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## Revision History:

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Record with brief description of all revisions made to product or manual

Version	Date	Description
1.0.0	September 15, 2024	First public release version.

The most current version of this document, along with any software, firmware, and other product updates, can be found on our website:

[www.anyload.com](http://www.anyload.com)



# 1. Introduction

This manual provides information on installation, configuration, calibration and servicing of the DGB-AI2508A/AV2508A Load Cell Amplifier.

For questions regarding this manual or the operation of ANYLOAD products, please contact your authorized ANYLOAD distributor or visit our website at [www.anyload.com](http://www.anyload.com) for support resources and service information.

## 1.1. Features

- Analog output options for 4-20mA signal (DGB-AI2508A) or adjustable 0-10V, ±5V (DGB-AV2508A)
- Reverse polarity protection
- Supports up to 2 x 350Ω load cells @ 24V DC power

## 1.2. Safety

READ this manual BEFORE operating or servicing this equipment or systems with this equipment incorporated.






FOLLOW these instructions carefully.

DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or modify this equipment.

SAVE and distribute this manual for future reference.

Failure to follow the instructions or heed the warnings could result in injury or death. Contact any ANYLOAD dealer or distributor for replacement manuals.

### Indicative Markings:

Symbol	Significance
 <b>WARNING</b> 	Warns of a potentially dangerous situation which can result in serious physical injury or death
 <b>CAUTION</b>	Warns of a potentially dangerous situation which can result in slight or moderate physical injury
<b>Notice</b>	Failure to comply to information with this marking may lead to damage to property
 <b>Important</b>	Important information about the product
 <b>Tip</b>	Application tips and other information that may be helpful
<i>For emphasis (Italics)</i>	Italics are used to emphasize key information

### General Safety:

#### **WARNING**

ONLY qualified professionals approved should carry out intrinsically safe installations. This work involves extensive knowledge of the product, specific safety standards, and the potentially hazardous environment in which it will be operating.

- Do not allow minors or inexperienced individuals to operate this unit.
- Ensure the unit is fully assembled before operation.
- Keep hands and fingers away from slots, openings, or any potential pinch points.
- Do not use this product if any component appears cracked or damaged.
- Avoid making alterations or modifications to the unit.
- Do not remove or obscure any warning labels.
- Do not submerge the unit in water.
- Before opening the unit, ensure the power cord is disconnected from the power source. Disconnect all power sources before servicing, as multiple power sources may be present. Failure to do so may result in property damage, personal injury, or death.
- For permanently connected equipment, incorporate a readily accessible disconnect device in the building's installation wiring.
- Pluggable units must be installed near an easily accessible socket/outlet.
- Use only copper or copper-clad aluminum conductors when wiring.

### Recommendations for Proper Use:

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- Keep the instrument away from heat sources and direct sunlight.
- Protect the instrument from rain unless it is a special IP-rated version.
- Do not clean with water jets unless specified for IP-rated models.
- Avoid dipping the instrument in water or spilling liquids on it.
- Use a soft, dry cloth for cleaning; do not use solvents or abrasive materials.
- Do not install the unit in areas with explosion hazards unless with specially rated models.
- If the working environment reaches the unit's temperature limits, ensure proper airflow around the instrument to prevent malfunctions such as sudden shutdowns or disconnections.

### Disposal Guidelines:



Product Disposal: Dispose of this product at authorized waste collection centers at the end of its life cycle. Proper disposal prevents environmental and health risks and supports recycling. Illegal disposal may result in legal penalties.

Battery Disposal: Dispose of batteries at designated centers as per local laws. Batteries may contain harmful substances (e.g., Cd, Li, Hg, Pb) and must not be discarded with household waste. Improper disposal may result in legal penalties.

## 2. Connection Diagram

Should be copied from the datasheet

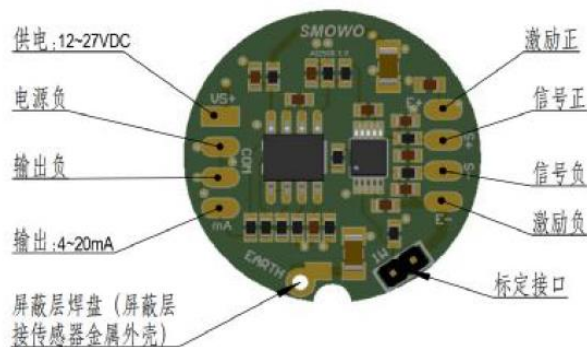


Figure 2-1: Connection Diagram

## 3. Installation

### 3.1. Connecting Power and Signal Wires

Connecting the power, output signal, and load cell to the amplifier can be accomplished with a small flat head screwdriver.

1. Loosen the terminals far enough that the lower section of the terminal clamp is visible.
2. Insert the loose, stripped wire into the terminal, ensure the wire remains near the top of the terminal hole.
3. Once the terminal is tightened, lightly check that the wires are clamped correctly and will not fall out of the terminal.

Note: If a wire is not clamped correctly, loosen the terminal again, and ensure the wire is inserted properly into the clamp assembly before tightening.

### 3.2. Securing the Board

The board includes two holes for M3 or #4 screws to secure it. Ensure that the board is being installed on appropriate height standoffs to provide adequate space for solder joints and components underneath the board once the assembly is fastened properly.

#### **⚠ CAUTION**

Care must be taken when tightening the screws to not overtighten them as this can result in cracking or breaking the PCB.

## 4. Calibration

Calibration is performed using the two pins (calibration interface) on the board, the calibration tool, and EZAdj software. Ensure you have a device on hand that can output your desired mV/V set points so you can verify the calibration. This is best accomplished using a load cell simulator but can also be carefully performed with a known output load cell and calibration weights.

1. Ensure the load cell is powered on with a 24VDC supply.
2. Connect the calibration tool to the calibration interface, ensuring the connector is oriented correctly and the wire labelled "1W" on the tool connects to its corresponding pin on the calibration interface.
3. Connect the calibration tool to a USB port on a computer.
4. Launch the EZAdj calibration software.

Note: if required, change the COM port, verify the COM port in use using device manager.

5. Select the amplifier model under "Board Type".

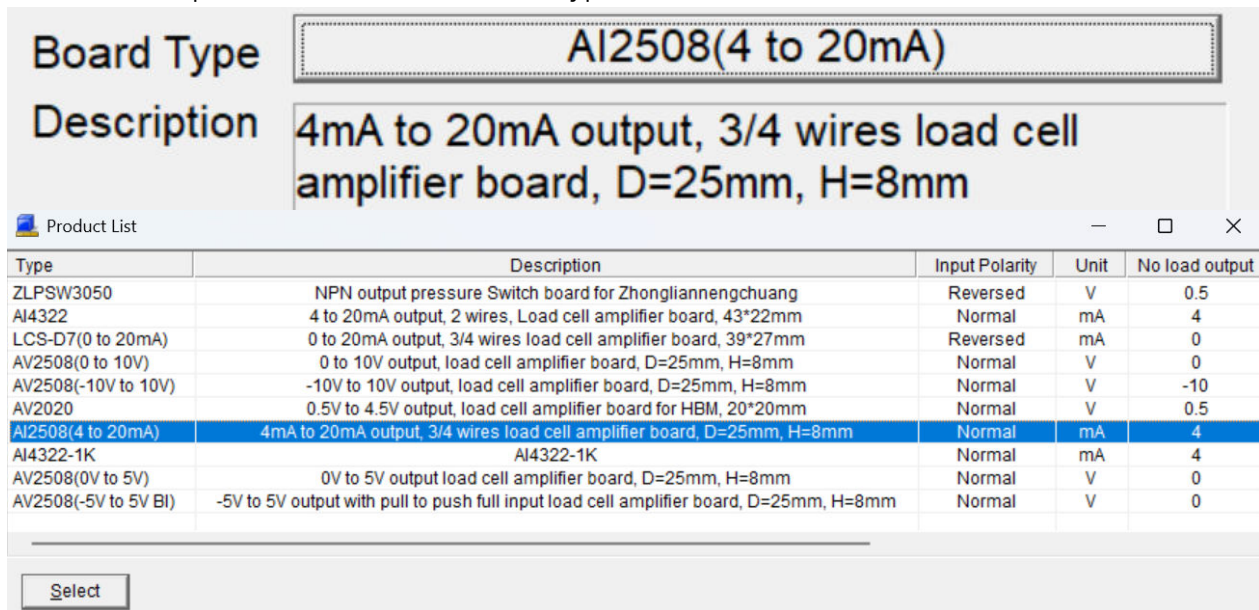


Figure 4-1: Board Type Selection

6. Once the board is selected, click "Validate Board". If the board cannot be validated, begin troubleshooting, calibration cannot be performed until the board passes validation.
7. Input desired parameters in section 2. (pictured: DGB-AI2508A calibration)

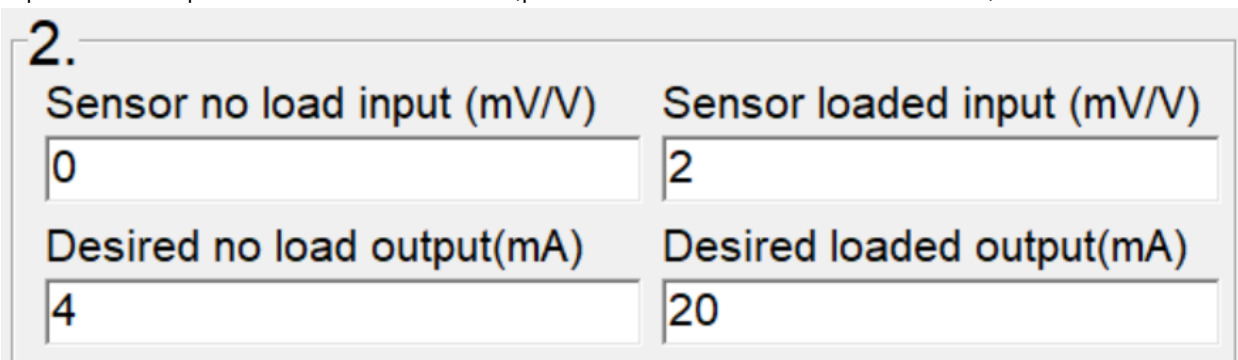


Figure 4-2: Input Parameter Configuration

- Using a multimeter, measure the output of the amplifier. Record the measurements at both the no load and loaded output in the corresponding fields in section 4. and click "Calibrate"

4.

Measured no load output(mA)	Measured loaded output(mA)
<input type="text"/>	<input type="text"/>

Figure 4-3: Output Verification Fields

**⚠ CAUTION**

Calibration can only be performed on an amplifier *four times in total*, after which it must be replaced. Ensure the calibration is performed adequately before saving the new values.



- Measure the no load and loaded output once more, if the readouts are not acceptable, repeat step 8 again until the results are satisfactory. Once the readouts are acceptable click "**Program**".


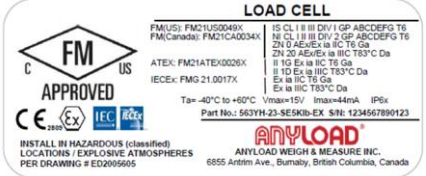
## 5. Operation

- The amplifier is not IP rated and must be kept away from water or debris ingress as these can significantly affect the output or render the amplifier inoperable. An enclosure is strongly recommended.
- For the most stable amplifier readouts, a stable and reliable DC power supply should be used.
- The load cell cable should be run through areas free of electrical and magnetic fields as the load cell must be able to transmit signal differences of a few  $\mu\text{V}$  to the amplifier, these fields can induce interference voltages.

## 6. Compliance

**Indicative Markings:**

<p><b>CE Certification</b></p> 	<p>The CE mark indicates that the manufacturer guarantees that the product complies with the requirements of the relevant EU Directives.</p>
<p><b>NTEP (US Legal-for-trade) Certification</b></p> 	<p>The NTEP mark denotes that the product is legal-for-trade certified in the US and other recognizing jurisdictions by meeting the National Type Evaluation Program (NTEP) requirements set by the National Conference of Weights and Measures (NCWM) in the United States of America.</p>

<p><b>OIML MAA Certification</b></p> 	<p>The OIML Mutual Acceptance Arrangement (MAA) mark indicates that the product is legal-for-trade certified in the EU, Australia, New Zealand, Canada, and other recognizing jurisdictions by meeting the standards set by the International Organization of Legal Metrology (OIML).</p>
<p><b>FM / Explosive Atmospheres Certification</b></p> 	<p><b>Important</b>  <i>Every single certified non-incendive / intrinsically safe product <b>MUST</b> bear this label, which shall indicate that the product is FM (US &amp; Canada), ATEX, and IECEx-approved for use in potentially explosive environments in recognizing jurisdictions.</i></p> <p>The model should also have an “-EX” suffix in its part number.</p>

## 7. Technical Specifications

### 7.1. Drawings & Dimensions

More detailed one than the datasheet if available

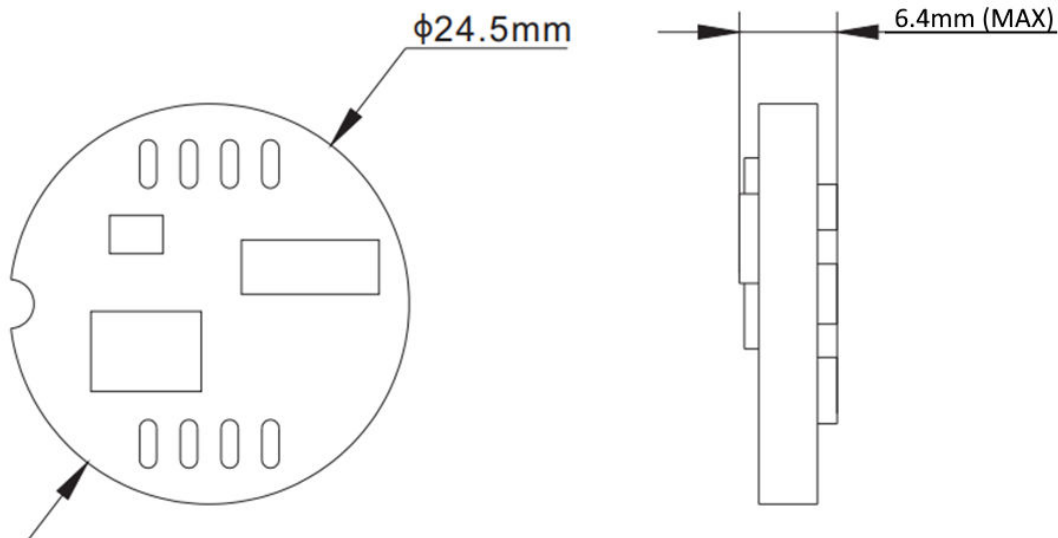


Figure 7-1: Chip Dimensions

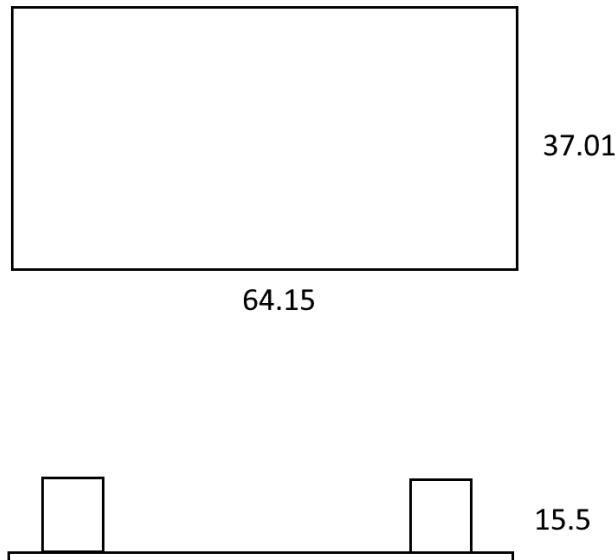


Figure 7-2: Optional Terminal Dimensions

## 7.2. Specifications Table

Table 1: Product Specifications

	DGB-AI2508A	DGB-AV2508A
<b>Acceptable Load Cell Type</b>	All strain gauge type	
<b>Weight Approx. (g)</b>	19	
<b>Power Supply</b>	12~27VDC	
<b>Working Temperature</b>	-30°C to +50°C	
<b>Output signal</b>	4-20mA	0-10V ±5V
<b>Non-linearity</b>	<0.2%	
<b>Accuracy</b>	<0.3% (over full temperature range)	
<b>Calibration method</b>	Software	
<b>Load cell excitation voltage</b>	5V	

### Important

Specifications are subject to change *without* notice. Users are encouraged to refer to our website or confirm with our team any details, questions, or concerns.

**Please Contact your Authorized Dealer for Technical Assistance:**

**ANYLOAD<sup>®</sup>**

Website: [www.anyload.com](http://www.anyload.com)

Email: [info@anyload.com](mailto:info@anyload.com)

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