

Allen-Bradley 1397 NEMA Type 1 Dynamic Brake

Cat. Nos. 1397-DB-AxxxE — 240VDC
1397-DB-BxxxE — 500VDC

What This Option Provides

The 1397 NEMA Type 1 Dynamic Brake provides a self contained NEMA Type 1 enclosed assembly that is wired to the 1397 drive.

Where This Option Is Used

Each NEMA Type 1 Dynamic Brake is sized to a 1397 drive as detailed below. For 230V AC drive ratings above 30HP (22kW) and 460V AC drive ratings above 60HP (45kW), a 1397 IP00 (open style) Dynamic Brake should be used.

Catalog Number	240VDC DB Rating		500VDC DB Rating	
	HP	(kW)	HP	(kW)
1397-DB-A001E	1.5	(1.2)	—	—
1397-DB-A002E	2	(1.5)	—	—
1397-DB-A003E	3	(2.2)	—	—
1397-DB-B003E	—	—	3	(2.2)
1397-DB-A005E	5	(3.7)	—	—
1397-DB-B005E	—	—	5	(3.7)
1397-DB-A007E	7.5	(5.5)	—	—
1397-DB-B007E	—	—	7.5	(5.5)
1397-DB-A010E	10	(7.5)	—	—
1397-DB-B010E	—	—	10	(7.5)
1397-DB-A015E	15	(11)	—	—
1397-DB-B015E	—	—	15	(11)
1397-DB-A020E	20	(15)	—	—
1397-DB-B025E	—	—	20-25	(15-18.5)
1397-DB-A025E	25	(18.5)	—	—
1397-DB-A030E	30	(22)	—	—
1397-DB-B030E	—	—	30	(22)
1397-DB-B040E	—	—	40	(30)
1397-DB-B060E	—	—	50-60	(37-45)

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What These Instructions Contain

These instructions contain the necessary information to install & configure a 1397 NEMA Type 1 Dynamic Brake. For additional information on wire recommendations, brake parameters and related function blocks, refer to the 1397 User Manual — Publication 1397-5.0.

Specifications

Duty Time	(3) repetitive stops with an average of (1) stop every (10) minutes.
Input Power	DC Power Supplied from 1397 Drive.
Enclosure Type	IP20 (NEMA Type 1) — Cannot be used in atmospheres having corrosive or hazardous dust, vapor or gas.
Altitude Derating	1,000 meters (3,300 feet) maximum without derating.

Installation



ATTENTION: This board contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control precautions are not followed. If you are not familiar with static control procedures, reference publication 8000-4.5.2, "Guarding Against Electrostatic Damage" or any other applicable ESD protection handbook.



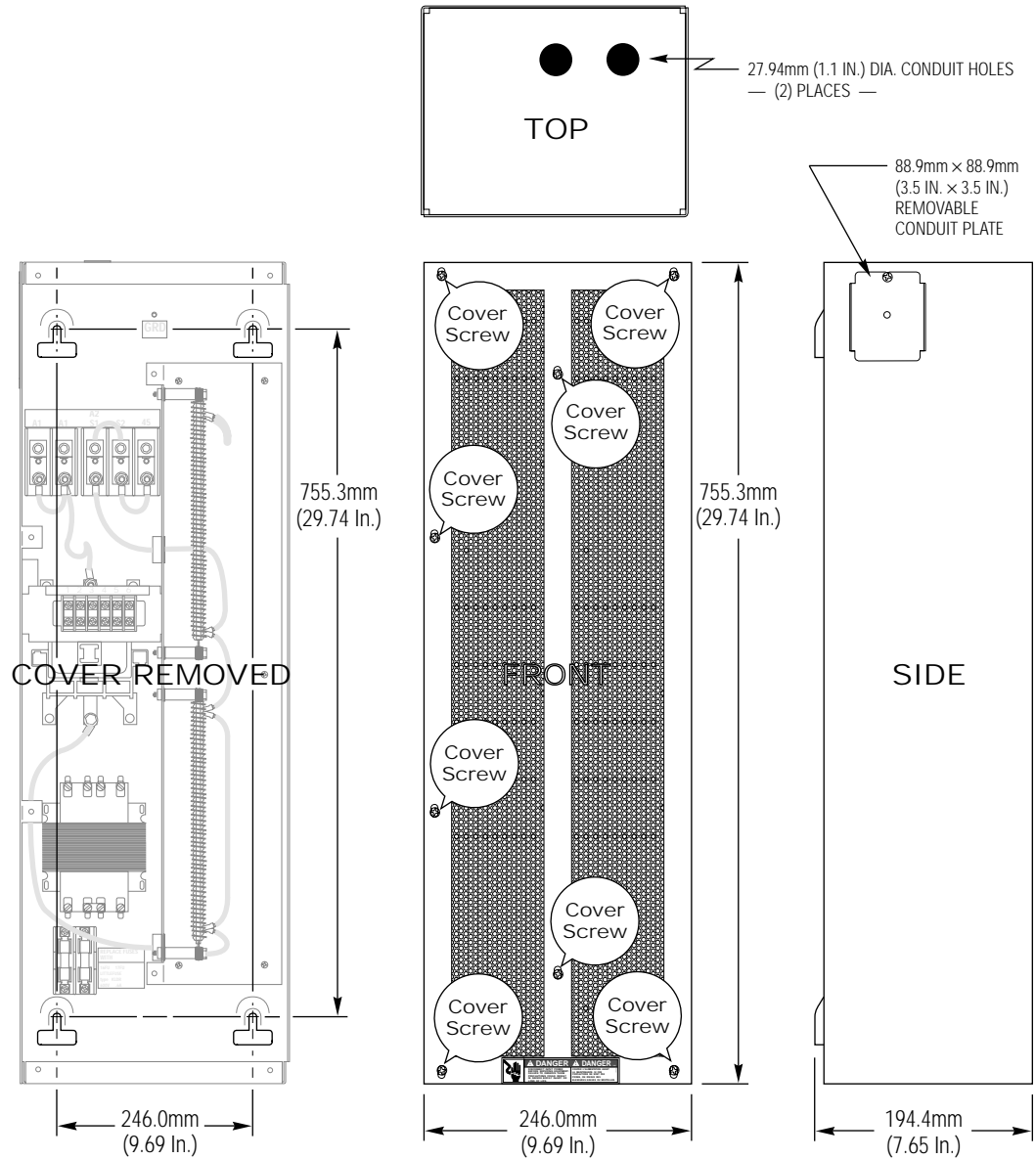
ATTENTION: Electric Shock can cause injury or death. Remove all power before working on this product.

The drive is at line voltage when connected to incoming AC power. Before proceeding with any installation or troubleshooting activity, disconnect, lockout and tag all incoming power to the drive. Verify with a voltmeter that no voltage exists at terminals L1, L2 and L3 on the drive input power terminal block.

IMPORTANT: The National Electrical Codes (NEC) and local regulations govern the installation and wiring of the NEMA Type 1 Dynamic Brake. AC power wiring, control wiring and conduit must be chosen and installed in accordance with these codes and the information supplied in the 1397 User Manual — publication 1397-5.0.

Installation (continued)

- ❑ 1 Remove and lockout all incoming power to the drive. Remove the (8) cover screws to remove the brake cover.



- ❑ 2 Included with the Dynamic Brake kit is a 1.22m (48 In.) interconnection cable to supply AC power between the drive's fuses and the Dynamic Brakes' control transformer. The Dynamic Brake is mounted using (4) user supplied mounting fasteners (6mm fasteners is recommended). Leave a minimum of 0.20 In. (5mm) space between the head of the screw and the mounting panel to slide the brake assembly over the heads of the fasteners.

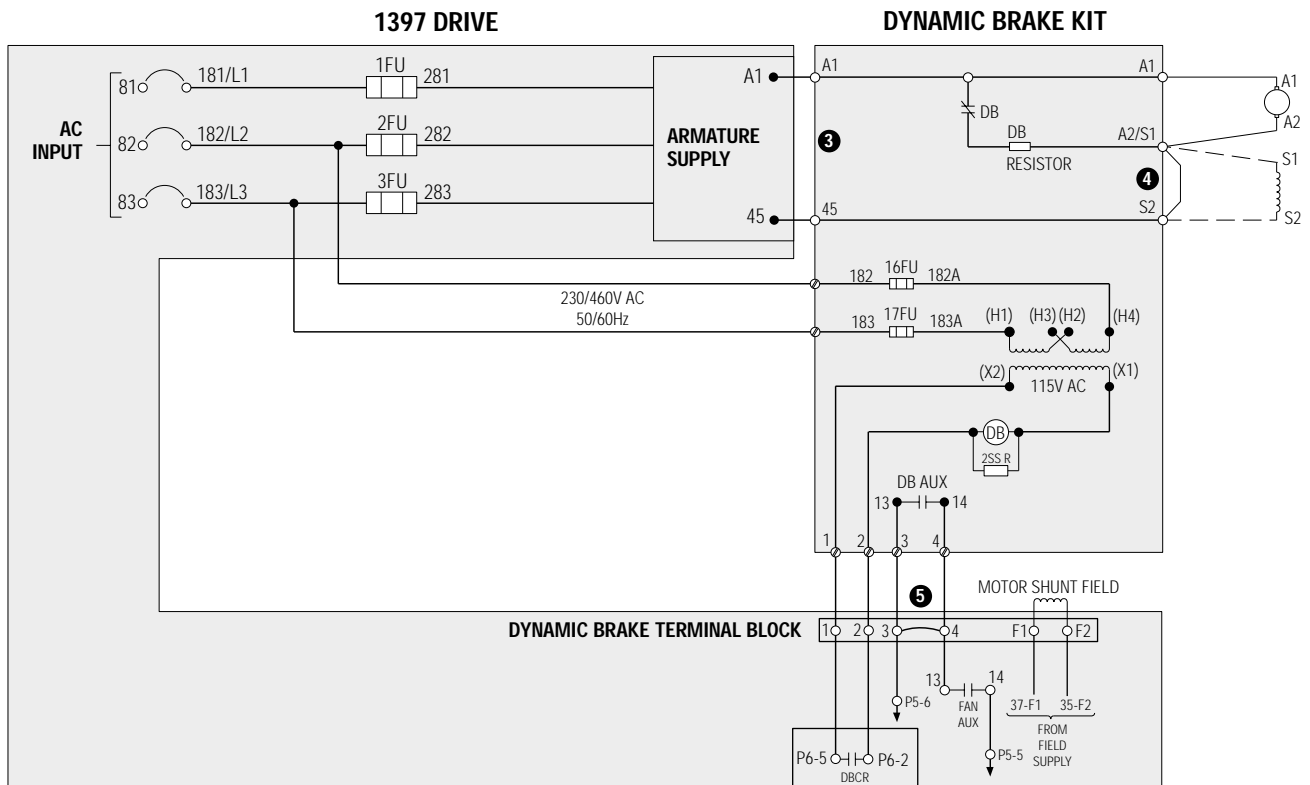
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Installation (continued)

Operation

Dynamic braking slows down a rotating DC motor and its load. It is an "uncontrolled" process. During dynamic braking, the motor armature is disconnected from the drive. A resistor is placed across the motor's rotating armature (now acting as a generator), and the resulting current causes braking torque in the motor. The motor will decelerate, even with a drive failure, as long as motor field excitation is maintained.

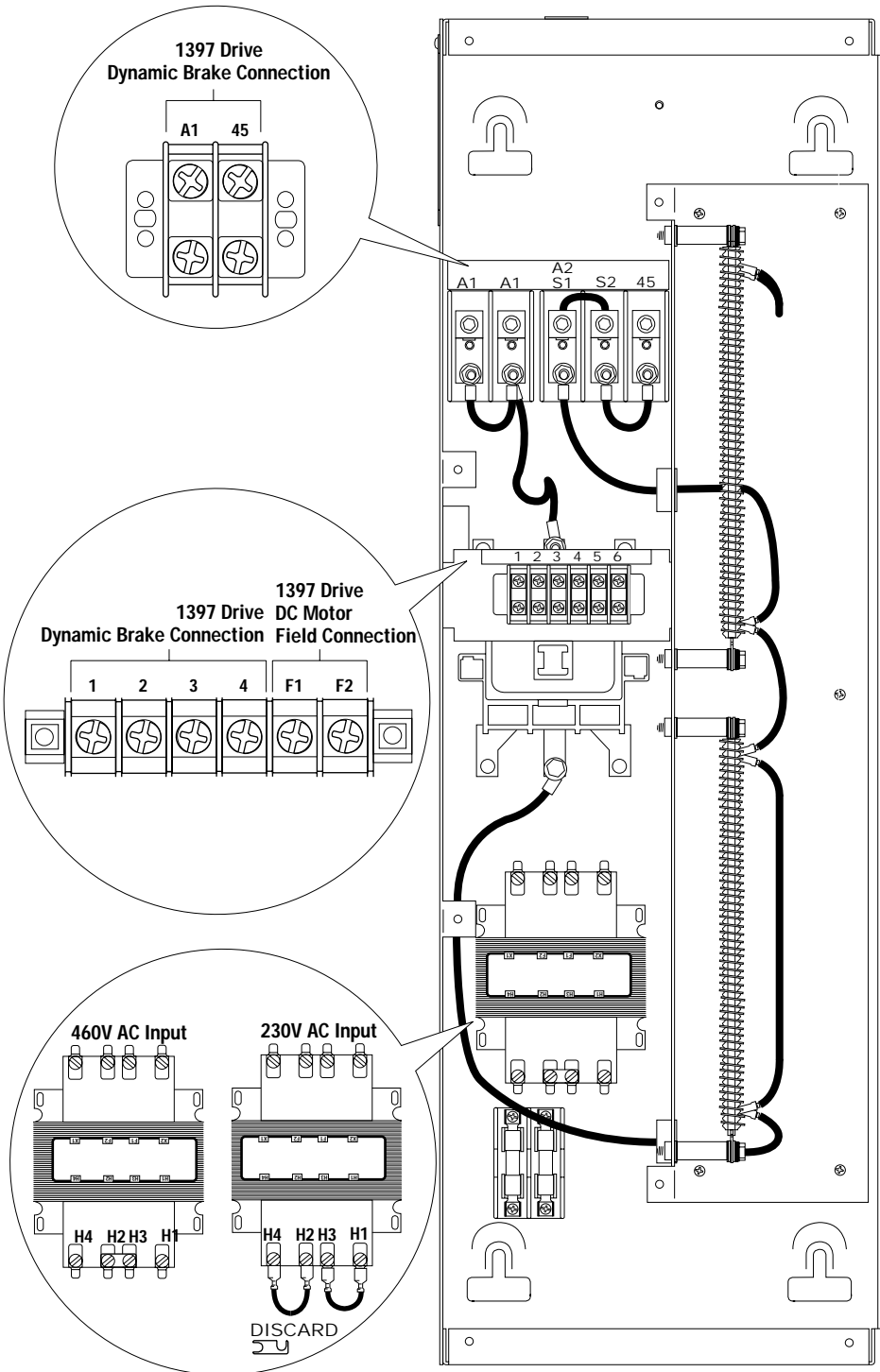
The drive must have the DC contactor open for dynamic braking to occur. Dynamic Braking is typically initiated with a Coast/DB stop command or a drive fault. Under drive fault conditions, the DC contactor opens and applies the dynamic braking grid across the armature for a dynamic braking stop.



- 3** Follow the wiring diagram above and connect user supplied leads between drive terminals A1 & 45 and dynamic brake terminals A1 & 45.
- 4** If the motor has S1 & S2 field leads, remove the S1 & S2 jumper from the brakes' power terminal block and connect the motor series leads to their respective terminals.
- 5** Remove the jumper between terminals 3 & 4 at the drive terminal block and connect user supplied leads between drive terminals 1, 2, 3 & 4 and dynamic brake terminals 1, 2, 3 & 4.

Installation
(continued)

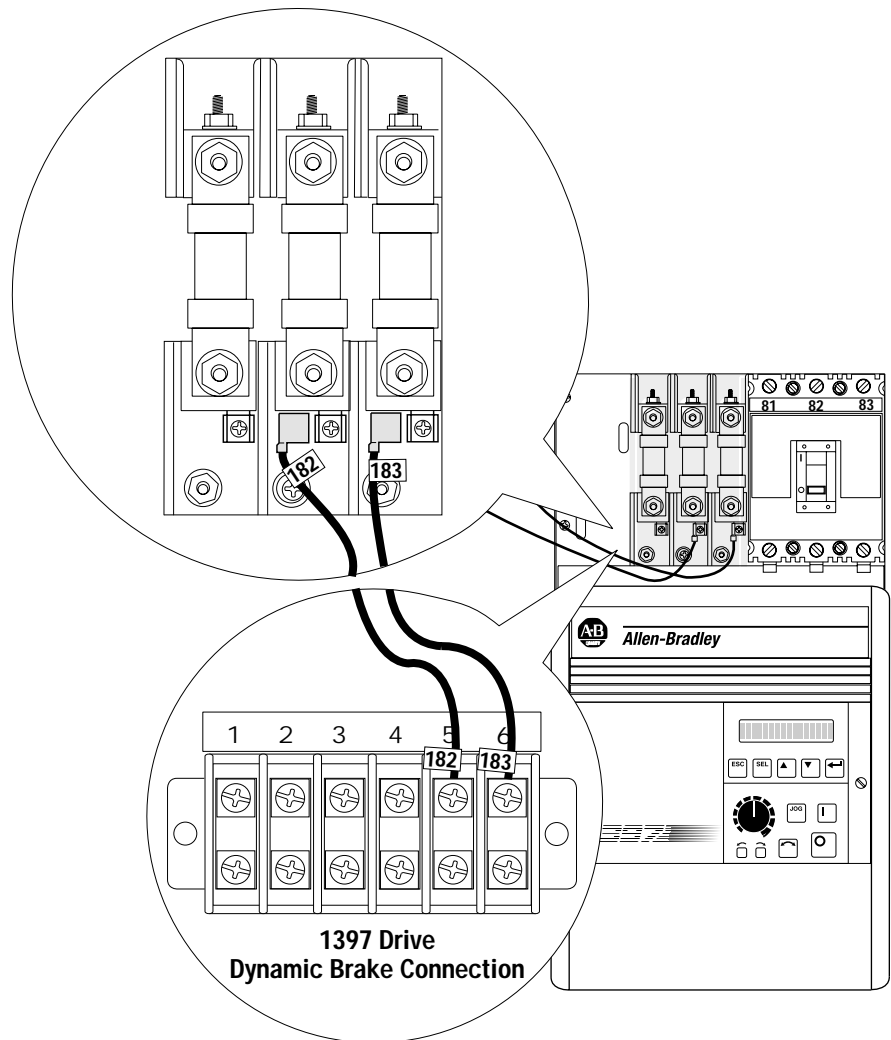
- ❑ 6 The Dynamic Brake should be pre-configured for 230 or 460V AC input voltage. If required, jumper the Dynamic Brake’s transformer for 230 or 460V AC input voltage as shown below.



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Installation (continued)

- 7 Connect the interconnection cable's spade terminations 182 & 183 to the drives line fuse spade terminals as shown. Route the other end to Dynamic Brake terminals 5 & 6.



Check that all wiring has been correctly installed before energizing the controller. Replace the brake cover using the (8) cover screws removed in Step 1.

Setup

Important: Depending upon the application, additional parameter adjustments may be required. If additional options are installed, different parameter settings may be required. Perform the Start-Up and Adjustment procedure in the 1397 User Manual to verify all parameter settings

Stop Mode

P.115 [Stop Mode Type]

Reset to 2 Coast/DB for dynamic braking.

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