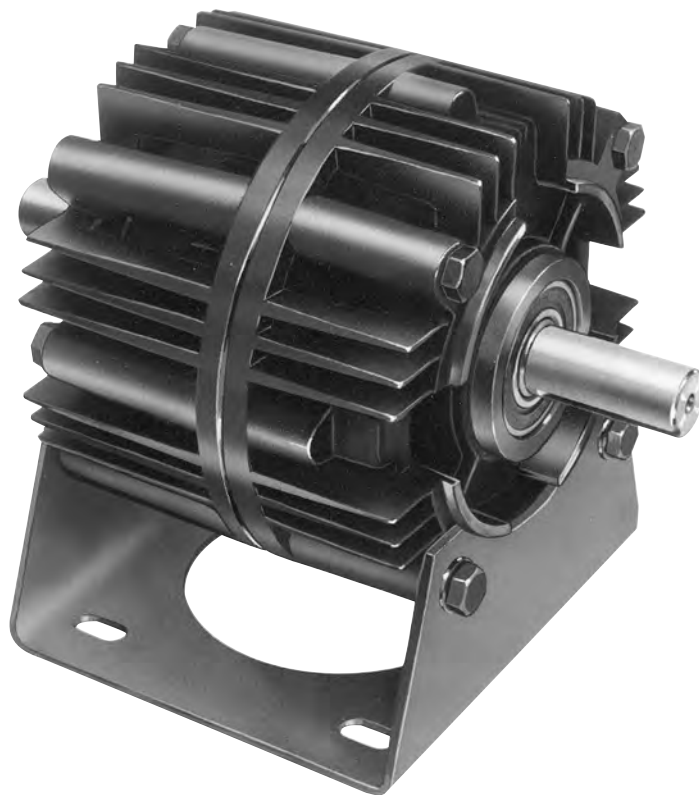


# Preassembled Clutch/Electrically Released Brake Module

P-273-2  
819-0346

Installation Instructions



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**⚠ WARNING** Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

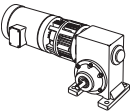
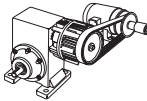
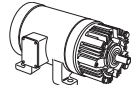
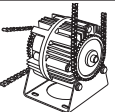
## Introduction

Warner Electric’s Unimodule has been designed to NEMA standards and can be installed with all standard power transmission drive systems.

Before installing the Unimodule to a motor or reducer, make certain that the UM Unimodule size and NEMA frame dimensions match according to the following chart.

### Corresponding NEMA Frame Sizes

UM Size	Old NEMA	New NEMA	Shaft Dia.	C-Face Pilot Dia.
50	56 C	48 Y	5/8	4 1/2
100	56 C	48 Y	5/8	4 1/2
180	182 C 184 C	143 TC 145 TC	7/8	4 1/2
210	213 C 215 C	182 TC 184 TC	1-1/8	8 1/2
215		213TC 215 TC	1 3/8 1 3/8	8 1/2 8 1/2

For These UM Combinations		Use These Installation Steps:
	UniModule Clutch-ER Brake Between C-Face Motor and Reducer - 1020 FBC	Mounting to a Motor Mounting to a Reducer Electrical Connections Start Up
	UniModule Clutch-Brake - 2030 FBC	Chain or pulley Drive to a Reducer Electrical Connection Start Up
	Motor Mount Unimodule Clutch-Brake on a C-Face Motor - 1020-FBC-M	Mounting to a Motor Installing the Motor Mount Electrical Connection Start Up
	Base Mounted Unimodule Clutch-Brake - 2030-FBC-B	Installing the Base Mount Electrical Connection Start Up

Install your specific modular combination according to the installation steps specified in the table. Use only those steps indicated for each combination.

The 1020 and 1040 UniModules are furnished with a special hardened key. It is strongly recommended that this key be used with the motor shaft to avoid damage to the shaft and rotor hub.

The size 210 UniModules require an adapter ring to be mounted to the motor prior to mounting the 1020 or 1040 UniModule. Adapter and mounting hardware are provided with the UniModule assembly.

**Note:** The equipment covered by this service manual must be installed in accordance with these instructions. Failure to do so may damage the equipment and void the warranty.

## Mounting to a Motor

1. Replace the existing motor shaft key with the hardened key provided with the unit. If necessary, prick punch the keyway of the motor shaft to keep the key from moving in the keyway. Slide the module assembly onto the motor shaft. (See Figure 1) Align the key in the motor shaft with the keyway in the rotor hub.

Do not use force. If the UniModule does not slide on freely, polish the motor shaft sufficiently to achieve a slip fit.



Figure 1

2. The housing is provided with vent holes which are normally placed in the down position. Rotate the assembly to where the vent holes are toward the bottom and insert the four long capscrews (provided) through the mounting holes in the housing and into the motor face. Tighten alternately and securely. (30 to 35 ft. lbs.)



Figure 2

3. The access hole for the Allen wrench to tighten the rotor setscrews is shown in Figure 3. Rotate the clutch rotor as necessary to insert the wrench into the setscrews. Tighten both screws alternately and securely. (40 to 45 in. lbs. for 180 size, 80 to 85 in. lbs. for 50 and 210 sizes.)



Figure 3

## Mounting to a Reducer

The output side of a Unimodule may be mounted directly to a reducer.

- A. Align the output shaft and key of the Unimodule with the corresponding shaft hole and keyway of the reducer. Slide the assembly together, matching the pilot diameter on the Unimodule with a pilot diameter on the reducer.
- B. Bolt the Unimodule to the reducer flange. The four (4) bolts required (3/8-16 UNC-2A) are normally furnished with the reducer. (18 to 22 ft. lbs. for 50 and 180 sizes, 40 to 45 lbs. for 210 size.)

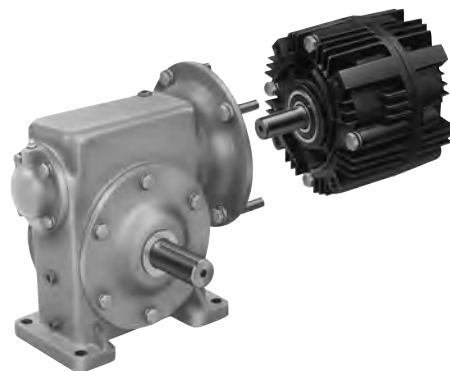


Figure 4

## Installing the Base Mount

Unimodules 2030 FBC can be base-mounted (Figure 5).



Figure 5

- A. Mount each Unimodule so that the base is located below the ventilation holes. A pilot diameter on the end of each Unimodule mates with pilot diameters on the base.
- B. Secure the base to the Unimodule with the four (4) bolts provided. (18 to 22 ft. lbs. for 50 and 180 sizes, 40 to 45 ft. lbs. for 210 size.)

## Installing the Motor Mount (M)

- A. Motor Mount (M) can be installed to the Unimodule output end to provide a foot mounting for the complete assembly of Unimodule and motor.

### Size 50 and 180

- A. Remove the two (2) long hex head bolts from the side of the Unimodule toward the ventilation holes.
- B. Mount the Unimodule on the Motor Mount so that the base of the Motor Mount is underneath the Unimodule and motor (Figure 6). A pilot diameter on the Unimodule mates with a pilot diameter on the Motor Mount.
- C. Secure the Motor Mount in place with two (2) longer mounting bolts (30 to 35 ft lbs.) and the two shorter bolts (18 to 22 ft. lbs.) all provided in the kit.

### Size 210

- A. Mount the Unimodule on the Motor Mount so that the base of the Motor Mount is underneath the Unimodule and motor (Figure 6). A pilot diameter on the Unimodule mates with a pilot diameter on the Motor Mount.
- B. Secure the Motor Mount to the Unimodule with three (3) bolts provided. (40 to 45 ft. lbs.)



Figure 6

## Electrical Connections

**⚠ WARNING** To avoid injury (or even death), always make certain all power is off before attempting to install or service this control or any electrical equipment.

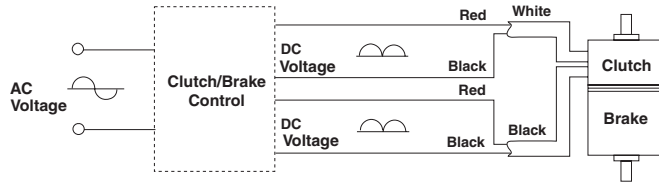
The Unimodule is provided with one conduit connection hole, threaded for standard 1/2" conduit connectors. Both the clutch and the brake lead wires are brought out through this opening. The conduit box accessory kit, P/N 5370-101-042, provides two conduit connection holes for standard 1/2" conduit connectors.

The clutch and brake coils operate on DC voltage. The brake must be controlled by an adjustable current or voltage supply for optimum release. Warner Electric offers a complete line of controls to meet the needs of almost any application. The service and installation instruction, included with each Warner Electric control detail the proper electrical connections.

The positive side of the adjustable supply must be connected to the red lead of the brake. Please refer to the figure below for the proper electrical connections. Clutch leads are identified with a white insulator sleeve. Brake leads have a black insulator sleeve.

### Start-Up

With the motor at rest, check the following:



- A. With the brake energized, spin the output shaft by hand to insure that it turns freely.
- B. With the clutch/brake control energized, switch back and forth between the clutch and brake and observe the armatures (plates) through the vent holes and opening in the fan. They should move back and forth approximately 1/32" when switched.
- C. If a scraping sound is noted when the output shaft is spun, it means an armature is dragging slightly because of shock and displacement during shipment. This is easily corrected.

Insert a screwdriver through the vent holes and slot in the fan and pry the dragging armature \* (clutch or brake as observed) away from the mating surface evenly all the way around as far as it will move. Then insert the screwdriver between the two armatures (back to back) and pry it evenly back into complete contact. This will reset the autogap in the proper position and the unit should now be ready for further assembly in the drive system and normal operation. If dragging armature is on the brake side, the brake must be energized during adjustment.

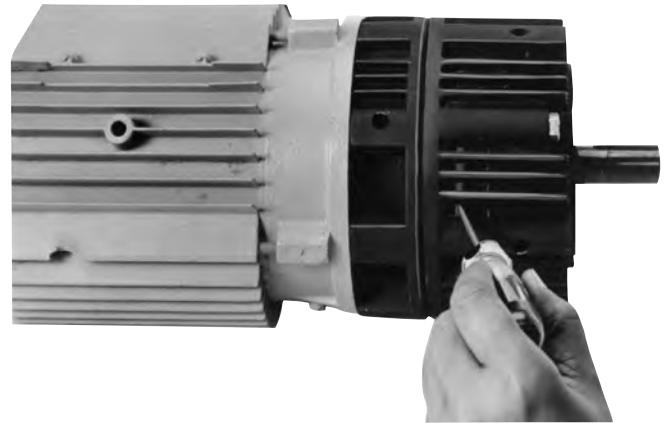


Figure 8

### Electrical Coil Data: (UMFBC)

Voltage-D.C.		Clutch 90	Brake 90	Clutch 24	Brake 24
Resistance (OHMS)	UM-50	452	447	31.8	29.2
	UM-180	392	308	26.7	21.7
	UM-210	248	203	17.9	13.6
AMPERES	UM-50	.199	.201	.755	.822
	UM-180	.230	.292	.896	1.11
	UM-210	.363	.443	1.34	1.76
WATTS	UM-50	18	18	18	19.7
	UM-180	20.7	26.3	21.5	26.6
	UM-210	32.7	40	32	42.2
Build Up (Milliseconds)	UM-50	52	40	52	40
	UM-180	72	80	72	80
	UM-210	120	90	120	90
Decay (Milliseconds)	UM-50	6.2	5	6.2	5
	UM-180	12	8	12	8
	UM-210	20	10	20	10

### Mechanical Data

	UM-50	UM-180	UM-210
Static Torque	10.5 lb. ft.	21 lb. ft.	56 lb. ft.
Maximum Speed	3600 rpm	3600 rpm	3600 rpm
Average Weight-lbs.			
Motor Clutch	3.4 lbs.	5.1 lbs.	9.1 lbs.
Brake	6.6	8.1	21.5
Input Clutch	6.4	8.4	19.8
Output Clutch	4.9	5.2	15.2
Inertia - WR			
Armature	.007 lb. ft.	.018 lb. ft.	.081 lb. ft.
Armature hub	.002	.003	.021
Shaft	.001	.002	.017
Rotor w/Fan and hub	.020	.046	.188

## Warranty

Warner Electric LLC warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of one (1) year from the date of original purchase for consumer, commercial or industrial use.

This warranty extends only to the original purchaser and is not transferable or assignable without Warner Electric LLC's prior consent.

Warranty service can be obtained in the U.S.A. by returning any defective product, transportation charges prepaid, to the appropriate Warner Electric LLC factory. Additional warranty information may be obtained by writing the Customer Satisfaction Department, Warner Electric LLC, 449 Gardner Street, South Beloit, Illinois 61080, or by calling 815-389-3771.

A purchase receipt or other proof of original purchase will be required before warranty service is rendered. If found defective under the terms of this warranty, repair or replacement will be made, without charge, together with a refund for transportation costs. If found not to be defective, you will be notified and, with your consent, the item will be repaired or replaced and returned to you at your expense.

This warranty covers normal use and does not cover damage or defect which results from alteration, accident, neglect, or improper installation, operation, or maintenance.

Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

Warner Electric LLC's obligation under this warranty is limited to the repair or replacement of the defective product and in no event shall Warner Electric LLC be liable for consequential, indirect, or incidental damages of any kind incurred by reason of the manufacture, sale or use of any defective product. Warner Electric LLC neither assumes nor authorizes any other person to give any other warranty or to assume any other obligation or liability on its behalf.

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