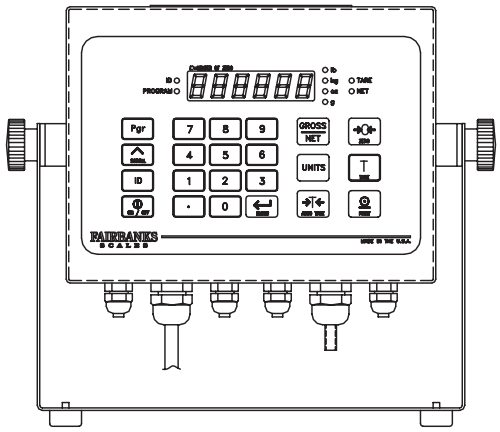
Operating Manual

2300 Series

Model : 2300



50202

Issue #4 2/04

Amendment Record

2300 Series

Models: 15744,15849,22258,21877,21879,22260

50202 / SJ 4773

Manufactured by Fairbanks Scales Inc.
821 Locust
Kansas City, Missouri 64106

Created	12/98	
Issue #1	12/98	New Product Release
Issue #2	7/99	Software Update, added 5 digit part numbers, added 610 printer
Issue #3	02/01	Added battery operated models
Issue #4	6/01	Update the Troubleshooting page and Technical Specifications (NEMA 4)

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Section 6: Troubleshooting

Appendix:

Disclaimer

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

Section 1: Introduction/Description

Caution: This product is shipped from the factory set for 110-120 VAC operation. For 220-240 VAC operation, settings must be changed before powering up. See power settings below for 220-240 VAC.

Power Settings:

AC Power can be set for 110/120VAC OR 220/240VAC via jumpers @ JP1 on Power PCB# 15759 or 21514, confirm setting.
For 220/240VAC = Jumper only center positions "B"
For 110/120VAC = Jumper both end positions "A" and "C"

A. Description:

The 2300 Series instrument is an all purpose analog weight indicator with the following features:

- 6 digit, 7 segment .56" LED display
- Full numeric keypad
- LED indicators for modes and functions
- Outputs, and two (2) inputs for external switches
- Choice of AC only or Battery & AC power (when ordering only)

B. Model Differences:

- Original model units did NOT have an ON/OFF switch on the keypad and are AC only.
- Neither their software nor their hardware allow battery operation or battery add-on.
- Parts from an original may NOT be used in a new style instrument and visa-versa.

(Original Styles)

15744 - Composite

15849 - Stainless Steel

- Newer models HAVE the new style keypad with an ON/OFF switch, and are ordered WITH or WITHOUT battery option. All contain the "bAtt' menu in their software.
  Parts from an original may NOT be used in a new style instrument and visa-versa.

(Newer Styles)

22258 - AC Only Stainless Steel

21877 - AC Only Composite

21879 - AC/Battery Composite

22260 - AC/Battery Stainless Steel

The 2300 Series is available in an ABS hostile environment version and in a hostile environment SS enclosure. The enclosure(s) come with a mounting bracket suitable for desk or wall mount.
Options are Time Clock and 4-20mA output accessories.

C. Intended Applications:

Include, but are not limited to:

- Tank weighing assemblies
- Floor scales
- Bench scales
- Hopper scales
- Truck scales

Section 2: Technical Specifications

A. Approval Specifications:

	NTEP CC #	98-131A1
	CWM APAM	97-0103

B. Models:

Version	Style	NEMA	IP
Original:	IND-HR2300-1 Composite	4	IP66
Original:	IND-HR2300-2 Stainless Steel	4X	IP66
Newer:	IND-HR2300-3 Composite, AC Only	4	IP66
Newer:	IND-HR2300-4 Composite AC/DC	12	IP40
Newer:	IND-HR2300-5 SST ,AC Only	4X	IP66
Newer:	IND-HR2300-6 SST , AC/DC	4X	IP66

Division sizes from .0002 to 50
(Platform capabilities take precedence over the instrument capabilities)

C. Environment:

The enclosures are suitable for use at their listed ratings.
Composite=Non washdown, Stainless Steel=Hand washdown Only

D. Power Requirements:

120/240 Volt AC, 50-60 Hertz grounded source -OR-- 6 "D" cell batteries (for those units so equipped). It is highly recommended that the proper grounds/shields from the base or junction box to the instrument be used. Power consumption: Approximately 4 watts

E. Instrument Capabilities:

1. **Number of load cells:** 8 each 350 ohm cells/16 each 1000 ohm cells

2. **Div size:** .0002 to 50

3. **Counts/div:** 500,000 internal counts available

4. **Cable lengths:** Use 18 ga cable, absolute maximum of 500 feet. (Must use sense leads over 25')

5. **Excitation voltage:** Pulsating (chopped) DC excitation measures (approx) 5.00 DCV (true RMS) at TB1-1 to TB1-2 (reading - exc to + exc on instrument terminal strip)

6. **Approximately 100 hrs of battery life using alkalines**, battery life will vary by battery manufacturer and actual usage.

   a. With 1 load cell, battery life equals 100+ hours

Section 3: Setup

A. Unpacking:

Be certain the instrument is undamaged and the packing list is correct.

B. Installing:

Setup is accomplished by locating and securing the instrument within a suitable area, wiring to the load cell(s) or junction box, programming to meet specific needs, calibration, then adding peripheral equipment as required. Place the instrument so that the platform can be viewed while operating, out of direct sun, and close to a power outlet if AC power is to be used. Configuration, calibration, accessory installation and peripheral device setup must be performed by an authorized installing technician. The instrument stand is attached via the two (2) screw knobs and used as a desk mount, or a wall mount using the pre-drilled holes in the base of the stand.

Note: *When adjusting screw knobs, hand tighten only, do NOT overtighten.*

1. AC Power can be set for 110/120VAC OR 220/240VAC via jumpers @ JP1 on Power PCB# 15759 or 21514, confirm setting.

For 220/240VAC = Jumper only center position "B"
For 110/120VAC = Jumper both end positions "A" and "C"

2. Models with battery option:

a. Stainless Steel: Open the battery holder's cover by loosening the four thumbscrews and insert 6 NEW "D" (alkaline) cells into the holder observing polarity. Ensure all batteries are inserted correctly, then secure screws before powering up.

b. Composite: Remove the battery holder cover and insert 6 NEW "D" (alkaline) cells into the holder observing polarity. Ensure all batteries are inserted correctly, then secure cover before powering up.

C. Power On:

To turn power ON, firmly press the ON/OFF switch on the front panel. On original models, without the ON/OFF switch, simply plug the power cord in to power up.

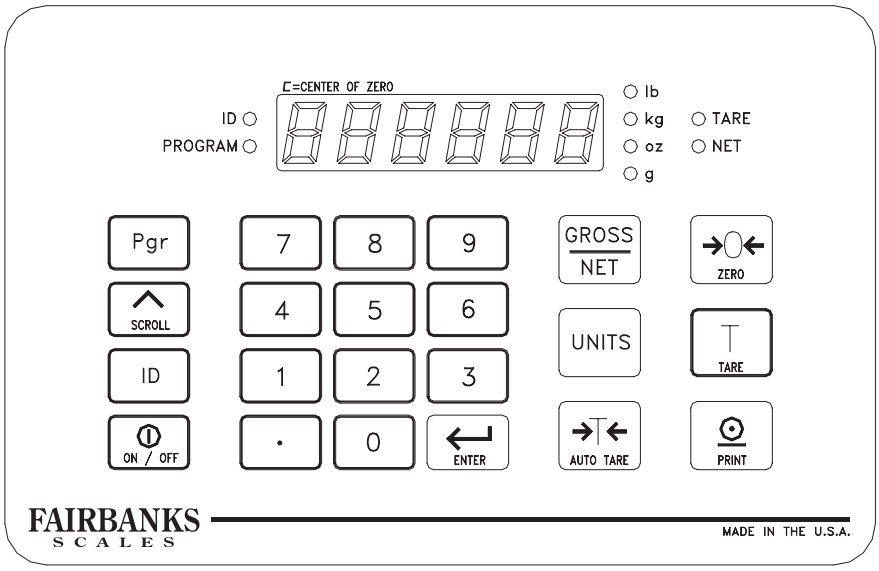
A 'Power-up' display will sequence is as follows:

LL.LLLL	(digit test)
777.777	(digit test)
- - - -. - -	(digit test)
init.	(initialization
P21579	(or current Prom #)
Rev 2	(or current Rev #)
X.X U	(battery voltage)
XX.XCs	(temperature
XX.XCn	(temperature
Adinit	(A-D Initialization)
Stby 25-1	(Countdown for A-D Initialization)
XXX.X	(weight display)

Section 4: Programming

A. Keyboard Layout:

Description of front panel keys and their function(s):



Note: *The original model's keypad does NOT have an ON/OFF switch key.*

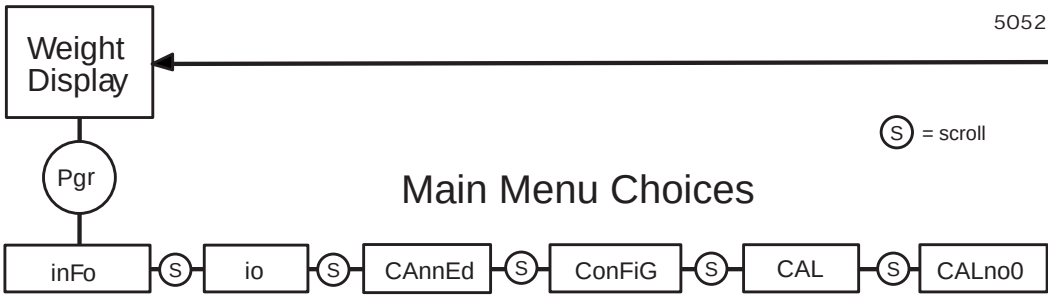
Pgr	Used the enter PROGRAM mode
SCROLL	Used to view choices in PROGRAM mode
ID	Used to set ID or Identification number
GROSS NET	Changes from GROSS to NET modes/ exits from Program mode.
UNITS	Selects weighing Units
AUTO TARE	Captures weight on platform as TARE, sets display to 00
ZERO	Resets display to 00
TARE	Reads current stored TARE weight
PRINT	Sends data to printer device(s)
ENTER	Transacts "keyed" data into memory
0	Number 0 to 9 for ID or Tare entries & used in programming
9	
.	Decimal for data entry in decimals
ON / OFF	Press FIRMLY to turn power ON, then OFF

B. Getting Started with Menus and Programming:

1. The **Main Menu** is accessed from the weigh screen by pressing PGR. The Main Menu's layout is shown here:

'Pgr' = Program

'S' = Scroll



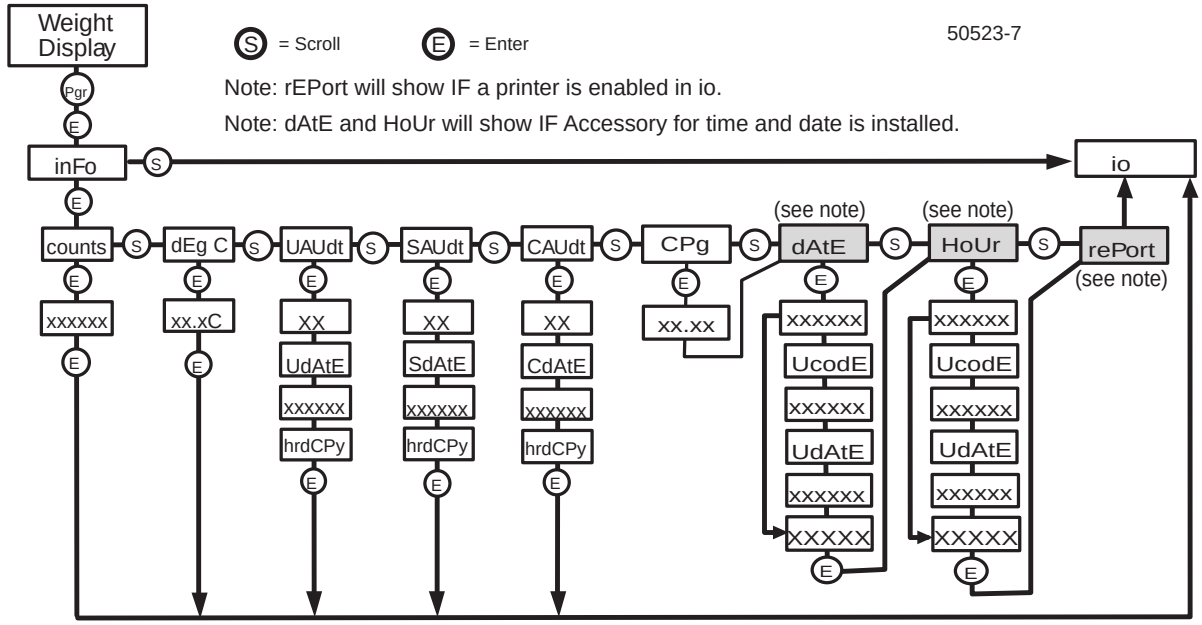
- Each Main menu is accessed by pressing ENTER with the Main menu legend displayed
- Each Main menu contains sub-menus
- Each sub-menu contains data
- Data can be viewed by pressing the SCROLL key, and 'accepted' by pressing ENTER
- Pressing the SCROLL key repeatedly will exit to a menu
- Pressing the GROSS/NET key repeatedly will exit to the weigh screen
- Menus can be accessed in any order for adjustments or calibration

Menu	**Description**
Info	NO password needed, set Time & Date, view data, print config reports
io	"U" code required, set up all ports for printers,and other devices and outputs
BAtt	NO password needed, view battery voltage, set sleep time and display brightness (Original instruments did NOT have the bAtt menu)
CAnnEd	"S" code required, clears memory and sets a default program
ConFig	"S" code required, set all weighing parameters here
CAL	"S" code required, calibrate zero and span
CALno0	"S" code required, re-calibrate without emptying or zeroing scale

C. info Menu:

The info menu may be accessed without a code. This menu may be looked at by Weights and Measures to check the "S Audt", "U Audt", or "C Audt" for entries after a seal has been attached. This menu contains other good information such as CoUntS for checking live counts, dEg C for checking the ambient temperature of the instrument location, and CPg or the counts per division. IF installed, time & date settings are accessed here.

- Press 'Pgr' to enter the program mode



- Press ENTER at the inFo menu

Prompts are:	**Results are:**
CoUntS	XXXXXX
dEg C	XX.X º C
U AUdt	User Audit
S AUdt	Service Audit
C AUdt	Calibration Audit
Cpg	Counts/Grad
dAtE	Date setting shows ONLY IF Time/Date Accessory is installed
hoUr	Time setting shows ONLY IF Time/Date Accessory is installed
rEPort	Report

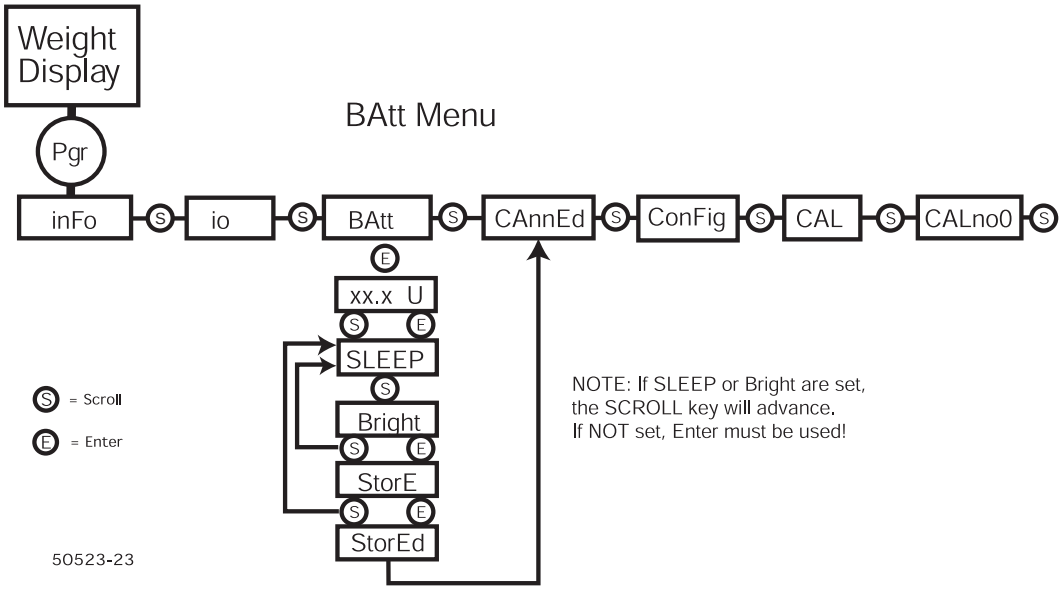
- With any prompt showing, press ENTER to 'view' the information at that prompt.
- Press ENTER again and the display will advance to the io menu.
- Use the SCROLL key to exit programming to the weigh mode.

1. Setting Time and Date:

The time and Date prompts will show ONLY if the time clock accessory 15819 is installed.

- Press 'Pgr' to enter the program mode
- inFo will be shown, press ENTER to go into the inFo menu
- Use 'Scroll' to go to the "dAtE" menu and press ENTER
- The existing date, "XXXXXX" will be displayed
- Use the keypad to enter the correct date in mmddyy format
- Press ENTER, the display will show "hoUr"
- Press ENTER, the display will show the existing time "XX.XX"
- Use the keypad to enter the correct time "XX.XX"
- Press AUTOTARE for "AM" or PRINT for "PM", an "A" or "P" will be added
- With the proper Time shown, press ENTER
- The display will show "rePort", press SCROLL repeatedly to exit to the weigh mode
- DONE

D. bAtt Menu: This menu is used for checking battery voltage, setting 'sleep' time, and display brightness. No passwords are required to access this menu.



To access the BAtt menu:

- Press 'Pgr' to enter the program mode
- Use 'Scroll' to go to the BAtt menu
- Press ENTER

Prompts are:	**Choices are:**
XX.X U	The voltage reading of the installed batteries (U="V"olts)
	NOTE: If AC power is used, the indication will NOT be accurate!
	Press ENTER or SCROLL to advance
***SLEEP**	The number of INACTIVE MINUTES before *'sleep' occurs
	Press ENTER or SCROLL to advance
SL 0	Enter 0=No sleep, 1-99 are active valid entries (use SCROLL)
SLEEP	Press SCROLL to advance
bright	Hi, Lo (Use Lo to extend battery life by about 20%)
	Press SCROLL
StorE	
StorEd/CAnnEd	Press GROSS/NET

Note: If either SLEEP or BRIGHT are accessed, the SCROLL key will advance to STORE. If neither are accessed, then SCROLL will 'loop' SLEEP-to-BRIGHT until an entry is made, or, the Gross/Net key is pressed repeatedly to exit programming and return to the weigh mode.

*** The 'sleep' option:** If the scale is idle at "0" (zero) for the amount of programmed 'sleep' time, the display will start to scroll dashes (- - - - - -) from right to left and momentarily flash "ASLEEP". It will stay this way for about 5 minutes if the scale is undisturbed, then turn OFF. If the scale is used in that 5 minute period, it will resume weighing, and reset the 'sleep' timer. The ON/OFF switch must be pressed to repower the unit if it turns itself OFF.

Section 5: Operation

A. Keyboard features:

Include eight (8) LED indicators that "light" when that function or parameter is selected.

ID	Indicates the instrument is in the ID entry mode.
PROGRAM	Indicates the instrument is in the program mode
lb	Indicates pounds (lb) is selected as the weighing unit
kg	Indicates kilograms (kg) is selected as the weighing unit
oz	Indicates ounces (oz) is selected as the weighing unit
g	Indicates grams (g) is selected as the weighing unit
***lb & oz**	Indicates pound-ounces (lb-oz) is selected as the weighing unit
TARE	Indicates the inst. is in the TARE mode, displays TARE weight
NET	Indicates the inst. is in the NET mode, displays NET weight

* The lb-oz unit is NOT LEGAL for TRADE, do NOT use in commercial applications.

Notes: If neither TARE or NET are selected, the instrument is in GROSS mode.

B. Other Key Functions:

1. Using ID

Press ID, then press numeric keys 0-9 (up to six [6] digits) for unique customer or container number.

Example:

Press ID, 55147, then press ENTER, 55147 is temporarily stored as ID. ID can then be printed on a ticket to identify a weighment.

ID is not saved through power reset.

2. Using TARE

Enter numeric value in proper units, then press ENTER. Value becomes a stored TARE weight. Enter 0, then ENTER to set a "zero" tare. Press TARE to view temporary TARE weight. Tare is not saved through power reset.

3. Using UNITS

IF 2 or more UNITS are set up in programming, then pressing the UNITS key will toggle through all choices. Selecting units will show another division size, and possibly different decimal places. Units reset to primary unit on power reset.

C. Weighing Operation

1. Gross Weighing

a. Use ZERO key to set scale to 0.0
b. Place container/vehicle on scale
c. If ID is desired, Press ID, enter numeric ID, press ENTER
d. Record/Read GROSS weight

2. Net Weighing

a. Use ZERO key to set scale to 0.0
b. Place container/vehicle on scale (Tare weight)
c. Press AUTOTARE or enter TARE weight via keypad
d. Place material in container/vehicle (net weight)
e. If ID is desired, Press ID, enter numeric ID, press ENTER
f. Record/Read NET weight

3. Gross/Tare/Net Weighing

a. Use ZERO key to set scale to 0.0
b. Place container/vehicle on scale (Tare weight)
c. Press AUTOTARE or enter TARE weight via keypad
d. Place material in container/vehicle (Net weight)
e. Press Gross/Net
f. If ID is desired, Press ID, enter numeric ID, press ENTER
g. Record/Read Gross/Tare/Net Weight

Section 6: Troubleshooting

Symptom	Cause	Remedy
ON/OFF sw will NOT turn ON (AC Power)	Sw not pressed firmly No power at outlet Faulty Instrument	Press the ON/OFF switch FIRMLY and SLOWLY to turn ON Check AC outlet Call for Service
ON/OFF sw will NOT turn OFF	Display must be in weight display mode	Press SCROLL to return the display to the weighing mode Press the ON/OFF switch FIRMLY to turn OFF
Blank with AC power	No Power Faulty Instrument	Check power, check outlet, check plug, check cord, replace power PCB, replace main PCB
no rEF	No Load Cell Reference	Connect simulator to test, attach load cell, replace load cell cable, replace load cell
InPErr	Input Error	Call for Service
Lo CPd	Low Counts per Division	Call for Service
LoSPAn	Low Span Weight(s) Used	Call for Service
LoLoAd	Low Load, below ZERO reference	Remove platform bind, Call for Service
HiLoAd	High Load, above scale capacity	Remove Heavy Load, Call for Service
ESdrSt	Electro Static Discharge Reset	Check grounds, check for 3 prong plug, reinitialize power, Call for Service
gt6chr	More than 6 Characters	Call for Service
ON/OFF sw Inop (Batteries)	Sw not pressed firmly Batteries dead Faulty Instrument	Press the ON/OFF switch FIRMLY and SLOWLY Replace ALL 6 batteries with NEW alkaline "D"cells Call for Service
Blank DC power	Batteries BELOW 6.4 VDC	Replace ALL 6 batteries with NEW alkaline "D"cells
LoBAtt	Batteries at about 6.4 VDC	Replace ALL 6 batteries with NEW alkaline "D"cells
LoBAtt 'Flashing'	Batteries BELOW 6.4 VDC	Replace ALL 6 batteries with NEW alkaline "D"cells
Was ON now Blank	Sleep 'timed out'	Press the ON/OFF switch to repower unit
SLEEP/ BRIGHT 'loop'	SCROLL key	Access either SLEEP or BRIGHT via the ENTER key, the SCROLL key will now advance.(If neither are accessed, the SCROLL key will 'loop' these parameters).

Appendix I: PTR-3950 Ticket Printer Information

PTR-3950 Switch Settings:

	SW1	SW2
	12345678	12345678
	01100011	10010010

2400, None, 8 Bits, Busy=0 **Use Cable 15598 (Acc 1296)**

Printout of REPORT
in INFO menu

Port 2:
2400
none
8
CRLF
3950

Port 1:
2400
none
8
Frbnks

EXSW2 = >0<
EXSW1 = PRINT

1ND2300:
d/PU 1 LB
UNITS LB KG OZ GM LB-OZ
kb tare
auto tare
AZT ld
0 RANGE 100%
MOT 1d
Filter MEDIUM
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 00
Hi W = 18500
Lo I = 0
SPAN = 102
gross

Platform:
PU Cap = 1000
PU Cpd = 637.508000
0 ref = 348458

Battery:
Voltage = 27.3
Sleep Time = 0
Intensity = Lo

Printout of U Audt
in INFO menu

User Audit 57
Audit Date 092898

Printout of Ticket

1670 lb GROSS

1000 lb NET

670 lb TARE

125 ID

Appendix II: PTR-3960 Form Printer Information

PTR-3960 Switch Settings: **SW1 =** **12345678910**

1110000000

9600, None, 8 Bits, Busy=0 **Use cable15599 (Acc 1297)**

Printout of REPORT

<u>in INFO menu</u>

Port 2:
9600
none
8
CRLF
3960

Port 1:
2400
none
8
Frbnks

EXSW2 = >0<
EXSW1 = PRINT

1ND2300:
d/PU 1
UNITS LB KG OZ GM LB-OZ
kb tare
auto tare
AZT ld
0 RANGE 100%
MOT 1d
Filter MEDIUM
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 00
Hi W = 18500
Lo I = 0
SPAN = 102
gross

Platform:
PU Cap = 1000
PU Cpd = 637.508000
0 ref = 348458

Battery:
Voltage = 27.3
Sleep Time = 0
Intensity = Lo

Printout of Uaudt

<u>in INFO menu</u>

User Audit 33
Audit Date 092898

<u>Printout of Ticket</u>

2500 lb GROSS

1000 lb NET

1500 lb TARE

77 ID

Appendix III: 50-3921 Form Printer Information

50-3921 Form Printer Switch Settings:

SW1(super spd ser bd)	SW2 (super spd ser bd)	DipSW (Main PC)
12345678	12345678	12345678
11111111	01100110	00001010

9600, None, 8 Bits, Busy=0 **Use cable 15599 (Acc 1297)**

Printout of REPORT
in INFO menu

Port 2:
9600
none
8
CRLF
3921

Port 1:
2400
none
8
Frbnks

EXSW2 = >0<
EXSW1 = PRINT

1ND2300:
d/PU .01 OZ
UNITS LB KG OZ GM LB-OZ
kb tare
auto tare
AZT ld
0 RANGE 100%
MOT 1d
Filter MEDIUM
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 00
Hi W = 18500
Lo I = 0
SPAN = 102
gross

Platform:
PU Cap = 1000
PU Cpd = 637.508000
0 ref = 348458

Battery:
Voltage = 27.3
Sleep Time = 0
Intensity = Lo

Printout of Uaudt
in INFO menu

User Audit 16
Audit Date 092898

Printout of Ticket

30.00 oz GROSS
12.50 oz NET
17.50 oz TARE

4077 ID

Appendix IV: 610 Ticket Printer Information

610 Switch Settings: **Switch 1**

12345678

01001011

1200, Odd, 7 Bits, Busy=1 **Use cable 15598 (Acc 1296)**

Printout of REPORT
in INFO menu

Port 2:
9600
none
8
CRLF
3921

Port 1:
2400
none
8
Frbnks

EXSW2 = >0<
EXSW1 = PRINT

1ND2300:
d/PU .01 OZ
UNITS LB KG OZ GM LB-OZ
kb tare
auto tare
AZT ld
0 RANGE 100%
MOT 1d
Filter MEDIUM
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 00
Hi W = 18500
Lo I = 0
SPAN = 102
gross

Platform:
PU Cap = 1000
PU Cpd = 637.508000
0 ref = 348458

Battery:
Voltage = 27.3
Sleep Time = 0
Intensity = Lo

Printout of Uaudt
in INFO menu

User Audit 11
Audit Date 101098

Printout of Ticket

30.00 oz GROSS
12.50 oz NET
17.50 oz TARE

555555 ID

Appendix V: 3550 Tape Printer Infromation

3550 Switch Settings: SW1 = 0111010100

SW2 = 11111010

3715 Setting, Busy 0, 4800 baud, 8 bits, no parity

Use Cable 15597 (ACC 1295)

Printout of REPORT
in INFO menu

Port 2:
9600
none
8
CRLF
3921

Port 1:
2400
none
8
Frbnks

EXSW2 = >0<
EXSW1 = PRINT

1ND2300:
d/PU .01 OZ
UNITS LB KG OZ GM LB-OZ
kb tare
auto tare
AZT ld
0 RANGE 100%
MOT 1d
Filter MEDIUM
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 00
Hi W = 18500
Lo I = 0
SPAN = 102
gross

Platform:
PU Cap = 1000
PU Cpd = 637.508000
0 ref = 348458

Battery:
Voltage = 27.3
Sleep Time = 0
Intensity = Lo

Printout of Uaudt
in INFO menu

User Audit 11
Audit Date 101098

Printout of Ticket

30.00 oz GROSS
12.50 oz NET
17.50 oz TARE

555555 ID

50-3715 Switch Settings:

	Switch 1	Switch 2
	12345678	12345678
	00000100	01001010

2400, None, 8 Bits, Busy =1 **Use cable 15597 (Acc 1295)**

Printout of REPORT
in INFO menu
Port 2:
9600
none
8
CRLF
3921

Port 1:
2400
none
8
Frbnks

EXSW2 = >0<
EXSW1 = PRINT

1ND2300:
d/PU .01 OZ
UNITS LB KG OZ GM LB-OZ
kb tare
auto tare
AZT ld
0 RANGE 100%
MOT 1d
Filter MEDIUM
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 00
Hi W = 18500
Lo I = 0
SPAN = 102
gross

Platform:
PU Cap = 1000
PU Cpd = 637.508000
0 ref = 348458

Battery:
Voltage = 27.3
Sleep Time = 0
Intensity = Lo

Printout of Uaudt
in INFO menu
User Audit 11
Audit Date 101098

Printout of Ticket

30.00 oz GROSS
12.50 oz NET
17.50 oz TARE

555555 ID

590 Switch Settings:

	Switch 1	Switch 2
	1,3,7 ON	All Off

9600, None, 8bits, Busy = 1 **Use cable 15598 (Acc 1296)**

Printout of REPORT in INFO menu	**590**	**TB2 2300**
Port 2:	3	2
9600	4	3
none	7	4
8		
CRLF		
TM-U590		

Port 1:
2400
none
8
none

EXSW2 = none
EXSW1 = none

1ND2300:
d/PU .01 LB
UNITS LB KG OZ GM
kb tare
auto tare
AZT 3d
0 RANGE 100%
MOT 3d
Filter CENTER
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 6.6
Hi W = 800.0
Lo I = 0
SPAN = 103.2
gross

Platform:
PU Cap = 1000.0
PU Cpd = 26.217100
0 ref = 524250

Battery:
Voltage = 16.1

295 Switch Settings: Switch 1

All Off

9600, None, 8bits, Busy = 0 Use cable 15599 (Acc 1297)

Printout of REPORT in INFO menu	**295**	**TB2 2300**
Port 2:	2	1
9600	3	2
none	7	4
8		
CRLF		
TM-U295		

Port 1:
2400
none
8
none

EXSW2 = none
EXSW1 = none

1ND2300:
d/PU 0.1 LB
UNITS LB KG OZ GM
kb tare
auto tare
AZT 3d
0 RANGE 100%
MOT 3d
Filter CENTER
Security: Software lock disabled
Hardware lock disabled

Analog Loop:
Lo W = 6.6
Hi W = 800.0
Lo I = 0
SPAN = 103.2
gross

Platform:
PU Cap = 1000.0
PU Cpd = 26.217100
0 ref = 524250

Battery:
Voltage = 16.1
Sleep Time = 0
Intensity= Hi

Appendix IX: Interface Cables/Pin-Outs

Port 1 RS232 (continuous)

From TB4 in the indicator	3715 25Pin	3950 25Pin	3921 25Pin	3960 25Pin	Computer 25 Pin	Computer 9 Pin	RMT140XA (using RS232)
Pin 1 TX RS232					**3**	**2**	**3**
Pin 2 GND					**7**	**5**	**2**
Pin 3 +5V							
Pin 4 +20mA							
Pin 5 -20mA							

Port 1 20mA

From TB4 in the indicator	RMT 140XA/150X
Pin 4 +20mA	**1**
Pin 5 -20mA	**5**
	2 ⎫ **jumper**
	6 ⎭

Port 2 RS232

From TB2 in the indicator	3715 25Pin	3550 25 Pin	3950 25 Pin	3921 25 Pin	3960 25 Pin	Comp 25 Pin	Comp 9 Pin	TMU 590	TMU 295
Pin 1 RX				2	2	2	3	-	2
Pin 2 TX	3	3	3	3	3	3	2	3	3
Pin 3 CTS	20	20	4					4	-
Pin 4 GND	7	7	7	7	7	7	5	7	7
Pin 5 RTS									
Cable Acc	15597	15597	15598	15598	15599	15599			

Port 2 RS485

From TB3 in the indicator	3715 25 Pin	3950 25 Pin	3921 25 Pin	3960 25 Pin	Comp 25 Pin	Comp 9 Pin	RMT 140XA
Pin 1 485+					RX+	RX+	_
Pin 2 485-					RX-	RX-	_
Pin 3 GND							_
Pin 4							_
Pin 5							_

Appendix X: Port 1 Data Stream

Port 1 Continuous Output Data Stream:

Selected Format	Char	Assignment
Fairbanks Std	1st	Stx
	2nd	'4'
	3rd	'0' gross lbs or ounces '1' net lbs or ounces '3' gross kgs or grams '4' net kgs or grams
	4th thru signed weight string e.g. 9th or 10th	'- 12.33' or ' 20' or '- 1'
	10th	Etx
Weightronix	1st	'0' if net ' ' if gross
	2nd	'N' " " 'G' " "
	3rd thru signed weight string e.g. 8th or 9th	'-12.33' or ' 20' or '- 1'
	9th, 10th & 11th OR 10th, 11th, & 12th	'lb' or 'kg' or 'g' or 'oz' or 'lb-oz'
	12th & 13th OR 13th & 14th	Cr and Lf
Consolidated Controls	1st	Stx
	2nd thru signed weight string e.g. 7th or 8th	'-12.33' or ' 20' or '- 1'
	9th or 10th	'L' or 'K' or 'G' or 'O'
	10th or 11th	'O' or 'I' indicator Error 'M' Motion ' ' No Motion
	12th or 13th	Cr
dPlus	1st	Sx
	2nd	STATUS WORD A **Bit Decimal point or Dummy Zero** x00 x0 x x.x x.xx x.xxx x.xxxx x.xxxxx 0 1 1 0 0 1 0 1 0 1 1 0 0 1 1 0 0 1 2 1 0 0 0 0 1 1 1

			Bit **Increment Size** Count by 1 Count by 2 Count by 5 3 1 0 1 4 0 1 1 5 Always Logic 1 6 Always Logic 1 7 Parity Bit
		3rd	
	dPlus	4th	**STATUS WORD B** **Bit** 0 Gross = 0 Net = 1 1 Positive = 0 Negative = 1 2 In Range = 0 Overcapacity = 1 3 No Motion = 0 Motion = 1 4 Avoirdupois = 0 Metric = 1 5 Always Logic 1 6 Always Logic 0 7 parity bit
		5th thru 10th unsigned 6 character gross weight string without decimal e.g.	STATUS WORD C Bit 0 Always Logic 0 1 Always Logic 0 2 Always Logic 0 3 Normal = 0 Print Operated Switch = 1 4 Always Logic 0 5 Always Logic 1 6 Normal = 0 Keyboard Tare = 1 7 parity bit
		11th thru 16th 6 character tare weight string without decimals e.g.	'-12.33' SENT AS ' 1233' or ' 20' or '- 1' SENT AS ' 1'
		17th	' 12.33' SENT AS ' 1233' or ' 20' or '- 1' SENT AS ' 1' Cr

Appendix XI: 4-20mA Option

The 4-20mA analog output can be used to drive chart recorders, logic controllers or computers. The indicator is passive as it relates to the 4-20mA signal. The power for the signal MUST come from the customer's equipment. That equipment MUST be capable of supplying a minimum of 7 to a maximum of 40 volts of power to that circuit. Common voltages supplied are 12-24 vdc.

Specifications:

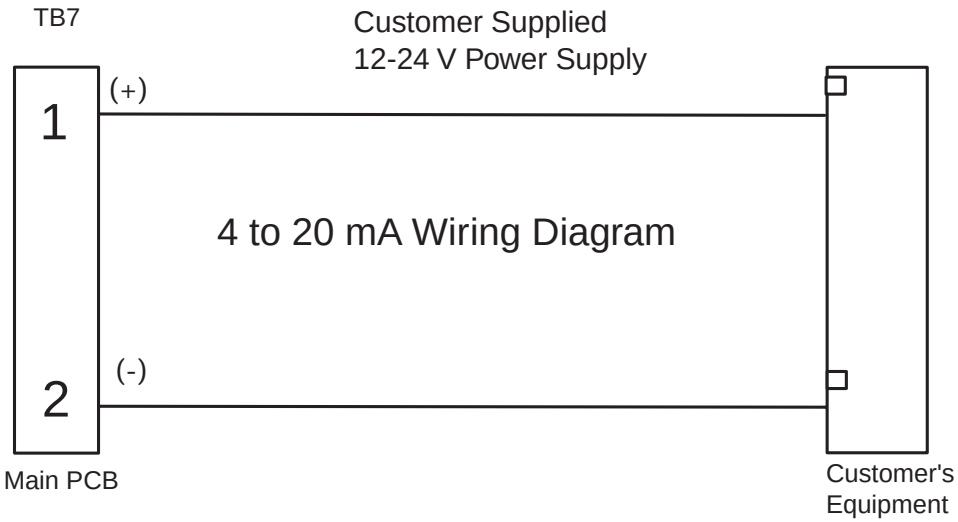
- 16 bit resolution
- +/- .01 integral linearity
- Current loop voltage compliance: 7 vdc minimum to 40 vdc maximum (typical voltage 24 vdc)
- Full scale settling time: 8 msecs
- Output impedance: 25 meg
- Alarm current: 3.5 to 24 mA (underload/overload conditions)
- Offset @ 25 degrees C; +/- .1% of full scale
- Offset drift: +/- 25 ppm of full scale per degree C
- Total output error: (20mA) @ 25 degrees C: +/- .2% of full scale max
- Total output drift: +/- 50 ppm of full scale per degree C max

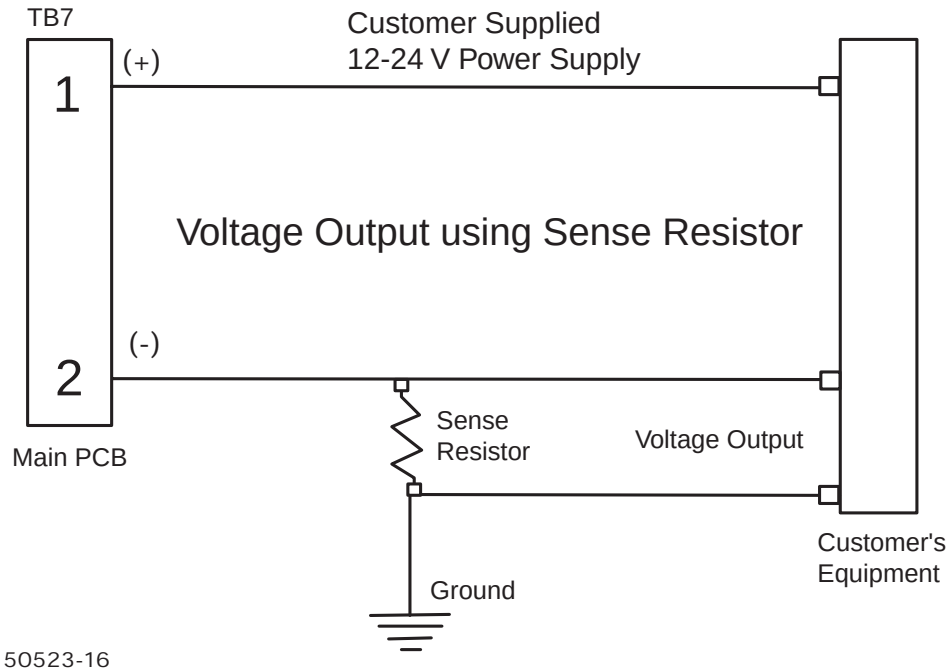
For supplying signal levels other than 4 to 20mA,
use the following formula example:

Supply voltage = **12V**
4mA x 500 ohms = **2V**
20mA x 500 ohms = **l0V**

The above example would provide a 2-l0V analog, adjustable signal. The sense resistor or the power supply may be changed to accommodate different levels.
Do NOT exceed the power supplied by the customer's equipment, i.e., 12V. Leave at least a 10% margin so that the power supplied is at least 10% greater than the signal being sent at maximum output. Use the following illustrations for wiring.

Warning: *The (-) terminal of the customer's power supply must NOT be connected to or shorted to instrument case ground or catastrophic failure will occur*.


TB7
Customer Supplied
12-24 V Power Supply
1
(+)
4 to 20 mA Wiring Diagram
2
(-)
Main PCB
Customer's
Equipment


TB7
Customer Supplied
12-24 V Power Supply
1
(+)
Voltage Output using Sense Resistor
2
(-)
Sense
Resistor
Voltage Output
Main PCB
Customer's
Equipment
Ground
50523-16

Appendix XIII: ASCII Chart

Decimal Code #	Control Char	Decimal Code #	Control Char	Decimal Code #	Control Char	Decimal Code #	Control Char
0	NUL	33	!	66	B	99	c
1	SOH	34	"	67	C	100	d
2	STX	35	#	68	D	101	e
3	ETX	36	$	69	E	102	f
4	EOT	37	%	70	F	103	g
5	ENQ	38	&	71	G	104	h
6	ACK	39	'	72	H	105	i
7	BEL	40	(	73	I	106	j
8	BS	41	)	74	J	107	k
9	HT	42	*	75	K	108	l
10	LF	43	+	76	L	109	m
11	VT	44	,	77	M	110	n
12	FF	45	_	78	N	111	o
13	CR	46	.	79	O	112	p
14	S0	47	/	80	P	113	q
15	S1	48	0	81	Q	114	r
16	DLE	49	1	82	R	115	s
17	DC1	50	2	83	S	116	t
18	DC2	51	3	84	T	117	u
19	DC3	52	4	85	U	118	v
20	DC4	53	5	86	V	119	w
21	NAK	54	6	87	W	120	x
22	SYN	55	7	88	X	121	y
23	ETB	56	8	89	Y	122	z
24	CAN	57	9	90	Z	123	{
25	EM	58	:	91	[	124	|
26	SUB	59	;	92	\	125	}
27	ESC	60	<	93	]	126	~
28	FS	61	=	94	^	127	Delete
29	GS	62	>	95	-		
30	RS	63	?	96	`		
31	US	64	@	97	a		
32	Space	65	A	98	b		

NOTE: *Refer to your printer or computer's User Manual for special control codes that your printer or computer may require for proper operation.*