8132

Indicator

Service Manual

TM008132I06

INTRODUCTION

This publication is provided solely as a guide for individuals who have received METTLER TOLEDO Technical Training in servicing the METTLER TOLEDO product.

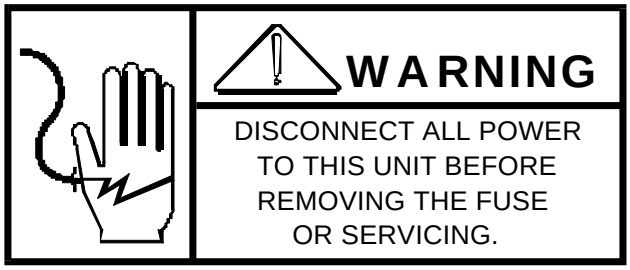
Information regarding METTLER TOLEDO Technical Training may be obtained by writing to:

METTLER TOLEDO
Training Center
P.O. Box 1705
Columbus, Ohio 43216
(614) 438-4400

METTLER TOLEDO RESERVES THE RIGHT TO MAKE REFINEMENTS OR CHANGES WITHOUT NOTICE.

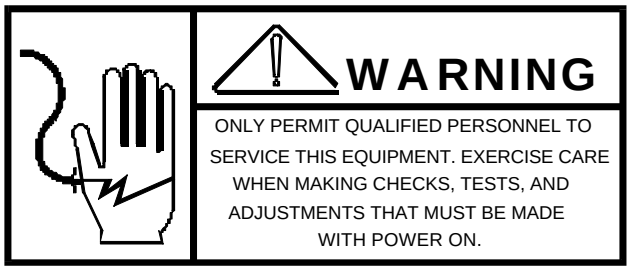
PRECAUTIONS

- **READ this manual before operating or servicing this equipment.**



- **ALWAYS REMOVE POWER and wait at least 30 seconds BEFORE connecting or disconnecting any internal harnesses. Failure to observe these precautions may result in damage to, or destruction of the equipment.**

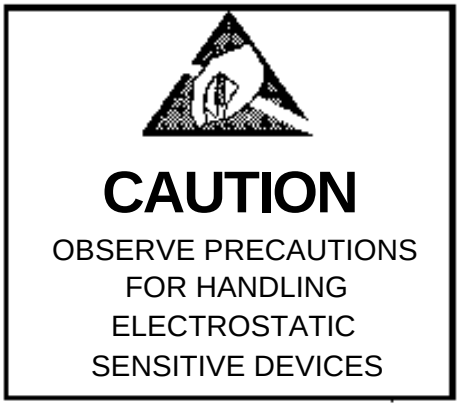
- **ALWAYS take proper precautions when handling static sensitive devices.**



- **DO NOT connect or disconnect a load cell scale base to the equipment with power connected or damage will result.**

- **SAVE this manual for future reference.**

- **DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.**



- **ALWAYS DISCONNECT this equipment from the power source before servicing.**

- **CALL METTLER TOLEDO for parts, information, and service.**

Contents

1. GENERAL DESCRIPTION

The Model 8132 Electronic Digital Indicator is intended for use with strain gauge load cell scales. The 8132 provides Gross or Net weight and Tare weight displays. The unit is available in Desk and Wall mount enclosures. Weight information is transmitted to a printer or accessory device using ASCII Code, 20 mA current loop, with even parity. The baud rate is selectable at 300, 1200, 2400, or 4800 Baud. An 8130 type output, Parallel BCD, is also available as an option. Other options include an Analog Over PCB, an Analog Verification PCB an EIA interface (RS-232-C), setpoint output, and remote input PCB.

FEATURES

- **Selectable increments from 1000, 1500, 1700, 2000, 2500, 3000, 3400, 4000, 5000, 6000, 6800, 8000, 8500, 10,000, 12,000, 16,000, 17,000, and 20,000.**
- **Displays Gross, net or Tare weight in pounds (LB) or kilograms (KG).**
- **Continuous tare display.**
- **Single or double width printing of displayed data, 0.3" high LED tare display.**
- **Available in a desk mount enclosure or in a wall mount, NEMA 4, "washdown" enclosure.**
- **Power input is through a separate line cord.**
- **Push-button tare or keyboard tare.**
- **Computer compatibility.**
- **Automatic Zero Maintenance (within ± 2% of scale capacity from zero).**
- **Push-button zeroing (within ± 2% of scale capacity from zero).**
- **Under capacity blanking at 7% of scale capacity.**
- **Over capacity blanking at 5 increments over scale capacity.**

Optional version of the 8132 (Rams 9 and 10) will provide TTL level control signals for two different types of operations: however, both modes cannot be used at the same time. The two operations include:

- **Either one or two cutoffs complete with dribble, preact and tolerance settings.**
- **From one to four setpoints for use a single cutoffs. No dribble, preact or tolerance values can be set.**

The 8132 setpoint control signals will change states when the absolute value of the displayed weight equals or exceeds the programmed setpoint value. This means that as long as the weighing sequence starts at zero, the cutoffs can be used in either weigh up or weigh down mode.

With the Setpoint option, any time power is lost, all information is cleared to zero in the registers.

2. SYSTEM DESCRIPTION

The instrument provides 15 volts of excitation for strain gauge load cells. The excitation is gated so that zero drift and temperature change can be compensated. The instrument conditions the microvolt signal and amplifies it to a maximum level of about 10 volts. It is then filtered and converted to a digital signal in the integrator.

The excitation voltage is 15 volts DC gated, switchable to 10 volts gated.

The initial range is adjustable from 0 to 30 millivolts.

The span range is adjustable from 3 to 30 millivolts.

The largest increment is 200 LB the smallest is 0.0001 LB.

Excitation current is provided for 6-240 ohm cells or 8-350 ohm cells.

2.1 THE 8132 CONSISTS OF THREE (3) MAJOR BLOCKS:

2.1.1 Control PCB -- Contains the scale logic, regulated strain gauge supply, program selection switches and data transmission circuitry.

2.1.2 Display PCB -- Contains the weight, tare and legend LED's as well as the decoding circuitry for the LED's and used as an interface for the keyboard.

2.1.3 Keyboard -- The keyboard allows operator interface for functions such as Tare, Print, Clear, LB/KG selection, push-button Zero and if ordered, Analog Verify. Test VERIFY and Setpoint information.

2.2 THE 8132 SETPOINT UNIT RETAINS ALL THE BASIC FUNCTIONS EXCEPT:

(of a standard 8132)

2.2.1 Keyboard switching from LB to KG is disabled; however, the unit may be powered up in either KG or LB as determined by an internal programming switch.

2.2.2 Analog Verification is deleted and the program switch that was used for operation of AV is now used for setpoint mode selection.

2.2.3 Display Verification has also been removed.

2.2.4 Several keys on the keyboard have a dual function such as entering tare and also setpoint information.

2.2.5 Setpoint may be changed while the scale is in motion.

3. SPECIFICATIONS

3.1 ELECTRICAL AND PHYSICAL SPECIFICATIONS

3.1.1 ENVIRONMENT

The Model 8132 operates from -10 C (14 F) to +50 C (122 F) 10 to 05% relative humidity, non-condensing.

Zero Temperature Coefficient -- 0.1 uV/ C Max.

Span Temperature Coefficient - ±12 PPM/ C Max.

3.1.2 POWER INPUT

The Model 8132 can operate (upon selection) at 100V, 120V, 220V and 240 VAC, (+10%, -15%) 49 Hz to 61.2 Hz. Power consumption is about 25 watts.

3.1.3 U.L. & C.S.A. STANDARDS

Materials, components and electrical design comply with U.L. and D.S.A. standards and requirements, including grounding of all metal parts, fusing, etc.

3.1.4 APPEARANCE ANDDIMENSIONS

The color of the Model 8132 is charcoal with a red display lens and color coded function switches. The desk mount sheet metal enclosure is 8.8 cm tall (3.47"), x 43.2 cm wide (17"), x 23.7 cm deep (9.3"), suitable for rack mounting with adapters. The wall mount Stainless Steel NEMA 4 enclosure is 33 cm high (13"), x 45.7 cm wide (18"), x 14 cm deep 5.5").

The desk mount model weights approximately 7 KG (15.4 LB), the wall mount unit weighs about 16 KG (35 LB).

Power, load cell and output connections are made via rear mounted connectors on the desk Model 8132, and via connectors on the bottom of the NEMA 4 enclosure.

3.2 INTERNAL FUNCTIONS

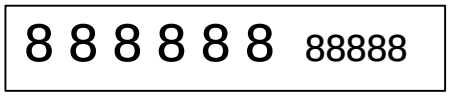
The 8132 contains the necessary electronics, except the load cell (s), to calculate and display weight, as well as the capability to transmit data to a remote device.

3.3 DISPLAY FORMAT

The weight display is 6 digit including (-) sign, 7 segment LED's.

The tare display is a 5 digit , 7 segment LED display. LED's are also used as a legend indicators.

Sample display:



On rams 9 and 19, the tare display is used to show what information is being entered for setpoints. Once Setpoint Selection Mode has been entered and a location selected the tare display will blink on and off displaying the data already stored. If no information is in that location, the tare display will blink all zeros. When the new data has been entered the display will return to displaying tare values.

3.4 DATA INTERFACE

Data output is provided in bit serial form, ASCII code, 20mA current loop, even parity. The baud rate is selectable at 300, 1200, 2400, or 4800 baud.

NOTE: The PRINT push-button on the 8132 is NOT active when using the parallel BCD option with a Model 500, 510 or 8895 Printer.

The 300 baud output is not changed with rams 0 and 19. The 4800 baud rate format changes to include the status of setpoint, dribble, preact and tolerance.

3.5 FACTORY RAM IDENTIFICATION

TYPE	RAM NUMBER	VERIFIED	DESCRIPTION OF MAIN PCB
DESK TOP	8132 0001	NO	Span Temp. Coef. of 12 PPM/ C
	8132 0002	YES	Span Temp. Coef. of 6 PPM/ C
	8132 0003	YES	Span Temp. Coef. of 3 PPM/ C
	8132 0004	NO	Span Temp. Coef. of 6 PPM C
	8132 0007	NO	Expanded Zero capture
	8132 0008	NO	Print Interlock
	8132 0009	NO	Setpoint Mode
	8132 0010	NO	Intrinsic Safe
	8132 0201	NO	Averaging
	8132 0202	NO	Averaging Checkweigh
	8132 0203	NO	Averaging legal for Trade
	8132 1009	NO	Setpoint w/Intrinsic Safe
WALL	8132 0011	NO	Span Temp. Coef. of 12 PPM/ C
	8132 0012	YES	Span Temp. Coef. of 6 PPM/ C
	8132 0013	YES	Span Temp Coef. of 3 PPM/ C
	8132 0014	NO	Span Temp Coef. of 6 PPM/ C
	8132 0017	NO	Expanded Zero capture
	8132 0018	NO	Print Interlock
	8132 0019	NO	Setpoint Mode
	81320 020	NO	Intrinsic Safe
	8132 0211	NO	Averaging
	8132 1019	NO	Setpoint w/Intrinsic Safe

***NOTES:**

Expanded Zero Capture -- Zero will automatically capture when the display returns to within ± 3 increments of zero. Intended for large capacity scales only.

Print Interlock -- After printing, the indication must return to within ±.25 increments of zero before another print may be made.

Setpoint Mode -- Provides TTL level signals for either two cutoffs, complete with dribble and preact, or four signal setpoints.

Intrinsic Safety -- Excitation voltage is reduced to ±3 volts.

3.6 RFI SPECIFICATIONS

The Model 8132 has successfully passed FCC regulation regarding the emission of RFI. The 8132 has also passed SMA requirements for susceptibility to RFI. Additional protection may be required in severe RFI environments.

3.7 RAMS 9 AND 19 CUTOFF SPECIFICATIONS

3.7.1 All cutoffs are TTL level negative true and "ON" when the displayed weight is less than the programmed cutoff value. That is, the output is 0 volts unit the cutoff value. That is, the output is 0 volts until the cutoff is reached then goes to a + 5 volt level.

3.7.2 The output consists of TTL open collector lines with 10K ohm pull-up resistors.

3.7.3 Each output will support 30 TTL loads of 7406 or similar gates.

3.8 8132 FACTORY NUMBERS

TYPE	PART NUMBER	VERIFIED	DESCRIPTION OF MAIN PCB
DESK TOP	8132 0001	NO	Span Temp. Coef. of 12 PPM/ ºC
	8132 0002	YES	Span Temp. Coef. of 6 PPM/ ºC
	8132 0003	YES	Span Temp. Coef. of 3 PPM/ ºC
	8132 0004	NO	Span Temp. Coef. of 6 PPM/ ºC
	8132 0007	NO	Expanded Zero Capture
	8132 0008	NO	Print Interlock
	8132 0009	NO	Setpoint Mode
	8132 0010	NO	Intrinsic Safe
	8132 0201	NO	Averaging
	8132 0202	NO	Averaging Checkweigh
	8132 0203	NO	Averaging Legal for Trade
	8132 1009	NO	Setpoint w/Intrinsic Safe
WALL	8132 0011	NO	Span Temp. Coef. of 12 PPM/ ºC
	8132 0012	UES	Span Temp. Coef. of 6 PPM/ ºC
	8132 0013	UES	Span Temp. Coef. of 3 PPM/ ºC
	8132 0014	NO	Span Temp. Coef. of 6 PPM/ ºC
	8132 0017	NO	Expanded Zero Capture
	8132 0018	NO	Print Interlock
	8132 0019	NO	Setpoint Mode
	8132 0020	NO	Intrinsic Safe
	8132 0211	NO	Averaging
	8132 1019	NO	Setpoint w/Intrinsic Safe

4. INSTALLATION INSTRUCTIONS

4.1 SET-UP PROCEDURE

4.1.1 Inspect the indicator for loose or damaged parts.

4.1.2 Open the indicator and remove the top cover and continue the inspection, noting that all the interconnecting harnesses are securely fastened.

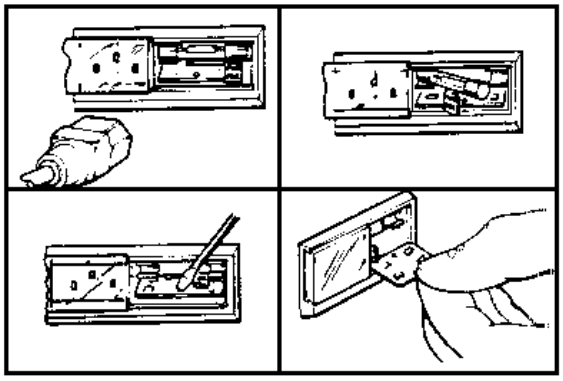
4.1.3 Check the line filter/fuse holder assembly to insure that the proper voltage and fuse size are selected for use in your area.

CAUTION: All units are shipped for 120 VAC operation. See below for alternate voltage operation.

The following photos will assist you in checking or changing the voltage selection. This step MUST be performed prior to applying power to the unit

1. This photo shows the line cord detached and the fuse cover moved to the left.

2. In this photo the fuse is removed by pulling the handle labeled "FUSE PULL"



3. With the fuse removed, use a small screwdriver or similar object and gently pry the card from the assembly. A hole in the card is provided to assist removal.

4. Once you have determined the proper voltage, return the card to the slot. The voltage desired will be on the left side of the card in a readable position. In the photo, the voltage selected is 120V. Replace the fuse with one of the correct rating. Slide fuse cover back into place.

4.1.4 Preliminary Calculations

Before any calibration is done it should be determined if the load cell (s) are of a size that will work correctly with the instrument and platform. If it is a standard build, go ahead and install the scale. However, if it is a special build or if it is a conversion of an existing mechanical scale, it should be checked by determining the microvolts per increment then checking it with the cart to make sure the proposed load cell (s) are the correct size.

HOW TO DETERMINE MICROVOLTS PER INCREMENT

FIRST FIND:

- Scale capacity*.

- Increment Size*.

- Number of load cells or total lever ratio.

- Size of load cell(s)*.

- Cell output rating in mV/V --millivolts per volt of excitation.

*** In LB or KG depending on how scale is to be calibrated and used.**

THEN:

1. **Divide the scale capacity by the increment size to get the number of increments that the indicator is to be programmed for.**

2. **Multiply the cell size by the number of cells or the lever ration (depending on the type of scale). This will be the overall scale capacity (disregard initial at this time).**

3. **Divide the overall scale capacity by the increment size. This will be the overall number of increments.**

4. **Multiply cell output in millivolts by 1,000 to get cell output in microvolts.**

5. **Divide cell output in microvolts by the overall number of increments to get microvolts per increment.**

NOTE: Load Cells built by Toledo are 2 mV/V. Load Cells built by BLH are usually 2 mV/V or 3 mV/V. Load Cells built by HBM that are used on the Toledo 7200 are 1.8 mV/V. The Model 2300 is 1mV/V.

The chart below shows the limits in microvolts for each available number of increments.

MICROVOLT CHART		
Number of Increments Programmed	**Maximum* uV/ Increment**	**Minimum** uV/ Increment**
20,000	1.5	0.3
17,000	1.7	0.3
16,000	1.8	0.3
12,000	2.5	0.3
10,000	3	.0.3
8,500	3.5	0.35
8,000	3.7	0.37
6,800	4.4	0.44
6,000	5	0.5
5,000	6	0.6
4,000	7.5	0.75
3,400	8.8	0.8
3,000	10	1.7
2,500	12	2.0
2,000	15	3.0
1,700	17	1.7
1,500	20	2.0
1,000	30	3.0

NOTE: *the 8132 cannot be adjusted on builds that are greater than the voltage shown for maximum μV/ Increment.

NOTE: **the instrument should never be programmed to less than .3uV/ Increment for multiple cell scales (4 or more) and no less than 1.5 μV/Increment for single cell scales.

If these limits are exceeded, the scale will not be stable.

EXAMPLE 1

60 x 10 Bridgemaster

Scale Capacity in pounds.....100,000 LB
Increment Size in pounds.....20 LB
Number of Load Cells.....4
Size of Load Cells in pounds.....100,000 LB
Cell Output Rating.....2 mV/V

STEP 1
100,000 LB capacity -- 20 LB increments
100,000 ÷ 20 = 5,000 increments

STEP 2
4 load cells - 100,000 LB capacity
4 x 100K = 400,000 LB overall scale capacity

STEP 3
400,000 LB overall scale capacity -- 20 LB increments
400,000 ÷ 20 = 20,000 overall number of increments

STEP 4
2 mV/V cell output rating
2 mV/V x 15 - 30 millivolt cell output at full capacity

STEP 5
30 mV x 1,000 = 30, 000 millivolts at full capacity

STEP 6
30,000 ÷ 20,000 = 3 ÷ 3 = 1.4 microvolt per increment

Check the Microvolt Chart to see if the μV/Increment fits in the range listed for 5,000 increments. The range listed is .6 to 6uV/Increment and 1.5 is inside this range, therefore, it will be a satisfactory build.

EXAMPLE 2

60 x 10 Lectrolever Scale

Scale Capacity in pounds.....100,000 LB
Increment Size in pounds.....20 LB
Lever Ration.....800 to 1
Size of Load Cells in pounds .....200 LB
Cell Output Rating.....mV/V

STEP 1
100,000 LB Capacity 0020 LB increments
100,000 ÷ 20 = 5,000 increments

STEP 2
800 lever ratio -200 LB load cell
800 x 200 = 160,000 LB overall scale capacity

STEP 3
160,000 LB overall scale capacity - 20 LB increments
160,000 ÷ 20 = 8,000 overall number of increments

STEP 4
2mV/V output rating
2mM.V x 15 = 30 millivolt cell output at full capacity

STEP 5
30 mV x 1,000 = 30,000 microvolts at full capacity

STEP 6
30,000 ÷ 8,000 = 30 ÷8 =3.75 microvolts per increment

Check the Microvolt Chart to see if the μV/ increments fits in the range listed for 5,000 increments. The range listed is .6 to 6 μV/Increment and 3.75 μV/Increment is inside the is range, therefore, it will be a satisfactory build.

EXAMPLE 3

Model 2184

Scale Capacity in pounds.....300 LB
Increment Size in pounds.....0.01 LB
Lever Ratio..... ..8.1 to 1
Size of Cell in pounds.....100 LB
Cell Output Rating.....2 mV/V

STEP 1
300 LB scale capacity --0.1 LB increments
300 ÷0.1 = 3.000 increments

STEP 2
8.1 lever ratio -100 LB load cell
8.1 x 100 - 810 LB overall scale capacity

STEP 3
810 overall scale capacity -0.1 LB increments
810 ÷ 0.1 - 8, 100 overall number of increments

STEP 4
2mV/V cell output rating
2mV/V x 15 = 30 millivolts at full capacity

STEP 5
30 mV x 1,000 = 30,000 microvolts at full capacity

STEP 6
30,000 ÷ 8.100 = 300 ÷ 81 = 3.7 microvolts per increment

Check the Microvolt Chart to see if the μV/ Increment fits in the range listed for 3,000 increments. The range listed is 1 to 10 μV/Increment and 3.7 μV/Increment is inside this range therefore, it will be a satisfactory build.

4.1.5 Programming the 8132

a. Select the proper number of increments to match the capacity of the platform and the load cell(s). Select with switches SW4-1 through SW4-5.

b. Select the proper increment size using switches SW5-2 and SW5-3.

c. Select the proper decimal point and/ or dummy zero (if used) with switches SW5-9, SW 6-1, and SW6-2.

d. Select the proper functions for tare, KG/LB, printing and blanking with switches remaining on SW5, SW6, and SW7.

4.2 PRECALIBRATION OF THE INSTRUMENT USING A LOAD CELL SIMULATOR

NOTE: Precalibration of the 8132 is not a required step; however, it can reduce the number of times test weights need to be applied to the scale platform.

FIRST FIND:

- Number of cells used.

- Capacity of one cell*.

- Total level ration (if required).

- Millivolt output of the cell(s).

*** In LB or KG depending on how the scale is to be calibrated and used.**

THEN:

1. **Multiply the cell capacity by the number of cells used. Multiply this number by the lever ratio, if required, to find the Total Cell Capacity.**

2. **Divide the Total Cell Capacity by the correct division number to find LB or KG per step on the simulator. Refer to the following chart for this number.**

MILLIVOLTS/VOLT CELL OUTPUT	DIVISION NUMBER
1	5
1.8	9
2	10
3	15

3. **At this time, connect the simulator to the instrument.**

4. **Connect to the power line.**

5. **Turn the simulator switch to the zero position and set the instrument to zero using the initial switches and potentiometer.**

6. **Calibrate the instrument. Use the maximum number of steps on the simulator without exceeding the instrument's capacity.**

7. **Remove power, disconnect the simulator from the instrument and connect the load cell(s). Reconnect to power. At this time the display will indicate the initial weight. Rest to zero using the initial switches and potentiometer. Make final calibration test with test weights.**

8. **Record the indication at all steps on the simulator along with the simulator's serial number. Attach this record to the instrument housing for future troubleshooting assistance.**

4.3 CALIBRATING THE 8132

4.3.1 Make sure the load cells are connected properly.

4.3.2 Turn SW7-1 ON before applying power or the indication will flash with the following display. the zero pushbutton will not operate with SW7-1 ON.

4.3.3 Turn initial potentiometer R-23 fully clockwise and span potentiometer R-24 fully clockwise.

4.3.4 Start with SW1-1 through SW1-8 OFF, SW2-1 through SW2-7 ON and SW3-1 through SW3-4 ON.

4.3.5 Zero the indication with the front panel zero adjustment.

4.3.6 Set span switch SW2-1 to the OFF position.

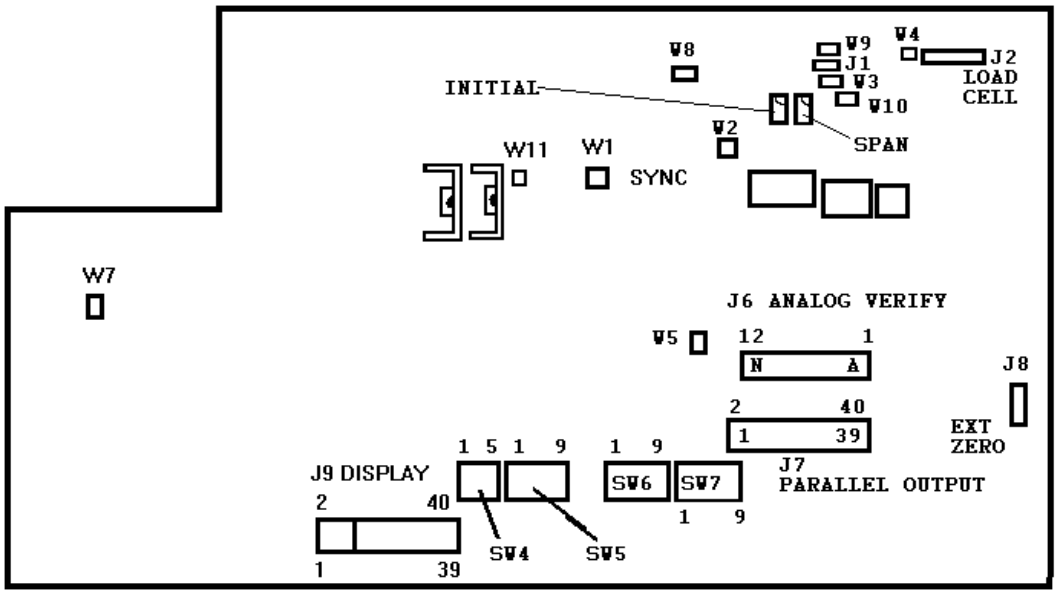
4.3.7 INITIAL -- To set initial, start with all SW1 switche s OFF, then turn them ON, one at a time starting with SW1- noting if it takes the indication below zero. If it does, turn OFF that switch again and go to the next switch. Try turning SW1-2 through SW1-8 ON, one at a time, only leaving the switches ON that do not take the indication below zero. SW1-1 will be the largest step and will be used only on scales with very high initial. Make the final initial adjustment with the fine initial potentiometer R-24.

4.3.8 SPAN-- When setting Span start with all SW2 and SW3 switches in the OFF position and the indication reading zero. Place test weights on the platform. (Approximately 10% of scale capacity.) Try turning SW2-1 ON. If the indication is too low, turn, that switch back OFF and go the next switch. Turning On this switch will have 1/2 the effect of the previous switch. Continue turning ON only the switches that do not take the indication below the correct reading. Make the final span adjustment with the span potentiometer R-24.

4.3.9 Remove test weights and check zero.

4.3.10 Repeat steps 8 and 9 until scale is calibrated properly. The display can be expanded by SW6-6 to allow more accurate calibration.

4.3.11 Remove test weights from the understructure and turn SW7-1 OFF. Capture zero with the zero button.



4.4 PROGRAM SWITCH SUMMARY (INCLUDING OPTION PCB'S)

It is important that you check the Technical Manual of the printer (if a printer is to be used), for program switch settings that may affect printer operations and formats, prior to connecting your 8132 Digital Indicator to the printer.

NOTE: The 8132 should never be programmed for a greater number of increments or a smaller increment size than the scale understructure will allow. Each understructure has a list of standard configurations (capacity and increment sizes) which should determine how the 8132 is to be programmed.

4.4.1 ANALOG FILTER

An Analog Filter is provided with selectable response of 2 seconds and 3 seconds settling time. The resistor pack (R72) can be inserted into its socket either of two ways- thus controlling the Analog Filtering. R72 is located on the right edge of the PCB, (facing the instrument) about half-way back on the desk mount unit and the left for the wall mount unit.

For maximum filtering (3 seconds response) install resistor pack with number one pin or dot away from load cell connector (J2).

For minimum filtering (2 seconds response) install resistor pack with number one pin or dot toward the load cell connector (J2).

1 second and 5 second update rates are available by replacing the R72 resistor pack with the specific resistor pack designated for either update rate. Refer to the 8132 Parts Catalog, PC008132 I05, for the part numbers.

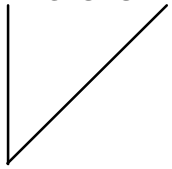
4.4.2 CONTROL PCB PROGRAM SWITCHES

TURNING ON ANY OF SW1 INITIAL SWITCHES WILL INCREASE THE INITIAL COMPENSATION.

SW1-2 HAS 1/2 THE EFFECT OF SW1-1.

SW1-3 HAS 1/2 THE EFFECT OF SW1-2, AND SO ON DOWN TO SW1-8.

SW1	**--INITIAL**
SW1-1	**--LARGEST STEP**
SW1-2	**--**
SW1-3	**--**
SW1-4	**--**
SW1-5	**--**
SW1-6	**--**
SW1-7	**--**
SW1-8	**--SMALLEST STEP**
SW1-9	**--NOT USED**

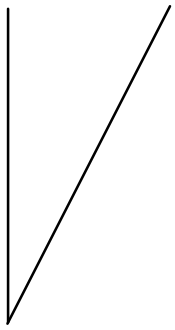


TURNING ON ANY OF SW2 AND SW3 SPAN SWITCHES WILL DECREASE THE WEIGHT INDICATION.

SW2-2 HAS 1/2 THE EFFECT OF SW2-1.

SW2-3 HAS 1/2 THE EFFECT OF SW2-2 AND SO ON DOWN TO SW3-4.

SW2-1	**--LARGEST STEP**
SW2-2	**--**
SW2-3	**--**
SW2-4	**--**
SW2-5	**--**
SW2-6	**--**
SW2-7	**--**
SW3	
SW3-1	**--**
SW3-2	**--**
SW3-3	**--**
SW3-4	**--SMALLEST STEP**



SW4-1 THRU SW4-5

After you have determined the required number of increments, use the chart to find the appropriate switch settings.

NO. OF INCREMENTS	SW4-1	SW4-2	SW4-3	SW4-4	SW4-5
1000	OFF	OFF	OFF	OFF	OFF
1500	OFF	OFF	OFF	OFF	ON
1700	OFF	OFF	OFF	ON	OFF
2000	OFF	OFF	OFF	ON	ON
2500	OFF	OFF	ON	OFF	OFF
3000	OFF	OFF	ON	OFF	ON
3400	OFF	OFF	ON	ON	OFF
4000	OFF	OFF	ON	ON	ON
5000	OFF	ON	OFF	OFF	OFF
6000	OFF	ON	OFF	OFF	ON
6800	OFF	ON	OFF	ON	OFF
8000	OFF	ON	OFF	ON	ON
8500	OFF	ON	ON	OFF	OFF
10000	OFF	ON	ON	OFF	ON
12000	OFF	ON	ON	ON	OFF
16000	OFF	ON	ON	ON	ON
17000	ON	OFF	OFF	OFF	OFF
20000	ON	OFF	OFF	OFF	ON

NOTE: Use only the above switch settings.

SW5-1 LB/KG SELECTION INHIBIT

ON -The display will remain in either LB or KG, as selected by SW6-9 and cannot be changed from one to the other.

OFF -The display may be changed from LB to KG and back again as desired.

RAMS 9 AND 19 ONLY
SW4-1 - Not Used - Should be OFF

SW5-2 INCREMENT SIZE

SW5-3 INCREMENT SIZE

NOTE: DO NOT LEAVE SW5-2 AND SW5-3 BOTH OFF.

LB.	KG.	SW5-2	SW5-3
X1	X0.5	OFF	ON
X2	X1	ON	OFF
X5	X3	ON	ON

SW5-4 TARE DISPLAY

ON -The Tare Display is OFF and Tare is inoperative.

OFF -The Tare Display is ON and the keys affecting tare are operative.

NOTE: SW5-4 must be OFF with Rams 9 & 19.

SW5-5 AUTO CLEAR

ON -Tare must be cleared by the use of the C (Clear) pushbutton.

OFF - Tare will automatically clear when the indication returns to zero. (The scale must first settle at some weight value greater than 10 increments up scale.)

NOTE: SW5-4 must be OFF for this function to operate. Also see SW5-7 for possible interaction.

SW5-6 MULTIPLE LINE PRINTING

ON -Single line printing.

OFF -The printer will print multiple lines -- Gross, Tare, and Net.

SW5-7 TARE INTERLOCK

ON -Tare may be cleared or changed at any positive weight indication. Keyboard entries (both tare and setpoint) are rounded to the nearest increment size.

OFF -The indication must be at true zero before the tare can be removed. (True zero is actually ZERO minus the tare value.) The least significant digit of keyboard entry (tare and/or setpoint information) must correspond to the increments size or the entry will not be accepted.

LSD OF TARE ENTERED	WITH SW5-7 OFF				WITH SW5-7 ON			
	X1	X2	X5	X10	X1	X2	X5	X10
0	0	0	0	0	0	0	0	0
1	1	-	-	-	1	2	0	0
2	2	2	-	-	2	2	0	0
3	3	-	-	-	3	4	5	0
4	4	4	-	-	4	4	5	0
5	5	-	5	-	5	6	5	10
6	6	6	-	-	6	6	5	10
7	7	-	-	-	7	8	5	10
8	8	8	-	-	8	8	10	10
9	9	-	-	-	9	10	10	10
10	10	10	10	10	10	10	10	10
(-) Tare not accepted.								

SW5-8 TARE ENTRY

ON -Digital Tare will not work, pushbutton Tare does work.

OFF -Digital Tare and pushbutton Tare both work.

NOTE: SW5-8 must be OFF with Rams 9 & 19.

SW5-9 DECIMAL POINT

SW6-1 DECIMAL POINT

SW6-2 DECIMAL POINT

LB KG X5 X2 X2 X1 X1	KG KG. X5	SW5-9	SW6-1	SW6-2
XXXX00	XXXXX0	OFF	OFF	OFF
XXXXX0	XXXXXX	OFF	OFF	ON
XXXXXX	XXXXX.	OFF	ON	OFF
XXXXX.X	X	OFF	ON	ON
XXXX.XX	XXXX.X	ON	OFF	OFF
XXX.XXX	X	ON	OFF	ON
XX.XXXX	XXX.XX	ON	ON	OFF
X.XXXXX	X	ON	ON	ON
	XX.XXX			
	X			
	X.XXXX			
	X			

SW6-3 AUTO ANALOG VERIFY/SETPOINT MODE SELECT

NOTE: In order for Analog Verification to operate, an Analog Verification PCB must be in place in J6 on the 8132 Main PCB.

NOTE: Auto Analog Verify (SW6-3) must be OFF and Analog Verify (SW6-4 must also be on). Analog Verification

ON -The Analog Verify will operate only when AV button is pressed. (SW6-4 must also be On).

OFF -The Analog Verify will operate automatically every time the indicator reruns to true zero. (The scale must firs settle at some weight value greater than 10 increments up scale.) The Analog Verify will also operate manually by pressing the AV button while at true zero.

RAMS 9 AND 19 ONLY
SETPOINT MODE SELECT

If Rams 9 or 19 are used, SW6-3 is used to select the mode of operation.

ON -The four setpoint mode is selected with no dribble, preact or tolerance settings.

OFF -Two setpoints with dribble, preact and tolerances are selected.

NOTE: All setpoint information must be checked after changing SW6-3.

SW6-4 ANALOG VERIFY

ON -Analog Verify will operate.

OFF -Analog Verify will not operate.

RAMS 9 AND 19 ONLY
SW6-4 -- Not Used -- Should be OFF

SW6-5 DEMAND MODE

ON -Normal mode, internal update is used.

OFF -Demand mode, the Demand Input line, (refer to Serial Connector Diagram) must be held low, then pulsed positive at +5V for 50 ms, forcing an A/D cycle.

SW6-6 EXPAND (For Calibration Only)

ON -The display will be expanded for calibration.

INCREMENT SIZE	DISPLAY EXPANDED BY
1	X10
2	X5
5	X2

OFF -Normal Mode.

NOTE: The AZM (Automatic Zero Maintenance) will be disabled in the expand mode. Check zero after switching to expand.

SW6-7 MOTION SENSITIVITY

ON -2 increments or less of movement is not detected.

OFF -1/2 increment or less of movement is not detected.

SW6-8 MOTION BLANKING

ON -Motion on the scale will NOT cause the display to blank.

OFF -Motion on the scale will blank the display. (Sensitivity is determined by SW6-7.)

SW6-9 POWER UP KG

ON -The display will be in KG when power is first applied. The Analog Verify option will operate only in the Kg mode.

OFF -The display will be in LB when power is first applied The Analog Verify option will operate in the LB mode only.

NOTE: This switch MUST be set BEFORE power is applied. Selection of LB or KG may be made at the keyboard. (See SW5-1).

SW7-1 AUTOMATIC ZERO MAINTENANCE (AZM)

ON -AZM and the Z (Zero) pushbutton are disabled. The display will not blink on power up.

OFF -AZM will operate to keep the instrument on zero in spite of small changes on the platform. (Less than 1 increment.) The Z (Zero) pushbutton will also operate.

SW7-2 CHECKSUM

ON -No Checksum character transmitted.

OFF -A Checksum character is transmitted to a device requiring checksum.

NOTE: Checksum is defined as the 2's complement of the sum of the bits 0-6 of all characters preceding the checksum character.

SW7-3 PRINT GROSS, TARE, NET

ON -The printer will print the Gross, Tare, and Net weight information.

OFF -Only the displayed weight is printed. (Gross or Net - Not Tare.)

SW7-4 -NEGATIVE WEIGH PRINTING

ON -Below "0" weights may be printed.

OFF -The printer will not print as long as the indication is below "0".

SW7-5 PRINT TONS

ON -A symbol "t" for tons is printed in place of the LB or KG symbol.

OFF -Only the LB or KG units is printed.

NOTE: No conversion from LB or KG to tons is made. The scale MUST be calibrated in tons.

The 8805 printer will not print a "t" for tons. The space for the weight symbol will be left blank if SW7-5 is ON.

SW7-6 BAUD RATE SELECT

SW7-7 BAUD RATE SELECT

The setting of SW7-6 and SW7-7 will determine the output baud rate.

BAUD RATE	SW7-6	SW7-7
300	OFF	OFF
1200	OFF	ON
2400	ON	OFF
4800	ON	ON

NOTE: At 300, 1200, and 2400 baud, activation of the PRINT pushbutton or a remote print command is required to generate a transmission. At 4800 baud the output is continuous.

RAMS 9 AND 19 ONLY
THE 8132 WILL OPERATE AT 300 BAUD OR 4800 BAUD ONLY!. WHEN INSTALLING ONE OF THESE RAMS, THE SWITCH SETTINGS ARE AS FOLLOWS.

SW7-6 BAUD RATE SELECT (20 mA OUTPUT)

ON -The weight information is continuously transmitted at the 4800 Baud rate.

OFF -The weight information is transmitted at the 300 Baud rate. Activation of the PRINT pushbutton or remote print command is required.

SW7-7 MINIMUM PRINT

SW7-8 MINIMUM PRINT

The setting of SW7-7 and SW7-8 determines how many increments must be displayed before a print may be made.

INCREMENTS	SW7-7	SW7-8
0	OFF	OFF
10	OFF	ON
20	ON	OFF
50	ON	ON

SW7-8 MINIMUM PRINT

ON -There must be at least 20 increments displayed before a transmission will occur.

OFF -No Minimum

SW7-9 DOUBLE WIDTH PRINT

ON -Normal print width selected.

OFF -The printer will print the GROSS or NET weight and symbol at twice the normal width. (The weight printed at double width is the LAST weight field to be printed.)

NOTE: This function is NOT active for the 500, 510, 8810, 8820 or 8830 printers. This switch must be ON when printing Gross, Tare, and Net on a single line.

4.4.3 CONTROL PCB JUMPER SETTINGS

W1 SYNC

W2 SYNC

IN -Line Sync (50 Hz or 60Hz as determined by local power.)

OUT -Internal Sync (217 Hz)

NOTE Both Line Sync jumpers, W1 and W2, must be set the same way. Either they are both in or both are out!

W3 LOAD CELL EXCITATION REDUCTION

W4 LOAD CELL EXCITATION REDUCTION

IN -Load cell excitation reduced to ± 5V.

OUT -Normal mode, load cell excitation ± 7.5V.

W5 ANALOG OUTPUT

IN -Normal mode - Must be in place to allow output of filter to the A/D section.

OUT -Factory Test purposes only.

W6 THIS DESIGNATION IS NOT USED

W7 EXTERNAL ROM SELECT

IN -Normal operation.

OUT -Factory Test purposes only.
Used in conjunction with TJ1 and TJ2.

W8 COMMON MODE

Jumper between Pins 1 and 2
Common mode enable
Use this setup except with Rams 10 and 20.

Jumper between Pins 2 and 3
Common mode disable
Use this setup with Rams 10 and 20.

W9 INTRINSIC SAFETY

W10 INTRINSIC SAFETY

IN -Intrinsic Safety. These pins must be shorted with Rams 10 and 20.

OUT -Normal Operation.

WARNING

With Rams 10 and 20 the following jumpers must be as stated for Intrinsically Safe Operation.

W3, W4, W9, W10 and W11 must all be shorted from one pin to the other.

W8 must be from Pin 2 to Pin 3.

J1-1 LINEARITY (UNITS WITH ANALOG VERIFY OPTION ONLY)

J1-1 to J1-2 + Linearity correction.

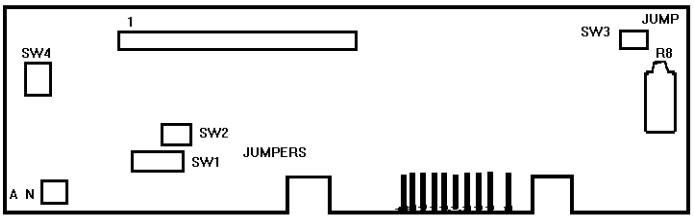
J1-2 to J1-3 - Linearity correction.

Potentiometer R6 on the Analog Verify PCB is used, in conjunction this jumper, for fine adjustment of linearity.

4.4.4 PARALLEL OUTPUT PCB/ANALOG OVER PCB JUMPER SETTINGS

These PCB's fit into J7 on the 8132 Main PCB.

A. Parallel I/O PCB - Part Number 108614 00A.



NOTE: The PRINT pushbutton on the 8132 is ONT active when using the parallel BCD option with a Model 500 or 510 Printer.

JUMPER SETTINGS

SW1 MOTION SYNC (PARALLEL OUTPUT PCB ONLY)

ON -Jumper between pins 1 and 2, sync pulse is enabled at all times.

OFF -Jumper between pins 2 and 3, sync pulse is disabled when scale motion is detected.

SW2 PARITY (PARALLEL OUTPUT PCB ONLY)

ON -(Jumper Connected) Odd parity selected.

OFF -(Jumper Disconnected) Even parity selected.

SW3 ANALOG OVER (PARALLEL OUTPUT AND ANALOG OVER PCB).

ON -(Jumper Connected) An analog over signal is present at J22-43. The adjustment for this signal is through the variable resistor R8 located on the Parallel Output and Analog Over PCB's.

OFF -(Jumper Disconnected) No analog over signal available at J22-43.

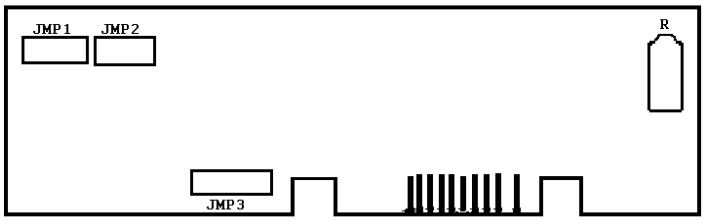
SW4 DIGITAL OVER (PARALLEL OUTPUT PCB ONLY).

ON -(Jumper connected) A digital over signal is present at J22-43 when the indicator reaches 105% of selected capacity.

OFF -(Jumper Disconnected) No digital over signal available J22-43.

NOTE: Do NOT attempt to have both SW3 and SW4 ON at the same time, as errors may occur.

B. Parallel I/O PCB - Part Number C108614 00A



JUMPER SETTINGS

JMP-1 ANALOG OR DIGITAL OVER

Jumper Between Pins 1 & 2
Digital over signal is present at J22-43 when display exceeds selected capacity by 5 increments.

Jumper Between Pins 2 & 3
Analog over signal is present at J22 - 43. The adjustment for this signal is through the variable resistor R7.

JMP-2 MOTION SYNC

Jumper Between Pins 1 &2
Sync pulse is disabled when motion on the scale is detected. When Pin 50 of J22 is held to ground, the sync pulse is enabled regardless of motion.

Jumper Between Pins 2 & 3
Sync pulse is enabled at all times.

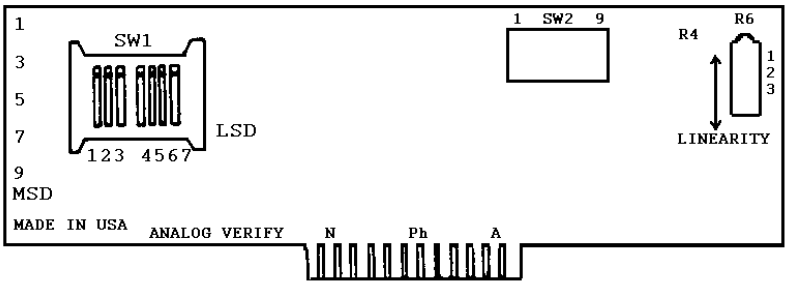
JMP-3 PARITY

Jumper Between Pins 1 & 2
Even parity is selected.

Jumper Between Pins 2 & 3
Odd parity is selected.

4.4.5 ANALOG VERIFY PCB

This PCB fits into J6 on the 8132 Main PCB.



MODEL 8132 ANALOG VERIFICATION

A. Principle of Operation

Verification of load cell wiring, excitation, amplifier gain and the A/D conversion is accomplished by connecting the load cell excitation to the load cell signal via a relay contact and precision resistor. The value of the resistor is selectable in binary steps so that the resulting signal from the lead cell has a magnitude of from 90 to 95% of the scale capacity.

The relay is actuated under microprocessor control either automatically or manually from the AV pushbutton on the keyboard. The AV cycle will begin only when the 8132 digital indication is within ±0.25 increments of the center of the zero increment. (Zero light is ON).

A 6 digit slide switch in the 8132 is set to the "REFERENCE" reading for the AV measurement. This reference is set to 0.1 increment resolution, and is normally set up at the time of scale installation, after the scale has been accurately calibrated.

In operation, whenever the AV cycle is actuated, if the scale is on zero, the relay closes shunting the load cell with the AV resistor. The action causes a load cell signal which when digitized results in a weight reading which is about 95% of the full scale reading . The digitized reading is compared by the microprocessor to the REFERENCE reading, and one of these actions results:

1. **If the ACTUAL reading is within ±1.0 increments of the REFERENCE reading, the AV test is passed, the relay contact is opened, and the scale returns to zero.**

2. **If the ACTUAL reading is greater than 1.0 but less than 2.0 increments from the REFERENCE reading, a CORRECTION factor of one half the difference is added (or subtracted) to span the ACTUAL reading closer to the REFERENCE reading. This cycle is repeated until the CORRECTED ACTUAL reading is within 1.0 increments of the REFERENCE. By definition, the CORRECTION factor can never exceed 1.0 increment, since no correction will be made when the ACTUAL is greater than 2.0 increments from he REFERENCE.**

3. **If the ACTUAL reading is greater than 2.0 increments from the REFERENCE reading, an error message is displayed, and the 8132 becomes inoperative. Removing and restoring power allows the instrument to operate, until the next AV cycle which results in a difference greater than 2.0 increments, which again renders the unit inoperative.**

B. Automatic AV Cycle Initiation

On automatic AV, whenever the scale has a "no motion" condition with a signal greater than 10 increments, then returns to zero, an AV cycle is initiated automatically.

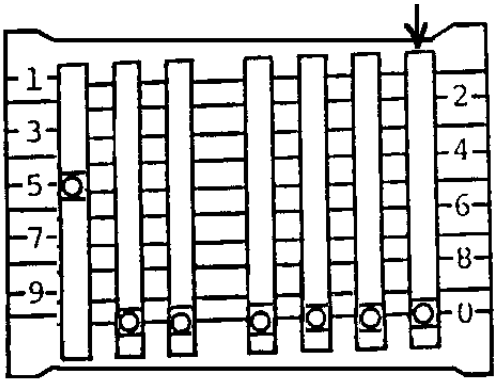
C. AV Test Failure

If the AV test fails, when initiated either manually or automatically, the circuit checks to determine whether the scale is off zero when the AV relay is reopened. If the scale is off zero by an amount greater than 2.0 increments the AV cycle is aborted, and the 8132 does not "lock up".

D. Set Up

1. Set up the scale and instrument and calibrate in the normal manner.

2. Set the REFERENCE slide switch to 500,000 or greater. **NOT USED, LEAVE ON "0"**



3. With the scale on Zero press AV. Display message UUUUUU will appear indicating the AV cycle in process.

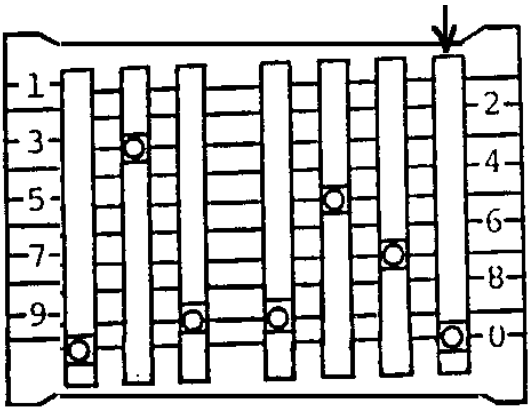
4. The message ERROR U will appear. Press AV again and a number will appear. the number represents the ACTUAL AV reading in minor increments.

5. Adjust the AV resistor value by use of the SW2 program switch on the Analog Verify PCB, until the ACTUAL reading is about 95% of full scale, expressed in minor increments. Minor increments full scale is always the number of increments programmed with SW4 x 10.

6. Record the exact value displayed, and set SW1 on the Analog Verify PCB, to that value.

If SW1 is set while the 8132 is in operation, the most significant digit should be set last so that no data is entered into the CORRECTION register while the switches are being set.

NOT USED, LEAVE ON "0"



EXAMPLE: The 8132 display shows 39957, set SW-1 switches accordingly.

7. Check for correct AV action by pressing the AV button after the display has returned to zero.

8. AV cycle time is dependent on the analog filter selection and upon scale resolution. Cycle time varies from about 4 to about 8 seconds depending on these conditions.

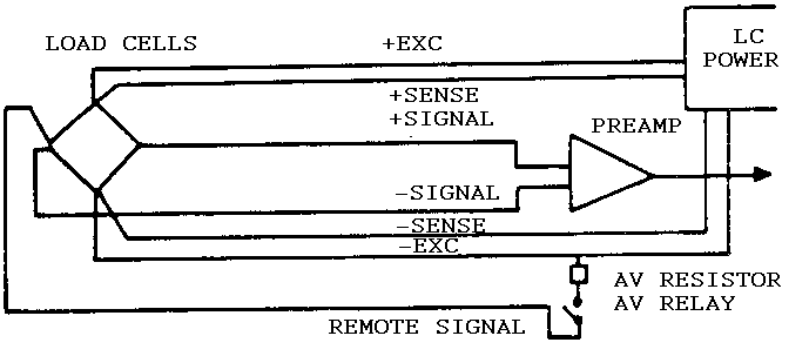
e). Other Considerations

1. An internal program switch permits disabling automatic AV initiation.

2. AV acceptance tolerances are small, so that use of the AV feature for scales having greater than 8000 increments full scale may result in frequent "AV fail" conditions due to load or support vibration, wind effects, and externally generated.

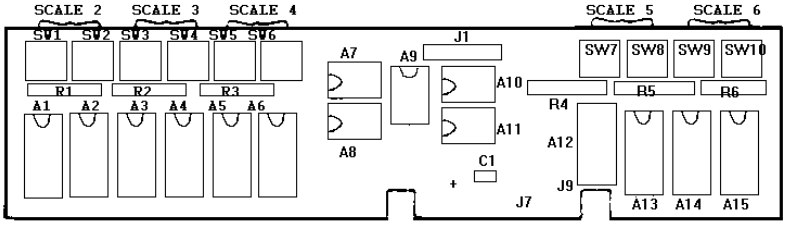
If SW6-9 is ON (Power up KG) the AV function will only operate in the KG mode. If SW6-9 is OFF (Power up LB) the AV function will only operate in the LB mode.

SIMPLIFIED SCHEMATIC



4.4.6 MULTIPLE BUILD PCB SWITCH SUMMARY (For use with Model 151)

This PCB fits into J7 on the 8132 Main PCB.



The ten switches located on the Multiple Build PCB are divided into 5 groups, with each group consisting of 2 banks of switches. The first bank kin each group is used to select the total increment count. The second bank in each group is used to select the increment size and decimal point location. Refer to the following chart the correct switch settings of each scale installed.

NOTE: WITH THE MULTIPLE BUILD OPTION INSTALLED THE SUM MODE OF THE 151 WILL NOT OPERATE.

NOTE: The use of this PCB also requires a different Control PCB in the 8132.

SCALE NUMBER	SWITCH NUMBER	SWITCH DESCRIPTION
1	All switches for scale # 1 are located in the 8132. Refer to Section 4.5.2 for the proper switch settings.	
2	SW1- 1 thru 5 SW2- 1 & 2 SW2-3, 4 & 5	Total Increment Count Increment Size Decimal Point Selection
3	SW13 - 1 thru 5 SW4 - 1 & 2 SW4 - 3, 4 & 5	Total Increment Count Increment Size Decimal Point Selection
4	SW 5 - 1 thru 5 SW6 - 1 & 2 SW6-3, 4 & 5	Total Increment Count Increment Size Decimal Point Selection
5	SW7 - 1 thru 5 SW8-1 & 2 SW8 -3, 4 & 5	Total Increment Count Increment Size Decimal Point Selection
6	SW9 1- thru 5 SW10 - 1 & 2 SW10 - 3, 4 & 5	Total Increment Count Increment Size Decimal Point Selection

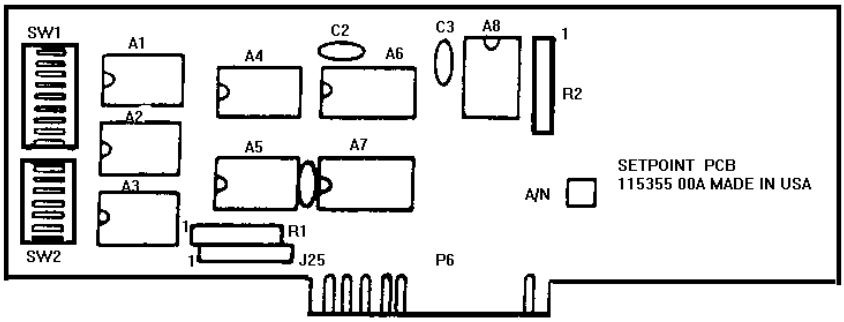
SW1, 3, 5, 7, 9 - 1 thru 5 TOTAL INCREMENT COUNT					
NUMBER OF INCREMENTS	-1	-2	-3	-4	-5
1000	OFF	OFF	OFF	OFF	OFF
1500	OFF	OFF	OFF	OFF	ON
1700	OFF	OFF	OFF	ON	OFF
2000	OFF	OFF	OFF	ON	ON
2500	OFF	OFF	ON	OFF	OFF
3000	OFF	OFF	ON	OFF	ON
3400	OFF	OFF	ON	ON	OFF
4000	OFF	OFF	ON	ON	ON
5000	OFF	ON	OFF	OFF	OFF
6000	OFF	ON	OFF	OFF	ON
6800	OFF	ON	OFF	ON	OFF
8000	OFF	ON	OFF	ON	ON
8500	OFF	ON	ON	OFF	OFF
10000	OFF	ON	ON	OFF	ON
12000	OFF	ON	ON	ON	OFF
16000	OFF	ON	ON	ON	ON
17000	ON	OFF	OFF	OFF	OFF
20000	ON	OFF	OFF	OFF	ON

SW2, 4, 6, 8, 10 - 1 & 2 INCREMENT SIZE			
LB.	KG.	-1	-2
X1	X0.5	OFF	ON
X2	X1	ON	OFF
X5	X2	ON	ON

SW2, 4, 6, 8, 10 - 3, 4, & 5		DECIMAL POINT SELECTION		
LB. KG. X5 X2 X2 X1 X1	KG. X5	-3	-4	-5
XXXX00	XXXXX0	OFF	OFF	OFF
XXXXX0	XXXXXX	OFF	OFF	ON
XXXXXX	XXXXX.X	OFF	ON	OFF
XXXXX.X	XXXX3.XX	OFF	ON	ON
XXXX.XX	XXX.XXX	ON	OFF	OFF
XXX.XXX	XX.XXXX	ON	OFF	ON
XX.XXXX	X.XXXXX	ON	ON	OFF
X.XXXXX	-------	ON	ON	ON

4.4.7 SETPOINT INTERFACE PCB SWITCH SUMMARY

This PCB fits into J6 on the 8132 Main PCB



The switches located on the Setpoint Interface PCB are used to program weight tolerances or setpoint 1 and 2 when the Two Setpoint Mode has been selected. The tolerance signals are not operational in the Four Setpoint Mode. SW1 and SW2 are arranged in four "banks" of four switches. Each of the two digits used for the tolerance value is binary coded by a combination of switches on that "bank" The display increments and maximum is 99 display increments.

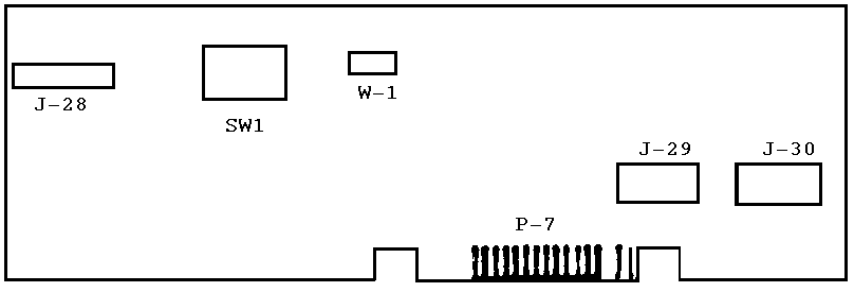
DESCRIPTION	SWITCH POSITION	DECIMAL VALUE
Tens Digit of Tolerance for Setpoint 1	SW1-1 SW1-2 SW1-3 SW1-4	8 4 2 1
Units of Tolerance for Setpoint 1	SW1-5 SW1-6 SW1-7 SW1-8	8 4 2 1
Tens Digit of Tolerance for Setpoint 2	SW1-9 SW2-1 SW2-2 SW2-3	8 4 2 1
Units Digit of Tolerance for Setpoint 2	SW2-4 SW2-5 SW2-6 SW2-7	8 4 2 1

If a combination of switches is selected that gives a decimal number greater than 9, a display error code of "Error U" will be shown. Changing the switch selection to a valid number and activating the clear button will remove the error code from the display.

NOTE: Turn switch ON to enable

4.4.8 REMOTE INPUT PCB SUMMARY

This PCB fits into J-7 of the 8132 Main PCB.



a). Operation Summary

The remote input K.O.P. provides for remote keyboard/operator functions of both the Desk and Wall version of the 8132. A terminal or computer may be used for Data Transmission. Circuitry allows for data input to be through either an ASCII 20 milliamp current loop or RS232C input. The incoming data consists of either a single ASCII alpha numeric character, or a string of characters to perform a specific function. Data formatting is as follows. Refer to Figure 1 for the ASCII characters and their functions.

Eleven Bit Frame:

Start Bit	7 Bit Word	Parity Bit	2 Stop Bits

Ten Bit Frame:

Start Bit	7 Bit Word	Parity Bit	1 Stop Bit

FUNCTION MODE	ASCII CHARACTER
ZERO	Z,z
ANALOG	A,a
VERIFY/SELECT	X,x
LB/KG	C,c, G,g
CLEAR (GROSS)	T,t
TARE/ENTER	P,p
PRINT	0
0/SP4	1
1/SP1	2
2/SP2	3
3/SP3	4
4/DR1	5
5/DR2	6
6	7
7/PR1	8
8/PR2	9
9	B,b
BLANK	N,n
NORMAL	H,h
HOLD	R,r
NO HOLD	D,d
DEMAND	

BLANK: Weight and Tare displays are blanked. remote input or keyboard input are not inhibited. The input will be displayed in the Tare display while the input is being made. Printer output is disabled while blank is active.

NORMAL: Returns blanked display to normal.

HOLD: Weight and Tare displays are held constant. Manual keyboard entry is disabled. Blank and Demand functions are delayed until Hold is released as well as printer output.

NO HOLD: Releases Hold and returns 8132 to normal operation.

DEMAND: To activate the Demand mode, SW6-5 on the 8132 Main PCB must be OFF. The 8132 display will update only when the D,d character is sent. Printer output is disabled in this mode.

b). Switch Settings

Selections for baud rate and parity are made on SW1 on the remote input PCB.

PARITY SELECTIONS			BAUD RATE SELECTIONS		
	SW1-1	SW1-2		SW1-3	SW1-4
Mark	ON	ON	300	ON	ON
Even	OFF	ON	1200	OFF	ON
Odd	ON	OFF	2400	ON	OFF
*None	OFF	OFF	4800	OFF	OFF

***The condition of no parity occurs when the mark bit is set equal to zero. A bit occupies this space but is not checked.**

NOTE: These selections ONLY affect the link between the 8132 and remote terminal. They do not affect the printer communication.

c). Interface Summary

Pinouts for the Remote Input connection PJ-26 (the 25 pin connector located above J-19 on the rear of the desk mount or the 50 pin connector on the bottom of the wall mount), are given in Figure 2 20 milliamp current loop and RS232C input may NOT be connected simultaneously as data input will be inhibited.

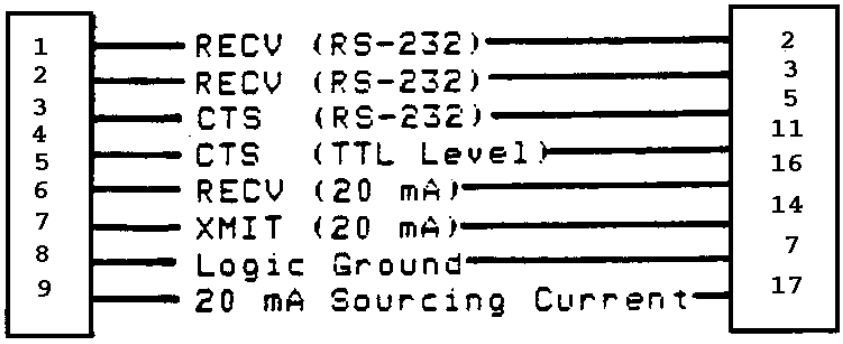


FIG. 2

NOTE: A jumper must be installed between pins 7 and 14 and also pins 16 and 17 of J-26. If these jumpers are not installed, the display will power up with one segment of each LED brighter than the remaining six.

5. OPERATING INSTRUCTIONS

FRONT PANEL CONTROLS

Display: Weight display is 6 digits 0.5 inches high with lighted decimal point. tare display is 5 digits 0.3 inches high with lighted decimal point.

Legends: Legends are LB, KG, ZERO, and NET with back lighted red letters Over capacity is indicated by blanking of the display. Motion is indicated by extinguishing the LB and KG legend. Under capacity is indicated by display blanking except for a minus sign to the far left. This occurs at approximately -7% of selected capacity.

LB: The LB display is illuminated when motion has ceased and the LB mode has been selected.

KG: The KG display is illuminated when motion has ceased and the KG mode has been selected.

ZERO: ZERO will be illuminated when the instrument is within ±0.25 increments of the center of the zero increment.

NET: The NET legend, when illuminated, indicates tare has been entered.

Power Up Blink: when power is first applied to the instrument , the display blinks until zero has been captured as indicted by the illumination of the zero indicator. This feature can be disabled by means of the same program switch that disables Automatic Zero Maintenance (AZM) and pushbutton zero (SW7-1).

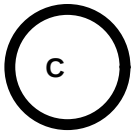
Zero Adjustment: an analog zero adjust potentiometer is located on the front panel, it can be adjusted with a removable knob or screwdriver. The range of zero adjustment is about 4 % scale capacity.

Pushbuttons: Pushbuttons, depending upon options, may include Zero, LB/KG, TV (Test Verify), AV (Analog Verify), Select, Print C (Clear), TR (Tare), TR/ENT (Tare - Enter), SP1 (Setpoint 1) DR1 (Dribble 1), PR1 (Preact 1), SP2 (Setpoint 2), DR2 (Dribble 2), PR2 (React 2), SP3 (Setpoint 3), SP4 (Setpoint 4) and digits 0-9.

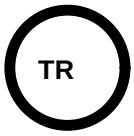
Pushbutton Zero: A front panel zero pushbutton provides rezeroing of the scale over a range of 4% of the scale capacity. An internal program switch Automatic Zero Maintenance (AZM) features.

LB/KG Pushbutton: An alternate action pushbutton is provided for LB/KG selection. When switching, the increment size will be adjusted and, if required, the decimal point will be shifted. The instrument can be locked into the KG mode or the LB mode by the use of programming switches.

Print Pushbutton: A print pushbutton is provided to initiate a print cycle. The type of print will be dependent on the model of printer and position of the program switches.



Clear Pushbutton
Tare may be cleared by the use of the clear pushbutton or automatically by the use of automatic clear can be disabled by the use of a program switch. Pressing and holding the Clear pushbutton once again will cause all of the display segments to light up. This action shows that all drivers and displays operate in both on and off conditions.



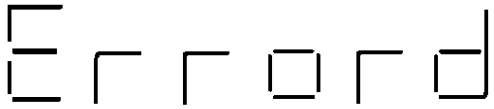
Pushbutton Tare: When the tare button is pressed with weight on the scale, and no weight motion present, the tare weight will be subtracted from the gross weight to provided a net weight display of zero. If the weight is removed from the scale, the tare weight will be displayed as a negative value.

Keyboard Tare: The instrument is equipped with a keyboard to provide a means of entering tare weight. Digital tare up to 5 digits can be entered up to full scale capacity. The number entered is displayed. When the tare button is pressed, the tare is entered and the net weight is displayed. A keyboard timer clears the entry if more than 6 seconds elapse between the time the digits are entered and the tare button is pressed. With Tare Interlock switch SW5-7 OFF, the least significant digit (LSD) of tare entry must correspond to the increment size or tare will not be accepted. With Tare Interlock switch SW5-7 ON, the tare entry is rounded to the nearest size.

LSD OF TARE ENTERED	WITH SW5-7 OFF				WITH SW5-7 ON			
	X1	X2	X5	X10	X1	X2	X5	X10
0	0	0	0	0	0	0	0	0
1	1	-	-	-	1	2	0	0
2	2	2	-	-	2	2	0	0
3	3	-	-	-	3	4	5	0
4	4	4	-	-	4	4	5	0
5	5	-	5	-	5	6	5	10
6	6	6	-	-	6	6	5	10
7	7	-	-	-	7	8	5	10
8	8	8	-	-	8	8	10	10
9	9	-	-	-	9	10	10	10
10	10	10	10	10	10	10	10	10
(-) Means tare not accepted.								

DISPLAY VERIFICATION -- AUTOMATIC (VERSIONS WITH VERIFICATION OPTION ONLY)
Circuitry within the instrument continuously samples the voltage drops across the Display LED segments to ascertain whether the LED is on or off. This information is reconstructed within the microprocessor to generate data which is compared to the data used to control the digital display. If the data is the same , the display is correct. If the data differs, an error message is generated.

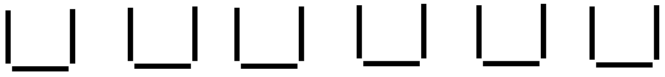
THE ERROR MESSAGE FOR DISPLAY VERIFICATION FAILURE IS THE FOLLOWING DISPLAY:



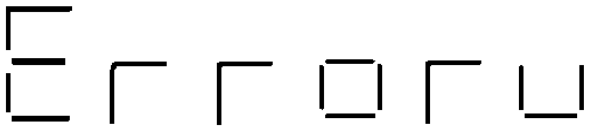
To confirm that this checking system is functional, the Test Verify pushbutton, if equipped, causes a short in one of the LED segments which results in false data, and a display verify failure indication.

ANALOG VERIFICATION (VERSION WITH VERIFICATION OPTION ONLY)
When the AV key is pressed, a precision resistor shunts the load cell to establish a predetermined weight display reading of about 95% of full scale.

The resulting weight data is compared to a seven decade switch register which was adjusted to the test reading at the time of scale calibration. Failure of the data to compare to the switch register within ±1 increment inhibits further use of the scale and places a unique symbol for this failure mode into the display. When an analog verification cycle is in progress., the message on the display is :

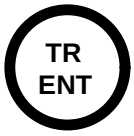


When the analog verification test fails the message on the display is:



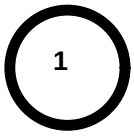
Front panel controls for setpoint option

Select: This pushbutton allows access to the Setpoint Mode. After this key is pushed, a setpoint location must be entered then the Enter button pressed. This will allow access to the data in that location for either review or change. If this key is mistakenly enabled, simply depress the Enter button. If the display shows "Error U", depress the C (Clear) key to clear the error before pressing Enter.



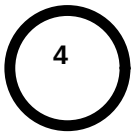
TR/ENT: The Tare - Enter key has a dual purpose. If the Setpoint Mode has not been enabled (i.e., the Select button has not been pressed), this key operates like the standard tare button. After the Select button and a setpoint location have been entered, pressing this key will cause the tare display to show the data present in that setpoint register. The tare display will flash to show that the Setpoint Mode has been entered. When the first digit of setpoint information is entered, the display will stop flashing.

After the desired information is entered via the keyboard, pressing the Enter key once again will transfer the data to the proper register and return the tare display to show tare weight. If the entire entry, including activation of the TR/ENT key, is not completed within six seconds, the display will return to flashing the previous setpoint data.



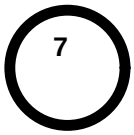
1/SP1, 2/SP2. 3/SP3. 0/SP4:

When not in the Setpoint Select Mode, these keys are SP1 used for tare selection of 0 - 4. When in the Setpoint Select Mode, these keys allow selection of the weight setpoint values. In the Two Setpoint Mode (with dribble and preact) SP1 and SP2 should be programmed in as the desired total weight. (Dribble and preact values are subtracted from this number). In the Four Setpoint Mode the weight entered into each register is the value at which the TTL level signal will change status as the display updates. The weight value selected for the setpoint value must not be greater than the capacity that the 8132 is programmed for. The proper sequence for selection is : Select - SP1 or SP2 or SP3 or SP4 - Enter - setpoint values (via the keyboard numbers) - and Enter.



4/DR1, 5/DR2:

If the Setpoint Select Mode has not been excited, these keys enter digits DR1 4 and 5 as tare information. When the Select Mode has been entered, these keys allow selection of the weight of material that is to slow fed or dribbled. The value that is entered via the keyboard is subtracted from the total setpoint weight fast feed control line changes stat at this point. A value of up to three digits (exclusive of fixed zeros) may be entered as the dribble weight value. The sequence for selection of this value is: Select - DR1 o DR2 - Enter- Dribble value (via keyboard numbers) - and Enter.



7/PR1, 8/PR2:

These keys are used to enter digits 7 and 8 for tare until the Setpoint PR1 Select Mode is entered. in the Select Mode, these keys select the registers or preact values. These weight values are subtracted from the total setpoint weight and the TTL level control signals for feeding change status when the displayed weight reaches this point. A value of only tow digits (exclusive of fixed zeros) may be entered as a preact value. The sequence for selecting preact values is: Select --PR1 or PR2 --enter -- Preact values (via the keyboard numbers) ----and Enter.

NOTE: If an illegal setpoint location is entered, the display will flash "Error U". For example, this will occur when SP3 location is accessed when in the Two Setpoint Mode.

6. PREVENTIVE MAINTENANCE

The Model 8132 Digital Indicator is designed to require a minimum of maintenance and service. This section provides instructions and procedures for maintenance of the indicator, as well as a troubleshooting guide to aid problem analysis.

It is suggested that assistance from Toledo Scale service personnel be requested in the event a problem should arise that is beyond the scope of this technical manual.

6.1. REQUIRED TOOLS AND SUPPLIES

The following items are recommended for 8132 maintenance and repairs. Common hand tools are also required:

--Volt - Ohm Meter
--Load Cell simulator (P/N 100865 00A)
--Cleaning Cloth
--"Velostat" Static Bags
--Static Wrist Strap

6.2 MAINTENANCE SCHEDULE

The frequency at which normal maintenance (cleaning and inspection) should be performed, when installed in a clean office environment, should be twice a year. However, if the unit is subjected to a dusty or a dirty environment the frequency should be increased as required.

6.3 CLEANING

Clean the keyboard and cover with a soft, clean cloth that has been dampened with a mild window type cleaner. (DO NOT USE ANY TYPE OF INDUSTRIAL SOLVENT.) DOT NOT SPRAY CLEANER DIRECTLY ONTO THE UNIT).

6.4 TROUBLESHOOTING

6.4.1 If operational difficulties are encountered, obtain as much information as possible regarding the particular problem as this may eliminate a lengthy, detailed checkout procedure.

6.4.2 Check fuses, primary power lines, external circuit elements and related wiring for possible defects. Failures and malfunctions often may be traced to simple causes such as loose or improper circuits, power supply connections or fuse failure.

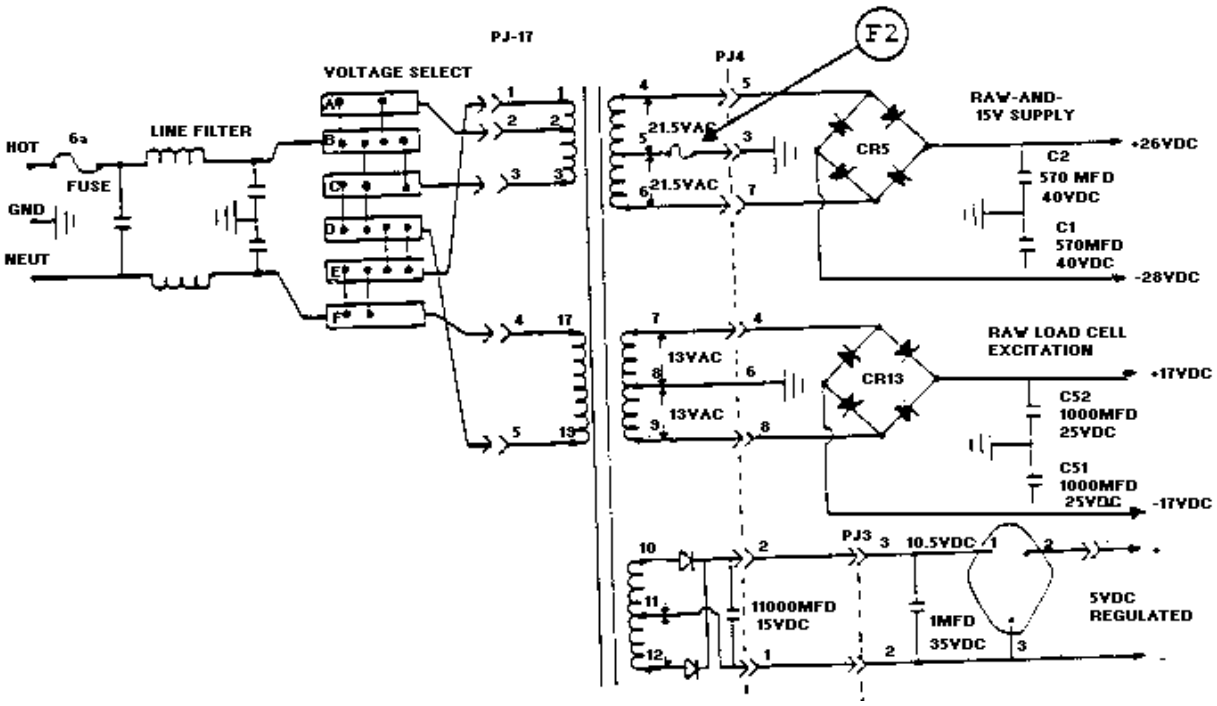
6.4.3 Use the electrical interconnecting diagram as an aid in locating trouble causes. The diagram contains various voltage measurements that are average for normal operation. Use instrument probes carefully to avoid causing short circuits and damaging circuit components.

6.4.4 A printed circuit board believed to be defective may be checked by replacing it with a known good PCB and observing whether the problem is corrected. WHEN HANDLING A PCB, USE A "VELOSTAT" STATIC BAG FOR BOTH THE NEW AND DEFECTIVE PCB.

Caution: before replacing the Main PCB, be sure to check the 1/4 Amp fuse (F-2) for continuity. If this fuse is open, damage to the new Main PCB could result.

6.4.5 To verify the problem, as being in the removed PDB, reinstall the defective PCB and retest. This simple test will eliminate the possibility of having replaced a good PCB because of a loose or poor connection.

Exchange PCB's or sub-assemblies are available from your authorized Toledo Scale representative. These assemblies are repaired and tested at various Toledo Scale factories.



8132 Basic Operational Checkout

The 8132 can be checked out to be sure it is operating as it should by setting the switches as shown below, and connecting it to a load cell simulator (Toledo Part #100865 00A). This is not a complete check, it is just a quick, easy test to use in the field on the site to prove the instrument is basically operational.

Set 8132 switches as shown below.

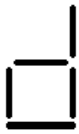
	POSITION								
	1	2	3	4	5	6	7	8	9
SW1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW4	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
SW5	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
SW6	ON	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
SW7	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF

(No plug in PCB's in main PCB).

Connect simulator to instrument, set both to zero, then turn simulator to second step (marked 4). The 8132 should read between 19,990 and 20,000+. depending on setting of R24 (fine span).

NOTE: Any non-linearity noted by using the steps of the simulator will usually be due to non-linearity of the simulator.

Error Codes
Error codes are displayed by the 8132 indicator when one of the following malfunctions occur.

ERROR	CAUSE	CORRECTIVE MEASURE
	ROM ERROR	Replace Main Logic PCB
	DISPLAY ERROR	Replace the failed 7-Segment LED in the gross or tare display
	RAM ERROR	Replace Main Logic PCB
	ANALOG ERROR	Recheck calibration. Possibly defective Analog Verify PCB or Main Logic PCB.
	SETPOINT ENTRY ERROR RAMS 9 & 19	Check tolerance switch settings. Check position of SW6-3 for desired mode of operation. May be an incorrect weight entry.

Testing The 20 Milliamp Current Loop
The test must be performed at the printer end of the interconnecting cable with the cable connected to the 8132 but removed from the printer. Set your volt-ohm meter to reading D-C milliamps.

After determining which printer is being used, refer to the following chart by printer model number to determine where to connect your meter leads. After connecting your meter leads to the proper cable pins, your meter should show from 18.0 to 40.0 milliamps. Depress the 'Print' pushbutton on the 8132 keyboard, and observe the meter reading.

The meter should fluctuate to half the original meter reading, which indicates thee is a transmission, then return to the original meter reading.

NOTE: When transmitting at 4800 baud, the meter reading will fluctuate constantly as the 8132 will be continuously transmitting information.

PRINTER MODEL NUMBER	PLACE RED LEAD ON PIN # 20 mA RECEIVE =	PLACE BLACK LEAD ON PIN # 20 mA RECEIVE -
301/307	6	7
8805	26	28
8804/8806	16	18
8810 SERIES	16	18
8855	3	22

NOTE: When a Model 8810/20/30 printer is being used, this test can be done only when the indicator is active. SW2-6 OFF and SW2-7 ON in the 8810/20/30.

Testing The Power Supply Voltages
The 5 volt supply can be measured at the ± volt test point.

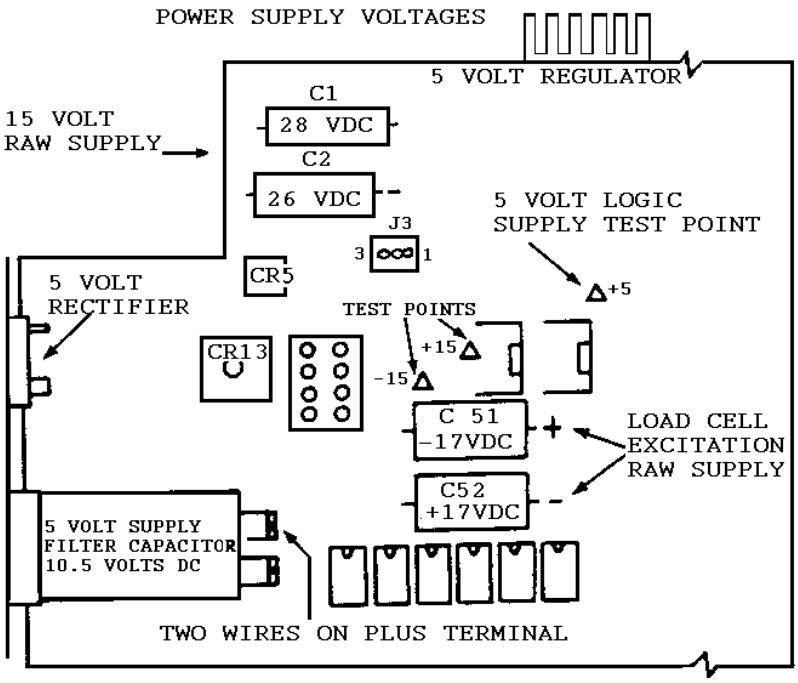
The load cell excitation voltage is gated off and on and therefore, cannot be measured accurately with a digital or analog voltmeter because they generally measure average volts. Some digital meters will not indicate equally in the negative direction, so for this reason, switch the test leads when checking the negative voltage against the positive.

The voltages when measured with a voltmeter will be:

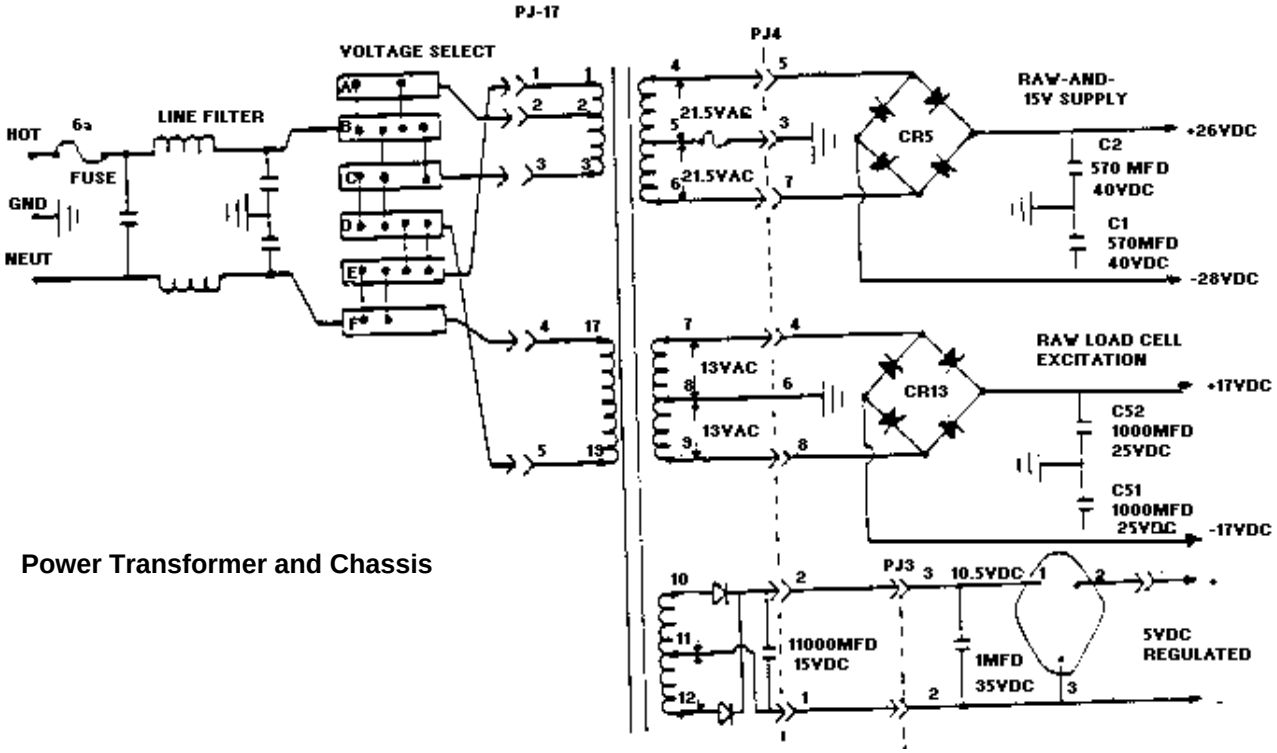
PINS AT J18	MEASURED EXCITATION W1 & W2 OUT	W1 & W2 IN
C TO GROUND	+3.75 VDC	+5 VDC
D TO GROUND	-3.75 VDC	-5 VDC
C TO D	+7.5 VDC	10 VDC

The raw supply voltages can be measured at the filter capacitors. The voltage present will usually indicate the condition of the filter capacitor if the line voltage is correct for the transformer tap in use. The correct voltages are shown on the 15 volt raw supply diagram at C1 and C2.

POWER SUPPLY VOLTAGES



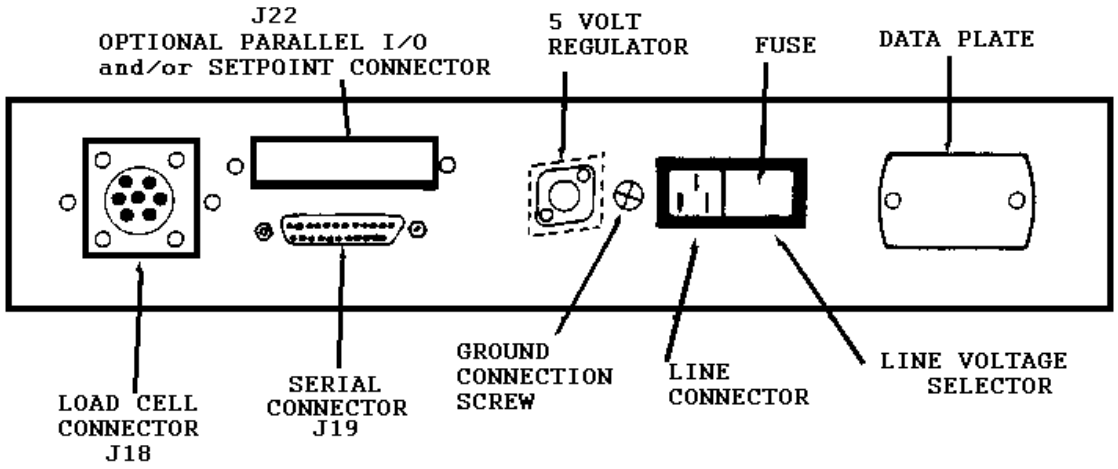
THE RAW SUPPLY VOLTAGES SHOWN ON
THE CAPACITORS ARE FOR A LINE VOLTAGE OF 117 VAC.



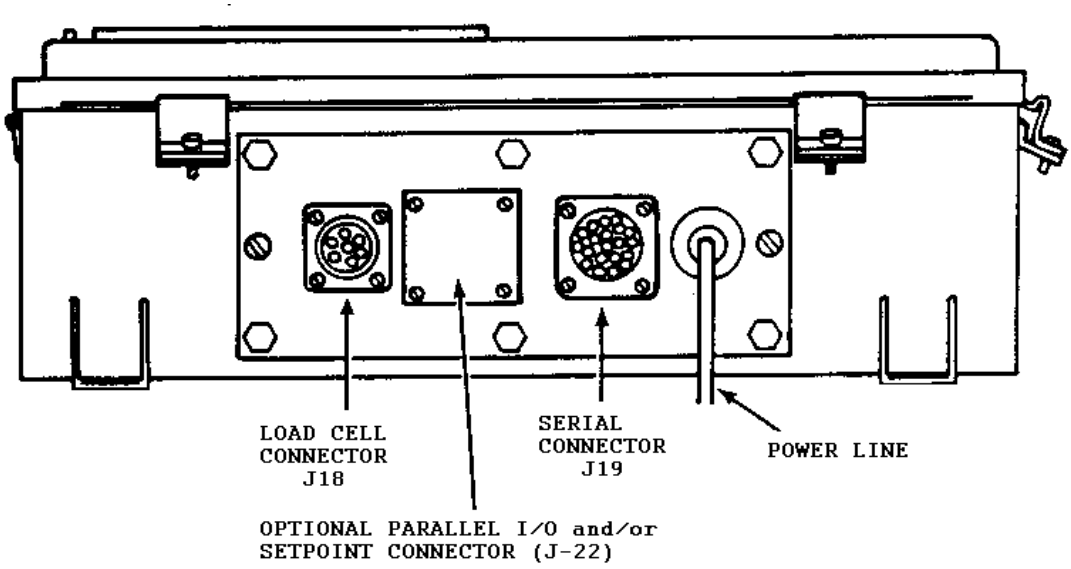
Power Transformer and Chassis

6.5 INPUT/OUTPUT CONNECTIONS

8132 DESK TOP REAR PANEL



8132 WALL MOUNT BOTTOM PANEL

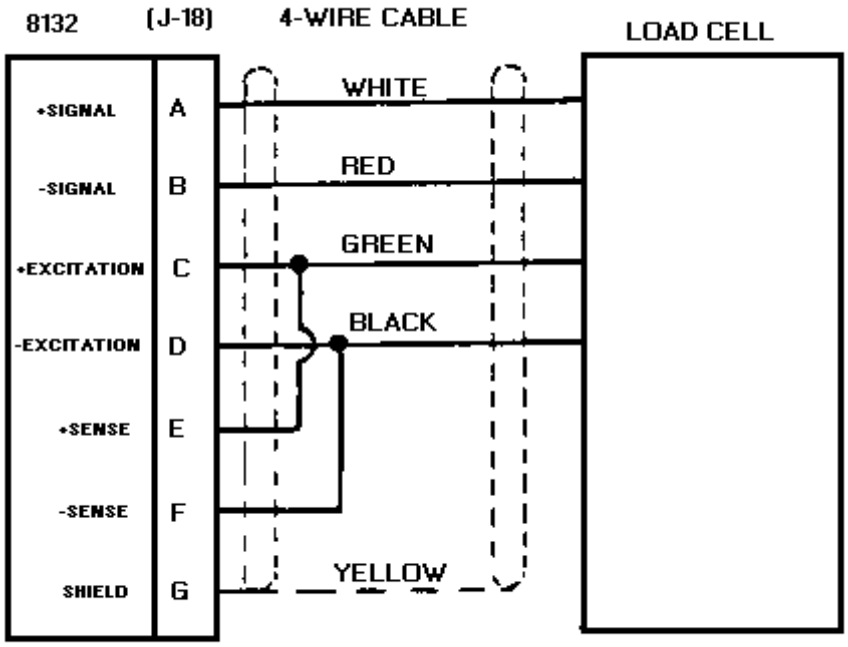


LOAD CELL CONNECTOR TABLE

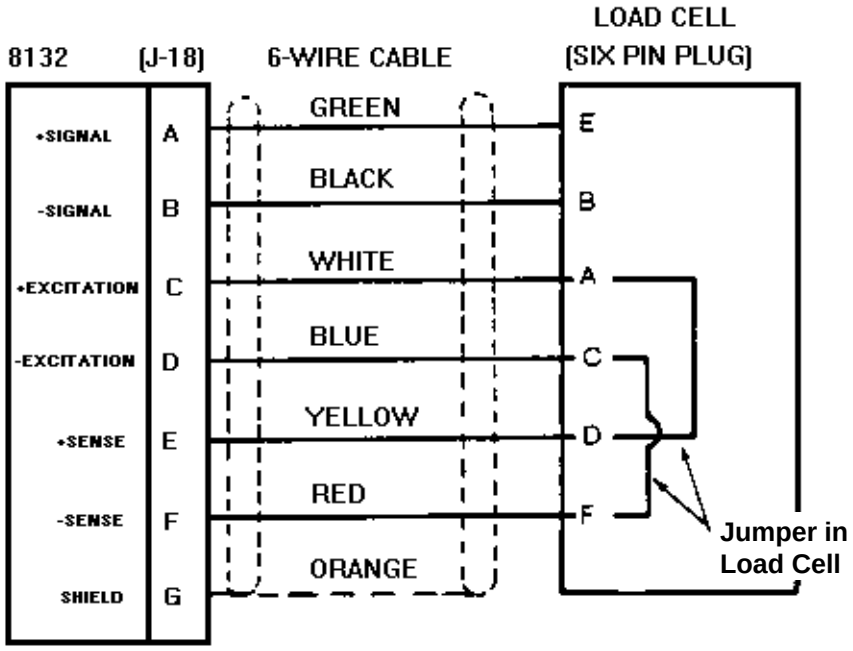
7 PIN CONNECTOR (NON VERIFIED)			14 PIN CONNECTOR (VERIFIED)		
PIN			PIN		
A	+	SIGNAL	A	+	SIGNAL
B	-	SIGNAL	B	-	SIGNAL
C	+	EXCITATION	C	+	EXCITATION
D	-	EXCITATION	D		EXCITATION
E	+	SENSE	E	+	SENSE
F	-	SENSE	F	-	SENSE
G		SHIELD	G	-	REMOTE
			H		SHIELD

NOTE: The maximum distances the load cell cable can be run to the 8132 Indicator is as follows:
When using 16 gauge wire -- max. distance is 1000 feet.
When using 20 gauge wire -- max. distance is 300 feet.

TYPICAL SINGLE LOAD CELL WIRING CONNECTIONS

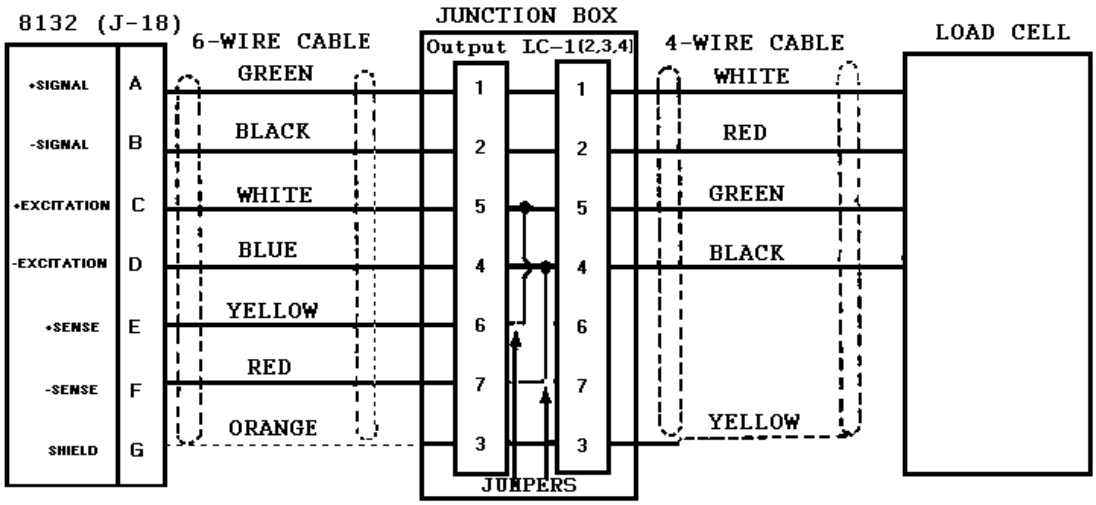


SINGLE 4-WIRE CELL CONNECTED DIRECTLY TO INSTRUMENT



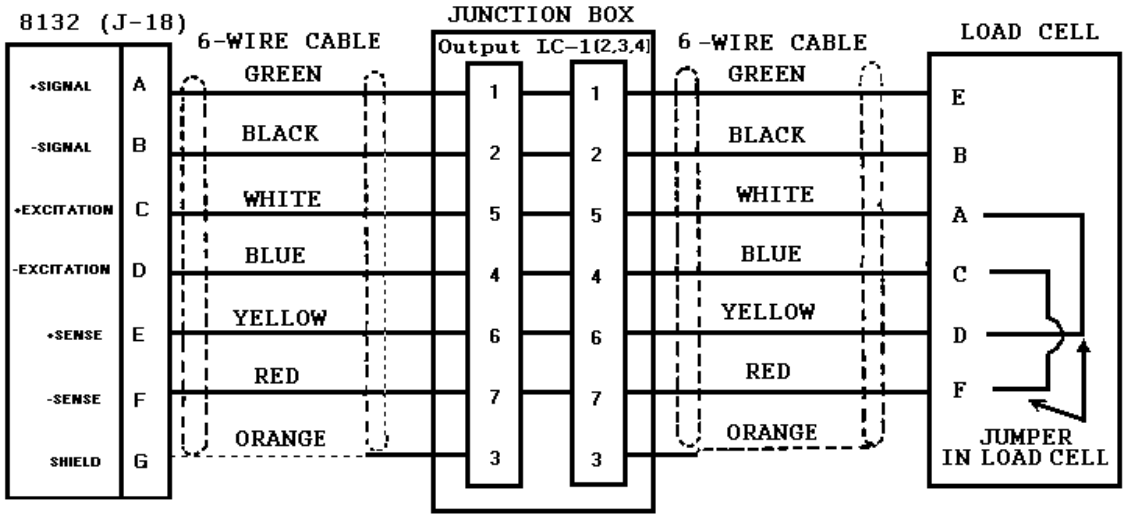
SINGLE 6-WIRE CELL CONNECTED DIRECTLY TO INSTRUMENT

TYPICAL LOAD CELL HOOK-UPS FOR SINGLE AND MULTIPLE CELL INSTALLATIONS WITH JUNCTION BOX



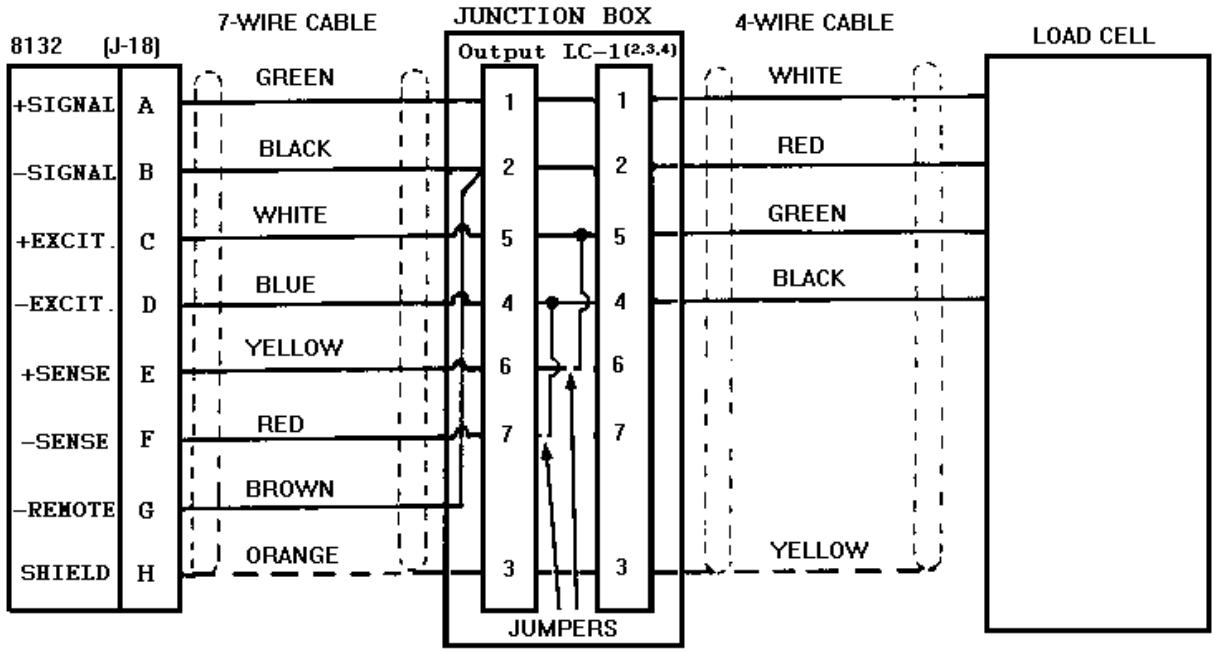
4 WIRE LOAD CELL(S) WITH JUNCTION BOX

When using 4 wire cells, there will be jumpers between terminal s 4 and 7 and between terminals 5 and 6 on TB101. On the 6 wire cells the jumpers are built into the load cell and they are between pins A and D and between pins C and F. Use terminal strip #1 if only one L/C is used.



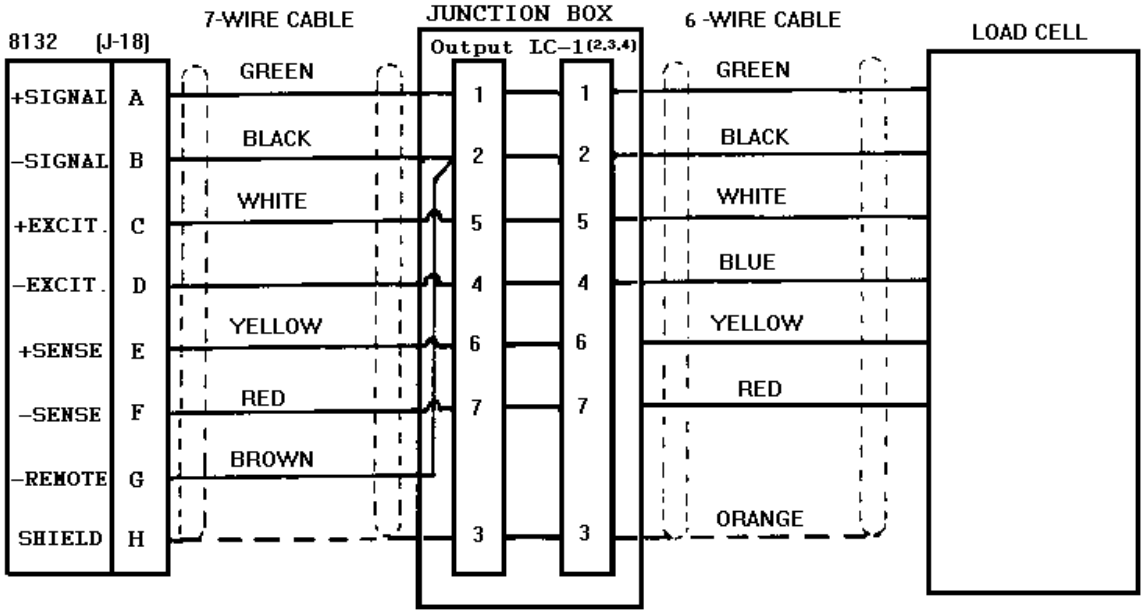
6 WIRE LOAD CELL (S) WITH JUNCTION BOX

TYPICAL LOAD CELL WIRING CONNECTION FOR INSTRUMENTS WITH ANALOG VERIFICATION



4 WIRE LOAD CELL (S) WITH JUNCTION BOX

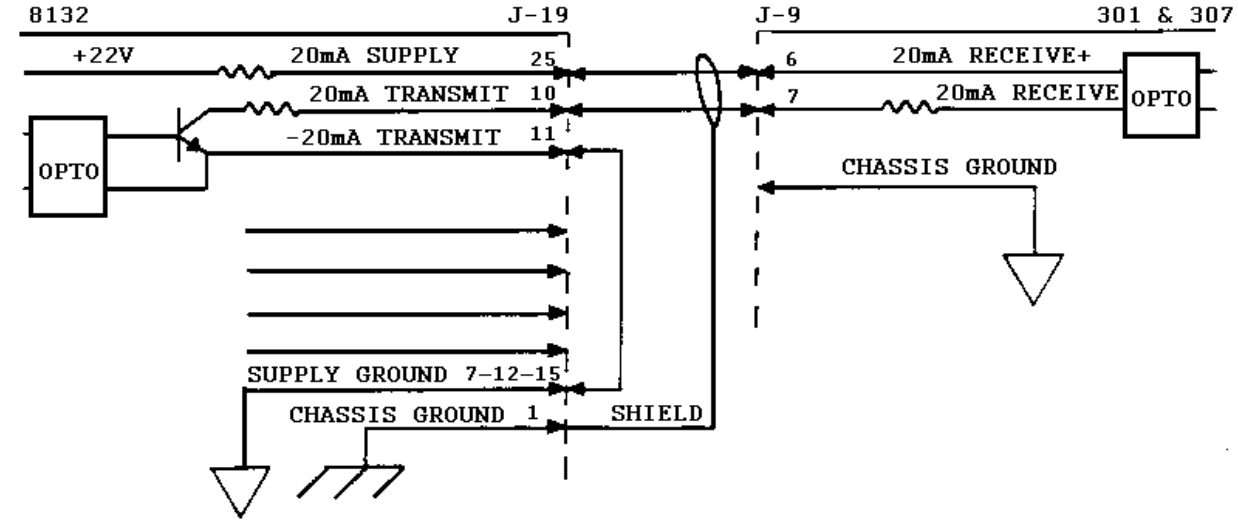
When using 4 wire cells, there will be jumpers between terminals 4 and 7 and between terminals 5 and 6 on TB 101. On the 6 wire cells the jumpers are built into the load cell and they are between pins A and D and between pins C and F. Use terminal strip # 1 if only one L C is used.

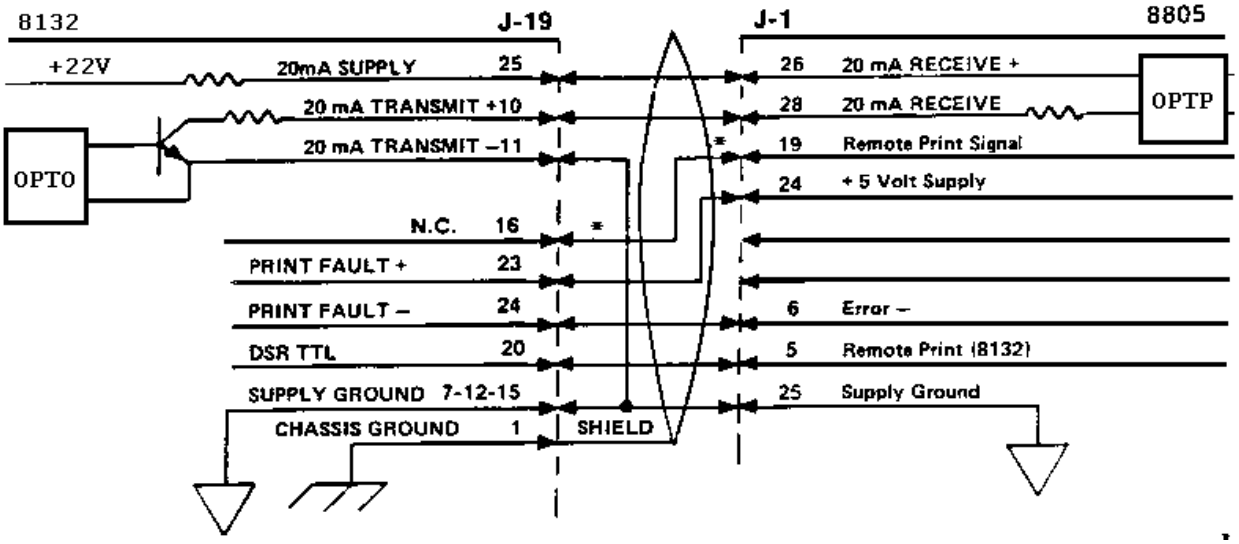


6 WIRE LOAD CELL(S) WITH JUNCTION BOX

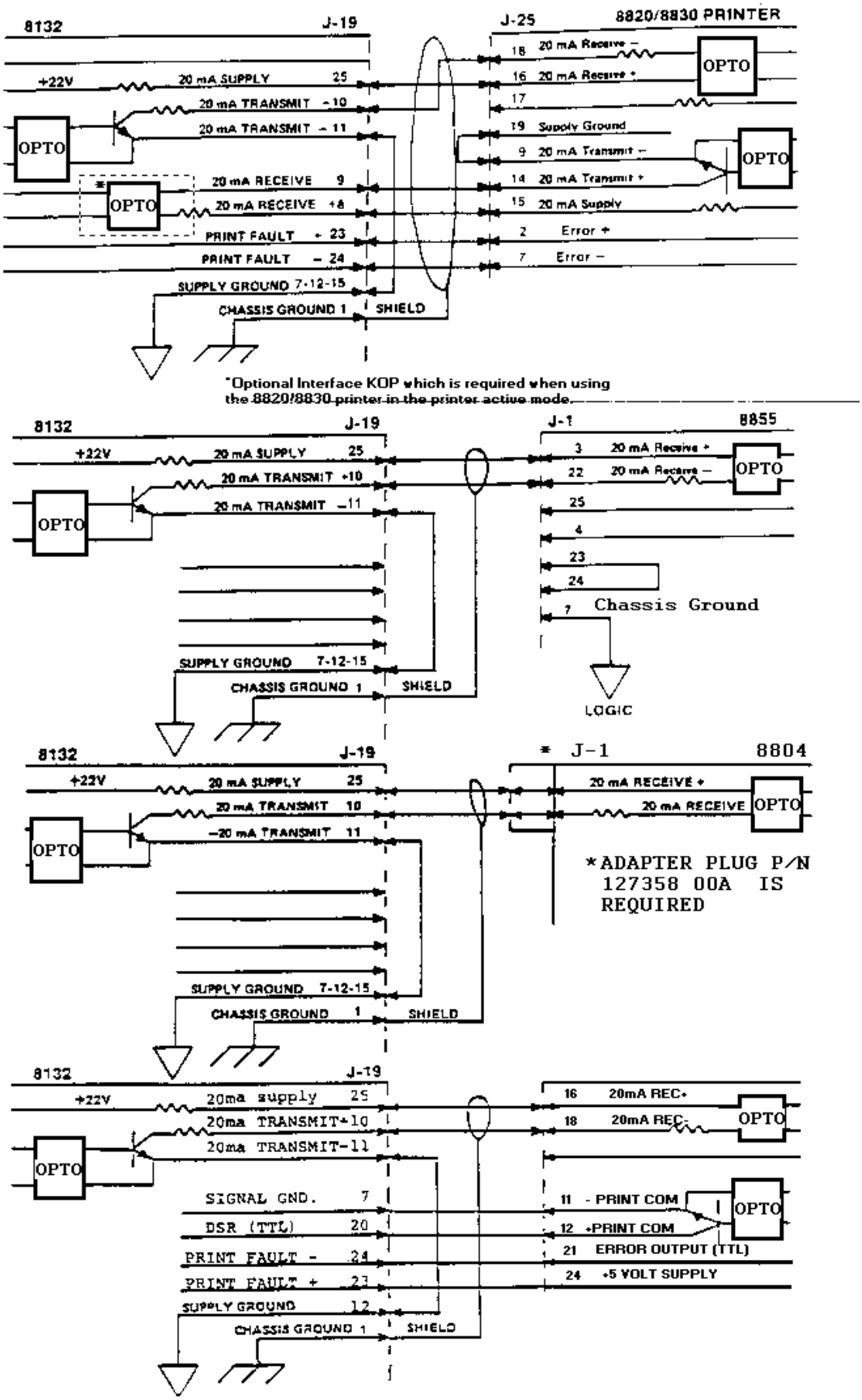
TYPICAL CONNECTIONS WITH 20 MA LOOP OUTPUT

The 8132 uses a 20 milliamp current loop output (ASCII) for printers and other devices. The output is designed so that it can be used with various types of interconnections to other devices. It can be used with an internal power source inside the 8132 or with an external power source depending on what terminals are connected on the 8132 serial connector.





Wire shown is in interconnecting cable but used in the Model 8136 Indictor only.


8132
J-19
J-25
8820/8830 PRINTER
+22V
20 mA SUPPLY 25
20 mA TRANSMIT +10
20 mA TRANSMIT – 11
OPTO
20 mA RECEIVE 9
20 mA RECEIVE +8
PRINT FAULT + 23
PRINT FAULT – 24
SUPPLY GROUND 7-12-15
CHASSIS GROUND 1
SHIELD
18 20 mA Receive –
16 20 mA Receive +
17
19 Supply Ground
9 20 mA Transmit –
14 20 mA Transmit +
15 20 mA Supply
2 Error +
7 Error –
*Optional Interface KOP which is required when using the 8820/8830 printer in the printer active mode.
8132
J-19
J-1
8855
+22V
20 mA SUPPLY 25
20 mA TRANSMIT +10
20 mA TRANSMIT –11
OPTO
3 20 mA Receive +
22 20 mA Receive –
25
4
23
24
7 Chassis Ground
SUPPLY GROUND 7-12-15
CHASSIS GROUND 1
SHIELD
LOGIC
8132
J-19
* J-1
8804
+22V
20 mA SUPPLY 25
20 mA TRANSMIT 10
–20 mA TRANSMIT 11
OPTO
20 mA RECEIVE +
20 mA RECEIVE –
*ADAPTER PLUG P/N 127358 00A IS REQUIRED
SUPPLY GROUND 7-12-15
CHASSIS GROUND 1
SHIELD
8132
J-19
+22V
20ma supply 25
20ma TRANSMIT+10
20ma TRANSMIT-11
OPTO
SIGNAL GND. 7
DSR (TTL) 20
PRINT FAULT - 24
PRINT FAULT + 23
SUPPLY GROUND 12
CHASSIS GROUND 1
SHIELD
16 20mA REC+
18 20mA REC-
OPTO
11 - PRINT COM
12 +PRINT COM
21 ERROR OUTPUT (TTL)
24 +5 VOLT SUPPLY

SERIAL OUTPUT CONNECTIONS J – 19 DESK AND WALL MOUNT

SIGNAL NAME	8132 J-19	301/ 307 J-9	8805 J-1	8804 8806 J-7	8820-30 J-25	8855 J-1
GROUND (CHASSIS) AVAILABLE	1					
TRANSMIT DATA (EIA) WITH EIA	2					
REQUEST TO SEND (EIA) OPTION	4					
CLEAR TO SEND (EIA) ONLY	5					
DATA SET READY (EIA)	6					
SIGNAL GROUND	7			11		
RECEIVE + AVAILABLE WITH 20mA	8				15	
RECEIVE -- INPUT OPTION ONLY	9				14	
20 mA TRANSMIT+	10	7	28		18	22
20 mA TRANSMIT -	*11			18		
SUPPLY GROUND	12					
CLEAR TO SEND (TTL) (INPUT)	13					
TRANSMIT DATA OUTPUT (TTL)	14					
SUPPLY GROUND	15		25			
NO CONNECTION	16**		19**			
FILTER OUTPUT (ANALOG OUT)	17					
ANALOG GROUND	18					
REQUEST TO SEND (TTL) (OUTPUT)	19					
DATA SET READY (TTL)	20		5	12		
DEMAND (TTL)	21					
DEMAND (EIA) (EIA OPTION)	22					
PRINT FAULT +	23		24	24	2	
PRINT FAULT -	24		6	21	7	
+ 20 mA SUPPLY (TRANSMIT)	25	6	26	16	16	3
					9***	
					19	

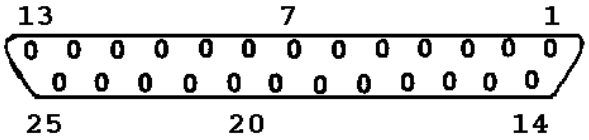
* JUMPER IS IN 8132 END OF CABLE

** WIRE IS CONNECTED IN THE CABLE, BUT SUED IN 8136 TO 8805 ONLY

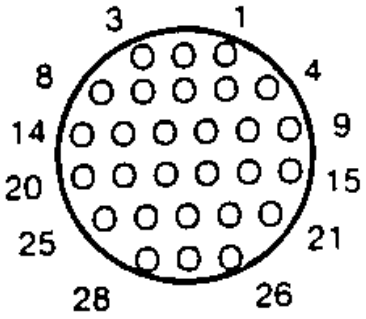
*** JUMPER IS IN THE PRINTER END OF INTERCONNECTING CABLE.

**** REQUIRES ADAPTER PLUG FOR 20mA INTERFACE

25 PIN CONNECTOR VIEWED FROM REAR OF INSTRUMENT (DESK TOP ONLY) CONNECTOR IS SHOWN TO AID IN PIN NUMBER IDENTIFICATION



THE WALL MOUNT CONNECTOR IS ROUNDED WITH 28 PINS, (PINS 26-27-28 ARE NOT CONNECTED). THE PIN NUMBERS ARE MARKED ON THE CONNECTOR.



A further description of the control lines available at the serial I/O connector follows:

Transmit Data (TX)
TTL level data transmission without opto isolation.
Request to send (RTS)
This TTL level line will go to +5 volts to inform an external device that the 8132 has data to transmit.

Clear to send (CTS)
When this TTL level signal line is held to ground, the 8132 will receive a not clear to send signal and data cannot be transmitted.

20 mA Receive +
The input to the optional receiving opto isolator for external 20mA print signal.

20 mA Receive --
The output for the optional receiving opto isolator for external 20mA print signal.

20mA Transmit+
This is the positive side of the opto isolator used for data transmission of the 20mA current loop from the 8132.

20 mA Transmit -
This is the negative end of the opto isolator used for data transmission of the 20mA current loop from the 8132.

Filter Output
A linear output from 0 volts DC at zero weight indication to approximately 10 volts DC corresponding to full programmed increment capacity.

Data Set Ready (DSR)
When this line is held to ground for 200 ms then released, the 8132 receives a signal to transmit data.

Demand
Holding this signal to ground will prevent any A/D cycles, which keeps the display at the last displayed weight. A 50 ms positive pulse of + 5 VDC will force an A/D cycle and update the display and BCD data. SW6-5 must be OFF for this function. With the Demand signal held to ground, the serial data output (300, 1200, 2400, or 4800 baud) will be disabled. If the Parallel Output option is used, the Sync output will also be disabled.

Print Fault
These are the input (+) and output (-) connections for the LED on the 8132 Display PCB to signal a printer error has occurred.

+20mA Supply (transmit)
This is the supply for the 20mA current loop.

OPTIONAL PARALLEL OUTPUT CONNECTIONS - BINARY CODED DECIMAL OUTPUT*

SIGNAL NAME	8132 J-22	500J-1 510 J-1 (TOP)
Ten thousands BCD 1	1	1
Ten thousands BCD 4	2	2
Ten thousands BCD 8	3	3
Gate ten thousand s (input)	4	4
Ten thousands BCD 2	5	5
Thousands BCD 1	6	6
Thousands BCD 4	7	7
Thousands BCD 8	8	8
Gate thousands (Input)	9	9
Thousands BCD 2	10	10
Hundreds BCD 1	11	11
Hundreds BCD 4	12	12
Hundreds BCD 8	13	13
Gate hundreds (Input)	14	14
Hundreds BCD 2	15	15
Gate tens	16	16
Tens BCD 1	17	17
Tens BCD 4	18	18
Units BCD 1	22	22
Units BCD 4	23	23
Units BCD 8	24	24
Units BCD 2	25	25
Five volt supply (100 mA Max.)	26	--
Motion (TTL positive true) (Output)	33	-
Net (TTL positive true) (Output)	34	-
Blanking (input)	37	37
Demand (hold at ground; pulse positive 5V for 50 milliseconds for an A/D cycle) (input)	39	-
Sync (TTL negative-going pulse at the end of the cycle if no hold or motion during the cycle) (Output)	40	40
Power ground	41	41
Power ground	42	42
Over (TTL positive true on over-count +5 increments) (Output)	43	43
Under (TTL positive true for minus sign or under) (Output)	44	44
Hold (ground to prevent update of binary coded decimal output) (Input)	49	49
Motion detector inhibit (ground to inhibit motion detector from blocking the sync signal) (Input)	50	--

NOTE: The desk top and the wall mount units use a different type of connector but the functions have the same pin numbers.

NOTE: On earlier production parallel I/O harness. Pin 42 was not connected. Later production harnesses have Pin 42 jumpered to Pin 41.

PARALLEL OUTPUT INTERCONNECTING CABLES

Model	To Type Indicator	Length	Part Number
500/510	8132 Wall	6'	112946 00A
510	8132 Desk	6'	098343 00A
8885	8132 Desk	6'	110839 00A

A further description of the control signals available at the BCD output follows:

GATES
The BCD output can be turned on or off with a voltage from another point. Each output digit can be gated of by grounding the gate pin for that digit. When the gate pin for a specific digit is grounded, all the outputs
that digit will go to + 5 volts DC. This will form an impossible number that should be automatically recognized as such by any device connected to the output.

MOTION
During a no motion condition, the output will be 0 volts DC. When motion is detected by the 8132, this output will go to + 5 volts DC. and remain there until motion settles.

NET
This line is held to 0 volts DC in the gross mode and goes to +5 volts when tare has been entered in the 8132.

BLANKING
+5 volts DC supplied to this pin will blank the display (except decimal point). BCD data is still available at J-22.

DEMAND
holding this signal to ground will prevent any A/D cycles, which keeps the display at the last displayed weight. A 50 ms positive pulse of + 5 VDC will force an A/D cycle and update the display and BCD data. SW6-5 must be OFF for this function. With the Demand line held to ground, the serial data output (300, 1200, 2400, or 4800 baud) will be disabled. The Sync output of the Parallel I/O will also be disabled.

SYNC
During a no motion condition, this output is + 5 volts DC with a negative going pulse (0 volts DC) approximately every 120 ms for a duration of about 6 ms. The pulse disappears with no motion and will occur again when a no motion condition is deleted. There is a jumper on the parallel I/O PCB which will enable sync at all times or allow control of sync from an external device.

OVER
Depending upon jumper selection on the Parallel I/O PCB, this signal can be either a digital over or analog over signal.

Digital Over **-The line is held low (0 volts DC) during normal operation and then goes to a + 5 volt DC level when the display shows 5 increments over capacity.**

Analog Over **-The output is 0 volts DC until the analog signal exceeds a preset value which causes the output to go high (+5 volts DC). This preset value is adjusted by a potentiometer on the Parallel I/O BCD.**

UNDER
This output will be 0 volts DC until the display shows a minus sign. When the minus sign appears, the output goes to +5 volts DC. This function is disabled when the display is blanked out behind zero (approximately -7% of capacity.)

HOLD
Grounding this signal prevents further update of the display and also the binary coded decimal output. The Sync output and the serial data output (300, 1200, 2400, or 4800 baud) will be disabled.

MOTION DETECTOR INHIBIT
When the jumper controlling the sync pulse on the Parallel I/O PCB is in the proper position, the grounding of this pin inhibits the motion detector from blocking the sync signal.

SET OPTION OUTPUTS

SIGNAL NAME	8132* J-22
Tolerance for Setpoint 1 (TTL Level)**	35
Five Volt Supply (210 Ma Max.)	36
Tolerance for Setpoint 2 (TTL Level)**	38
Feeding for Setpoint 1 (TTL Level)	45
Feeding for Setpoint 2 (TTL Level)	46
Fast Feed for Setpoint 1 (TTL Level) or Feeding for Setpoint 3 (TTL Level)	47
Fast Feed for Setpoint 2 (TTL Level) or Feeding for Setpoint 4 (TTL Level)	48
Ground	32

*** The desk and wall mount units have the same pin-out numbers.**

****Tolerance 1 and Tolerance 2 outputs are always 0 volts when in the Four Setpoint Model.**

All cutoffs are TTL level negative true and "ON" when the displayed weight is less than the programmed cutoff value. That is the output is 0 volts until the setpoint weight is reached then goes to a +5 volt level.

SERIAL OUTPUT INTERCONNECTING CABLES

MODEL	TO TYPE INDICATOR	LENGTH	PART NUMBER**
301-307	8132 Desk	20'	112156 00A
301-307	8132 Wall	20'	112157 00A
8805	8132 Desk	6'	110837 00A
8805	8132 Desk	20'	110838 00A
8805	8132 Wall	6'	110849 00A
8805	8132 Wall	20'	110850 00A
8806/8804***	8132 Desk	6'	115484 00A
8806/8804***	8132 Desk	20'	115485 00A
8806/8804***	8132 Wall	6'	114031 00A
8806/8804***	8132 Wall	20'	114032 00A
8810-20-30*	8132 Desk	6'	111502 00A
8810-20-30*	8132 Desk	20'	115487 00A
8810-20-30*	8132 Wall	6'	114031 00A
8810-20-30*	8132 Wall	20'	114032 00A
8855	8132 Desk	6'	114285 00A
8855	8132 Desk	20'	114408 00A
8855	8132 Wall	6'	114104 00A
8855	8132 Wall	20'	114105 00A

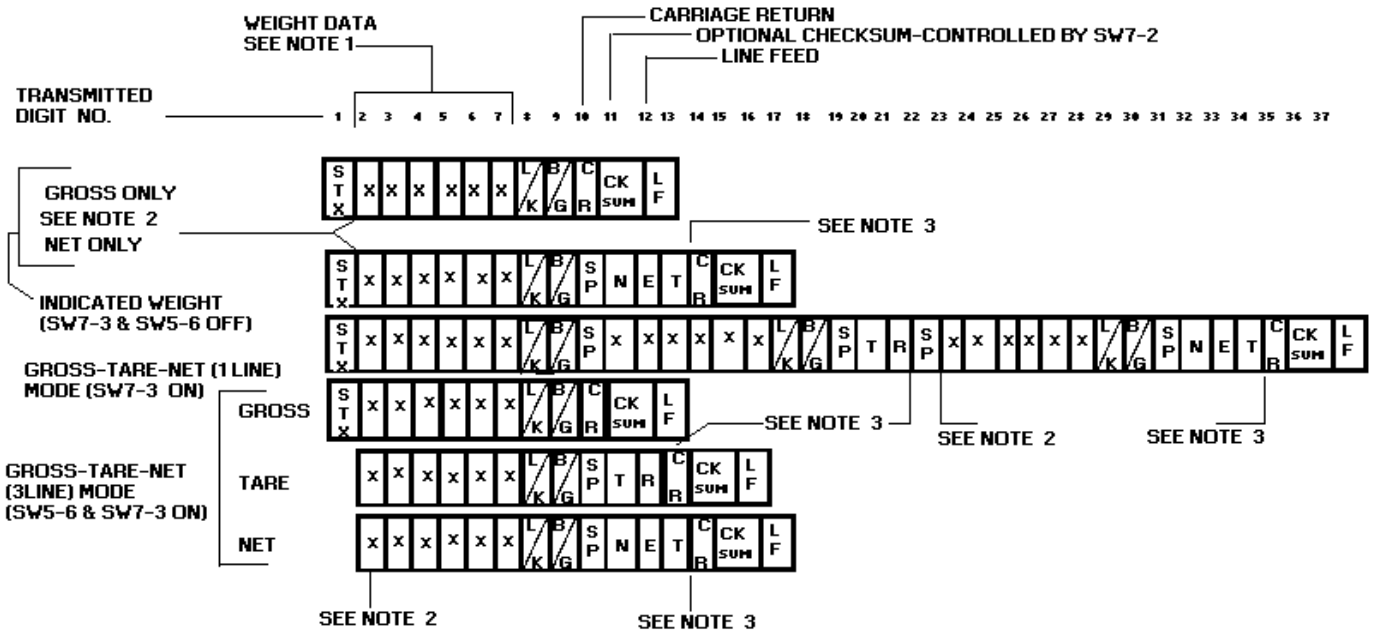
***For the Model 8810 series printer to operate active, an optional KOP must be used in the 8132.**
****Revision level omitted.**
*****8804 Must Use Adapter Plug part number 127358 00A**

6.6 DATA OUTPUT TABLES

1. 300, 1200, 2400 BAUD OUTPUT

All data sent is 11 bit ASCII (1 start bit, 7 data bits, 1 even parity bit, 2 stop bits)
Data is sent once eahc time print button on front of module is pressed.

LOW SPEED DATA FORMAT (300, 1200 AND 2400 BAUD)



1. AN EXTRA BYTE IS INSERTED IN THE FORMAT WHEN A DECIMAL POINT IS REQUIRED.

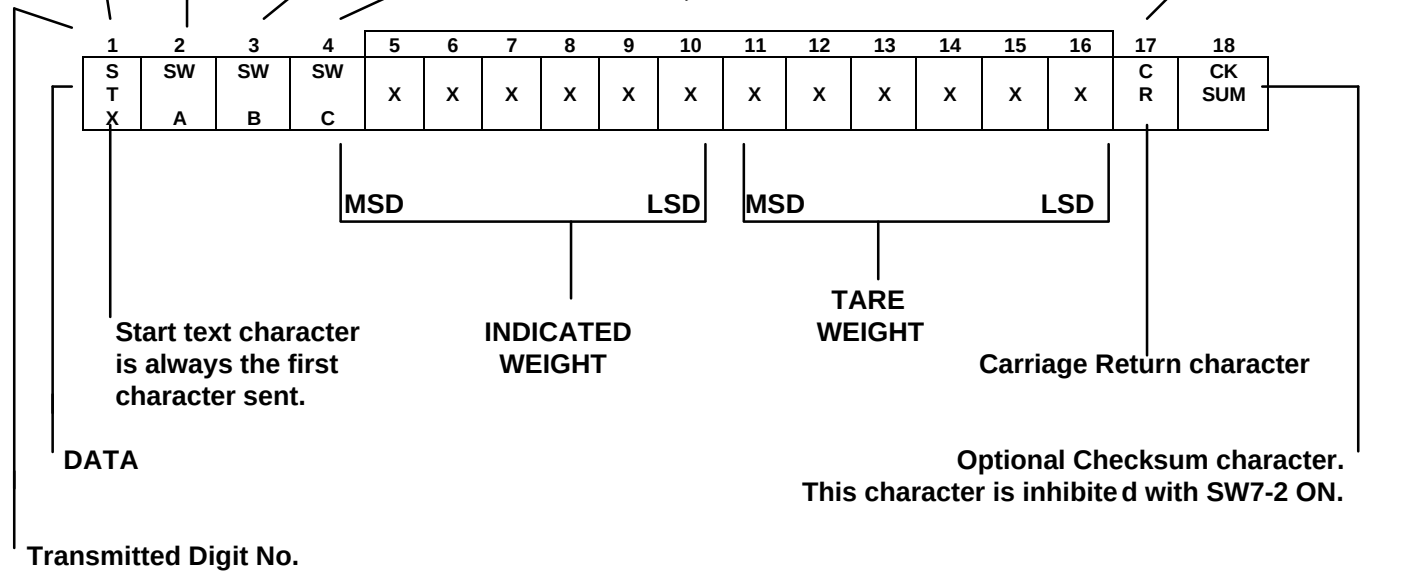
2. IF DOUBLE WIDTH PRINTING IS SELECTED (SW7-9 OFF) AN “SO” CHARACTER (HEX E) IS INSERTED AT THIS POINT. ALL FOLLOWING CHARACTERS ARE SHIFTED RIGHT 1 LOCATION.

3. IF 8132 IS USED IN METRIC (KG) MODE ONLY AND KEYBOARD TARE IS USED THE DATA FORMAT IS MODIFIED TO ADD “H” AFTER “TR” AND A “C” AFTER “NET”. ALL FOLLOWING CHARACTERS ARE SHIFTED RIGHT ACCORDINGLY.

2. 4800 BAUD OUTPUT

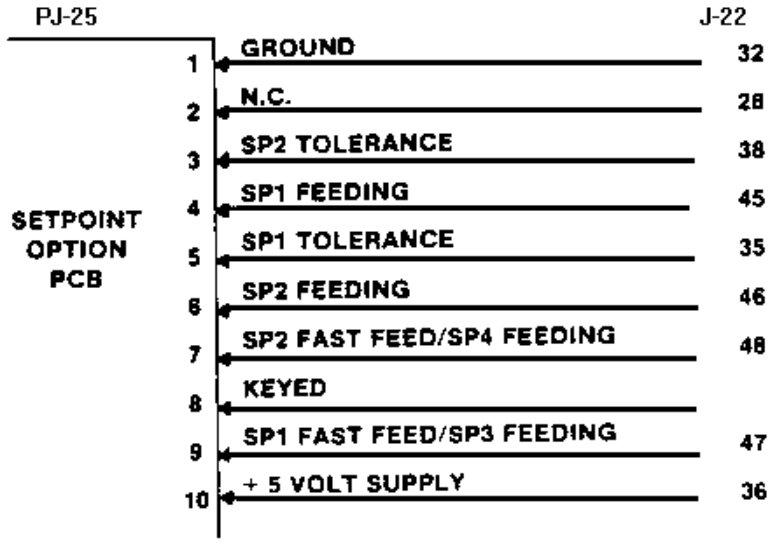
HIGH SPEED ACSII DATA OUTPUT FORMAT DECODING TABLE (4800 BUAD SW7-6 & SW7-7 ON)

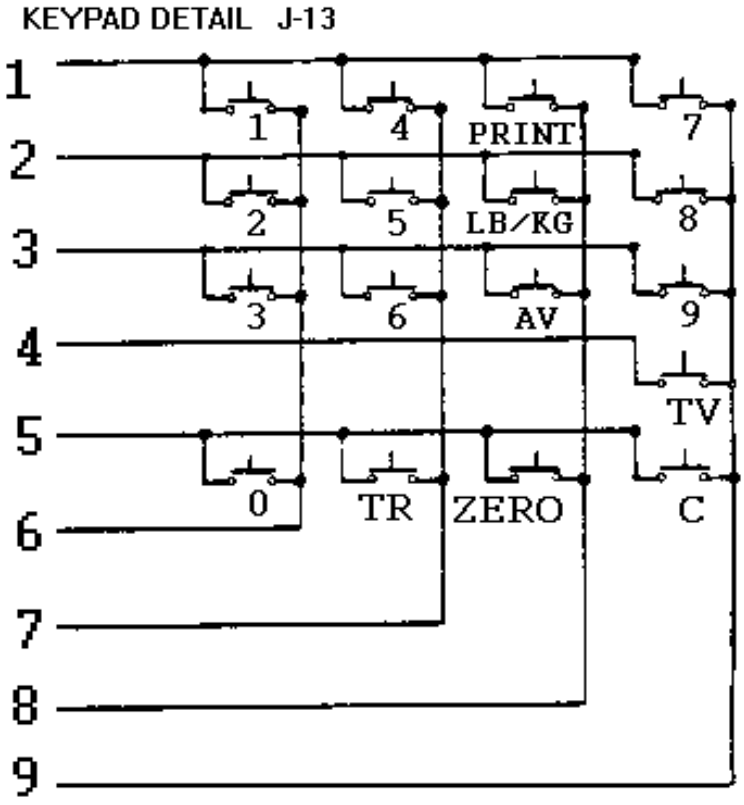
BIT NO	STX	STATUS WORD 'A'								STATUS WORD ' B '	STATUS WORD 'C'							SPACE	NUMERIC DATA 0-9										CR
		X 100	X 10	1	.X	.XX	.XXX	.XXXX	.XXXX		NO 151	151 CHANNEL SELECTED 1 SUM	2	3	4	5	6		0	1	2	3	4	5	6	7	8	9	
0	0	0	1	0	1	0	1	0	1	NET MODE = 1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	1
1	1	0	0	1	1	0	0	1	1	NEGATIVE DATA = 1	0	0	1	1	0	0	1	1	0	0	0	1	1	0	0	1	1	0	0
2	0	0	0	0	0	1	1	1	1	OVER CAP = 1 NORMAL = 0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	0	0	1
3	0	X1 = 1 X2 = 0 X5 = 1								MOTION = 1 NO MOTION = 0	PRINT BUTTON PUSHED = 1								0	0	0	0	0	0	0	0	0	1	1	1
4	0	X1 = 0 X2 = 1 X5 = 1								LB = 0 KG = 1	EXPANDED DATA = 1								0											0
5	0	ALWAYS 1								ALWAYS 1	ALWAYS 1								1	ALWAYS 1										0
6	0	ALWAYS 0								POWER UP = 1	SEE NOTE 1								0	ALWAYS 0										0
7	1	EVEN PARITY								EVEN PARITY	EVEN PARITY								1	0	1	1	0	1	0	0	1	1	0	1

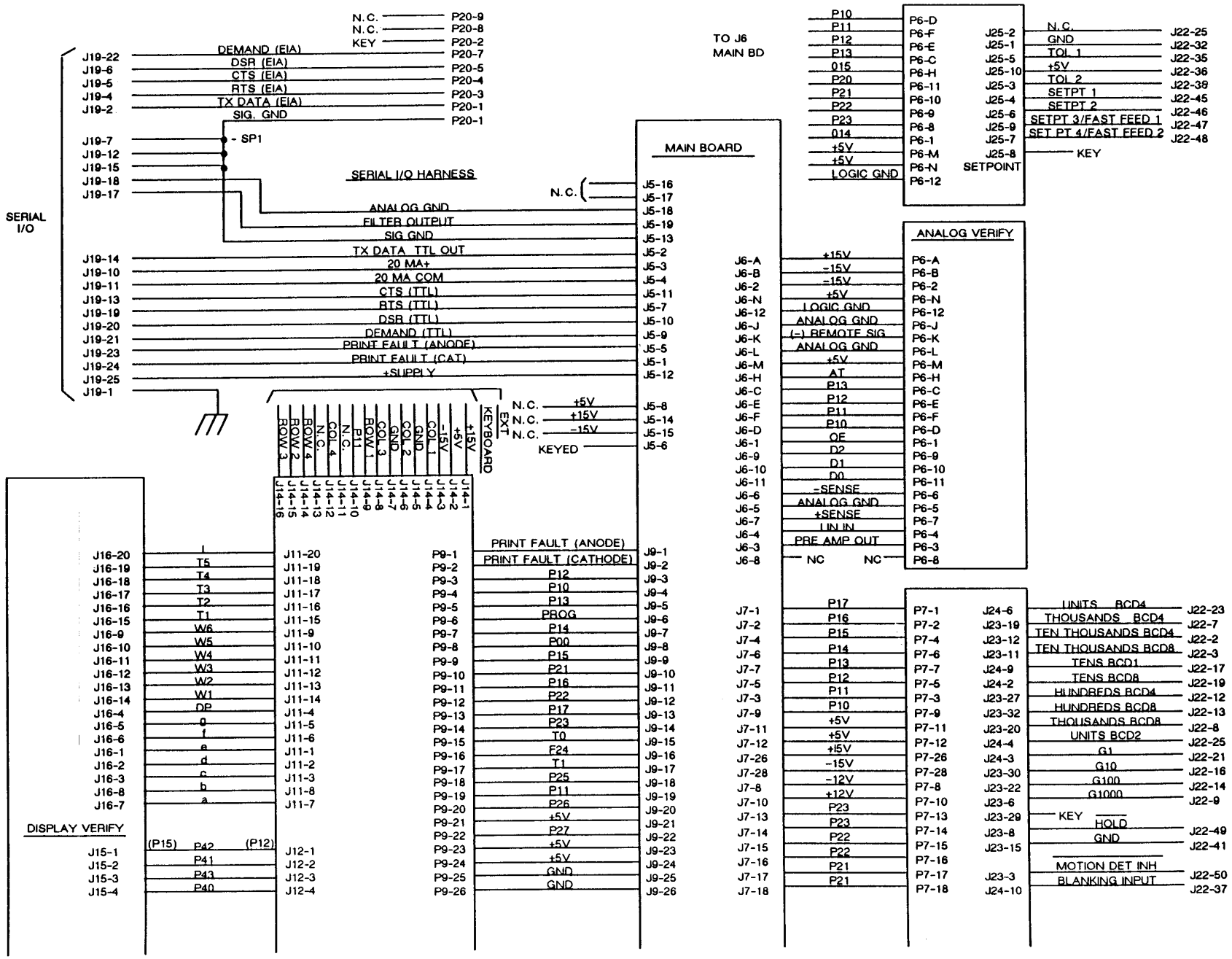


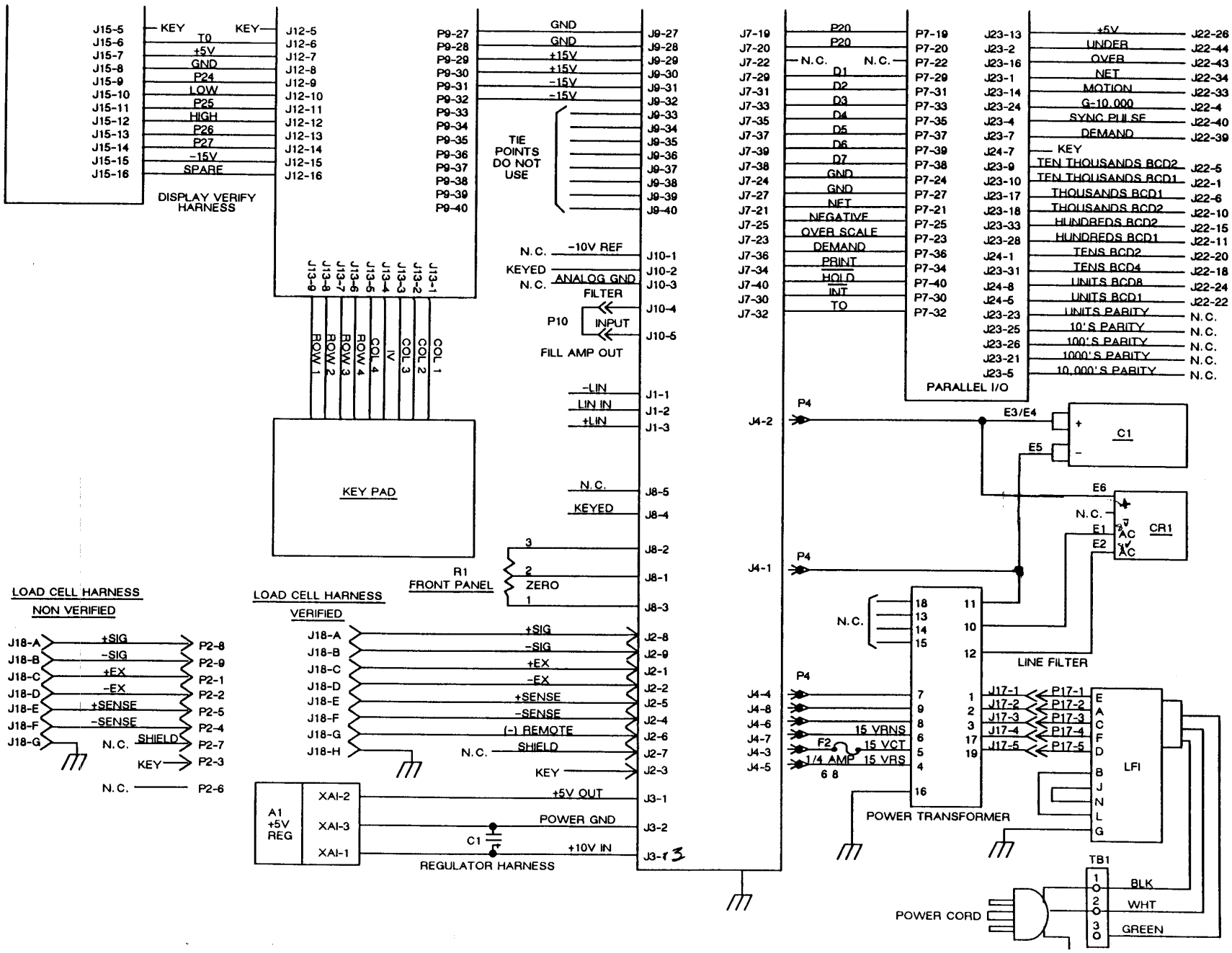
ASCII CHAR.	DECIMAL	HEX	76543210	ASCII CHAR.	DECIMAL	HEX	76543210
NULL	0	00	00000000	@	64	40	01000000
SOH	1	01	00000001	A	65	41	01000001
STX	2	02	00000010	B	66	42	01000010
ETX	3	03	00000011	C	67	43	01000011
EOT	4	04	00000100	D	68	44	01000100
ENQ	5	05	00000101	E	69	45	01000101
ACK	6	06	00000110	F	70	46	01000110
BELL	7	07	00000111	G	71	47	01000111
BACKSPACE	8	08	00001000	H	72	48	01001000
TAB	9	09	00001001	I	73	49	01001001
LineFeed	10	0A	00001010	J	74	4A	01001010
Vert. Tab	11	0B	00001011	K	75	4B	01001011
Form Feed	12	0C	00001100	L	76	4C	01001100
Carr.Return	13	0D	00001101	M	77	4D	01001101
Shift Out	14	0E	00001110	N	78	4E	01001110
Shift In	15	0F	00001111	O	79	4F	01001111
Data Link Esc	16	10	00010000	P	80	50	01010000
DC1	17	11	000010001	Q	81	51	01010001
DC2	18	12	00010010	R	82	52	01010010
DC3	19	13	00010011	S	83	53	01010011
DC4	20	14	00010100	T	84	54	01010100
NAK	21	15	00010101	U	85	55	01010101
SYNCH IDLE	22	16	00010110	V	86	56	01010110
End Trans. Block	23	17	00010111	W	87	57	01010111
CANCEL	24	18	00011000	X	88	58	01011000
End Of Medium	25	19	00011001	Y	89	59	01011001
SUBSTITUTE	26	1A	00011010	Z	90	5A	01011010
ESCAPE	27	1B	00011011	[	91	5B	01011011
FS (Cursor Right)	28	1C	00011100	\	92	5C	01011100
GS (Cursor Left)	29	1D	00011101	]	93	5D	01011101
RS (Cursor Up)	30	1E	00011110	^	94	5E	01011110
US (Cursor Down)	31	1F	00011111	_	95	5F	01011111
SPACE	32	20	00100000	`	96	60	01100000
!	33	21	00100001	a	97	61	01100001
"	34	22	00100010	b	98	62	01100010
#	35	23	00100011	c	99	63	01100011
$	36	24	00100100	d	100	64	01100100
%	37	25	00100101	e	101	65	01100101
&	38	26	00100110	f	102	66	01100110
'	39	27	00100111	g	103	67	01100111
(	40	28	00101000	h	104	68	01101000
)	41	29	00101001	i	105	69	01101001
*	42	2A	00101010	j	106	6A	01101010
+	43	2B	00101011	k	107	6B	01101011
,	44	2C	00101100	l	108	6C	01101100
-	45	2D	00101101	m	109	6D	01101101
.	46	2E	00101110	n	110	6E	01101110
/	47	2F	00101111	o	111	6F	01101111
0	48	30	00110000	p	112	70	01110000
1	49	31	00110001	q	113	71	01110001
2	50	32	00110010	r	114	72	01110010
3	51	33	00110011	s	115	73	01110011
4	52	34	00110100	t	116	74	01110100
5	53	35	00110101	u	117	75	01110101
6	54	36	00110110	v	118	76	01110110
7	55	37	00110111	w	119	77	01110111
8	56	38	00111000	x	120	78	01111000
9	57	39	00111001	y	121	79	01111001
:	58	3A	00111010	z	122	7A	01111010
;	59	3B	00111011	{	123	7B	01111011
<	60	3C	00111100	|	124	7C	01111100
=	61	3D	00111101	}	125	7D	01111101
>	62	3E	00111110	~	126	7E	01111110
?	63	3F	00111111		127	7F	01111111

6.7 INTERCONNECT DIAGRAM






SERIAL I/O
SERIAL I/O HARNESS
MAIN BOARD
TO J6 MAIN BD
DISPLAY VERIFY
ANALOG VERIFY
KEYBOARD EXT
SETPOINT
N.C.
DEMAND (EIA)
DSR (EIA)
CTS (EIA)
RTS (EIA)
TX DATA (EIA)
SIG. GND
- SP1
ANALOG GND
FILTER OUTPUT
SIG GND
TX DATA TTL OUT
20 MA+
20 MA COM
CTS (TTL)
RTS (TTL)
DSR (TTL)
DEMAND (TTL)
PRINT FAULT (ANODE)
PRINT FAULT (CAT)
+SUPPLY
KEYED
PRINT FAULT (ANODE)
PRINT FAULT (CATHODE)
PROG
TO
GND
+5V
+15V
-15V
-12V
+12V
LOGIC GND
ANALOG GND
(-) REMOTE SIG
+SENSE
-SENSE
LIN IN
PRE AMP OUT
NC
UNITS BCD4
THOUSANDS BCD4
TEN THOUSANDS BCD4
TEN THOUSANDS BCD8
TENS BCD1
TENS BCD8
HUNDREDS BCD4
HUNDREDS BCD8
THOUSANDS BCD8
UNITS BCD2
G1
G10
G100
G1000
KEY
HOLD
MOTION DET INH
BLANKING INPUT
SETPT 1
SETPT 2
SETPT 3/FAST FEED 1
SET PT 4/FAST FEED 2


J15-5 KEY
J15-6 T0
J15-7 +5V
J15-8 GND
J15-9 P24
J15-10 LOW
J15-11 P25
J15-12 HIGH
J15-13 P26
J15-14 P27
J15-15 -15V
J15-16 SPARE
KEY
DISPLAY VERIFY HARNESS
J12-5
J12-6
J12-7
J12-8
J12-9
J12-10
J12-11
J12-12
J12-13
J12-14
J12-15
J12-16
P9-27 GND
P9-28 GND
P9-29 +15V
P9-30 +15V
P9-31 -15V
P9-32 -15V
P9-33
P9-34
P9-35
P9-36
P9-37
P9-38
P9-39
P9-40
TIE POINTS DO NOT USE
J9-27
J9-28
J9-29
J9-30
J9-31
J9-32
J9-33
J9-34
J9-35
J9-36
J9-37
J9-38
J9-39
J9-40
J13-9 ROW 1
J13-8 ROW 2
J13-7 ROW 3
J13-6 ROW 4
J13-5 COL 4
J13-4 IV
J13-3 COL 3
J13-2 COL 2
J13-1 COL 1
KEY PAD
N.C. -10V REF
KEYED ANALOG GND
N.C. FILTER
P10 INPUT
FILL AMP OUT
J10-1
J10-2
J10-3
J10-4
J10-5
-LIN
LIN IN
+LIN
J1-1
J1-2
J1-3
N.C.
KEYED
J8-5
J8-4
3
2 ZERO
1
R1 FRONT PANEL
J8-2
J8-1
J8-3
LOAD CELL HARNESS NON VERIFIED
J18-A +SIG P2-8
J18-B -SIG P2-9
J18-C +EX P2-1
J18-D -EX P2-2
J18-E +SENSE P2-5
J18-F -SENSE P2-4
J18-G N.C. SHIELD P2-7
KEY P2-3
N.C. P2-6
LOAD CELL HARNESS VERIFIED
J18-A +SIG J2-8
J18-B -SIG J2-9
J18-C +EX J2-1
J18-D -EX J2-2
J18-E +SENSE J2-5
J18-F -SENSE J2-4
J18-G (-) REMOTE J2-6
J18-H N.C. SHIELD J2-7
KEY J2-3
A1 +5V REG
XAI-2 +5V OUT J3-1
XAI-3 POWER GND J3-2
XAI-1 C1 +10V IN J3-3
REGULATOR HARNESS
J7-19 P20
J7-20 P20
J7-22 N.C. N.C.
J7-29 D1
J7-31 D2
J7-33 D3
J7-35 D4
J7-37 D5
J7-39 D6
J7-38 D7
J7-24 GND
J7-27 GND
J7-21 NET
J7-25 NEGATIVE OVER SCALE
J7-23 DEMAND
J7-36 PRINT
J7-34 HOLD
J7-40 INT
J7-30 TO
J7-32
P7-19
P7-20
P7-22
P7-29
P7-31
P7-33
P7-35
P7-37
P7-39
P7-38
P7-24
P7-27
P7-21
P7-25
P7-23
P7-36
P7-34
P7-40
P7-30
P7-32
J23-13 +5V J22-26
J23-2 UNDER J22-44
J23-16 OVER J22-43
J23-1 NET J22-34
J23-14 MOTION J22-33
J23-24 G-10.000 J22-4
J23-4 SYNC PULSE J22-40
J23-7 DEMAND J22-39
J24-7 KEY
J23-9 TEN THOUSANDS BCD2 J22-5
J23-10 TEN THOUSANDS BCD1 J22-1
J23-17 THOUSANDS BCD1 J22-6
J23-18 THOUSANDS BCD2 J22-10
J23-33 HUNDREDS BCD2 J22-15
J23-28 HUNDREDS BCD1 J22-11
J24-1 TENS BCD2 J22-20
J23-31 TENS BCD4 J22-18
J24-8 UNITS BCD8 J22-24
J24-5 UNITS BCD1 J22-22
J23-23 UNITS PARITY N.C.
J23-25 10'S PARITY N.C.
J23-26 100'S PARITY N.C.
J23-21 1000'S PARITY N.C.
J23-5 10,000'S PARITY N.C.
PARALLEL I/O
J4-2 P4
E3/E4
E5
C1
E6
N.C.
E1
E2
CR1
J4-1 P4
N.C.
18 13 14 15 11 10 12
LINE FILTER
J4-4 J4-8 J4-6 J4-7 J4-3 J4-5 P4
7 9 8 6 5 4 16 1 2 3 17 19
15 VRNS
F2 15 VCT
1/4 AMP 15 VRS
6 8
J17-1 P17-1
J17-2 P17-2
J17-3 P17-3
J17-4 P17-4
J17-5 P17-5
E A C F D B J N L G
LFI
POWER TRANSFORMER
TB1
1 BLK
2 WHT
3 GREEN
POWER CORD

6.8 RECOMMENDED LIST OF SPARE PARTS

Recommended Quantity	Part Number	Description	Quantity Used
1	G109871 00A	Main PCB	1
1	A117939 00A	Display PCB	1
1	A118142 00A	Remote Input PCB	1*
1	C108614 00A	Parallel Output PCB	1*
1	112721 00A	Analog Over-Cap PCB	1*
1	115355 00A	Setpoint PCB	1*
1	B113493 00A	Key Pad	1
1	107763 00A	Filter Capacitor	1
1	093943 00A	Rectifier	1
1	104935 00A	Regulator (5 volt)	1
5	095100 00A	Fuse (.6 Amp SB)	1
5	0952920 00A	Fuse (1/4 Amp)	1
2	104739 00A	Lamp, Legend	4
1	108535 00A	LED, Weight	6
1	117672 00A	LED, Tare	5
1	117644 00A	LED, Weight, High Intensity	6*
TOOL	100865 00A	Load Cell Simulator	

*Optional

MATING CONNECTORS FOR 8132 INPUTS/OUTPUTS			
TYPE	DESCRIPTION	DESK	WALL
Load Cell 7 Pin	Connector Clamp	117661 00A 117662 00A	117661 00A 117662 00A
Load Cell 14 Pin	Connector Clamp	117664 00A 117665 00A	117664 00A 117665 00A
Serial I/O	Male Plug Clamp Pins (Pkg. of 10) Sealing Clamp	107187 00A 107188 00A 107189 00A	112139 00 A 110803 00A 107189 00A 110802 00A
Parallel I/O	Complete Assembly Male Plug Clamp Pins (Pkg. of 10)	P00719 020	 108649 00A 112459 00A 107189 00A

6.9 8132 MAIN PCB CHART

PART NUMBER	DESCRIPTION	RAM
G109871 00A	Standard PCB (Same as 114975 00A)	1,11
F111185 00A	3 PPM/C	3,13
D111187 00A	6 PPM/C	4,14
A112078 00A	Multiple Build (Used with Model 151)	
B114266 00A	Expanded Zero Capture	7,17
B114267 00A	Print Interlock	8,18
B114975 00A	Standard (Same As G109871 00A)	1,11
B114976 00A	6 PPM/C	2,12
C116605 00A	Intrinsic Safe	10,20
A116723 00A	Setpoint	9,19
118158 00A	Multiple Build and Intrinsic Safe	
A118811 00A	Setpoint and Intrinsic Safe	9,19
118826 00A	Averaging (Standard) 1 second AZM	201
126128 00A	Averaging (9475) 2.3 second AZM	202
126402 00A	Averaging (9471), Legal for Trade) 2.3	203
126411 00A	Sec.	
KA570348 00A	Stored Weight	9,19
KA570618 00B	Setpoint, 4800 Baud Standard Output	
KA571262 00A	Stored Weight and Intrinsic Safe	
KA571262 00B	40,000 Count	
KA571397 00A	40,000 Count and Intrinsic Sale	
KB574220 020	Setpoint with Zero Tolerance	
KA572882 00A	Averaging, HAP (9475) 2.3 SEC. AZM	
KA572881 00A	Setpoint, Battery Back Up	
KA5728/82 00A	Tare, Battery Back Up	
KA572881 00B	Setpoint, HAP, Battery Back Up	
	Tare, HAP, Battery Back Up	

7. INTERFACE K.O.P.'S

7.1 PARALLEL I/O K.O.P.

Desk 112711 00A
Consists of :

C108614 00A	**Parallel Output PCB**
108624 00A	**Output Harness**

Wall 112712 00A
Consists of:

C108614 00A	**Parallel Output PCB**
111158 00A	**Output Harness**
108651 00A	**Cap for 57-Pin Connector**

7.2 EIA INTERFACE K.O.P.

Desk 114746 00A
Consists of:

116130 00A	**Interface PCB Assembly**
114752 00A	**Harness from Main PCB**
115358	**Instruction sheet**

Wall 114747 00A
Consists of:

114980 00A	**Interface PCB Assembly**
114971 00A	**Harness to Output**
114280 00A	**Harness from Main PCB**
114342	**Instruction sheet**

7.3 MULTIPLE BUILD K.O.P. (151)

Desk only 112074 00A
Consists of:

112064 00A	**Multiple Build PCB**
A112078 00A	**8132 Main PCB**
112077	**Instruction sheet**

7.4 8820/30 PRINTER INTERFACE K.O.P.'S

DESK MODEL 8132 WITH 6' OF CABLE
PART NUMBER - 114748 00A

PART NUMBER	DESCRIPTION	QTY.
113757 00A	Interface PCB	1
113758 00A	Internal Harness	1
111502 00A	Interconnecting Cable (6')	1
114970	Method of Assembly	

DESK MODEL 8132 WITH 20' OF CABLE
PART NUMBER - 114749 00A

PART NUMBER	DESCRIPTION	QTY.
113757 00A	Interface PCB	1
113758 00A	Internal Harness	1
111503 00A	Interconnecting Cable (20')	1
114970	Method of Assembly	

WALL MOUNT 8132 WITH 6' OF CABLE
PART NUMBER - 114750 00A

PART NUMBER	DESCRIPTION	QTY.
R01678 050	Nut, Hex 4-40	12
R01679 050	Lockwasher	4
R02296 00A	Screw 4-40 x 5/8	4
113757 00A	Interface PCB	1
114972 00A	Harness (Interface to Main	1
114753 00A	PCB)	1
114279 00A	Harness (Interface to Output)	1
274480	Mounting Plate	Suff.
114031 00A	Tape	1
114970	Interconnecting Cable (6')	
	Method of Assembly	

WALL MOUNT 8132 WITH 20' OF CABLE
PART NUMBER - 114751 00A

PART NUMBER	DESCRIPTION	QTY.
R01678 050	Nut, Hex 4-41	12
R01679 050	Lockwasher	4
R02296 00A	Screw 4-40 x 5/8	4
113757 00A	Interface PCB	1
114972 00A	Harness (Interface to Main	1
114753 00A	PCB)	1
114729 00A	Harness (Interface to Output)	1
274480	Mounting Plate	Suff
114032 00A	Tape	1
114970	Interconnecting Cable (20')	
	Method of Assembly	

NOTE THAT INTERCONNECTING CABLE IS INCLUDED IN INTERFACE K.O.P.

REMOTE INPUT K.O.P., DESK
PART NUMBER 118147 00A

PART NUMBER	DESCRIPTION	QTY.
108568 00A	Screw Lock Assembly	1
A118142 00A	PCB Assembly	1
118143 00A	Harness (Disp. to remote)	1
118144 00A	Harness (Remote to Panel)	1
118146 00A	Mounting Plate	1
118157 00A	Harness (Remote to St.	1
P00719 020	Point)	1
R01678 050	Plug - 50 Pin	2
R01679 050	Nut 4-40	2
R02101 050	Washer #44	2
118156	Screw 4-40 x 3/8	1
	installation Instructions	

REMOTE INPUT K.O.P., DESK
PART NUMBER 118148 00A

PART NUMBER	DESCRIPTION	QTY.
A118142 00A	PCB Assembly	1
118820 00A	Harness (Remote to Disp.)	1
118821 00A	Harness (Remote to St.	1
R00813 050	Pnt.)	4
R01771 050	Nut Hex 6-32	4
R02434 00A	Washer #6	4
R03086 00A	Screw 6-32 x 5/8	4
118822	Nylon Roll Collar #6	1
	Installation Instructions	

SETPOINT CONVERSION K.O.P., DESK
PART NUMBER A117932 00A

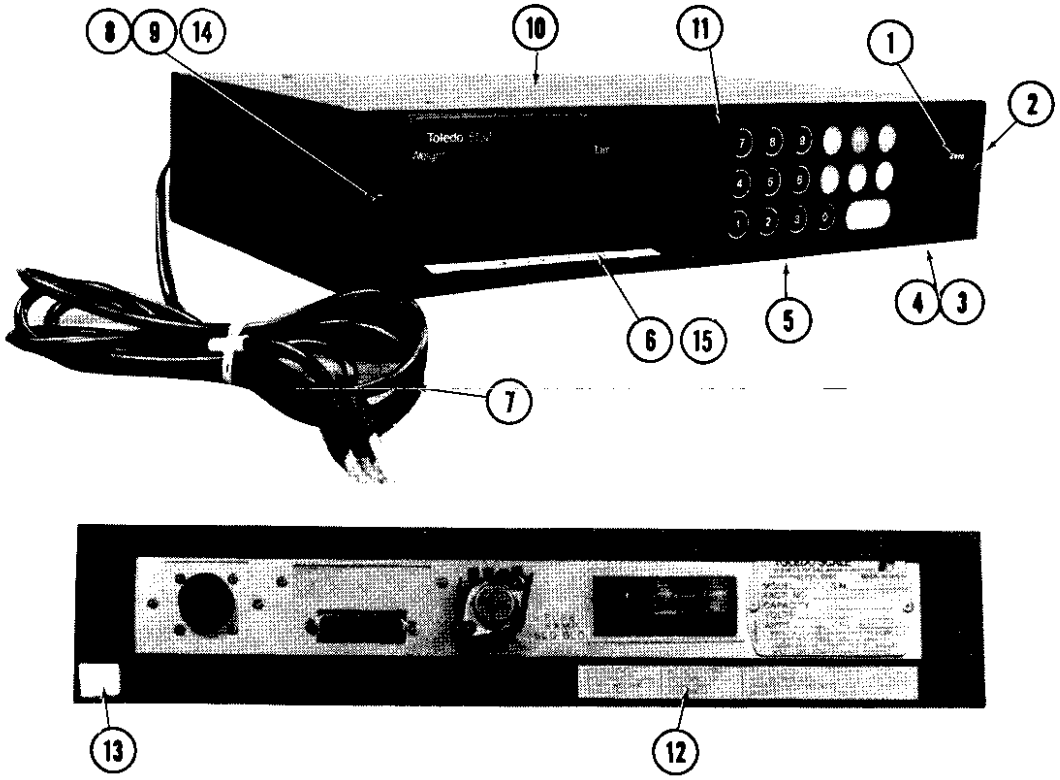
PART NUMBER	DESCRIPTION	QTY.
115355 00A	Setpoint PCB	1
116134 00A	Assembly	1
116727 00A	Setpoint Key Pad	1
117933 00A	harness	1
118815 00A	Decal TR/Setpoint	1
A116723 00A	Decal (SW6 settings)	1
	Main PCB for Setpoint	

SETPOINT CONVERSION K.O.P., WALL
PART NUMBER A117940 00A

PART NUMBER	DESCRIPTION	QTY.
115355 00A	Setpoint PCB	1
116134 00A	Assembly	1
116728 00A	Setpoint Key Pad	1
117933 00A	Harness	1
118815 00A	Decal (TR/Setpoint)	1
A116723 00A	Decal (SW6 Settings)	1
	Main PCB for Setpoint	

8. PARTS CATALOG

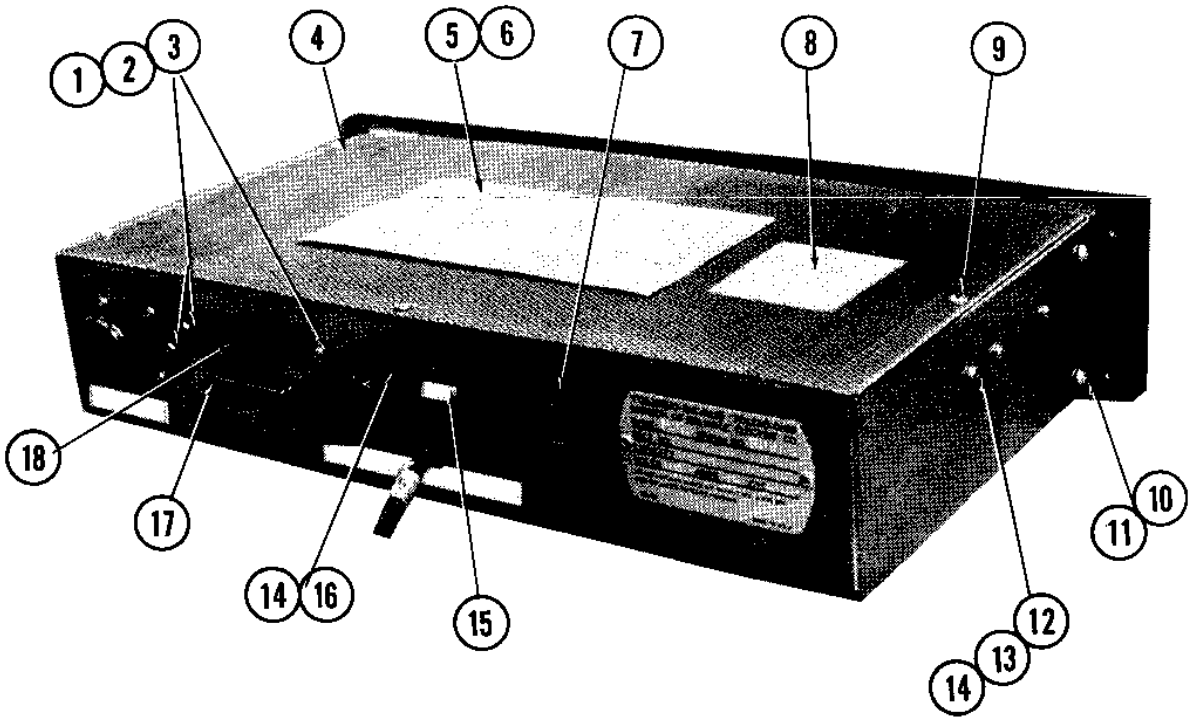
8.1 FRONT PANEL & COVER ASSEMBLY (DESK)



REF	PART NUMBER	DESCRIPTION	QTY.
1	109877 00A	Knob-Kit of Parts	1
2	102843 00A	Lead Seal 7 Wire (N.S)	1
3	031585 02A	Bumper Screw (N.S)	4
4	R01611 050	Nut 8-32 (N.S)	4
5	113971 00A	FCC Tested Label (On	1
6	105192 00A	Bottom)	1
7	103867 00A	Capacity Label LB/KG	1
8	108572 00A	Line Cord	2
9	R01279 020	Panel Screw	2
10	A097478 00A	Retaining Ring	1
11	D108546 00A	Outer Cover	1
12	110865 00A	Front Panel	1
13	097405 00A	Warning Label	1
14	R02999 00A	U.L. Label (On Rear)	2
15	093853 00A	Speed Nut (N.S.)	1
		Capacity Label (LB Only)	

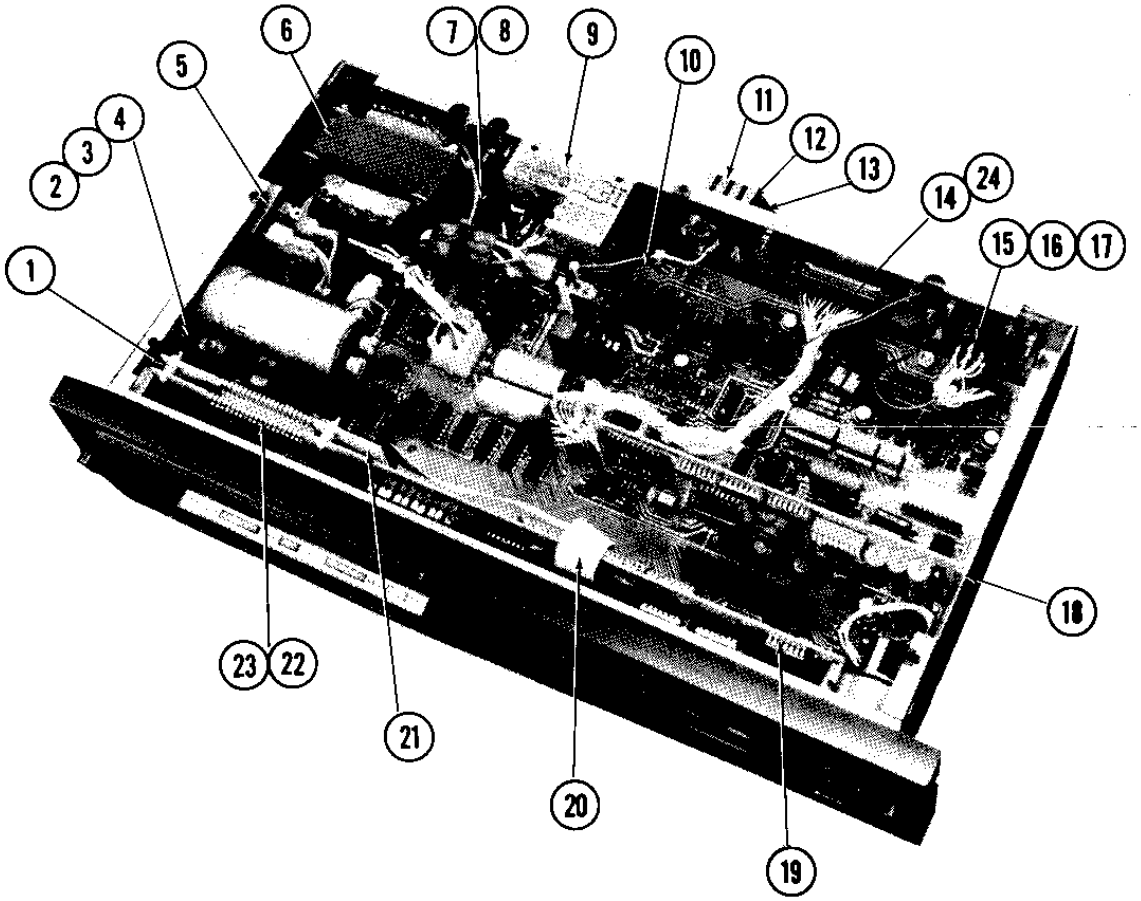
N.S. - Not Shown

8.2 MISCELLANEOUS HARDWARE (DESK)



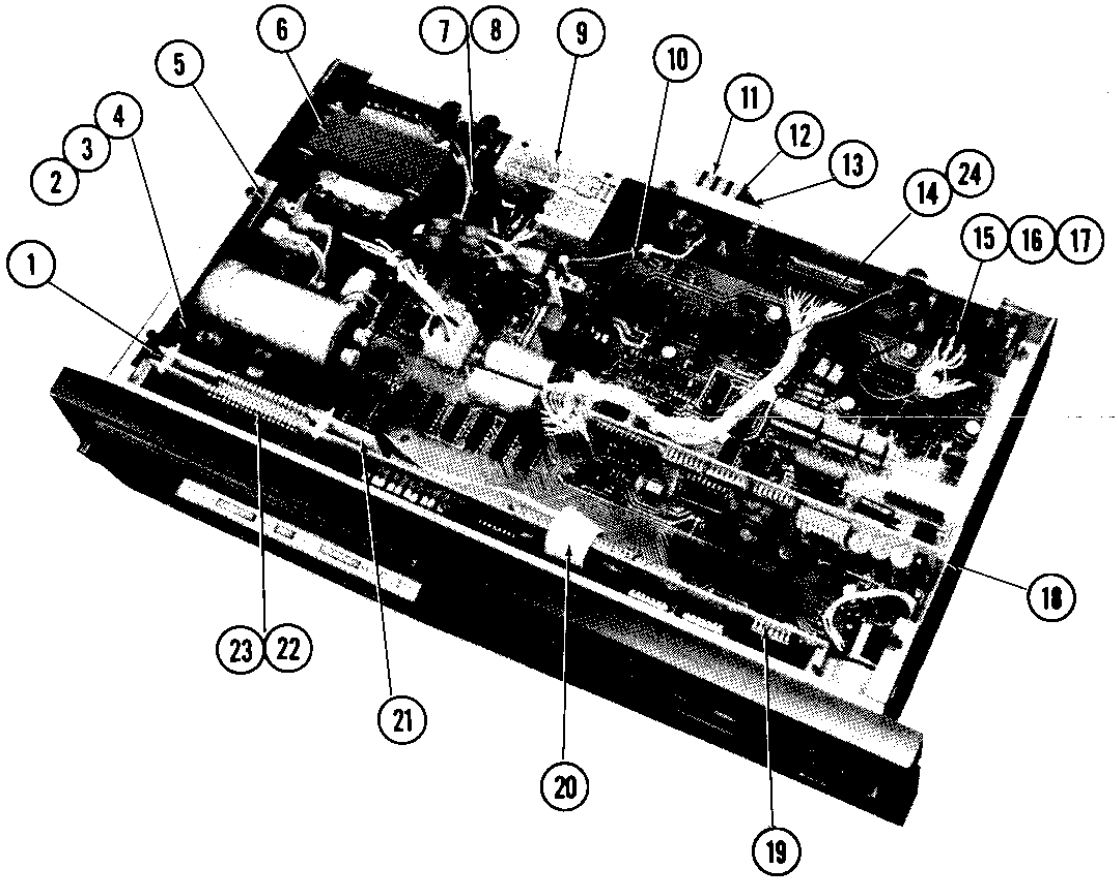
REF	PART NUMBER	DESCRIPTION	QTY.
1	R01679 050	Lockwasher #4	4
2	R01678 050	Nut 4-40	4
3	R02101 050	Screw 4-40 x 3/8	4
4	C108578 00A	Chassis Cover	1
5	118823 00A	Switch Setting Tag	1
6	095100 00A	.6 Amp Fuse	1
7	111770 00A	Static Awareness	1
8	R03090 00A	Label	3
9	R02180 050	Screw 6-32 x 3/8	4
10	R00589 210	Screw 8-32 x 5/16	4
11	R02245 00A	Lockwasher #8	1
12	R00813 050	Screw 6-32 x 5/8	1
13	R01771 050	Nut 6-32	3
14	11190 00A	Lockwasher #6	1
15	R025055 130	Fuse Label	2
16	108568 00A	Screw 6-32 x 1/2	1
17	105403 00A	Screw Loc-Kit	1
18	118813 00A	Parallel I/O Cover	1
		Label (Set point)	

8.3 TRANSFORMER & HARNESS ASSEMBLIES (DESK)



REF.	PART NUMBER	DESCRIPTION	QTY.
1	037331 00A	Spacer (Rams 2.3)	4
2	R01982 050	Screw 4-40 x 5/8 (Rams 2,3)	4
3	R01679 050	Lockwasher # 4 (Rams 2,3)	4
4	R01678 050	Nut, 4-40 (Rams 2,3)	4
5	093943 00A	Bridge Rectifier	1
6	108628 00A	Transformer Assembly	1
7	R01611 050	Nut 8-32	5
8	R00589 210	Lockwasher #8	5
9	108634 00A	Line Filter Assembly	1
10	108635 00A	Regulator Harness	1
11	104935 00A	Voltage Regulator	1
12	097522 00A	Heat Sink	1
13	P00549 020	Aluminum Insulator	1
14	108625 00A	Serial I/O Harness	1
15	A108632 00A	L/C Harness (Rams 1,4)	1
16	B108631 00A	L/C Harness (Rams 2,3)	1
17	112758 00A	L/C Harness (Rams 1,4) (RFI	1
18	102528 00A	Filtered)	1
19	A117653 00A	PCB Guide	2
20	108627 00A	Display Board Assembly	1
21	108610 00A	Display Verify Cable (Rams 2,3)	1
22	108540 00A	Display Verify Board (Rams 2,3)	1
23	112270 00A	20 Position Connector (Rams 2,3)	1
24	114974 00A	Connector cover (Rams 2,3)	1
		RFI Filtered Serial I/O Harness.	

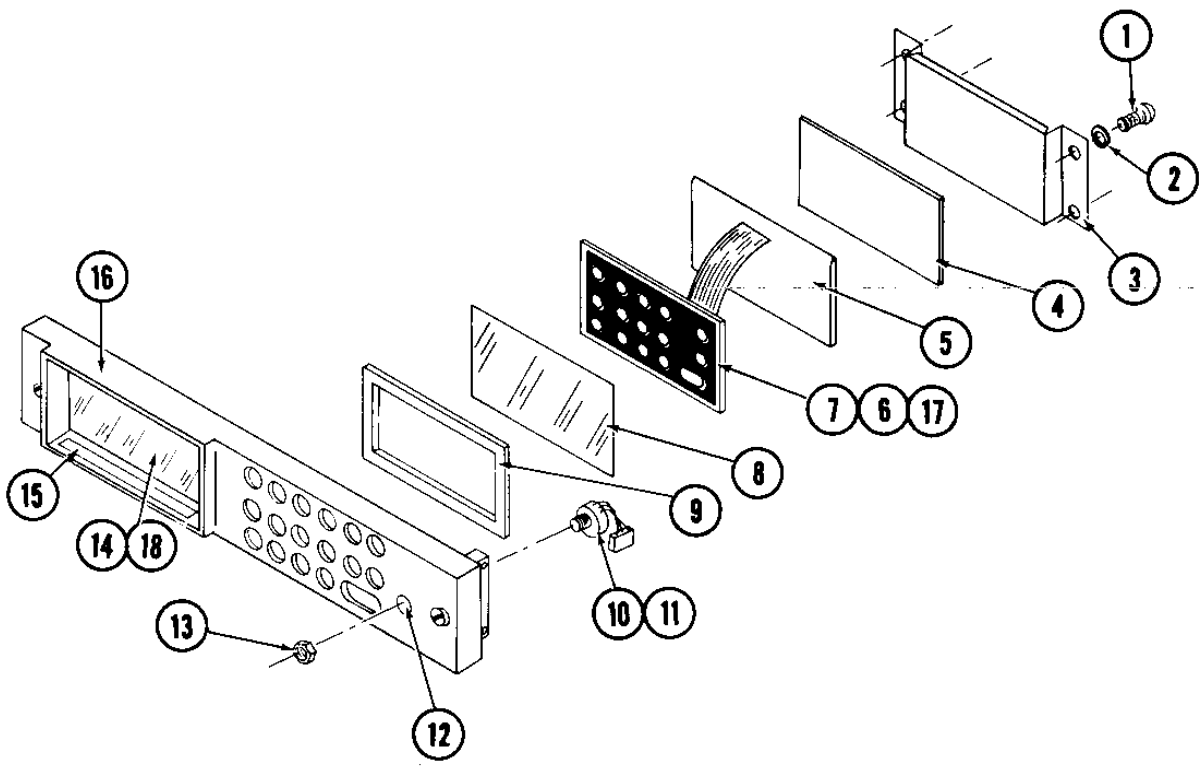
8.4 INTERNAL HARDWARE (DESK)



REF.	PART NUMBER	DESCRIPTION	QTY.
1	P00686 020	Capacitor Clamp	1
2	107763 00A	11000 uf Cap. 15V	1
3	095920 00A	.25 Amp Fuse	p
4	092915 00A	Cable Band	1
5	108612 00A	Analog Verify PCB (Rams 2,3)	1
6	115355 00A	Setpoint PCB (Ram 9) (N.S.)	1
7	108635 00A	Regulator Harness	1
8	A108624 00A	Parallel Output Harness (N.S.)	1
9	116727 00A	Setpoint Output Harness	1
10	C108652 00A	(N.S.)	1
11	R01859 050	Chassis Assembly	4
12	R01611 050	Push Rivet	10
13	R00589 210	Nut 8-32	5
14	108648 00A	Lockwasher #8	1
15	112064 00A	Fishpaper Insulator	1
16	C108614 00A	** Multiple Build PCB (N.S.)	1
17		* Parallel Output PCB (N.S.)	1
18	R01771 050	Main PCB	2
19	R00813 050	Lockwasher #6	2
20	R01674 050	Nut 6-32	2
		Screw 6-32 x 3/8	

*** Parallel KOP (Desk) 112711, (Wall) 11271200A**
**** Multiple Build KOP (151) 11270400A Desk Only.**
N.S. - Not Shown

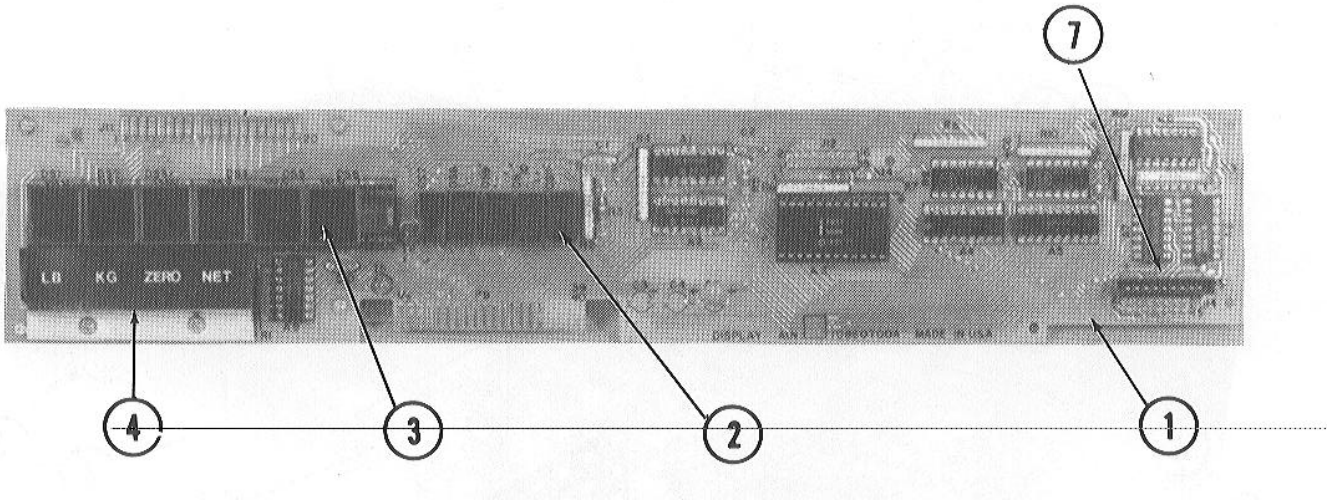
8.5 FRONT PANEL & KEYBOARD (DESK AND WALL)



REF.	PART NUMBER	DESCRIPTION	QTY.
1	R01609 050	Screw, 6-32 x 5/16	4
2	R01771 050	Lockwasher #6	4
3	A108595 00A	Keyboard Retainer Bracket	1
4	114276 00A	Foam Gasket	1
5	114275 00A	Backer Board	1
6	B113493 00A	Keypad Assembly*	1
7	117079 00A	keyboard Mask (Rams 1,4,11,14)	1
8	A113763 00A	Plastic Window	1
9	113486 00A	Gasket	1
10	108641 00A	Zero Pot. Assembly (Desk)	1
11	109865 00A	Zero Pot. Assembly (Wall)	1
12	A108571 00A	Shaft Seal	1
13	017442 050	Pot. Retaining Nut	1
14	B108645 00A	Display Lens	1
15	105192 00A	Capacity Label LB/KG	1
16	D108546 00A	Front Panel	1
17	116134 00A	Keypad Assb. (Rams 9 & 19) *	1
18	116726 00A	Display Lens (Rams 9 & 19)	1
19	A112148 00A	Display Lens Gasket	1

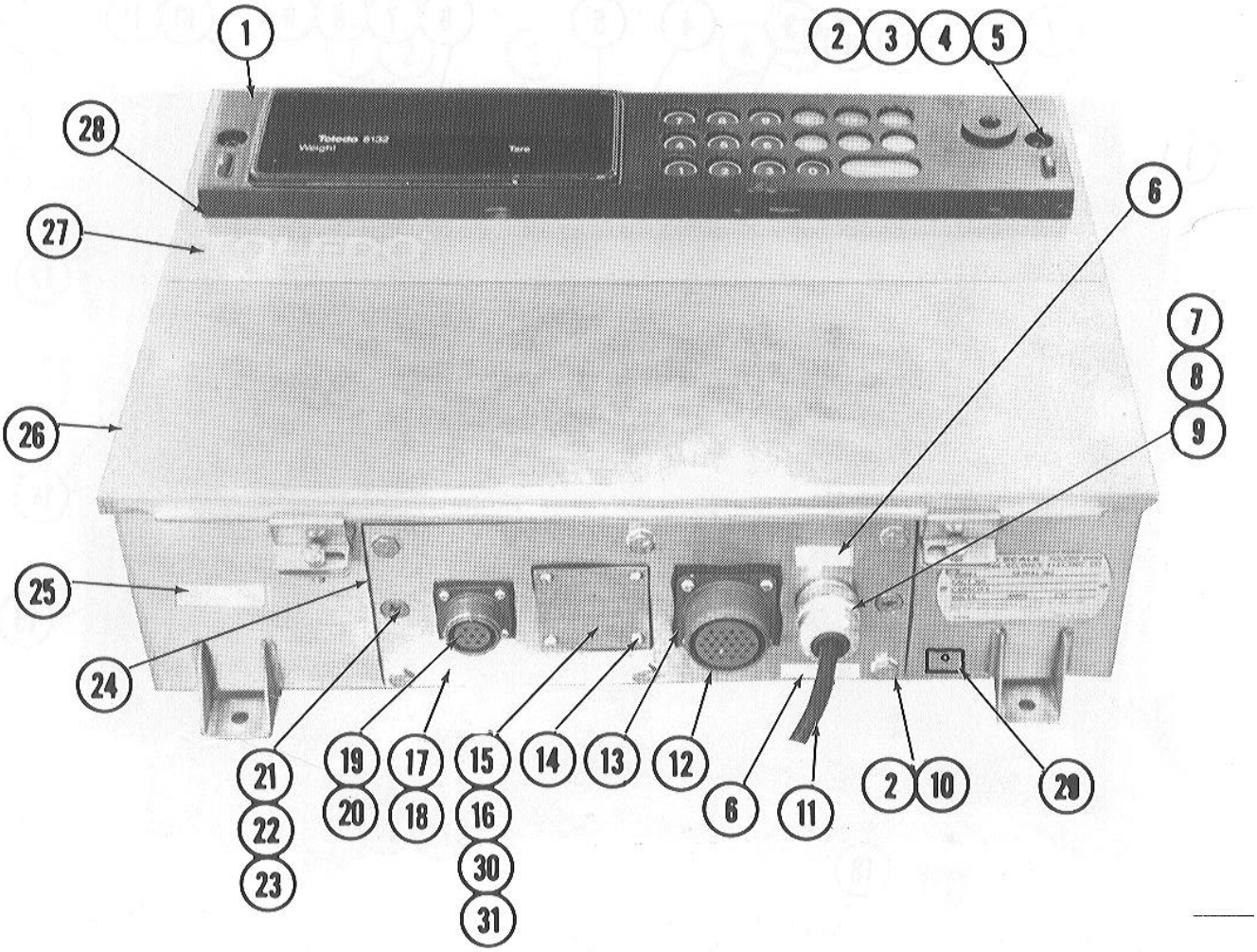
***Do not remove adhesive cover on back of keypad. The keypad is not to be attached to the backerboard.**
When ordering Keyboard for Rams 1,4,11, & 14 order keyboard mask also.
Keyboard mask is used to cover "TV" and "AV" button on non-verified units.

8.6 DISPLAY PCB & COMPONENTS



REF.	PART NUMBER	DESCRIPTION	QTY.
1	A117653 00A	PCB display	1
2	117672 00A	Tare LED	5
3	117644 00A	Display LED	6
4	104739 00A	Legend LED	4

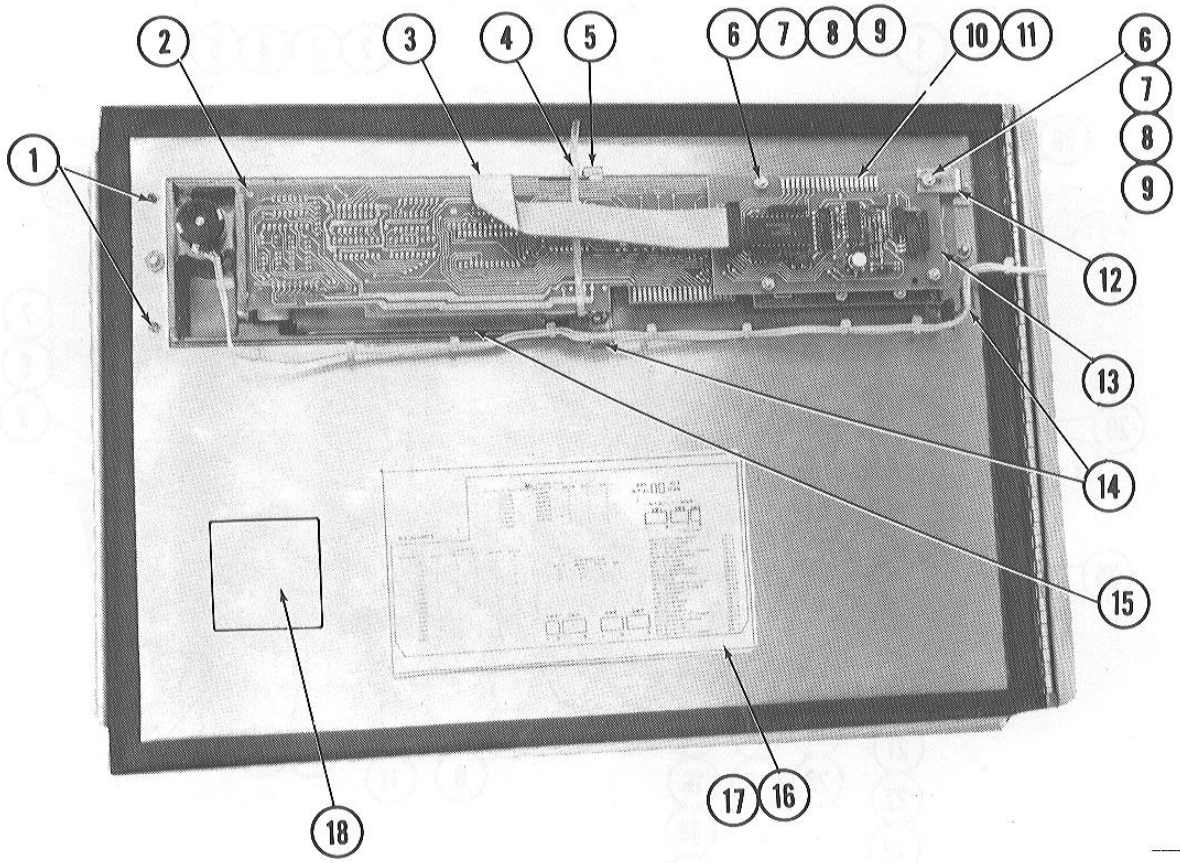
8.7 FRONT PANEL & MISCELLANEOUS HARDWARE (WALL)



(8.7 FRONT PANEL & MISCELLANEOUS HARDWARE (WALL) continued)

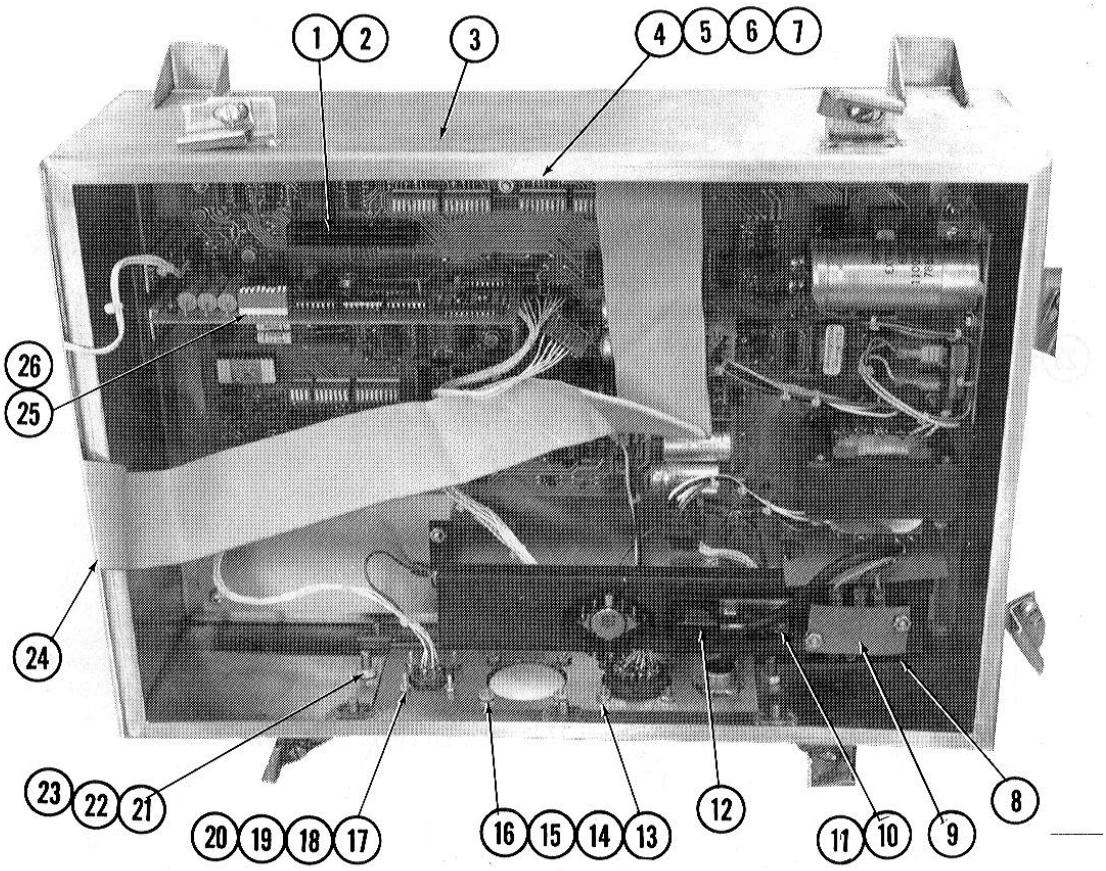
REF.	PART NUMBER	DESCRIPTION	QTY.
1	D108546 00A	Front Panel	1
2	R03088 00A	Nylon Roll Collar #10	2
3	R00822 00A	Lockwasher #10	2
4	000956 13	Nut 10-32	2
5	R03443 00A	Screw 10-32 x 1(ECNY 4155)	2
6	113488 00A	Warning Label	1
7	104699 00A	Gasket "O" Ring	1
8	033272 00A	Conduit Lock Nut	1
9	P00477 020	CGB Conn.	1
10	R02346 00A	Screw 1/4 - 20 x 3/8	6
11	109859 00A	Line Cord Assembly	1
12	112143 00A	MS Conn. Cap (N.S.)	1
13	A108616 00A	MS Conn. Gasket	1
14	A108615 00A	Parallel I/O Gasket	1
15	A111158 00A	Parallel Output harness (N.S.)	1
16	A111160 00A	Parallel I/O Cover	1
17	C109854 00A	Bottom Plate (Rams 12,13)	1
18	D108587 00A	Bottom Plate (Rams 11,14,17,18)	1
19	109852 00A	Gasket Verified (Rams 12,13)	1
20	109853 00A	Gasket Non Verified (Rams 11,14,17,18)	1
21	R00434 00A	Nut 1/4 -20	
22	R02357 00A	Screw 1/4 - 20 x 3/4	2
23	R03089 00A	Nylon Roll Collar 3/4	2
24	104554 00A	Bottom Plate Gasket	8
25	B113971 00A	FCC Tested Label	1
26	C108580 00A	Enclosure	1
27	B108589 00A	Decorative Bezel	1
28	108592 00A	Front Panel Gasket	1
29	097405 00A	U.L. Label	1
30	103651 00A	57 Pin Conn. Cap. (N.S.)	1
31	116728 00A	Setpoint Output Harness (N.S.)	1

8.8 DISPLAY ASSEMBLY (WALL)



REF.	PART NUMBER	DESCRIPTION	QTY.
1	R02180 050	Tap Screw 8-32 x 3/8	6
2	B108608 00A	Display PCB	1
3	108627 00A	Display Verify Cable (Rams 12,13)	1
4	098271 00A	Cable Band	1
5	A108593 00A	Hold Down bracket	4
6	037331 020	Spacer (Rams 12,14)	4
7	R01982 050	Screw 4-40 x 5/8 (Rams 12,13)	4
8	R01679 050	Lockwasher #4 (Rams 12,13)	4
9	R01678 050	Nut 4-40 (Rams 12, 13)	1
10	108540 00A	20 Position Connector (Rams	1
11	112270 00A	12,13)	1
12	111179 00A	Connector Cover (Rams 12, 13)	1
13	108610 00A	Display Board Support	1
14	P00228 020	Display Verify PCB (Rams 12, 13)	2
15	C109876 00A	Cable Clamp	1
16	A111162 00A	Switch Setting Tag	1
17	11177 00A	Display Board Retainer	1
18	118813 00S	Static Awareness label	1
		Label (Setpoint)	

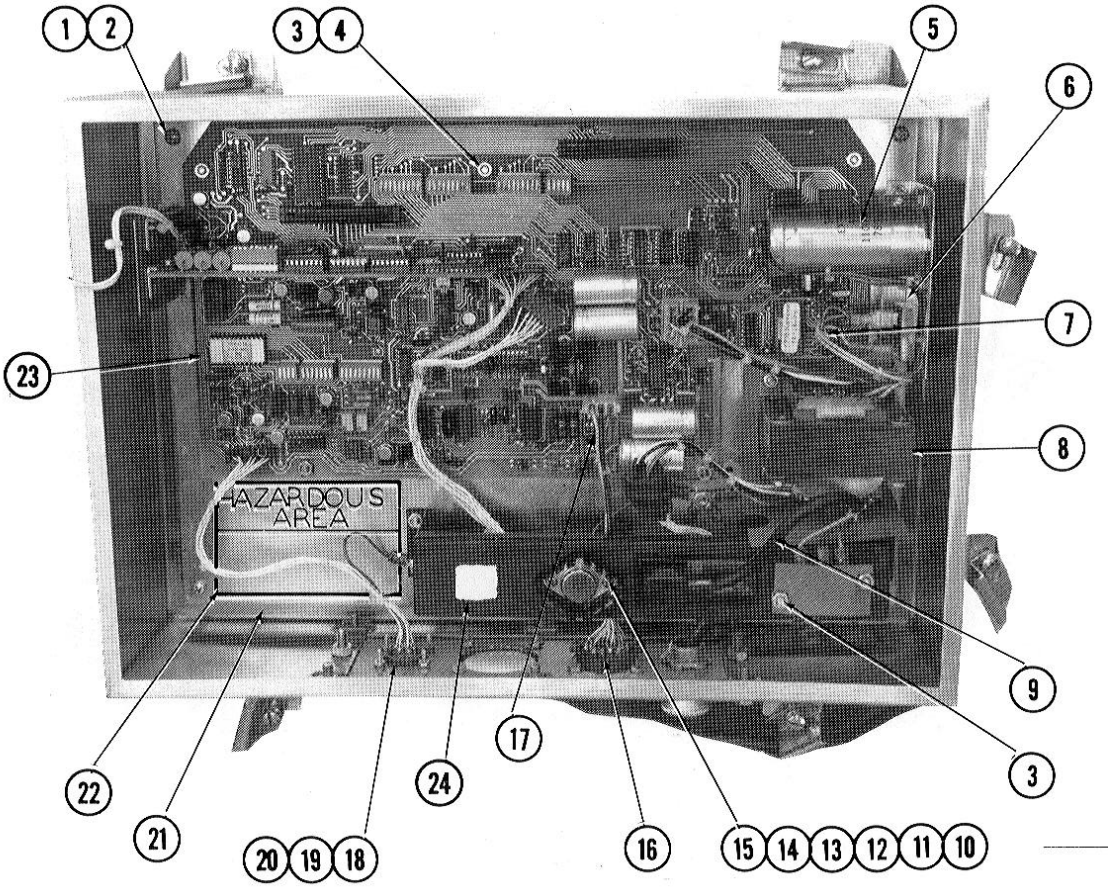
8.9 OPTIONAL PCB'S & HARNESS (WALL)



REF.	PART NUMBER	DESCRIPTION	QTY.
1	C108614 00A	*Parallel Output PCB (N.S.)	1
2	112064 00A	**Multiple Build PCB (N.S.)	1
3	112855 00A	Cable Clamp (N.S.)	1
4	118816 00A	PCB Guide (N.S.)	1
5	094038 00A	Hex Stud (N.S.)	1
6	R00849 130	Screw, 8-32 x 1/2 (N.S.)	1
7	R00589 210	Washer, #8 Lock (N.S.)	1
8	097821 00A	Terminal Block	1
9	111161 00A	Terminal Block Cover	1
10	108634 00A	Line Filter	1
11	095100 00A	.6 Amp Fuse	1
12	111188 00A	Right Angle Power Cord	1
13	R00813 050	Nut 6-32	8
14	R01771 050	Lockwasher #6	8
15	R02423 00A	Screw 6-32 x 5/8	8
16	R03086 00A	Nylon Roll Collar #6	8
17	R01678 00A	Nut, 4-40	4
18	R01679 00A	Lockwasher #4	4
19	R02101 050	Screw 4-40 x 3/8	4
20	R03085 00A	Nylon Roll Collar #4	4
21	R00434 00A	Nut ¼-20	1
22	R02357 00A	Screw 1/4-20 x 3/4	1
23	R03089 00A	Nylon Collar 1/4”	2
24	111182 00A	Display Harness	1
25	108612 00A	Analog Verify PCB (Rams 12,13)	1
26	115355 00A	Setpoint PCB (Ram 19) (N.S.)	1

***Parallel K.O.P. (Desk) 112711 00A, Parallel K.O.P. (Wall) 112712 00A**
****Multiple Build K.O.P. (151) 112074 00A Desk Only**
N.S. - Not Shown

8.10 MISCELLANEOUS HARDWARE (WALL)



REF.	PART NUMBER	DESCRIPTION	QTY.
1	R00512 050	Screw 10-32 x 3/8	4
2	R00822 00A	Lockwasher # 10	4
3	R01611 050	Nut 8-32	7
4	R00589 210	Lockwasher #8	5
5	107763 00A	11000 uf Cap. 15V	1
6	093943 00A	Rectifier	1
7	095920 00A	.25 Amp Fuse	1
8	108628 00A	Transformer Assembly	1
9	111188 00A	Right Angle Power Cord	1
10	104935 00A	Voltage Regulator	1
11	R02055 0130	Screw 6-32 x 1/2	2
12	R01771 050	Lockwasher #6	2
13	097522 00A	Heat Sink	1
14	101994 00A	Nylon Insulator	1
15	P00549 020	Aluminum Insulator	1
16	A108604 00A	Serial I/O Harness	1
17	108635 00A	Voltage Regulator Harness	1
18	109850 00A	Load Cell Harness (Rams 11,14, 17, 18)	1
19	109851 00A	Load Cell Harness (Rams 12, 13)	1
20	112759 00A	L.C. Harness RFI Filtered (Rams 11,14,	1
21	108596 00A	17,18)	1
22	A098462 00A	Main Panel	1
24	111190 00A	Hazardous Area Label	1
		Fuse Label	

8.11 MAIN PCB'S

PART NUMBER	DESCRIPTION	RAM
G109871 00A	Standard PCB (Same as 114975 00A)	1, 11
F111185 00A	3 PPM / ° C	3, 13
D111187 00A	6 PPM / ° C	4, 14
A112078 00A	Multiple Build (Used with Model 151)	
B114266 00A	Expanded Zero Capture	7, 17
B114267 00A	Print Interlock	8, 18
B114975 00A	Standard PCB (Same as 109871 00A)	1, 1
B114976 00A	6 PPM / ° C (Analog Verify Main PCB)	2, 12
C116605 00A	Intrinsic Safe	10, 20
A116723 00A	Setpoint	9, 19
A116723 00A	Multiple Build and Intrinsic Safe	
118158 00A	Setpoint and Intrinsic Safe	9, 19
118826 00A	Averaging (standard) 1 second AZM	201
126128 00A	Averaging (9475) 2.3 second AZM	202
126402 00A	Averaging (9271, Legal for Trade) 2.3 sec.	203
KA570618 00A	AZM	9, 19
KA570618 00A	Setpoint, 4800 Baud standard 8132 Output	
KA570262 00B	Stored Weight	
KA571262 00A	Stored Weight and Intrinsic Safe	
KA571397 00B	40,000 Count	
KA5711220 00A	40,000 Count and Intrinsic Safe	
KA574882 020	Setpoint with Zero Tolerance	
KA572881 00A	Averaging, HAP (9475) 2.3 sec. AZM	
KA572882 00A	Setpoint, Battery Back-up	
KA572881 00B	Tare, Battery Back-up	
KA572882 00B	Setpoint, HAP, Battery Back-up	
	Tare, HAP, Battery Back-up	

8.12 COMMON C.O.D. MAIN PCB'S AND ADDITIONAL PARTS

40,000 COUNT

PART NUMBER	DESCRIPTION
Y813218234AE	Main PCB 40,000 Count
Y813218234AD	Switch Map

GROSS, TARE, NET

PART NUMBER	DESCRIPTION
Y81323201AG	Main PCB Gross, Tare, Net
Y81323201AF	
Y81323201AD	Switch Map Addendum
Y81323201AC	Keyboard Assembly
	Display Lens

8.13 INTERFACE K.O.P.'S

A. PARALLEL I/O K.O.P

Desk 112711 00A
Consists of:

PART NUMBER	DESCRIPTION	QTY
B108614 00A	Parallel Output PCB	1
108624 00A	Output Harness	1

Wall 112712 00A
Consists of :

PART NUMBER	DESCRIPTION	QTY
B108614 00A	Parallel Output PCB	1
111158 00A	Output Harness	1
108651 00A	Cap for 57 Pin Connector	1

B. EIA INTERFACE K.O.P.

Desk 114746 00A
Consists of:

PART NUMBER	DESCRIPTION	QTY
116130 00A	Interface PCB	1
114752 00A	Assembly	1
115358	Harness from Main PCB	1
	Instruction Sheet	

Wall 114747 00A
Consists of :

PART NUMBER	DESCRIPTION	QTY
114980 00A	Interface PCB Assembly	1
114971 00A	Harness to Output	1
114280 00A	Harness from Main PCB	1
115342	Instruction Sheet	1

C. MULTIPLE BUILD K.O.P. (151)

Desk Only 112074 00A
Consists of:

PART NUMBER	DESCRIPTION	QTY
112064 00A	Multiple Build	1
A112078 00A	PCB	1
112077 00A	8132 Main PCB	1
	Instruction Sheet	

D. 8820/30 PRINTER INTERFACE K.O.P.'S

Desk Model 8132 with 6' of Cable
Part Number -114748 00A

PART NUMBER	DESCRIPTION	QTY
113757 00A	Interface PCB	1
113758 00A	Internal harness	1
111502 00A	interconnecting Cable	1
114970	(6')	1
	Method of Assembly	

Desk Model 8132 with 20' of Cable
Part Number - 114749 00A

PART NUMBER	DESCRIPTION	QTY
113757 00A	interface PCB	1
113758 00A	Internal harness	1
111503 00A	Interconnecting Cable	1
114970	(20)'	1
	Method of Assembly	

Wall Mount 8132 with 6' of Cable
Part Number -114750 00A

PART NUMBER	DESCRIPTION	QTY
R01678 050	Nut, Hex 4-40	12
R01679 050	Lockwasher #4	4
R02296 00A	Screw 4-40 x 5/8	4
113757 00A	Interface PCB	1
114972 00A	Harness (interface to Main	1
114753 00A	PCB)	1
114279 00A	Harness (Interface to Output)	1
274480	Mounting Plate	Suff
114031 00A	Tape	1
114970	Interconnecting Cable (6')	1
	Method of Assembly	

Wall Mount 8132 with 20' of Cable
Part Number - 114751 00A

PART NUMBER	DESCRIPTION	QTY
R01678 050	Nut, Hex 4-40	12
R01679 050	Lockwasher #4	4
R02296 00A	Screw 4-40 x 5/8	4
113757 00A	Interface PCB	1
114972 00A	Harness (Interface to Main	1
114753 00A	PCB)	1
114279 00A	Harness (Interface to Output)	1
274480	Mounting Plate	Suff
114032 00A	Tape	1
114970	Interconnecting Cable (20')	1
	Method of Assembly	

Note that interconnecting cables are included in Interface K.O.P..

GROSS TARE PRINT K.O.P., DESK
PART NUMBER KC 567175 00A

PART NUMBER	DESCRIPTION	QTY
KB 170231 020	Gross Tare Print PCB	1
KT 665020 XAB	Support Clips	2
KA 567128 020	Harness (GTP to	1
KA 567131 00A	Display)	1
	Harness (GTP to J-22)	

GROSS TARE PINT K.O.P., DESK
PART NUMBER KC 567175 00B

PART NUMBER	DESCRIPTION	QTY
KB 170231 020	Gross Tare Print PCB	1
KT 665020 XAB	Support Clips	2
KA 567128 020	Harness (GTP to	1
KA567131 00B	Display)	1
	Harness (GTP to J-22)	

WARM-UP TIMER K.O.P., DESK/WALL
PART NUMBER 114122 00A

PART NUMBER	DESCRIPTION	QTY
113762 00A	Warm-up Timer PCB	1
114125 00A	Harness	1
103335 00A	Insulated T-Splice	3
114127	Installation	1
	Instructions	

ANALOG OVER-CAPACITY K.O.P.
PART NUMBER 112720 00A

PART NUMBER	DESCRIPTION	QTY
112721 00A	Analog Over-Capacity PCB	1
112722 00A	Harness	1

REMOTE INPUT K.O.P., DESK
PART NUMBER 118147 00A

PART NUMBER	DESCRIPTION	QTY
108568 00A	Screw Lock Assembly	1
A118142 00A	PCB Assembly	1
118143 00A	Harness (Disp. to remote)	1
118144 00A	Harness (Remote to	1
118146 00A	Panel)	1
118157 00A	Mounting Plate	1
P00719 020	Harness (Rmt. to St.	1
R01678 050	Point)	2
R01679 050	Plug - 50 Pin	2
R02101 050	Nut 4-40	2
118156	Washer #4	1
	Screw 4-40 x 3/8	
	Installation Instructions	

REMOTE INPUT K.O.P., WALL
PART NUMBER 118148 00A

PART NUMBER	DESCRIPTION	QTY
A118142 00A	PCB Assembly	1
118820 00A	Harness (Remote to Disp.)	1
118821 00A	Harness (Remote to St.	1
R00813 050	Pnt.)	4
R01771 050	Nut Hex 6-32	4
R02434 00A	Washer #6	4
R06086 00A	Screw 6-32 x 5/8	4
118822	Nylon Roll Collar #6	1
	Installation Instructions	

GROSS WEIGHT ANALOG OUTPUT K.O.P.
PART NUMBER KN 572262 020

PART NUMBER	DESCRIPTION	QTY
KC 564601 020	Analog Buffer	1
KA 567219 020	Cable	1
KN 567218 020	Modification	1
	Parts	

SETPOINT CONVERSION K.O.P., DESK
PART NUMBER A117932 00A

PART NUMBER	DESCRIPTION	QTY
115355 00A	Setpoint PCB	1
116134 00A	Assembly	1
116727 00A	Setpoint Key Pad	1
117933 00A	Harness	1
118815 00A	Decal TR/Setpoint	1
A116723 00A	Decal (SW6 settings)	1
	Main PCB for Setpoint	

SETPOINT CONVERSION K.O.P., WALL
PART NUMBER A117940 00A

PART NUMBER	DESCRIPTION	QTY
115355 00A	Setpoint PCB	1
116134 00A	Assembly'	1
116728 00A	Setpoint Key Pad	1
117933 00A	Harness	1
118815 00A	Decal (TR/Setpoint)	1
A116723 00A	Decal (SW6 Settings)	1
	Main PCB for Setpoint	

8.14 SERIAL OUTPUT INTERCONNECTING CABLES

MODEL	TYPE	LENGTH	PART NUMBER
301/307	DESK	20 ‘	112156 00A
301/307	WALL	20 ‘	112157 00A
8805	DESK	6 ‘	110837 00A
8805	DESK	20 ‘	110838 00A
8805	WALL	6 ‘	110849 00A
8805	WALL	20 ‘	110850 00A
8806	DESK	6 ‘	A115484 00A
8806	DESK	20 ‘	A115485 00A
8806	WALL	6 ‘	115486 00A
8806	WALL	20 ‘	115487 00A
8810-20-30*	DESK	6 ‘	111502 00A
8810-20-30*	DESK	20 ‘	111503 00A
8810-20-30*	WALL	6 ‘	114031 00A
8810-20-30*	WALL	20 ‘	114032 00A
8855	DESK	6 ‘	114285 00A
8855	DESK	20 ‘	114408 00A
8855	WALL	6 ‘	114104 00A
8855	WALL	20 ‘	114105 00A

*** For the model 8810 series printer to operate active, and 8820/30 Optional Interface KOP must be used in the 8132.**

LOAD CELL CABLE SPLICE KOP
PART NUMBER A118271 00A

PART NUMBER	DESCRIPTION	QTY
125921 00A	Splice Pot Kit	1
125922 00A	24-Gauge Heat Shrink	1
125923 00A	20-Gauge Heat Shrink	1
125924 00A	16-Gauge Heat Shrink	1
125925 00A	Plastic Gloves	2
126436 00A	Hot Pack	1
A118273 00A	Splicing Instuctions	1

DISPLAY FILTER RESISTOR PACKS

PART NUMBER	RATE OF TIME
099133 00A	1 second rate
103524 00A	2 or 3 second rate
A100408 00A	(standard)
	5 second rate

METTLER TOLEDO
Scales & Systems
350 West Wilson Bridge Road
Worthington, Ohio 43085-2273

TM008132I06

Revised 7/87