

Dynacorp

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Features:

- Dual torque adjustable outputs (5 to 100%)
- Provides power directly to the clutch/brake. No interfacing relay needed (less wiring)
- Fast response time for high-speed machines
- Compact size – only 5.4 square inches of panel space (DIN rail or panel mount)
- Flexible, versatile control interface (PLC compatible)
- Increases clutch/brake life with adjustable Anti-Overlap switching time delay
- Status indicator for each load

The **D2650** is an all-solid-state power supply relay for 90 VDC magnetic clutches and brakes. Advanced features offer the ability to operate clutches and brakes at very high speeds, with less mechanical wear. Output voltage (torque) is adjustable for both the clutch and brake. The Adjustable Switching Time Delay feature will minimize the overlap between alternate starting and stopping for longer life.

OPERATION

- a. When power is applied to L1, L2 with no logic voltage present at 1 and 2, 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.

Notes:

1. Logic terminals 1 and 2 are isolated. Terminal L2 and/or 2 may be grounded. Load terminals A – B - C are not isolated and must not be grounded.
2. Load terminals (A – B - C) are not isolated from line terminals (L1, L2) and must not be connected to ground or the ground side of a line.
3. 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.

D2650 Clutch Brake Control Instructions

P/N 214237-040-2233 - Logic Input 120 VAC

Torque Adjustments

Both clutch and brake output voltage is adjustable from 5 to 100% of full load. When the voltage is reduced the clutch and or brakes torque characteristics are de-rated. Under high cycling applications the clutch or brake may continuously slip (not fully engage) and life may be shortened. If the application requires soft start and or stop the D2750 accel / decel series control may be a better choice.

Switching Time Delay

The Dynacorp D2650 features adjustable switching time delay. Switching time is a delay between clutch turn-off and brake turn-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 (the clutch and brake will work against each other). The switching time delay feature can reduce or eliminate this overlap and increase the useful life of the clutch and brake. The D2650 is supplied with an 8.2 Kilo-ohm resistor, which provides a 82 ms switching time delay. Since smaller clutch/brakes tend to respond faster, the switching time delay resistor can be reduced in many applications (see table1). A jumper may be installed in the place of the resistor to obtain the shortest switching time delay. Switching time delay relates to resistor size as follows:

$$T_s = R \times 10$$

R = Switching Time Delay resistor, in Kilo-ohms.

T_s = Switching Time Delay, in milliseconds

Size (in)	Torque (ft-lb)	Coil data		Flux Rise Time (msec)	Suggested Switching Time Delay (ohms)
		Res. (ohms)	Current (amps)		
2 5/8	5/8	1150/800	.11/.09	50	2.7 K
4 1/4	20/22	820/700	.13	60	3.3 K
5 5/8	50/57	270/220	.41/.39	90	3.3 K
8 1/2	125/175	225/160	.57/.47	180	8.2 K
12 1/4	465/525	260/245	.43/.34	350	12 or 15 K
15 1/4	700/850	305/220	.41/.34	510	18 or 22 K

Notes:

- Flux rise time is the typical time for flux to build up to 90% of the steady state value. This point is typically equal to 80% of rated torque.
- Flux decay time to 10% of steady state flux using the D2650 is typically 20% to 30% of the flux rise time.
- Flux rise time is independent of switching time delay.

Specifications	
P/N 214237-040-2233	
Line Input (L1, L2 terminals)	120 VAC +/- 20%, 50/60 Hz
Logic Input (1, 2 terminals)	120 VAC +/- 20%, 50/60 Hz, 25 mA burden (will not operate on leakage current below 10 mA)
Recommended Line Fuse	Wickman 19231 2A
Output Load Rating (A – B - C terminals)	Adjustable – 5 to 100% of full load
Output Voltage	
Current Rating	1.0 Amps maximum
Switching Time Delay (Rt terminals)	Adjustable from less than 1 msec to 100 msec 10 ms per K ohm; 8.2K = 82 milliseconds
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.

