

LC-WA WEIGH ASSEMBLY HIGH CAPACITY

OPERATION INSTALLATION AND SERVICE MANUAL



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SECTION 1.0 DESCRIPTION

EAGLE MICROSYSTEMS Weighing Assemblies provide the commercial and industrial user with an easy to use, accurate and reliable method to weigh all types of hoppers, tanks, and scale platforms. The **LC-WA-H LOW CAPACITY WEIGHING ASSEMBLIES** are self-supporting and require no stay rods.

SECTION 2.0 PREPARATION FOR USE

2.1 RECEIVING INSPECTION

1. Upon receiving the assembly, carefully inspect the condition of the crate including the banding and any protective covering used for shipping. Report any damage to the shipper and to Eagle Microsystems.
2. Remove the assembly from crating and inspect for damage. Report any damage to the shipper and to Eagle Microsystems.
3. In some cases, the assembly is shipped with fabreeka shock pads and, if ordered, optional upper mounting plates removed and packaged separately. Verify that these items have been received and save for final installation.

2.2 SHIPMENT

Should re-shipment of your assembly become necessary.

1. Use a strong, well built crate. The crate must be larger than the outer dimensions of the assembly to protect it in shipping.
2. Make sure the hook-up cable is protected and secured in crate.
3. Use strong banding to secure assembly in shipment.

2.3 SITE SELECTION

1. Line power devices causing large inductive currents should not run off the same circuit as the weigh system. Fluctuations in line voltage caused by such devices may result in display instability.
2. The hook-up cable to the read-out should not run close to other unshielded cables. Display instability may result.
3. For best accuracy, a flat, level, and rigid surface is recommended to support the assemblies.
4. The area should be accessible for periodic cleaning.

2.4 INSTALLING

Install the Weigh Assemblies under the vessel's supports. Installation should be on a flat and level surface. Assemblies can be shimmed so the load cells are roughly equal on each support. Position the Weigh Assemblies so that there are no side loads or binding. LC-WA-H LOW CAPACITY WEIGHING ASSEMBLIES can be mounted in any orientation with respect to the tank or hopper. It is recommended that Weigh Assemblies be orientated so that they do not create a tripping hazard.

The following are important installation considerations for hoppers and tanks.

1. The Weighing Assemblies should be level and parallel so that side loads and bending moment loads are minimized.
2. The load on each assembly should be roughly equal.
3. The structure being weighed should not touch or rub against supporting structures.
4. The filling or emptying pipes should have flexible sections or run parallel to tank for a length so that piping is decoupled from tank and will not affect system accuracy.
5. For lower capacity systems, the attachment of pipes and feed chutes to the tank is more critical in relation to weighing errors.

2.5 HOOK-UP CABLE

1. Route the load cell cables to Summing J Box so that they will not be damaged or cut.
2. Connect the load cell cables to terminals on the Summing J Board.
3. Connect the 6 conductor hook-up cable from the Summing J Board to the load cell terminal on the Weight Indicator.

Figure 1 shows the wiring connections necessary to attach the load cells to the summing J Board. The color code and function are as noted.

COLOR	FUNCTION
BLACK	- EXCITATION
WHITE	- SIGNAL
RED	+ EXCITATION
GREEN	+ SIGNAL

Fig. 1

SECTION 3.0 TROUBLE SHOOTING

The following is a list of potential problems and likely cures.

1. Inaccurate but repeatable weight readings:
 - a. Adjust span on read-out (see instrument manual)
2. Blank or drifting display:
 - a. Consult the instrument manual.
 - b. Look for loose connection in hook-up cable at the instrument or in the Summing Box. See Section 4.0
 - d. Look for moisture in the Summing Box
 - c. Test for bad load cell (see section 4.2)

SECTION 4.0 SERVICING

4.1 Checking the connections to the Summing Box.

1. Locate the Summing J Box and remove the lid.
2. View and compare all connections to Figure 2.
3. Check all connections by lightly pulling on each lead. Tighten terminal connections as needed.
4. If problem persists, press lightly on the circuit board itself and check meter response. Replace board if required.

Note: Make sure when replacing the cover that the box is dry and the cover is tight.

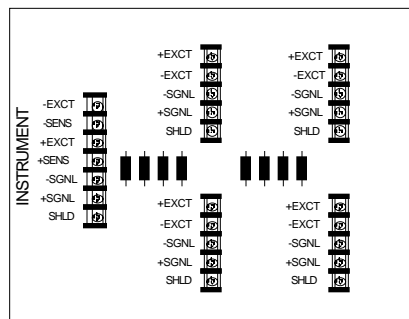


Figure 2: Summing Junction Board

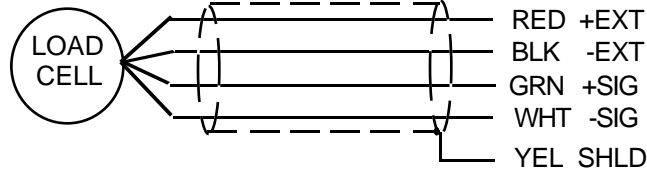
4.2 Checking the load cells.

1. Load Cell resistance test:
 - a. Disconnect the load cells from the Summing Box and measure the resistance as shown in Figure 3.
 - b. Any electrical leakage between the leads and the load cell case is usually caused by moisture leakage into the load cell or by moisture in a damaged load cell cable.
 - c. If a load cell does not pass the above resistance tests, replace it with a known good one.
2. Load Cell zero shift test:
 - a. Remove all the weight from the load cell and measure the output as shown in Figure 4.
 - b. Connect a DC power supply of 10 or 15 volts to the Red (+) and Black (-) excitation load cell leads.
 - c. The measured output between the Green (+) and White (-) signal leads should be less than 5 millivolts.
 - d. An output signal greater than 5 millivolts indicates a zero shift caused by mechanical overload.
 - e. If the output signal is between 5 and 15 millivolts, the load cells zero has shifted but will probably still continue to work.

f. If the output signal is greater than 15 millivolts, the load cell should be replaced with a known good one.

LOAD CELL WIRING

FIGURE 4



LOAD CELL VOLTAGE CHECK (WITH 15V EXCITATION)

BLACK TO WHITE:	+7.5V (EXCITATION / 2)
BLACK TO GREEN:	+7.5V (EXCITATION / 2)
BLACK TO RED:	+15V

LOAD CELL OUTPUT

GREEN TO WHITE:	LESS THEN +/- 5 MILLIVOLTS (NO DEAD LOAD) LESS THEN 25 MILLIVOLTS (EXACT OUTPUT VOLTAGE DEPENDS ON DEAD LOAD WEIGHT)
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NOTE: If the load cell's zero has shifted due to a mechanical overload, the reason for the overload should be determined before a new load cell is installed.

4.3 REPLACING THE LOAD CELL

Call the factory to advise that the load cell is defective. Report model and serial numbers for load cell.

1. Disconnect the upper mounting plate from the vessel and remove all weight from assembly
2. Remove the screws from Summing Box lid. Disconnect the wires of defective load cell being replaced. Gently pull cable out of the frame.
3. Use 3/4 wrench to remove 2 hext head cap screws which secure load cell to the base plate. Remove the upper mounting plate and shock pad from the damaged cell and reinstall on the replacement cell.
4. Install new load cell on the base plate using 35 ft. lbs. torque to screws and fish wires back to the Summing Box.
5. Insert leads into terminal as before and tighten. Put lid on Summing Box and tighten.
6. Shim, if necessary to achieve even loading on the load cells.

SECTION 5.0 SPECIFICATIONS

CONSTRUCTION:	Stainless Steel Load Cell, A36 Steel Mounting Plates.
FINISH (STEEL PARTS):	Primer and acrylic paint
CAPACITY:	1000, 2000 and 4000 LB cap.
SAFE OVERLOAD:	50% of Rated Capacity.
ULTIMATE OVERLOAD:	100% of Rated Capacity.
NOMINAL OUTPUT:	3.0 mV/V at full scale
OPERATING ACCURACY:	0.1% of Capacity.
REPEATABILITY:	0.02% of Capacity.
LOAD CELL:	Stainless Steel strain gage beam, 350 Ω .(20' cable to SJB)
HOOK-UP CABLE:	15' of 6 conductor color coded shielded cable. PVC jacket.

SECTION 6.0 SPARE PARTS LIST

<u>PART DESCRIPTION</u>	<u>MODEL/CAPACITY</u>
S.S. Load Cell	1,000 lbs F.S.(B35)
S.S. Load Cell	2,000 lbs F.S.(B35)
S.S. Load Cell	4,000 lbs F.S.(B35)
As Req'd 6 Conductor Cable	15' Standard
Load cell Summing Board SJB-4	All sizes and capacities