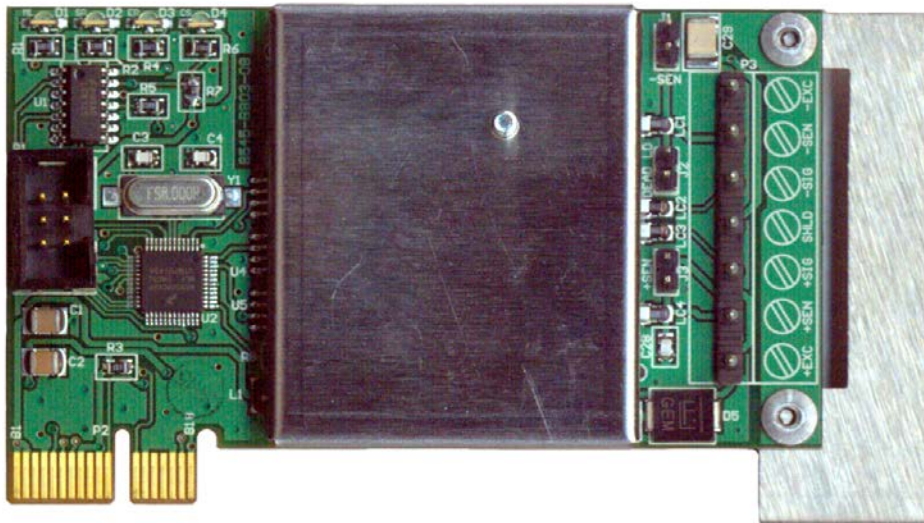




CARDINAL®



825 Gen2
INDICATOR

825-SIB Scale Input Board Installation Manual

INTRODUCTION

This manual serves as your guide for installing the 825-SIB Scale Input Board in the Gen2 825 Stainless Steel Weight Indicator, 825 Desktop Weight Indicator, 825 No Screen Weight Indicator, and the 900UPS Systems. Please read it carefully before beginning the installation and keep it available for future reference.

Please note that the images used in the installation guide feature the Gen2 825 Stainless Steel Weight Indicator. The installation process is similar for the other Gen2 825 models and the 900UPS systems.

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DISCLAIMER

While every precaution has been taken in the preparation of this manual, the Seller assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. All instructions and diagrams have been checked for accuracy and ease of application; however, success and safety in working with tools depend largely upon individual accuracy, skill, and caution. For this reason, the Seller is not able to guarantee the result of any procedure contained herein. Nor can they assume responsibility for any damage to property or injury to persons occasioned by the procedures. Persons engaging in the procedures do so entirely at their own risk.

PRECAUTIONS



CAUTION! The 825-SIB Scale Input Board contains static-sensitive components. Improper handling of the printed circuit board can result in damage to or destruction of the components or board. Such actual and/or consequential damage IS NOT covered under the warranty and is the responsibility of the board owner. Electronic components must be handled only by qualified electronic technicians who follow the guidelines listed below:



ALWAYS handle printed circuit board assemblies by the outermost edges. **NEVER** touch the components, component leads, or connectors.

ALWAYS observe warning labels on static protective bags and packaging and **NEVER** remove the board or component from the packaging until ready for use.

ALWAYS store and transport electronic printed circuit boards and components in anti-static protective bags or packaging.



ATTENTION! **ALWAYS** use a properly grounded wrist strap when handling, removing, or installing electronic circuit boards or components. Make certain that the wrist strap ground lead is securely attached to an adequate ground. If you are uncertain of the quality of the ground, you should consult a licensed electrician.

INSTALLATION

Indicator Gland Connector Layout



Figure No. 1

INSTALLATION, CONT.

Load Cell Cable Connection with RFI Suppression



WARNING! Disconnect any external load cell power supply before connecting load cells to the indicator. Failure to do so will result in permanent damage to the indicator.

To eliminate RFI, the load cell cable should be routed through the special metallic gland connector, and the shield wire from the load cell cable must be connected to this gland connector for grounding. Refer to Figure No. 1 for the gland connector layout.

1. Referring to Figure No. 2, unsnap the four draw latches (two on top and two on bottom) securing the front display panel to the rear enclosure, and then lower the hinged front display panel. See Figure No. 3.

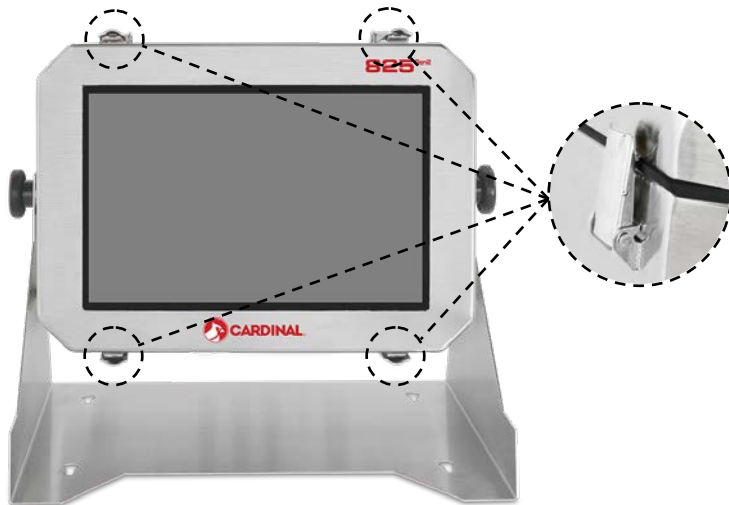


Figure No. 2



Figure No. 3

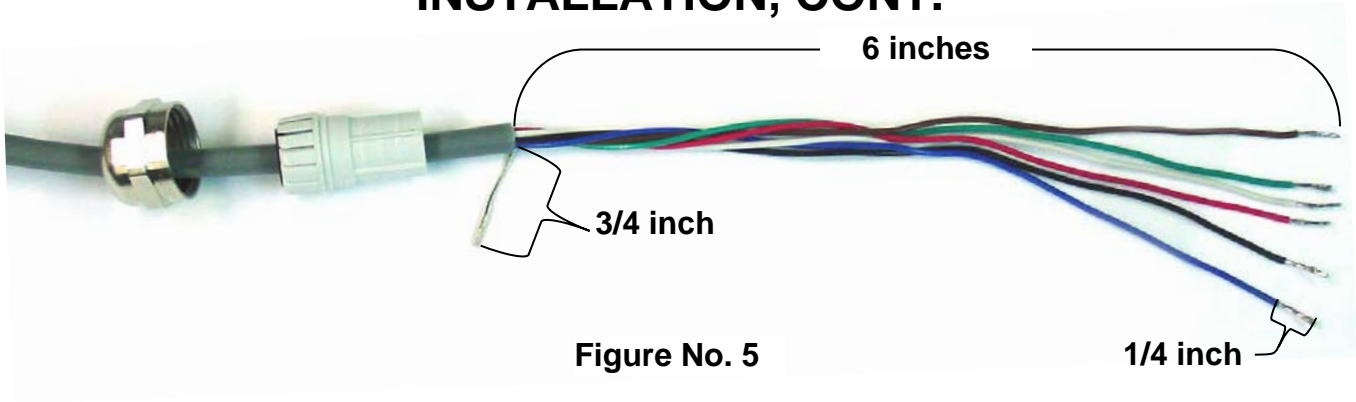
2. Loosen and remove the metal gland connector nut and then remove the plastic insert.
3. Referring to Figure No. 4, route the single cable from the load cell or load cell junction box through the nut and plastic insert and into the base enclosure.
4. With the load cell cable routed into the base enclosure, refer to Figure No. 5 and then remove approximately 6 inches of the cable outer insulating jacket exposing the internal wires.

5. Next, cut the shield wire so that it extends past the outer jacket approximately 3/4 inch.
6. Now, remove 1/4 inch of insulation from the end of each of the six wires (with sense leads) or four wires (without sense leads).



Figure No. 4

INSTALLATION, CONT.



- Remove the screw securing the 825 Scale Input Board (825-SIB) to the main PC board and then lift the 825-SIB straight up to remove it from the base enclosure. See Figure No. 6.
- Remove the 7-terminal block connector from the 825-SIB. (Hold the board in place, grasp the terminal block connector, and lift straight up away from the board). See Figure No. 7.

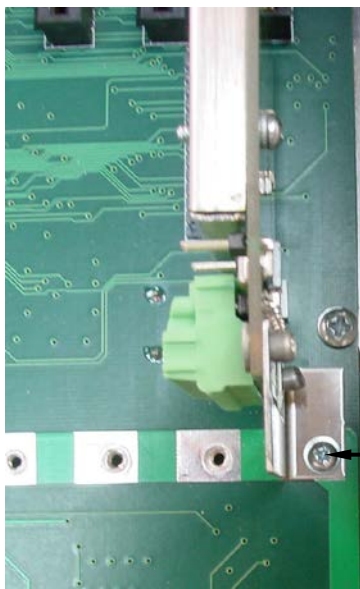


Figure No. 6

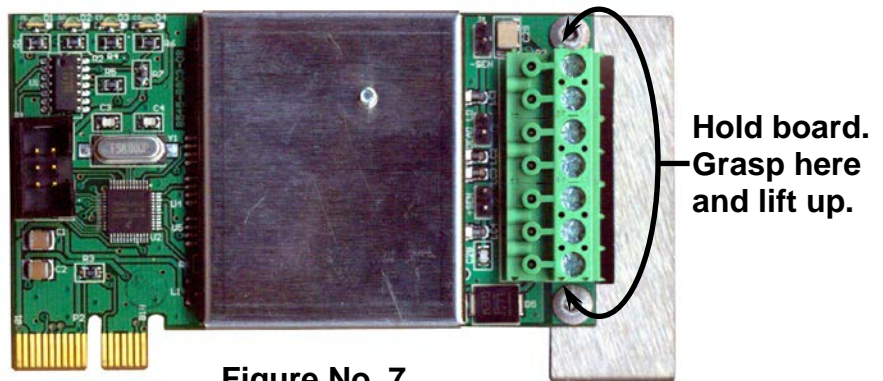


Figure No. 7

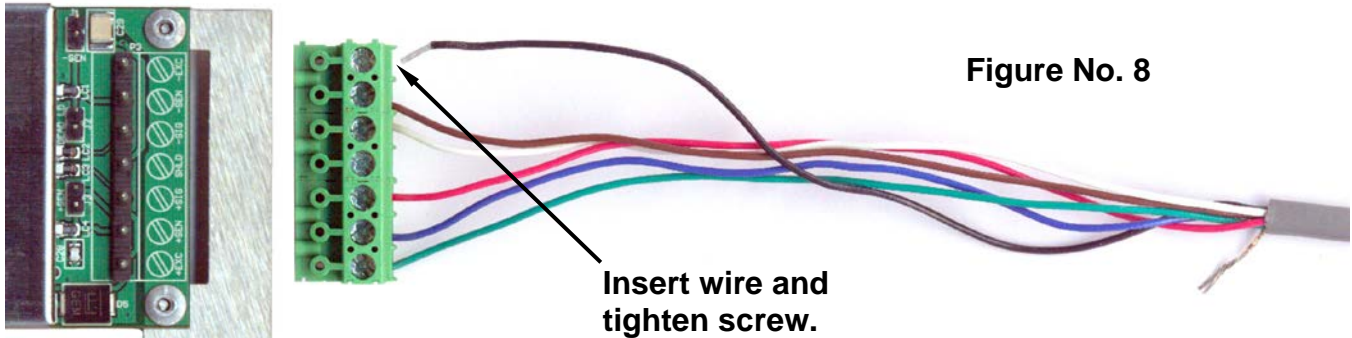
- Referring to the table below and the labels on the circuit board for terminal connections, connect each wire to the terminal block.

Load Cell Wiring Table

Board Label	Function	Board Label	Function
+EXC	+ EXCITATION	-SIG	- SIGNAL
+SEN	+ SENSE	-SEN	- SENSE
+SIG	+ SIGNAL	-EXC	- EXCITATION
SHLD	SHIELD (Not used, the shield wire is connected to the metal gland).		

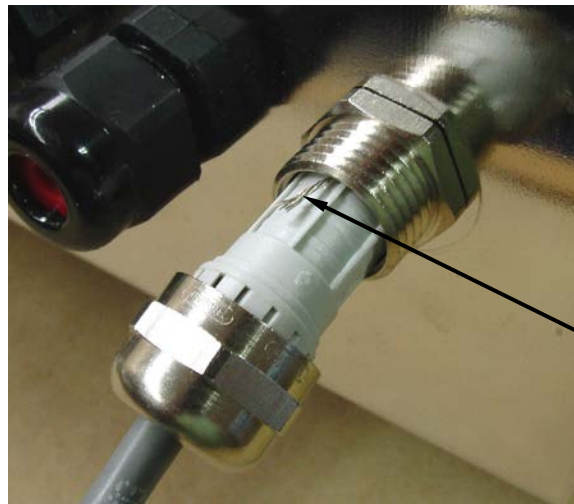
INSTALLATION, CONT.

10. To terminate a wire, loosen the screws in the terminal block and then insert the wire into the terminal opening. Tighten the screw to secure the wire in place. See Figure No. 8.
11. Repeat the procedure until all wires are in place.



12. After all terminations have been made, remove the excess cable from the enclosure.
13. Referring to Figure No. 9, fold the shield wire back over the plastic insert and then insert the plastic insert (with the shield wire) into the gland connector.

Figure No. 9



Shield Wire

14. The shield wire is secured when tightening the gland connector nut. Do not overtighten the connector but make certain it is snug. See Figure No. 10.

Shield Wire

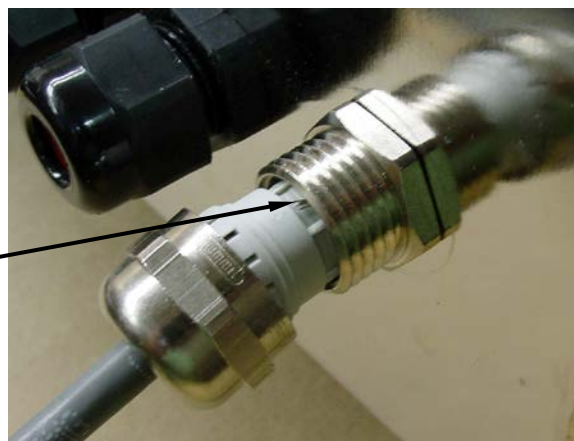


Figure No. 10

INSTALLATION, CONT.

Load Cell Cable Connection without RFI Suppression

The following instructions describe the load cell connection without RFI Suppression should it not be required.

1. If the front panel of the indicator has been lowered, proceed to step 2. Otherwise, referring to Figure No. 2, unsnap the four draw latches (two on top and two on bottom) securing the front display panel to the rear enclosure, and then lower the hinged front display panel. See Figure No. 3.
2. Referring to Figure No. 1, choose a gland connector for the load cell cable and loosen it.
3. Slip the single cable from the load cell or load cell junction box through the gland connector and into the enclosure.

4. Referring to Figure No. 11, remove 3 inches of the outer insulation jacket of the load cell cable.
5. Next, remove 1/4 inch of insulation from each of the four wires and shield (without sense leads) or six wires and shield (with sense leads).
6. Referring to the table below and the labels on the circuit board for terminal connections, connect each wire to the terminal block.

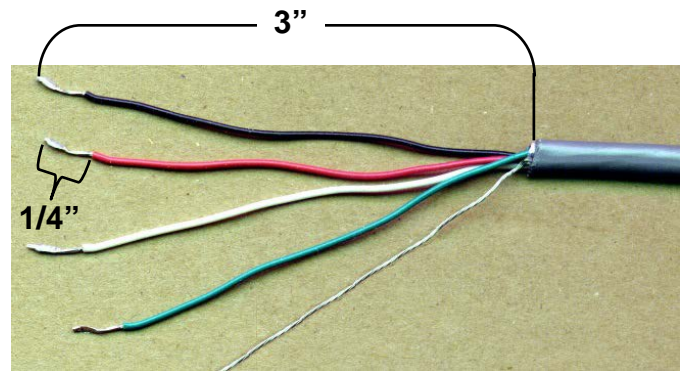


Figure No. 11

Load Cell Wiring Table

Board Label	Function	Board Label	Function
+EXC	+ EXCITATION	-SIG	- SIGNAL
+SEN	+ SENSE	-SEN	- SENSE
+SIG	+ SIGNAL	-EXC	- EXCITATION
SHLD	SHIELD (Connect the load cell cable shield wire here).		

7. To terminate a wire, loosen the screws in the terminal block and then insert the wire into the terminal opening. Tighten the screw to secure the wire in place. See Figure No. 8.
8. Repeat the procedure until all wires are in place.

Load Cell Connections with Over 30 Feet of Cable

For installations with over 30 feet of cable between the 825 and the load cells, sense wires should be used. The sense wires must be connected between the +SENS, -SENS terminals on the 825-SIB (Scale Input Board) and the +EXCITATION, -EXCITATION wires of the load cells or the +SENS, -SENS terminals of the load cell trim board (or the section seal trim board). For the 825-SIB to use the sense wires, the -SENS and +SENS jumpers J1 and J3 must be open (on one pin only) or removed. Refer to Figure No. 12 for the location of these jumpers.

825-SIB (SCALE INPUT BOARD)

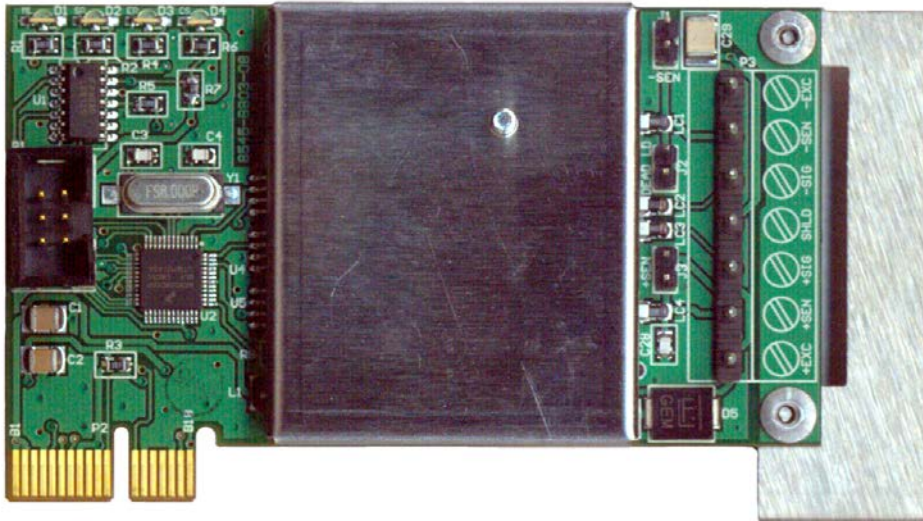


Figure No. 12

P1 - FACTORY USE ONLY

P3 - LOAD CELL TERMINAL

Board Label	Function	Board Label	Function
+EXC	+ EXCITATION	-SIG	- SIGNAL
+SEN	+ SENSE	-SEN	- SENSE
+SIG	+ SIGNAL	-EXC	- EXCITATION
SHLD	SHIELD		

J1 (-SEN) and J3 (+SEN) - SENSE JUMPERS

If the sense leads are NOT used, you must install the -SEN and +SEN jumpers at J1 and J3 (near the P3 terminal block). These jumpers connect the sense leads to the excitation leads. If sense leads ARE used (as in motor truck scales or installations with over 30 feet between the indicator and load cells), these jumpers should be open (on one pin only) or removed.

J2 (DEAD LD) - DEAD LOAD BOOST JUMPER

For scales with extremely low dead loads (less than 10% of the combined load cell capacity), connect the DEAD LD (dead load boost) jumper J2 (near the P3 terminal block).

CLOSING THE FRONT DISPLAY PANEL

After all terminations have been made.

1. Reinstall the 825-SIB into the rear enclosure and secure it to the main PC board with the screw removed earlier. See Figure No. 13.
2. Remove the excess cable from the rear enclosure and securely tighten each of the cable gland connectors.
 - Do not overtighten these connectors but make certain they are snug.
 - **DO NOT USE TOOLS!** Finger-tighten only!
3. Ensure any unused gland connectors are plugged.
4. Next, close the hinged front display panel by lifting it until it is against the rear enclosure.
5. Place the catch of the draw latches over the latch hooks on the front panel (two on top and two on bottom) and then snap the latches in place, ensuring the front display panel is tightly closed against the rear enclosure.

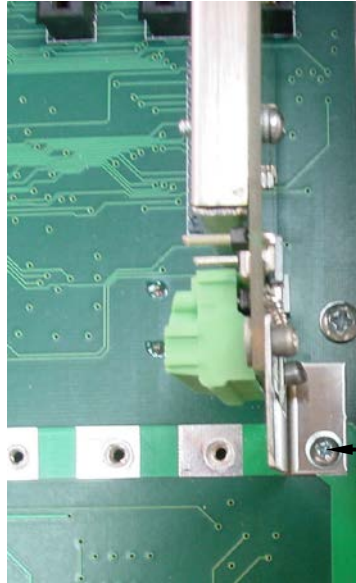


Figure No. 13

Secure 825-SIB to main board by installing this screw.

STATEMENT OF LIMITED WARRANTY

WARRANTY TERMS

Cardinal Scale Manufacturing Company warrants the equipment we manufacture against defects in material and workmanship. The length and terms and conditions of these warranties vary with the type of product and are summarized below:

PRODUCT TYPE	TERM	MATERIAL AND WORKMANSHIP	LIGHTNING DAMAGE See note 9	WATER DAMAGE See note 7	CORROSION See note 4	ON-SITE LABOR	LIMITATIONS AND REQUIREMENTS
WEIGHT INDICATORS	90 DAY REPLACEMENT ----- 1 YEAR PARTS	YES	YES	YES	YES	NO	1, 2, 3, 5, 6 A, B, C, D
LOAD CELLS (Excluding Hydraulic)	1 YEAR	YES	YES	YES	YES	NO	1, 2, 3, 5, 6 A, B, C, D
HYDRAULIC LOAD CELLS (When purchased with Guardian Vehicle Scale)	LIFETIME	YES	YES	YES	YES	90 DAYS	1, 5, 6, 8 A, B, C, D
HYDRAULIC LOAD CELLS (When purchased separately)	10 YEARS	YES	YES	YES	YES	NO	1, 5, 6, 8, 9 A, B, C, D
VEHICLE SCALE (Deck and Below Excl. PSC Series)	5 YEARS	YES	YES	YES	YES	90 DAYS	1, 2, 3, 5, 6 A, B, C, D, E
LSC SCALE (Deck and Below)	3 YEARS	YES	YES	YES	YES	90 DAYS	1, 2, 3, 5, 6, 11 A, B, C, D
GUARDIAN FLOOR SCALES	10 YEARS	YES	YES	YES	YES	NO	1, 2, 3, 5, 6, 9, 10 A, B, C, D
ALL OTHER CARDINAL PRODUCTS	1 YEAR	YES	YES	YES	YES	NO	1, 2, 5, 6 A, B, C, D, E
REPLACEMENT PARTS	90 DAYS	YES	YES	YES	YES	NO	1, 2, 4, 5, 6 A, B, C, D
SWIM AND 760 SERIES VEHICLE SCALES	1 YEAR	YES	YES	YES	YES	90 DAYS	1, 2, 5, 6 A, B, C, D
SOFTWARE	90 DAYS	YES	N/A	N/A	N/A	NO	1, 6 B, C, D
CONVEYOR BELT SCALES (including Belt-Way)	1 YEAR	YES	YES	YES	YES	NO	1, 2, 3, 5, 6 A, B, C, D, E, F



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315-WARRANTY-CAR-M

APPLICABLE LIMITATIONS AND REQUIREMENTS

1. This warranty applies only to the original purchaser. The warranty does not apply to equipment that has been tampered with, defaced, damaged, or had repairs or modifications not authorized by Cardinal or has had the serial number altered, defaced or removed.
2. This warranty is not applicable to equipment that has not been grounded in accordance with Cardinal's recommendations.
3. This equipment must be installed and continuously maintained by an authorized Cardinal / Belt-Way dealer.
4. Applies only to components constructed from stainless steel.
5. This warranty does not apply to equipment damaged in transit. Claims for such damage must be made with the responsible freight carrier in accordance with freight carrier regulations.
6. Warranty term begins with date of shipment from Cardinal.
7. Only if device is rated NEMA 4 or better or IP equivalent.
8. Lifetime warranty applies to damages resulting from water, lightning, and voltage transients and applies only to the hydraulic load cell structure itself (does not include pressure transducers, rubber seals, o-rings, and associated wiring).
9. 10-Year prorated warranty on hydraulic load cells.
10. 1-Year warranty for scale structure.
11. PSC models' warranty coverage applies only to agricultural installations on farms up to 3,000 acres (LSC models not limited in this manner).
12. Load cell kits MUST be installed in accordance with Cardinal Scale instructions. Failure to follow these instructions will void the warranty.

EXCLUSIONS

- A.) This warranty does not include replacement of consumable or expendable parts. The warranty does not apply to any item that has been damaged due to unusual wear, abuse, improper line voltage, overloading, theft, fire, water, prolonged storage or exposure while in purchaser's possession or acts of God unless otherwise stated herein.
- B.) This warranty does not apply to peripheral equipment not manufactured by Cardinal. This equipment will normally be covered by the equipment manufacturer's warranty.
- C.) This warranty sets forth the extent of our liability for breach of any warranty or deficiency in connection with the sale or use of our product. Cardinal will not be liable for consequential damages of any nature, including but not limited to loss of profit, delays or expenses, whether based on tort or contract. Cardinal reserves the right to incorporate improvements in material and design without notice and is not obligated to incorporate said improvements in equipment previously manufactured.
- D.) This warranty is in lieu of all other warranties expressed or implied including any warranty that extends beyond the description of the product including any warranty of merchantability or fitness for a particular purpose. This warranty covers only those Cardinal products installed in the forty-eight contiguous United States and Canada.
- E.) This warranty does not cover paint coatings due to the variety of environmental conditions.
- F.) Do not cut load cell cables on load cells returned for credit or warranty replacement. Cutting the cable will void the warranty.
- G.) Software is warranted only for performance of the functions listed in the software manual and/or the Cardinal proposal.
- H.) The software warranty does not cover hardware. Warranties on hardware are provided from the hardware vendor only.
- I.) The software warranty does not cover interfacing issues to non-Cardinal supplied hardware.
- J.) The software warranty does not include automatic software upgrades unless purchased separately.



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8545-1215-0M Rev-A 08/24