

Model 640 Series Indicators

Model 640XL



Model 640

Model 640M



Service Instructions

NORTH AMERICA

© Avery Weigh-Tronix group of companies 2009. All rights reserved.

No part of this publication may be reproduced, stored in an electronic retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written consent of the copyright owner, or as permitted by law or under license. Full acknowledgment of the source must be given.

Avery Weigh-Tronix is a registered trade mark of the Avery Weigh-Tronix group of companies. This publication was correct at the time of going to print however, Avery Weigh-Tronix reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service at any time.

All third party brands and product names used within this document are trademarks or registered trademarks of their respective holders.

Table of Contents

	<i>page</i>
Manual revision history	5
Chapter 1 General information and warnings	6
About this manual	6
Installation	7
Safe handling of equipment with batteries	7
Routine maintenance	7
Cleaning the machine	8
Training	8
Sharp objects	8
FCC and EMC declarations of compliance	9
Chapter 2 Introduction	10
Front Panel	10
Key Descriptions	11
Annunciators	12
Display Messages	12
Chapter 3 Setup Menu	13
Accessing the Setup Menu	13
Setup Menu Summary	14
CONFIG Menu	15
CUSTOM Menu	18
O-CAP Menu	20
SPAN Menu	21
CLOCK Menu	22
AUT.LOC Menu	22
INPUT Menu	24
UPDATE Menu	26
AVERAGE Menu	27
AZT Menu	30
STABLE Menu	31
RS232 Menu	32
Configuring for RF Operation	35
M640 Serial Command Set	37
MAINT Menu	38
INFO Menu	40
Chapter 4 Test Menu	42
Test Menu Summary	42
Access the Test Menu	43
Test Menu Items	43
VOLTS (Input voltage)	43
LCD (LCD Display test)	44
KEYPAD (Keypad test)	44
A/D (View /Test A to D counts)	45
SERIAL (Testing Serial Ports)	46
INPUT (Testing the Input)	46
SOFT (Software PN, version and revision)	47
Chapter 5 Factory Level Servicing	48
Resetting Factory Defaults	48

Downloading New Software to the Model 640	49
Accessing Factory Calibration Mode	50
Setting Zero Calibration	50
Setting the Span Calibration	51
Viewing Current Calibration	51
Viewing Factory Span Factor	51
Re-setting Factory Span Without Calibrating with a Simulator	52
Chapter 6 Appendix A: Custom Configuration Num. Table	53
Chapter 7 Technical Illustrations	57
Complete Service Menu	57
MODEL 640-Std / 640-XL Indicator (parts and assembly)	58
MODEL 640-Std / 640-XL Indicator (Remote XMTR / RCVR (optional) Programming Instructions)	59
MODEL 640-Std / 640-XL Indicator (Dimensional Outline Drawing)	60
MODEL 640-Std / 640-XL Indicator (External System Diagram)	61
MODEL 640-Std / 640-XL Indicator (Internal System Block Diagram)	62
MODEL 640-Std / 640-XL Indicator (Keypad/Backer Plate Assy)	63
MODEL 640-Std / 640-XL Indicator (Display and Keypad Interface PC Board)	64
MODEL 640-Std / 640-XL Indicator (Main PC Board Assy)	65
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box) ...	66
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box) ...	67
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box) ...	68
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box) ...	69
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)	70
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)	71
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)	72
MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)	73
MODEL 640-Std / 640-XL Indicator ("Lower Panel" Connector/Cable Assy Pin-outs)	74
MODEL 640M Indicator (Parts and Assembly)	75
MODEL 640M Indicator (Lower Panel Options Using J-box and Lower Panel Parts List) ..	76
MODEL 640M Indicator (Dimensional Outline Drawing)	77
MODEL 640M Indicator (External System Diagram)	78
MODEL 640M Indicator (Internal System Block Diagram)	79
MODEL 640M Indicator (Keypad Assy - P/N 57162-0012)	80
MODEL 640M Indicator Display (and Keypad Interface) PC Board P/N 57127-0024 (std. display)	81
MODEL 640M Indicator (Main PC Board Assy P/N AWT25-500042 (std.) P/N AWT25-500043 - RF Module option)	82
MODEL 640M Indicator ("Lower Panel" Connector/Cable Assy Pin-outs)	83
TDM-40 Transfer Data Module (Optional, For 640-Series Indicators) P/N 55370-0014 & Cable Pin-outs	84
MODEL 640-Std / 640-XL Indicator (Options / Accessories)	85

Manual revision history

Current Issue	Date Created	Details of Changes
AD	October 2009	Manual in new template. Software changes documented.

1 General information and warnings

1.1 About this manual

This manual is divided into chapters by the chapter number and the large text at the top of a page. Subsections are labeled as shown by the 1 and 1.1 headings shown above. The names of the chapter and the next subsection level appear at the top of alternating pages of the manual to remind you of where you are in the manual. The manual name and page numbers appear at the bottom of the pages.

Text conventions

Key names are shown in **bold** and reflect the case of the key being described. This applies to hard keys and onscreen or soft keys.

Displayed messages appear in ***bold italic*** type and reflect the case of the displayed message.

Special messages

There are five types of special text messages, NOTE, CAUTION, WARNING, DANGER, and ELECTRICAL HAZARD. Each will appear as illustrated below:



NOTE: *This contains extra information on a concept or process.*



CAUTION: *This may cause damage to the product or data loss.*



WARNING: *This could result in injury or death*



DANGER: THIS WILL RESULT IN INJURY OR DEATH



ELECTRICAL DANGER: THIS WILL RESULT IN INJURY OR DEATH.

1.2 Installation



DANGER: RISK OF ELECTRICAL SHOCK. NO USER SERVICEABLE PARTS. REFER TO QUALIFIED SERVICE PERSONNEL FOR SERVICE.

1.2.1 Safe handling of equipment with batteries



CAUTION: *Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.*

ATTENTION: *Il y a danger d'explosion s'il y a remplacement incorrect de la batterie, remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.*

1.3 Routine maintenance



IMPORTANT: *This equipment must be routinely checked for proper operation and calibration. Application and usage will determine the frequency of calibration required for safe operation.*

Always turn off the machine and isolate from the power supply before starting any routine maintenance to avoid the possibility of electric shock.

Make sure that it is placed securely on a flat and level surface.

1.4 Cleaning the machine



Table 1.1 Cleaning DOs and DON'Ts

DO	DO NOT
Wipe down the outside of standard products with a clean cloth, moistened with water and a small amount of mild detergent	Attempt to clean the inside of the machine
Spray the cloth when using a proprietary cleaning fluid	Use harsh abrasives, solvents, scouring cleaners or alkaline cleaning solutions
	Spray any liquid directly on to the display windows

1.5 Training

Do not attempt to operate or complete any procedure on a machine unless you have received the appropriate training or read the instruction books.

To avoid the risk of RSI (Repetitive Strain Injury), place the machine on a surface which is ergonomically satisfactory to the user. Take frequent breaks during prolonged usage.

1.6 Sharp objects

Do not use sharp objects such as screwdrivers or long fingernails to operate the keys.

1.7 FCC and EMC declarations of compliance

United States

Table 1.2

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

Table 1.3

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Countries

Table 1.4

WARNING: This is a Class A product. In a domestic environment, this product may cause radio interference in which the user may be required to take adequate measures.

2 Introduction

This manual covers the setup and servicing of your Avery Weigh-Tronix Model 640 / 640M / 640XL indicator series.

The first part of the manual covers the basics of the indicator and the configuring of the indicator using menus you access through the front panel keys.

- Setup Menu (640 password)
- Test Menu(111 password)
- Calibration Menu (01010101 password)

The last part of the manual covers the parts and assemblies of the indicator.

2.1 Front Panel

The Model 640 indicator face is shown in Figure 2.1.



Figure 2.1 Front panel

2.1.1 Key Descriptions



Key names will appear as **bold, upper case words** in this manual. Examples: **TARE**, **G/N**, etc.

Annunciators will appear as *italic words*. Examples: *G/N*, *Lb*, etc.

Displayed messages will appear as **bold, italic words**. Examples: ***HELLO***, ***LO-BAT***, etc.

There are a total of 8 keys. All keys except the **ON/OFF** will have audible feedback with low, medium, or high volume settings.

ON/OFF	Press to turn the unit On/Off
TARE	Press to tare the weight on the scale
ZERO/CLEAR	Press to zero G/N weight. It also is used to clear memory channels.
G/N	Press to toggle between gross and net weight
HOLD/MENU	Press this key to hold a displayed weight. Press again to release the hold mode. The weight is retained in memory in case the unit is turned off. When powered up again the weight reading will still be displayed. This key is also used to move around in the MENU structure. This will be explained in the <i>Menu</i> section of the manual.
PRINT/SELECT	Press this key to send data to an attached printer. This key is also used to move down in the menu structure.
RM	Press this key to access a memory channel, so the indicator is ready for accumulations into that channel.
M+	Press this key to accumulate weights
SERVICE	Press this key if you need contact information for your scale dealer. A key sticker will be placed in the location shown in Figure 2.1 if contact information was programmed by the dealer.

2.1.2 Annunciators

The Model 640 uses six triangle annunciators for *Lb*, *kg*, *G/N*, *Net*, *Auto* and *Motion*.

G/N	Indicates the unit is in the gross/net weighing mode.
NET	Indicates the unit is in the net weighing mode.
MOTION	Displayed when there is scale motion. This is based off the stability window parameters. See <i>STABLE Menu</i> on page 31 .
Lb	Indicates the unit is weighing in pounds.
AUTO	Displayed if the unit is programmed for AUTO-LOC. Auto-loc is used in animal weighing applications.
Kg	Indicates the unit is weighing in kilograms.
CAN'T	Displayed when attempting to access too large of a numeric entry OR memory channel number greater than 100 OR if trying to zero in net mode.
MAINT	Maintenance required. A timer was set by the dealer as a reminder to perform maintenance.

2.2 Display Messages

Following are the messages that may appear on the display and what they mean:

Message	Meaning
HELLO	Message displayed on power-up sequence for 3 seconds
-----	UPPER DASHES, Indicator is in a state of overcapacity, or analog input is too high.
-----	LOWER DASHES, Indicator is in a state of undercapacity, or analog input is too low.
-----	MIDDLE DASHES, This means the 640 is setup in Remote Mode. Call support to change setup to perform as a scale.
PRINT	Indicator is transmitting data. Appears after pressing the print key for a second.
LO-BAT	Alternates on the display between current mode and LO-BAT when input voltage is between 9-10 volts.
HOLD	Used when moving a portable system.
CAN'T	Usually displayed when trying to accumulate when motion is present on the scale.
CLR.ACC	Memory accumulators have been cleared through a Serial port command or through the user menu
SHTDWN	Is shown on the display prior to shutting the indicator off after the sleep timer has expired. (10 seconds before this the alarm beeps several times).

3 Setup Menu

3.1 Accessing the Setup Menu



Numeric Entry Procedure



Press this key to enter a value on the screen and increment the value being entered.



Press this key to decrement the numeric value being entered.



Press this key to move the numeric entry cursor one position to the right.

Follow these steps to access the setup menu:

1. From the G/N mode, press and hold the **HOLD/MENU** key for three beeps (3 seconds), then release...
SET.PAS is displayed.
2. Use the numeric entry procedure to enter the password **640**. Press **PRINT/SELECT** to accept it...
640 is shown
3. Press **PRINT/SELECT** once more...
CONFIG is displayed.

3.2 Setup Menu Summary

The setup menu has the items needed to configure the Model 640 indicator. The complete setup menu is found in the z-fold pages at the back of this manual. The top level of the menu is shown Figure 3.1. Each menu item is explained in the following pages.

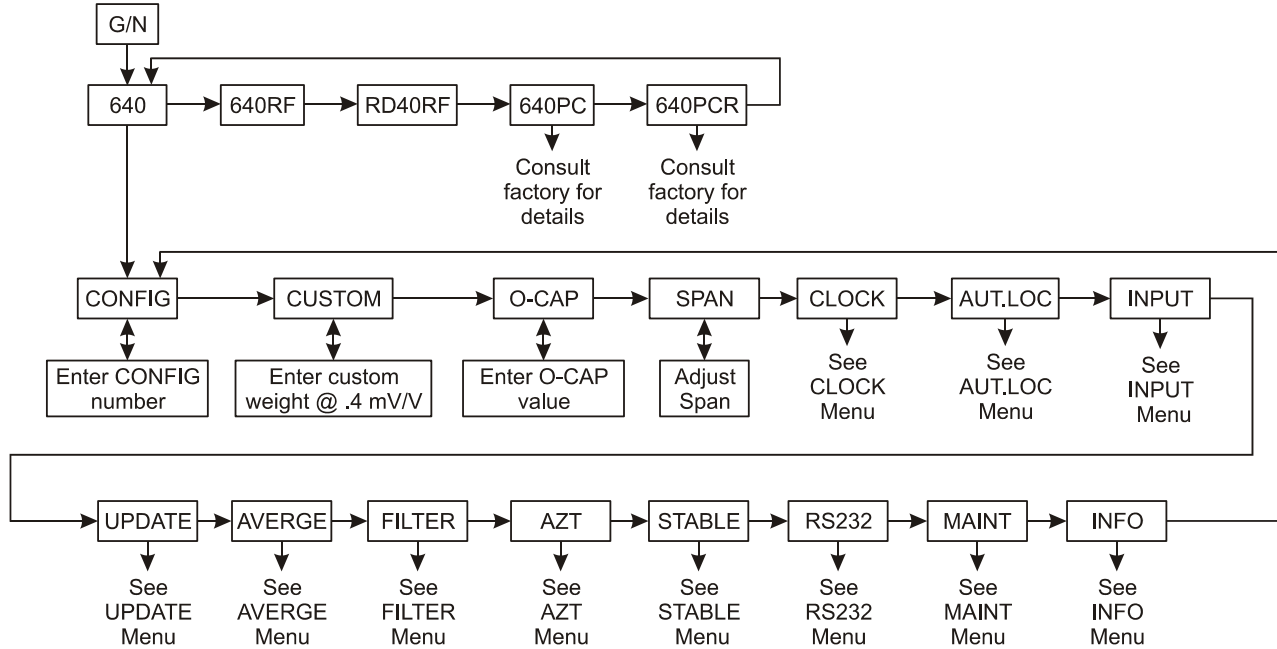


Figure 3.1 Top level of the setup menu.

Use the following key legend to navigate the menu structure and perform the various tasks:



Menu Navigation



Moves right in the menu structure.



Moves up in the menu structure.



Selects displayed option and moves up/down in menu structure at $\updownarrow$

The setup menu items are summarized below and explained fully in the sections that follow.

CONFIG	Use this item to enter the 4-5 digit configuration number.
CUSTOM	Use this item to enter a weight value at .4 mV/V.
O-CAP	Use this item to set the over-capacity value of the scale. When reached, the display shows -----.
SPAN	Use this item to adjust the span +/- 10%. RM =up, M+ = down, TARE returns to factory calibration.
CLOCK	Use this item to set the clock to either 12 or 24 hour clock.
AUT.LOC	Use this item to set AUTO LOC parameters (std.loc/adv.loc min.wt and release tolerance)
INPUT	Use this item to set input for std, zero, menu, hold, print, G/N Ptare, tare, RM, or RM.
UPDATE	Use this item to configure the indicator for 1,2, or 5 display updates/second.
AVERAGE	Use this item to configure the indicator for the # of A/d conversions (1-60)
FILTER	Use this item to configure the harmonizer filter and threshold.
A.Z.T.	Use this item to configure the Automatic Zero Tracking. (off to 10.0 divisions)
STABLE	Use this item to configure the motion window (off to 10.0 divisions)
RS232	Use this item to configure the RS232 serial port 1 (baud, parity, data, hand, auto, layout, or enquire)
MAINT	Use this item to set programmable maintenance timer. ((0 = OFF, 1-365 enables)
INFO	Use this item to set programmable GREETING and SERVICE messages.

3.3 CONFIG Menu

Figure 3.2 shows the CONFIG menu item.

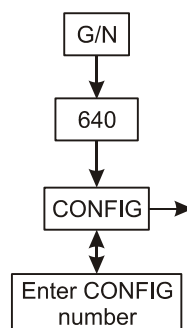


Figure 3.2 CONFIG Menu

This section shows you how to find and enter a configuration number that sets up the indicator for the type of weigh-bar, capacity, increment, print format (0-9), units, and auto-loc.

Example:

20,000 x 5 lb, 2 1/8 calibration, print format 3, therefore code= 5133

The Model 640 indicator is precalibrated at Avery Weigh-tronix with appropriate code number specified by the OEM, or leaves with a factory calibration number of 18030.

See Figure 3.1 for information on finding the correct configuration number. Once a number is established enter as follows:

1. From **CONFIG**, press the **PRINT/SELECT** key...

Current code number is shown.



If you attempt to enter an invalid number, the display will show CAN't and return to CONFIG.

2. Use the numeric entry procedure to enter a new number...

New number is shown

3. Press **PRINT/SELECT**...

CONFIG is shown.

4. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

The following tables show how to establish a configuration number to configure the Model 640 indicator: The number is entered under the **CONFIG** menu.

Table 3.1 .Configuration Number Tables

1st #	CALIBRATION SIZE	CAPACITY x INCREMENT SIZE					
00	5/8 *	200 x 0.01	200 x 0.02	200 x 0.05	2K x 0.1	2K x 0.2	2K x 0.5
01	1	2K x 0.1	2K x 0.2	2K x 0.5	20K x 1	20K x 2	20K x 5
02	1-1/4	2K x 0.1	2K x 0.2	2K x 0.5	20K x 1	20K x 2	20K x 5
03	1-7/8	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
04	2	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
05	2-1/8	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
06	2-1/4	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
07	2-1/4D	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
08	2-1/4D-P	200K x 10	200K x 20	200K x 50	200K x 100	200K x 200	200K x 500
09	2-1/2	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
10	3-1/8	200K x 10	200K x 20	200K x 50	200K x 100	200K x 200	200K x 500
11	4	200K x 10	200K x 20	200K x 50	200K x 100	200K x 200	200K x 500
12	CC20/CC30	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
13	Alley Weigh	2K x 0.1	2K x 0.2	2K x 0.5	20K x 1	20K x 2	20K x 5
14	CC30-3	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
15	Chute Weigh	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
16	CC-50	200K x 10	200K x 20	200K x 50	200K x 100	200K x 200	200K x 500
18	SPARE	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
20	1-digi	2K x 0.1	2K x 0.2	2K x 0.5	20K x 1	20K x 2	20K x 5
21	1 POLY(DIGI)	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
22	1-7/8,2(DIGI)	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
23	2-1/8,2-1/2,2-7/8,3-3/4 (DIGI)	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
97	Custom Setting	200 x 0.01	200 x 0.02	200 x 0.05	2K x 0.1	2K x 0.2	2K x 0.5
98	Custom Setting	20K x 1	20K x 2	20K x 5	200K x 10	200K x 20	200K x 50
99	Custom Setting	200K x 100	200K x 200	200K x 500			
	2nd #	0	1	2	3	4	5

3rd #	Print Formats
0	G
1	GTN
2	G w/ TD
3	GTN w/TD (STD)
4	CSV-G
5	CSV-GTN
6	CSV-G w/TD
7	CSV-GTN w/TD
8	Displayed Wt.
9	Displayed Wt. w/TD

4th #	units	Auto-Loc	Auto-Acc
0	Lb	Off	Off
1	Lb	Off	On
2	Lb	On	Off
3	Lb	On	On
4	Kg	Off	Off
5	Kg	Off	On
6	Kg	On	Off
7	Kg	On	On

3.4 CUSTOM Menu

Figure 3.3 shows the CUSTOM menu item.

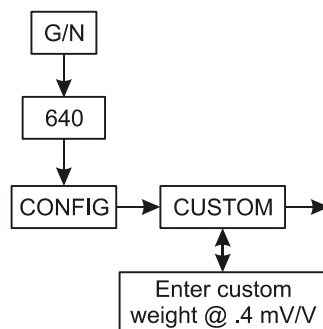


Figure 3.3 Custom Menu

If a custom weight sensor is being used, the mV/V rating as a system needs to be known (see example below), then calculated so the weight value at 0.4 mV/V can be entered into the Model 640 under the **CUSTOM** menu item. Reference the CONFIG chart and decide if the code number would start with a 97, 98, or 99 configuration number.

For custom configuration numbers for Avery Weigh-Tronix Weigh Bars, see the table in Appendix A.

A Custom Calibration Number can be calculated by two methods; either get the information from the weigh bars that are being use as shown here:

Example 1:

Need to calibrate to 4 weigh bars with the following information:

1 weigh bar 2.0 mV/V = 5,000 lb

Therefore 4 weigh bars would be 2.0 mV/V = 20,000 lb for the system
CUSTOM calibration number needs to be weight value at .4mV/V or 4,000 lb.

OR

The other method is to first enter in the Configuration Code Number (97XXX through 99XXX) and then place a known weight on the scale. Record that weight and then figure the scale factor difference from the known weight and the displayed weight. Then this factor needs to be multiplied by the current CUSTOM number to calculate the new CUSTOM number.

Example 2:

Current CUSTOM configuration Code = 4000

Known Weight Applied 15,000

M640 Displayed Weight 10,000

Known Weight/ Displayed Weight 1.5000

(New CUSTOM #) = (Current CUSTOM #) x (Calibration Factor)

6000 = 4000 x 1.5

Following is an example of calculated Custom number and how to enter it:

EXAMPLE: System capacity of 2 mV/V at 20000 lb, or .4 mV/V=4000 lb

The custom number as stated would be the weight value at 0.4 mV/V or as in this example 4000 lb.



You cannot access the CUSTOM number until the CCN, starting with 97XXX through 99XXX, has been entered.

1. From the **CONFIG** display, press **HOLD/MENU** once...

CUSTOM is shown

2. Press the **PRINT/SELECT** key...

Current weight is shown. Default value of custom = 20000, or 0.4 mV/V at 20,000 lb.

3. Use the numeric entry procedure to enter 4000...

4000 is shown.

4. Press the **PRINT/SELECT** key...

CUSTOM is shown.

5. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.5 O-CAP Menu



Numeric Entry Procedure



Press this key to enter a value on the screen and increment the value being entered.



Press this key to decrement the numeric value being entered.



Press this key to move the numeric entry cursor one position to the right.

Figure 3.4 shows the O-CAP menu item.

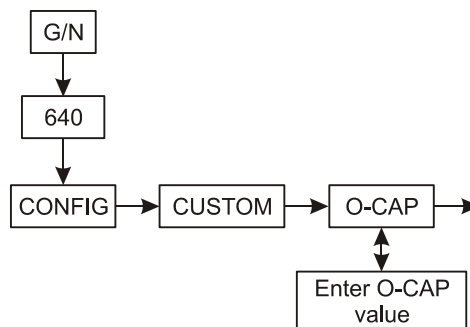


Figure 3.4 O-CAP menu

Use this to set up the over capacity if the standard default of 200.00, 2000.0, 20000, or 200000 is not acceptable. So if a user selects a 20,000 x 5, but really wants a 25000 x 5, then under this O-CAP menu, they must enter in 25000. If this parameter isn't used it will always have the default of what was set in the CONFIG parameter.

1. From the **CONFIG** display, press the **HOLD/MENU** key several times until...
O-CAP is shown.
2. Press the **PRINT/SELECT** key...
Current over-capacity value is shown
3. Using the numeric entry procedure enter in the overcapacity...
Entered value is shown.
4. Press the **PRINT/SELECT** key...
O-CAP is displayed.
5. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.6 SPAN Menu

Figure 3.5 shows the SPAN menu item.

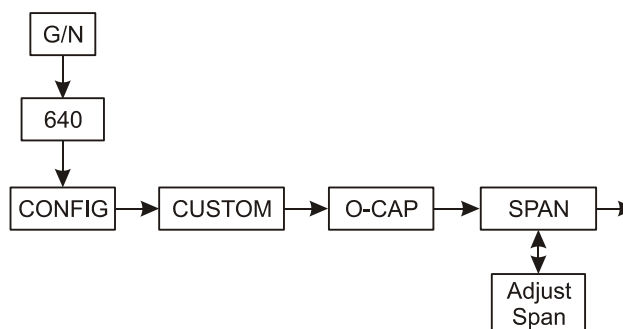


Figure 3.5 SPAN Menu

To field calibrate or adjust weight span, do the following:

1. From the **CONFIG** display, press the **HOLD/MENU** key several times until...
SPAN is displayed.
2. Press the **PRINT/SELECT** key...
Current weight is displayed.
3. With either a calibrator or some known weight, put appropriate weight onto the scale system.
Current weight is displayed.
4. Use the numeric entry procedure to adjust weight accordingly:
To increase span, press **RM**
To decrease span, press **M+**
To return to the span factory calibrated value, press **TARE**
Each press of a key will decrement/increment one division of the scale.
Press and hold the key to decrease/increase the value more quickly.
5. Once appropriate weight value is shown, press the **PRINT/SELECT** key...
SPAN is shown.
6. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.7 CLOCK Menu

Figure 3.6 shows the CLOCK menu item.

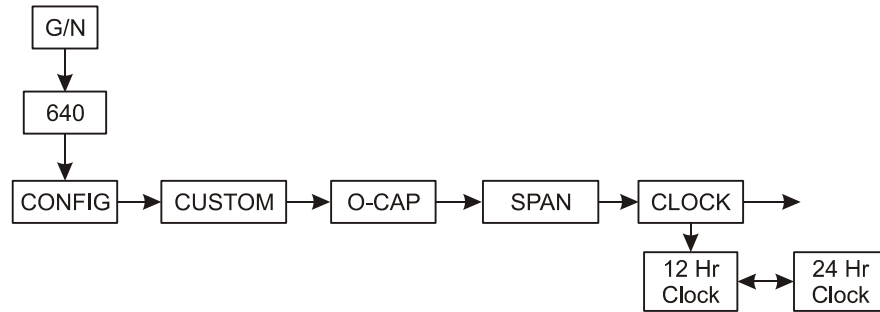


Figure 3.6 CLOCK Menu

1. Access the setup menu and from the **CONFIG** display, press the **HOLD/MENU** key repeatedly until **CLOCK** is displayed.
2. Press the **PRINT/SELECT** key to access this item...
Current time style is displayed; **12 HR** or **24 HR**.
3. Toggle between the choices by pressing the **HOLD/MENU** key. When the style you want is displayed, press the **PRINT/SELECT** key...
CLOCK is displayed.

3.8 AUT.LOC Menu



AUT.LOC only appears in the menu when Auto Loc is selected in the Code # when XXXX (2 or 3) or XXXX (6 or 7) are entered.

Figure 3.2 shows the AUT.LOC menu item. Below are definitions of the two modes of auto-lock.

Standard AUT.LOC

Weight stays locked until the weight on the scale drops by the programmed release tolerance. (Example: weighing a 2000 lb animal with a 25% release tolerance, means the lock will release when weight drops below 1500 lb).

Advanced AUT.LOC

The Model 640 will lock on an animals weight and stay locked even after the animal is off the scale. A new AUTO-LOC weight will only be retriggered upon placing the next animal on the scale.

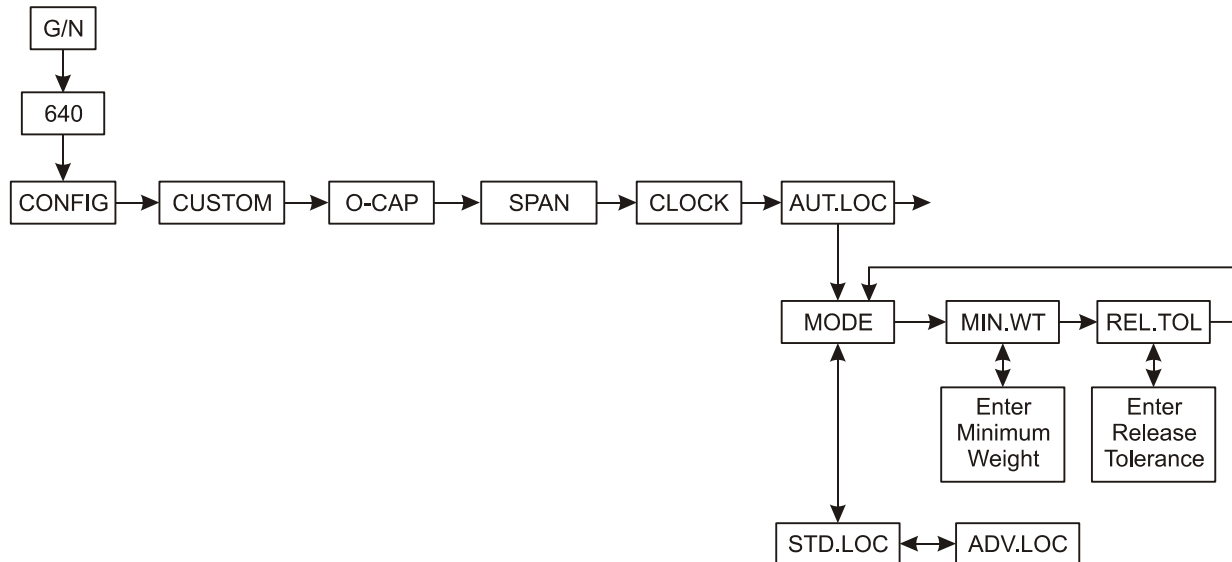


Table 3.2 AUT.LOC Menu

1. From the **CLOCK** display, press the **HOLD/MENU** key...
AUT.LOC is displayed.
2. Press the **PRINT/SELECT** key to access this item...
MODE is displayed.

This menu item is where you choose standard or advanced LOCK, minimum weight (**MIN.WT**), and release tolerance (**REL.TOL**) appropriate for the livestock application.
3. Press the **PRINT/SELECT** key...
STD.LOC is displayed. This is the standard LOCK. Toggle between this and the **ADV.LOC** by pressing the **HOLD/MENU** key.
4. When your choice is displayed, press the **PRINT/SELECT** key...
Your choice is selected and **MODE** is displayed.
5. Press the **HOLD/MENU** key...
MIN.WT is displayed. This is where you set the minimum weight that must be on the scale to activate the AUTO-LOC feature. This prevents smaller weights from locking on the display. See the example below.



EXAMPLE: If you are weighing 1200 pound cattle, you may set the minimum weight at 800 pounds and a release tolerance of 25%. Anything thing that goes on the scale that weighs less than 800 pounds (like a person or the neighborhood dog) will not cause the weight to lock. When an animal steps off the scale and the weight drops by at least 300 pounds (25% of 1,200 pounds), the system will reset to lock on the next weight above 800 pounds.

6. To set the minimum weight, press the **PRINT/SELECT** key...
Use the numeric entry procedure to enter the minimum weight value.
7. When the value is entered, press the **PRINT/SELECT** key to accept it and...
MIN.WT is displayed.
8. Press the **HOLD/MENU** key...
REL.TOL is displayed. This is the release tolerance. This is the tolerance amount set in steps 6 and 7 which must be removed from the scale before the AUTO-LOC resets. See the example on page 23.
9. Press the **PRINT/SELECT** key...
Use the numeric entry procedure to enter the release tolerance in percentage of the minimum weight.
10. When the value is entered, press the **PRINT/SELECT** key to accept it and...
Your choice is selected and **REL.TOL** is displayed.

You can exit the menu and return to gross weighing mode by repeatedly pressing the **G/N** key.

3.9 INPUT Menu

Figure 3.7 shows the INPUT menu.

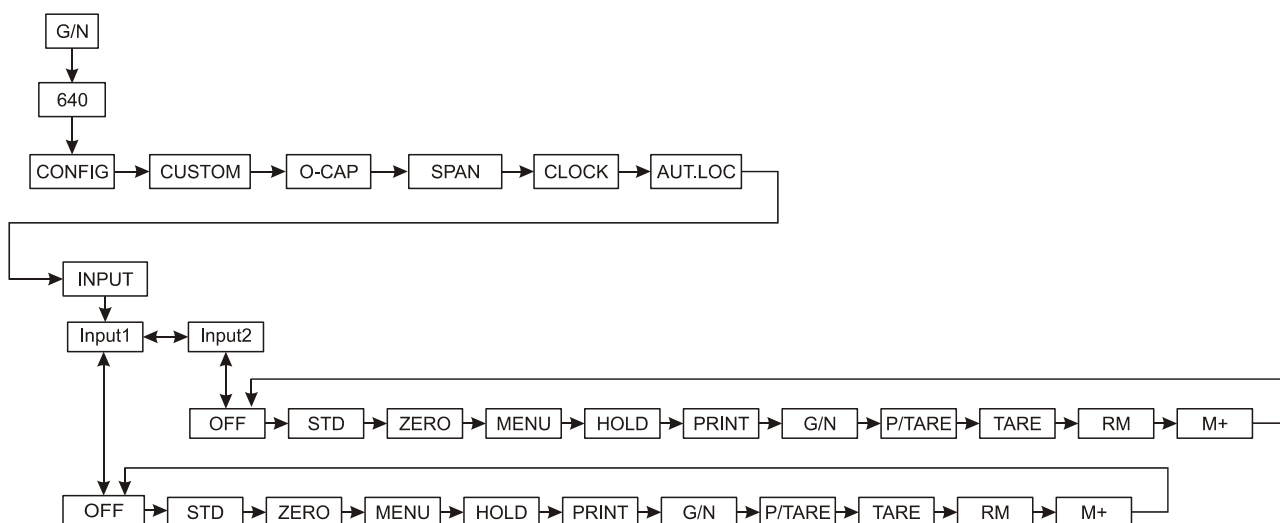


Figure 3.7 INPUT Menu

This parameter allows user to set the function of input, or the XM64 remote. The selections are as follows: STD, ZERO, MENU, HOLD, PRINT, G/N, PRINT/Terra RM, or M+.

The STD selection simply means the following:

- If in the Gross mode, activating the input allows taring of the unit.
- If in the G/T/N mode, activating the input allows return to the GROSS mode if pressing for more than 3 seconds.

All other input selections will act like the keys they are configured for.
(ZERO,MENU,HOLD,PRINT,TARE, RM and M+ act exactly like the keys themselves.

P/TARE input: If this input is selected, when the XM64 is pressed, the displayed value will first be printed, then the unit tared. (unit should be set for either “displayed weight settings” in configuration mode.

Example:

1. Start in gross mode at 0 lb
2. Load first ingredient (1000 lb)...
- G 1000 lb** is displayed.
3. Press XM64 button and...
- G 1000 lb** is printed and then **N 0 lb** is displayed.
4. Load second ingredient (1000 lb) and press the XM64 button...
- N 1000 lb** is printed and then **N 0 lb** is displayed. Repeat steps 3 and 4 until completed.

Follow these steps to setup INPUT.

1. From the **CONFIG** display, press the **HOLD/MENU** key repeatedly until...
- INPUT** is displayed.
2. Press the **PRINT/SELECT** key...
- INPUT 1** is displayed.
3. Press the **PRINT/SELECT** key ...
- Current setting is displayed.
4. Use the **HOLD/MENU** key to scroll through the choices. Press the **PRINT/SELECT** key when your choice is displayed...
- INPUT 1** is displayed.
5. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.10 UPDATE Menu

Figure 3.8 shows the UPDATE menu.

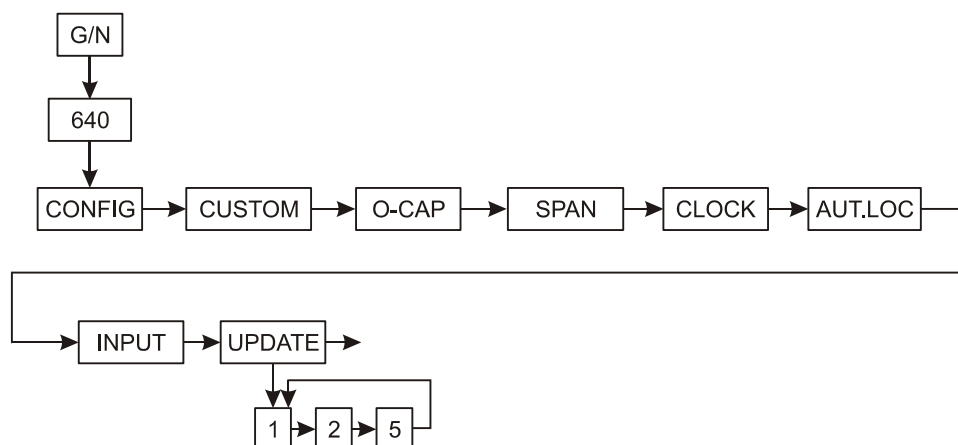


Figure 3.8 UPDATE Menu

Use this to set the display update rate to 1,2,or 5 times /second. Follow the steps below.

1. From the **CONFIG** display, press the **HOLD/MENU** key repeatedly until...
UPDATE is displayed.
2. Press the **PRINT/SELECT** key...
The current selection is displayed.
3. Use the **HOLD/MENU** key to scroll to your choice, then press the **PRINT/SELECT** key...
UPDATE is displayed.
4. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.11 AVERAGE Menu

Figure 3.9 shows the AVERAGE menu.

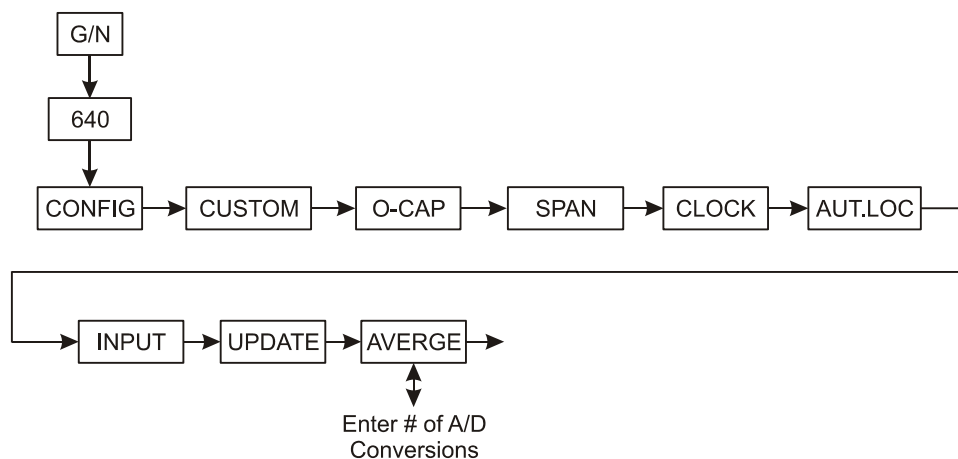


Figure 3.9 AVERAGE Menu

This allows the user to enter into the Model 640 the number of A/D conversion to average. For example, if you enter in 30, the unit will average the weight values from the last 30 A/D conversions and uses that value for displayed data. (User can enter values from 1-60)

1. From the **CONFIG** display, press the **HOLD/MENU** key repeatedly until...
AVERAGE is displayed.
2. Press the **PRINT/SELECT** key...
The current selection is displayed.
3. Use the numeric entry procedure to enter the number of conversions...
The entered number is displayed
4. Press the **PRINT/SELECT** key...
AVERAGE is displayed.
5. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.12 FILTER Menu

Figure 3.10 shows the FILTER menu.

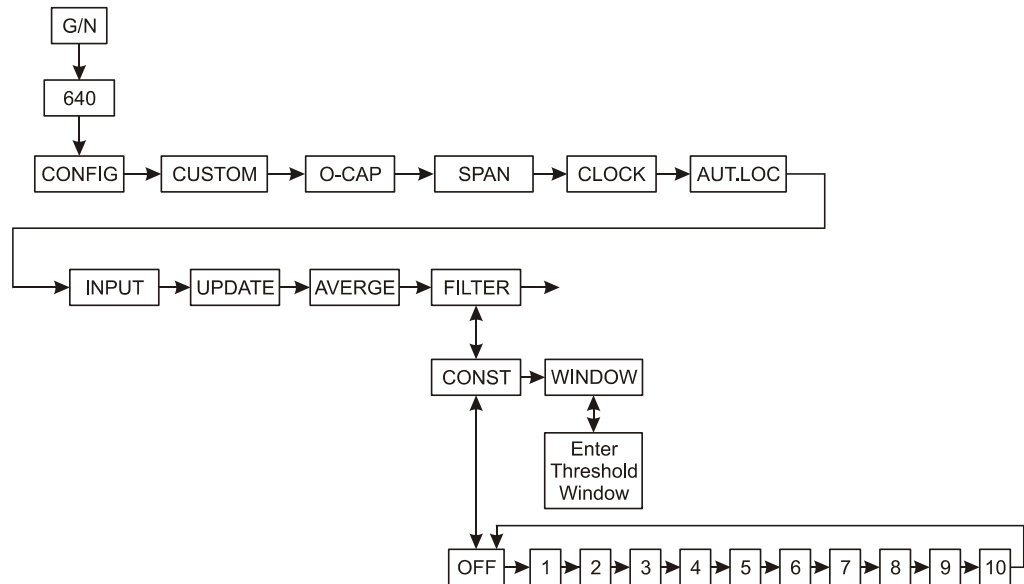


Figure 3.10 FILTER Menu

The FILTER item allows you to adjust the filtering on your Model 640 to counteract excessive movement or vibration on the scale system. Follow these steps to set the FILTER menu item.

1. From the **CONFIG** display, press the **HOLD/MENU** key repeatedly until...

FILTER is displayed.

There are two parts to filtering; Constant and Window. How to set these is explained in the following steps. How they affect weighing is explained in the *Filtering* note below.



Filtering:

Default settings; CONST=2, WINDOW=0

If the value for the constant (CONST) = OFF, the filtering is disabled. If a value for CONST is entered, filtering is ON and you must also enter a WINDOW value. Set the CONST number small for small vibration problems and higher for more dampening effect.

The WINDOW threshold parameter defines a weight window that enables the filtering. The recommended value of 0 is the default, which means the filtering is engaged all the time.

Example: A WINDOW setting of 10 means a weight change over 10 pounds occurring during the display update time will disable the filter until the weight change during the sample time remains within 10 lbs.

2. Press the **PRINT/SELECT** key twice...

The current **CONSTANT** value is shown. Press the **HOLD/MENU** key to increase the value. Increasing this value causes the indicator to ignore increasing amounts of weight change on the scale. This means small changes can be ignored at a relatively small Constant value. To filter larger changes out, choose a larger Constant value. (Choices are OFF to 10, Default=2)

3. When the value you want to try is displayed, press the **PRINT/SELECT** key...

Your choice is selected and **CONST** is displayed.

4. Press the **HOLD/MENU** key...

WINDOW is displayed. This is where you will set the threshold window of the filter parameter. You can enter 0 to full capacity.

5. Press the **PRINT/SELECT** key...

Current setting for the threshold window is displayed.

6. Use the numeric entry procedure to enter a new value. Press the **PRINT/SELECT** key to accept it...

WINDOW is displayed.

7. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

Check the function of the indicator. If the weight display does not act in a manner to your liking, repeat steps 1 through 6 until the indicator functions as desired.

3.13 AZT Menu

Figure 3.11 shows the AZT menu.

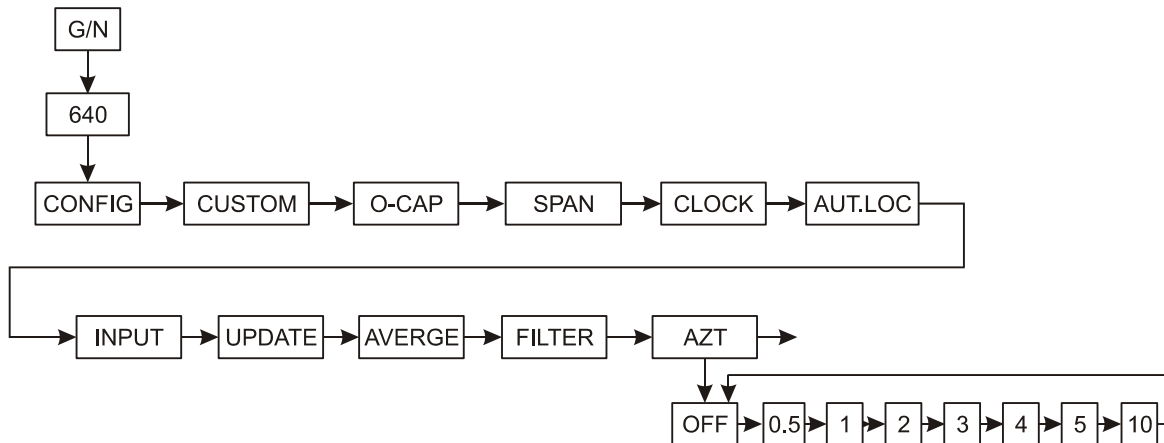


Figure 3.11 AZT Menu

Use this menu to set the automatic zero tracking window, with the following choices (off, 0.5, 1.0, 2.0, 3.0, 5.0, 10.0 divisions)

1. From the **CONFIG** display, press the **HOLD/MENU** key repeatedly until...
AZT is displayed.
2. Press the **PRINT/SELECT** key and...
Current selection is shown
3. Press the **HOLD/MENU** key to scroll through the choices. When your choice is displayed, press **PRINT/SELECT**...
AZT is shown
4. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.14 STABLE Menu

Figure 3.12 shows the STABLE menu.

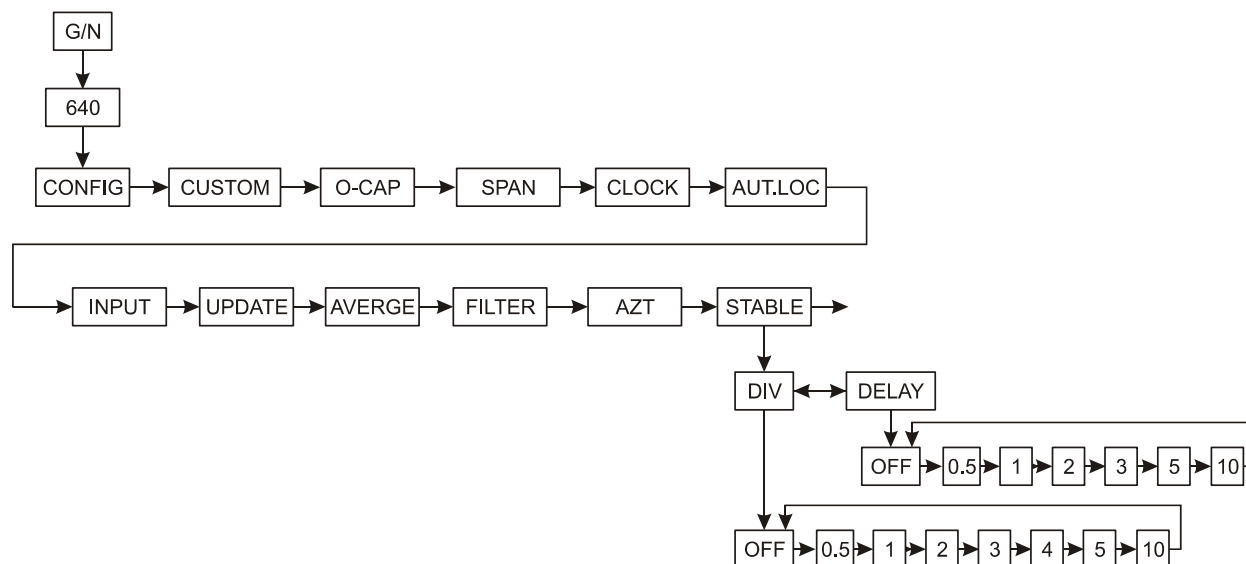


Figure 3.12 STABLE Menu

DIV is the number of increments that the weight must remain between to be stable

DELAY is the time required to be stable before performing any automatic scale functions.

Use this menu to set the stability window (off, 0.5, 1.0, 2.0, 3.0, 5.0, 10.0 divisions) and to set stability delay (off, 0.5, 1.0, 2.0, 3.0, 4.0, 5.0, 10.0 seconds)

1. From the CONFIG display, press the **HOLD/MENU** key repeatedly until...
STABLE is displayed.
2. Press the **PRINT/SELECT** key...
DIV is shown
- 3a. Press the **PRINT/SELECT** key to edit **DIV**...
 OR
- 3b. Press the **MENU** key to move to **DELAY** and then press the **PRINT/SELECT** key to edit **DELAY**.
4. Press the **HOLD/MENU** key to scroll through the choices. When your choice is displayed, press **PRINT/SELECT**...
DIV or **DELAY** is shown, depending on which item you were setting.
5. Press the **G/N** key repeatedly until the indicator returns to the gross weighing mode.

3.15 RS232 Menu

Figure 3.13 shows the RS232 Menu

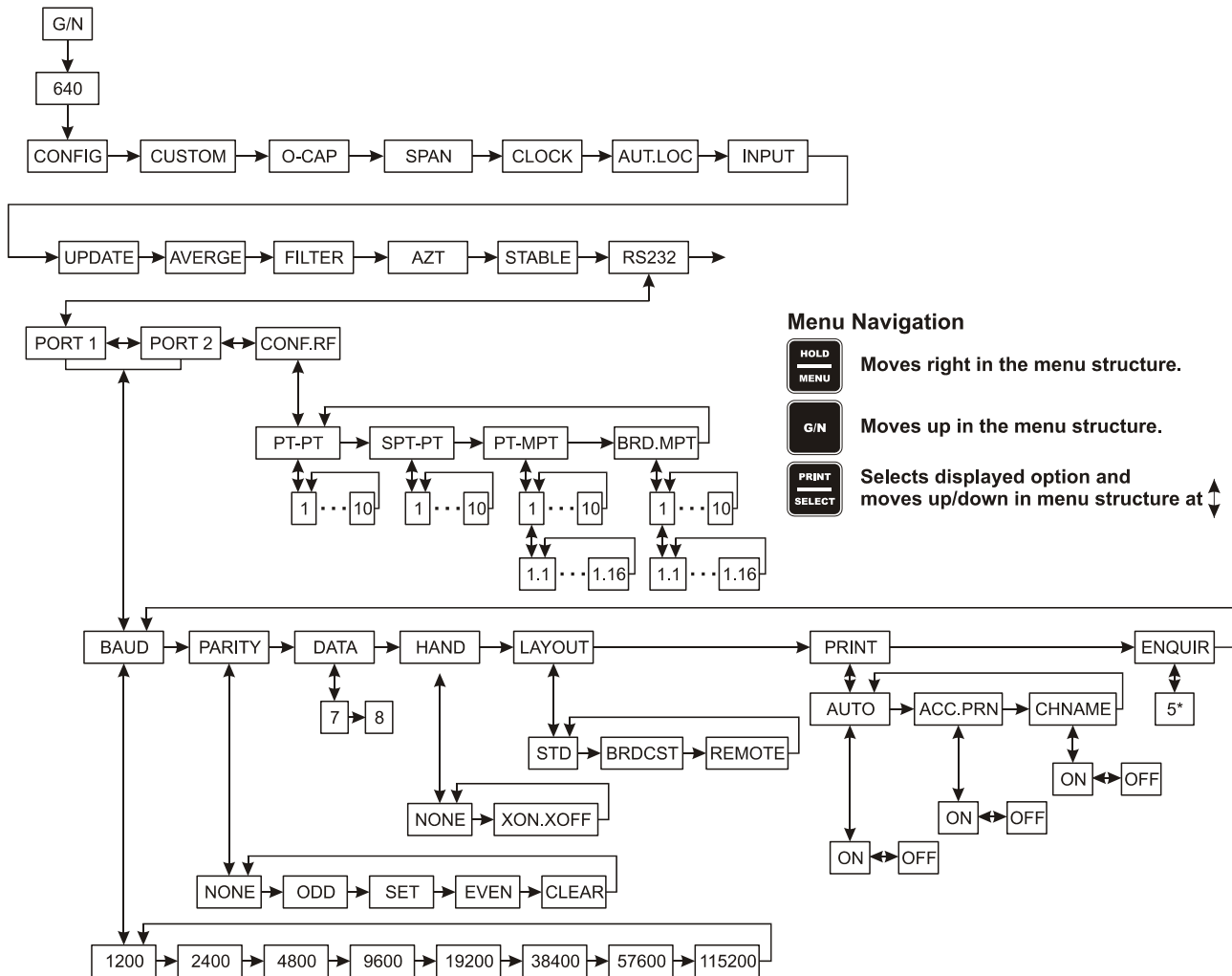


Figure 3.13 RS232 Menu

Use this menu to set the communication parameters.

1. From the CONFIG menu, press the **HOLD/MENU** key repeatedly until...

RS232 is shown

2. Press the **PRINT/SELECT** key...

PORT 1 is displayed. You can select to configure **PORT 1** or **PORT 2** or configure port 2 for radio communication with remote peripherals, **CONF.RF**.

3. Press the **HOLD/MENU** key to scroll through the choices. When your choice is displayed, press **PRINT/SELECT**...

4. The parameters you can set are identical for the PORT 1 or 2 choice. If you choose **CONF.RF** see *Configuring for RF Operation* on page 35

BAUD is displayed.

5. Press the **PRINT/SELECT** key...
Current baud rate is shown. Choices are 1200 to 115200 baud.
6. Press the **HOLD/MENU** key to scroll through the choices. When your choice is displayed, press **PRINT/SELECT**...
BAUD is displayed.
7. Press the **HOLD/MENU** key...
PARITY is shown
8. Press the **PRINT/SELECT** key...
Current selection is shown.
9. Press the **HOLD/MENU** key to scroll through the choices. When your choice is displayed, press **PRINT/SELECT**...
PARITY is shown.
10. Press the **HOLD/MENU** key...
DATA is shown.
11. Press the **PRINT/SELECT** key...
Current selection is shown.
12. Press the **HOLD/MENU** key to scroll through the choices. When your choice is displayed, press **PRINT/SELECT**...
DATA is shown.
13. Press the **HOLD/MENU** key ...
HAND is shown.
14. Press the **PRINT/SELECT** key...
Current selection is shown.
15. Press the **HOLD/MENU** key to toggle between the choices. When your choice is displayed, press **PRINT/SELECT**...
HAND is shown.
16. Press the **HOLD/MENU** key ...
LAYOUT is shown.
17. Press the **PRINT/SELECT** key...
Current selection is shown. Choices are explained below.

STD	All printouts will be printed as standard.
BRDCST	Broadcast continuous serial RS-232 data so this can be hooked up to any device that needs to look at continuous serial output. You must set the proper format in the configuration code #.
REMOTE	When using another 640 as a wired remote, this selection must be chosen.

18. Press the **HOLD/MENU** key to toggle between the choices. When your choice is displayed, press **PRINT/SELECT**...
LAYOUT is shown
19. Press the **HOLD/MENU** key ...
PRINT is shown
20. Press the **PRINT/SELECT** key...
Current selection is shown. Choices are **AUTO**, **ACC.PRN** or **CHNAME**.
21. Press the **HOLD/MENU** key to toggle between the choices. When your choice is displayed, press the **PRINT/SELECT** key...
Current selection is shown. Choices are **ON** or **OFF**
22. Press the **HOLD/MENU** key to toggle between the choices. When your choice is displayed, press **PRINT/SELECT**...
Your last selection is shown.
23. Press the **G/N** key...
PRINT is shown.
24. Press the **HOLD/MENU** key ...
ENQUIRE is displayed. Use this to set an enquire code character.
25. Press the **PRINT/SELECT** key...
Current selection is shown.
26. Use the numeric entry procedure to enter an enquire code number and press **PRINT/SELECT**...
Your choice is entered and the display returns to **ENQUIRE**.
27. Press the **G/N** key repeatedly to return to the gross weighing mode.

3.15.1 Configuring for RF Operation

The indicator can be setup for four different wireless scenarios. See the *RS232 Menu on page 32*. These are briefly summarized below and explained fully following that:

PT - PT	One 640 indicator communicating to one RD40RF. See <i>PT-PT Communication on page 35</i> .
SPT - PT	Multiple 640 indicators communicating to one RD40RF. See <i>SPT-PT Communication on page 35</i> .
PT - MPT	Multiple 640 indicators communicating to multiple RD40RFs. See <i>PT-MPT Communication on page 36</i> .
BRD - MPT	One 640 indicator communicating to multiple RD40RFs. See <i>BRD-MPT Communication on page 36</i> .

PT-PT Communication

1. From the display **CONF.RF**, press the **PRINT/SELECT** key...

PT-PT is displayed. This stands for point to point communication. This is the most common RF setup. Use it when one Model 640 indicator is communicating to one RD40RF remote display. For proper PT-PT operation, both devices need to be configured to matching network ID numbers. Choices are 1 through 10.

2. To select the ID number for the device, with **PT-PT** displayed, press the **PRINT/SELECT** key...

Current setting for the ID number is displayed.

3. Press the **HOLD/MENU** key to scroll through the choices (1 thru 10). When your choice is displayed, press the **PRINT/SELECT** key to select it...

PT-PT is displayed.

SPT-PT Communication

1. From the display **CONF.RF**, press the **PRINT/SELECT** key...

PT-PT is displayed.

2. Press the **HOLD/MENU** key...

SPT-PT is displayed. This stands for selectable point to point communication. Use this when you have up to ten 640 indicators and one RD40RF remote display. With each 640 having its own ID number, you can select, from the RD40RF, which Model 640 you want to communicate with.

For proper SPT-PT operation two communicating devices must have the same ID number. Choices are 1 through 10.

3. To select the ID number for the 640 indicator, with **SPT-PT** displayed, press the **PRINT/SELECT** key...

Current setting for the ID number is displayed.

4. Press the **HOLD/MENU** key to scroll through the choices (1 thru 10). When your choice is displayed, press the **PRINT/SELECT** key to select it...

SPT-PT is displayed.

PT-MPT Communication

1. From the display **CONF.RF**, press the **PRINT/SELECT** key...

PT-PT is displayed.

2. Press the **HOLD/MENU** key twice...

PT-MPT is displayed. This stands for point to multi-point. This is for the situation of having multiple RD40RF units and selecting which of multiple 640s you want to communicate with. For example: Two front end loaders wanting to be able to communicate with any of 16 different trucks, by selecting scale address RF-01 through RF-16 from the RD40RF. The RF scale addresses would correspond to each truck (truck 1 = RF-01, truck 2 = RF-02, etc.)

For proper PT-MPT operation the Model 640 indicator and the RD40RFs need to be configured to matching network ID numbers (choices are 1 through 10) and matching scale addresses (choices are 1.1 through 1.16).

3. To select the ID number for the 640 indicator, with **PT-MPT** displayed, press the **PRINT/SELECT** key...

Current setting for the ID number is displayed.

4. Press the **HOLD/MENU** key to scroll through the choices (1 thru 10). When your choice is displayed, press the **PRINT/SELECT** key to select it...

Current setting for the scale address is displayed.

5. Press the **HOLD/MENU** key to scroll through the choices (1.1 through 1.16). When your choice is displayed, press the **PRINT/SELECT** key to select it...

PT-MPT is displayed.

BRD-MPT Communication

1. From the display **CONF.RF**, press the **PRINT/SELECT** key...

PT-PT is displayed.

2. Press the **HOLD/MENU** key three times...

BRD-MPT is displayed. Use this setup when having multiple remotes (ex: RD40RF in both the feedroom and in the front end loader, communicating back to the indicator on the mixer). All the RD40RF's have full access of the functional features of the Model 640.

For proper operation the Model 640 indicator and the RD40RF need to be configured to matching network ID numbers (choices are 1 through 10) and matching scale addresses (choices are 1.1 through 1.16).

3. To select the ID number for the 640 indicator, with **BRD-MPT** displayed, press the **PRINT/SELECT** key...

Current setting for the ID number is displayed.

4. Press the **HOLD/MENU** key to scroll through the choices (1 thru 10). When your choice is displayed, press the **PRINT/SELECT** key to select it...
Current setting for the scale address is displayed.
5. Press the **HOLD/MENU** key to scroll through the choices (1.1 through 1.16). When your choice is displayed, press the **PRINT/SELECT** key to select it...
BRD-MPT is displayed.
6. Press the **G/N** key repeatedly until the indicator returns to the G/N weighing mode.

3.15.2 M640 Serial Command Set

The M640 family of indicators can be controlled using an RS232 connection. This serial interface will have the ability to trigger the functions associated with the front panel keys. This includes commands for the **RM**, **M+**, **TARE**, **G/N**, **HOLD/MENU**, **PRINT/SELECT** and **ZERO/CLEAR** keys. The **ON/OFF** key cannot be controlled.

The RS232 port setting, **LAYOUT**, must be set for **STD** or **BRDCST**. Make sure that the **BAUD**, **DATA**, **PARITY**, and **HAND** also match the communication settings of the device the M640 will be connected to.

Command Set - all characters are case sensitive.

- | | | |
|----------|---|---|
| r | → | RM key – Single press function |
| R | → | RM key – Press and hold function (Not used in current version) |
| m | → | M+ key – Single press function |
| M | → | M+ key – Press and hold function (Clear last accumulate) |
| t | → | TARE key – Single press function |
| T | → | TARE key – Press and hold function (Not used in current version) |
| g | → | G/N key – Single press function |
| G | → | G/N key – Press and hold function (Not used in current version) |
| n | → | G/N key – Single press function |
| N | → | G/N key – Press and hold function (Not used in current version) |
| h | → | HOLD/MENU key – Single press function |
| H | → | HOLD/MENU key – Press and hold function (Enter the A-List Menu) |
| p | → | PRINT/SELECT key – Single press function |
| P | → | PRINT/SELECT key – Press and hold function (Not used in current version) |
| z | → | ZERO/CLEAR key – Single press Function\ |
| Z | → | ZERO/CLEAR key – (Clear active memory channel value) |

3.16 MAINT Menu



Numeric Entry Procedure



Press this key to enter a value on the screen and increment the value being entered.



Press this key to decrement the numeric value being entered.



Press this key to move the numeric entry cursor one position to the right.

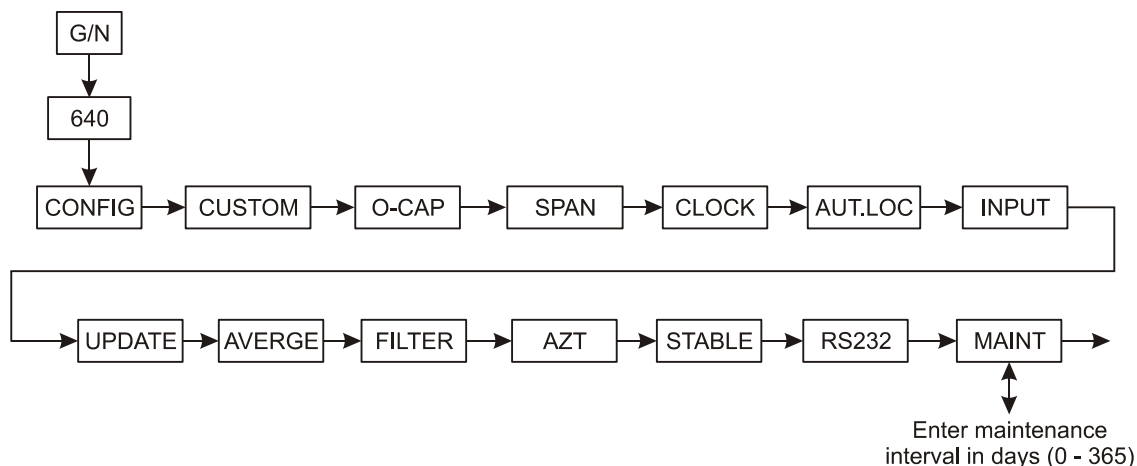


Figure 3.14 MAINT menu

This menu, shown in Figure 3.14, allows dealers to setup a maintenance timer for the equipment the M640 is used on. The timer is a day timer. Enter in the number of days of the maintenance interval and a warning message will appear on the display at midnight on that day and remain there until reset.

To setup this option, perform the following steps:

1. From the **CONFIG** menu, press the **HOLD/MENU** key repeatedly until...
MAINT is displayed.
2. Press the **PRINT/SELECT** key...
The current setting is shown. (Default is 0 or OFF)
3. Using the numeric entry procedure, enter the new maintenance delay in days. You can enter between 0 and 365 days.
4. Press the **PRINT/SELECT** key to store the value.

Clearing or Resetting the MAINT Timer

The value you enter will reference today as the start day. Example: If 10 days was entered today, and today is August 3rd, the maintenance alarm will go off at 12:01:00 AM on the 13th of August.

When the maintenance alarm goes off the display will alternately show **MAINT** then your preprogrammed service message until you reset the timer or set it to 'snooze'.

To reset the timer:

1. Press the **ZERO/CLEAR** key...

RESET? is displayed.

2. Press **PRINT/SELECT** key to restart the Maintenance clock.

OR

3. Press **G/N** to cause the alarm to 'snooze' until the next day. The Maintenance timer will go off at midnight the next day.

3.17 INFO Menu

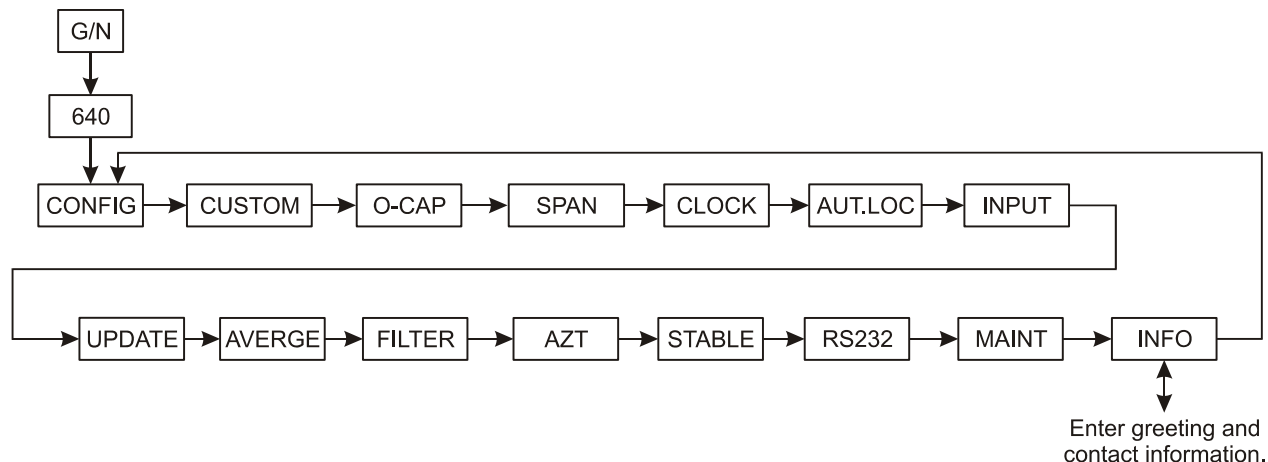


Figure 3.15 INFO menu

Manufacturers and/or dealers can use the INFO menu, shown in Figure 3.15, to give a unique greeting during powerup and to show the user service contact information for the system. Both messages (***GREET*** or ***SERVICE***) can be up to 32 characters long. A space is used to separate words in the message. The whole word is shown if less than six characters in length. If longer than six character, the word will scroll across the display.

This option can be programmed using the M640 keypad or through the M640 RS232 port connected to a computer.

To setup this option, perform the steps below for your method of entry:

Keyboard Entry

1. From the **CONFIG** menu, press the **HOLD/MENU** key repeatedly until...
INFO is displayed.
2. Press the **PRINT/SELECT** key...
GREET is shown. Use the **HOLD/MENU** key to scroll to **SERVICE** if that is the message you want to create.
3. With the message you want to create displayed, press the **PRINT/SELECT** key...
The current message is displayed.
4. Use the numeric entry procedure to enter the new message. When finished, press the **PRINT/SELECT** key to store the value.
5. Repeat steps 2 - 4 for the other message.

Serial Port Entry

To program these messages through the serial port, connect a serial interface cable to your PC and send the following commands to setup the messages.

GREET Message:

Send...

<BEL>message<CR><LF>

SERVICE Message:

Send...

<HT>message<CR><LF>

where:

<BEL> is ASCII character decimal 7

<CR> is the carriage return ASCII character decimal 13

<LF> is the linefeed ASCII character decimal 10

<HT> is ASCII character decimal 9

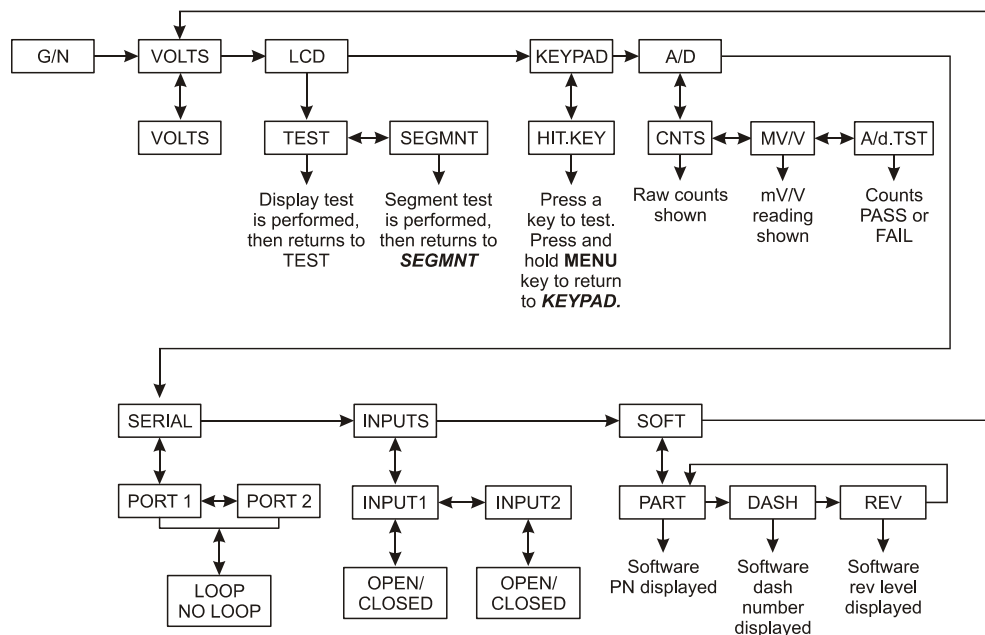
Message can be 32 characters in length.

4 Test Menu

4.1 Test Menu Summary

The test menu, shown in Figure 4.1, allows you to test the functions of the indicator shown below.

- VOLTS** Monitor the input voltage of the indicator
- LCD** Do a LCD display test.
- KEYPAD** Do a keypad test
- A / D** Do an Analog to Digital Test (A/D)
- SERIAL** Check the serial ports (Port 1 and 2).
- INPUTS** Check the inputs.
- SOFT** Verify the software version of the indicator.



Menu Navigation



Moves right in the menu structure.



Moves up in the menu structure.



Selects displayed option and moves up/down in menu structure at ↑↓

Figure 4.1 Test menu

4.2 Access the Test Menu

To access the Test menu, follow these steps:

1. From the G/N mode, press and hold the **HOLD/MENU** key for three beeps (3 seconds), then release...
SET.PAS is displayed.
2. Use the numeric entry procedure and enter the password 111...
111 is displayed.
3. Press the **PRINT/SELECT** key...
VOLTS, the first menu item, is displayed.

4.3 Test Menu Items

4.3.1 VOLTS (Input voltage)

This allows a user to check the voltage coming into the indicator.

1. Access the test menu...
VOLTS is displayed.
2. Press the **PRINT/SELECT** key, and...
Current voltage is displayed.
3. Press the **G/N** key repeatedly to return to the G/N weighing mode.



Menu Navigation



Moves right in the menu structure.



Moves up in the menu structure.



Selects displayed option and moves up/down in menu structure at 

4.4 LCD (LCD Display test)

Use this to perform a self test on the LCD, either a complete display test or a segment test.

1. From **VOLTS** press menu...
LCd is displayed.
2. Press the **PRINT/SELECT** key...
TEST is shown.
3. Press the **PRINT/SELECT** key...
Display performs a test (15 sec).
4. When test is completed...
TEST is shown.
5. Press **HOLD/MENU**...
SEGMNT is displayed.
6. Press the **PRINT/SELECT** key...
Display performs a segment test.
7. When test is completed...
SEGMNT is displayed.
8. Press **G/N** key to...
Return to **LCd** display.
9. Press **G/N** key to return to the G/N weighing mode.

4.4.1 KEYPAD (Keypad test)

This test allows testing of all active keys...

1. From **VOLTS**, press menu...
LCd is displayed.
2. Press the **HOLD/MENU** key repeatedly until...
KEYPAD is shown.
3. Press the **PRINT/SELECT** key...
HIT.KEY is displayed briefly, then **NO KEY** is shown if a key isn't being pressed. Test the key by pressing it. If it is working the corresponding key name will be displayed. See table below:

Press the G/N key	G/N is displayed.
Press the HOLD/MENU key	HOLD is displayed.
Press the ZERO/CLEAR key	ZERO is displayed.
Press the PRINT/SELECT key	PRINT is displayed.
Press the RM key	RM is displayed.
Press the M+ key	M+ is displayed.
4. Press and hold the **HOLD/MENU** key to return to **KEYPAD**.

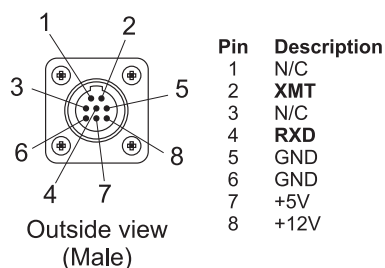
4.4.2 A/D (View /Test A to D counts)

1. From **VOLTS**, press menu...
LCd is displayed.
2. Press **HOLD/MENU** repeatedly until...
A/d is shown.
3. Press the **PRINT/SELECT** key...
CNTS is shown.
4. Press the **PRINT/SELECT** key...
A/D raw counts are shown.
5. Press the **PRINT/SELECT** key...
CNTS is shown.
6. Press the **HOLD/MENU** key...
mV/V is shown.
7. Press **PRINT/SELECT** key...
The mV/V value is shown.
8. Press **PRINT/SELECT** key...
mV/V is shown.
9. Press **HOLD/MENU** key...
A/d.TST is shown.
10. Press **PRINT/SELECT** key...
Counts PASS or **FAIL** is shown.
11. Press **PRINT/SELECT** key...
A/d.TST is shown.
12. Press the **G/N** key two times...
Returns to the G/N weighing mode.

4.4.3 SERIAL (Testing Serial Ports)

1. From **VOLTS**, press **HOLD/MENU** repeatedly until...
SERIAL is shown.
2. Press the **PRINT/SELECT** key and ...
PORT 1 is displayed.
3. Press the **HOLD/MENU** key to toggle between your choices: **PORT 1** and **PORT 2**. Press the **PRINT/SELECT** key when your choice is displayed...
4. Short the XMT to RXD. See illustration below...
LOOP will be displayed if communication is working properly. **NO LOOP** will be displayed if there is a problem.

RS-232 Port



5. Press **PRINT/SELECT** and...
SERIAL is displayed.
6. Press the **G/N** key...
Returns to the G/N weighing mode.

4.4.4 INPUT (Testing the Input)

1. From **VOLTS**, press menu...
LCd is displayed.
2. Press **HOLD/MENU** repeatedly until...
INPUTS is shown.
3. Press the **PRINT/SELECT** key and ...
INPUT1 is displayed.
4. Press the **PRINT/SELECT** key and...
OPEN or **CLOSED** is displayed.
5. Press the **PRINT/SELECT** key...
INPUT1 is displayed
6. Press **HOLD/MENU** key...
INPUT2 is displayed

7. Press the **PRINT/SELECT** key...
OPEN or **CLOSED** is displayed.
8. Press the **PRINT/SELECT** key...
INPUT2 is displayed
9. Press the **G/N** key repeatedly to return to the gross weighing mode.

4.4.5 SOFT (Software PN, version and revision)

1. From **VOLTS**, press menu...
LCd is displayed.
2. Press **HOLD/MENU** repeatedly until...
SOFT is shown.
3. Press **PRINT/SELECT** and...
PART is displayed. This stands for the part number for the software.
4. Press **PRINT/SELECT** and...
60259 is displayed. This is the software part number.
5. Press the **GN** or **PRINT/SELECT** key...
PART is displayed.
6. Press **HOLD/MENU** and...
DASH is displayed.
7. Press **PRINT/SELECT** and...
-0010 is displayed. This is the software dash number.
8. Press the **GN** or **PRINT/SELECT** key...
DASH is displayed.
9. Press **HOLD/MENU** and...
REV is displayed. This is the software revision number.
10. Press **PRINT/SELECT** and...
Rev A is displayed, for example. This is the software revision level.
11. Press the **GN** or **PRINT/SELECT** key...
REV is displayed.
12. Press **GN** key twice to return to the G/N weighing mode.

5 Factory Level Servicing

Using the menus in this section you can do the following:

- Reset the indicator to factory defaults
- Download new software to the indicator
- Perform a factory calibration

5.1 Resetting Factory Defaults

Figure 5.1 shows the Factory Default Menu. Use this to reset the system to factory defaults and also to download firmware to the indicator.

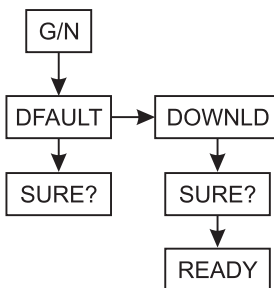


Figure 5.1 Factory Default menu

Accessing this menu will set all parameters to factory defaults.



CAUTION: *It is very important that you do this only if you are sure. All entered information is lost and there is no way to retrieve it.*

1. From the gross mode, press and hold on the **HOLD/MENU** key for three beeps (3 seconds), then release...
2. Use the numeric entry procedure and enter **222174**...
222174 is displayed.
3. Then press the **PRINT/SELECT** key...
DFAULT is displayed.
4. Press the **PRINT/SELECT** key again...
SURE? is displayed.
5. Press **G/N** key to return to **DFAULT** without resetting to the defaults, OR, If you are sure that you want to proceed, press the **PRINT/SELECT** key and the factory defaults will be loaded...
DFAULT is displayed.
6. Repeatedly press the **G/N** key to return to gross weighing mode.

5.2 Downloading New Software to the Model 640

If you are a certified service center and have the Model 640 Firmware Downloader Program, access the download mode on the indicator by following these steps:

1. From the gross mode, press and hold on the **HOLD/MENU** key for three beeps (3 seconds), then release...
2. Use the numeric entry procedure and enter 222174...
222174 is displayed.
3. Then press the **PRINT/SELECT** key...
DFAULT is displayed.
4. Press the **HOLD/MENU** key...
DOWNLD is displayed.
5. Press the **PRINT/SELECT** key...
SURE? is displayed.
6. If you are sure that you want to proceed, press the **PRINT/SELECT** key again...
READY is displayed.

The unit is now ready to download the updated firmware or software to the indicator. Connect the RS-232 serial cable assembly into the computer and into the RS-232 port on the Model 640. If the 640 does not have serial port, hook into the serial connector, P12, on the inside of the indicator on the main PC board.

7. Press the **DOWNLOAD** key on the PC software package...

The computer will give you the status during the download process. The indicator backlight will go off and the indicator will say **BUSY**. When complete, the indicator backlight will come back on and the display will show **HELLO** briefly, then return to the gross weighing mode.

Once the indicator software is updated and the indicator is powered on, we recommend setting the factory defaults as shown in [section 5.1](#), *Resetting Factory Defaults* and doing a factory calibration as shown in [section 5.3](#), *Accessing Factory Calibration Mode* before using.

5.3 Accessing Factory Calibration Mode

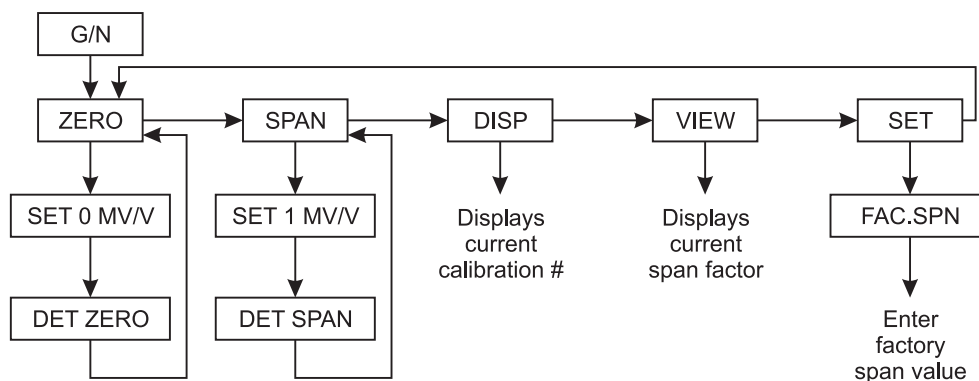


Figure 5.2 Factory Calibration Menu

Accessing this menu gives production or service access to calibrating factory calibration as follows: (1 mV/V = 10000 lb)

- From the gross mode, press and hold the **HOLD/MENU** key for three beeps (3 seconds), then release...
SET.PAS is displayed.
- Use the numeric entry procedure and enter **010101**...
010101 is displayed
- Then press the **PRINT/SELECT** key...
ZERO is displayed

5.4 Setting Zero Calibration

- From **ZERO**, press **PRINT/SELECT**...
SET.0MV is displayed.
- Dial calibrator to 0 mV/V and press **PRINT/SELECT**...
DET.ZER then **DONE** is displayed.
- Indicator returns to the **ZERO** display
- Press the **G/N** key to return to the gross weighing mode.

5.5 Setting the Span Calibration

1. From **ZERO**, press **HOLD/MENU**...
SPAN is displayed.
2. Press **PRINT/SELECT** and...
SET.1MV is displayed.
3. Dial calibrator to 1 mV/V, press **PRINT/SELECT**...
DET.SPN then **DONE** is displayed
4. Indicator returns to the **SPAN** display.
5. Press the **G/N** key to return to the gross weighing mode.

5.6 Viewing Current Calibration

1. From **ZERO**, press **HOLD/MENU** repeatedly until...
DISP is displayed.
2. Press **PRINT/SELECT** and...
Current weight calibration is displayed. (1.0mV/V = 10,000, 0.5mV/V = 5000)
3. Press **PRINT/SELECT**...
DISP is displayed.
4. Press the **G/N** key to return to the gross weighing mode.

5.7 Viewing Factory Span Factor

1. From **ZERO**, press **HOLD/MENU** repeatedly until...
VIEW is displayed.
2. Press **PRINT/SELECT** and...
Current span factor is displayed. 1 mV/V = 100000 if electronics are all exact. For example if off 0.01%, could read 99990
3. Press **PRINT/SELECT**...
VIEW is displayed
4. Press **G/N** key to return to the gross weighing mode.

5.8 Re-setting Factory Span Without Calibrating with a Simulator

Use this to return the unit to its factory calibration. You need to first retrieve the factory span value from the indicator, clear memory and re-enter the value at this point.

1. From **ZERO**, press **HOLD/MENU** repeatedly until...
SET is displayed.
2. Press **PRINT/SELECT** and...
FAC.SPN is displayed.
3. Enter factory span value...
Entered value is displayed.
4. Press **PRINT/SELECT** and...
SET is displayed
5. Press the **G/N** key to return to the gross weighing mode.

6 Appendix A: Custom Configuration Num. Table

Cal. size	No. of bars	Reading (lbs.) @.4mV/V	Reading (kg) @.4mV/V
5/8	1	92.3	41.8
5/8	2	184.5	83.7
5/8	3	276.8	125.5
5/8	4	369	167.4
5/8	5	461.3	209.2
5/8	6	553.6	251.1
5/8	7	645.8	292.9
5/8	8	738.1	334.8
1	1	375.3	170.2
1	2	750.6	340.5
1	3	1126	510.7
1	4	1501.3	681
1	5	1876.6	851.2
1	6	2251.9	1021.5
1	7	2627.2	1191.7
1	8	3002.6	1361.9
1 1/4	1	893	405
1 1/4	2	1785.9	810.1
1 1/4	3	2678.9	1215.1
1 1/4	4	3571.9	1620.2
1 1/4	5	4464.9	2025.2
1 1/4	6	5357.8	2430.3
1 1/4	7	6250.8	2835.3
1 1/4	8	7143.8	3240.4
1 7/8	1	2630	1193
1 7/8	2	5261	2386
1 7/8	3	7891	3579
1 7/8	4	10522	4773
1 7/8	5	13152	5966
1 7/8	6	15782	7159
1 7/8	7	18413	8352
1 7/8	8	21043	9545
2	1	3270	1483
2	2	6540	2967
2	3	9810	4450
2	4	13080	5933
2	5	16350	7416
2	6	19620	8900

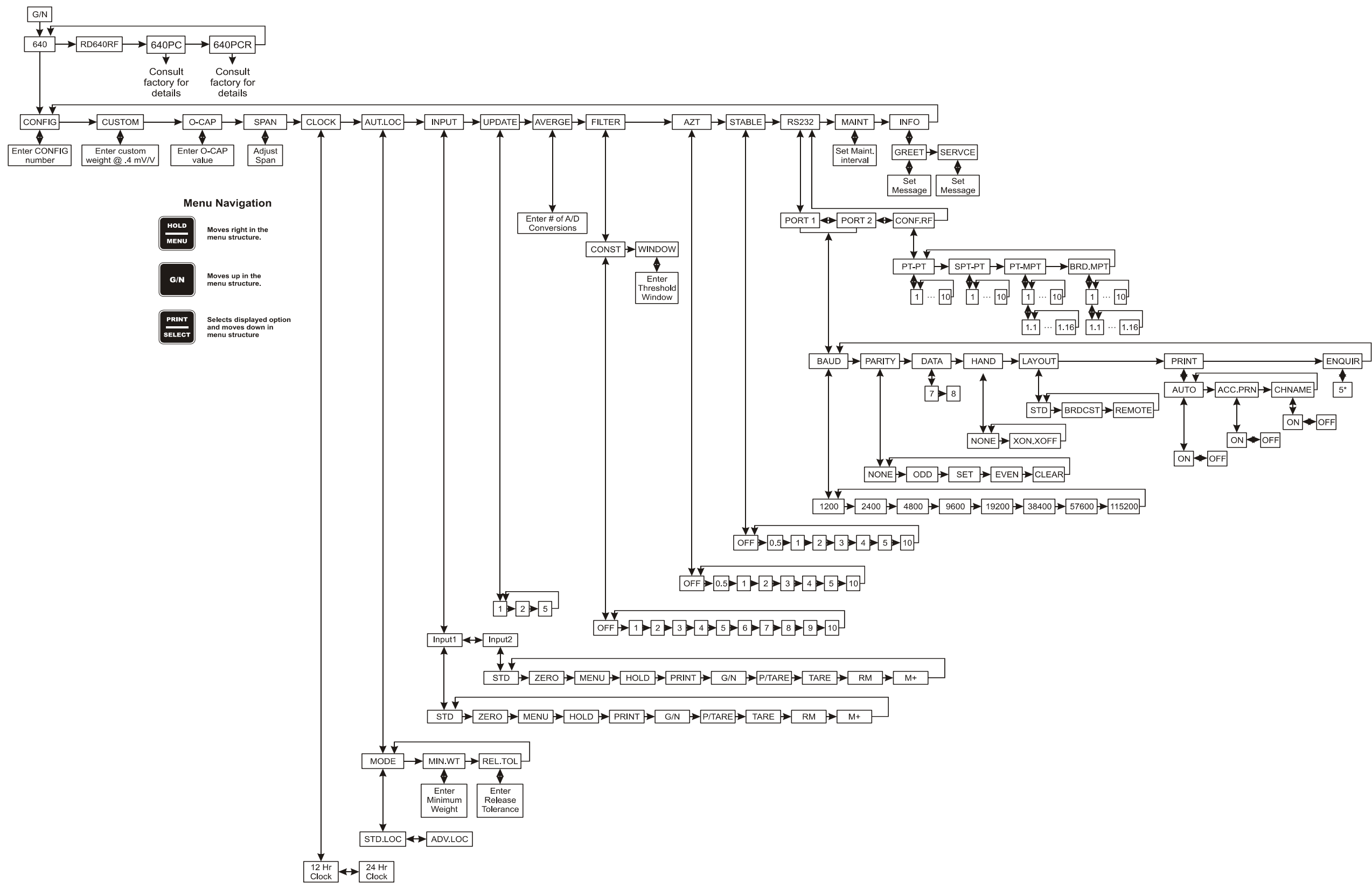
Cal. size	No. of bars	Reading (lbs.) @.4mV/V	Reading (kg) @.4mV/V
2	7	22890	10383
2	8	26160	11866
2 1/8	1	3753	1702
2 1/8	2	7506	3405
2 1/8	3	11260	5107
2 1/8	4	15013	6810
2 1/8	5	18766	8512
2 1/8	6	22519	10215
2 1/8	7	26272	11917
2 1/8	8	30026	13619
2 1/4	1	4613	2092
2 1/4	2	9226	4185
2 1/4	3	13839	6277
2 1/4	4	18452	8370
2 1/4	5	23065	10462
2 1/4	6	27678	12554
2 1/4	7	32291	14647
2 1/4	8	36904	16739
2 1/4Dual	1	9226	4185
2 1/4Dual	2	18452	8370
2 1/4Dual	3	27678	12554
2 1/4Dual	4	36904	16739
2 1/4Dual	5	46130	20924
2 1/4Dual	6	55356	25109
2 1/4Dual	7	64582	29294
2 1/4Dual	8	73808	33479
2 1/2	1	6427	2915
2 1/2	2	12853	5830
2 1/2	3	19280	8745
2 1/2	4	25706	11660
2 1/2	5	32133	14575
2 1/2	6	38559	17490
2 1/2	7	44986	20405
2 1/2	8	51412	23320
3 1/8	1	12955	5876
3 1/8	2	25910	11752
3 1/8	3	38864	17629
3 1/8	4	51819	23505
3 1/8	5	64774	29381
3 1/8	6	77729	35257

Cal. size	No. of bars	Reading (lbs.) @.4mV/V	Reading (kg) @.4mV/V
3 1/8	7	90684	41133
3 1/8	8	103638	47010
4	1	26523	12031
4	2	53046	24061
4	3	79569	36092
4	4	106092	48122
4	5	132615	60153
4	6	159137	72184
4	7	185660	84214
4	8	212183	96245
Alley Weigh bar	1	389	176
Alley Weigh bar	2	778	353
Alley Weigh bar	3	1167	529
Alley Weigh bar	4	1556	706
Alley Weigh bar	5	1946	882
Alley Weigh bar	6	2335	1059
Alley Weigh bar	7	2724	1235
Alley Weigh bar	8	3113	1412
Chute Weigh bar	1	2630	1193
Chute Weigh bar	2	5261	2386
Chute Weigh bar	3	7891	3579
Chute Weigh bar	4	10522	4773
Chute Weigh bar	5	13152	5966
Chute Weigh bar	6	15782	7159
Chute Weigh bar	7	18413	8352
Chute Weigh bar	8	21043	9545
CC-20/CC-30	1	5634	2555
CC-20/CC-30	2	11268	5111

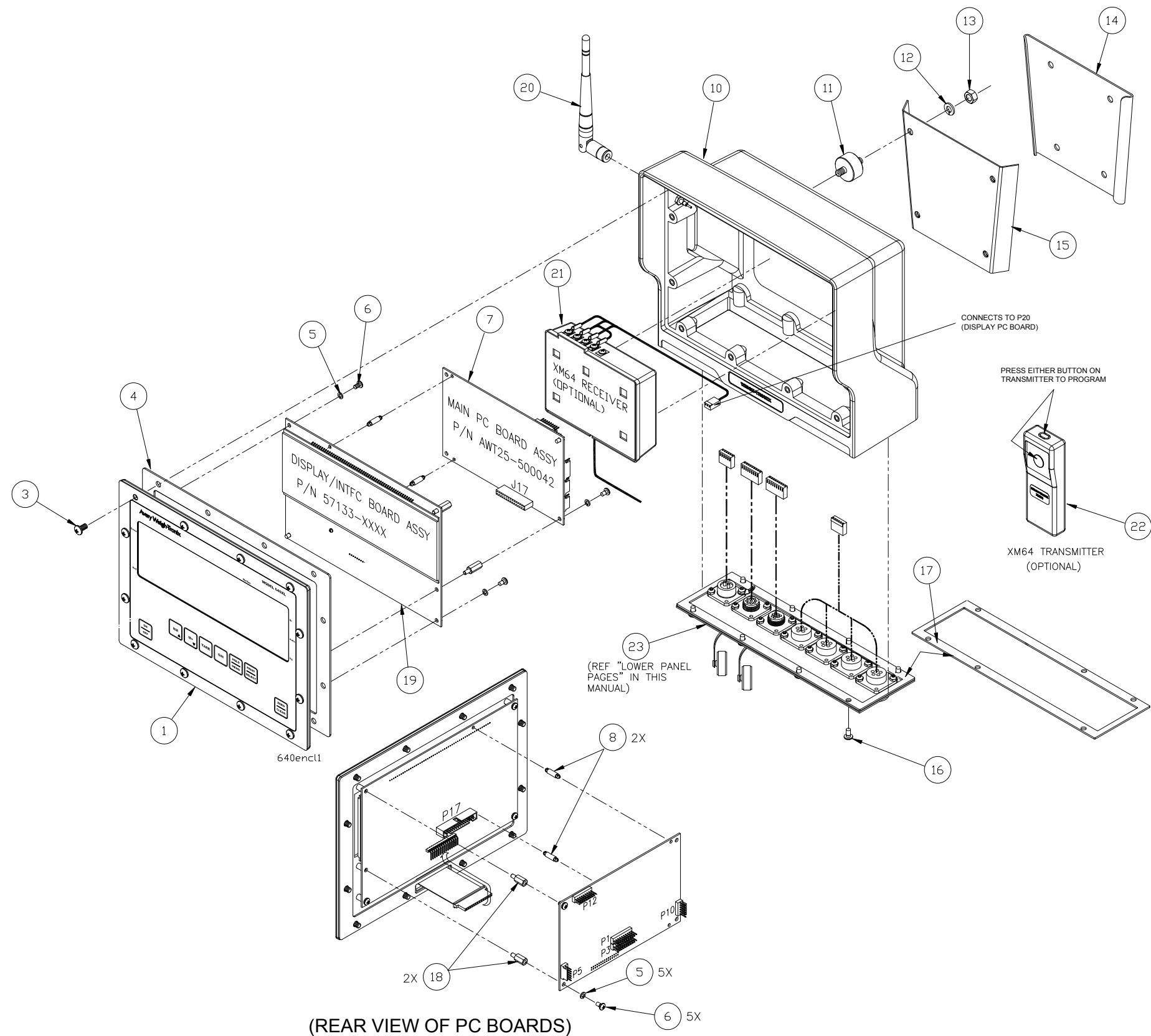
Cal. size	No. of bars	Reading (lbs.) @.4mV/V	Reading (kg) @.4mV/V
CC-20/CC-30	3	16901	7666
CC-20/CC-30	4	22535	10222
CC-20/CC-30	5	28169	12777
CC-20/CC-30	6	33803	15333
CC-20/CC-30	7	39437	17888
CC-20/CC-30	8	45070	20444
CC-30-3	1	4000	1814
CC-30-3	2	8000	3629
CC-30-3	3	12000	5443
CC-30-3	4	16000	7257
CC-30-3	5	20000	9072
CC-30-3	6	24000	10886
CC-30-3	7	28000	12701
CC-30-3	8	32000	14515
CC-50	1	8000	3629
CC-50	2	16000	7257
CC-50	3	24000	10886
CC-50	4	32000	14515
CC-50	5	40000	18144
CC-50	6	48000	21772
CC-50	7	56000	25401
CC-50	8	64000	29030

7 Technical Illustrations

7.1 Complete Service Menu

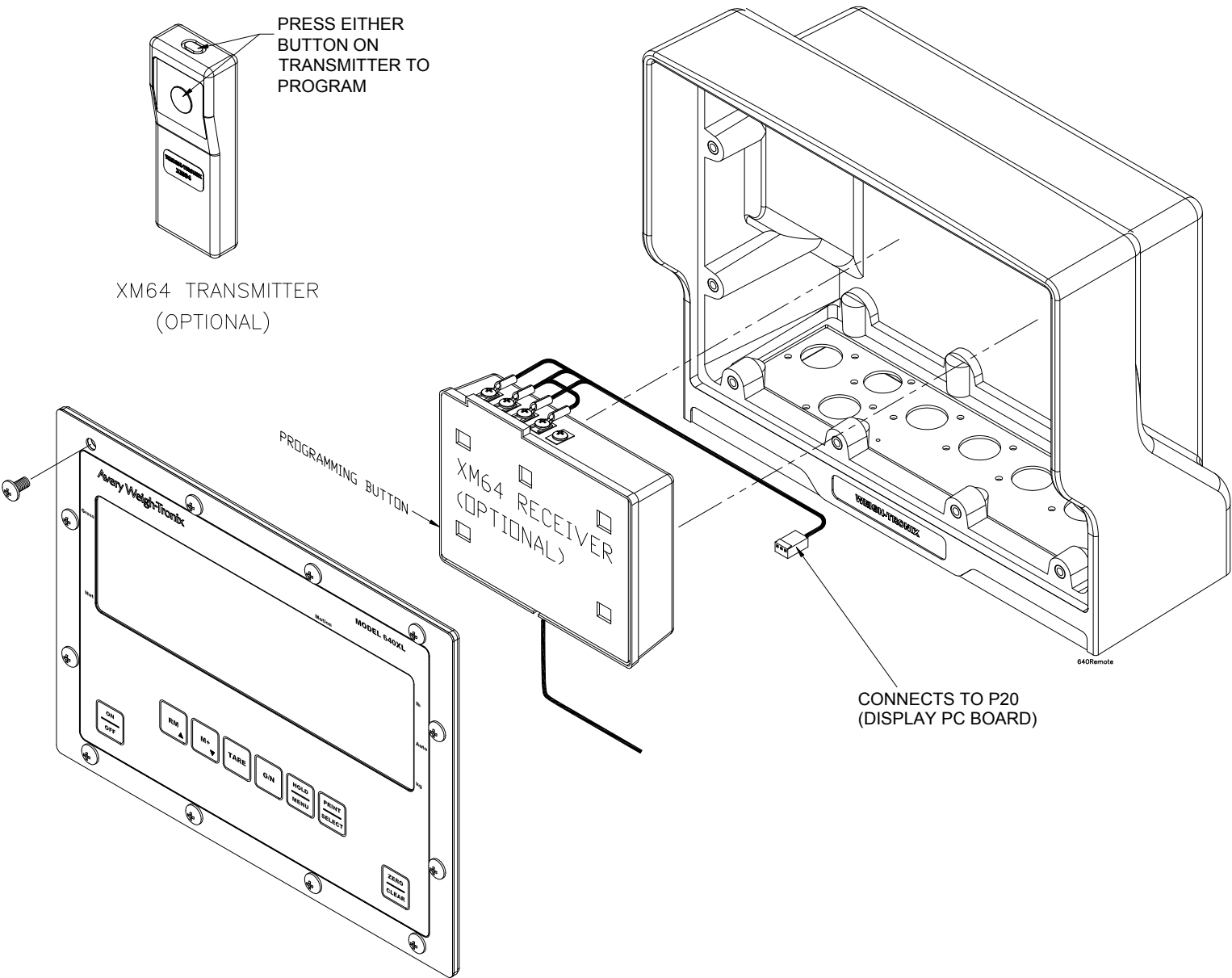


7.2 MODEL 640-Std / 640-XL Indicator (parts and assembly)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Keypad/Backer Plate Assy, (Std.) (includes gasket) Keypad/Backer Plate Assy, (XL) (includes gasket)	57755-0015 57755-0023	1
2	--NO PART--	-----	---
3	Screw, #10-32 x .38"L	14503-8030	12
4	Replacement Gasket, sticky one side, (for item 1)	47694-0010	1
5	Lock Washer, #6	14474-0032	5
6	Screw, #6-32 x .25"L	14473-0223	5
7	Main Pc Bd Assy Main Pc Bd Assy (w/ RF, optional)	AWT25-500042 AWT25-500043	1 1
8	Spacer	52590-0064	2
9	--NO PART--	-----	---
10	Enclosure Enclosure with hole for "RF" antenna (optional)	47017-0010 57916-0011	1 1
11	Rubber Vibration Mount (incl. w/ Indicaror)	17807-0108	4
12	Lock Washer, .25" (incl. w/ Indicaror)	14474-0198	4
13	Hex Nut, .25-20 (incl. w/ Indicaror)	14471-0209	4
14	Mtg. Bracket (optional)	12339-0015	1
15	Mtg. Bracket (included w/ Indicator)	11899-0043	1
16	Screw, #8-32 x .31"L	14473-0348	8
17	Replacement Gasket, sticky one side (for item 20)	47695-0019	1
18	Standoff, hex, #6-32 x .44"L, M/F	15437-5018	2
19	Display/Interface XL Board Assy (large display) Display/Interface Board Assy (std. display)	57133-0026 57133-0034	1 1
20	RF Antenna (optional)	60147-0016	1
21	XM64 Receiver, std. version-315MHz (optional) XM64 Receiver, Euro. version-433MHz (optional)	55096-0017 55096-0025	1 1
22	XM64 Transmitter, std. version-315MHz (optional) XM64 Transmitter, Euro. version-433MHz (optional)	55096-0017 55096-0025	1 1
23	Lower Panel Assembly options: (for complete description and p/n's, refer to "lower panel option pages" in this manual)		

7.3 MODEL 640-Std / 640-XL Indicator (Remote XMTR / RCVR (optional) Programming Instructions)



The following are instructions for the transmitter receiver kits used in the Model 640/XL products. Please read through the following when debugging the XM-64 operation.

Checking Memory:

1. Press the program button on the receiver and hold for about two seconds until the Red LED illuminates, the release.
2. Count the number of times the Red LED blinks, this is the total number of transmitters programmed into the receiver.

Erasing Memory:

1. Press the program button on the receiver and continue to hold it through the count of the transmitters.
2. Continue to Hold the button after the count until the indicator blinks one more time (about five seconds after the count).
3. All transmitters programmed into the memory will be erased.

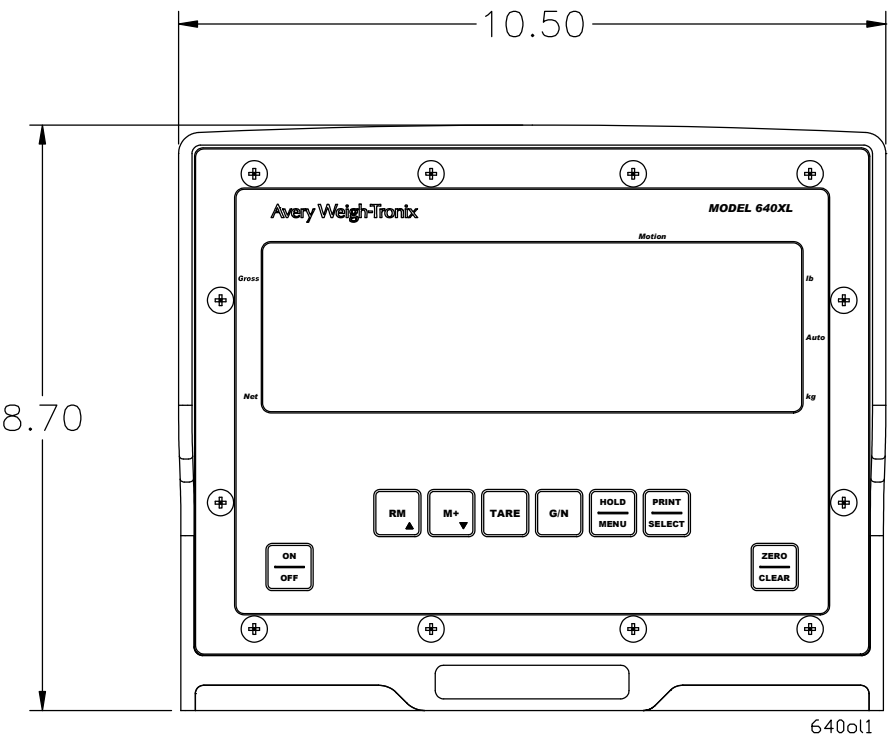
Programming Memory:

1. Press and release program button on the receiver.
2. Program indicator will light if there is room in memory for another transmitter. (32 transmitters max)
3. Press the button on the transmitter (XM64), indicator on receiver will flicker as signal is received.
4. Repeat the above three steps for each additional transmitter.

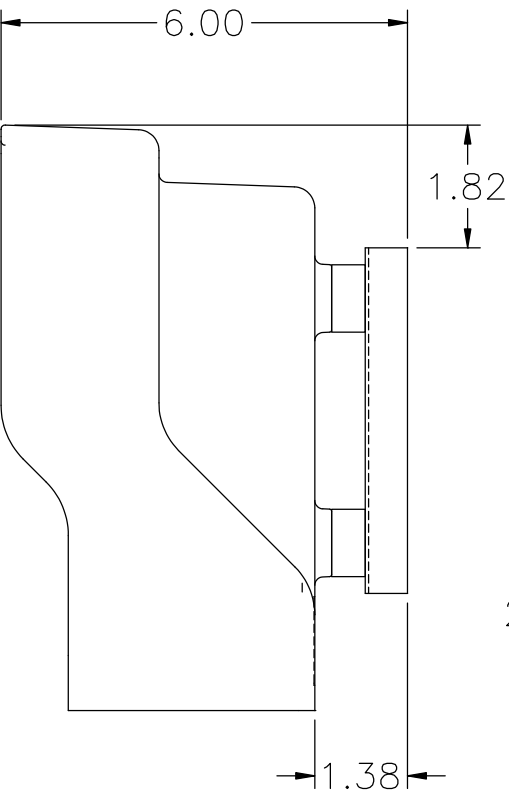


The receiver can memorize each transmitter more than once. To prevent duplicate entries, program each transmitter into receiver only once.

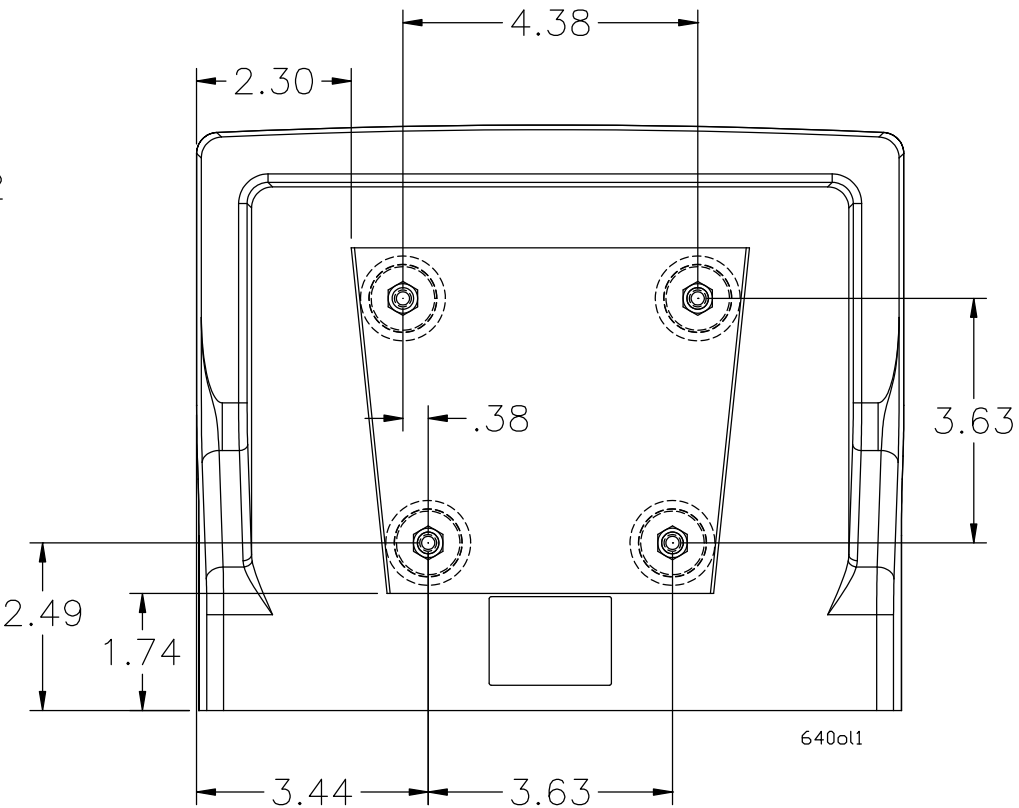
7.4 MODEL 640-Std / 640-XL Indicator (Dimensional Outline Drawing)



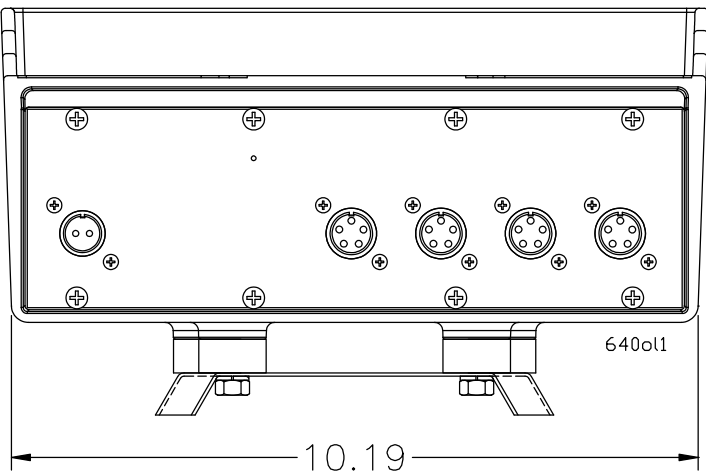
〈FRONT VIEW〉



〈SIDE VIEW〉

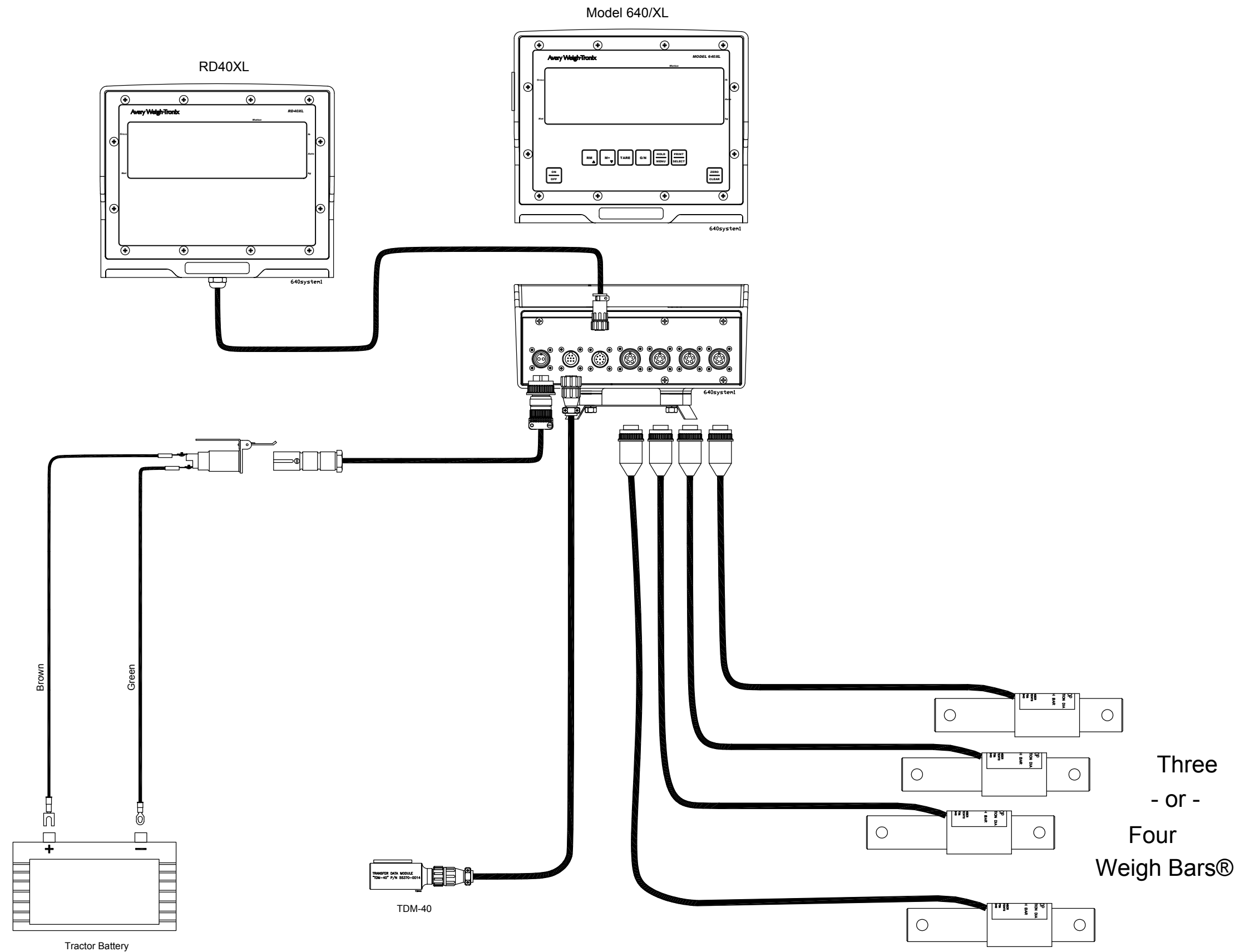


〈REAR VIEW〉

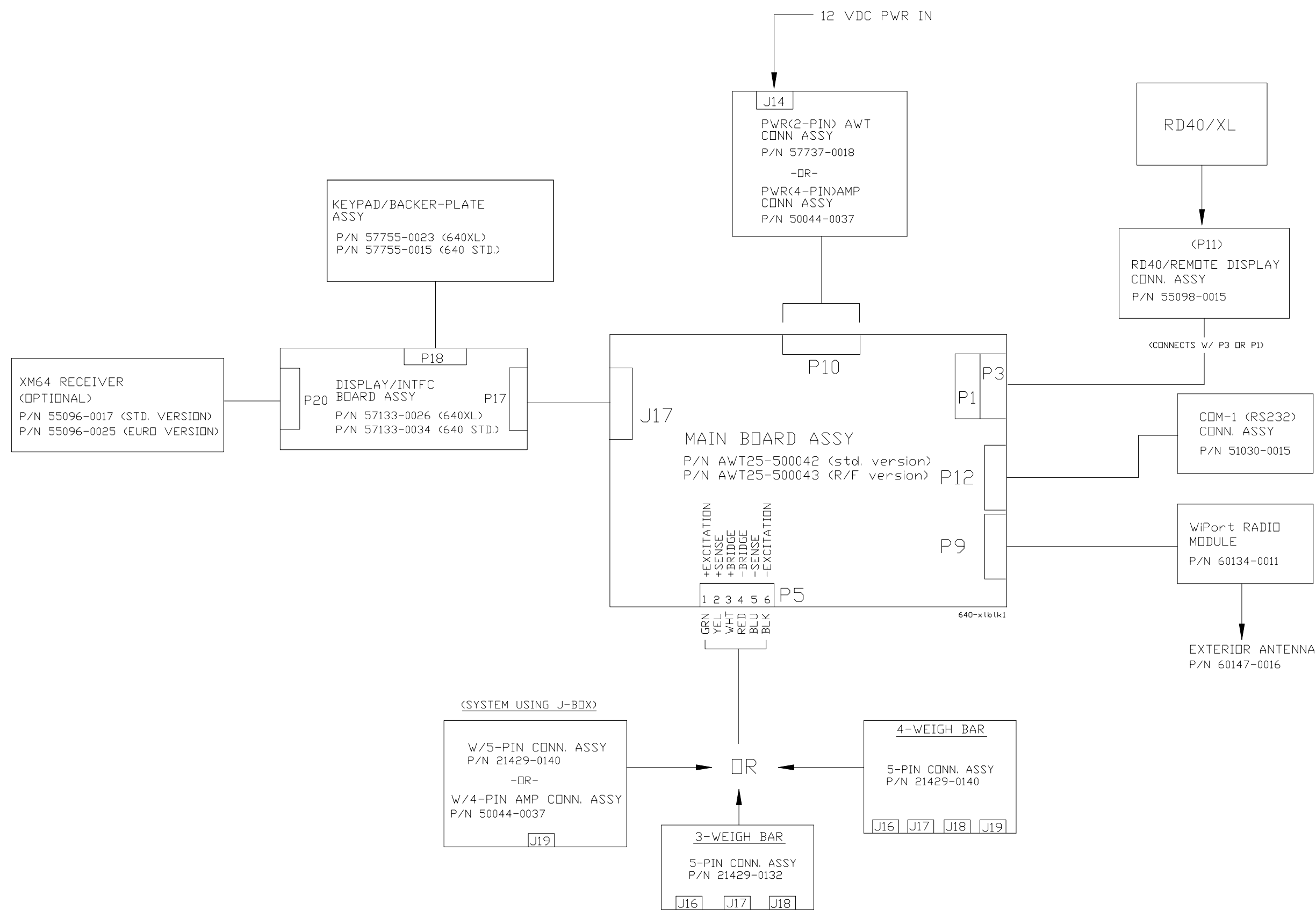


〈BOTTOM VIEW〉

7.5 MODEL 640-Std / 640-XL Indicator (External System Diagram)

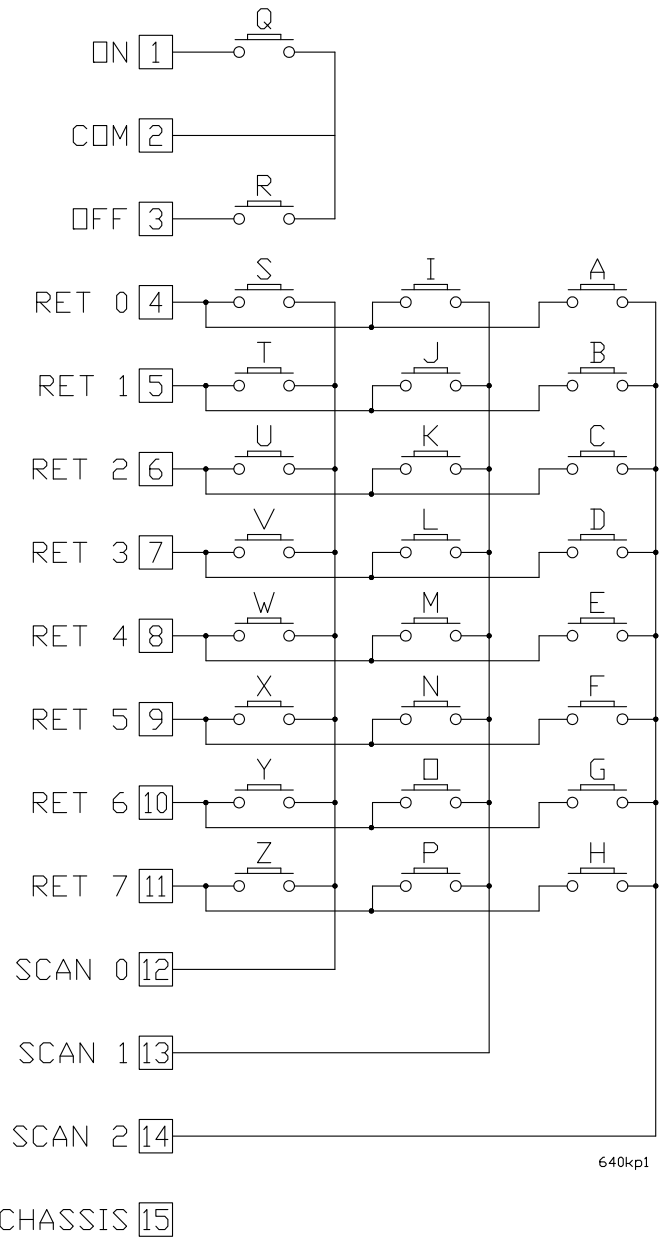
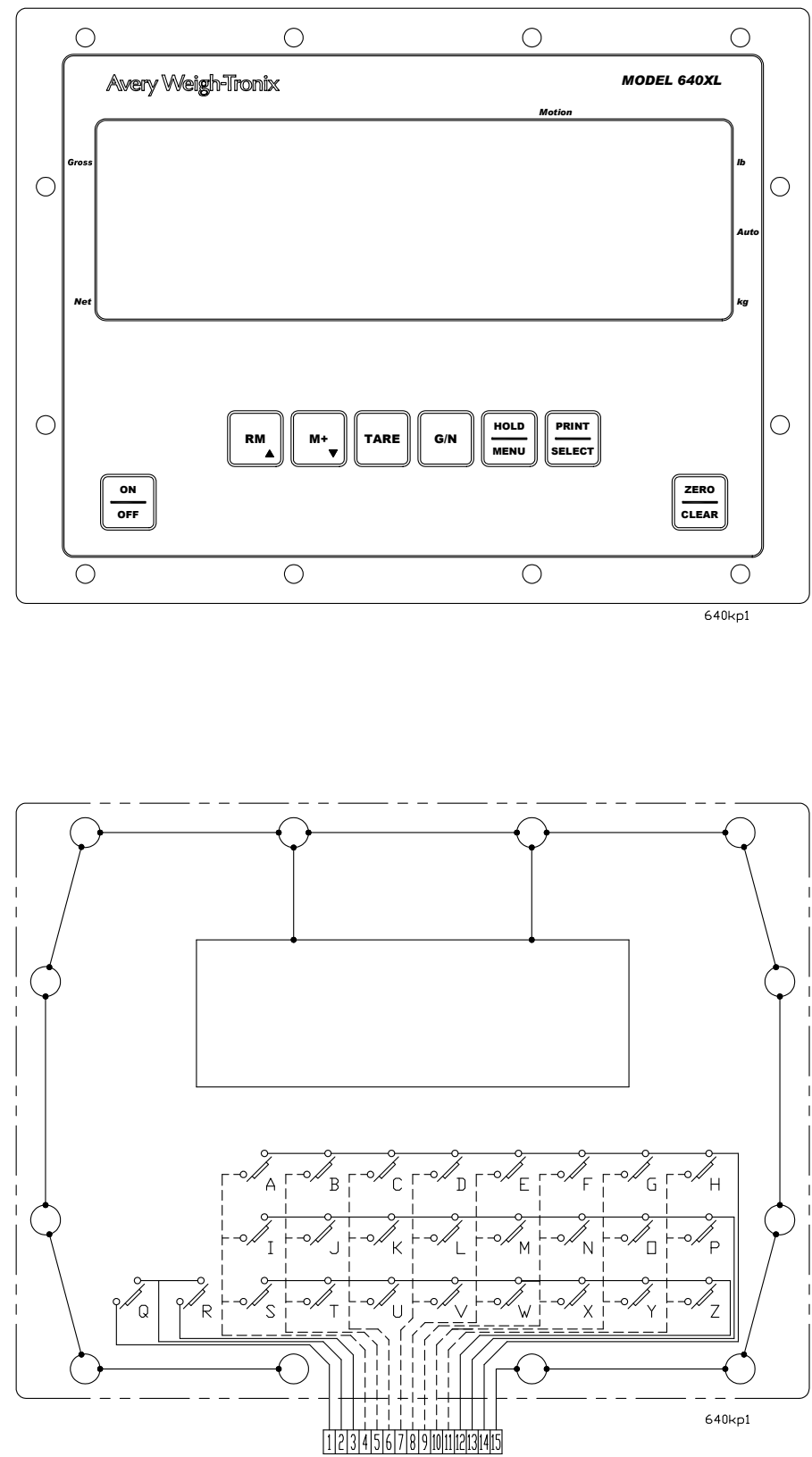


7.6 MODEL 640-Std / 640-XL Indicator (Internal System Block Diagram)



7.7 MODEL 640-Std / 640-XL Indicator (Keypad/Backer Plate Assy)

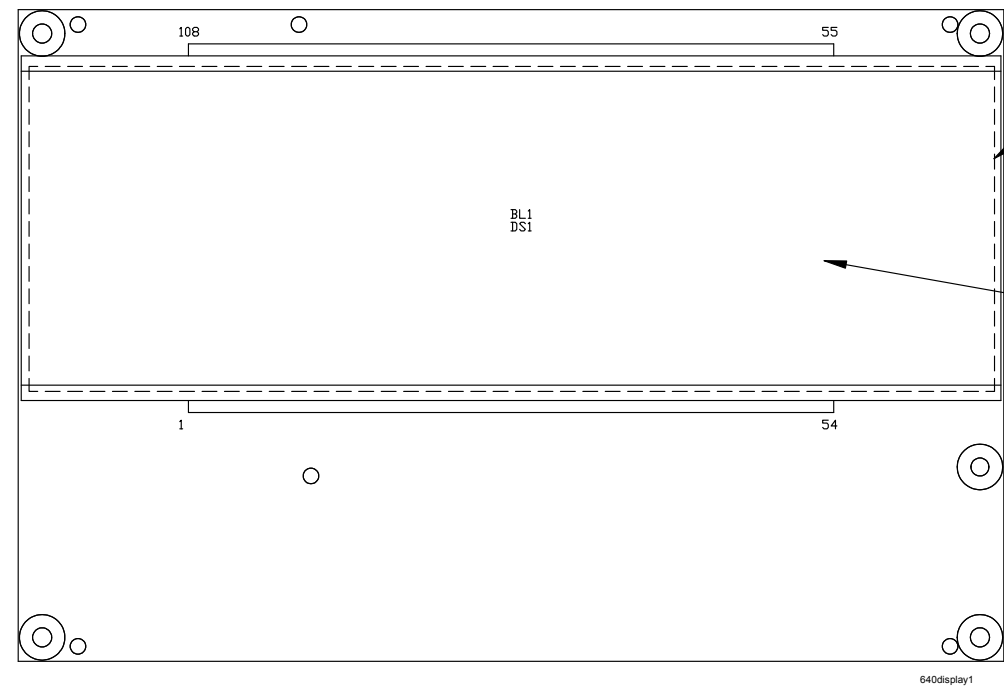
P/N 55085-0135 (XL keypad)
P/N 55085-0127 (std. keypad)



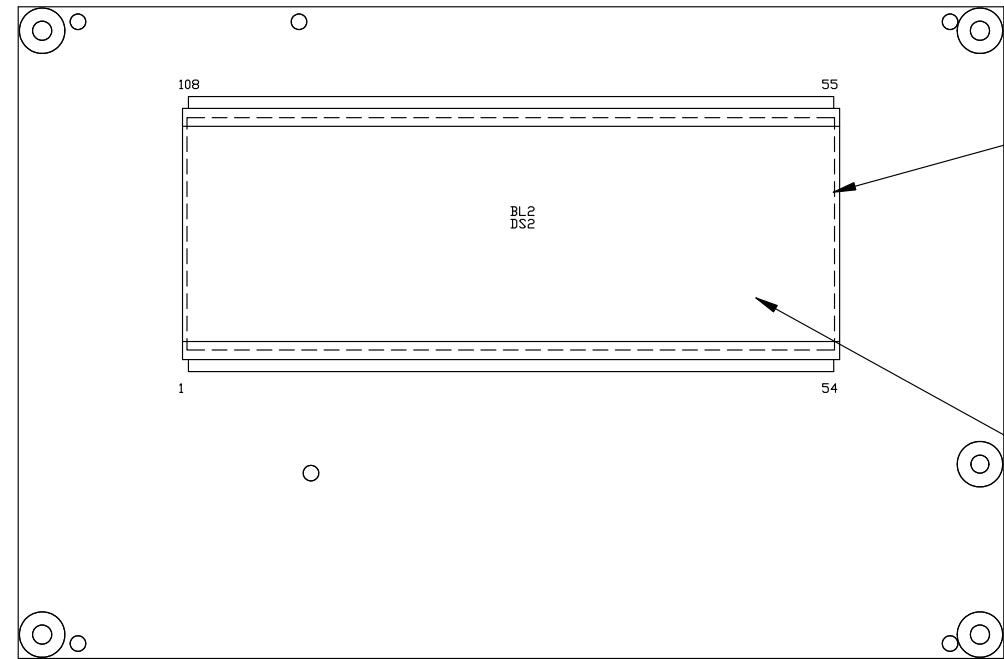
SCHEMATIC DIAGRAM

7.8 MODEL 640-Std / 640-XL Indicator (Display and Keypad Interface PC Board)

P/N 57133-0026 (XL display)
P/N 57133-0034 (std. display)



DISPLAY SIDE, "XL DISPLAY"



DISPLAY SIDE, "STANDARD DISPLAY"

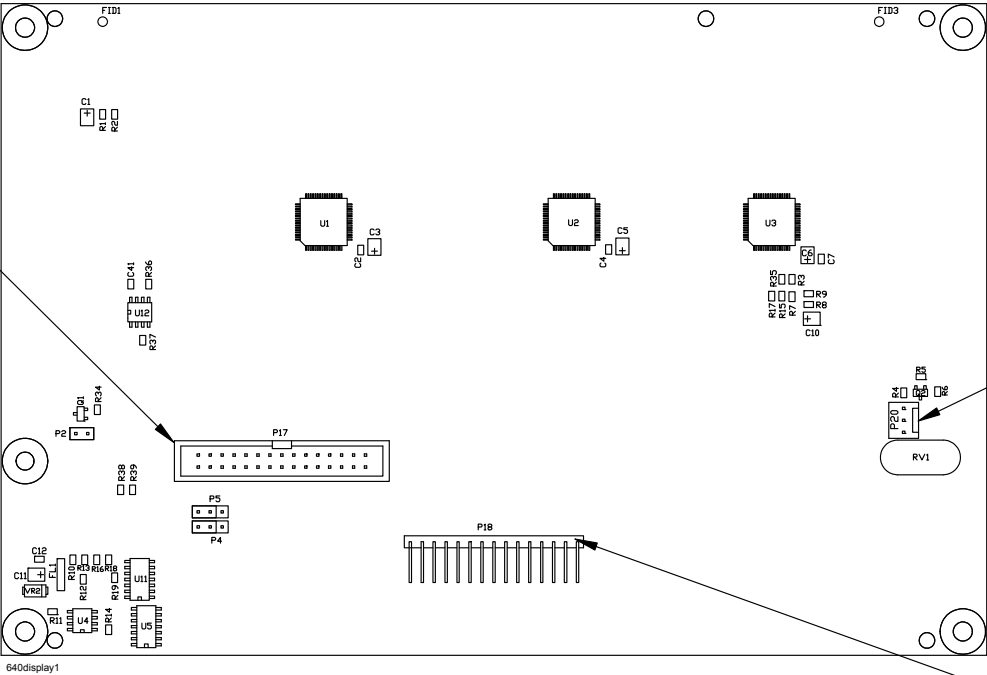
BACKLIGHT (BL1) REPLACEMENT:
P/N 60167-0029

DISPLAY (DS1) REPLACEMENT:
P/N 60210-0042

CONNECTS WITH
J-17, MAIN BOARD.

BACKLIGHT (BL1) REPLACEMENT:
P/N 60167-0011

DISPLAY (DS1) REPLACEMENT:
P/N 60210-0034



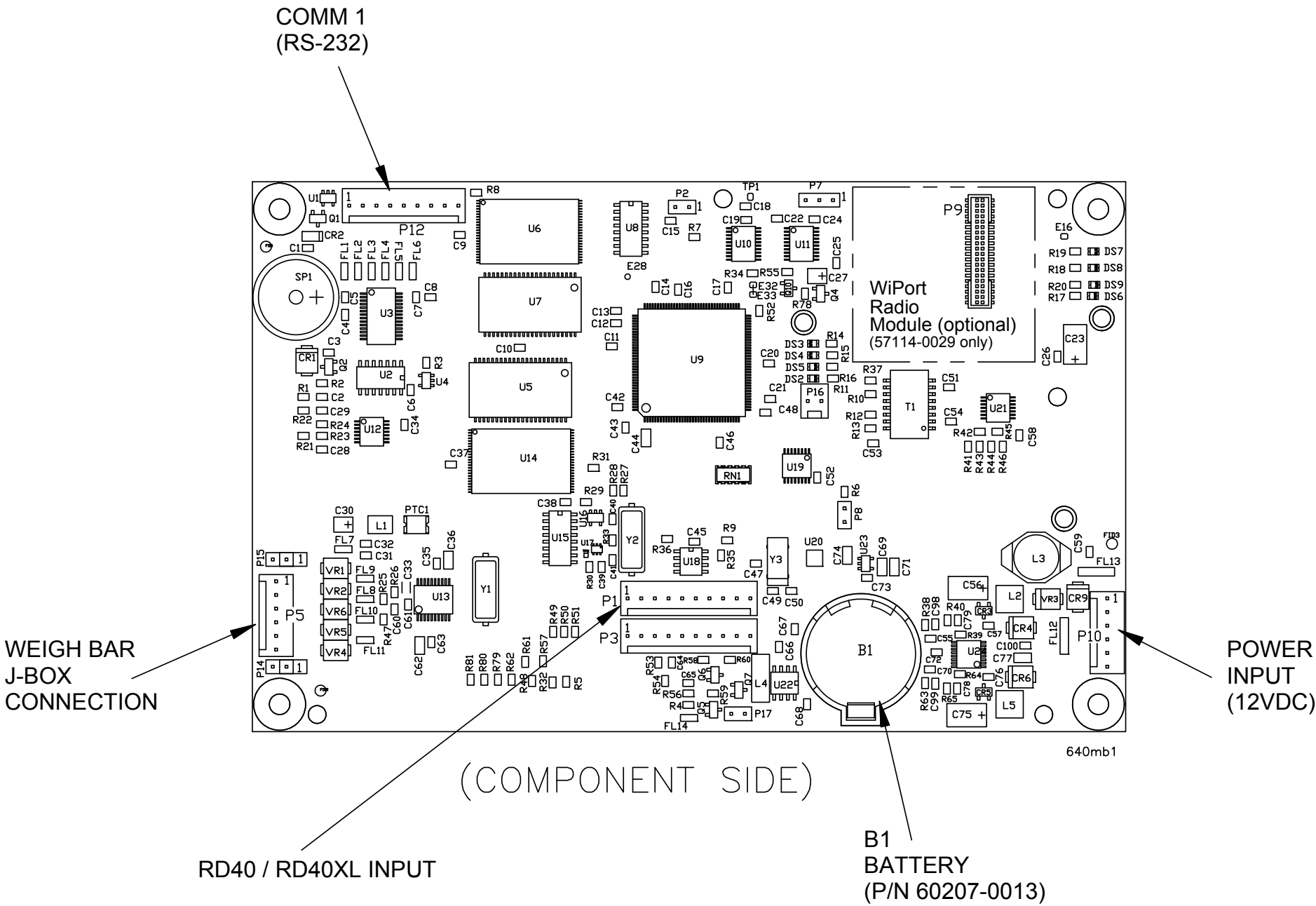
COMPONENT SIDE (BOTH VERSIONS)

XM64 RECEIVER
CONNECTION

FRONT PANEL KEYPAD
CONNECTION

7.9 MODEL 640-Std / 640-XL Indicator (Main PC Board Assy)

P/N AWT25-500042 (std. and XL)
P/N AWT25-500043 (RF Module option) (std. and XL)

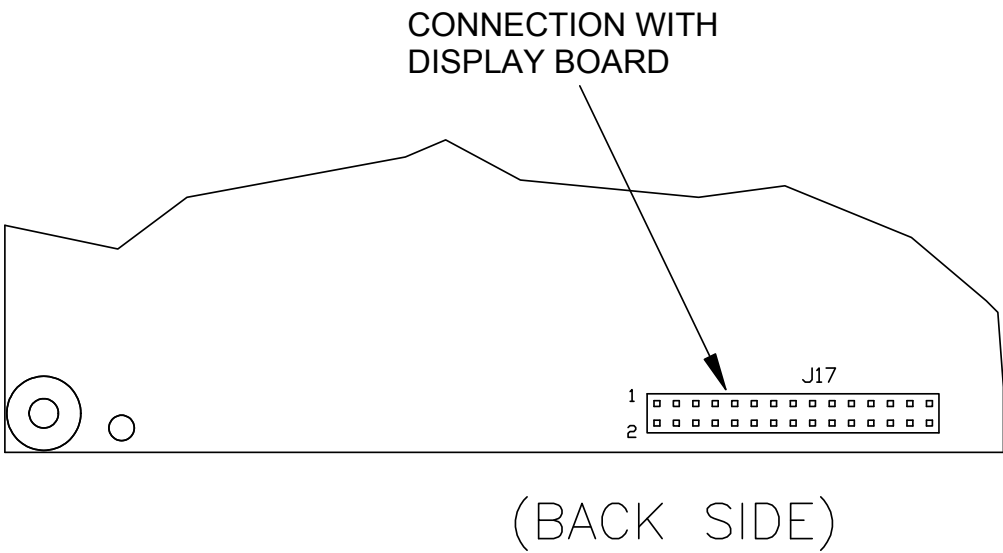


CAUTION !

DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.

REPLACE BATTERY (B1) ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER.

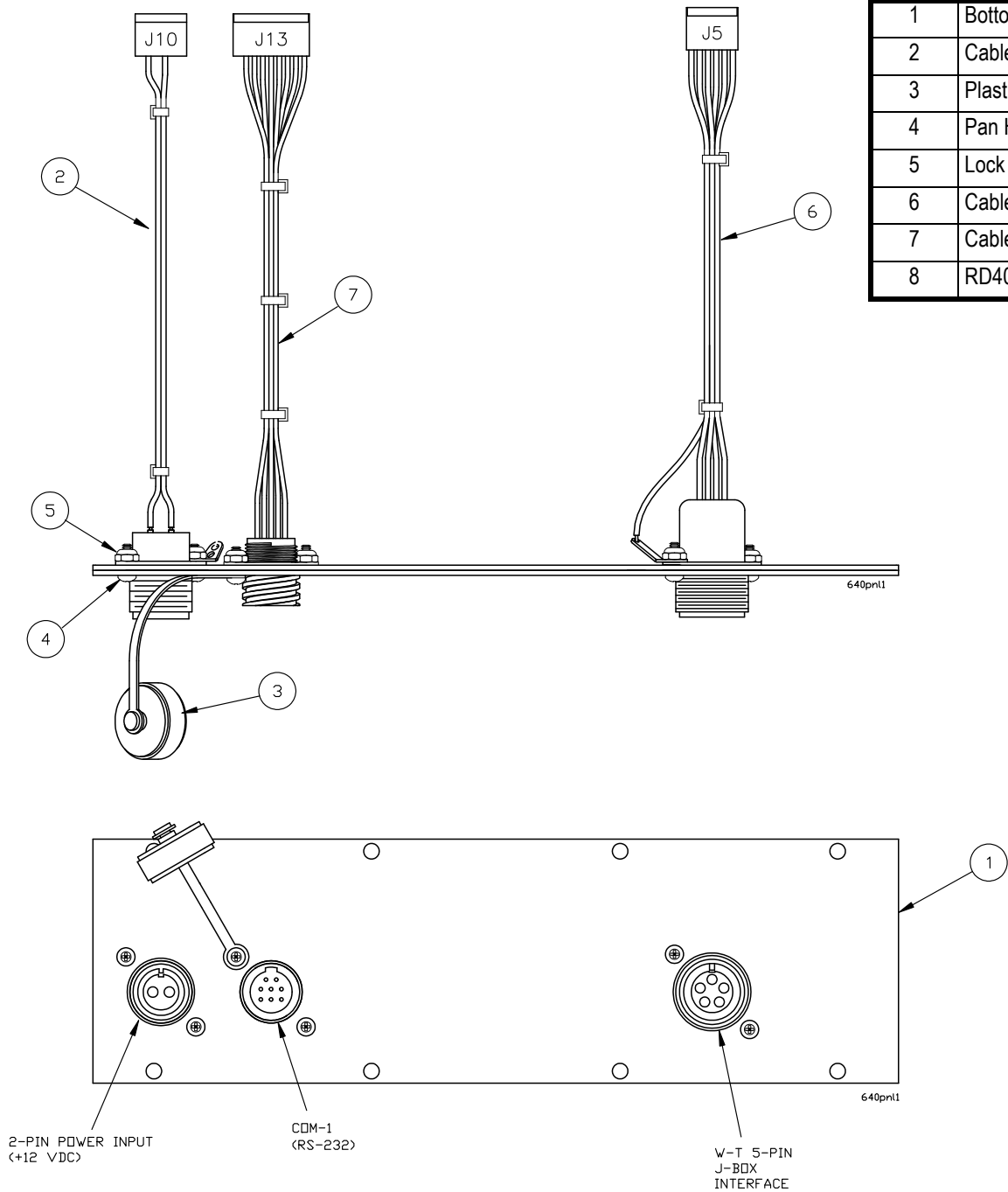
DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.



7.10 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box)

Complete Panel Assembly as shown:
Single 5-pin w/ RS232, p/n 57746-2013

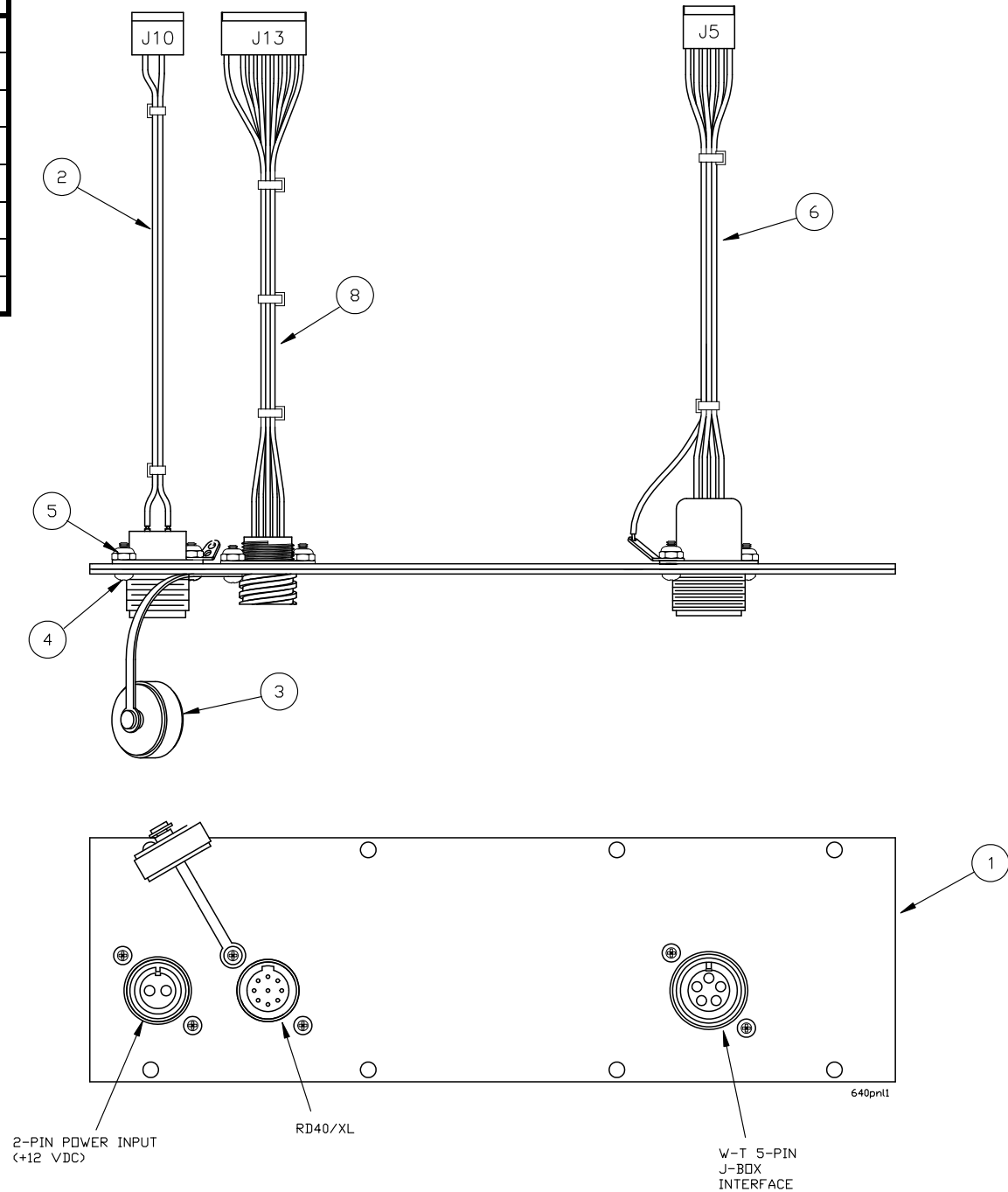
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0051	1
2	Cable/Connector Assy, (2-pin input power)	57737-0018	1
3	Plastic Cap Assy	48684-0010	1
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	8
5	Lock Nut, #4 (stainless)	14464-0026	8
6	Cable/Connector Assy (weigh bar 5-pin)	21429-0140	1
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1

Complete Panel Assembly as shown:
Single 5-pin w/ Remote Display, p/n 57746-2021

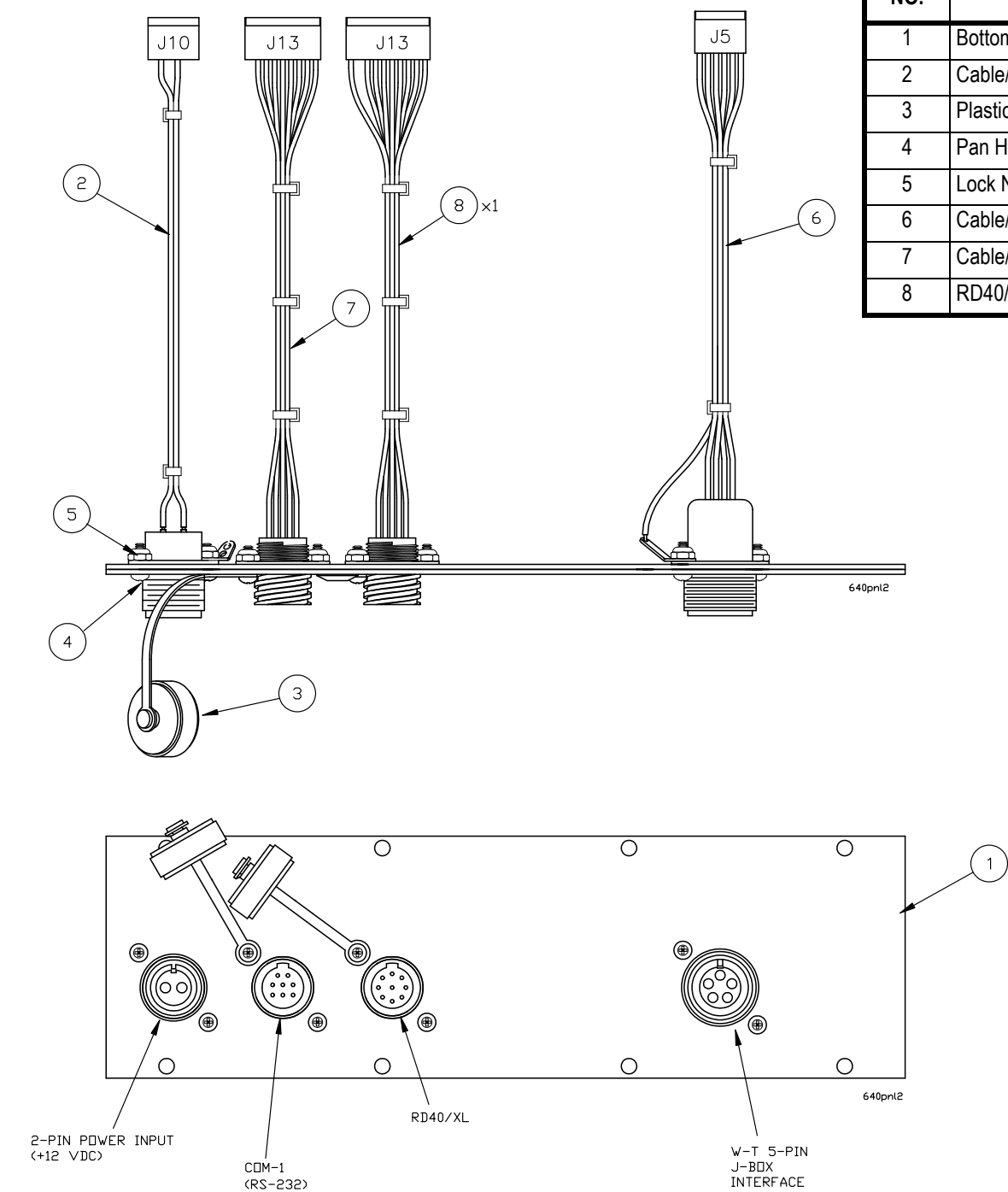
(Also Ref. "Pin-Out" Pages in this manual)



7.11 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box)

Complete Panel Assembly as shown:
Single 5-pin w/ RS232 & Remote Display, p/n 57746-2039

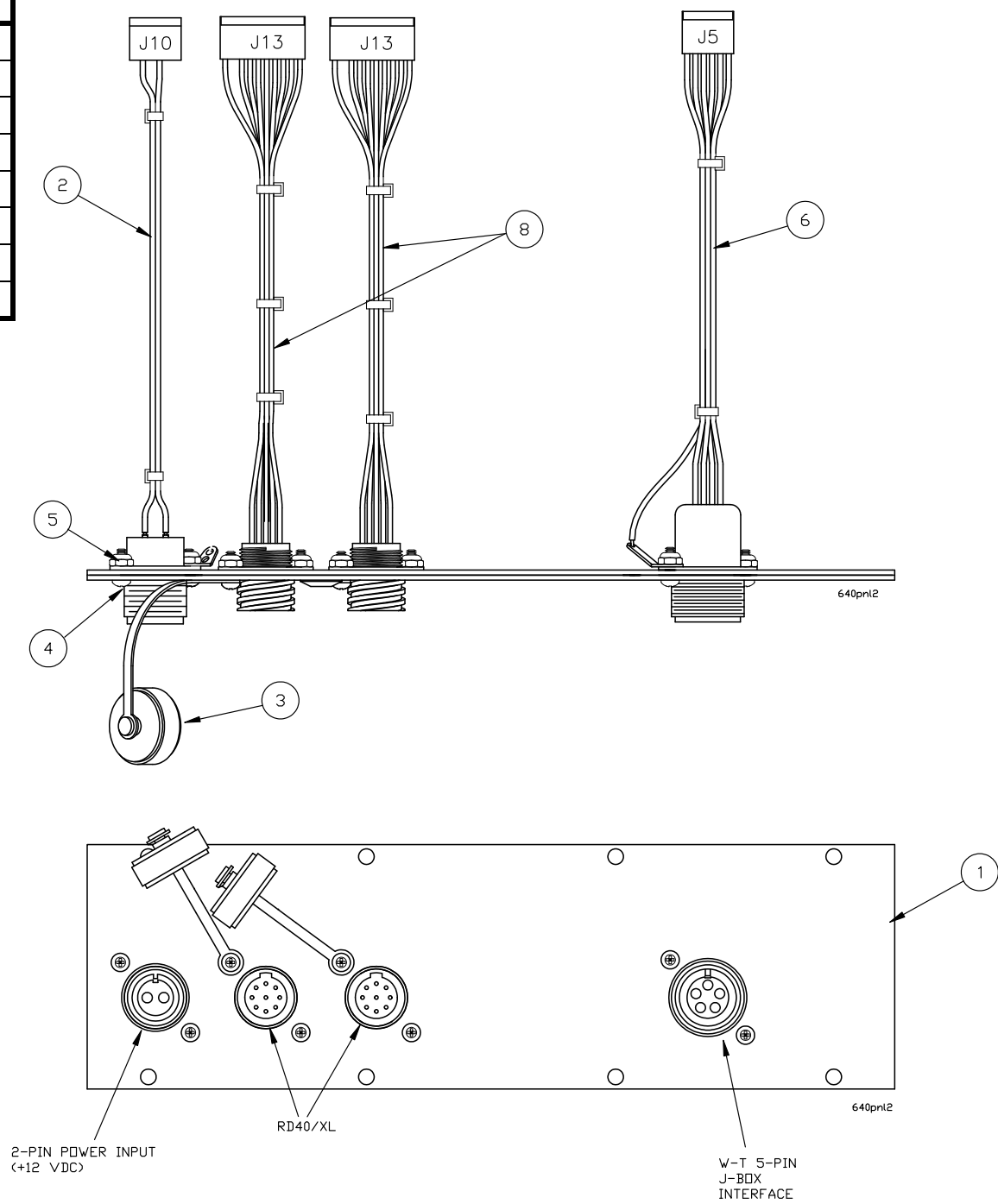
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0069	1
2	Cable/Connector Assy, (2-pin input power)	57737-0018	1
3	Plastic Cap Assy	48684-0010	2
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	6
5	Lock Nut, #4 (stainless)	14464-0026	6
6	Cable/Connector Assy (weigh bar 5-pin)	21429-0140	1
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1 or 2

Complete Panel Assembly as shown:
Single 5-pin w/ 2 Remote Displays, p/n 57746-2047

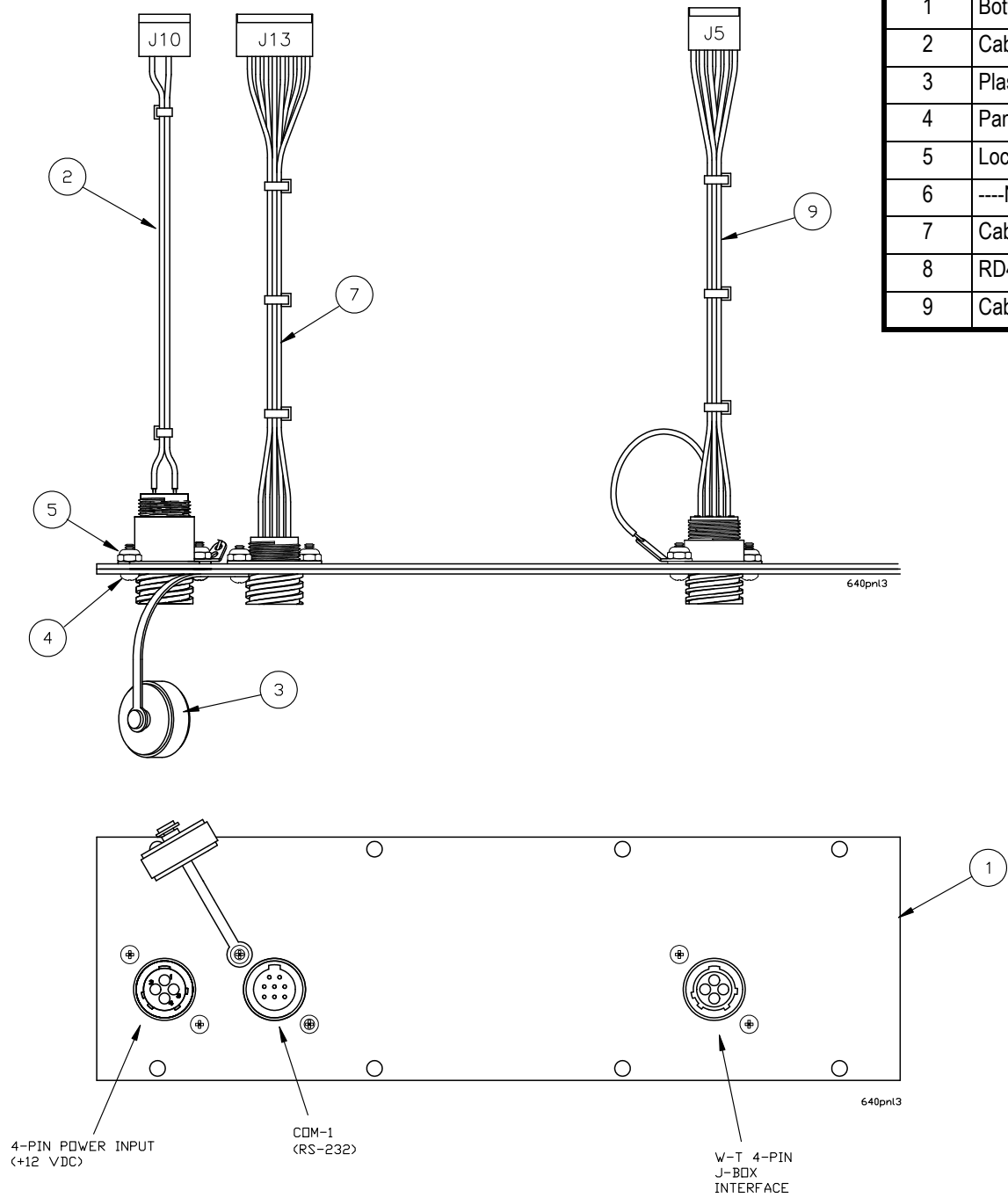
(Also Ref. "Pin-Out" Pages in this manual)



7.12 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box)

Complete Panel Assembly as shown:
Single AMP w/ RS232, p/n 57747-2012

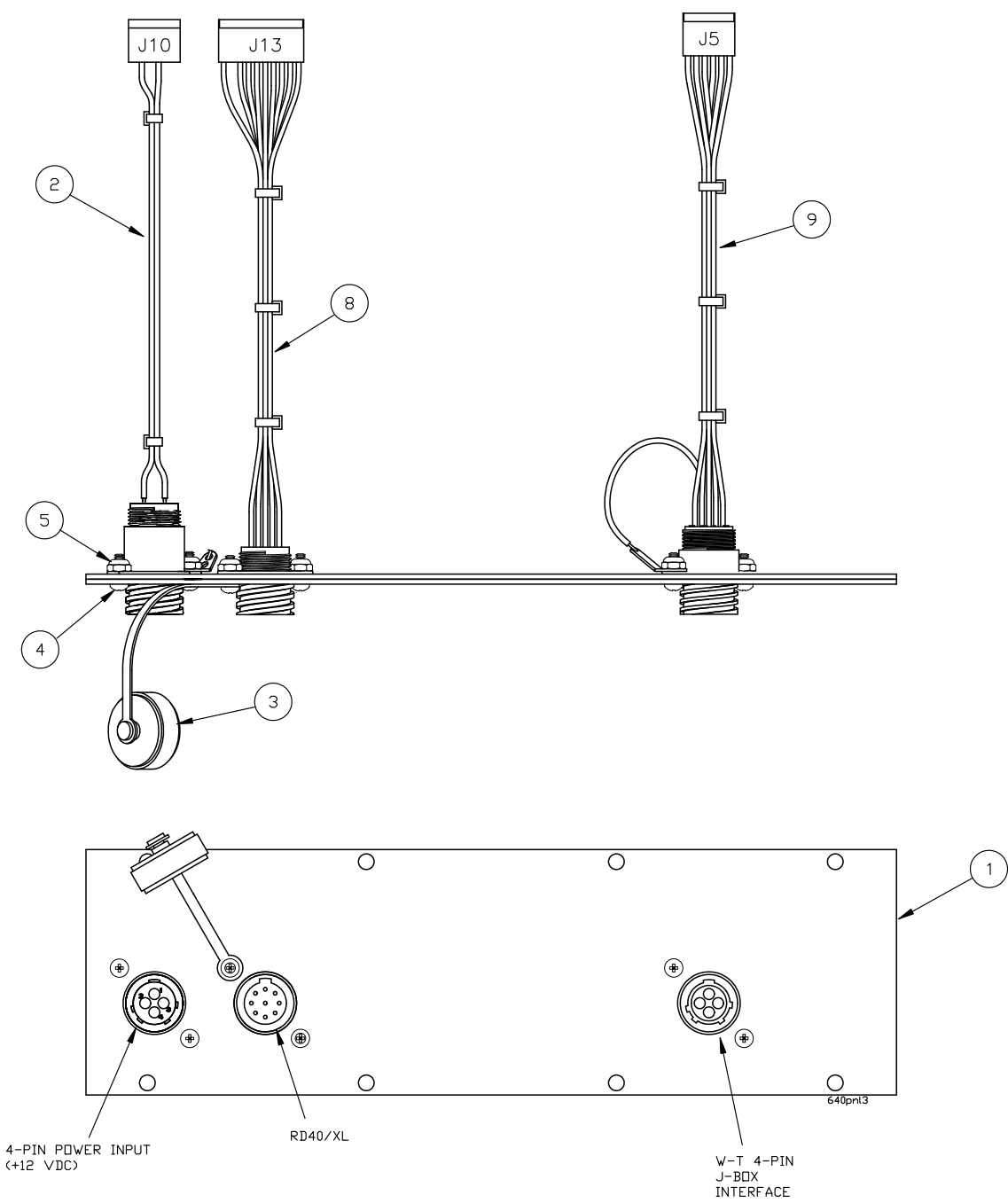
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0051	1
2	Cable/Connector Assy, (4-pin input power)	57737-0026	1
3	Plastic Cap Assy	48684-0010	1
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	6
5	Lock Nut, #4 (stainless)	14464-0026	6
6	---No Part---	----	----
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1
9	Cable/Connector Assy (weigh bar 4-pin)	50044-0037	1

Complete Panel Assembly as shown:
Single AMP w/ Remote Display, p/n 57747-2020

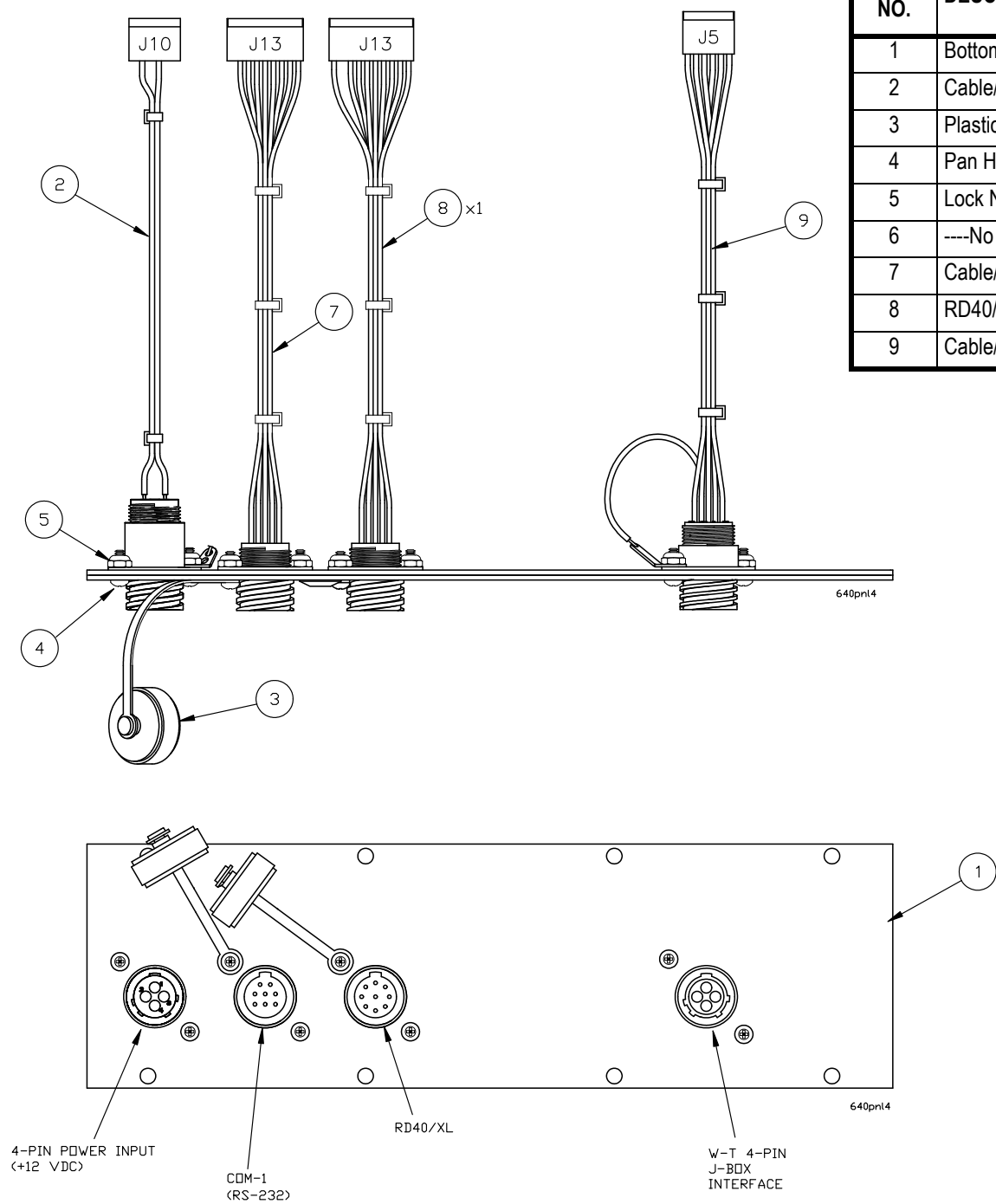
(Also Ref. "Pin-Out" Pages in this manual)



7.13 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems Using J-box)

Complete Panel Assembly as shown:
Single AMP w/ RS232 & Remote Display, p/n 57747-2038

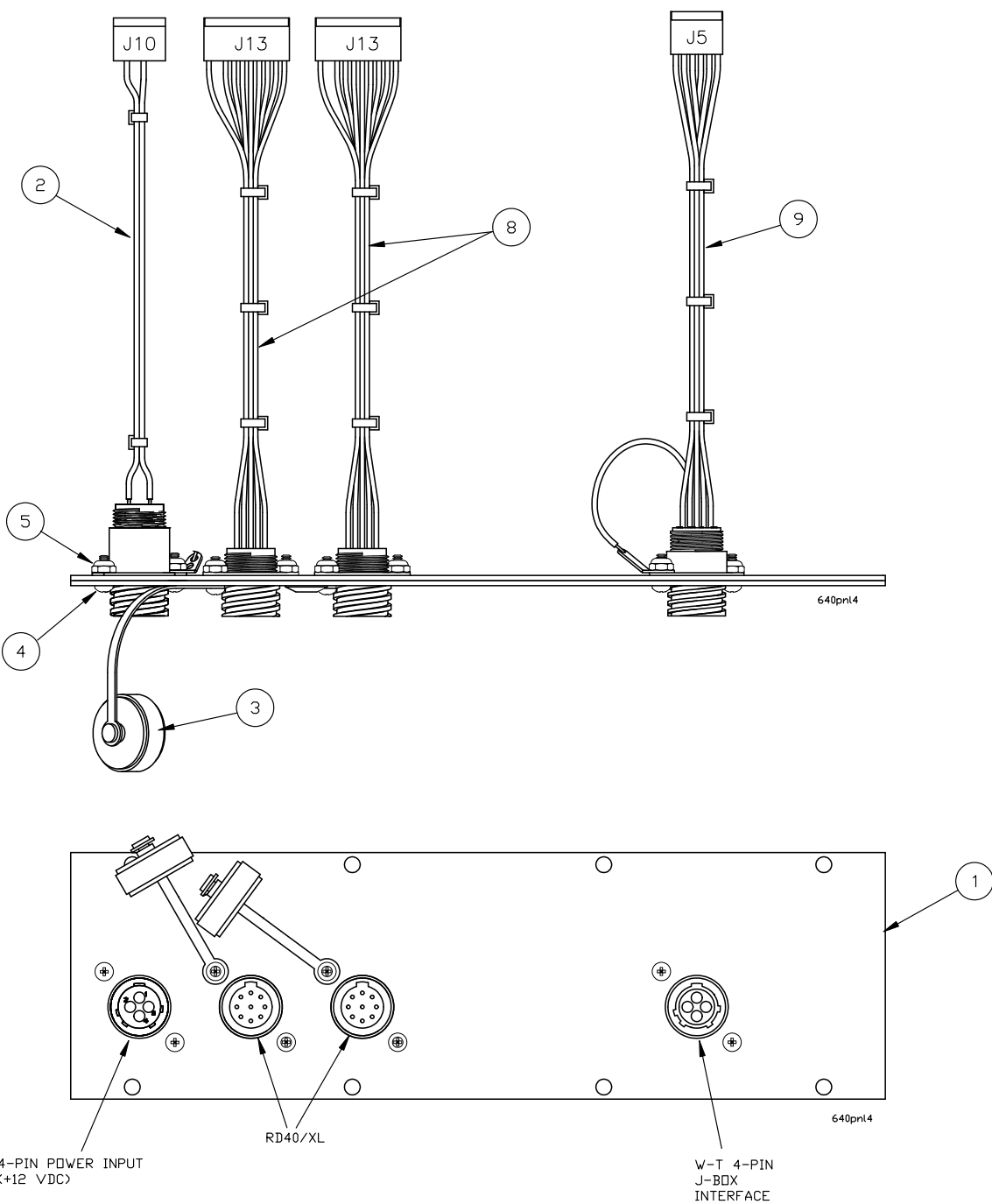
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0069	1
2	Cable/Connector Assy, (4-pin input power)	57737-0026	1
3	Plastic Cap Assy	48684-0010	2
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	8
5	Lock Nut, #4 (stainless)	14464-0026	8
6	----No Part----	----	----
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1 or 2
9	Cable/Connector Assy (weigh bar 4-pin)	50044-0037	1

Complete Panel Assembly as shown:
Single AMP w/ 2 Remote Displays, p/n 57747-2046

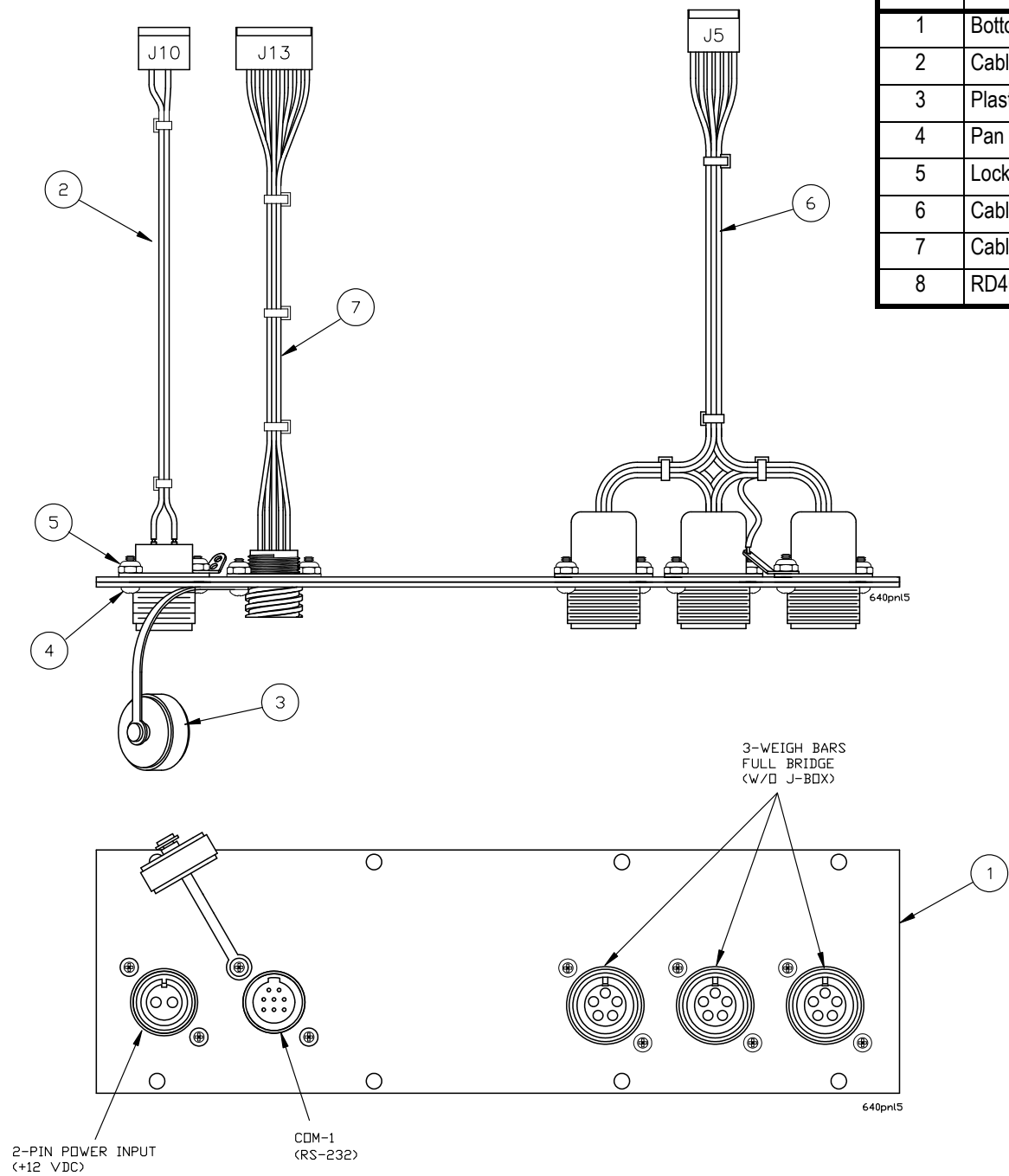
(Also Ref. "Pin-Out" Pages in this manual)



7.14 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)

Complete Panel Assembly as shown:
3 Weigh Bars 5-pin w/ RS232, p/n 57745-2014

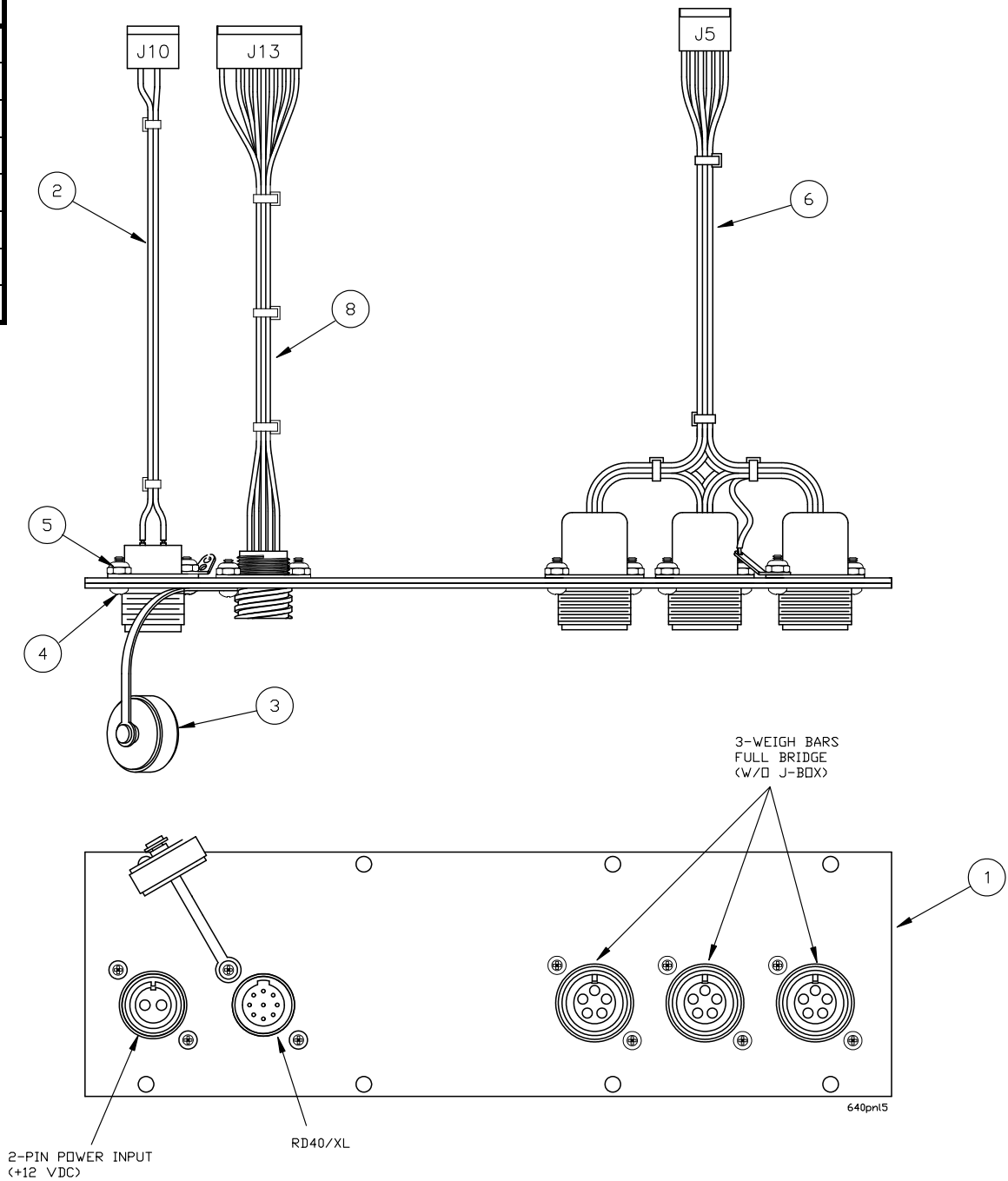
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0036	1
2	Cable/Connector Assy, (4-pin input power)	57737-0018	1
3	Plastic Cap Assy	48684-0010	1
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	10
5	Lock Nut, #4 (stainless)	14464-0026	10
6	Cable/Connector Assy (weigh bar 5-pin)	21429-0132	1
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1 or 2

Complete Panel Assembly as shown:
3 Weigh Bars 5-pin w/ Remote Display, p/n 57745-2022

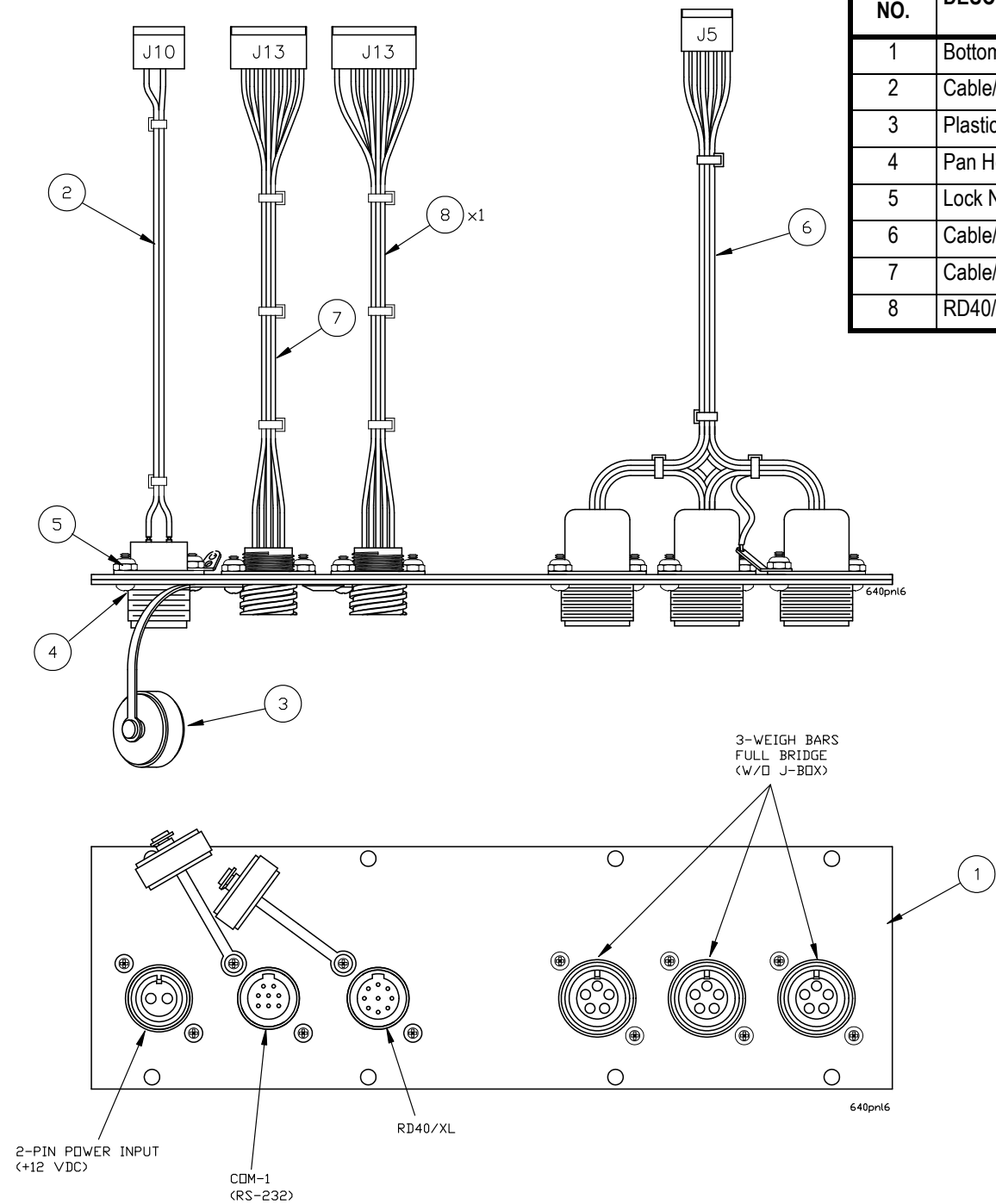
(Also Ref. "Pin-Out" Pages in this manual)



7.15 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)

Complete Panel Assembly as shown:
3 Weigh Bars 5-pin w/ RS232 & Remote Display,p/n 57745-2030

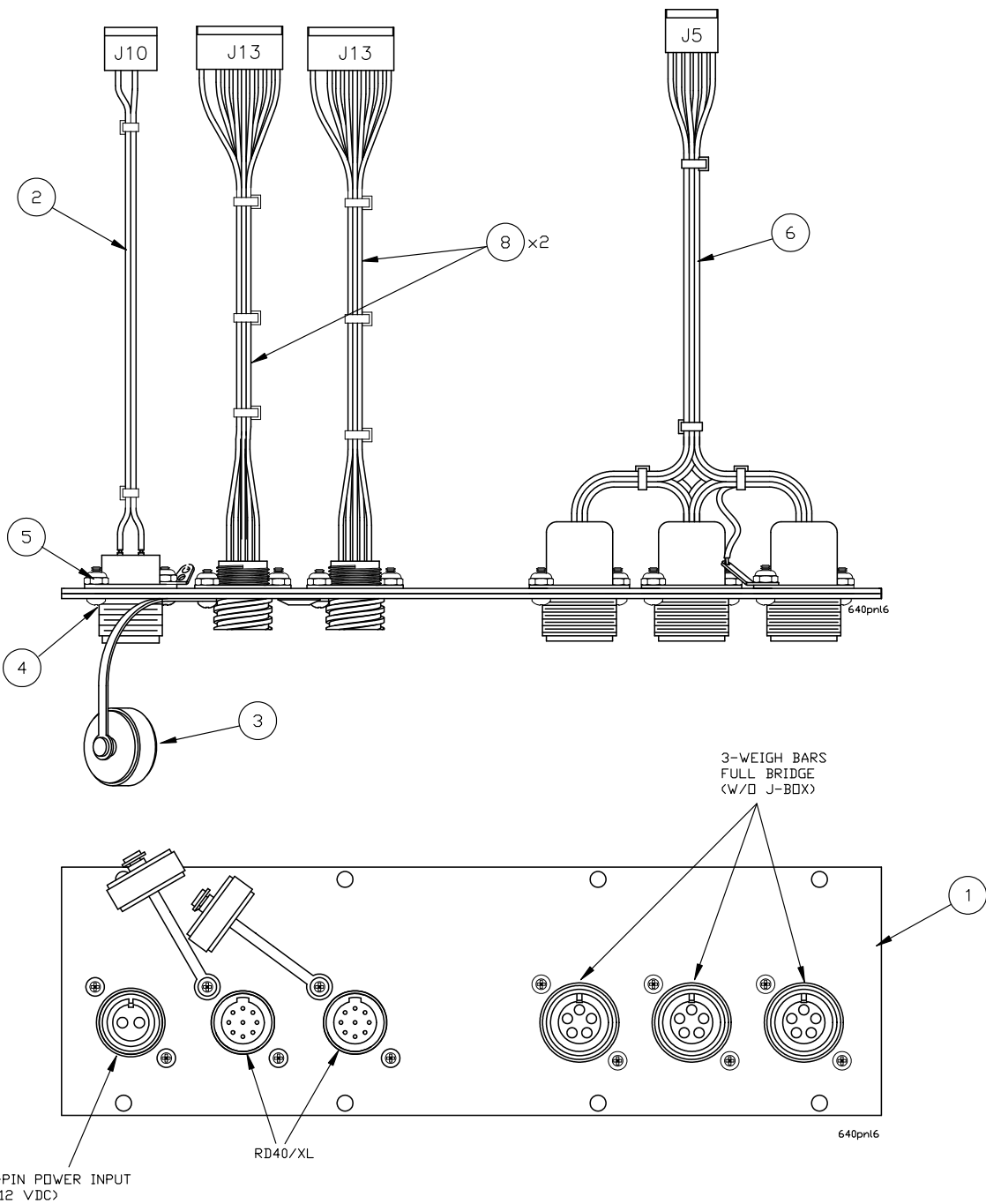
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0044	1
2	Cable/Connector Assy, (2-pin input power)	57737-0018	1
3	Plastic Cap Assy	48684-0010	2
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	12
5	Lock Nut, #4 (stainless)	14464-0026	12
6	Cable/Connector Assy (weigh bar 5-pin)	21429-0132	1
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1 or 2

Complete Panel Assembly as shown:
3 Weigh Bars 5-pin w/ 2 Remote Displays, p/n 57745-2048

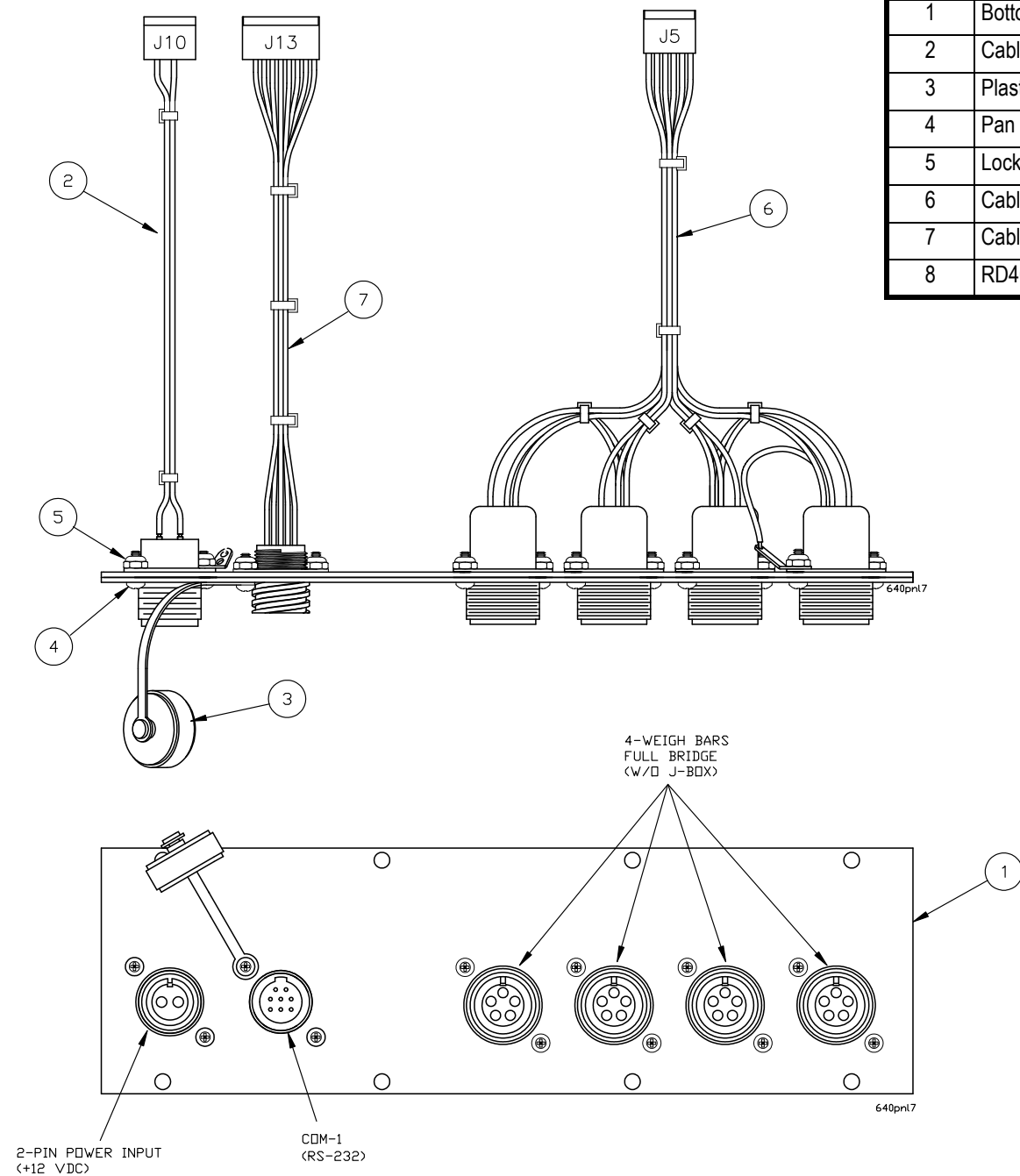
(Also Ref. "Pin-Out" Pages in this manual)



7.16 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)

**Complete Panel Assembly as shown:
4 Weigh Bars 5-pin w/ RS232, p/n 57744-2015**

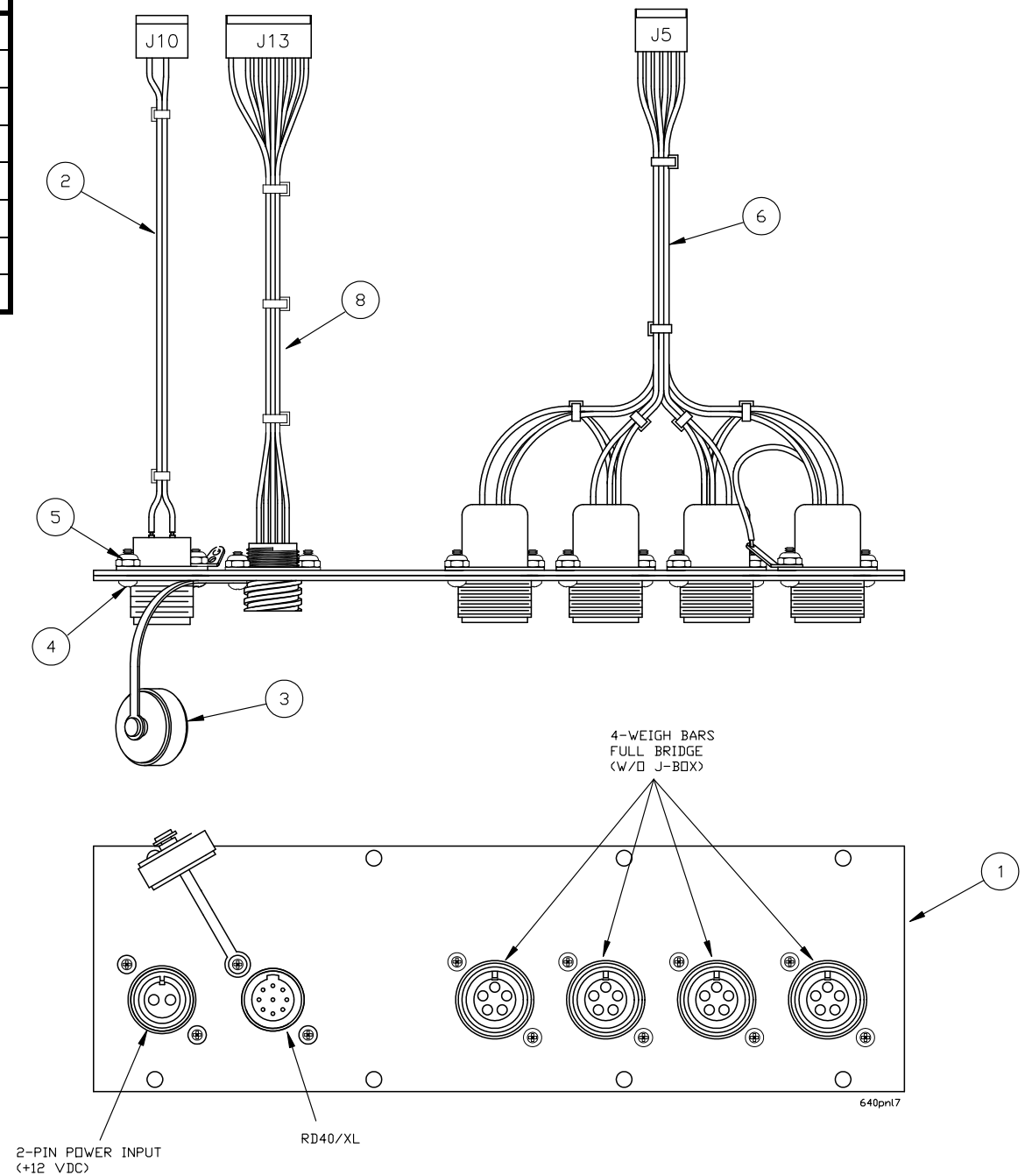
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0036	1
2	Cable/Connector Assy, (2-pin input power)	57737-0018	1
3	Plastic Cap Assy	48684-0010	1
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	12
5	Lock Nut, #4 (stainless)	14464-0026	12
6	Cable/Connector Assy (weigh bar 5-pin)	21429-0124	1
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1

**Complete Panel Assembly as shown:
4 Weigh Bars 5-pin w/ Remote Display, p/n 57744-2023**

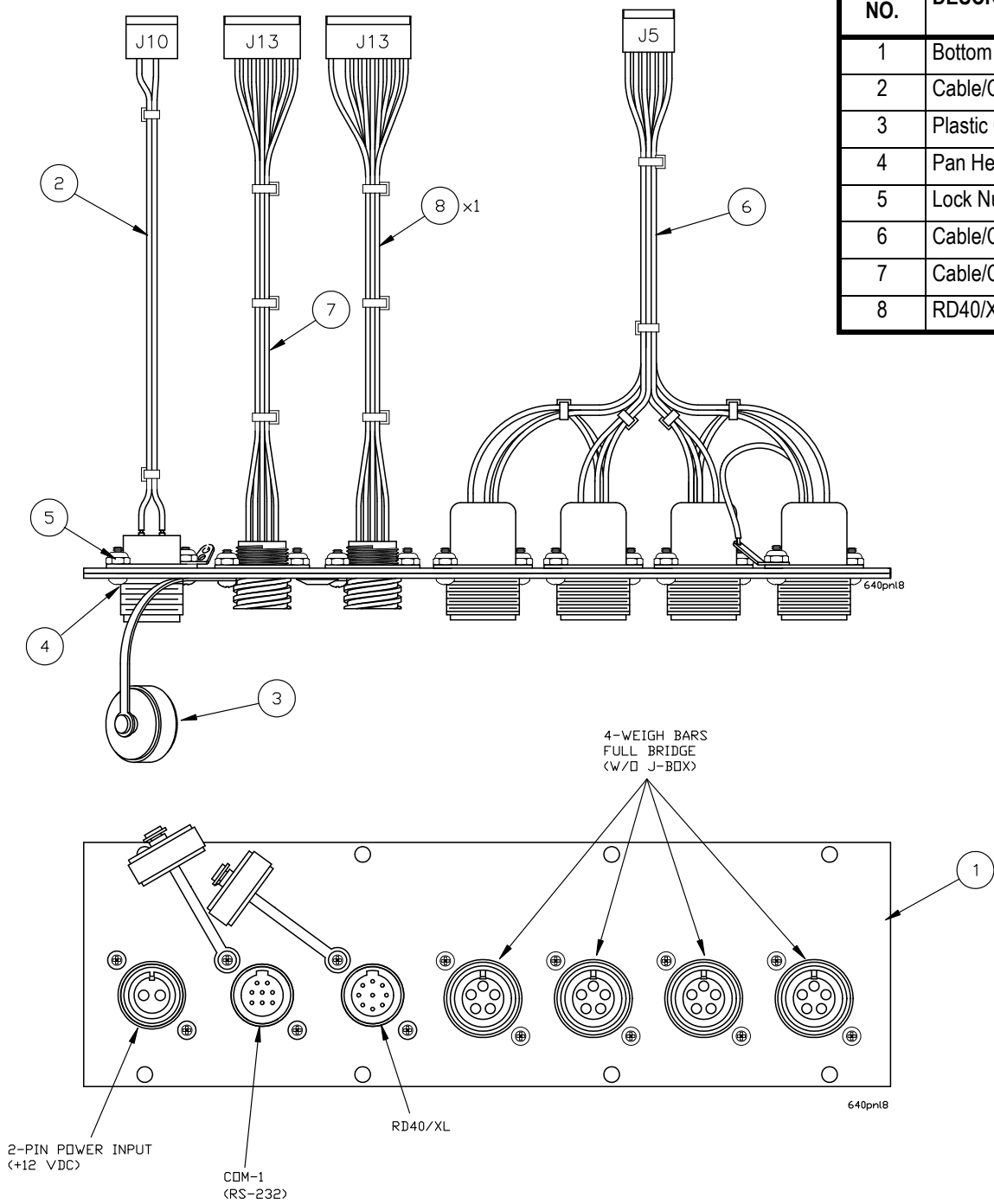
(Also Ref. "Pin-Out" Pages in this manual)



7.17 MODEL 640-Std / 640-XL Indicator (Lower Panel Options For Systems w/o J-box)

Complete Panel Assembly as shown:
4 Weigh Bars 5-pin w/ RS232 & Remote Display, p/n 57744-2031

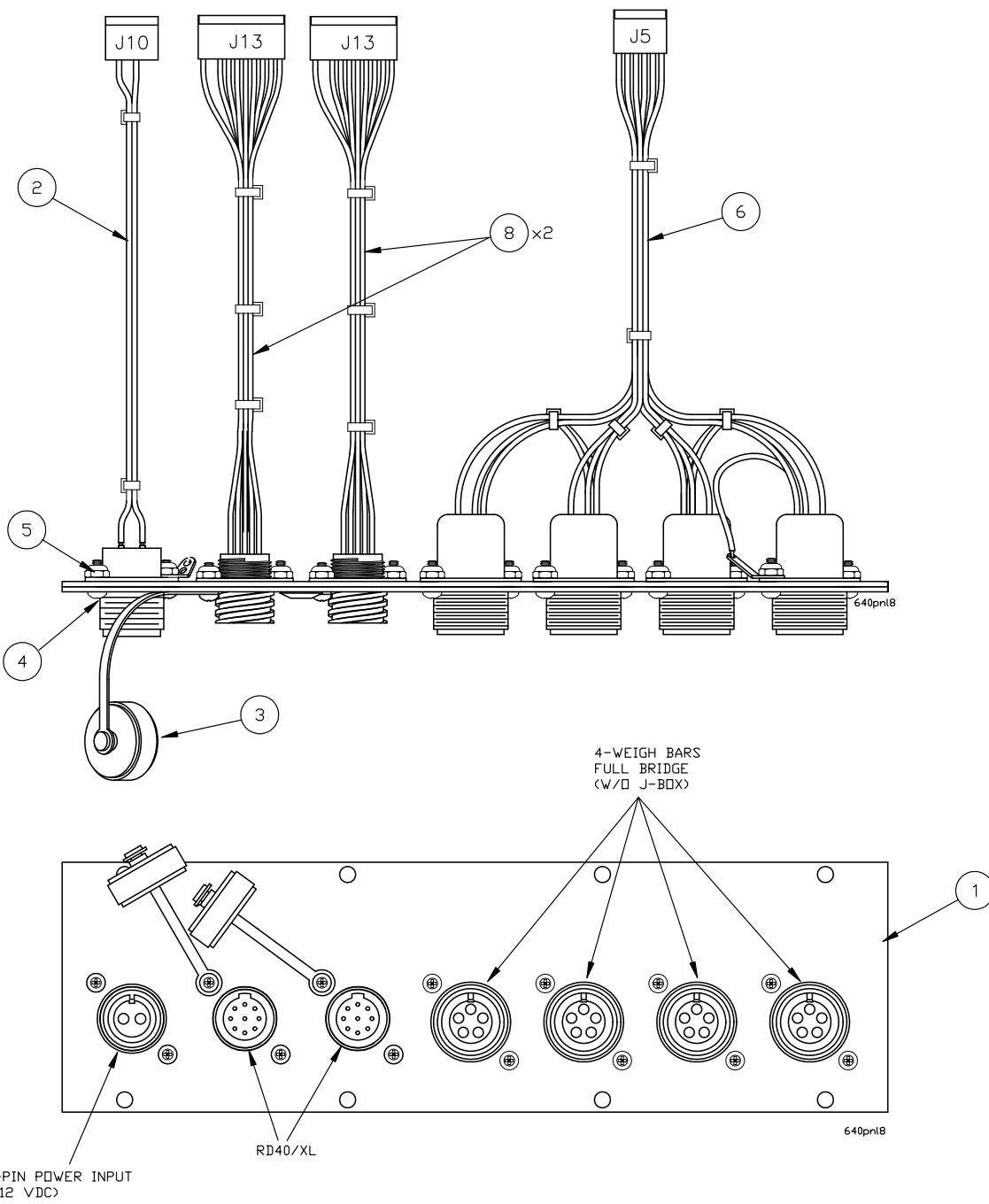
(Also Ref. "Pin-Out" Pages in this manual)



ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Bottom Plate (stainless)	57735-0028	1
2	Cable/Connector Assy, (2-pin input power)	57737-0018	1
3	Plastic Cap Assy	48684-0010	2
4	Pan Head Screw, #4 x .38" L (stainless)	14473-0124	14
5	Lock Nut, #4 (stainless)	14464-0026	14
6	Cable/Connector Assy (weigh bar 5-pin)	21429-0124	1
7	Cable/Connector Assy (COM-1)	51030-0015	1
8	RD40/XL Connector Cable Assy	55098-0015	1 or 2

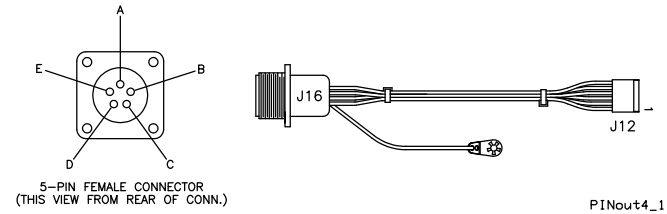
Complete Panel Assembly as shown:
4 Weigh Bars 5-pin w/ 2 Remote Displays, p/n 57744-2049

(Also Ref. "Pin-Out" Pages in this manual)

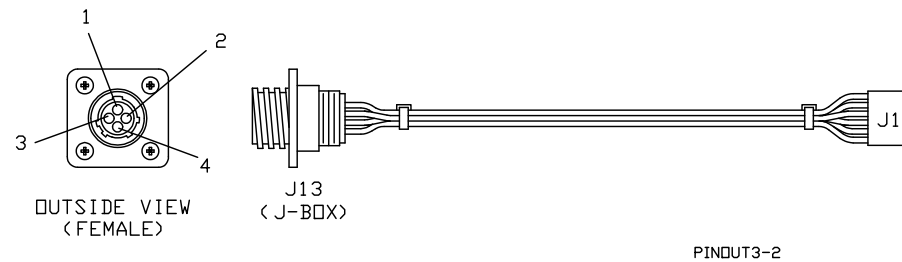


7.18 MODEL 640-Std / 640-XL Indicator (“Lower Panel” Connector/Cable Assy Pin-outs)

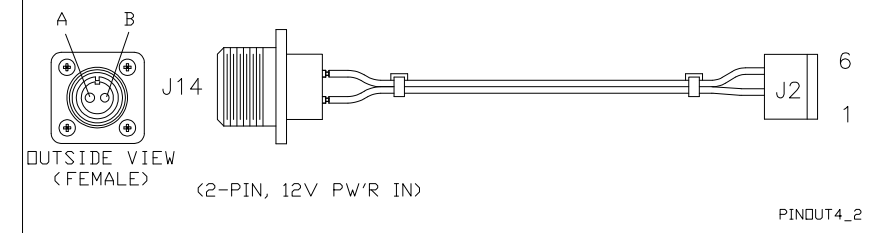
5-PIN WEIGH BAR CABLE/CONNECTOR ASS'Y, P/N 21429-0140			
W-T WIRE COLOR	ORIGIN	DESTINATION	SIGNAL
	TERMINATION	TERMINATION	
RED	J16-A(+2)	J12-4	(-) BRI
GRN	J16-B(+2)	J12-1	(+) EXC
YEL	J16-B(+2)	J12-2	(+) SENSE
WHT	J16-C(+2)	J12-3	(+) BRI
BLK	J16-D(+2)	J12-6	(-) EXC
BLU	J16-D(+2)	J12-5	(-) SENSE
WHT/ORN	J16-E	GND-1	



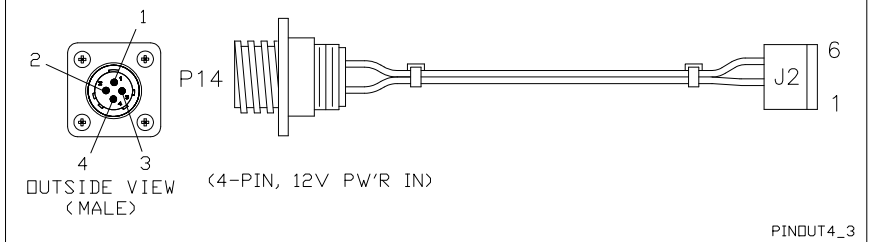
4-PIN J-BOX INTERFACE CABLE ASSY P/N 50044-0037			
W-T WIRE COLOR	ORIGIN	DESTINATION	SIGNAL
	TERMINATION	TERMINATION	
BLK	J13-4	J1-6	-EXC
BLU	J13-4	J1-5	-SENSE
WHT	J13-3	J1-3	+BRIDGE
RED	J13-2	J1-4	-BRIDGE
GRN	J13-1	J1-1	+EXC
YEL	J13-1	J1-2	+SENSE



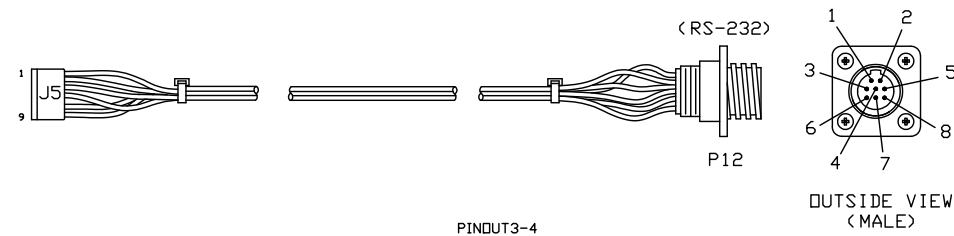
2-PIN POWER CABLE ASSY P/N 57737-0018			
W-T WIRE COLOR	ORIGIN	DESTINATION	SIGNAL
	TERMINATION	TERMINATION	
BLK	J14-A	J2-3	+12V INPUT
WHT	J14-B	J2-5	GND



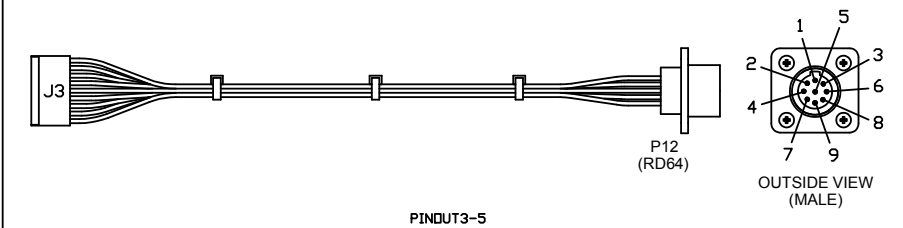
4-PIN PW'R CABLE ASSY P/N 57737-0026			
W-T WIRE COLOR	ORIGIN	DESTINATION	SIGNAL
	TERMINATION	TERMINATION	
BLK	P14-1	J2-3	+12V INPUT
WHT	P14-2	J2-5	GND



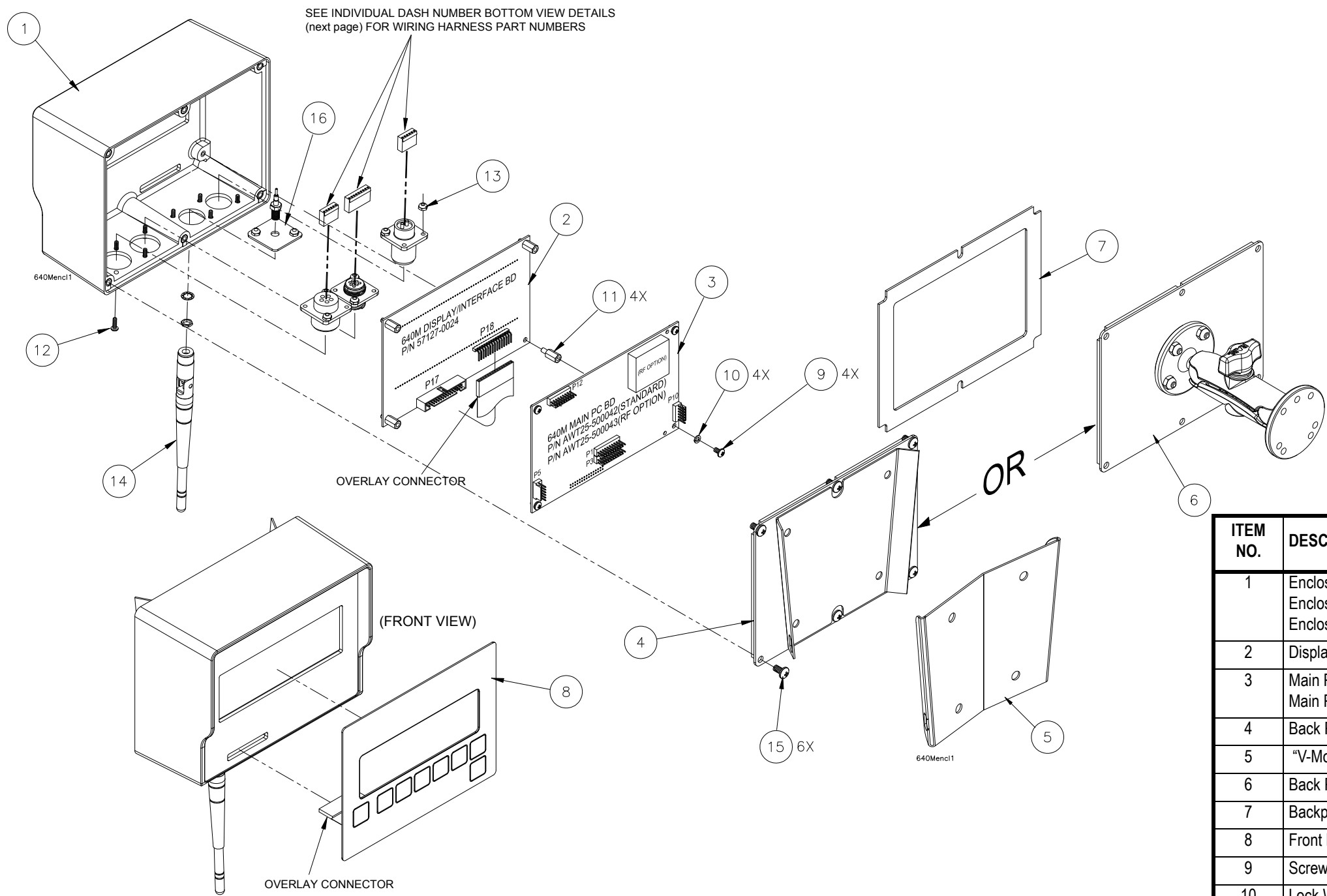
8-PIN RS-232 CABLE ASSY P/N 51030-0015			
W-T WIRE COLOR	ORIGIN	DESTINATION	SIGNAL
	TERMINATION	TERMINATION	
BLACK	J5-1	P12-1	N/C
BROWN	J5-2	P12-2	XMIT
RED	J5-3	P12-3	N/C
ORANGE	J5-4	P12-4	RXD
YELLOW	J5-5	P12-5	GND
GREEN	J5-6	P12-6	GND
BLUE	J5-7	P12-7	+5V
VIOLET	J5-8	P12-8	+12V



9-PIN RD40 CABLE ASSEMBLY P/N 55098-0015			
COLOR	ORIGIN	DESTINATION	SIGNAL
	TERMINATION	TERMINATION	
BLK	J3-1	P12-1	+12V
BRN	J3-2	P12-2	+5V
RED	J3-3	P12-3	GND
ORN	J3-9	P12-4	REMOTE-2
YEL	J3-5	P12-5	N/C
GRN	J3-6	P12-6	DATA IN
BLU	J3-7	P12-7	CLOCK
VIO	J3-8	P12-8	N/C
GRA	J3-10	P12-9	REMOTE-1

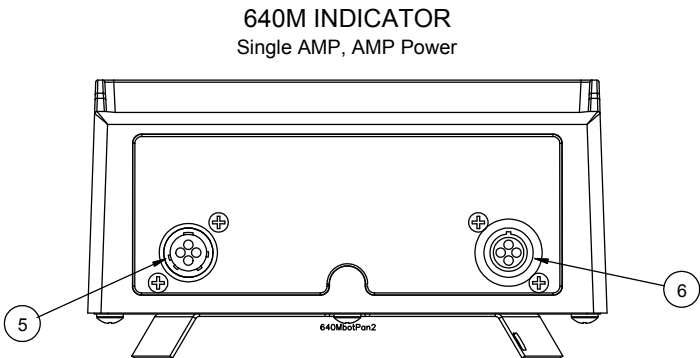
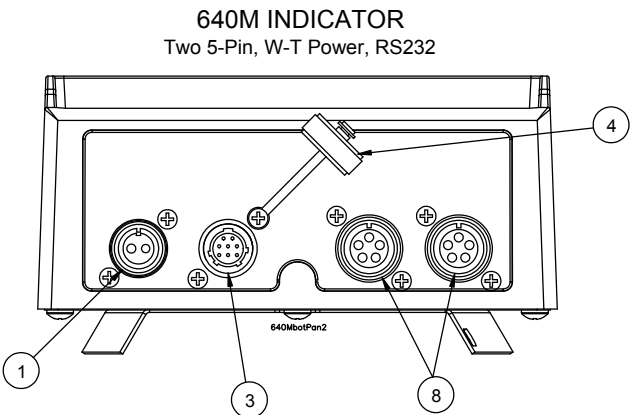
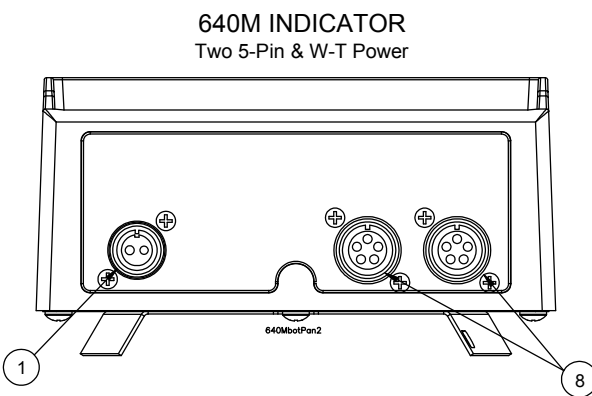
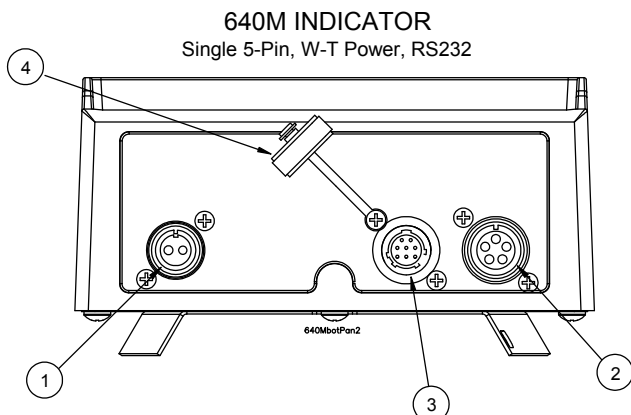
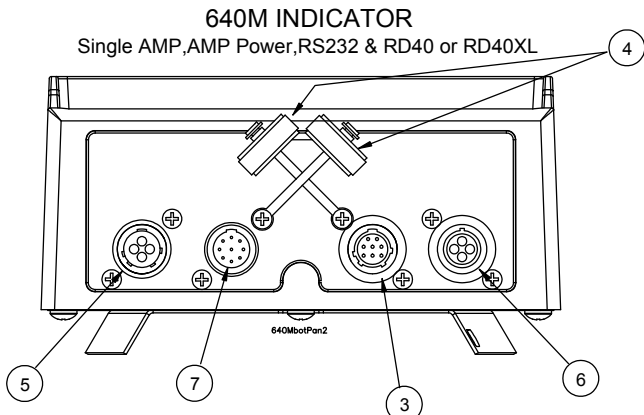
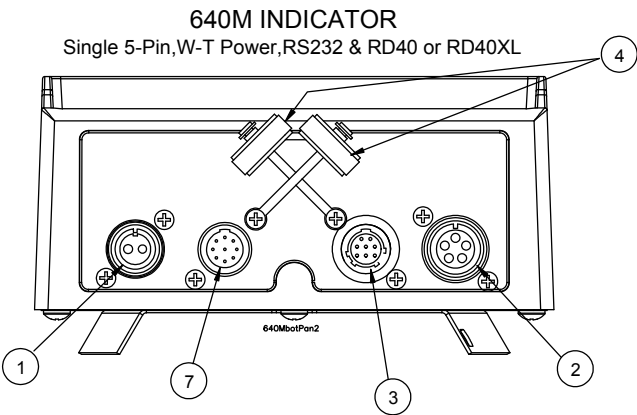
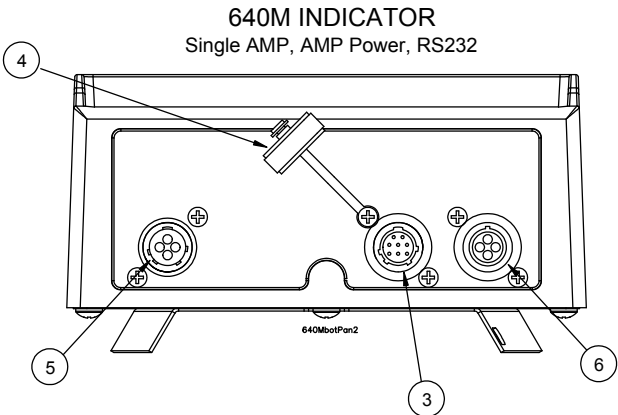
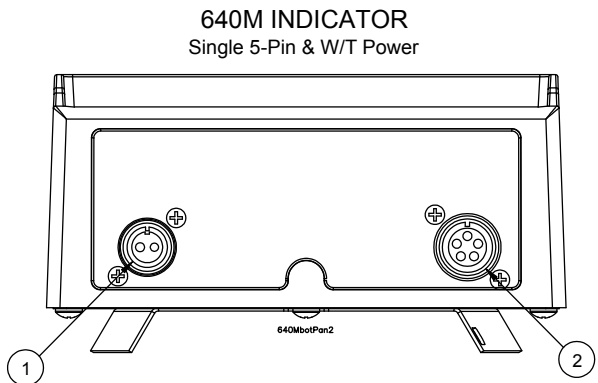
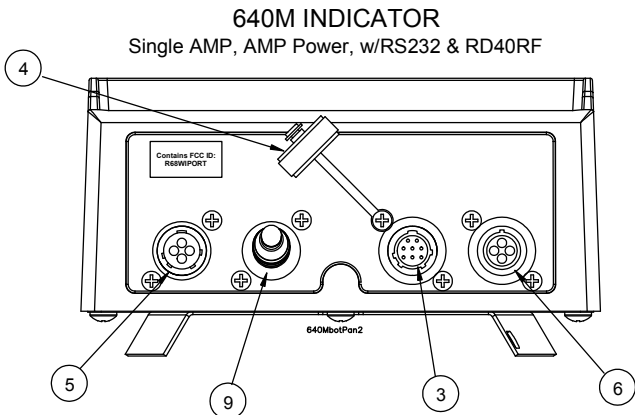
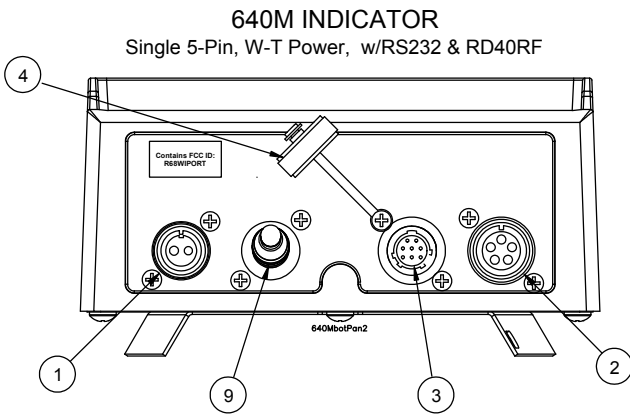


7.19 MODEL 640M Indicator (Parts and Assembly)



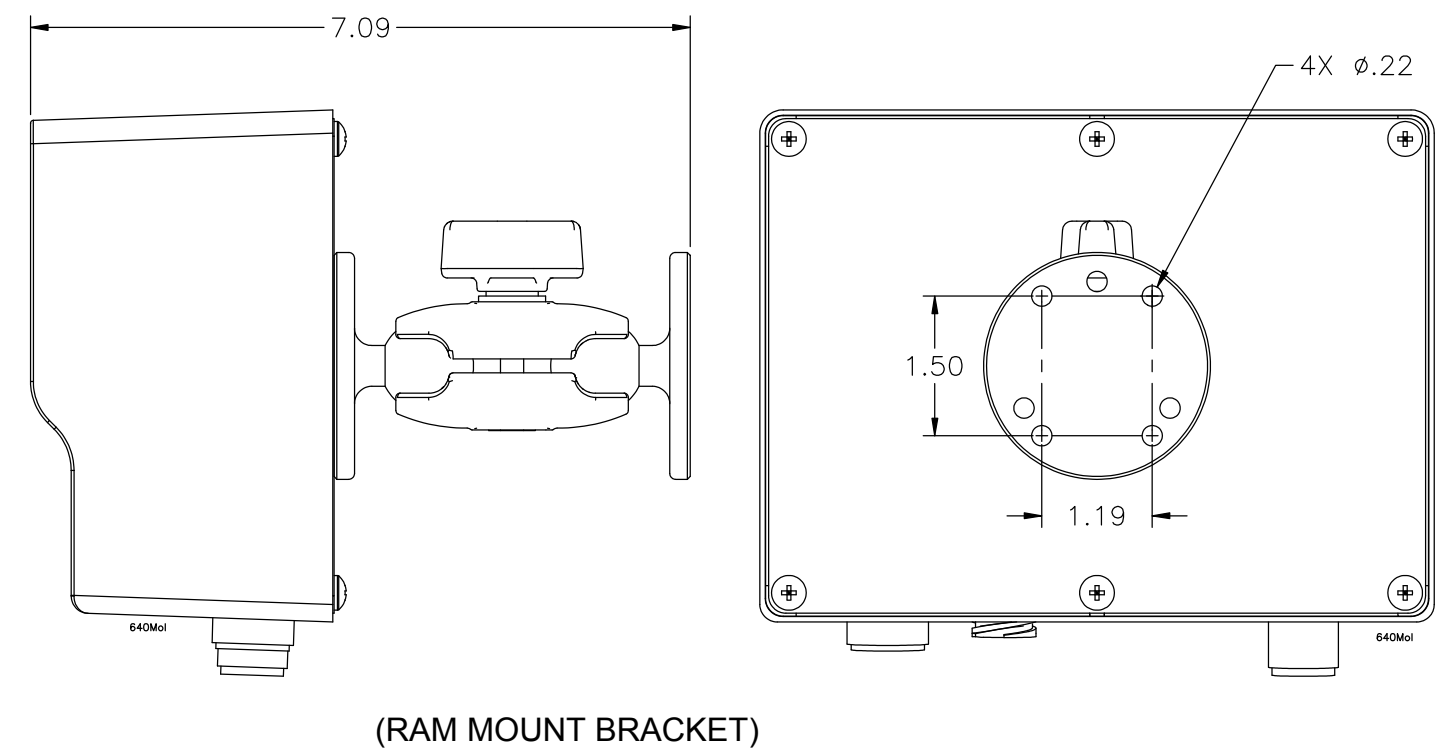
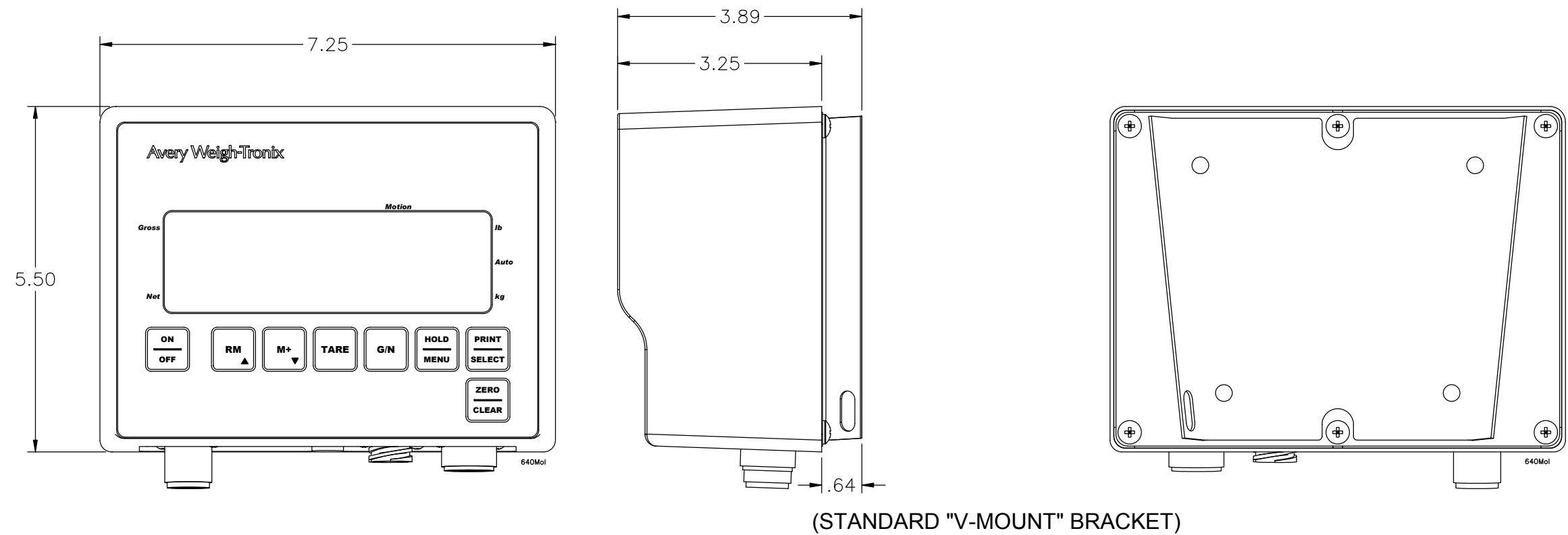
ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Enclosure, 2-connector	57161-0013	1
	Enclosure, 3-connector	57161-0021	1
	Enclosure, 4-connector	57163-0011	1
2	Display/Interface Board Assy	57127-0024	1
3	Main PC Board	AWT25-500042	1
	Main PC Board (w/ RF, optional)	AWT25-500043	1
4	Back Plate Assy w/ "V-Mount" Bracket (also incl. gasket, item 13)	17807-0108	1
5	"V-Mount" Bracket (mounts to wall, mating bracket for item 14)	12339-0015	1
6	Back Plate Assy w/ Ram "Wall Mount" Bracket Assy (incl. gasket, item 13)	57734-1035	1
7	Backplate Replacement Gasket, sticky one side	57298-0019	1
8	Front Panel Overlay	57162-0012	1
9	Screw, #6-32 x .25"L	14473-0223	4
10	Lock Washer, #6	14474-0032	4
11	Standoff, #6 x 32 x .44, m/f	15437-5018	4
12	Screw, #4-40 x .38"L	14473-0124	8
13	Lock Nut, #4	14464-0026	8
14	External RF Antenna Assy (optional)	60147-0016	1
15	Screw, #10-32 x .38"L	14503-0037	6
16	Cover Plate (w/ center hole)	57736-0027	1
Lower Panel Assembly options: (for complete description and p/n's, refer to "lower panel option page" in this manual)			

7.20 MODEL 640M Indicator (Lower Panel Options Using J-box and Lower Panel Parts List)

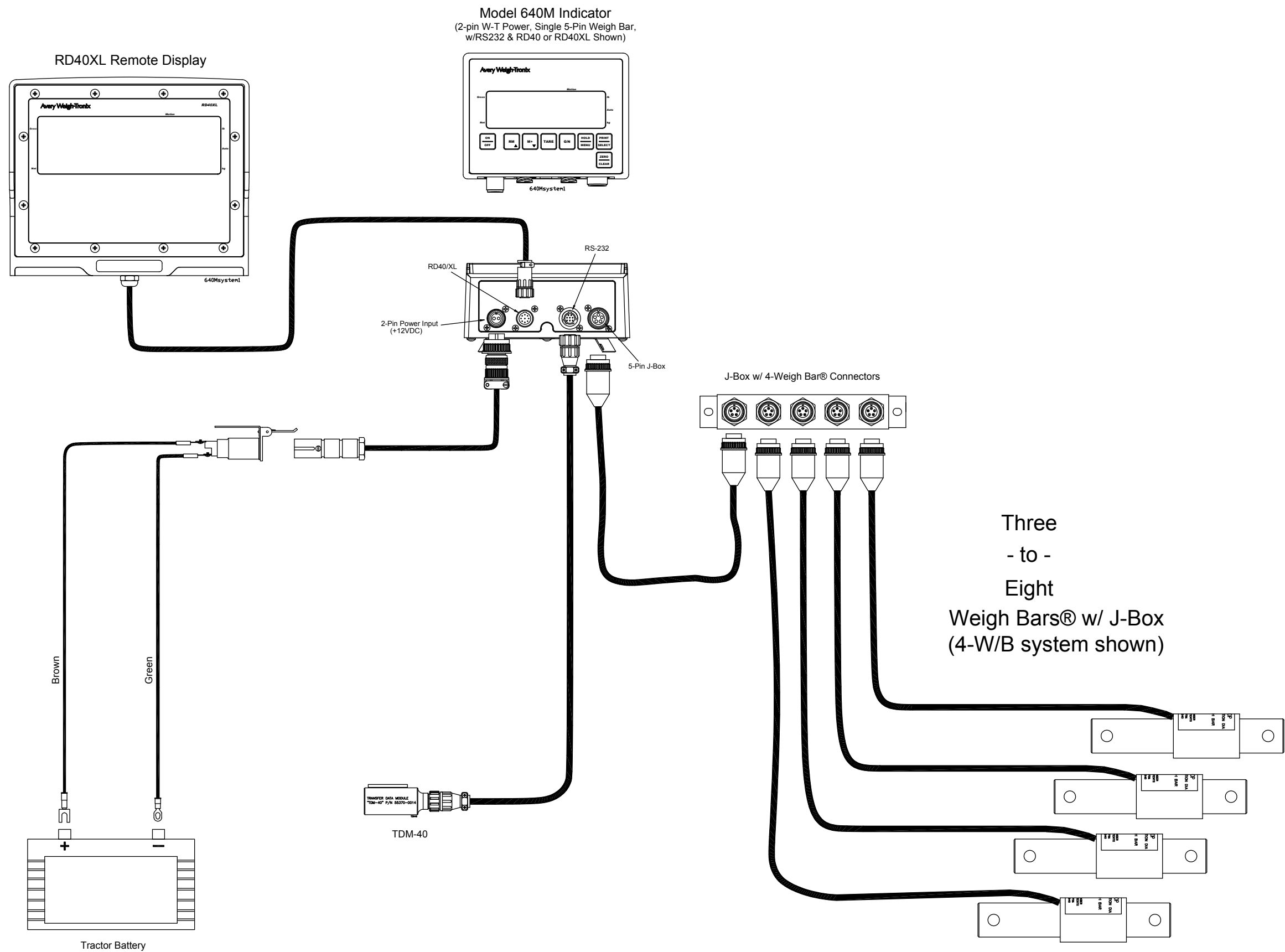


ITEM NO.	DESCRIPTION	W-T P/N	QTY
1	Cable/Connector Assy, (2-pin input power)	57737-0018	A / R
2	Cable/Connector Assy (j-box 5-pin)	21429-0090	A / R
3	Cable/Connector Assy (RS-232)	51030-0015	A / R
4	Plastic Cap Assy	48684-0010	A / R
5	AMP Cable/Conn. Assy, (4-pin input power)	57737-0018	A / R
6	AMP Cable/Conn. Assy (4-pin j-box)	50044-0011	A / R
7	RD40/XL, RD40, Connector Cable Assy	55098-0015	A / R
8	2-W/B Cable/Conn. Assy (dual 5-pin J-Box)	48204-0029	A / R
9	External RF Antenna Assy (w/ female conn.)	60147-0016	A / R

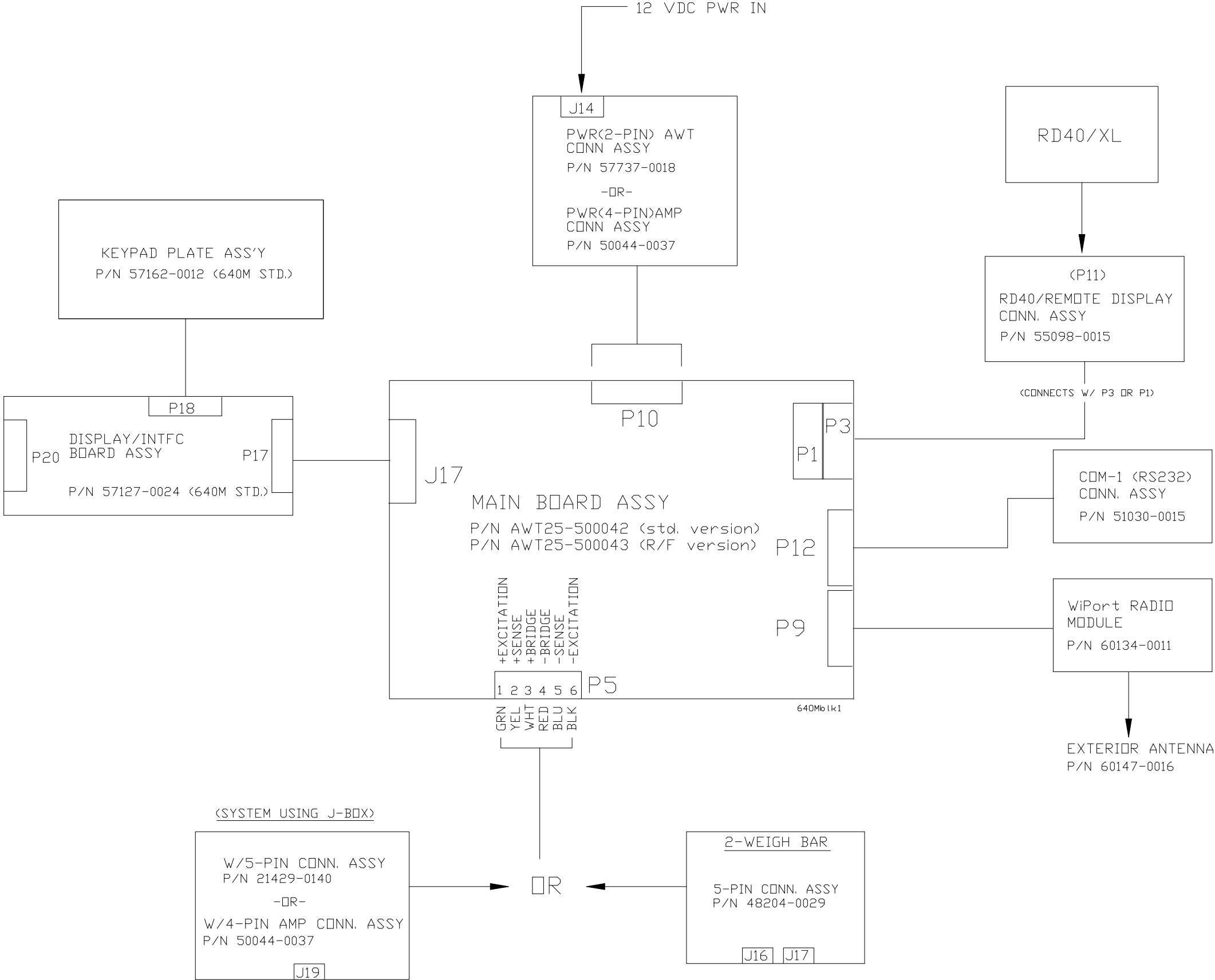
7.21 MODEL 640M Indicator (Dimensional Outline Drawing)



7.22 MODEL 640M Indicator (External System Diagram)



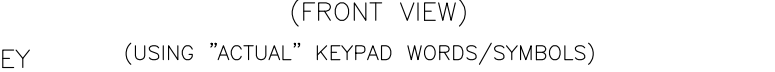
7.23 MODEL 640M Indicator (Internal System Block Diagram)



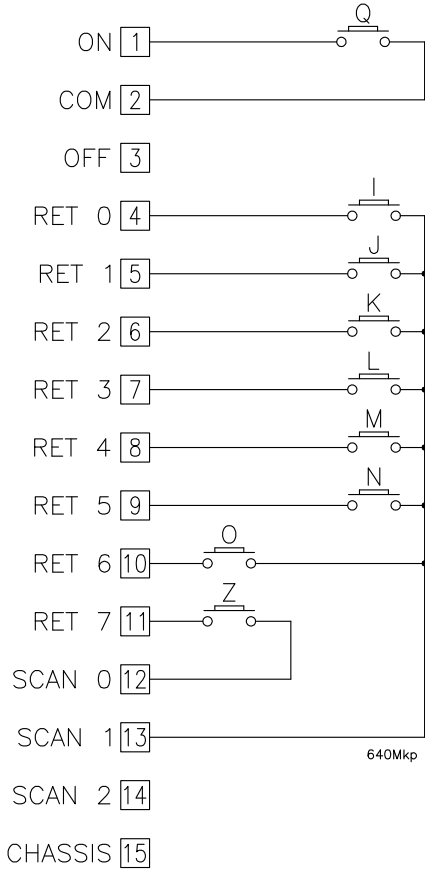
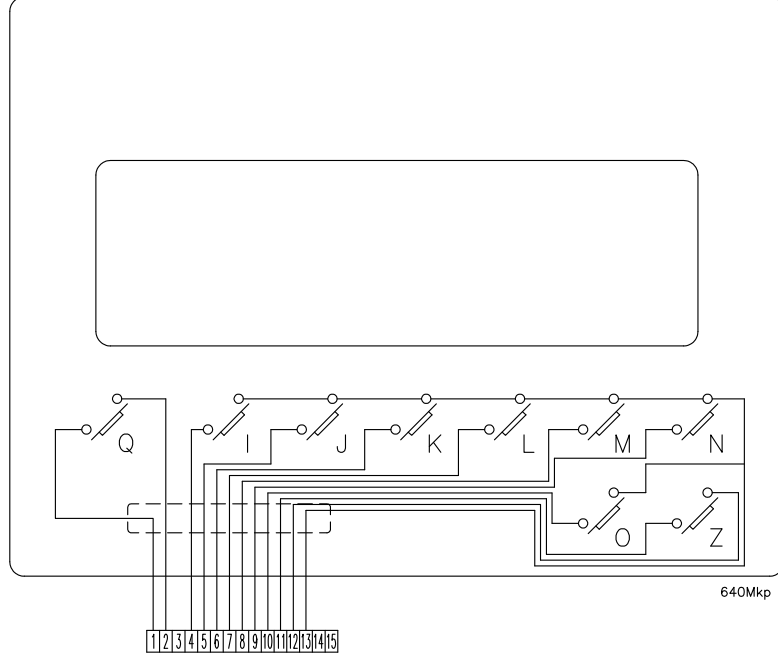


(USING "SCHEMATIC REFERENCED" KEYPAD LETTERS)

HIDDEN KEY



(USING "ACTUAL" KEYPAD WORDS/SYMBOLS)

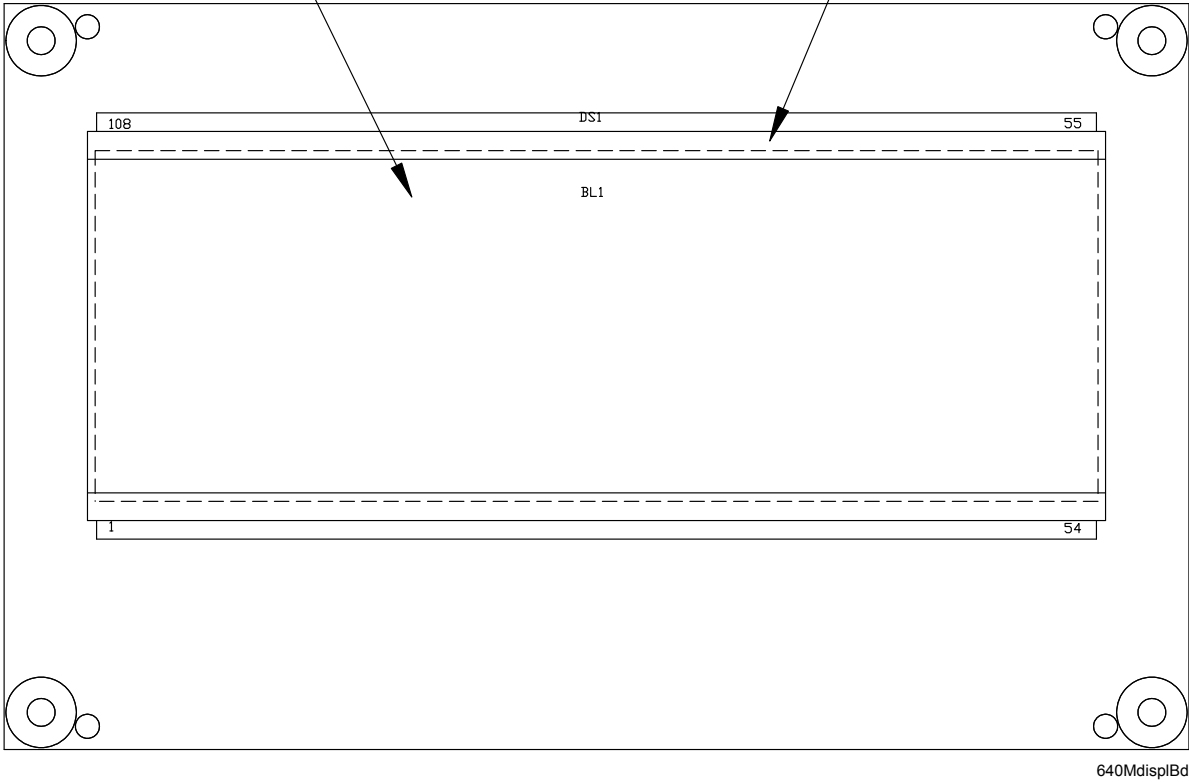


SCHEMATIC DIAGRAM

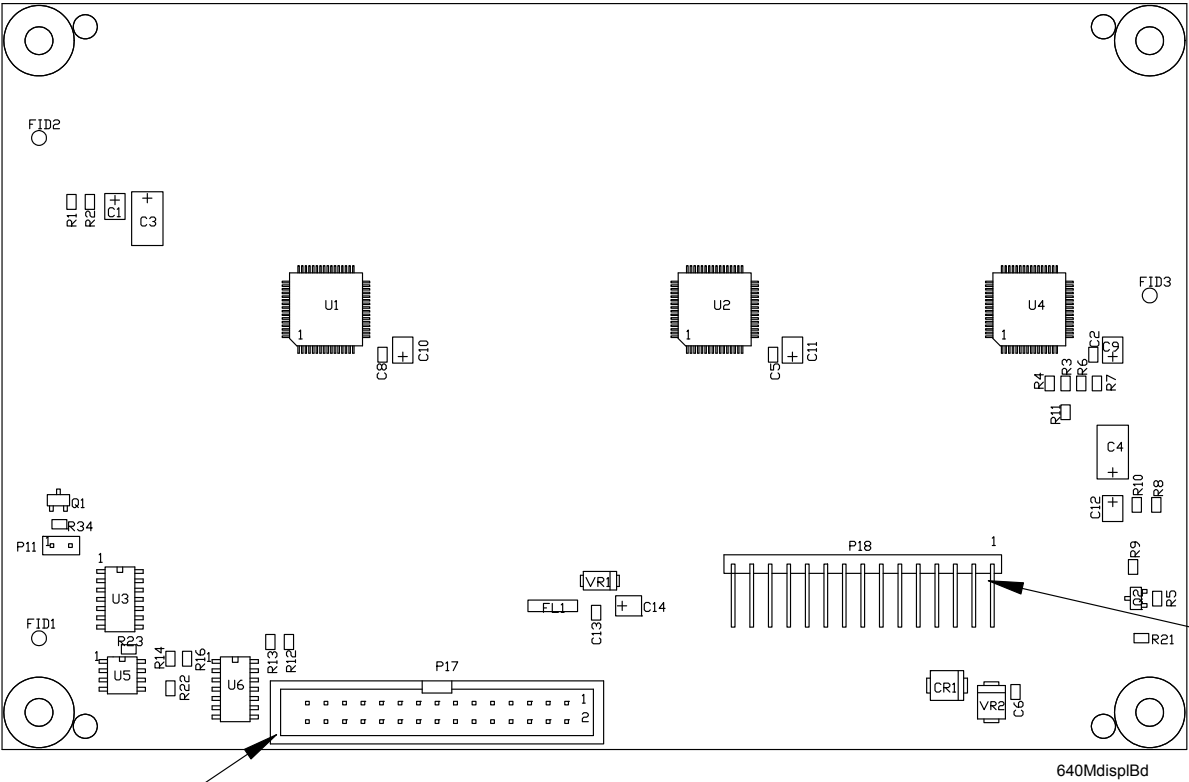
7.25 MODEL 640M Indicator Display (and Keypad Interface) PC Board P/N 57127-0024 (std. display)

DISPLAY (DS1) REPLACEMENT:
P/N 60210-0034

BACKLIGHT (BL1) REPLACEMENT:
P/N 60167-0011



(DISPLAY SIDE)

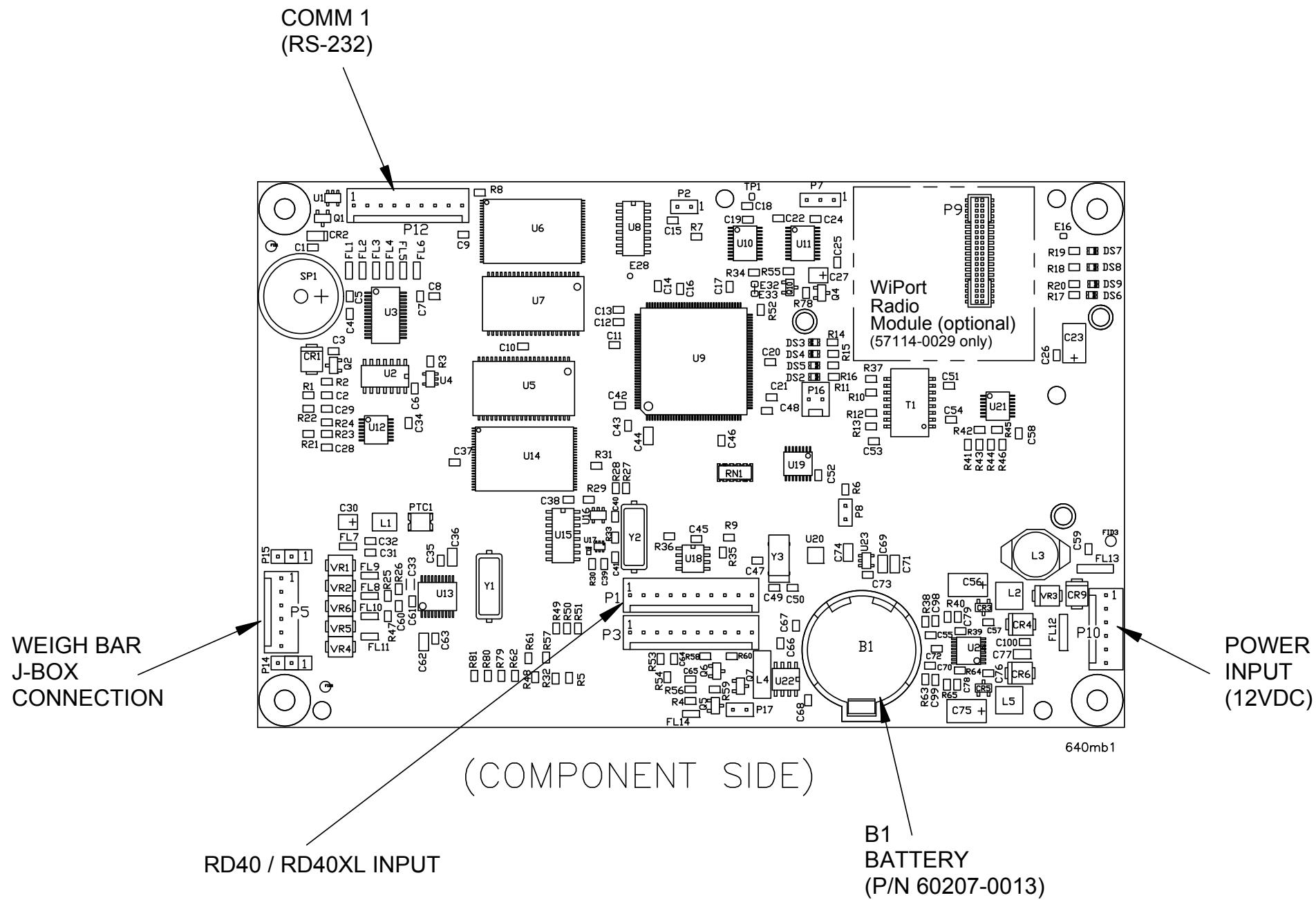


(COMPONENT SIDE)

MAIN BOARD
CONNECTION

FRONT PANEL
KEYPAD
CONNECTION

7.26 MODEL 640M Indicator (Main PC Board Assy P/N AWT25-500042 (std.) P/N AWT25-500043 - RF Module option)

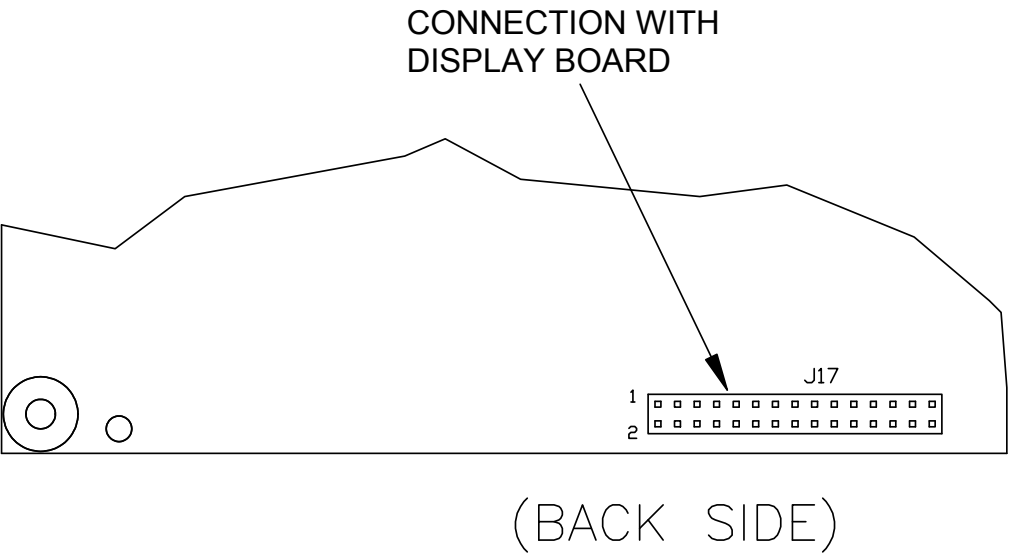


CAUTION !

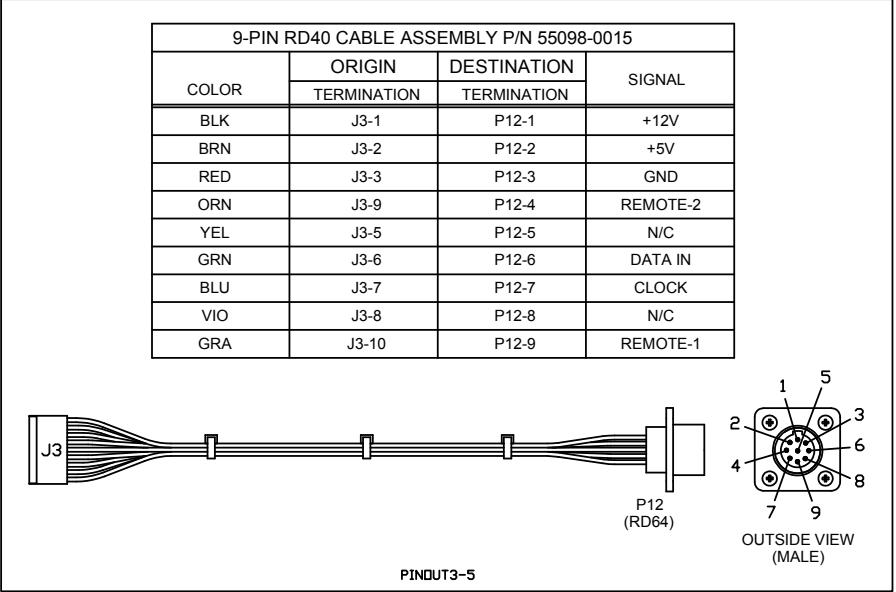
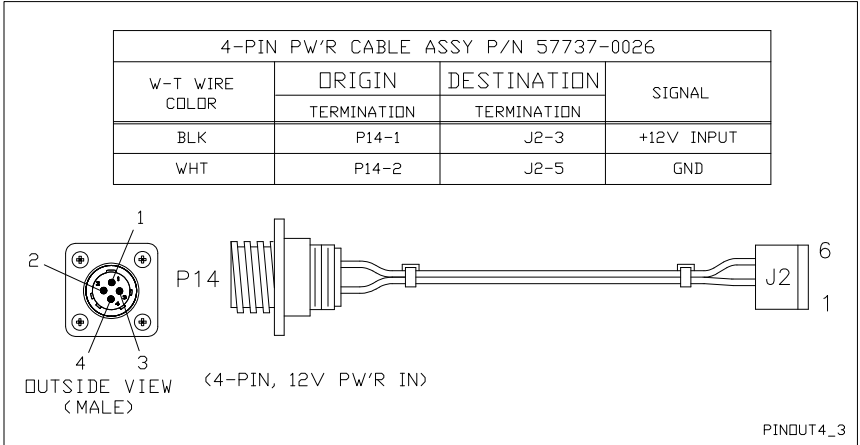
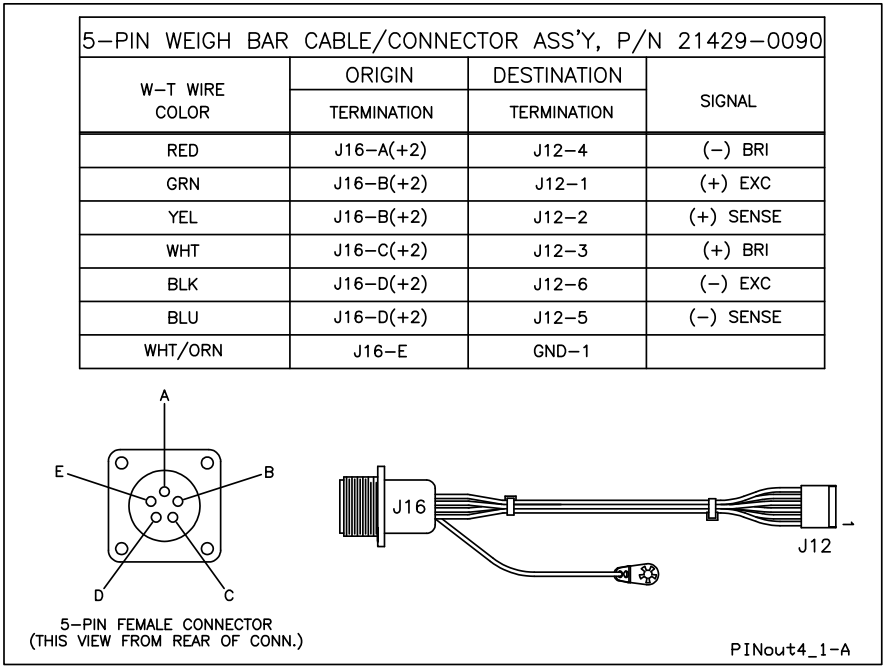
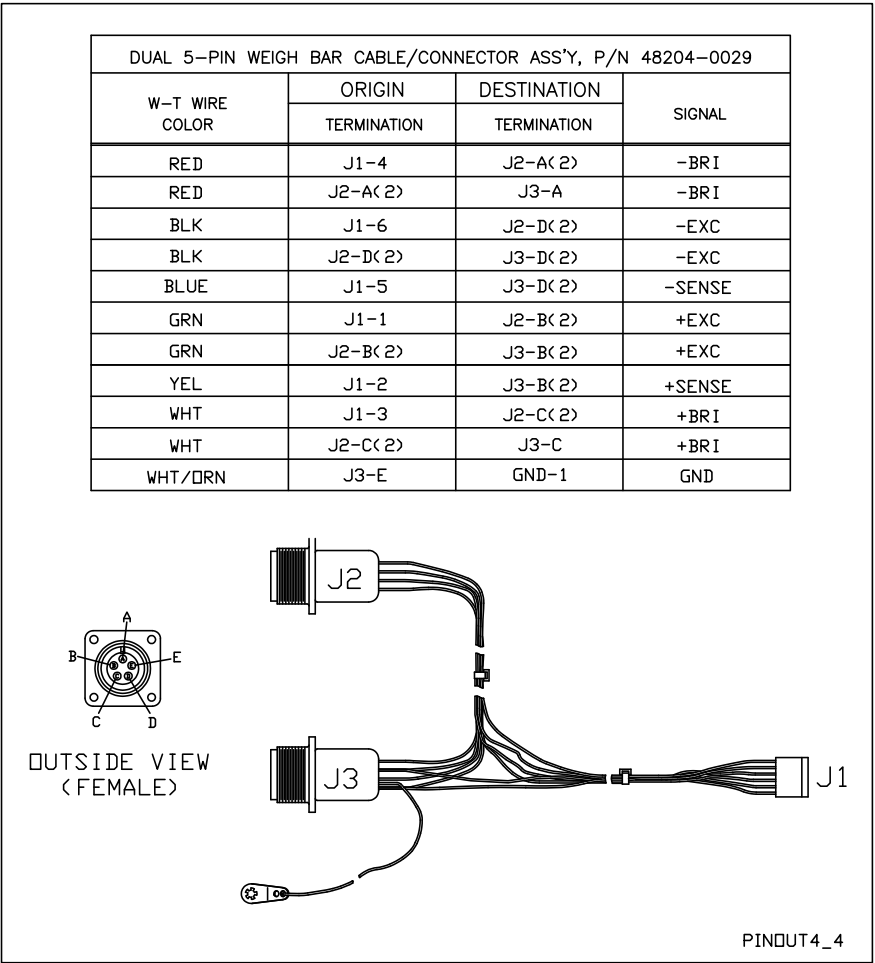
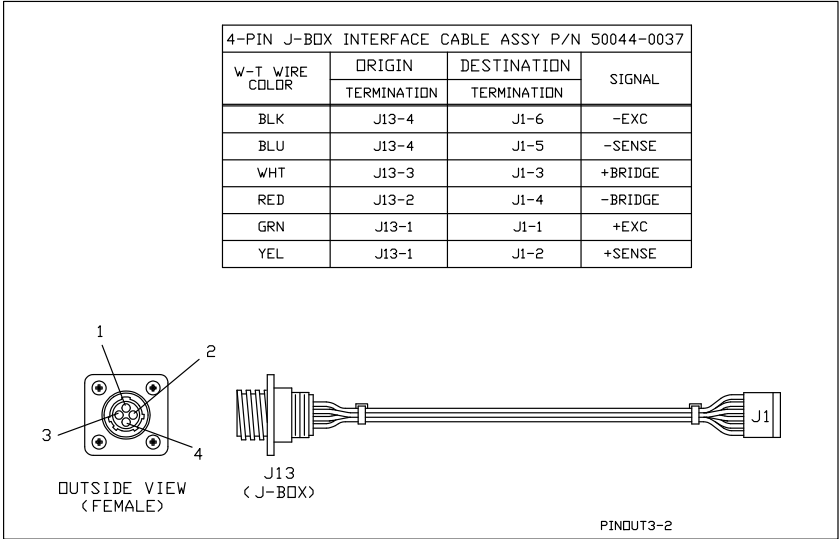
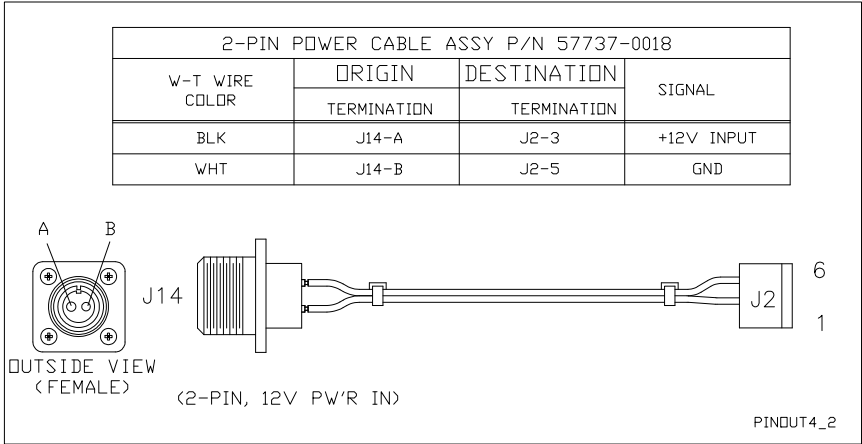
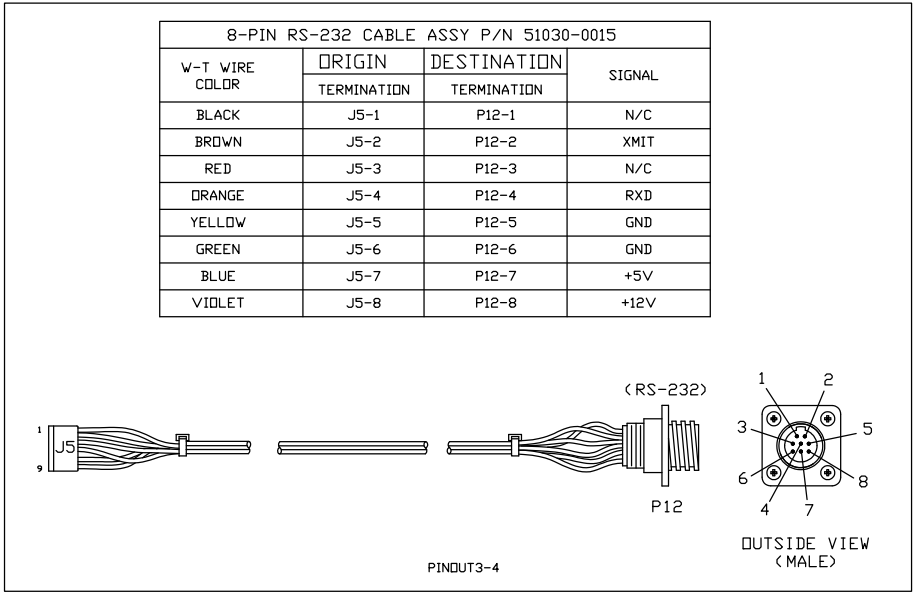
DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.

REPLACE BATTERY (B1) ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER.

DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

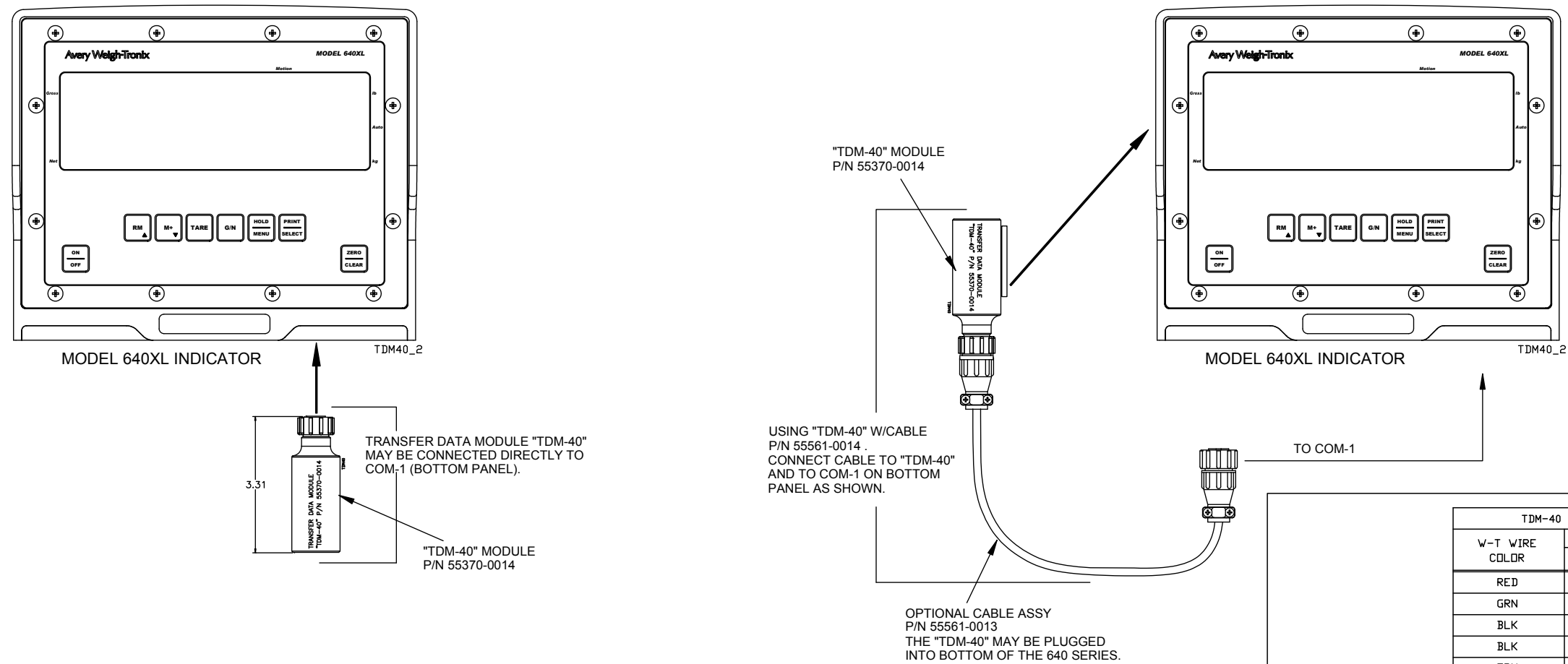


7.27 MODEL 640M Indicator (“Lower Panel” Connector/Cable Assy Pin-outs)

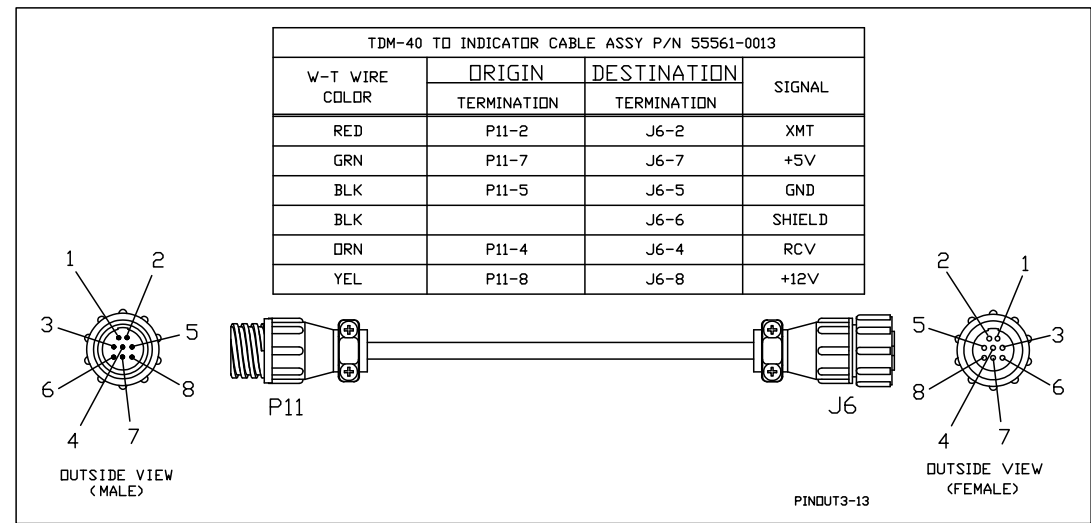
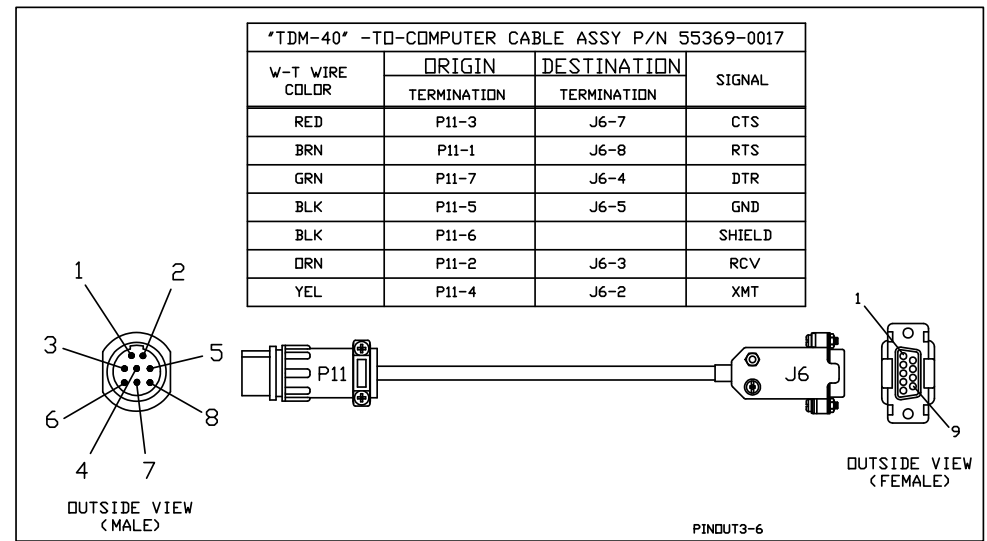
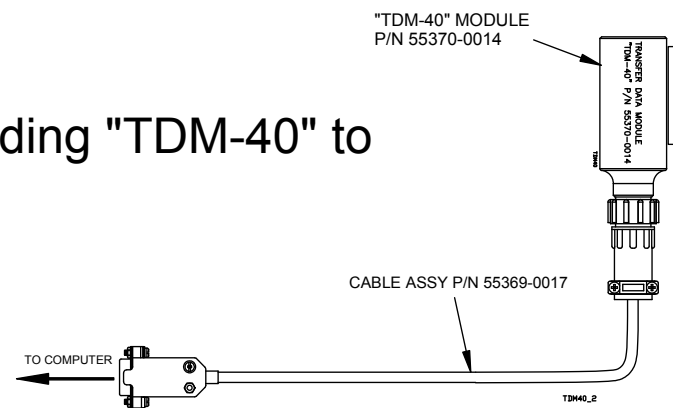


7.28 TDM-40 Transfer Data Module (Optional, For 640-Series Indicators) P/N 55370-0014 & Cable Pin-outs

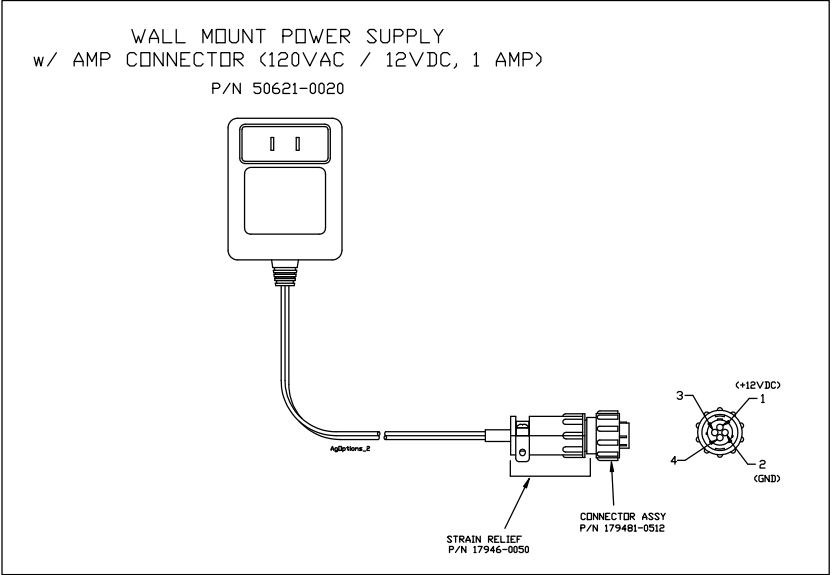
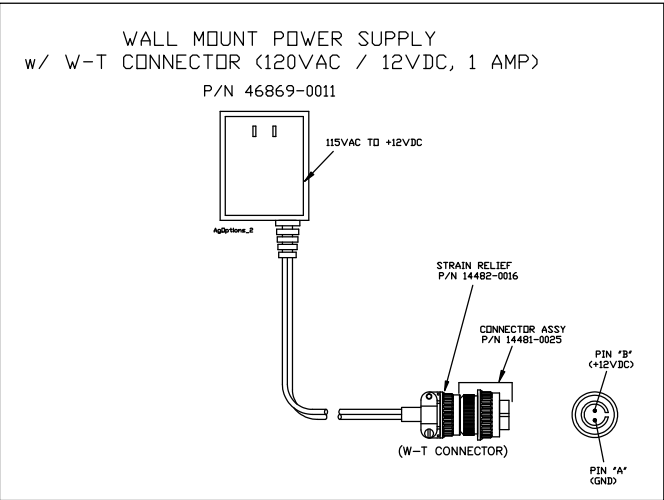
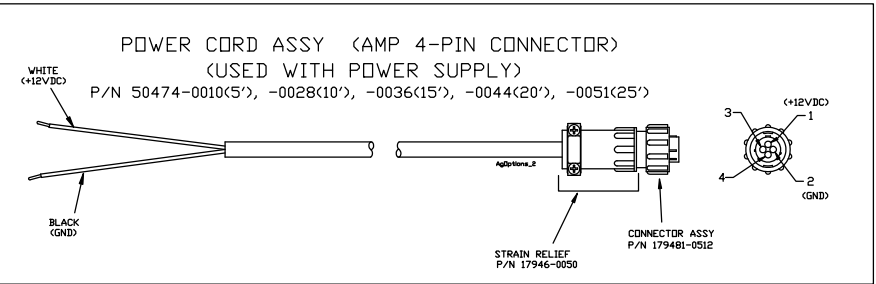
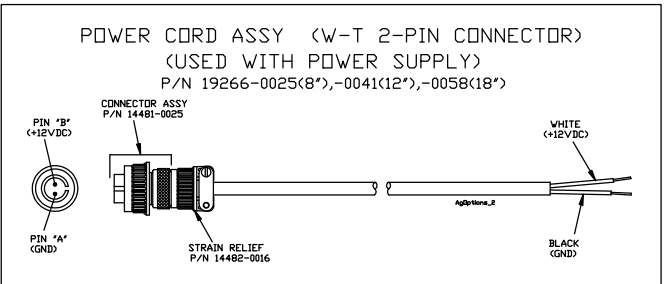
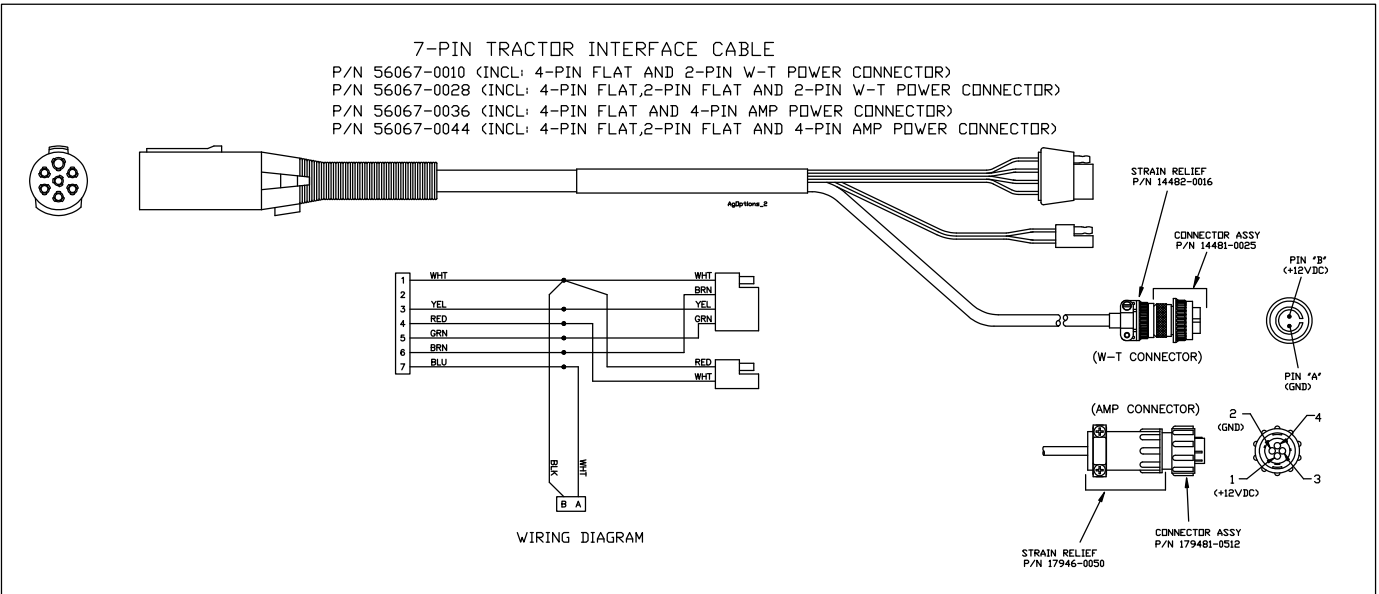
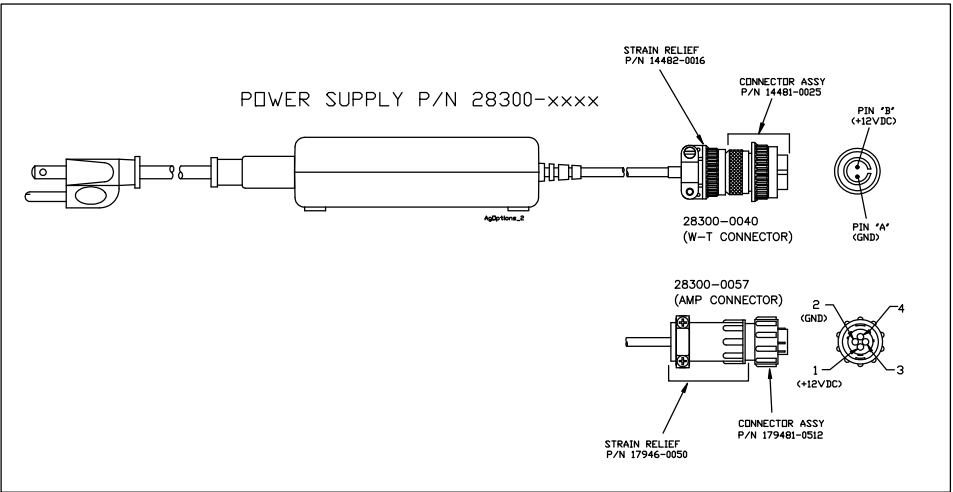
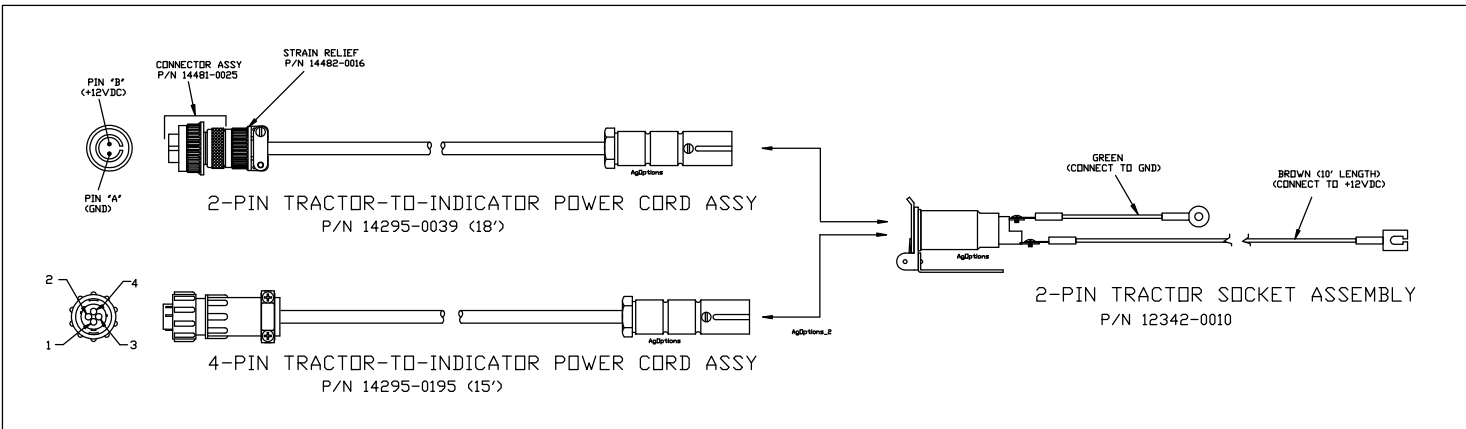
Down Loading Indicator to "TDM-40"



Down Loading "TDM-40" to Computer



7.29 MODEL 640-Std / 640-XL Indicator (Options / Accessories)



Standard Scale & Supply Company
25421 Glendale Avenue
Redford, MI 48239
313-255-6700
www.standardscale.com

