

Dynacorp

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D2950 Clutch Brake Control Instructions

P/N 214277-040-2211 - Logic Input: 120 VAC
P/N 214277-040-2212 - Logic Input: 3 to 32 VDC
P/N 214277-040-2213 - Logic Input: Contact Closure

Features:

- Dual overexcite (OE)
- Adjustable Anti-overlap switching delay Increases clutch/brake life
- Output Overload Protection
- Provides power directly to the clutch/brake. No interfacing relay needed (less wiring)
- Fast response time for high-speed machines
- Compact size – only 10.8 square inches of panel space (DIN rail or panel mount)
- Flexible, versatile control interface (PLC compatible)
- Status indicator for each load

The **D2950** is a solid-state over-excitation power supply for 90 VDC loads. Applying an overexcite voltage spike, turn-on times of typical loads can be reduced by up to 75% reducing the load response time, cycle rates in high speed applications can be increased dramatically. The adjustable anti-overlap time delay also offers the ability to operate clutches and brakes at very high speeds, with less mechanical wear. The output overload circuit shuts down the control when output current draw is above 1.0 ampere. Three input logic options allow interface with PLC's, photoelectric controls, proximity sensors, contacts, transistors, etc.

OPERATION (see wiring diagrams):

Upon initiation, the D2950 supplies 340 VDC (peak) to the load, resulting in fast energization. Following overexcite, the solid-state 90V output remains ON.

P/N 214277-040-2211 and 214277-040-2212

- a. When power is applied to L1,L 2 with no logic voltage present, the brake energizes.
- b. When logic voltage is applied to terminals 1, 2 brake immediately de-energizes. Clutch is energized following preset Switching Time Delay.
- c. When logic voltage is removed, clutch de-energizes and, following Switching Time Delay, brake energizes.

P/N 214277-040-2213

Maintained 2-wire (1 SPST switch)

- a. When power is applied to L1, L2 with 1, 3 contacts open, brake energizes.
- b. Maintained closure of 1, 3 contacts causes brake to de-energize. Clutch is energized following Switching Time Delay.
- c. When 1, 3 contacts open, clutch de-energizes and, following Switching Time Delay, brake energizes.

P/N 214277-040-2213 continued

Maintained 3-wire (1 SPDT switch)

- a. When power is applied to L1, L2 with 2, 3 contacts closed, brake energizes.
- b. When 2, 3 contacts open and 1, 3 contacts close, brake de-energizes. Clutch is energized following Switching Time Delay.
- c. When 1, 3 contacts open and 2, 3 contacts close, clutch de-energizes and, following Switching Time Delay, brake energizes.

Momentary (2 SPST switches)

- a. When power is applied to L1, L2 with 1, 3 and 2, 3 contacts open, brake energizes.
- b. Momentary closure of 1, 3 contacts causes brake to de-energize. Clutch is energized following Switching Time Delay.
- c. Momentary closure of 2, 3 contacts causes clutch to de-energize. Brake is energized following Switching Time Delay.
- d. With 1, 3 and 2, 3 contacts closed, 1, 3 contacts override and clutch energizes.

Notes:

1. Logic terminals 1,2 on the 214277-040-2211 and 214277-2212 are isolated. Terminal L2 and/or 2 may be grounded.
2. Logic voltage on the 214277-040-2213 is 12 VDC from internal power supply. Initiating contact may be any contact, transistor, reed switch, etc. capable of switching 12 VDC, 1 ma.
3. Load terminals (A – B - C) and terminal 3 are not isolated from line terminals (L1, L2), and must not be connected to ground.
4. Do not place switches or mechanical contacts between clutch and brake and their terminals (A – B - C). Opening these circuits while current is flowing may damage the control.

Anti-Overlap Time Delay

Anti-Overlap time is a delay between clutch power off and brake power on, and vice versa. By adjusting this delay, you can obtain the fastest cycling time and the least wear on your system. If a clutch/brake control switches too quickly, there may be a mechanical overlap between the clutch and the brake. With the Switching Time Delay control fully clockwise (10), switching time delay is at its maximum (approx. 100 msec). Fully counter clockwise (0) provides the minimum delay. Correct setting depends upon clutch/brake size, response time, and load inertia.

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Overload Protection

If the clutch or brake coil current level rises above 1.0 amp the overload circuit turns OFF the output. Power must be removed for L1, L2 to reset the control.

Overexcite Jumper 6, 7

For fastest coil rise time jumper 6, 7 is installed. Clutch and or brake coils greater than 500 ohm the jumper must be removed to fully overexcite the coil. See jumper chart.

Overexcite Jumper 6-7 Data Table

Size (in)	Torque (ft-lb)	Coil data		6-7 Jumper
		Res. (ohms)	Current (amps)	
2 5/8	5/8	1150/800	.11/.09	No
4 1/4	20/22	820/700	.13	No
5 5/8	50/57	270/220	.41/.39	Yes
8 1/2	125/175	225/160	.57/.47	Yes
12 1/4	465/525	260/245	.43/.34	Yes
15 1/4	700/850	305/220	.41/.34	Yes

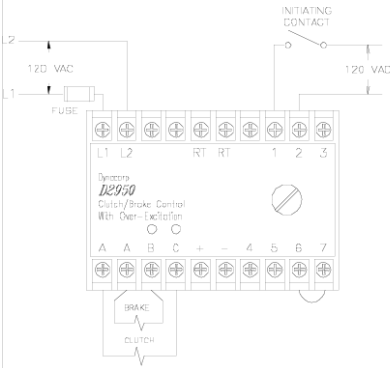
Specifications	P/N 214277-040-2211	P/N 214277-040-2212	P/N 214277-040-2213
Line Input (L1, L2 terminals)	120 VAC +/- 20%, 50/60 Hz, 25 mA burden (excluding load current)		
Logic Input (1, 2 terminals)	120 VAC +/- 20%, 50/60 Hz, 25 mA burden (will not operate on leakage current below 10 mA)	3-32 VDC, 1-35 mA burden	contact closure; contacts must be able to switch 12 VDC, 1 mA
Logic Response Time (excluding Switching Time Delay)	1-9 msec	< 1 msec	< 1 msec
Load Rating (A,B,C terminals) Steady-state output Output Current	105 VDC at 120 VAC line input 1.0 Amps maximum		
Switching Anti-overlap Time Delay	adjustable from less than 1 msec to 100 msec		
Recommended Line Fuse (L1 terminal)	Littelfuse 322 Series 2 Amp Very Fast-Acting 322002		
Temperature	0 to 65° C (32 to 149° F)		

WARNING: Because of the possible danger to person(s) or property from accidents, which may result from the improper use of products, it is important that correct procedures be followed: Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Dynacorp nor are the responsibility of Dynacorp.

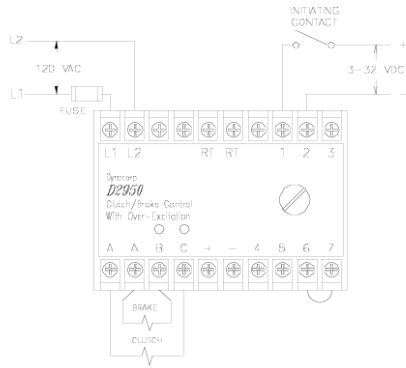
All Models
 Input Voltage: 120 VAC
 Output Current: 1.0 Amps Max

D2950 Wiring Diagrams

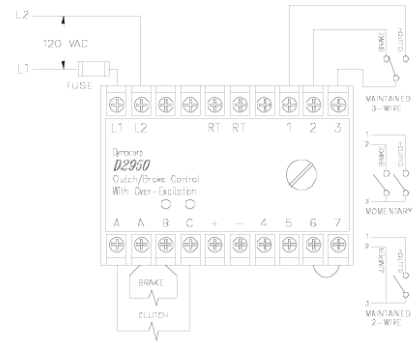
214277-040-2211
Logic Input: 120 VAC



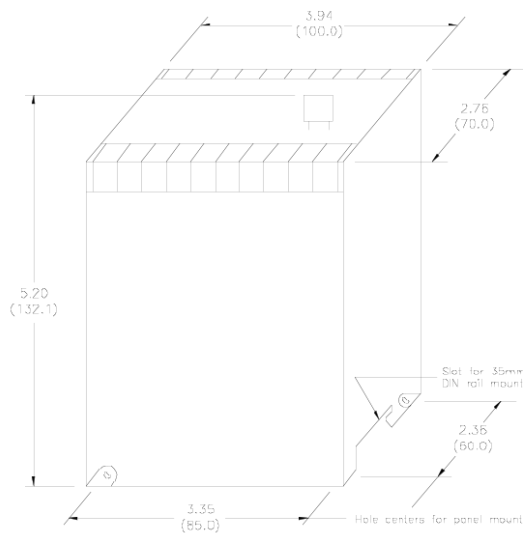
214277-040-2212
Logic Input: 3 to 32 VDC



214277-040-2213
Logic Input: Contact Closure



DIMENSIONS $\frac{in}{(mm)}$



Note: Optional terminal covers are available.

TIMING DIAGRAM

