

5211

CURRENT REGULATED POWER SUPPLY

1.0 INTRODUCTION

The 5211 is a 0-1A current-regulated 24 VDC power supply and display that is designed for use with Magtrol's Hysteresis Brakes and Clutches. It features a 10-turn current adjustment potentiometer and 3 selectable current ranges: 200 mA, 500 mA, and 1 000 mA. A convenient built-in panel meter displays the braking current being applied.

The 5211 is designed as a closed-loop power supply to provide smooth application of current throughout an entire range up to a maximum set point. By utilizing regulated current, fluctuations in brake torque caused by temperature changes within the brake coil are eliminated. Braking current can be controlled manually from the front panel using the 10-turn potentiometer. Alternatively, if remote operation is required, the 5211 can be controlled by an external source using the 0-5 VDC control input located on the rear panel.

1.1 SPECIFICATIONS

Brake Voltage	24 VDC
CURRENT RANGES:	
Low Scale	0 to 200 mA
Medium Scale	0 to 500 mA
High Scale	0 to 1 000 mA
Current Regulation	± 1% Full Scale
Braking Control	10-turn potentiometer (front panel) or 0-5 VDC external control (back panel)
Brake Fuse (5 × 20 mm)	IEC 1.25 A 250V T
Line Fuse (5 × 20 mm)	5211-2 120 V: IEC 1.0 A 250V T 5211-2A 240 V: IEC 0.4 A 250V T
Power Requirements	70 VA
Voltage Requirements	120/240 VAC 50/60 Hz
External Control Impedance	1 M Ohms

1.2 FRONT AND REAR PANEL



Fig.1-1 5211 Front Panel



Fig. 1-2 5211 Rear Panel

2.0 OPERATION

The 5211 is universal for all Magtrol Hysteresis Brakes and Clutches. Due to the wide range of full scale current requirements, a three position current range control is provided to improve torque resolution. The full scale current level of the power supply is determined by the RANGE switch, LOW, MED, and HIGH. Full scale for the ranges are 0.2 A for LOW , 0.5 A for MED and 1.0 A for HIGH. The digital panel meter indicates the current output level to within $\pm 1\%$.

The included cable has a 2-pin connector on one end and flying leads on the other. The flying leads can be connected to the brake or clutch leads by way of the supplied wire nuts.



NOTE: For current ratings on a particular brake or clutch, refer to Products>Brakes and Clutches at magtrol.com.

Controlling a Hysteresis Brake or Clutch:

1. With the power off, connect the brake or clutch to the BRAKE connector on the back panel of the 5211 using the cable provided as shown below.

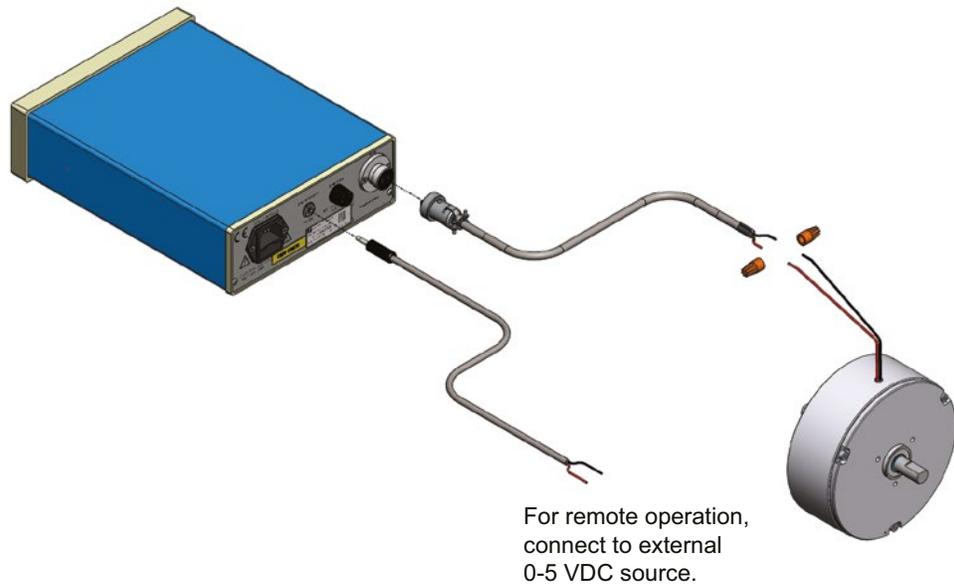


Fig. 2-1 Brake or Clutch connection

2. Set the current range switch to the LOW position.
3. Adjust the current adjustment knob to the full counter-clockwise position. The display should read zero amps.
4. Apply power and slowly increase the current until the desired torque or tension is obtained.
5. If more torque is required, adjust the current level to zero (fully counter-clockwise) and change the range switch to the MED position.
6. Slowly increase the current until the desired torque or tension is obtained.
7. Repeat steps 5 and 6 for the HIGH current range if more torque is required.

2.1 EXTERNAL CONTROL INPUT

An EXTERNAL CONTROL input is provided on the back panel of the 5211 to remotely adjust the current from an external 0 to +5.0 VDC supply. This input is scaled for 5.0 VDC and equals the full scale output current of each current range (on the LOW range, 5 V = 200 mA, on the MED range, 5 V = 500 mA and on the HIGH range, 5 V = 1 000 mA). A 3.5 mm connector is provided for the external supply to be connected.



NOTE: When this connector is plugged in, the front panel ADJUST control is disabled.

To control using an external supply:

1. To remotely control a brake or clutch, connect an external 0-5 VDC source to the EXTERNAL CONTROL jack on the back panel of the 5211. If using the provided 3.5 mm connector, solder the positive lead of the source to the tip and the negative lead to the ring.
2. Using the brake cable provided, connect a brake or clutch to the cable as shown in Fig. 2-1. Use the supplied wire nuts to attach the cable to the brake.
3. Power on the 5211 and adjust the external supply until the desired torque or tension is obtained.

