

REGENT'S

# ClutchBraker™

## CLUTCH/BRAKE CONTROL

**ClutchBraker120** for 120 VAC Logic  
**ClutchBraker32** for DC Logic  
**ClutchBrakerV12** for external switch

### Features

- Provides power directly to clutch/brake. No interfacing relays needed (less wiring).
- Flexible, versatile control interface. PLC compatible.
- Increases clutch/brake life with adjustable switching time delay.
- Fast response time for high-speed machines.
- Compact size. DIN rail or panel mount.
- LED status indicator for each load.
- Regent's 2 Year Warranty.

### Ideal for:

- ▶ Material handling
- ▶ Indexing tables
- ▶ Winding machines
- ▶ Automatic cutoff
- ▶ Conveyor control
- ▶ Packaging machines
- ▶ Film feed
- ▶ Label feed
- ▶ Alternate clutch/brake drive or twin clutch applications (2 speed and reversing)



The *ClutchBraker* is an all-solid-state power supply relay for 90 VDC magnetic clutches and brakes. Its advanced features offer the ability to operate clutches and brakes at very high speeds, with less mechanical wear.

Logic level input permits direct interface with PLC output modules, photoelectric controls, proximity sensors, contacts, transistors, etc.

Adjustable switching time delay lets you minimize overlap between the clutch and brake, which means longer mechanical life.

### PART NUMBER BUILDER

ClutchBraker – 120

Control Logic  
- **120** for 120 VAC logic  
- **32** for DC logic  
- **V12** for external switch

Series Name  
**ClutchBraker** for 90V Clutch and Brake

FOR MORE INFORMATION CALL 203-732-6200  
OR VISIT US ONLINE AT [www.regentcontrols.com](http://www.regentcontrols.com)



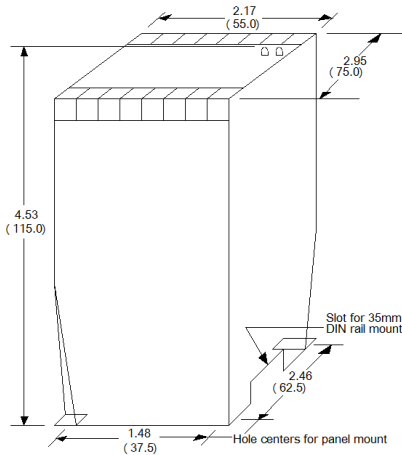
e-mail: [sales@regentcontrols.com](mailto:sales@regentcontrols.com)



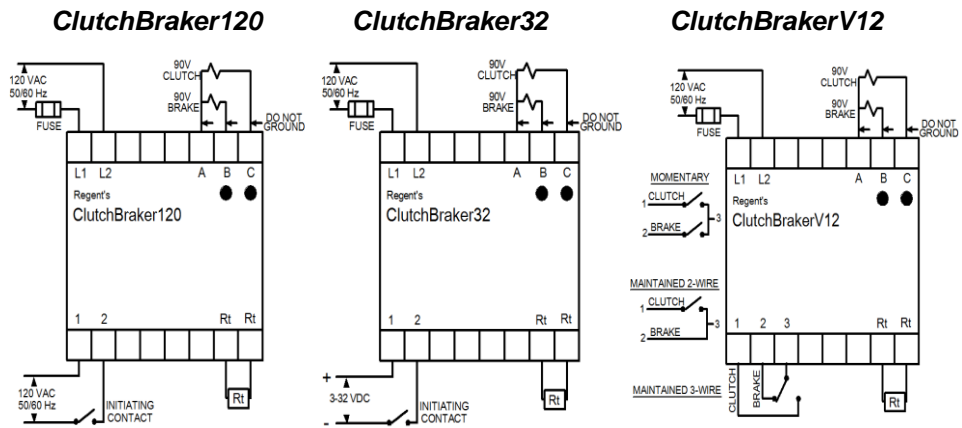
# Regent's *ClutchBraker*™

## Clutch/Brake Control

### DIMENSIONS



### WIRING DIAGRAMS



### NOTES

1. Logic terminals 1,2 on the *ClutchBraker120* and *ClutchBraker32* are isolated. Terminal L2 and/or 2 may be grounded.
2. Logic terminals 1,2,3 on the *ClutchBrakerV12* are not isolated and must not be grounded.
3. Load terminals A,B,C and terminal 3 are not isolated from line terminals L1,L2 and must not be connected to ground or the ground side of the line.
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.

SPECIFICATIONS	<i>ClutchBraker120</i>	<i>ClutchBraker32</i>	<i>ClutchBrakerV12</i>
<b>Line Input (L1,L2)</b>	120 VAC +/- 20%, 50/60 Hz 25 mA burden (excluding load)	120 VAC +/- 20%, 50/60 Hz 25 mA burden (excluding load)	120 VAC +/- 20%, 50/60 Hz 25 mA burden (excluding load)
<b>Logic Input (1,2)</b>	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, 1mA
<b>Logic Response Time (exc. Switching Time Delay)</b>	1-9 msec	<1 msec	<1 msec
<b>Load Rating (A,B,C) Steady-state output Current rating Recommended Fuse</b>	105 VDC at 120 VAC line input 1 A maximum Buss PCB1	105 VDC at 120 VAC line input 1 A maximum Buss PCB1	105 VDC at 120 VAC line input 1 A maximum Buss PCB1
<b>Switching Time Delay</b>	Adj. from less than 1 to 100 msec	Adj. from less than 1 to 100 msec	Adj. from less than 1 to 100 msec
<b>Recommended Line Fuse</b>	Littelfuse 322002	Littelfuse 322002	Littelfuse 322002
<b>Temperature</b>	0 to 65°C (32 to 149°F)	0 to 65°C (32 to 149°F)	0 to 65°C (32 to 149°F)



# Regent's *ClutchBraker*™

## Clutch/Brake Control

### OPERATION (refer to TIMING DIAGRAM)

#### *ClutchBraker120* and *ClutchBraker32*

- When power is applied to L1,L2 with no logic voltage present, the brake energizes.
- When logic voltage is applied to 1,2 brake immediately de-energizes. Clutch is energized following preset Switching Time Delay.
- When logic voltage is removed, clutch de-energizes and, following Switching Time Delay, brake energizes.

#### *ClutchBrakerV12*

##### Maintained 2-wire (1 SPST switch)

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

##### Maintained 3-wire (1SPDT switch)

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

##### Momentary (2 SPST switches)

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

### SWITCHING TIME DELAY

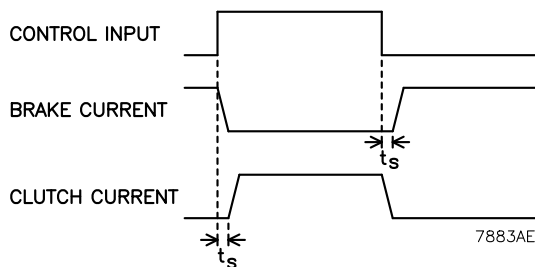
Regent's *ClutchBraker* features adjustable Switching Time Delay. Switching Time Delay is a delay between clutch turn-off and brake turn-on, and vice versa, to reduce overlap. By adjusting this delay, you can obtain the fastest cycle time and the least wear on your mechanical system.

If a clutch/brake switches too quickly, there may be mechanical overlap between the clutch and brake. Switching time delay can reduce or eliminate this overlap increasing the useful life of the clutch and brake.

The *ClutchBraker* is ordinarily supplied with an 8.2 K ohm resistor providing 82 msec switching time delay (i.e. 1K = 10 msec). Correct setting depends upon clutch/brake size, response time, and load inertia (see table below for sample values). Flux rise time in clutch or brake coil is independent of Switching Time Delay.

Size (in)	Torque (lb ft)	Coil Res. (ohms)	Coil Current (amps)	Flux Rise Time (msec)	Suggested Switching Time Res. (ohms)
2 5/8	8	1150	0.09	50	2.7 K
4 1/4	20	820	0.13	60	3.3 K
5 5/8	50	270	0.39	90	3.3 K
8 1/2	125	225	0.47	180	8.2 K
12 1/4	465	245	0.43	350	12 or 15 K
15 1/4	700	305	0.34	510	18 or 22 K

### TIMING DIAGRAM



$t_s$  = Switching Time Delay

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