

A1A Series Load Cell Amplifier

Product Manual



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1. Introduction

Thank you for choosing A1A series load cell amplifier. A1A strain gage amplifier provides load cell and transducer signal conditioning. It is designed for converting mV signal from load cell output into a 4~20mA or 0~10V signal. The A1A strain gage amplifier is DC powered and can drive up to 1 x 350Ω load cells directly connected or maximum of 4 X 350Ω load cells or 8x700Ω load cells through a junction box. The amplifier is housed in an aluminum casting enclosure and has 2 through holes for easy installation. This manual provides the installation, operation and calibration procedures of the product.

2. Installation

Only simple tools like small size slotted screw driver and Philips screwdriver are required for connecting cables during installation, adjusting the unit during calibration and installation of enclosure cover.

3. Connection Diagram and Layout

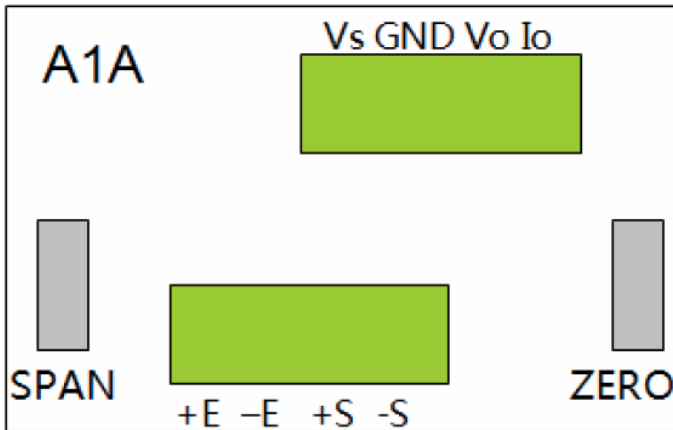


Fig1.Connection Diagram and Layout for A1A

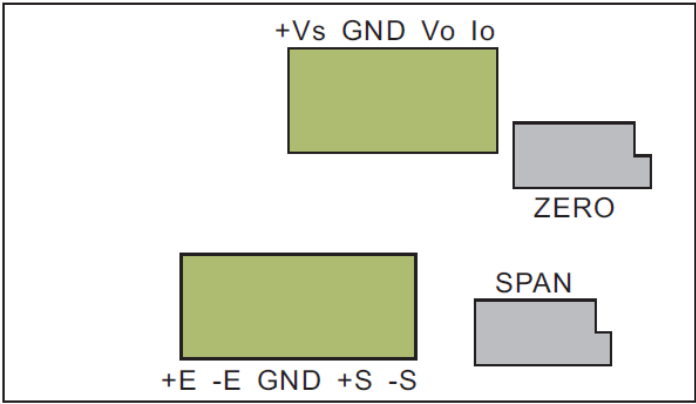


Fig2.Connection Diagram and Layout for A1A-22

From Amplifier to 24V DC Power and 0~10V/4~20mA output signal:

- Vo: Output Voltage Signal 0~10V
- Io: Output Current Signal 4~20mA
- Vs: Input 24V DC Power
- GND: Ground

From Load Cell to Amplifier:

- +S:+Output mV Signal
- S:-Output mV Signal
- +E:+Excitation
- E: -Excitation

4. Specifications

Type	A1A	A1A-22
Features	Can drive up to 1x350Ω load cells directly connected Can be connected to a maximum of 4 X 350Ω load cells or 8x700Ω load cells through a junction box	
Load Cell Type	All strain gauge type	
Weight (G), approx.	0.15 / 0.33 (kg/lb)	0.17 / 0.37 (kg/lb)

Power Supply	24±10% V DC
Input Signal Range	0 – 30 mV
Max. Power Voltage	30V DC, 2.5A
Output Signal Range	0 – 10 V
	4 – 20 mA
Max. Output Current	40 mA
Maximum Output Voltage	12 V
Max. Input Offset Voltage	50 μ V
Max. Input Offset Drift	0.6 μ V/ oC
Min. Common-mode RejectionRatio (G=10)	100 dB
Nominal Temperature Range	-10°C~40°C
Protection Class	IP66
Enclosure Material	Aluminum casting

5. Calibration

The calibration of A1A consists of Zero Calibration and Span Calibration:

5.1 Zero Calibration

Step1.Remove all load from the scale platform. If the scale require hooks or chains (tare weight), place the hooks or chains into the scale for zero calibration.

Step2.Adjust ZERO variable resistor to an output of 0V or 4mA.

(Note: Tare weight shall not exceed 30% of full load)

5.2 Span Calibration

Step1.Place full load into the scale.

Step2. Adjust SPAN variable resistor to an output of 10V or 20mA.

(Note: It's recommended to repeat adjustment in Step 2 of Section 5.2 above three times.)

6. Operation

6.1 Except during calibration, always keep the enclosure cover on and ensure the seal is properly fitted when installing the cover.

6.2 Always keep the amplifier clean from dirt to avoid affecting the values of the ZERO and SPAN variable resistors.

6.3 For stable amplifier signal output, always use safe and reliable DC power supply.

6.4 When output reading changes, re-calibrate the amplifier according to Section 5, Calibration.

7. Troubleshooting

7.1 No output from the amplifier: Check all wire connections and the DC power supply.

7.2 Output signal is abnormal: Re-calibrate according to Section 5, Calibration.

7.3 Problem cannot be resolved: Contact supplier