

# 6 Channel Rotating Amplifier Module

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## Model LWEH-6L

- Mounts directly to LW Series Wheel Load Transducer
- Provides pilot and connector for SR/ERT series slip ring
- Precision low noise differential amplifiers
- Stable bridge excitation
- High level voltage signal output
- Remote bridge excitation On/Off capability
- Remote shunt calibration capability
- Not affected by temperature rise due to braking
- Environmentally sealed



## Description

The *6 Channel Rotating Amplifier Module* is designed to mount directly to the Wheel Load Transducer. Michigan Scientific SR/ERT series slip ring with resolver mounts directly to the amplifier module. Superior data accuracy is achieved by locating the signal amplifiers on the rotating side of the slip ring. Errors due to lead wires length, connector resistance variations, and electro-magnetic interference are greatly reduced with the rotating amplifier module.

This *6 Channel Rotating Amplifier Module* incorporates precision low drift bridge excitation, stable differential amplifiers, and remotely activated shunt calibration resistors for system span verification. When mounted to the wheel load transducer, the amplifier module provides strain gage bridge excitation and amplification for six channels. The amplifier module is rugged enough to withstand pot hole and curb bumping impacts. Thermal stability is excellent, making it suitable for brake development work including repeated stops from highway speeds. All connections are made during assembly and sealed to withstand wet road conditions.

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Rev: 4/28/12

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## Specifications

PARAMETER	SPECIFICATION
<b>BRIDGE EXCITATION</b>	
Type	DC Constant Voltage (Bipolar excitation)
Magnitude	10 Volts
Accuracy	0.40%
Temperature Coefficient	0.0005%/°C Max (0.00028 %/°F)
Current Limit	84 mA/channel
<b>REMOTE CALIBRATION</b>	
Positive & negative shunt calibration	
Shunt Resistance	Matched to Wheel Load Transducer Range
Shunt Accuracy	0.50%
<b>GAIN</b>	
Matched to Wheel Load Transducer Range	
Range	w/ jumper 100 & 2000 V/V
	w/ external resistor 100 through 2000 V/V
Accuracy	@ 25°C, Gain =100 ±0.05 %typ (±0.50 % max)
	@ 25°C, Gain =1000 ±0.50 %typ (±1.0 %max)
Temperature Coefficient	0.0025 %/°C (0.0014 %/°F)
<b>OUTPUT</b>	
Range	±10V Max
Capacitive Load	1000 pF Max
<b>VOLTAGE OFFSET</b>	
Referred to input of amplifier	
Initial	@ 25°C ±10 µV
Temperature Stability	±0.1 µV /°C
Time Stability	±1.0 µV / Month
DC CMRR	160 dB
Noise	rti 0.01 to 10 Hz 0.7 µV p-p
<b>DYNAMIC RESPONSE</b>	
Frequency Response	@ Gain=1000 1 kHz
	-3dB @ Gain=100 10 kHz
Slew rate	0.5 V/ µs
Settling Time to 0.01%	@ Gain=100 145 µs
<b>POWER REQUIREMENTS</b>	
Voltage	@ 25°C ±13 to ±17 VDC
Current	±100 mA plus Bridge Load (+100 mA additional during shunt calibration)
<b>ENVIRONMENT</b>	
Specification	-25 to +85°C (-13 to +185°F)
Operation	-55 to +125°C (-67 to +257°F)
<b>MECHANICAL</b>	
Weight	1.2 kg (2.5 lbs)

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