact or Opto-Isolated 3-30 VDC or 115 VAC
- Status/Diagnostic lights:  
Clutch On  
Brake On

Input Logic	Part No.
115 VAC, 50/60 Hz	214247-040-2201
3-30 VDC	214247-040-2202
Contact Closure	214247-040-2203

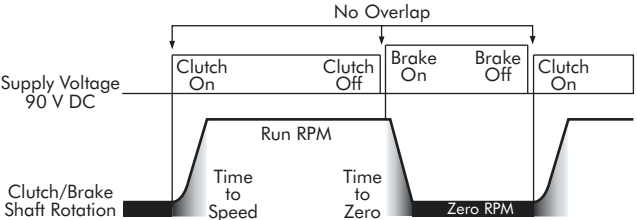
## D2550 Anti-Overlap

When using conventional controls where the output voltage is switched by a relay contact, overlap occurs when you see the arching across the contacts. This indicates that just for an instant the brake and clutch are both engaged. This graph represents overlap. The effect of this is excessive wear and heat to the clutch/brake system.



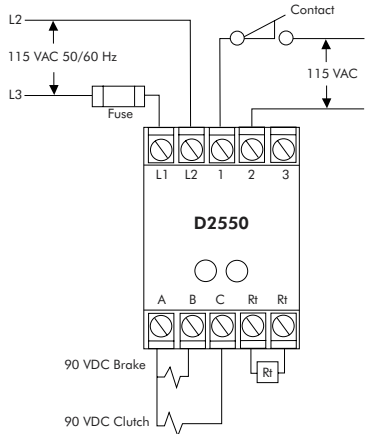
Clutch/Brake Shaft RPM Curve using Conventional Control

The Dynatec® 2550 incorporates MOV's and time delay logic that will prevent the effects of overlap. This graph illustrates the effects of anti-overlap. Notice the difference between the RPM curves. You have a shorter time to speed and time to zero, and the switching is more precise, creating less heat. These controls can actually operate the clutch/brake system at higher cycle rates with better repeatability and less heat than conventional controls.

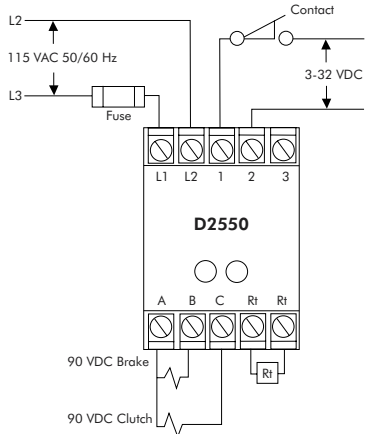


Clutch/Brake Shaft RPM Curve using Dynatec® Control with Anti-Overlap

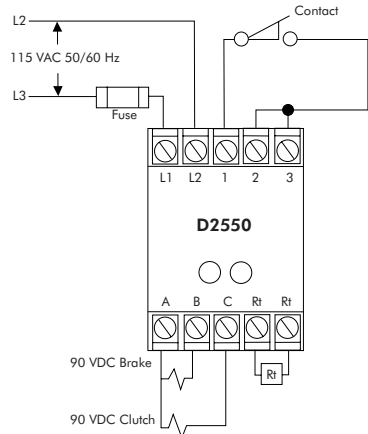
## D2550 Wiring Information



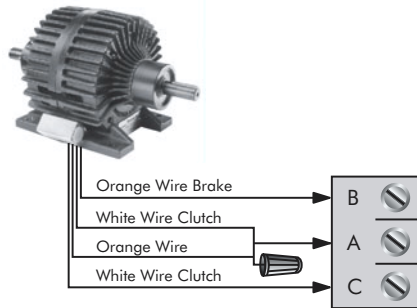
Wiring example for logic input 115 VAC



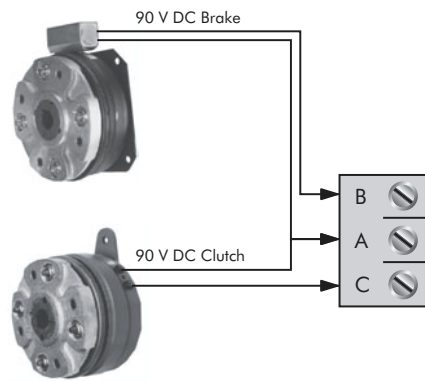
Wiring example for logic input 3-32 VDC



Wiring example for contact closures



Dynatec® Clutch/Brake Package Wiring



Single Clutch and Brake Wiring

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# Dynatec® Controls

## Dynatec® D2100 and D2110

### Plug-in Clutch/Brake Controls

Dynacorp® D2100 Control Part# 214215 (115 VAC Input)

Dynacorp® D2110 Control Part# 224215 (230 VAC Input)



#### Description:

The Dynatec® 2100 (D2100) and 2110 (D2110), are plug-in controls, designed to mount into an eight pin octo-socket. The D2100 and the D2110 are engineered to operate a 90 V DC clutch and/or brake coil with current loads up to 2.0 amps. The compact plug-in design allows for ease of installation and replacement.

The D2100 and D2110 are fused on both input power lines to protect the controller system. These controls incorporate voltage protection on the AC input to suppress transient spikes, present on some power lines.

#### Specifications:


##### Model D2100

Part#	214215
Input V	115 VAC 50/60Hz
Output V	90 V DC
Output A	2 A Max.
Fuse	3 A, 250 VAC Micro-Fuse

##### Model D2110

Part#	224215
Input V	230 VAC 50/60Hz
Output V	90 V DC
Output A	2 A Max.
Fuse	3 A, 250 VAC Micro-Fuse

#### Features:

- Meets  Certification
- Status/Diagnostic LED'S:
  1. Green—Clutch ON
  2. Red—Brake ON
- The D2100 and D2110 are protected from transient high voltage spikes with MOV technology.

#### Optional Parts:

Part# 65-22-3

8 Pin Octal Socket

Part# 32-1-11 (Pack of 5)

3 A, 250 VAC (2 AG) F/A Micro-Fuse

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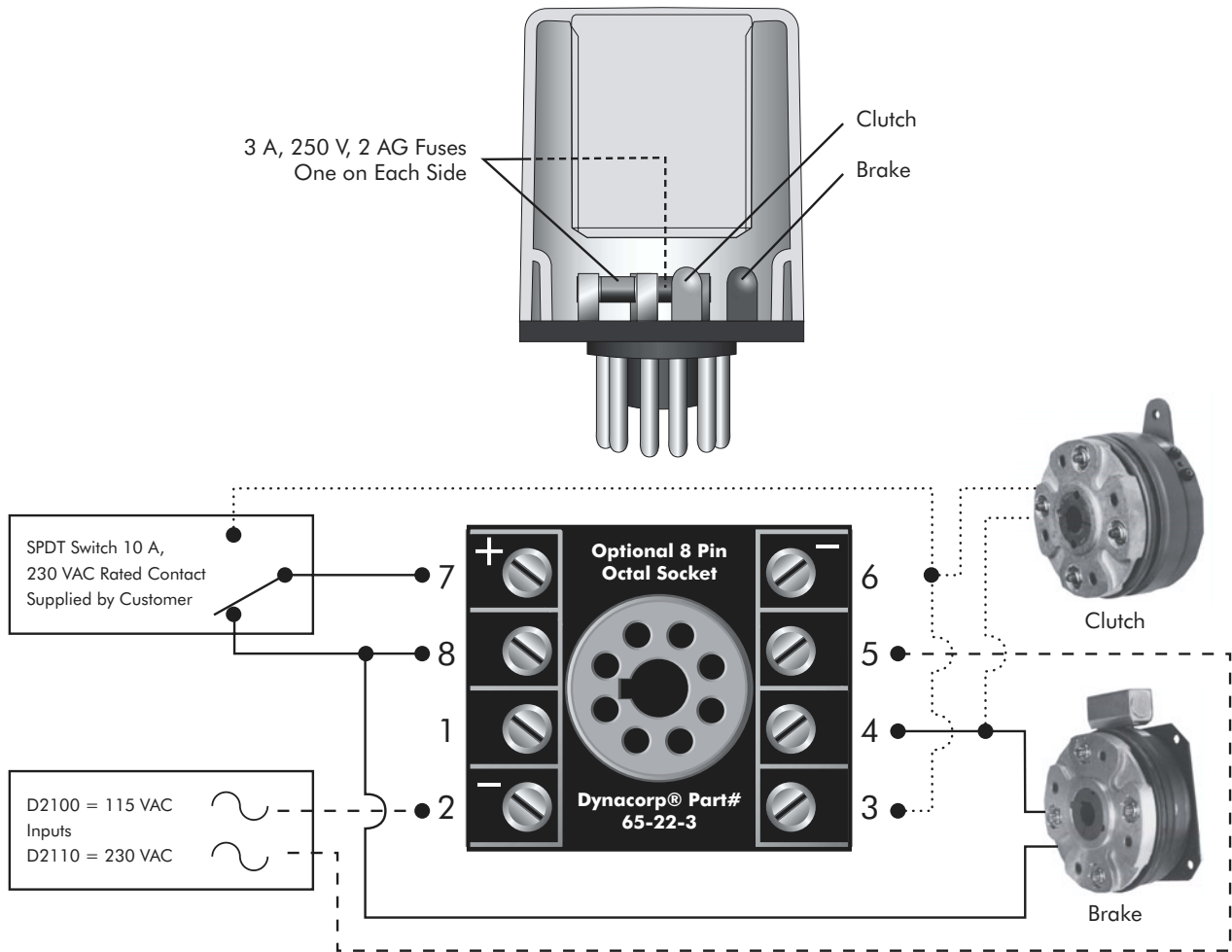
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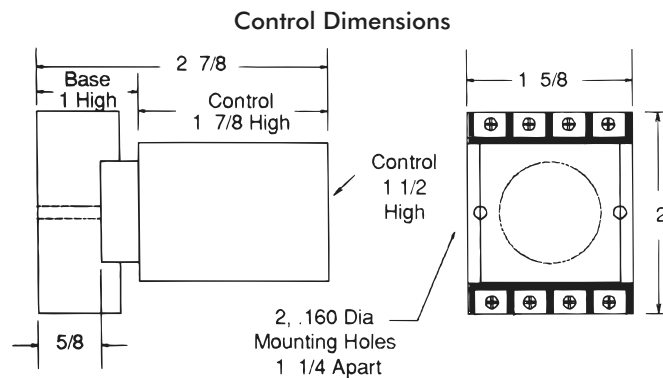


D2100/D2110 Wiring Information

Wiring Diagram  
For Clutch and or Brake



Notice: Use wire and methods in accordance with Local, State, and National Electric Codes (NEC).



Base (Part # 65-22-3) ordered separately

# Dynatec® Controls

## Dynatec® D2101 and D2111

### Plug-in Clutch/Brake Controls

Dynacorp® D2101 Control Part# D6001-448-004 (115 VAC Input)

Dynacorp® D2111 Control Part# D6001-448-006 (230 VAC Input)



#### Description:

The Dynatec® 2101 (D2101) and 2111 (D2111), are plug-in controls, designed to mount into an eight pin octo-socket. The D2101 and the D2111 are engineered to operate a 90 V DC clutch and/or brake coil with current loads up to 2.0 amps. The compact plug-in design allows for ease of installation and replacement.

The D2101 and D2111 are fused on both input power lines to protect the controller system. These controls incorporate voltage protection on the AC input to suppress transient spikes, present on some power lines.

#### Specifications:


##### Model D2101

Part#	D6001-448-004
Input V	115 VAC 50/60Hz
Output V	90 V DC
Output A	2 A Max.
Fuse	3 A, 250 VAC Micro-Fuse

##### Model D2111

Part#	D6001-448-006
Input V	230 VAC 50/60Hz
Output V	90 V DC
Output A	2 A Max.
Fuse	3 A, 250 VAC Micro-Fuse

#### Features:

- Meets  Certification
- Status/Diagnostic LED'S:
  1. Green—Clutch ON
  2. Red—Brake ON
- The D2101 and D2111 are protected from transient high voltage spikes with MOV technology.

#### Optional Parts:

Part# 65-22-3

8 Pin Octal Socket

Part# 32-1-11 (Pack of 5)

3 A, 250 VAC (2 AG) F/A Micro-Fuse

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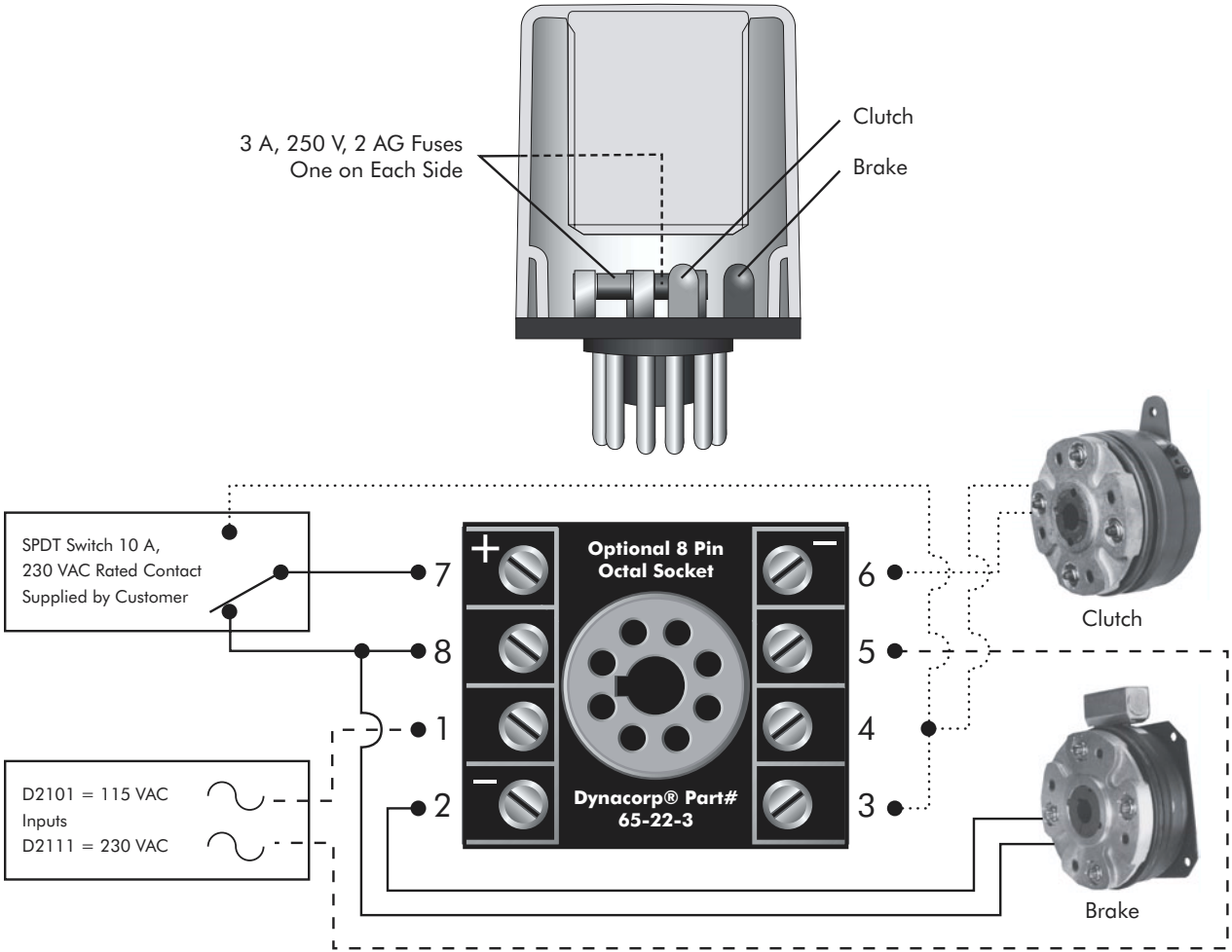
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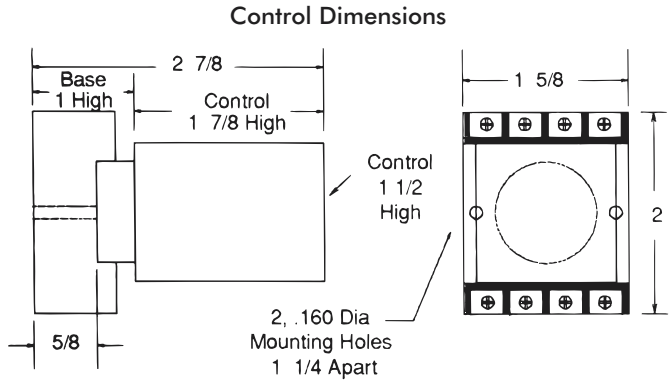
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D2101/D2111 Wiring Information

Wiring Diagram  
For Clutch and or Brake



Notice: Use wire and methods in accordance with Local, State, and National Electric Codes (NEC).



Base (Part # 65-22-3) ordered separately

# Dynatec® Controls

## Dynatec® 2650 Control

Dual Channel Anti-Overlap  
Torque Adjust Clutch/Brake Control



### Description

The Dynatec® 2650 (D2650) is a solid-state anti-overlap clutch/brake controller, engineered to operate 90 VDC clutch/brake (C/B) coils with current loads up to 1.0 amp; Din rail mounting for ease of installation.

This controller operates one or two coils, incorporating adjustable output voltage (torque) for each channel and anti-overlap circuit.

The D2650 incorporates voltage protection on the AC input. When transient voltage spikes or notching is present on AC lines, an isolation transformer is required to filter the incoming power to the D2650.

### Specifications

#### Power Input

Voltage	115 VAC
Current	1.5 amp
Frequency	50/60 HZ
Fusing	Customer-supplied 2 amp

#### Power Output

Voltage	90 VDC
Current	1.0 amp Max.


#### D2650 Dimensions

Weight	15 oz.
Overall	2.76" H. x 1.97" W. x 4.30" D.

#### Temperature

Operating	0° to 65°C (32° to 149°F)
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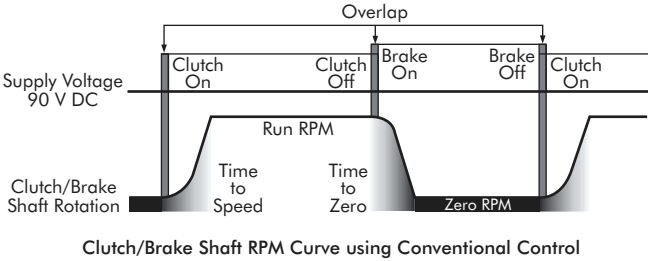
### Features

- Meets  Certification
- Anti-Overlap Circuit
- Dual Output Torque (Voltage) Adjustment
- 115 VAC Input
- Selective Input Switching Logic –115 VAC
- Status/Diagnostic LED'S:
  1. Clutch ON
  2. Brake ON

Input Logic	Part No.
115 VAC, 50/60 Hz	214237-040-2233

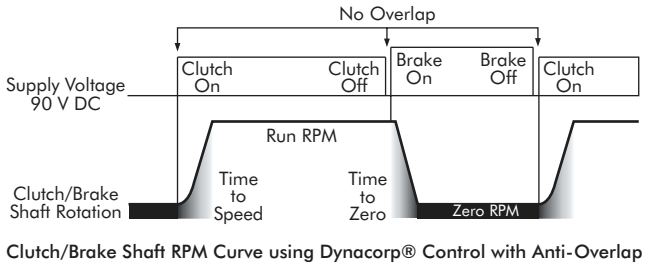
### D2650 Anti-Overlap

When using conventional controls where the output voltage is switched by a relay contact, overlap occurs when you see the arching across the contacts. This indicates that just for an instant the brake and clutch are both engaged. This graph represents overlap. The effect of this is excessive wear and heat to the clutch/brake system.



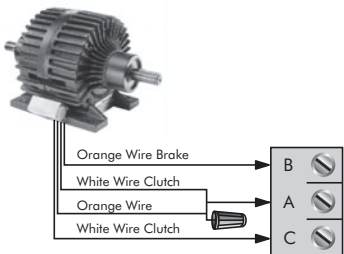
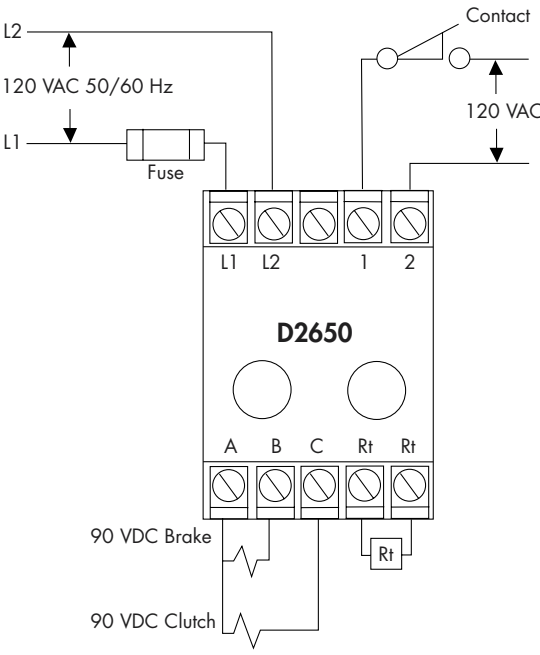
Clutch/Brake Shaft RPM Curve using Conventional Control

The Dynatec® 2650 incorporates MOV's and time delay logic that will prevent the effects of overlap. This graph illustrates the effects of anti-overlap. Notice the difference between the RPM curves. You have a shorter time to speed and time to zero, and the switching is more precise, creating less heat. These controls can actually operate the clutch/brake system at higher cycle rates, with better repeatability and less heat than conventional controls.

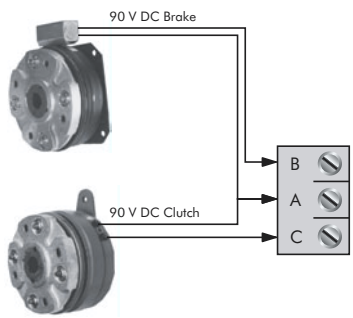


Clutch/Brake Shaft RPM Curve using Dynacorp® Control with Anti-Overlap

### D2650 Wiring Information



Dynacorp® Clutch/Brake Package Wiring



Single Clutch and Brake Wiring