

INSTRUCTION MANUAL MODEL LCA LOAD CELL AMPLIFIER

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Periodically there will be updates to this manual. The latest version is available at www.magpowr.com or by calling 1-800-MAGPOWR (624-7697).

1.0 Introduction

The MAGPOWR Model LCA is a Load Cell Amplifier. The LCA supplies 10 VDC or 5 VDC excitation for both full bridge or half bridge load cells. The signals from the load cells are added together and amplified to produce a 0 to 10 VDC or a 4 to 20 mA DC output.

2.0 Mounting

The LCA is intended for installation on a vertical panel with a DIN 35 rail, with the wiring terminals facing down. Figure 1 shows the enclosure dimensions.

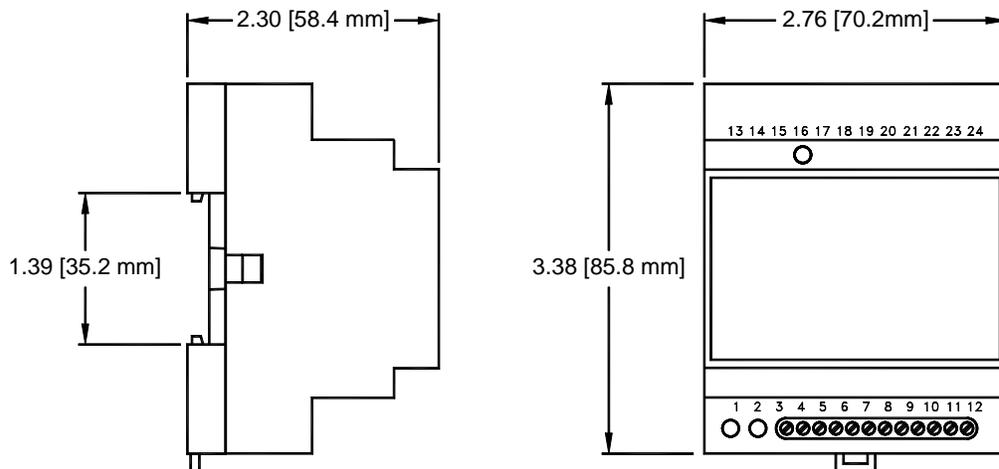


Figure 1
Enclosure Dimensions

3.0 Setup

When MAGPOWR or other 21 mVDC load cells are used, no setup is required. If 500 mVDC load cells are used, then J1 must be moved to the 500mV position (See figure 2). The enclosure may be opened by inserting a flat blade screwdriver under one of the retaining tabs in the base and lifting the cover (See figure 3).

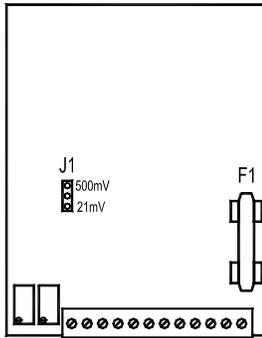


Figure 2
Location of J1

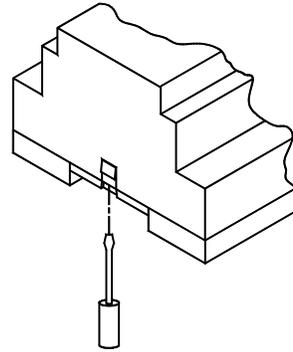


Figure 3
Enclosure Top Removal

4.0 Electrical Connections

Figure 4 shows the wiring connections that are required for the basic system. They are:

- 24 VDC power
- Load cell cables
- Tension Reference Output to monitoring or controlling device
- Output to Meter

Wiring to and from the LCA must be done with double or reinforced insulation or protective screening which provides protective separation. All wiring should comply with the essential requirements of the appropriate local standard(s) and is the responsibility of the installer.

Route power away from load cell wiring. Run all wiring in shielded cable. Connect shields to the terminals indicated as "SHIELD". Maximum shield length and maximum length of wires outside of the shield is 3 in. (75 mm).

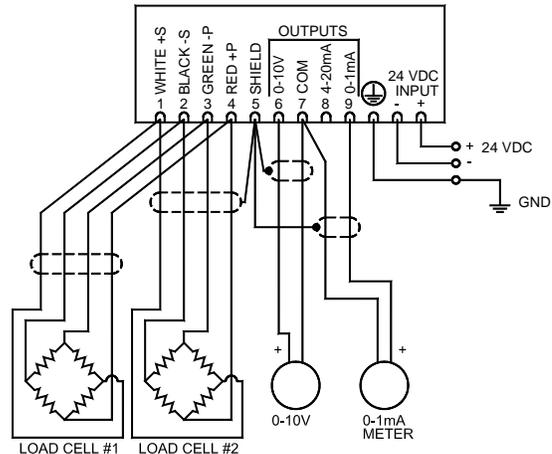


Figure 4
Wiring Connections

The load cell power leads and signal outputs are ground referenced. The power input circuit is not isolated, since the negative lead of the 24 VDC power input is ground referenced.

5.0 Maintenance

The only maintenance that may be required on the LCA is fuse replacement. Replacement of the fuse requires first disconnecting the 24 VDC power, then opening the enclosure, which circumvents the enclosure IP rating. The enclosure may be opened by inserting a flat blade screwdriver under the retaining tabs in the base (See figure 3).

6.0 Calibration

Tension reference output calibration is accomplished by two adjustments (**ZERO** and **GAIN**). The **ZERO** adjustment is used to cancel the weight of the sensing roll. The **ZERO** adjustment will adjust out a sensing roll weight of up to 50% of the combined load cell(s) load rating(s). Adjust the **ZERO** adjustment potentiometer until the tension output is zero.

After suspending a known weight with a temporary web (See figure 5), adjust **GAIN** until the desired tension reference output is reached for the load applied. The maximum load on the load cells must be less than or equal to the total load cell rating and greater than 1/8 of the total load cell rating. When two load cells are used the total load cell rating is the combined rating of both load cells (i.e. 100 lb for two 50 lb load cells).

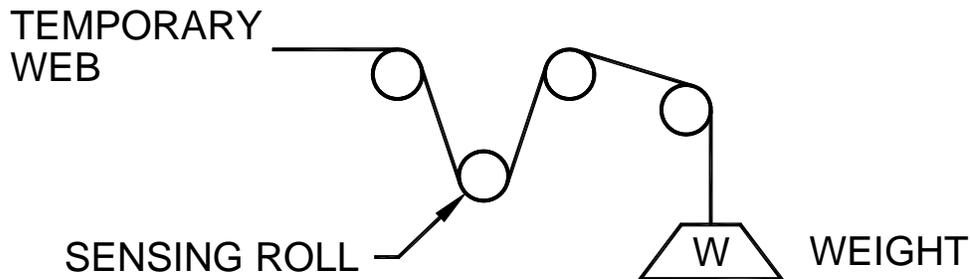


Figure 5
Dead Weight Calibration

7.0 Troubleshooting

PROBLEM	DIAGNOSTIC
Cannot ZERO the meter	<ol style="list-style-type: none"> 1) The total weight of the sensing or idler roller and shaft must be less than $\frac{1}{2}$ of total load cell rating. When two load cells are used this is the combined rating of both (i.e. 100 lb for two 50 lb load cells). 2) Verify load cell cables are connected correctly to the LCA. 3) Verify J1 is set correctly for the load cell(s) being used.

7.0 Troubleshooting (Continued)

<p>GAIN adjustment does not give the desired output</p>	<ol style="list-style-type: none"> 1) Calibration load is greater than the load cell(s) rating. 2) Verify 24 VDC power is connected with the correct polarity. 3) Verify load cell cables connected correctly to the LCA. 4) Verify J1 is set correctly for load cell(s) being used. 5) The impedance load on the output is not within specifications (0 to 10 VDC - 10 kohm min.) (4 to 20 mADC - 500 ohm max.)
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8.0 Specifications

Supply Voltage:	24 VDC, +/- 10%, 90 mADC, 2 VA
Fuse: F1	2.5 amp, Littelfuse Part No. 21602.5, or Wickmann Part No. 19194-058-FS
Enclosure:	IP20
Climatic Class:	3K3 (EN60721)
Temperature Range:	
Operating:	0° C to 50° C
Storage:	-30° C to 80° C
Relative Humidity:	5% to 85%
Pollution Degree:	2 (IEC664-1)
Altitude:	0 to 2000 m
Compatible Residual Current Device Types:	A or B (IEC755)
Worst Case Fault Current:	2.5 amp DC
Load Cell Excitation:	5 or 10 VDC, 64 mADC maximum
Load Cell Input:	0 to 21 mVDC or 0 to 500 mVDC, jumper selectable
Outputs:	
Tension Reference Output:	0 to 10 VDC
or	4 to 20 mADC
Meter Signal:	0 to 1 mADC



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