ANYLOAD®

J04SA-16

Junction Box
Signal Trim



CE

TECHNICAL MANUAL

Version 24A

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I. ABOUT THIS MANUAL

Thank you for choosing the Anyload J04SA-16 load cell junction box. This junction box has been designed with direct customer feedback from the field technicians and engineers to better accommodate installation, safety, and accuracy. This manual provides how to install J04SA-16 junction box properly in the application. This manual is intended to be used by qualified service technicians and installers. Please review this manual in detail before installing, operating, or configuring any systems involving this instrument. For further information please contact Anyload or an authorized dealer.

II. DISCLAIMER

Information in this Technical Manual is subject to change without notice. All information contained within this publication is, to the best of our knowledge, complete and accurate at the time of publication.

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III. SAFETY

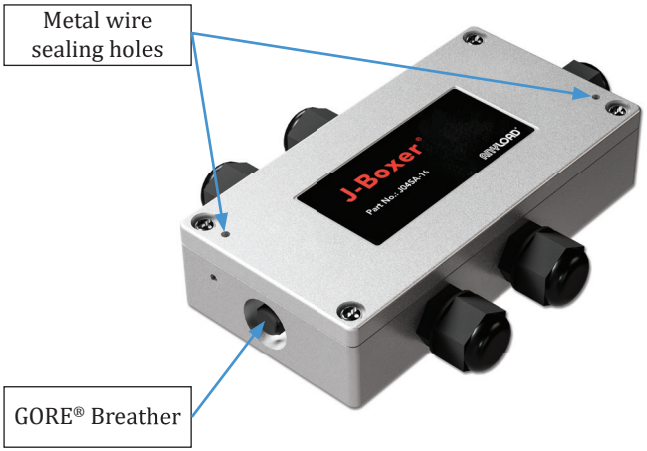
General safety

Standard safety practices are required before conducting any installation, maintenance, or procedure on device. It is recommended to read and understand the instructions and warnings in this manual before performing any procedure on device. Failure to follow the instructions and warnings could result in injury or death.

Symbol	*Description*
	***WARNING!*** Indicates a potentially hazardous situation which may result in serious injury or death. Indicates a potentially dangerous procedure which may cause injury or death.
	***CAUTION!*** Indicates a potentially wrong procedure which may result in damage to device. Indicates a potentially wrong procedure which may result in loss of warranty.
	***NOTICE!*** Indicates a procedure which may need more instructions. Indicates a procedure which has more information available.

1. INTRODUCTION

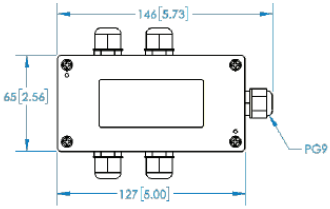
ANYLOAD J04SA-16 signal trim junction box is a versatile design which connects four load cells together to give a single accurate and stable output. J04SA-16 junction box enclosure is anodized cast aluminum. It also has a rubber sealing which seals the inside up to IP67 standards. The GORE® breather vent allows the enclosure to breathe, equalizing pressure and reducing condensation while filtering out liquids and other contaminants.

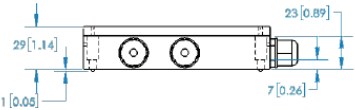


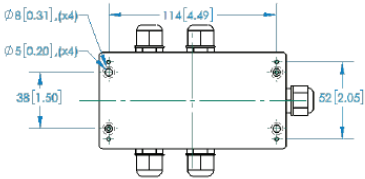
2. SPECIFICATIONS

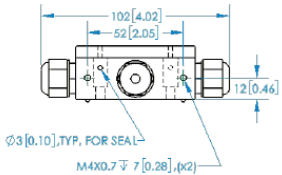
Model	J04SA-16	
Trimming	Signal Trim	
Trimming Range	%	3.6 for 350Ω
		6.3 for 700Ω
		7.0 for 1000Ω
Max. Permissible Voltage	V	18
Operating Temperature Range	°C(° F)	-10 TO +50 (+14 to +122)
Storage Temperature Range	°C(° F)	-20 to +60 (-4 to +140)
Cable Connector/Cable Diameter	Input:PG9, 4-8mm Output:PG9, 4-8mm	
Seal Type	IP67	
Enclosure Material	Anodized Cast Aluminum	
Weight of the Item	kg/lb	0.5 / 1.1

3. DIMENSIONS







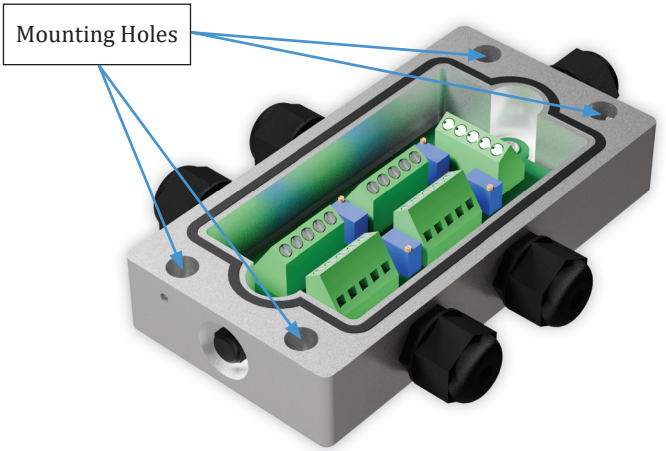


4. INSTALLATION

Mechanical installation

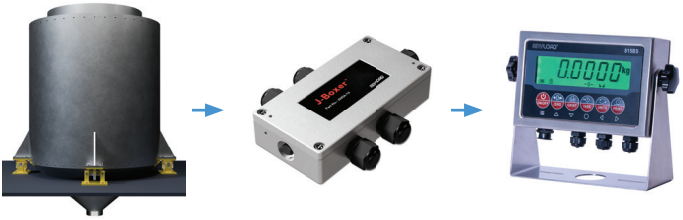
J04SA-16 junction box must be installed in a location that avoids interference from vibration or heat and it should be convenient to access for servicing. Cutting the cable voids the warranty as it may compromise the weighing properties and longevity of the load cell. Mount the junction box to the flat surface according to the steps below:

1. Unscrew the top cover.
2. Mount the junction box to the desired flat surface using four suitable screws (#10 or M4 threaded screw is recommended).



Electrical Installation

J04SA-16 junction box is used to connect four load cells together and then transfer a single output to an analogue input device such as an indicator.



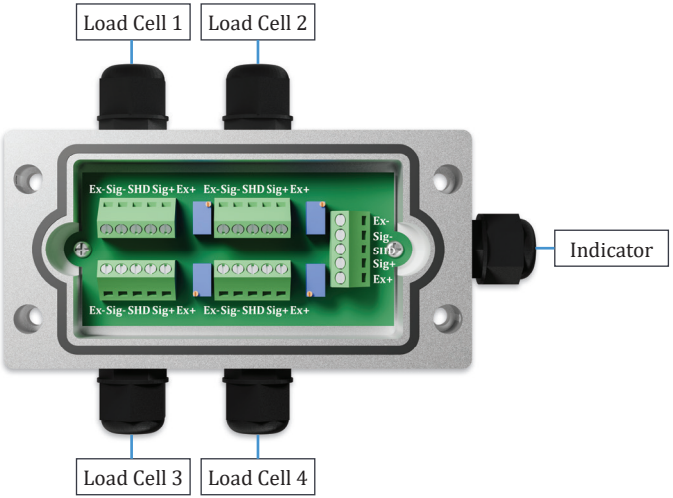
Tank Weighing System

J04SA Junction Box

Analog Input

Insert the load cell cables through the plastic cable glands and connect to the terminal connectors as per the diagram on the next page (pg. 9). Tighten the cable glands properly for better sealing to avoid any water leakage to the box. **Check the load cell data sheet to confirm the wiring color code of the load cell** as it depends on the load cell manufacturer. For example, Anyload's standard load cell the color code is, Red (Ex+), Green (Sig+), Black (Ex-), White (Sig-).

Connect the home run cable to the indicator and **refer to the data sheet manual of the indicator to confirm the wiring color code of the indicator.**



1. Arrange the load cell cable neatly to minimize risk of winding or damage, and insert them through the plastic cable glands. Leave the cable glands grips loose and tighten them securely after wiring. Check the load cell color code listed in the data sheet as it depends on the load cell manufacturer.

2. Strip the load cell cable wires. Anyload recommends stripping about 0.25” (6mm) for a solid connection.

3. Unscrew each pole using small flat screwdriver. Insert the wires and tighten them properly.

4. Connect the home run cable coming from the indicator following the same instructions as above. Find the color code of the indicator from the data sheet/manual of the indicator as it depends on the indicator manufacturer.

5. Check all the wiring again to ensure all of them have been wired correctly (according to the load cell color code) and make sure there are no stripped out wires, loose parts or debris, etc. inside the junction box.

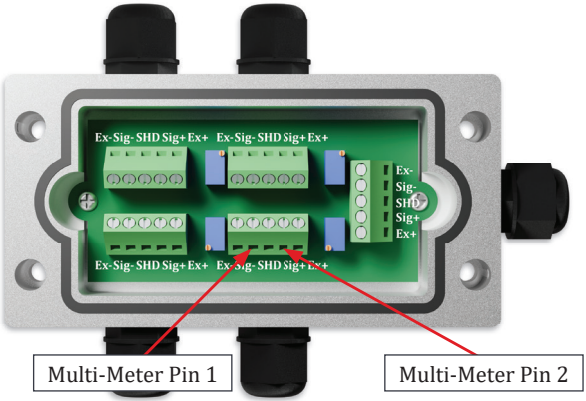
5. TRIMMING PROCEDURE

Load cell outputs need to be adjusted by trimming the potentiometers to equalize them to eliminate any off-center loading error of the weighing scale/system. J04SA junction box allows load cell outputs to be adjusted up to 3.6% for 350Ω, 6.3% for 700Ω and 7.0% for 1000Ω. Only small adjustments to the potentiometers should be needed if the mechanical arrangement of the scale/weighing system is properly configured and set up. If there remains a need to adjust more than the above-mentioned percentages, please check for other causes of the off-center errors such as mechanical arrangement of the scale to see there is any physical interference, etc.

Anyload recommends letting the scale weighing system stabilize for about 10-15 minutes mechanically and electrically before performing the corner adjustment or any calibration with the indicator.

Follow the instructions on the next page for the trimming process:

Trimming Method 1



1. Check the resistances of the potentiometers using a multimeter. Place one pin of the multimeter to Sig+ and one pin to Sig- of the load cell terminal to confirm whether they match the factory default settings. Each potentiometer has been adjusted from the factory such that Wi (i =1, 2, 3, 4) is equal to approximately 2.07kΩ which is the middle of the resistance range from 1.8kΩ to 2.3kΩ.

2. Identify the potentiometers related to each load cell/section. It may be helpful to label them as corner 1, 2, 3, and 4 temporally to avoid any mix-up or confusion.

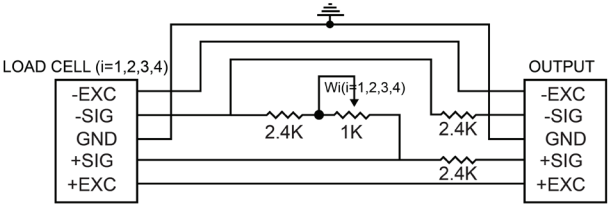
3. Place the appropriate test weight on the exact middle of the scale and record the indicator reading. Move the same test weight to each corner and record the indicator readings. The recommended test weight capacity is dependent on the scale configuration, rules, and regulations. For example, refer to Handbook 44, published by the National Institute of Standards and Technology (NIST).

4. Place the weight on a corner and adjust the corresponding potentiometer to match the reading to the recorded center reading. Adjust the potentiometer so that the reading matches the recorded center reading, turning clockwise to increase the reading and counterclockwise to decrease the reading. Check the zero balance (reading on the indicator should return to zero) after every adjustment as load cells are shunting/interacting each other.

5. Test each load cell/sections again and repeat the steps 3 & 4 as needed until get the required accuracy.

6. Pull the excess cables out from the junction box and tighten the cable glands properly using a suitable wrench.

7. Close the cover.


LOAD CELL (i=1,2,3,4)
-EXC
-SIG
GND
+SIG
+EXC
Wi(i=1,2,3,4)
2.4K
1K
2.4K
2.4K
OUTPUT
-EXC
-SIG
GND
+SIG
+EXC

Trimming Method 2

1. Identify the potentiometer corresponding to each load cell/ section. It may be helpful to label them as corner 1, 2, 3, and 4 temporally to avoid any mix-up or confusion.

2. Turn all the potentiometers counterclockwise to keep the outputs at their minimum. Or turn them all clockwise to keep the outputs at their maximum. Sense the “click” sound to identify that they have reached to their maximum limit.

3. Place the desired test weight on the middle of the scale and move on to each sections/load cells and record the readings. The test weight capacity is dependent on the scale configuration, rules, and regulations. For example, refer to the Handbook 44, published by the National Institute of Standards and Technology (NIST).

4. Find out the reference corner as it is the highest reading corner if the potentiometers turned counterclockwise in step 2 and it is the lowest corner if the potentiometers turned clockwise in step 2.

5. If all the potentiometers were turned counterclockwise in step 2, then start with the potentiometer with the lowest corner reading and turn it clockwise to increase the reading to match the highest corner reading (reference corner).

If all the potentiometers were turned clockwise in step 2, then start with the potentiometer with the highest corner reading and turn it counterclockwise to decrease the reading to match the lowest corner reading (reference corner).

6. Follow the same process for other two corners. Check the zero balance after every adjustment as load cells are shunting interacting each other.

7. Test each load cell/sections again and repeat the steps 3, 4 and 5 as needed until get the required accuracy.

8. Pull the excess cables out from the junction box and tighten the cable glands properly using a suitable wrench.

9. Close the cover and tighten the screws properly to seal to minimize moisture ingress.

6. TROUBLESHOOTING

Anyload recommends letting the scale/weighing system stabilize for about 10-15 minutes mechanically and electrically before performing the corner adjustment or any calibration with the indicator.

4.1. Scale indicator does not give an output sensitive to the scale: Check all the wiring connections as per the load cells and indicator color code.

4.2. Indicator reading is not stable: Check all the wiring connections and properly tight them to avoid any loose connections. Check the scale/weighing system mechanically to avoid any touching/interactions. Check the indicator parameters setting such as filters.

4.3. Problem cannot be resolved: Contact Anyload customer support or your authorized dealer.

NOTES:

Please Contact Our Authorized Dealer for Technical Assistance:

North America Toll Free: 1-855-ANYLOAD (269-5623)
Email: info@anyload.com
Web: www.anyload.com

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Version 24A

ANYLOAD®

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