QuickSilver IS

5001 Series

Amendment Record

QuickSilver IS
5001 Series
50769

Manufactured by Fairbanks Scales Inc.
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Kansas City, Missouri 64106

Created

Issue #1	03/05	New Product
Issue #2	12/06	Updated Description Parts List
Revision 3	10/07	Revised Parts List
Revision 4	04/12	Added NTEP Approved Divisions, Control Drawings, Certificate of Compliance and updated Battery Charger information.
Revision 5	03/15	Updated battery type (lead-acid), Replacement Battery Bracket
Revision 6	04/17	Updated A/D Counts Calibration Mode

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Disclaimer

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scale makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made.

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SECTION 1: Introduction

The 5001 Series of bench scales and indicators have stainless steel construction. They are designed for use in a hazardous area and/or wash-down environment. They are either powered with a direct power supply or by a battery. The scales feature the capacity to store up to four (4) Over/Under Checkweighing Sequences in memory, each of which can be recalled at the push of a button. Programming of these Over/Under Checkweighing can be made through the front panel. The battery pack is stored in the battery holster located on the back of the indicator which can be easily removed for recharging.

SECTION 2: Description

A.   Legends

P   =   Platform
P   =   Pillar (2nd "P")
I   =   Indicator or IND = Indicator Only
W   =   Wall Bracket
H   =   Hazardous Environment

Example: PWI = Platform + Wall bracket + Indicator
Example: PPI = Platform + Pillar + Indicator

Note: C = CSA approved (Canadian certification)

B.   Specifications

1. Minimum Grad Size for Commercial Applications: NTEP Approval = 5000 Divisions

NTEP Approved	LB	KG	OZ	G
	2.0000 X .0001	0.90715 X .00005	32.000 X .002	907.15 X .05
	2.0000 X .0002	0.9072 X .0001	32.000 X .005	907.2 X .1
YES	2.0000 X .0005	0.9072 X .0002	32.00 X .01	907.2 X .2
	6.0000 X .0001	2.72155 X .00005	96.000 X .005	2721.55 X .05
	6.0000 X .0002	2.7215 X .0001	96.000 X .005	2721.5 X .1
	6.0000 X .05	2.7216 X .0002	96.00 X .01	2721.6 X .2
	6.000 X .001	2.7215 X .0005	96.00 X .02	2721.5 X .5
YES	6.000 X .002	2.722 X .001	96.00 X .05	2722 X 1
YES	6.000 X .005	2.722 X .002	96.0 X .1	2722 X 2
	10.000 X .001	4.5360 X .0005	160.00 X .01	4536.0 X .5
YES	10.000 X .002	4.536 X .001	160.00 X .05	4536 X 1
YES	10.000 X .005	4.536 X .002	160.0 X .1	4536 X 2
	12.000 X .001	5.4430 X .0005	192.00 X .02	5443.0 X .5
	12.000 X .002	5.443 X .001	192.00 X .05	5443 X 1
YES	12.000 X .005	5.444 X .002	192.0 X .1	5444 X 2
	24.000 X .001	10.8865 X .0005	384.00 X .02	10886.0 X .5
	24.000 X .002	10.886 X .001	384.00 X .05	10886 X 1
YES	24.000 X .005	10.886 X .002	384.0 X .1	10886 X 2
YES	24.00 X .01	10.885 X .005	384.0 X .2	10885 X 5
YES	24.00 X .02	10.89 X .01	384.0 X .5	10890 X 10
YES	24.00 X .05	10.88 X .02	384 X 1	10880 X 10
	25.000 X .001	11.3400 X .0005	400.00 X .02	113400 X 5
	25.000 X .002	11.340 X .001	400.00 X .05	11340 X 1
YES	25.000 X .005	11.340 X .002	400.0 X .1	11340 X 2
	30.000 X .001	13.6070 X .0005	480.00 X .02	136075 X 5
	30.000 X .002	13.608 X .001	480.00 X .05	13608 X 1
	30.000 X .005	13.608 X .002	480.0 X .1	13608 X 2
YES	30.00 X .01	13.610 X .005	480.0 X .2	13610 X 5

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NTEP Approved	LB	KG	OZ	G
YES	30.00 X .02	13.61 X .01	480.0 X .5	13610 X 10
YES	30.00 X .05	13.60 X .02	480 X 1	13600 X 10
	40.000 X .001	18.1440 X .0005	640.00 X .02	181440 X 5
	40.000 X .002	18.144 X .001	640.00 X .05	18144 X 1
	40.000 X .005	18.144 X .002	640.0 X .1	18144 X 2
YES	40.00 X .01	18.145 X .005	640.0 X .2	18145 X 5
YES	40.00 X .02	18.14 X .01	640.0 X .5	18140 X 10
YES	40.00 X .05	18.14 X .02	640 X 1	18140 X 20
	50.000 X .001	22.6785 X .0005	800.00 X .02	226800 X 5
	50.000 X .002	22.680 X .001	800.00 X .05	NOT AVAILABLE
	50.000 X .005	22.680 X .002	800.0 X .1	NOT AVAILABLE
YES	50.00 X .01	22.680 X .005	800.0 X .2	22680 X 5
YES	50.00 X .02	22.68 X .01	800.0 X .5	NOT AVAILABLE
YES	50.00 X .05	22.68 X .02	800 X 1	NOT AVAILABLE
	60.000 X .001	27.2155 X .0005	960.00 X .02	272160 X 5
	60.000 X .002	27.215 X .001	960.00 X .05	NOT AVAILABLE
	60.000 X .005	27.214 X .002	960.0 X .1	NOT AVAILABLE
	60.00 X .01	27.215 X .005	960.0 X .2	27215 X 5
YES	60.00 X .02	27.22 X .01	960.0 X .5	NOT AVAILABLE
YES	60.00 X .05	27.22 X .02	960 X 1	NOT AVAILABLE
	100.00 X .01	45.360 X .005	1600.0 X .2	45360 X 5
YES	100.00 X .02	45.36 X .01	1600.0 X .5	NOT AVAILABLE
YES	100.00 X .05	45.36 X .02	1600 X 1	NOT AVAILABLE
	150.00 X .01	68.040 X .005	2400.0 X .2	68040 X 5
	150.00 X .02	68.04 X .01	2400.0 X .5	NOT AVAILABLE
YES	150.00 X .05	68.04 X .02	2400 X 1	NOT AVAILABLE
	200.00 X .01	90.720 X .005	3200.0 X .2	90720 X 5
	200.00 X .02	90.72 X .01	3200.0 X .5	NOT AVAILABLE
YES	200.00 X .05	90.72 X .02	3200 X 1	NOT AVAILABLE
	250.00 x .01	113.400 X .005	4000.0 X .2	113400 x 5
	250.00 X .02	113.40 X .01	4000.0 x .5	NOT AVAILABLE
YES	250.00 X .05	113.40 X .02	4000 X 1	NOT AVAILABLE
	300.00 X .01	136.07 X .005	4800.0 X .2	136075 X 5
YES	300.00 X .02	136.08 X .01	4800.0 X .5	NOT AVAILABLE
	300.00 X .05	136.08 X .02	4800 X 1	NOT AVAILABLE
YES	300.0 X .1	136.10 X .05	4800 X 2	136100 X 50
YES	300.0 X .2	136.1 X .1	4800 X 5	NOT AVAILABLE
YES	300.0 X .5	136.0 X .2	4800 X 10	NOT AVAILABLE
	500.00 X .01	226.795 X .005	8000 X .2	226800 X 5
	500.00 X .02	226.80 X .01	8000.0 X .5	NOT AVAILABLE
	500.00 X .05	226.80 X .02	8000 X 1	NOT AVAILABLE
YES	500.0 X .1	226.80 X .05	8000 X 2	226800 X 50
YES	500.0 X .2	226.8 X .1	8000 X 5	NOT AVAILABLE
YES	500.0 X .5	226.8 X .2	8000 X 10	NOT AVAILABLE
	1000.0 X .1	453.60 X .05	16000 X 2	453600 X 50
YES	1000.0 X .2	453.6 X .1	16000 X 5	NOT AVAILABLE
YES	1000.0 X .5	453.6 X .2	16000 X 10	NOT AVAILABLE

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2. **Rounding:** Nearest division (0.5 division rounded upwards)

3. **Overload Protection:** 18" x 24" and 24" x 24" = 300% of scale capacity.
All other models = 500% of scale capacity

4. **Construction:** All stainless steel

5. **Humidity:** 0-100%, suitable for water washdown; NEMA 4X rated enclosure

6. **Operating Temperature:** 14F to 104F (-10C to 40C)

7. **Power:** 7 volt rechargeable lead-acid battery pack, removable or direct power supply.

8. **Battery Life:** 65 hours continuous operation, 250 hours in battery saver mode

9. **Display:** 0.75" 6-digit, liquid crystal

10. **Units:** Front panel selectable

11. **Zero:** Programmable 2% or 100% of capacity

12. **Center-of-Zero:** Active when scale is within 0.25 divisions of zero

13. **Checkweighing:** 4 programmable target and limit weights

14. **Front Panel Programming:** 3 levels of security

15. **Power Failure Protection:** Calibration data, checkweighing target weights and limit weights protected

16. **Approvals:** COC: 92-050A1

C.   **QuickSilver IS Accessories:**

Model	Description
14618	Intrinsically Safe 65-250 hour battery pack, purchased WITH instrument
31465	Safe area recharger, used with 14618.
14177	Direct Power supply (NOT for Groups A & B)
14178	Direct Power supply, Canadian Version (NOT for Groups A & B)
14434	10' cable for 14177 & 14178
14432	25' cable for 14177 & 14178
14433	50' cable for 14177 & 14178

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SECTION 3: Installation

A.   Mounting

Mounting the QuickSilver IS Instrument with wall mounting bracket:
1. Choose a location within the length of the cable between the indicator and the platform.
2. Mount the bracket at eye level of the operator, using SS screws.
3. Attach the indicator to the wall bracket using hardware provided.
4. Route the cable where it is protected.
5. Set platform on a solid, level surface for operation.

B.   Assembly

The QuickSilver IS bench scale is shipped partly disassembled.
To assemble the scale:
1. Carefully remove the packing materials from the box.
2. The scale is shipped in three parts, the platform, the indicator and the pillar. The platform and indicator are connected with the load cell cable. Remove the three components and place them on a work surface.
3. The top of the pillar has two (2) mounting flanges in the shape of a "Y." Be sure the pillar is in the correct orientation before proceeding.
4. Use the hardware provided for affixing the indicator to the pillar. The retainer washer is on the indicator side of the mounting bracket or Pillar Kit flange.
5. Connect the battery cable to the port in the bottom of the indicator.
6. Assembly is now complete and the scale is ready to operate.

C.   Instrument to Remote Platform Interface

1. The battery pack or direct power should be disconnected when the load cell interface cable connections are performed.
2. Remove the twelve bolts that hold the back cover in place.

D.   Load Receiver Interface

The load receiver load cell cable must be installed properly to prevent problems. Install the load cell cable and all the required parts using the following procedure: (refer to Figure 2280b)

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1. Run the load cell cable from the platform to the instrument location.

2. Slip the gland nut (from the plastic gland assembly) over the cable.

3. Feed the cable through the rubber boot, if the boot is needed.

4. Strip the outer jacket from the end of the load cell cable by approximately

5. 20 inches but do not remove the insulation from the individual wires.

6. Pull back and place all shield wires down the side of the nut adaptor.

7. Feed the colored wires through the protective cap and push the cap over the shields and the nut adaptor.

8. Secure the protective cap in place with a tie-wrap.
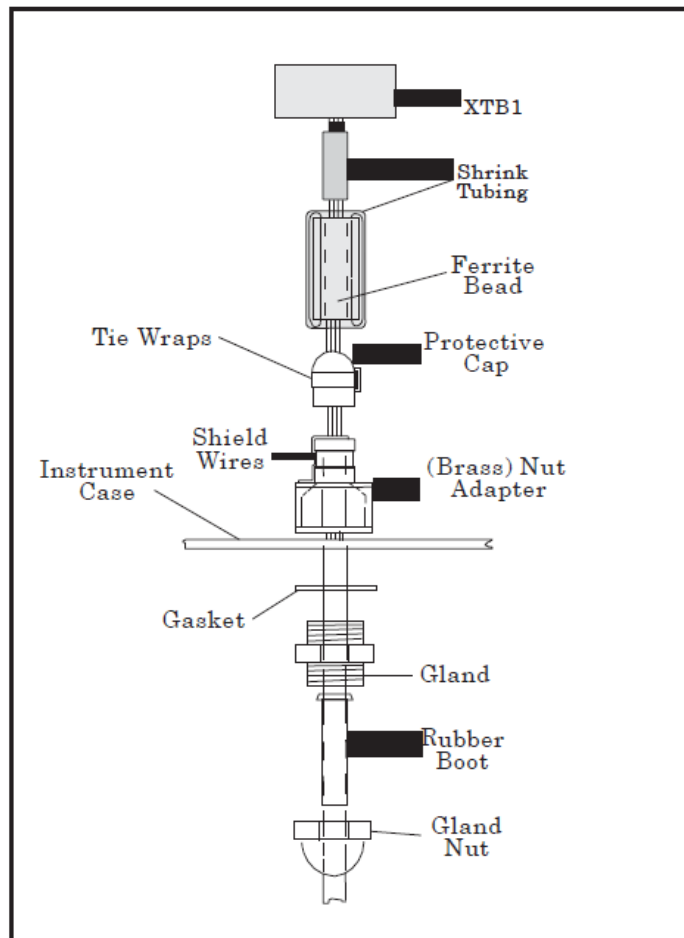
9. Trim the excess shield wires at the bottom of the protective cap. Be sure to remove all the excess wire from inside the enclosure.

Figure 2280b

10. Feed the colored wires through the ferrite bead three times.

11. The ferrite bead must be within one-quarter inch (1/4") of the protective cap.

12. Cover the ferrite bead and wires with shrink tubing provided.

13. The load cell cable wires should be stripped back one-quarter inch (1/4").

14. Cover the load cell wires from the ferrite bead with smaller tubing to within one-half inch (1/2") of the end of the wires.

Load Cell Connector

Keypad Connector

Power

2566a
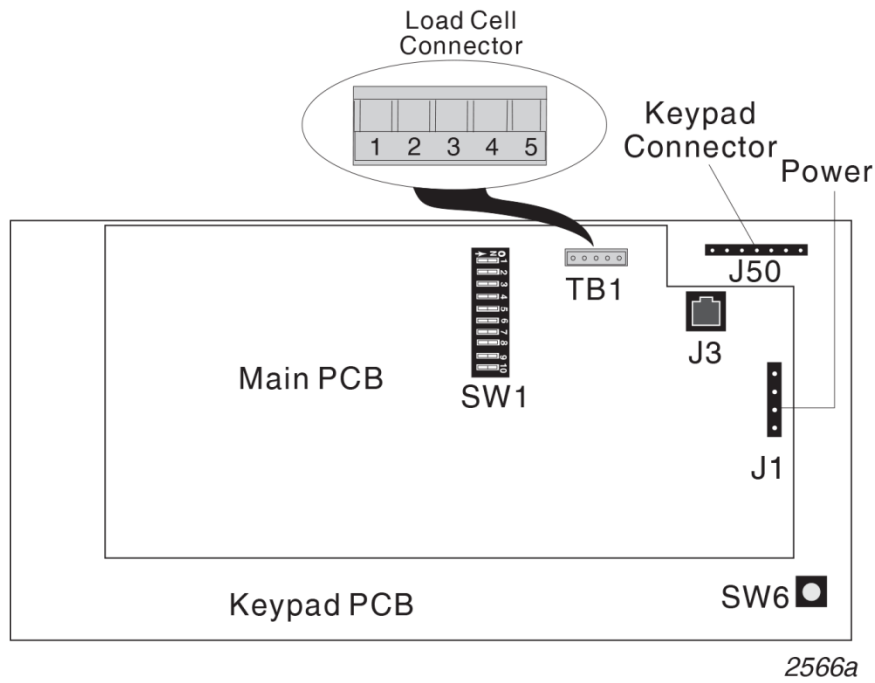
15. Connect the wires to terminal strip TB1 on the main PC board as follows:

> TB1-1 (-) Excitation
> TB1-2 (+) Excitation
> TB1-3   Shield TB1-
> 4 (+) Signal TB1-5 (-)
> Signal

SECTION 4: Programming & Calibration

A.   Security Levels

The QuickSilver IS is shipped with the least protected security level, 00, programmed into the indicator. This level allows all parameters to be programmed from the front panel. To change the security level to a more restricted condition, change program step "SL" (security level) "10 00" to "10 01" or "10 02". Once a higher level is programmed, it CANNOT be reduced to a lower level from the front panel. To reduce the security level, call a qualified service representative.

The security levels are:

00 - No programmable parameters are protected and all of them can be changed from the front panel. This security level can only be used in NON-COMMERCIAL applications.

01 - Limited parameters are protected and P3 through P9 can be changed from the front panel. This security level can be used in commercial applications.

02 - All programmable parameters are protected and NO changes can be made from the front panel. This security level may be used in commercial applications.

03 - Same as 00.

If the scale is to be used in a commercial application, it must be placed-in-service by a certified technician or an official from the Weights and Measures department. To be used as a commercial scale, the security level must be set to 01 or 02.

B.   Instrument Programming

• At each programming step, the display will show a word display for about 5 seconds, and then show the program step number, in the form PX xxx.

• To quickly scroll through the program steps, when the first word is displayed, press the UNITS key. The display will move to the next word display. When the desired word is displayed, wait 5 seconds and the display will change to the program step.

• While in the programming process, pressing the GROSS/NET key will return the instrument to the weigh mode.

Caution:
When the programming mode is entered, the target weight and the limit weight values in memory will be LOST in all four registers and will have to be re-entered.

1.   Getting Started

To enter the programming mode, press the SW6 switch on the main PC Board, or, if security level 00 has been previously programmed, press the UNITS key 8 times. The display will show "UNITS" then PO xx, where the xx is the units selection. Use the UP key to scroll through the choices. When the desired selection is displayed, press the UNITS key to enter the value into memory and move to the next program step.

See Appendix I for the standard factory settings for each of the programmable parameters.

NOTE:
If the value in Program Step 0, 1, or 2 is changed, the instrument must be re-calibrated.

2. Programming Steps

a. **Program Step 0, UNITS.**
There are various selections for the instrument operating units. The display will show "UNITS" and then P0 xx where xx is:

01 = lb	**05** = lb/oz	**09** = lb/gm	**13** = lb/oz/gm
02 - kg	**06** = kg/oz	**10** - kg/gm	**14** = kg/oz/gm
03 = lb/kg	**07** = lb/kg/oz	**11** = lb/kg/gm	**15** = lb/oz/kg/gm

Press the UP key to scroll through the available values. When desired value is displayed, press the UNITS key to save and advance to the next program step.

b. **Program Step 1, Capacity**
This parameter is set to establish decimal point location and maximum displayed weight. The maximum displayed weight will be the selected capacity, approximately + 3%. When selecting capacity, consideration must be given to the Grad Size selection in Program Step P2. These two parameters, Capacity and Grad Size, cannot result in a resolution greater than 1/5,000 for commercial weighing operations. The capacity selection is available in lb or kg units. To change the displayed selections, change Program Step 0, UNITS.

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lb	Program Step P1: The display	kg
2.0000	will show "CAP" then xxxxxx	0.9050
6.0000	where x represents:	2.7200
6.000		02.720
10.000		05.000
12.000		05.440
24.000	OR	10.900
24.00		10.90
25.000		11.310
30.000		13.570
30.00		13.57
40.000		18.100
40.00		18.10
50.000		22.620
50.00		22.62
60.000		27.150
60.00		27.15
100.00		45.25
150.00		67.87
200.00		90.50
250.00		113.12
300.00		135.80
300.0		135.8
500.00		226.50
500.0		226.5
1000.0		453.5

By selecting, then pressing UNITS, the platform capacity will be entered in Program Step 1 and the grad size is entered in program step 2

c. Program Step 2: Grad Size
This is the displayed weight resolution. This weight value will also be used to determine motion and AZT weight ranges. The range of grad sizes depends on the capacity selection and is .0001 to .5 in increments of 1, 2, 5. (.0001 to .0005 appear as . 001 and . 005). Any changes to this parameter will affect scale calibration. The display will show gd S2 then P2 0.x, where the 0.x represents the Grad size. The grad size decimal point will be selected automatically when the capacity is selected in Program Step 1.

Note :
For commercial applications, refer to the capacity/grad size list in the Specifications section of this manual.

d. Program Step 3 - Motion
This is a programmable range, in grads, which acts to enable and disable the following functions:

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Zero
Auto Tare
AZT

Weight variations in excess of this range will disable the above listed functions. These functions will also be disabled if the rate of change in weight is greater than 2.5 times the motion range every second.

The display will show "motion" then P3 x.x where x.x is the selected motion Band value.

0.5	Most Sensitive to Motion
1.0	
2.0	
3.0	Least Sensitive to Motion

e. Program Step 4 - AZT (Auto Zero Tracking)

This is a programmable tolerance which is used to enable and disable the AZT (Auto Zero Tracking) function. This tolerance is specified in divisions. If the stable weight is farther from zero than the programmed tolerance, AZT is disabled, otherwise AZT will rezero the displayed weight. The AZT function will also be disabled if the rate of change in weight is greater than the programmed tolerance every second.

The display will show "a2t" then P4 x.x, where x.x is the selected value.

0.0	OFF
0.6	Grads
1.0	Grads
3.0	Grads

f. Program Step 5 - Zero Range (Power-Up Display)

This refers to the maximum weight for which the zero function is enabled. Weight in excess of this value will cause the zero function to be disabled. The display will show "ZErO" then P5 0x where 0x is:

00	100% of Capacity, Zero Displayed at Power-up
01	2% of Capacity, Zero Displayed at Power-up
02	100% of Capacity, Actual Weight Displayed at Power-up
03	2% of Capacity, Actual Weight Displayed at Power-up

g. Program Step 6 - Auto Tare

This function may be programmed to enable or disable any or all of the tare functions.

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The display will show "tArE" then P6 0x where 0x is:

    00   Tare Enabled
    01   Gross Only Weighing, Tare Disabled

h. Program Step 7 - Sleep
This function may be programmed to enable or disable the sleep function and set the sleep shutdown time.

The display will show "SLEEP" then P7 0x where 0x is:

    00   Automatic shut-down disabled
    01   5 minute automatic shut-down
    02   30 minute automatic shut-down
    03   120 minute automatic shut-down

i. Program Step 8 - Digital Filtering
This function is programmed to set the amount of filtering.

The display will show "FiLtEr" then P8 0x, where 0x is:

    00 = average 32
    01 = average 16
    02 = average 8
    03 = average 4

j. Program Step 9 - Display Rate
This function is programmed to set the display update rate.

The display will show "dSPrt" then P9 0x, where 0x is:

    00 = 0.2 seconds
    01 = 0.4 seconds
    02 = 0.8 seconds
    03 = 1.2 seconds

k. Program Step 10 - Security Level
The display will show "SL" then "10 0x" where 0x is:

    00   No programmable parameters are protected and all can be changed from the front panel
    01   Limited parameters protected (P3 through P9 can be

changed from the front panel

02   All programmable parameters are protected and cannot be changed from the front panel

03   The same as 00.

This completes the programming section. When the UNITS key is pressed, the instrument will go into the Cal Mode.

I. A/D Counts Calibration Mode

The A/D counts are the instrument internal counts to convert the weight on the platform to digital information in the display. The counts are set by manipulating the gain and offset switches to reach the desire range. The total range is from 0 counts to 40,000. However, it is necessary to maintain a buffer at both the top and bottom of the counts range. The recommended lower A/D count value is 1,000 to 7,000, and the upper value is 30,000 to 37,000.

The display will show 40,000 if the A/D counts exceed 40,000.
The display will show 00 if the A/D counts go below 0.

To enter the counts calibration mode, press the SW6 button twice. The display will show "C xxxxx", where C is the calibration prompt and xxxxx is the counts value.

1. Set S1 positions 5 closed and 1, 2, 3, 4, 6 and 7 open
   (See Gain & Offset charts, page 16).

2. With no weight on the platform, press the ZERO key. This will store the zero reference, or press AUTO to restore the old zero reference.

3. Apply a test weight to the platform, 25% or more of the scale capacity is recommended. The display will show the live load counts.

4. Record the displayed counts. (If there was no counts change or the change was negative, check the load cell wiring and correct the problem before proceeding).

This recorded change is the count value for the weight applied to the platform. To determine the change that would occur if full capacity weight were applied to the platform, multiply this change using the following formula:

Liveload Counts = Applied Wt Counts X   Scale Capacity
$$\hspace{6cm} \text{Test Weight}$$

Example:

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Liveload Counts = 4290 X 100.00 ~ Liveload counts = 4290 X 4 = 17160 cts.
                    25.00

The change in count value for full capacity weight should be between 30,000 and 37,000. Choose the appropriate gain setting from the chart below by selecting, from the chart, the gain ratio closest to and less than the gain ratio established as follows:

Gain Ratio = 37,000
Change X Counts Change

```
┌──────────────────────────────────────────────────────────┐
│ Switch Settings (S1)                                       │
│                                                            │
│ Gain Ratio          Open          Closed                  │
│    1.00             5,6              7                     │
│    1.33                            5,6,7                   │
│    1.40        *    5,6,7                                  │
│    1.85        *      7            5,6                     │
│ * Not recommended for commercial weighing applications.   │
│                                                            │
└──────────────────────────────────────────────────────────┘
```

Once the switch setting is chosen establish the actual change in counts for full capacity by rechecking using the above formula. Using the most counts available per division increases stability.

5. With the gain switches properly set use the chart below to select the deadload compensation. This compensation must be chosen to produce the lowest A/D count value with no weight on the platform, but not less than 1,000.

```
┌──────────────────────────────────────────────────┐
│ Switch Settings (S1)                              │
│ Offset Compensation                               │
│                     Closed        Open            │
│      Minimum         - - -       1,2,3,4          │
│                       2,4          1,3            │
│                       1,3          2,4            │
│      Maximum        1,2,3,4       - - -           │
└──────────────────────────────────────────────────┘
```

6. Verify correct operating range:
   a. By adding the A/D count value with no weight on the platform (deadload) to the calculated actual change in counts for full capacity (liveload).

   b. The sum (total counts) must not exceed 38,000. If so, reduce gain and reverify.

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This completes the A/D counts calibration. If the guidelines for gain and deadload compensation cannot be met, the scale will function properly under the following conditions:

1). The selected gain and deadload compensation satisfies the conditions specified in Step 6.

2). The ratio of A/D counts per displayed weight graduations* is greater than 3.

$$* \text{ displayed weight graduations} = \frac{\text{Full Capacity Weight}}{\text{Smallest Weighing Increment}}$$

A/D Count
40,000
36,000
y
6,000
0

0   Empty   x   Capacity

Weight on platform   2505
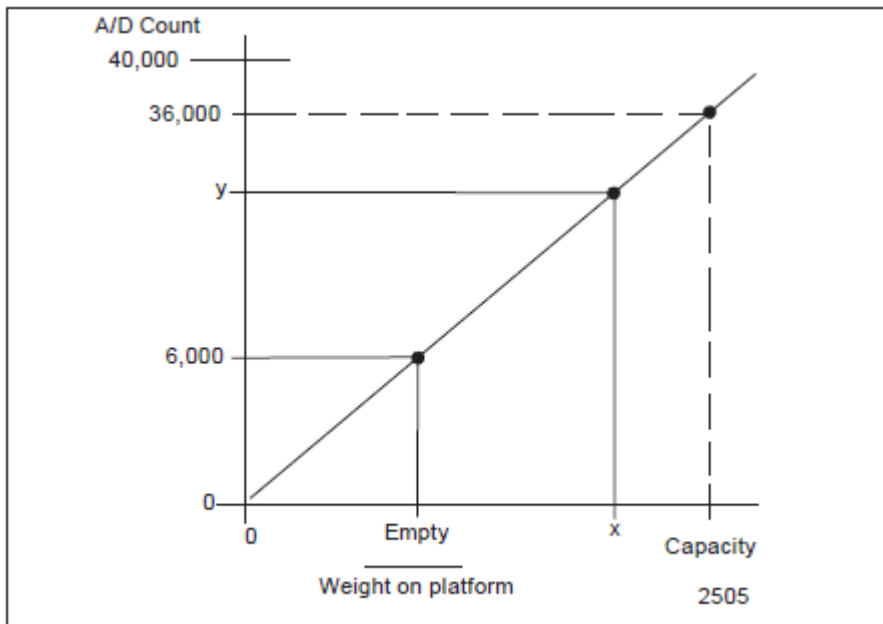
Span Calibration Mode

1). Enter the counts calibration mode by pressing SW6 twice or until the display shows "Cxxxx" where "C" is the counts calibration prompt and xxxx is the count value.

2). With no weight on the platform press the ZERO key. The zero weight reference value is stored and the display will show "C 0".

3). Place the test weights (not exceeding the programmed or physical capacity) onto the platform. A test weight equal to the platform capacity will produce the most accurate calibration. Test weights less than platform capacity may be used.

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4). Next, press the UNITS key. This stores the displayed A/D counts and changes the display to show the previous calibration weight value or the selected scale capacity.

5). Enter the weight currently on the platform. Scroll up with the UP key or down with the DOWN key. These keys will change the value of the 3rd, 4th and 5th digits.

Pressing the ZERO key will reset the displayed value to zero.

6). With the calibration weight value displayed, press the UNITS key to complete the calibration and return the instrument to the weighing mode.

Analog Filter
Light analog filtering will give a fast display response time but makes the display less stable due to motion on the platform. Heavy analog filtering will give a slower display response time but will tolerate more platform motion. In general, light capacity scales use the light analog filtering, while large capacity scales use the heavy analog filtering.

<u>ANALOG FILTER</u>	<u>Switch Settings</u>
Light Filtering	8, 9 Closed
Heavy Filtering	8, 9 Open

SECTION 5: Operation

A.   Keys

ON - When pressed, turns the indicator ON. The display will go through a warm- up sequence and then go into the weigh mode.

OFF - When pressed, turns the indicator OFF.

UNITS - Switches the scale between the available units, pounds, kilograms, ounces, and grams.

UP - DOWN - These are used to scroll through the various values in each of the program options and are used to change the over/under values in the checkweigh mode.

1, 2, 3, 4 - These are used to program and select the stored checkweigh values.

AUTO TARE - Enters the value of the weight on the platform into memory as a tare weight.

B/G NET- Toggles the display between GROSS weight and NET weight.

ZERO - When pressed, sets the indicator to zero.

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B.   Indicators

> **NET -** When ON, indicates the scale is in the NET mode. When OFF, indicates the scale is in the GROSS mode.
>
> **lb -**   Indicates the scale is using pounds as the unit of weight.
>
> **kg -**   Indicates the scale is using kilograms as the unit of weight.
>
> **oz -**   Indicates the scale is using ounces as the unit of weight.
>
> **g -**   Indicates the scale is using grams as the unit of weight.

Center-of-Zero - Indicates the scale is at the zero point and is ready to weigh.

C.   Weighing

Remove any weight from the platform. If the instrument is OFF, press and hold the ON key until the display comes on (not blank) and the indicator begins its initiation sequence (the Prom # and Revision will be displayed briefly i.e., 11754.2). The scale will begin operations in the Gross Weighing Mode.

The Zero function, Auto Tare function, and AZT require the displayed weight to be stable before these functions will operate. The weight reading is stable if the variation in weight is less than the programmed motion range. If the rate of change in weight is less than 2.5 times the motion range every second, then the weight is stable.

1. Instrument Weighing Functions

The industry uses three terms which describe the apportionment of an object's weight. These terms are GROSS WEIGHT, TARE WEIGHT, and NET WEIGHT.

• Gross weight is the total weight of an object. This would include any incidental materials as well as the primary materials which comprise the object.
• Tare weight is the weight of the incidental materials.
• Net weight is the weight of the primary materials. Tare weight and Net weight together equal the Gross weight.

Example: A can of house paint is an object to be weighed. The can is incidental material used to hold the primary material, paint, and the label is incidental material used to identify the paint. All of the incidental materials taken together make up the tare weight. All of the primary
materials' weights together make up the Net weight; in this case pigment, vehicle, and solvent. The object is made up of incidental materials, can and label, primary materials, and paint. Taken together, this is the gross weight.

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The three weights can be expressed in terms as
follows: GROSS = NET + TARE
TARE = GROSS -
NET NET =GROSS -
TARE

The equation, **NET = GROSS -TARE**, is particularly important because it is the equation that a scale uses to figure net weights in NET WEIGHING MODE. The gross weight is a function of the weight on the platform and the zero reference. Tare weight is always an operator-defined value.

a. Basic Weighing

1). Turn ON the indicator and the display will go through the warm-up sequence.

2). When the warm-up sequence is complete, the display should show zero and the Center-of-Zero indicator should be ON. If it is not, press the ZERO key.

3). For GROSS weighing, the NET indicator should be OFF. If it is not, press the GROSS/NET key until the NET indicator is OFF.

4). Place the object to be weighed on the platform. As soon as the system is stable, the weight value will appear in the display.

b. Tare Weighing

1). Turn ON the indicator and the display will go through the warm-up sequence.

2). When the warm-up sequence is complete, the display should show zero and the Center-of-Zero indicator should be ON. If it is not, press the ZERO key. Any tare weight in memory when the scale was turned off will be lost. A new tare weight must be entered into tare memory.

3). Place the empty container that is going to be used on the platform and press the AUTO/TARE key. The weight of the empty container will be entered into memory as a tare weight.

4). Remove the container from the platform.The display will show a NEGATIVE tare weight value.

5). Place the same or similar container filled with product on the platform.

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The display will show the weight of the material in the container.

c. Change the TARE weight value

1). With no weight on the platform, press the ZERO key. The display will show zeros and the Center-of-Zero indicator will be ON.

2). Place the new container on the platform and press the AUTO/TARE key. The old tare weight will be deleted from memory and the new tare weight entered.

d. Weighing Units

To select the desired weighing units, press the UNITS key. The Units indicator will move in response to the key.

The selected weighing units will be saved in memory each time the OFF key is pressed. This feature allows the instrument to return to the weighing units in use when power is restored.

The selected weighing units will not change unless:

1. The UNITS key is pressed.

2. Power to the instrument is lost prior to pressing the OFF key.

3. The Programming mode of the instrument is accessed.

e. Checkweighing

CHECKWEIGHING is a process in which a TARGET weight is entered into the scales memory. The display shows the operator where the weight on the platform is, over or under, relative to the target weight.

The **TARGET VALUE** is the weight that has been selected as the weight to be achieved in the checkweighing process. The target value refers to the absolute value of the Gross weight only. This is a programmable feature.

The **LIMIT WEIGHT** value is the amount over or under the target weight that is to be shown in the display. This is a programmable feature.

Three different ranges can be shown in the display; the accept range, the over range and the under range. The size of the ranges is set by the **LIMIT WEIGHT** value.

When the weight on the platform is within the **ACCEPT** range, the display will

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show a series of "- - -". A pointer will show the operator where the weight value is, within the ACCEPT range.

If the weight on the platform is over or under the values set by the limits, the display will show a series of **"U"s** for under, or up-side-down **"U"s** for over. A pointer will tell the operator where in the over or under range the weight value is located.

> *Note:*
>
> *In the Checkweighing Mode, the ZERO, AUTO/TARE, and UNITS keys are disabled.*
>
> *Target and limit weight values - while values of 0, 1, 2, 3 , or 4 divisions may be entered as target or limit values during the programming, the system will ALWAYS default to 5 divisions.*

A. Accept Range Display

B. Under Range Display

C. Over Range Display

2645b
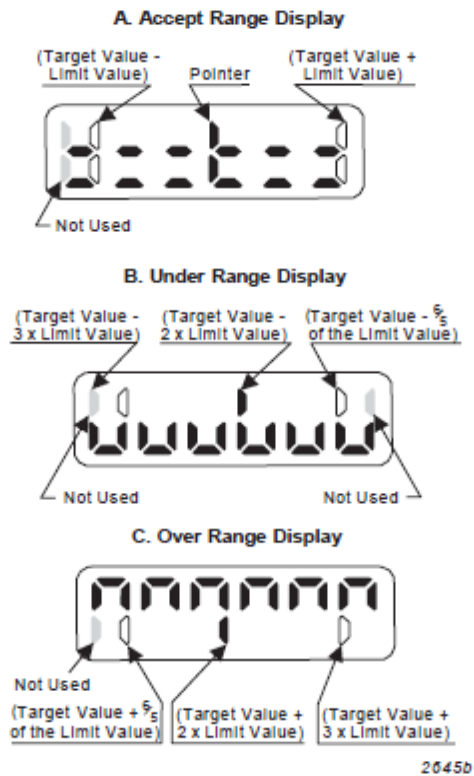
To exit the Checkweighing Mode, press the GROSS/NET key.

f. Over/Under Setup

1. Press the ZERO key and the display will show "0" with the center-of- zero indicator ON.

2. Press the appropriate OVER/UNDER key, 1, 2, 3, or 4. The display will flash the last target value entered into memory and then display the OVER/UNDER graphic.

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3. To change the TARGET WEIGHT, press the UP key. The display will show the current target weight in memory as a four digit number.

4. Press the UP key to increase the target weight or the DOWN key to decrease the target weight. In some cases, it will be faster to enter a new target weight or limit weight by starting from 0. Press the ZERO key. The display will be reset to all zeros. Use the arrow keys and the UNITS key to enter a new target weight or limit weight.

5. With the appropriate TARGET weight displayed, press the same OVER/UNDER key, 1, 2, 3, or 4 as was pressed in Step 2.

6. To change the LIMIT WEIGHT, press the DOWN key. The display will show the current limit weight in memory as a four digit number.

7. Press the UP key to increase the limit weight or the DOWN key to decrease the limit weight.

8. With the appropriate LIMIT weight displayed, press the same

Note:
When the arrow keys are pressed, the digits will change. Fine adjustment changes the last two digits, coarse adjustment changes the first two digits. The operator can toggle between fine and coarse adjustments by pressing the UNITS key.

OVER/UNDER key, 1, 2, 3, or 4 as was pressed in Step 2.

9. Repeat this process for each of the four OVER/UNDER programs.

g. Over/Under Weighing

1. Press the OVER/UNDER key, 1, 2, 3, or 4, that is to be used in the weighing operation. The display will show the appropriate OVER/UNDER graphic.

2. Place the item to be weighed on the platform. The indicator in the display will move to show the weight as being UNDER, OVER, or on TARGET.

3. Add or remove material from the platform until the indicator shows on target.

4. Remove the material from the platform and repeat the process.

h. Exit Over/Under Weighing

To exit the Over/Under Weighing Mode, press the GROSS/NET key. The indicator will return to the Weigh Mode.

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SECTION 6: Battery Pack

A.   Description

Accessory 530 Battery Recharger is a **Safe Area Smart Charger**, intended for non-hazardous, safe areas only. It is only used for recharging **Battery Accessory 352**.

- This Accessory will fully charge a completely discharged 352 Battery **within sixteen (16) hours.**
- A charged battery can be left on the charger without any resulting damage to either the charger or the battery pack.
- When a discharged Accessory 352 Battery is first connected to a charger, the status LED on the charger will be a constant **yellow**.
- Once the battery is fully charged, the LED will remain a constant **green**.

IMPORTANT NOTE: **Use the Accessory 530 Battery Recharger in a SAFE AREA only.**

B.   Specifications

INPUT VOLTAGES	120 VAC, 60 Hz
BATTERY OUTPUT VOLTAGES	7.0 VDC +/- 0.2 VDC at the end of charge cycle with battery connected.
LEADS	• Output leads 18 AWG, approximately three feet (3') • Extended power cord up to six feet (6')
STATUS LED	Brightness sufficient to discern the charge status under general office environment lighting.
CHARGING TIME	• Sixteen (16) hours maximum for undamaged chargeable battery (electrolyte not depleted). • Initial unloaded output voltage of 5.0 VDC. • **Do not recharge a battery with a voltage below 4.0 VDC**
OPERATING	0°C to +38°C (+32°F to +100°F)

* * WARNING! * *
Battery packs are to be charged in non-hazardous areas only!

C. States of Operation

STATE 1: NO BATTERY
- **RED LED** is constantly on.
- No battery is attached to the charger, and no current is flowing from the charger.

STATE 2: UNDER VOLTAGE BATTERY
- **RED LED** flashes at a set interval.
- A battery is attached to the charger, but is **below the 3.6V threshold**.
    - The charger will attempt a trickle charge for up to sixteen **(16) hours** to restore the battery to normal state.
    - If at the end of sixteen (16) hours the battery has not reached 3.6V, the charger shuts down.
    - **RED LED** flashes with a steady **YELLOW LED**.
    - No battery charge exists while in this state.
- The small trickle charge in this state is about **10% duty cycle**, or about **60mA***.

STATE 3: CHARGING
- **YELLOW LED** is on constantly.
- Indicates the battery is between **3.6V and 7.0V**.
- Charger will continue charging for up to sixteen (16) hours
    - If charger has not reach next state in the sixteen (16) hours, it will determine voltage
- If charger is between **6.4V** and **7.2V**, the unit switches to **State 4: Trickle Charge**.
- If charger is not to 6.4V, charger shuts down and shows **YELLOW LED** on steady with
    - **RED LED** flashing (used to indicate possible fault with battery).
- **Full charge** is produced in this state is **200mA***.

STATE 4: TRICKLE CHARGE
- **GREEN LED** will be on steady, battery pack is considered fully charged
- Indicates the battery has reached 7.0V, and is now between **6.6V and 7.2V**.
    - Hysteresis is built in to allow battery's chemicals to settle.
- Charger will stay in this state indefinitely as long as battery voltage remains between **6.6V and 7.2V**.
    - If voltage drops **below 6.6V**, the charger returns to **State 3: Charging**.
    - If voltage rises above **7.2V**, the charger switches to **State 5: Over Voltage**.
- Trickle charge is produced at about 35% duty cycle or **about 60mA***.

STATE 5: OVER VOLTAGE
- **GREEN LED** will be on steady with the **RED LED** flashing.
- This indicates the battery has been over charged above **7.2V**.
    - Current from the charger is stopped and charger waits for voltage level to drop back **below 7.2V.**
- No current is produced

* Current levels will vary between batteries and is only given as a reference.

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SECTION 7: Service and Maintenance

A.   Loading Canned Menu

Caution : When replacing either a display PCB or PROM, use the following procedure to load the canned menu.

Set these switches on the MAIN PCB, SW1

LBS	Platform Size	Cell Cap.	SW1 "ON"
2.000	10 x 10	7 kg	1,2,3,4,5,6
6.000	10 x 10	7 kg	1,2,3,4,5,6
10.000	10 x 10	7 kg	1,2,3,4,5,6
12.000	10 x 10	7 kg	1,2,3,4,5,6
24.000	10 x 10	30 kg	2,4
25.000	10 x 10	30 kg	2,4
30.000	12 x 12	30 kg	2,4
40.000	12 x 12	30 kg	1,3
50.000	12 x 12	30 kg	1,3
50.000	18 x 18	100 kg	1,3,5,6,7
60.000	18 x 18	100 kg	1,3,5,6,7
100.00	18 x 18	100 kg	1,3,5,6,7
150.00	18 x 18	100 kg	1,3,5,6,7
200.00	18 x 18	100 kg	1,3,5,6,7
250.00	18 x 18	150 kg	1,3,5,6,7
300.00	18 x 18	150 kg	1,3,5,6,7
100.00	18 x 24	150 kg	1,3,5,6,7
150.00	18 x 24	150 kg	1,3,5,6,7
200.00	18 x 24	150 kg	1,3,5,6,7
100.00	24 x 24	150 kg	1,3,5,6,7
250.00	24 x 24	150 kg	1,3,5,6,7
500.00	24 x 24	250 kg	1,3,5,6,7
1000.0	24 x 24	500 kg	1,3,5,6,7

- Switches 8 and 9 should be "ON" for all models.
- Connect battery to the instrument
- Press and hold SW6, then press the ON key, then release SW6.
- Verify that all segments "light", all "carrots" at the bottom of the display are 'lit' and visible.

B.   Replacing the Main PC Board (Analog)

1. Disconnect the battery.
2. Remove the twelve bolts holding the back cover on.
3. Disconnect power connector at the PC Board at J1.
4. Disconnect the load cell at TB1.

5. Remove the 4 screws that hold the Main PC Board to the Keypad PC Board.
6. Gently lift the Main PC Board and unplug from the Keypad PC Board.
7. Install the new Board so that it sets on the spacers and plugs into the display board.
8. Secure with the 4 screws.
9. Re-connect the load cell at TB1 and the power supply at J1.
10. Re-program and re-calibrate instrument per Section 4.
11. Replace and secure all cover screws to 18-20 inch lbs of torque.

C. Replacing the Keypad PC Board (Digital)

1. Disconnect the battery.
2. Remove the bolts securing the back cover to the indicator.
3. Disconnect power connector at the PC Board at J1.
4. Disconnect the load cell at TB1.
5. Remove the 4 screws that hold the Main PC Board to the Keypad PC Board.
6. Remove the 4 spacers that hold the Keypad PC Board to the inside of the instrument.
7. Gently lift the Main PC Board until it clears the weld studs.
8. Disconnect the keypad ribbon cable at J50.
9. Remove PROM using caution to not bend the pins.
10. Install PROM into new PC Board using caution to not bend the pins
11. Install the new display, reversing the previous instructions.
12. Replace and secure all cover screws to 18-20 inch lbs of torque.

D. Overview

> ### ***WARNING***
>
> *Repair is expressly limited to factory trained service personnel on Factory Mutual approved weighing systems for hazardous intrinsically safe areas application.*

PROMs are integrated circuits which are programmed with the software which controls the instrument's capabilities. Both the PC Assemblies and the PROMs are highly susceptible to damage from static charge and/or careless handling, and maximum care should be used. Assembly and PROM part numbers have suffix numbers and revision letters which are very important. The correct part number/revision is marked on each PC Assembly, and labeled on each PROM. Since it is possible to replace PROMs, any replacement PC Assembly should be carefully examined for the correct number and revision letters on the PROMs.

> *CAUTION:*
> *Handle all PC Assemblies and PROMS with EXTREME CARE. Use wrist ground straps to avoid damage from static discharge. Never replace a PC Assembly with one having a LOWER REVISION LEVEL, or having PROMs marked with LOWER REVISION LEVEL(s). ALWAYS check the part number suffix and revision marked on the Assembly, and replace with the same number having the SAME OR HIGHER revision letter.*

E. Replacing PROM(s)

1. Make certain the correct PROM is available, with the correct part number and the suffix revision number the same or higher than the part being replaced.

2. Use a wrist ground strap, and prom removal tool to unseat the PROM from its socket.

3. Use 94832 PROM insertion tool to carefully insert and seat the PROM.
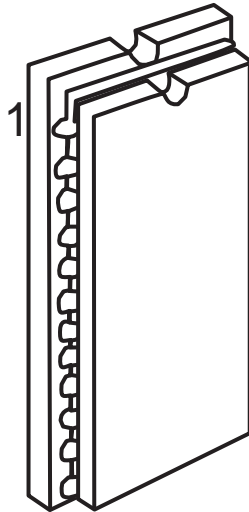
413j

F. Troubleshooting

1. Use troubleshooting flow chart in Appendix II.

2. Check disconnected battery voltage. A fully charged battery should read approximately 6.75vdc.

3. Excitation voltage to the load cell should read approximately 1.3vdc (pulsating dc) from (+) excitation to (-) excitation on instrument TB1, terminal 1 to terminal 2.

G. Replacement Battery Bracket

In 2013, 352 Acc battery pack was changed in 2013. The old battery was housed in a black ABS enclosure, the new battery is in a stainless steel housing. If replacing an old battery with a new battery, you MUST ORDER part #25225 (battery bracket). The new battery is dimensionally different and requires the old battery bracket to be changed with part #25225.

1. Remove existing bracket and keep hardware for reuse.

2. Install new bracket, part #25225.

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SECTION 8: Parts

A.   Instrument = All Models

Item#	Part Number	Description
1	15123	Enclosure, Weldment
2	14209	PCB Assembly, IS Analog
3	15151	PCB Assembly, IS Digital
4	24959	Keyboard, QuickSilver IS
6	14576	Battery, Cable Assembly
10	25099	Cover, Enclosure
11	14954	Gasket, Enclosure Cover
12	11754	Prom, Programmed
14	17606	Spacer, # 6-32 x .215
15	11661	Spacer, Hex, # 6-32 x 1.00
16	17534	Connector, Liquid Tight
17	12618	Washer, Retainer
18	13428	Nut, Adaptor
19	11176	Bushing, Amphenol Rubber
20	14820	Washer, Formed Key SST #10
21	17509	Block, Terminal, Plug 5 Position
22	12653	Gasket, Connector
23	12342	Ring, "O", .625 I.D.
24	17282	Cap, Sealing
25	12221	Grease, Food Grade
26	14628	Label
27	14465	Label Protector
28	17617	Mount, Cable Tie
29	17613	Tie Wire
33	13429	Vinyl Protective Cap
34	17660	Bead, Ferrite
35	11290	Tubing, Shrinkable
36	11287	Tubing, Shrinkable
40	16006	Plate
41	16007	Gasket, 4-40
42	11339	Washer, Nylon, NO. 8
43	13468	Screw, Sealing, 8-32 x .50
45	24282	Spacer, Round, .25 I.D. x .50 DIA x .25 Long
46	15716	Nut, Threadlock Acorn, 10-32
47	25225	Bracket, Battery
49	11149	Screw-Mach-Ph-Phil, 4-40 x .38
50	11106	Nut-Hex, 4-40
51	11192	Washer-Lock-Ext. Tooth, No. 4
54	11495	Washer, Nylon, No. 10
55	11075	Screw-Cap-Hex Hd., 10-32 x .50
56	14083	Screw, Sealing, 10-32 x .50
59	11163	Screw-Mach-Ph-Phil, 6-32 x .19
60	11191	Washer-Lock-Ext. Tooth, No. 6

62	11104	Nut-Hex, 8-32
63	11126	Washer-Plain, No. 8
64	14820	Washer, Formed Key SST, No. 10
69	12189	Seal, Heavy Meter
70	13762	Nameplate

VIEW SHOWN WITH COVER AND GASKET REMOVED (ITEMS 10 AND 11)
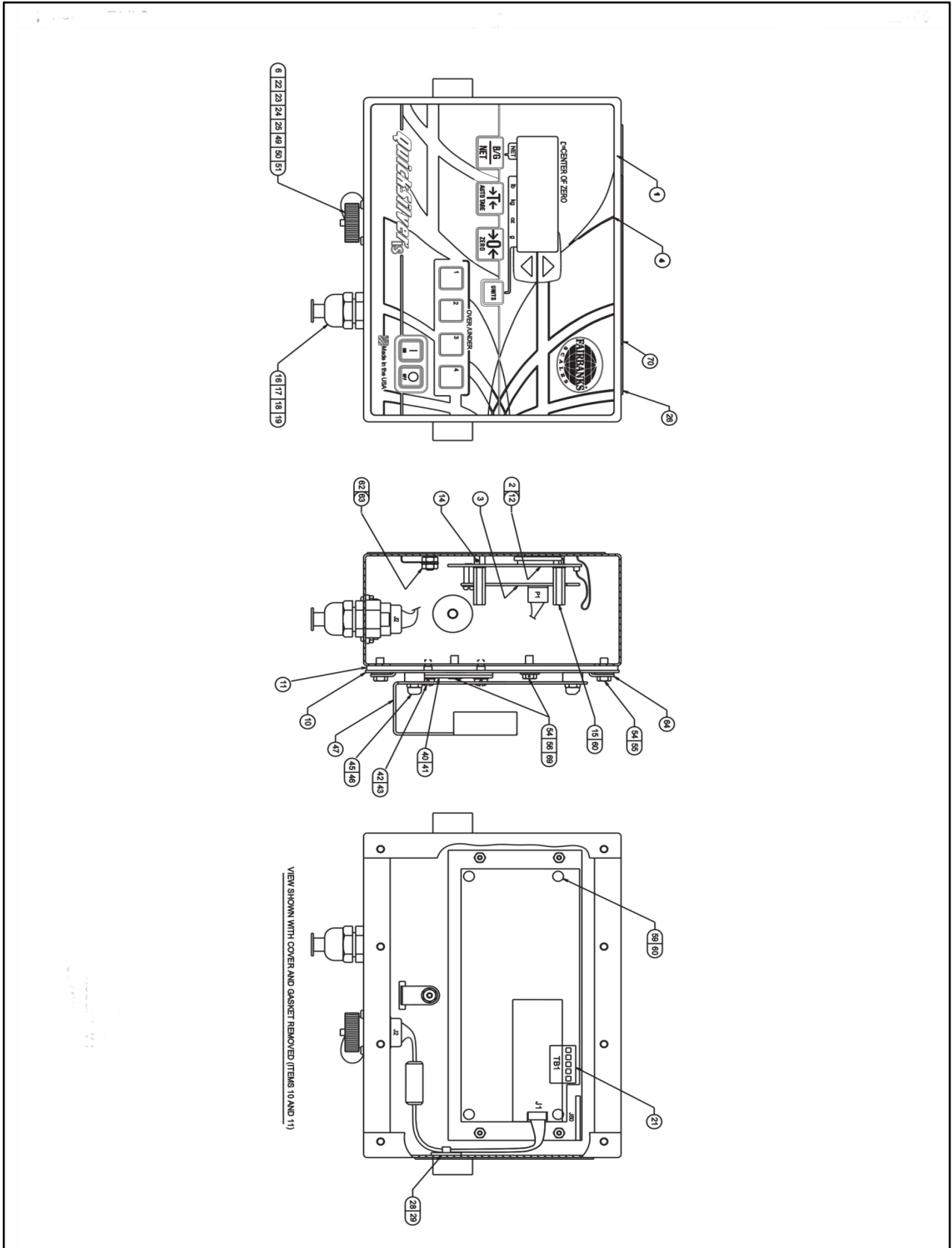
B. **QuickSilver Platforms 10" x 10"**
   (2 lb, 6 lb, 10 lb, 25 lb capacities)

Item	Part No.	Description
2	14961	Load Cell - 7 kg (24760, 24761, 24762)
2	14963	Load Cell - 30 kg (24763 only)
4	14219	Foot Assembly (used as a bumper)
5	23664	Spider, Platform
6	23669	Cover, Platform
7	24779	Shim, Load Cell (.109 thick)
10	23668	Base, Platform
11	24406	Clip, Ground
13	11051	Screw, Mach, Hex Hd Cap, .23 - 20 x .75
16	24408	Screw, Set, Socket Hd, Cup Point, 10 - 32 x .50
17	11103	Nut, Hex, 10 - 32
18	11920	Adhesive, Screw
19	17613	Tie Wire
20	14220	Foot Assembly
21	11039	Bulls Eye Level
22	13223	Adhesive Sealant
24	22963	Nut, Nylon, Stop

LC(+)EX G INPUT
LC(-)EX BK INPUT
LC(+)SIG W OUTPUT
LC(-)SIG R OUTPUT
LC SHIELDY SHIELD

50739-3

C.   QuickSilver Platforms 12" x 12"
         (30 lb & 50 lb capacities)

Item	Part No.	Description
2	14963	Load Cell - 30 kg
4	14219	Foot Assembly (used as a bumper)
5	23971	Spider, Platform
6	23977	Cover, Platform
7	24780	Shim, Load Cell (.185 thick)
10	23976	Base, Platform
11	24406	Clip, Ground
13	11051	Screw, Mach, Hex Hd Cap, .23 - 20 x .75
16	24408	Screw, Set, Socket Hd, Cup Point, 10 - 32 x .50
17	11103	Nut, Hex, 10 - 32
18	11920	Adhesive, Screw
19	17613	Tie Wire
20	14220	Foot Assembly
21	11039	Bulls Eye Level
22	13223	Adhesive Sealant
24	22963	Nut, Nylon, Stop

50739-5

LC(+)EX   G   INPUT
LC(-)EX   BK   INPUT
LC(+)SIG   W   OUTPUT
LC(-)SIG   R   OUTPUT
LC SHIELD   Y   SHIELD

(.357)

D. QuickSilver Platforms 18" x 18"
   (50 lb, 100 lb, 150 lb, 300 lb capacities)

Item	Part No.	Description
2	14965	Load Cell - 100 kg (24766, 24767 & 24768)
2	14966	Load Cell - 150 kg (24769 only)
4	14219	Foot Assembly (used as a bumper)
5	23538	Spider, Platform
6	23548	Cover, Platform
8	24843	Shim, Load Cell (.750 think) (24769 only)
9	24781	Shim, Load Cell (.500 thick)
10	23547	Base, Platform
11	24406	Clip, Ground
12	24844	Screw, Mach, Hex Hd Cap, 3/8 - 16 x 1.50 (24769 only)
13	11047	Screw, Mach, Hex Hd Cap, 3/8 - 16 x 1.25
16	24782	Screw, Set, Socket Hd, Cup Point, 1/4 - 20 x .88
17	11131	Nut, Hex, Jam, 1/4 - 20
18	11920	Adhesive, Screw
19	17613	Tie Wire
20	14220	Foot Assembly
24	22963	Nut, Nylon, Stop
34	11039	Bulls Eye Level
35	13223	Adhesive Sealant
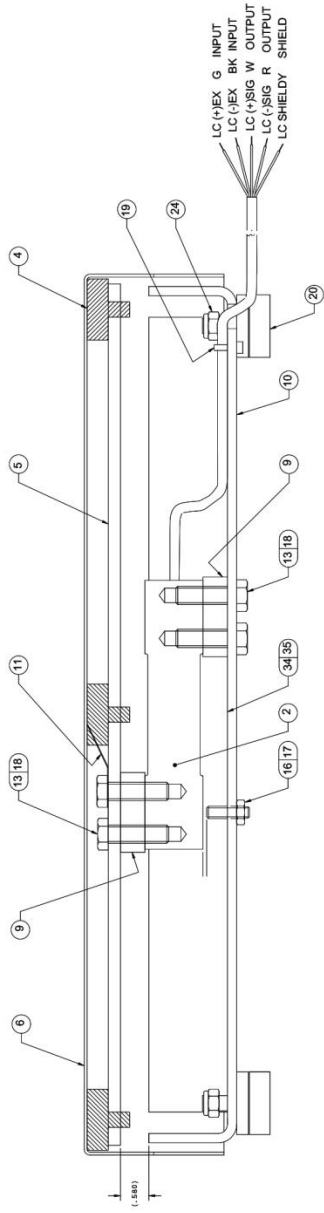
24766 50 LB. CAPACITY
24767 100 LB. CAPACITY
24768 150 LB. CAPACITY
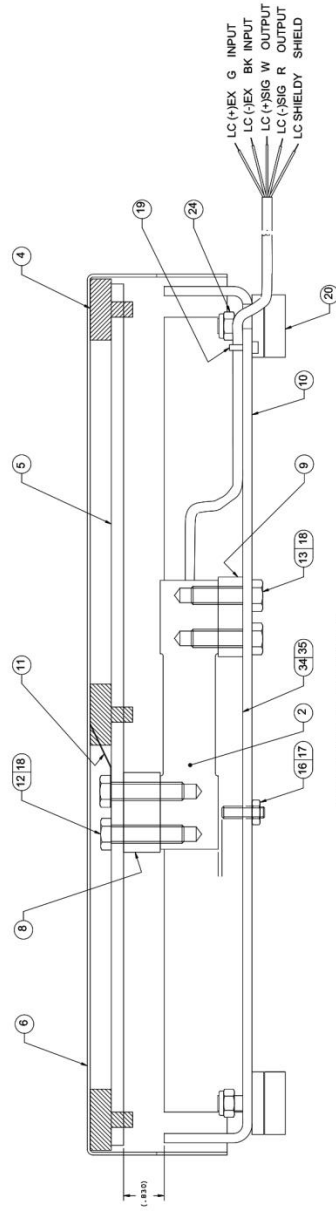
24769 300 LB. CAPACITY

50739-7

E. QuickSilver Platforms 18" x 24"
   (100 lb, 150 lb & 200 lb capacities)

Item	Part No.	Description
2	15835	Load Cell - 150 kg (24770, 24771 & 24772)
2	21350	Load Cell (hermetically sealed) - 100 kg (24862, 24863 & 24864)
4	14219	Foot Assembly (used as a bumper)
5	24430	Spider, Platform
6	24429	Cover, Platform
9	15831	Spacer, Load Cell (.250 thick)
10	24428	Base, Platform
11	24406	Clip, Ground
13	11050	Screw, Mach, Hex Hd Cap, 5/16 - 18 x 1.00
18	11920	Adhesive, Screw
19	17613	Tie Wire
20	14220	Foot Assembly
24	22963	Nut, Nylon, Stop
34	11039	Bulls Eye Level
35	13223	Adhesive Sealant

(+) EX. GRN INPUT
(+) SIG. WHT OUTPUT
(-) EX. BLK INPUT
(-) SIG. RED OUTPUT
SHIELD, YELLOW

24862, 24863, AND 24864

(+) EX. GRN INPUT
BLU SENSE
SIG. RED OUTPUT
GRN. SENSE
(-) EX. BLK INPUT
(-) SIG. WHT OUTPUT
SHIELD

24770, 24771, AND 24772

50739-9

F. QuickSilver Platforms 24" x 24"
   (100 lb, 250 lb, 500 lb & 1000 lb capacities)

Item	Part No.	Description
1	24447	Base, Platform
N/S	15830	Spacer, Load Cell (24775,24776, 24785 & 24786)
3	21350	Load Cell (hermetically sealed) - 100 kg (24783 & 24784)
3	15835	Load Cell - 150 kg (24773 & 24774)
3	21352	Load Cell (hermetically sealed) - 250 kg (24785)
3	15836	Load Cell - 300 kg (24775)
3	15837	Load Cell - 500 kg (24776)
3	21353	Load Cell (hermetically sealed) - 500 kg (24786)
4	15831	Spacer, Load Cell (.250 thick)
N/S	15827	Plate Support (24775 & 24785)
7	15827	Plate Support (24773, 24774, 24783 & 24784)
7	15828	Plate Support (24775, 24776, 24785 & 24786)
8	15826	Spider, Platform
9	24448	Cover, Platform
12	11480	Foot Assembly
13	11101	Nut, Hex, 1/2 - 13
15	11060	Screw, Mach, Hex Hd Cap, 1/4 - 20 x .50
16	11049	Screw, Mach, Hex Hd Cap, 5/16 - 18 x 1.25
17	11050	Screw, Mach, Hex Hd Cap, 5/16 - 18 x 1.00 (24773, 24774, 24783 & 24784)
19	11920	Adhesive, Screw
24	17613	Tie Wire
30	15017	Clip, Ground
34	11039	Bulls Eye Level
35	13223	Adhesive Sealant

WIRING FOR 24783, 24784, 24785, AND 24786

(+) EX GRN INPUT
(+) SIG WHT OUTPUT
(-) EX BLK INPUT
(-) SIG RED OUTPUT
SHIELD, YELLOW

WIRING FOR 24773, 24774, 24775 & 24776

(+) EX GRN INPUT
BLU SENSE
(-) SIG RED OUTPUT
BRN SENSE
(-) EX BLK INPUT
(+) SIG WHT OUTPUT
SHIELD

24773, 24783 ASSY, 100 LB. CAPACITY
24774, 24784 ASSY, 250 LB. CAPACITY

VIEW A
SHOWN WITH COVER REMOVED
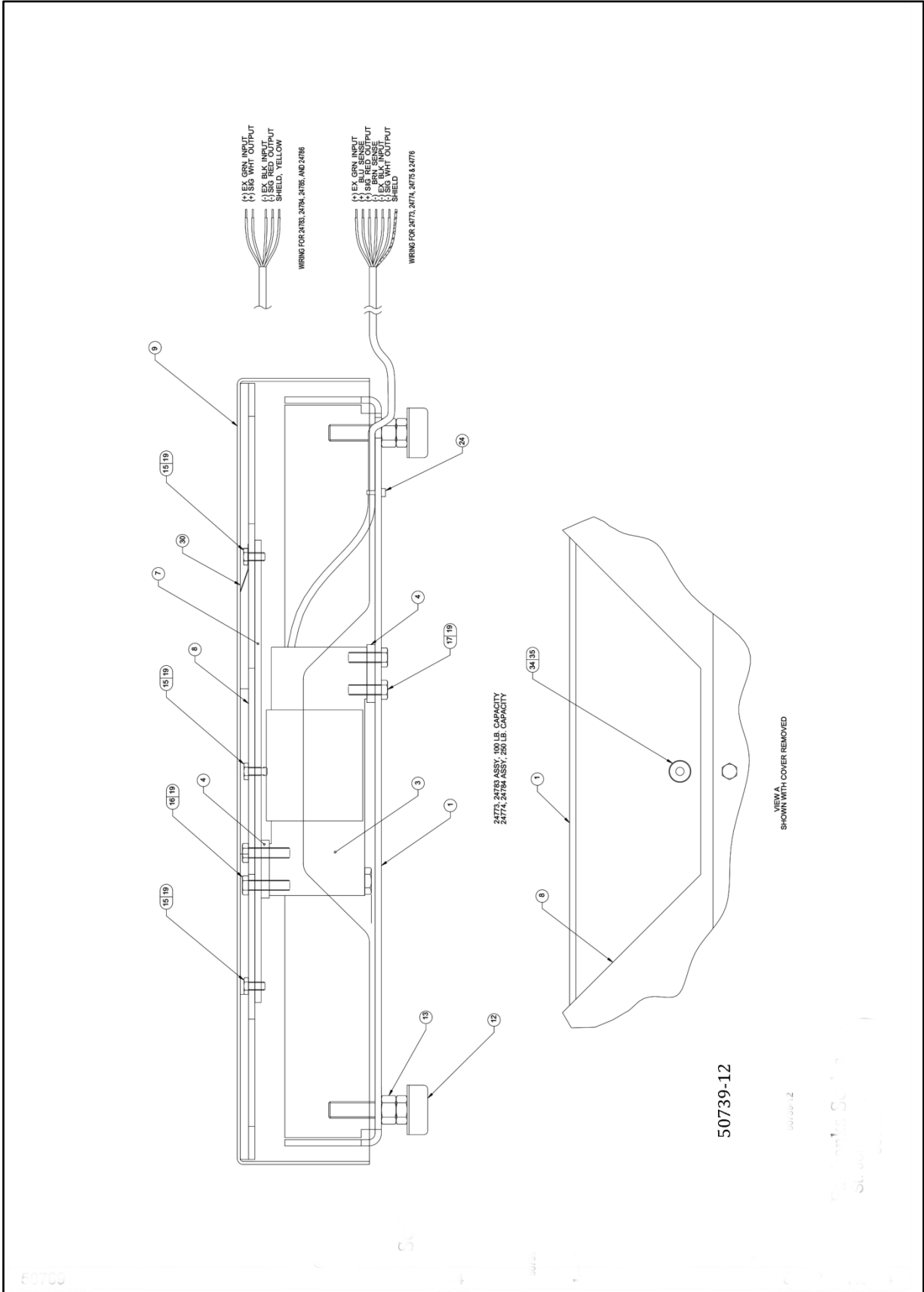
50739-12

G. Kit, Desk / Wall Mount

Item	Part No.	Description
1	15823	Bracket, Instrument
3	15745	Knob
4	12621	Washer, Retainer
5	12103	Foot
6	11138	Screw, Mach, Ph, Phil, 8 - 32 x .38

WALL MOUNT

DESK MOUNT

REFERENCE
24515 INSTRUMENT ASSY
24918 INSTRUMENT ASSY
WITH RS232 OUTPUT
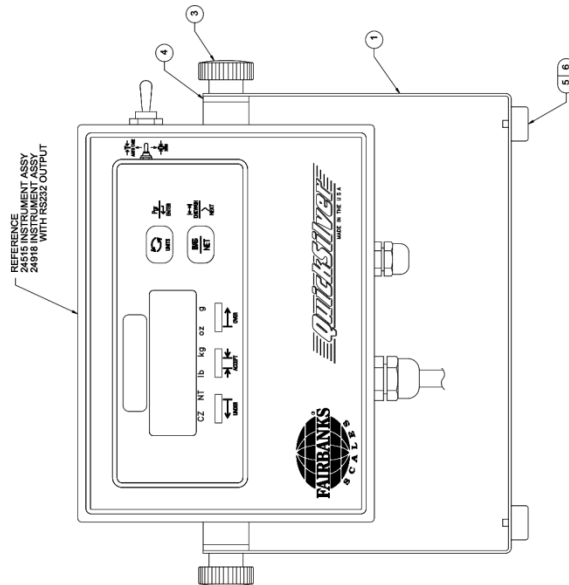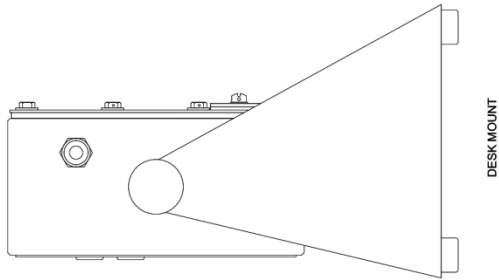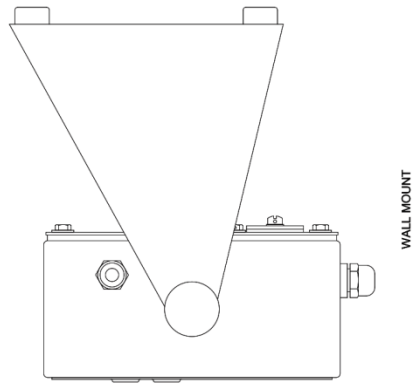
FAIRBANKS

50739-18

H.   Kit, Tilt Bracket

Item	Part No.	Description
1	24459	Pillar, Short
3	23750	Bracket, Pillar
4	15745	Knob
5	12621	Washer, Retainer
6	24282	Spacer, Round .25 I.D. x .50 DIA x .25 Long
7	14420	Foot Assembly
9	11051	Screw, Mach, Hex Hd Cap, .25 - 20 x .75
10	11091	Washer, Med Spring Lock, .25
11	22963	Nut, Nylon Stop
N/S	17613	Tie Wire

REFERENCE
24760, 10 X 10 PLATFORM ASSY, 2 LB CAP
24761, 10 X 10 PLATFORM ASSY, 6 LB CAP
24762, 10 X 10 PLATFORM ASSY, 10 LB CAP
24763, 10 X 10 PLATFORM ASSY, 25 LB CAP

50739-19

I.   Pillar Kits

Item	Part No.	Description
1	23663	Pillar 10" (24827)
1	24245	Pillar 18" (24828)
1	24247	Pillar 30" (24829 & 24830)
3	24448	Bracket Pillar (24830)
3	23750	Bracket, Pillar
4	15745	Knob
5	12621	Washer, Retainer
6	24282	Spacer, Round .25 I.D. x .50 DIA x .25 Long
7	14420	Foot Assembly
9	11051	Screw, Mach, Hex Hd Cap, .25 - 20 x .75
10	11091	Washer, Med Spring Lock, .25
11	22963	Nut, Nylon Stop
N/S	17613	Tie Wire

50739-20

J.   Alternate Indicator Pillar Kits

Item	Part No.	Description
1	24385	Pillar, 10" (24848)
1	24386	Pillar, 18" (24849)
1	24387	Pillar, 30" (24850 & 24851)
2	20559	Plate Assembly
3	23750	Bracket Pillar (24848)
3	24448	Bracket Pillar (24851)
4	15082	Spacer
6	24282	Spacer, Round .25 I.D. x .50 DIA x .25 Long
7	14420	Foot Assembly
9	11051	Screw, Mach, Hex Hd Cap, .25 - 20 x .75

52

10	11091	Washer, Med Spring Lock, .25
11	22963	Nut, Nylon Stop
12	11099	Nut, Hex, 10 - 24
13	11092	Washer, Med Spring Lock, No. 10
14	11104	Nut, Hex
N/S	17613	Tie Wire
17	11095	Washer, Med Spring Lock, No. 8
N/S	22335	Kit, Mounting Hardware

REFERENCE
14605, INSTRUMENT ASSY (H90-3052D)

(ONLY USED ON THIS CONFIGURATION)

REFERENCE
24760, 10 X 10 PLATFORM ASSY, 2 LB CAP
24761, 10 X 10 PLATFORM ASSY, 6 LB CAP
24762, 10 X 10 PLATFORM ASSY, 10 LB CAP
24763, 10 X 10 PLATFORM ASSY, 25 LB CAP

24764, 12 X 12 PLATFORM ASSY, 30 LB CAP
24765, 12 X 12 PLATFORM ASSY, 50 LB CAP

WARNING: Product co
PRECAUCION: Producto config

50739-24
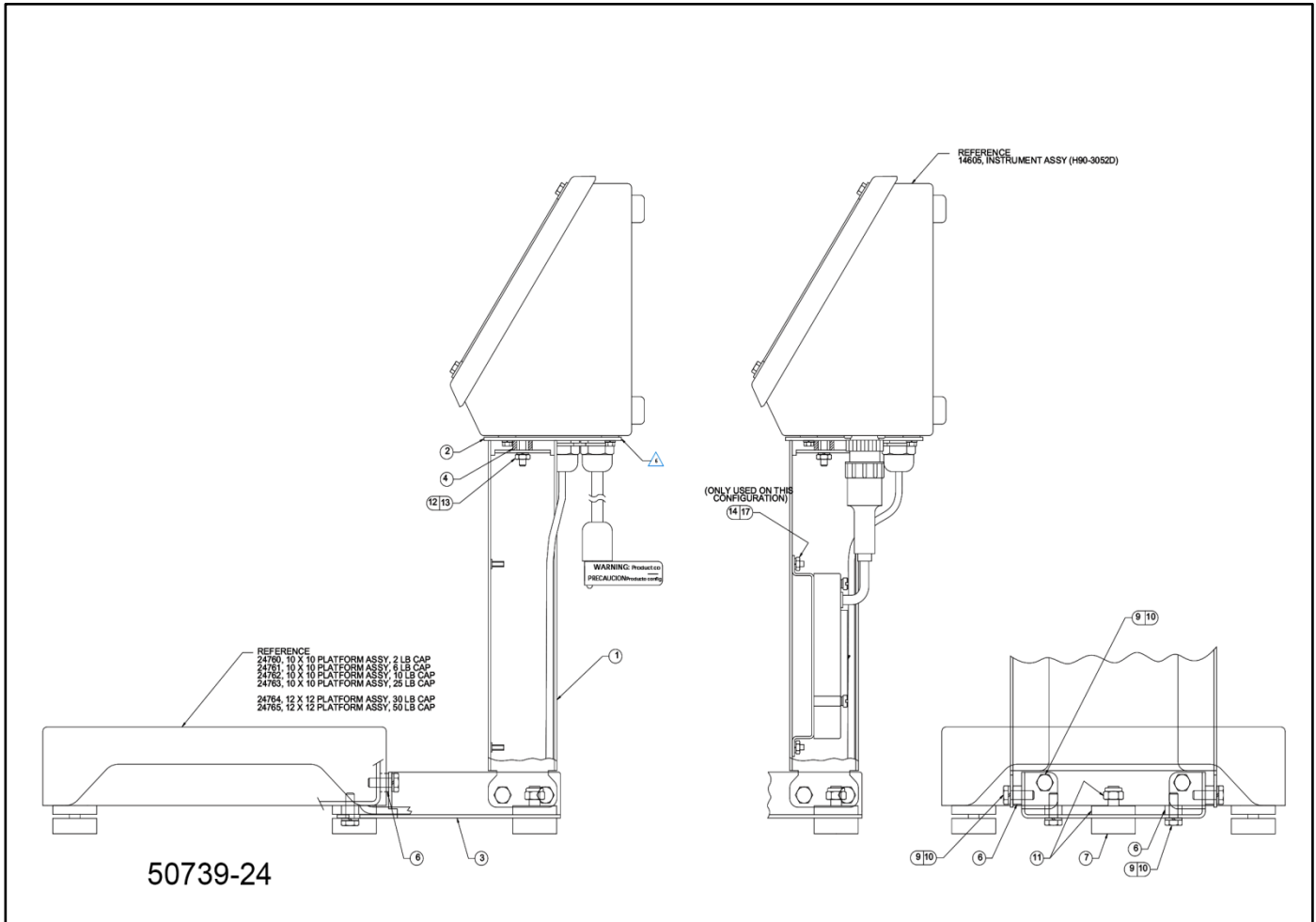
K.   ACC-530 Battery Charger

Item	Part No.	Description
1	31465	Battery Charger (lead-acid) – ACC 530
3	24011	Fuse, 250V / 500mA Slow Blow

(.180) DIA
MOUNTING HOLES

(3.848)

(5.198)

FAIRBANKS
SCALES

BATTERY CHARGER
ACC-530 P/N 31465

SAFE AREA
USE ONLY

FAULT
IF FLASHING

CHARGING

CHARGED

BATTERY CHARGER (LEAD-ACID)
ACC-530
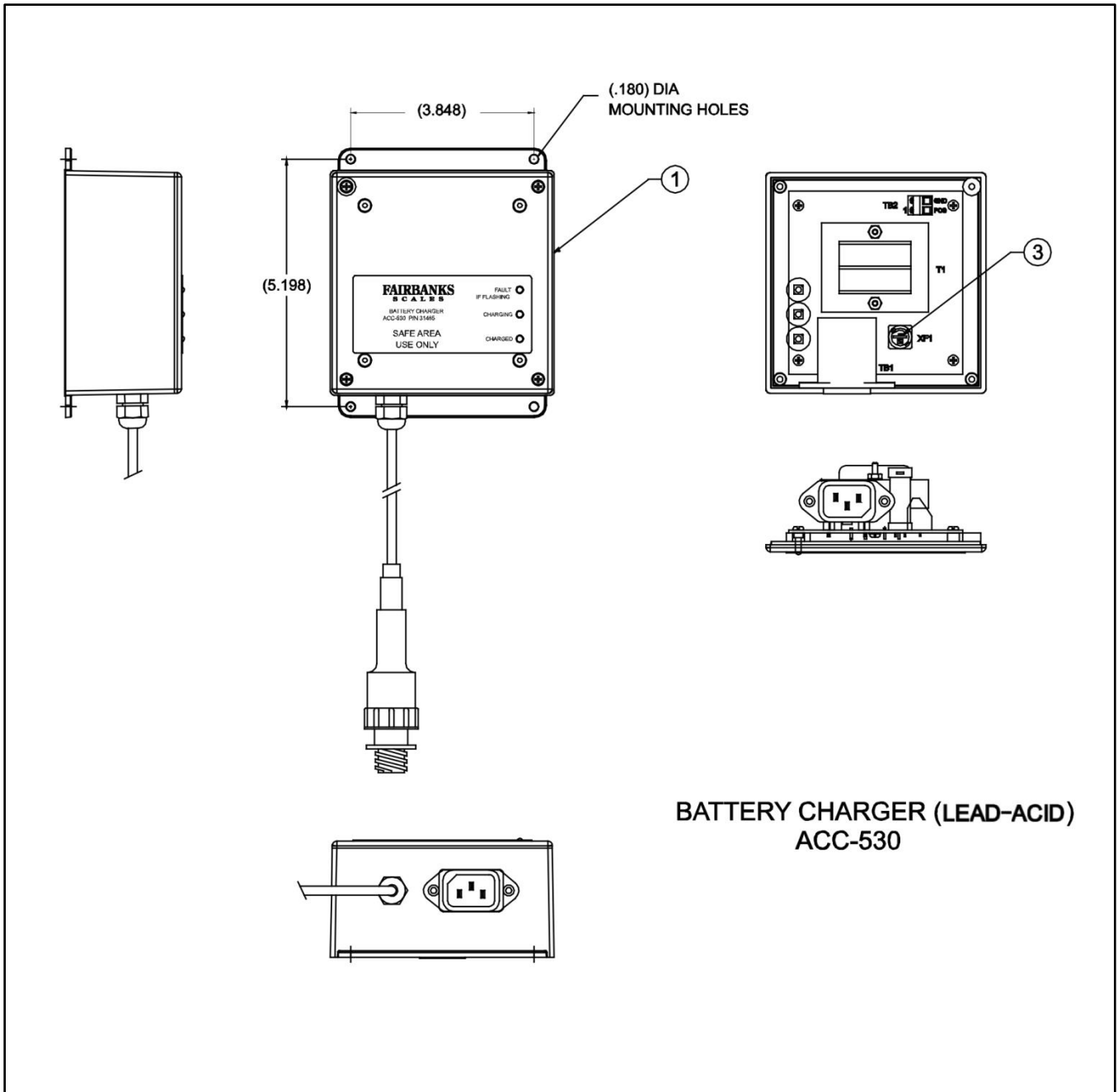
L. Battery Charger Cable

Item	Part No.	Description
1	N/A	Cable Assy, Battery Charger (lead-acid)

54

BLACK (TO TB2-2/GND)

RED (TO TB2-1/POS)

2.00
TYP

CABLE ASSY,
BATTERY CHARGER (LEAD-ACID)
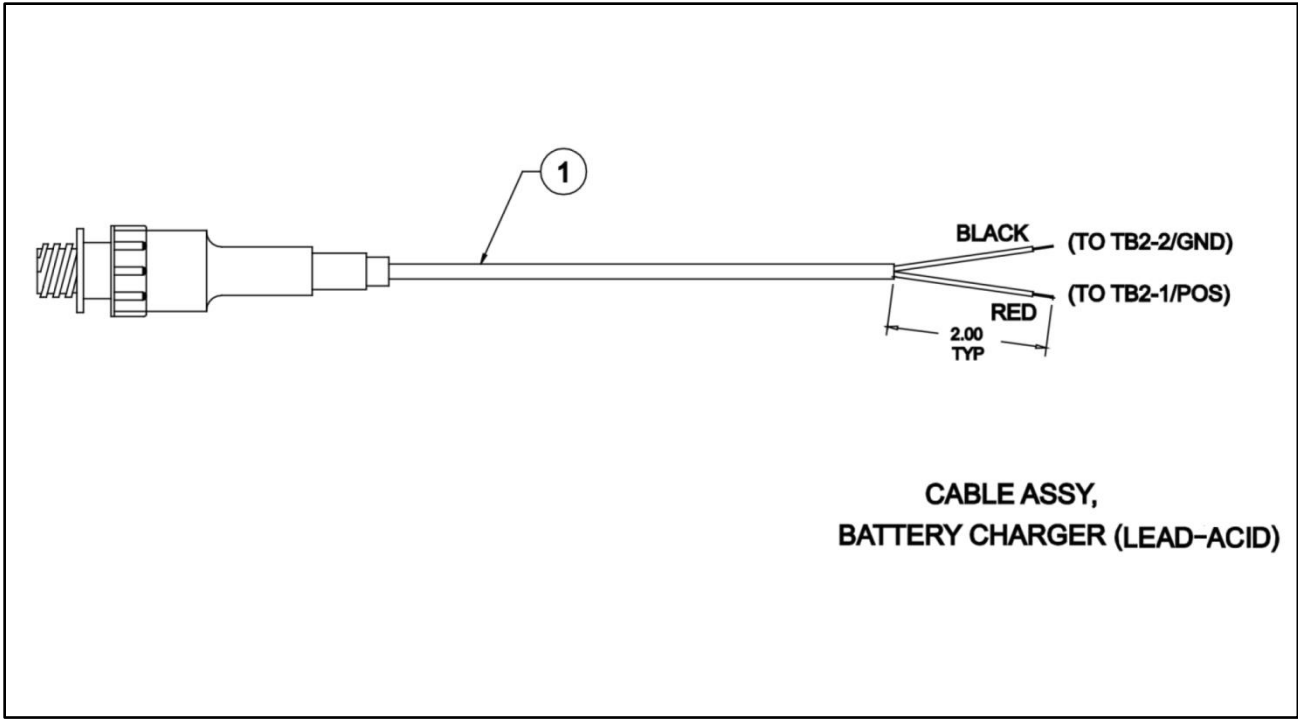
Appendix I: Quick Reference Chart

Programming Quick Reference Chart:

Program Step	Factory Setting	Choices
PO, Units	15	1 through 15
P1, Capacity	per the scale	2 through 1000
P2, Grad Size	per the scale	divisions of 1,2 or 5
P3, Motion	1.0	0.5, 1.0, 2.0, 3.0
P4, AZT	0.6 grads	0.0, 0.6, 1.0, 3.0
P5, Zero	00, 100%	00, 01, 02, 03
P6, Tare	00, enabled	00 or 01
P7, Sleep	00, 5 minutes	00, 01, 02, 03
P8, Filter Rate	00, average 32	00, 01, 02, 03
P9, Display Rate	01, 0.4 seconds	00, 01, 02, 03
SL, Security Level	00	00, 01, 02, 03

Appendix II: Flow Chart

```
                                                    ┌──────────────┐
                                                    │  Indicator   │
                                                    │     Not      │
                                                    │   Working    │
                                                    └──────────────┘

┌─────────────────────────────┐
│ Perform a visual inspection  │
│ and Begin Asking Specific's  │
│ to Identify the cause and/or │
│   Symptoms BASICS            │
└─────────────────────────────┘
                  │
                  │     ┌──────────────┐        ◇             NO
                  └─────│   Place      │──────◇ Does ◇──────────────┐
                        │ indicator on │      ◇ it work? ◇          │
                        │ a simulator  │        ◇             YES    │
                        └──────────────┘         │                  │
                                                 │                  │
┌──────────────────────┐                         │          ┌──────────────┐
│ Check wiring at load │─────────────────────────┘          │  Repair the  │
│ cell perform load    │                                     │  Indicator   │
│ cell tests, and/or   │                                     └──────────────┘
│ replace load cell    │
└──────────────────────┘
            │
        ◇       ◇
      ◇  Does it  ◇      YES      ┌──────────────────┐
     ◇  work?      ◇──────────────│ Problem resolved │
        ◇       ◇                 │ Finalize all     │
            │ NO                  │ repairs          │
            │                     └──────────────────┘
            │
    ┌──────────────┐
    │     Call     │
    │  Technical   │
    │   Support    │
    └──────────────┘
```

50533-2

57
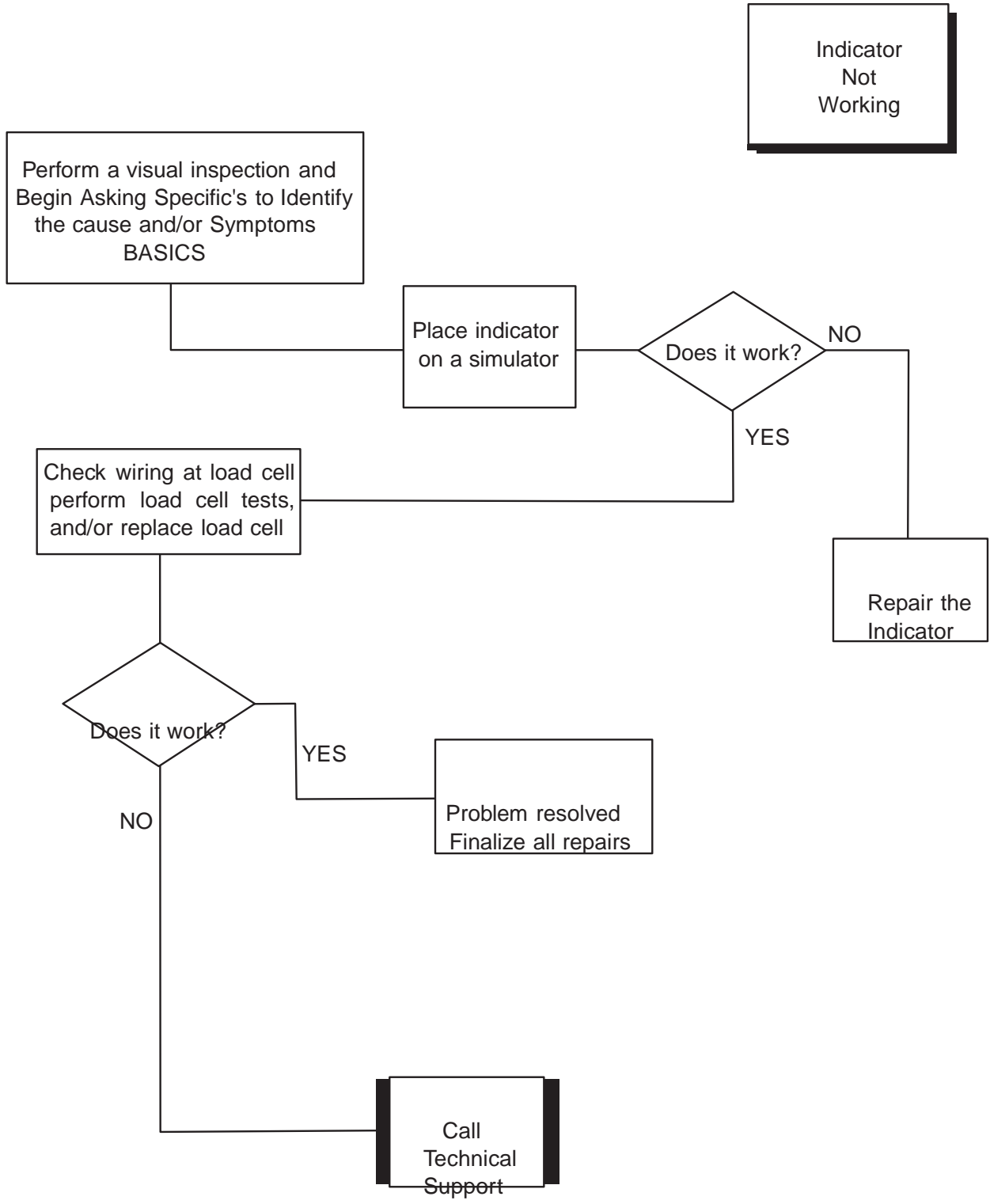
Appendix III: Schematic Diagram

PIN No.: **3**   **4**   **5**   **6**   **1**

ON

2

	1	▽	O/U 2	GROSS NET

8

		△	O/U 1	AUTO TARE

9

	OFF	3	O/U 3	ZERO

10

	2	UNITS	O/U 4

11
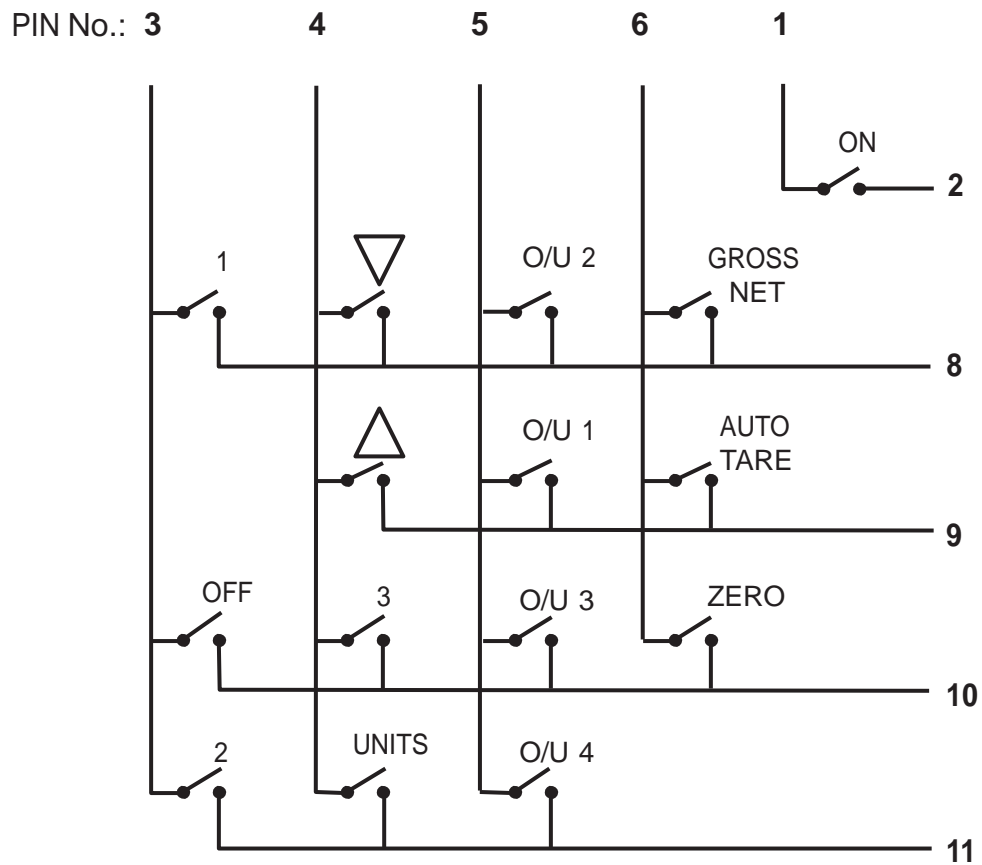
50533-3

No Trace Connection on Pin   **7**
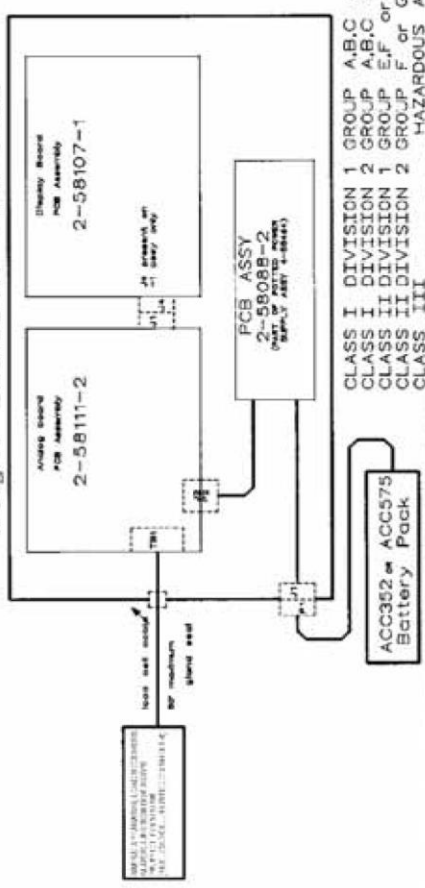
Weight Indicator MXP-9800

Display Board
PCB Assembly
2-59430-1

Analog Board
PCB Assembly
2-57624-1

ACC573
Battery Pack

CLASS I DIVISION 1 GROUP A,B,C or D HAZARDOUS AREAS

SIMPLE APPARATUS and/or LOAD RECEIVERS
(see load cable listed on sheet 4)

load cell cable
50' maximum
gland seal
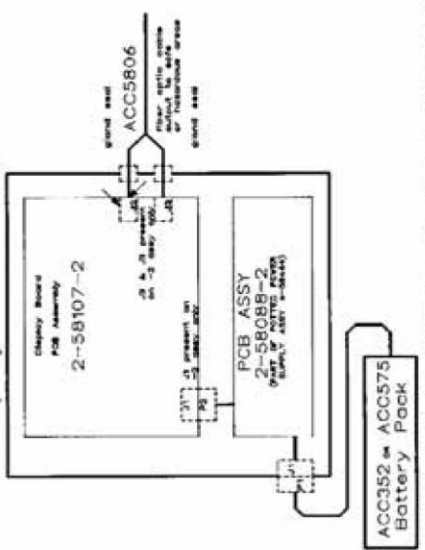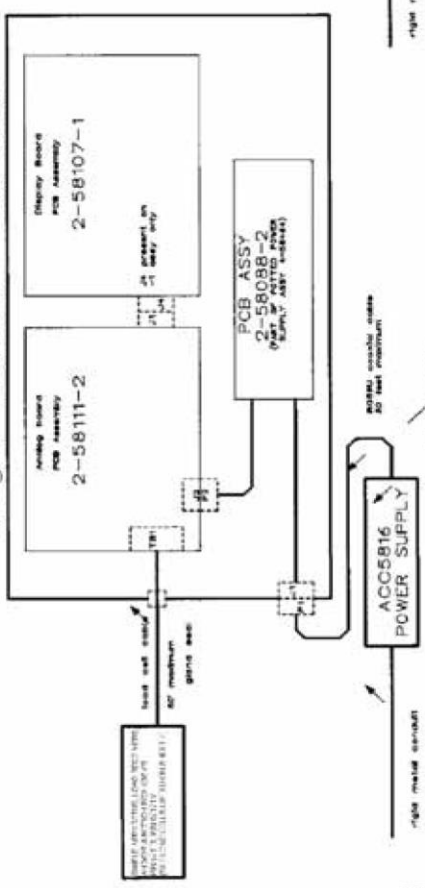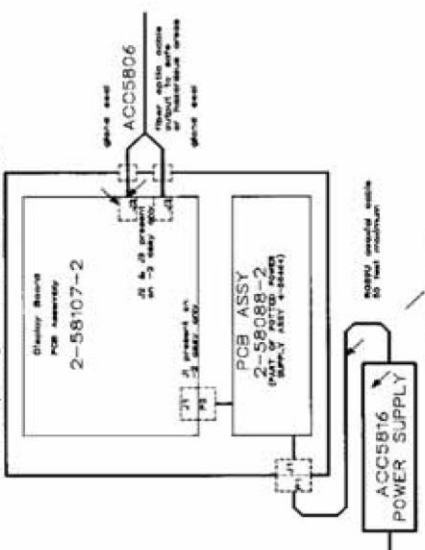
No change may be made to this drawing or related components without prior written approval from Factory Mutual!!!

orcad filename C57747F3

Fairbanks Scales
St.Johnsbury, Vermont

FM APPROVED LOW POWER INDICATORS

FOR USE IN HAZARDOUS LOCATIONS

DR. ORCAD/MPD
CH. MPD
APP MPD

The material and information contained herein is confidential and is the pro—

SENSORTRONICS

MANUFACTURER PART NUMBER				FWD PLATFORM
60001	FAMILY			1106 &
60001-	500			1170
				1107
60001-	750			1108
60001-	1K			60-5400
60001-	1.5K			1109
60001-	2K			1111
60001-	3K			1112
60001-	5K			
60008	FAMILY			
60018	FAMILY			
60030	FAMILY			
60036	FAMILY			
60045	FAMILY			
60048	FAMILY			
60051	FAMILY			
60058	FAMILY			
60060	FAMILY			
65016	FAMILY			
65016-	5K	TWA		80-9114
65016-	15K	TWA		80-9118
65016-	25K	TWA		80-9108
65016-	50K	TWA		80-9110
65016-	0104-	15K	TWA	H80-9119
65016-	0104-	25K	TWA	H80-9109
65023	FAMILY			
65023-	2.5K	-1107		23-2554AFM
65023-		-1107		H70-4100AFM
65023A-	2.5K			H23-2502FM
65023A-	2.5K	-0140		H23-2500AFM
65023A-	2.5K	-0140		23-2502AFM
65023A-	2.5K	-1107		23-2500AFM
65023A-	2.5K	-1107		23-2520A
65023A-	2.5K	-0140		H70-4100BFM
65023A-	1K			H23-2512FM
65023A-	1K	-5140		H23-2503AFM
65023A-	5K-0140			23-2503AFM
65023A-	5K-0140			23-2557
65023A-	5K-0140			23-2558
65023A-	10K-0140			
65024	FAMILY			
65029	FAMILY			
65032	FAMILY			
65040	FAMILY			
65041	FAMILY			
65058	FAMILY			
65059	FAMILY			
65059-	75	TWA		80-9016
65059-	100	TWA		80-9111
65059-	250	TWA		80-9117
65059-	500	TWA		80-9112
65059-	1K	TWA		80-9113
65061	FAMILY			
65083	FAMILY			
65094	FAMILY			
65040A-50K-1124				

GSE SCALE SYSTEMS

4515 PLATFORMS

GEC AVERY LTD

MANUFACTURER PART NUMBER
8701 FAMILY
8708 FAMILY
8713 FAMILY
T101 FAMILY
T103 FAMILY
T105 FAMILY
8707 FAMILY

FAIRBANKS

LOAD CELL MANUFACTURER	MANUFACTURER PART NUMBER	FWD PLATFORM
FAIRBANKS	3-53776-1	H23-2511 &
	3-54723-1	23-2511
	3-54824-1	70-4070
	3-54824-2	70-4170
	3-55122-1	21-2102
		21-2104
	3-55157-1	21-2101
	3-55176-1	H70-4814 &
	3-55177-1	H70-4820
	3-55383-1	

REVERE TRANSDUCERS INCORPORATED

MANUFACTURER PART NUMBER	FWD PLATFORM
SSBFAMILY	H80-9104
SSB-10-30-51398	
USFFAMILY	
CBUFAMILY	
UPFFAMILY	
LTOHAMILY	
TO FAMILY	
LPCHAMILY	
K8 FAMILY	
C5FFAMILY	
CP FAMILY	
UMPAMILY	
UEFFAMILY	
SS5FAMILY	
T5PFAMILY	
H5BFAMILY	
USFRMILY	

HBM INC (BALDWIN)

Part	
SB2	FAMILY
SB3	FAMILY
BBS	FAMILY
SBF	FAMILY
UIT	FAMILY
TLC	FAMILY
USB	FAMILY
PLC	FAMILY
BLC	FAMILY
BLF	FAMILY
PLX	FAMILY
TRT	FAMILY
JRT	FAMILY
THC	FAMILY
HLC	FAMILY
RSC	FAMILY
PW2K3	FAMILY
PW2-2	FAMILY
LCB	FAMILY
PW5	FAMILY
PWAm	FAMILY

MANUFACTURER FLINTEC

Part	
SB4	SERIES
SB5	SERIES
SB6	SERIES
SB7	SERIES
UB1	SERIES
UB5	SERIES
UB6	SERIES
UB7	SERIES
PC1	SERIES
RC1	SERIES
PBX	SERIES
SLB	SERIES
SB14	
RC2	
RC3-30t	
RC3-40t	
RC3-50t	
PC3	SERIES

MANUFACTURER SI-LODEC

PART NUMBER	
83-00	360 -10
83-00	370-10
83-00	270-10
83-00	420-10
83-00	420-11
83-00	460-10
83-00	490-10
83-00	500-10
83-00	505-10
83-00	520-10
83-00	520-12
83-00	520-13
83-00	525-12
83-00	530-10
83-00	540-10
83-00	550-10
83-00	550-20
83-00	600-10
83-00	600-13
83-00	610-10
83-00	610-13
83-00	615-10
83-00	625-10
83-00	635-10
83-00	755-10
83-00	755-15
83-00	800-10

TEDEA-HUNTLEIGH

1000 SERIES
3400 SERIES
9010 SERIES
0-4800300053 (1250 SERIES)
0-4800300054 (1250 SERIES)
0-4800370055 (1250 SERIES)

REVISIONS

ZONE	LTR	DESCRIPTION / RELEASED	DATE	APPROVED
	A		7-2-92	MPD
	C		11-19-92	MPD
	D		9-1-93	JS
	E		9-1-93	JS
	H		9-21-93	JS
	I		1-23-97	JS
	K		4-6-98	GAL
	L		4-23-98	GAL
	M		11-25-99	GAL
	N	REVISED PER ECO 13399	9-28-04	GAL

		DATE
DR	ORCAD/MPD	5-18-95
CK	MPD	5-18-95
APP	MPD	5-18-95

Fairbanks Scales — St. Johnsbury, Vermont

FM APPROVED LOW POWER INDICATORS FOR USE IN HAZARDOUS LOCATIONS

SIZE: C — DRAWING NO. 3-57747

Date: Thursday, December 23, 1999 — SHEET 4 of 6

Weight Indicator PW110

Display Board
PCB Assembly
2-59430-1

Analog board
PCB assembly
2-57624-1

ACC573P
Battery Pack
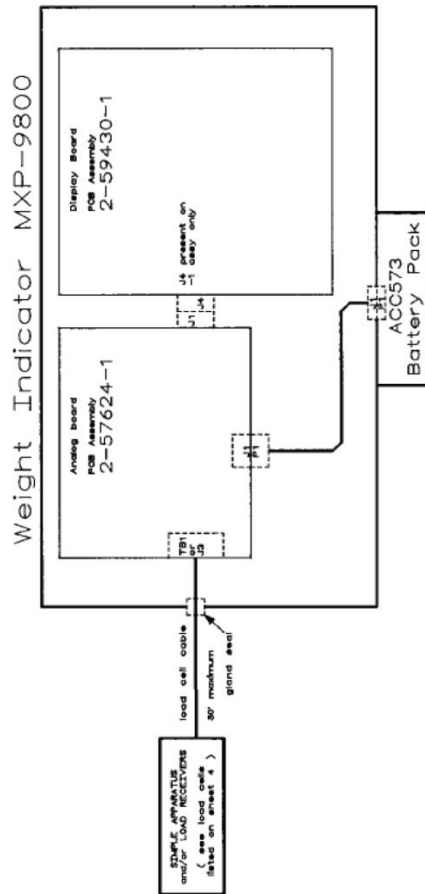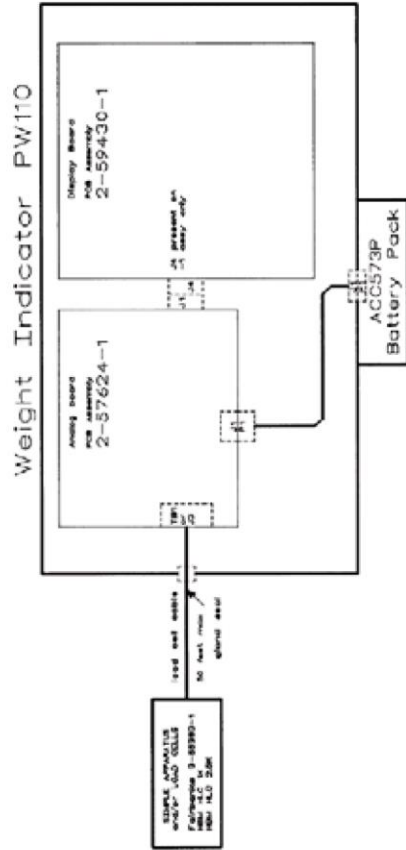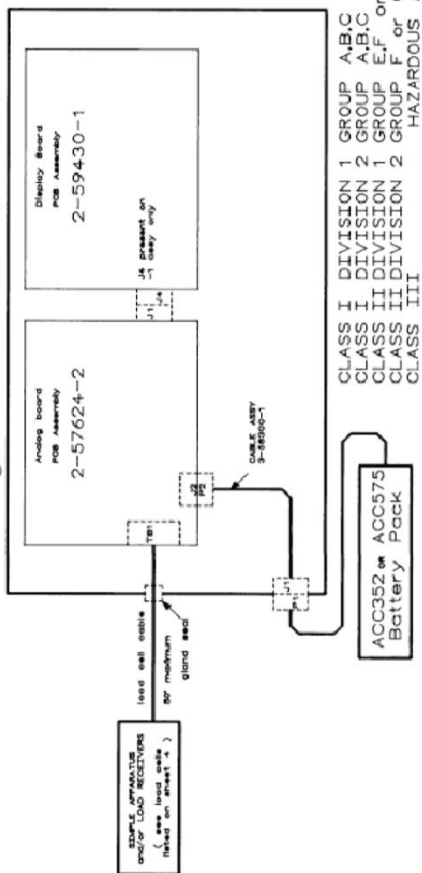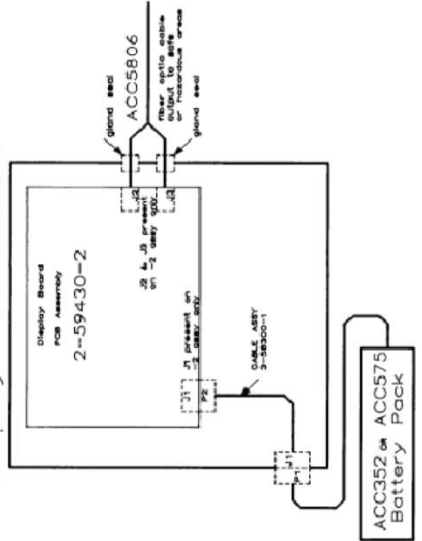
CLASS I   DIVISION 1 GROUP A,B,C or D
CLASS I   DIVISION 2 GROUP A,B,C or D

HAZARDOUS AREAS

orcad filename C57747F5

Fairbanks Scales
St. Johnsbury, Vermont

3-57747

DR. ORCAD/MPD
CH. MPD
APP. MPD

Certificate of Compliance

Certificate: 1617918

Master Contract: 157638

Project: 16J7892

Date Issued: 2005/11/17

Issued to: Fairbanks Scales

A Division of Fairbanks Incorporate
2176 Portland St., Suite 1
St. Johnsbury, VT 05819 8802
USA
Attention: Mr. Keith Charron

The products listed below are eligible to bear:h CSA Mark Cown

Issued by: Zenon Grys

Authorized by: Patricia Pasemko, Operations Manager

PRODUCTS

CLASS 9068 01 -SCALES- For Hazardous Locations

Class I, Groups A, B, C and D; Class fl, Groups E, F and G; Class III:

Weight Indicator Model H90-3052C and JND-HR5001-1 C, battery powered by pack PIN ACC352C or ACC575C or power supply ACC5816C (CL I, Gr. C, D; C!. IJ, Gr. E, F, G; CI. Ill); intrinsically safe and provides intrinsically safe circuit for connection to discrete passive strain gauge load cells when interconnected per installation Dwg No 3-58456. Temp Code TIA (180°C) for Cl. I, GPA,B,C,D and T4 (135°C) for Cl. U, GP E,f,G; Cl. ΓΓΓ. Ta = 40°C

– Weight Display Accessory ACC-3052CR, battery powered by pack PIN ACC352C or ACC575C or power