

321 E. Huron Street
Milford, MI 48381
(248) 685-3939
Fax: (248) 684-5406



MICHIGAN SCIENTIFIC
corporation

8500 Ance Road
Charlevoix, MI 49720
(231) 547-5511
Fax: (231) 547-7070

<http://www.michsci.com>

PS-DC

DC Remote Amplifier Control Unit

OPERATOR'S MANUAL



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Introduction

Michigan Scientific's *DC Remote Amplifier Control Unit* is a complete system for controlling all Michigan Scientific Spinning Amplifiers. The PS-DC powers the amplifiers, controls excitation to strain gage bridges, and commands Spinning Strain Gage Amplifiers to apply their internal shunt calibration resistor to the appropriate arm of the strain gage bridge. The bridge excitation off feature allows the user to detect self-generated system response (noise) from undesired environmental conditions.

A power supply of 10 to 36 VDC is required to operate the PS-DC, which makes it ideal for automotive applications.

Features

- Bipolar power supply for spinning amplifiers
- Powers up to 22 spinning strain gage amplifiers
- Remote bridge excitation On/Off capability
- Remote electronic shunt calibration capability
- Wide input voltage range
- Ideal for automotive application

Operation

Operation with Strain Gage Amplifier

The PS-DC must be powered with 10-36 volts. The power switch activates the remote amplifier control unit and illuminates the LED.

The bridge excitation switch, when used with the strain gage amplifier, turns the excitation to the bridge on or off without turning off the amplifier. This is done by inverting the polarity of the ± 15 V supply pins.

The shunt calibration switch remotely applies a positive or negative shunt resistance across bridge terminals when used with a strain gage amplifier.

The LED light is illuminated whenever the power is turned on. When the LED light is red, it signifies a positive or negative shunt calibration condition or the bridge excitation is turned off. When the LED light is green, it signifies that the bridge excitation is turned on and the shunt calibration is in the neutral position. If the LED is Red when the bridge excitation is on and the shunt is in the neutral position, then the control unit is overloaded.

Operation with Thermocouple Amplifier

The PS-DC must be powered with 10-36 volts. The power switch activates the remote amplifier control unit and illuminates the LED.

The bridge excitation and shunt calibration switches do not effect the operation of the thermocouple amplifier.

The LED is illuminated whenever the power is turned on. It is recommended that the bridge excitation is turned on and the shunt calibration is put in the neutral position. If the LED is red when the bridge excitation is on and the shunt is in the neutral position, then the control unit is overloaded. During normal operation, the LED is green.

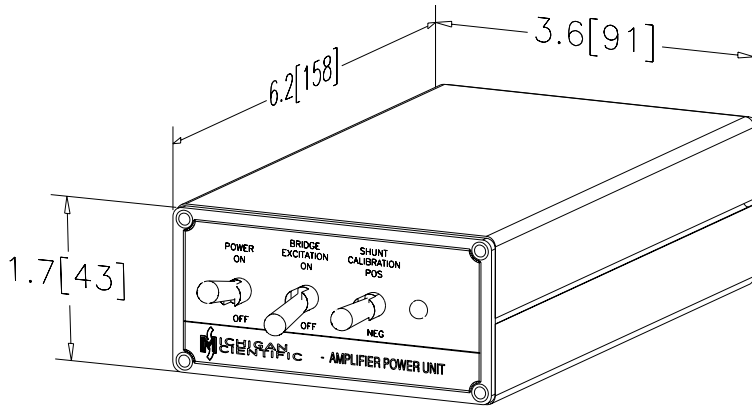
Specifications

PARAMETER	SPECIFICATIONS
OUTPUT	
Voltage	± 15 V
Maximum Voltage Error (No Load)	± 200 mV
Ripple Voltage (No Load)	± 200 mV
Maximum Source Resistance	1 ohm
Power Supply Rejection	50 dB
Temperature Coefficient	0.02 %/°C
Maximum Current	1 A
Maximum Transient Response	500 µs
INPUT	
Voltage	10to 36 VDC
Current @ Full Load	3 A
ENVIRONMENT	
Operation	-25 to +70°C (-13 to +158°F)
Storage	-50 to +100°C (-58 to +212°F)

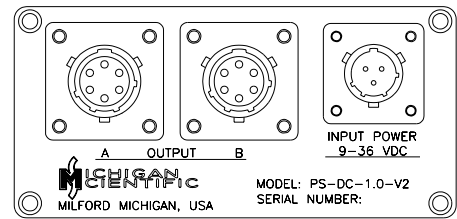
Output Controls

Switch Position		Output (Volts) Socket on Output Connectors					
Bridge Excitation	Shunt Calibration	A	B	C	D	E	F
Off	Center	-15 V	15 V Common	+15 V	15 V Common	Input Ground	0.0 V
Off	Positive	-15 V	15 V Common	+15 V	15 V Common	Input Ground	+15 V
Off	Negative	-15 V	15 V Common	+15 V	15 V Common	Input Ground	-15 V
On	Center	+15 V	15 V Common	-15 V	15 V Common	Input Ground	0.0 V
On	Positive	+15 V	15 V Common	-15 V	15 V Common	Input Ground	+15 V
On	Negative	+15 V	15 V Common	-15 V	15 V Common	Input Ground	-15 V

Dimensions



DIMENSIONS ARE INCH[mm]



REAR PANEL

Troubleshooting

Symptom	Possible Cause	Test to Verify Problem	Solution
Power Light doesn't come on	No Power to Unit	Check Voltage from source	Turn on power
	Blown fuse	Check fuse in cigarette lighter plug	Replace fuse
Power light always red	+15 V, -15 V or ground shorted	Remove cable from output	Remove short