PNT 2103

OWNER'S MANUAL

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TECHNOLOGIES

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For your records

The serial number of this product is on the back of the indicator and the software version is shown when you turn on the indicator. You should note the serial number of this unit and the software version in the space provided and retain this manual as a permanent record of your purchase to aid in identification in the event of theft or loss.

Product Name: PNT2103

Software Version: _____

Serial Number: _____

Do not use pencils or other sharp-pointed objects to press the meter keys.

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Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

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OVERVIEW

The PNT 2103 digital on-board weighing system consists of a digital meter, load cells, transmitters, and cables designed for logging trucks. The meter is optimized to be used with PNTechnologies transmitters and cables but will also function with other manufacturer's equipment.

Benefits of using the PNT 2103 include:

- Flexibility to read individual axle weights.
- A reliable two-wire hookup between the transmitters and the meter.
- An extremely bright weight display, visible even in full sunlight.
- Ability to calibrate the meter without having to have the truck loaded.
- Internal software that can be updated to include the latest enhancements.

A modern on-board weighing systems consists of load cells to sense the load's weight, transmitters and cables to send the load-cell output to the meter, and a meter to change the signals into information usable by the operator.

Load cells are precision-machined high-strength steel beams with strain gages bonded inside. The load cell is installed on the truck between the log load and the truck frame. When the logs are loaded on the truck, the strain gages sense the weight of the logs and send a small electrical signal to the meter by way of the transmitter.
The **transmitter** provides the voltage to the load cell to power the strain gages. A signal voltage from the load cell is returned to the transmitter where it is converted to a digital signal before being sent to the PNT 2103 meter through the two-wire cable.

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

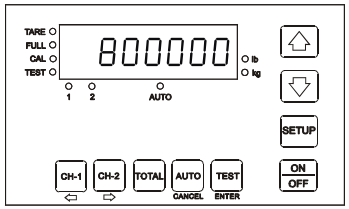
The **PNT 2103 meter** receives the digital signal from the transmitter and interprets and displays it as a weight in pounds or kilograms. The bright LED display can easily be switched between truck, trailer, or total weight.

When the meter is in either the calibration or setup modes, the numbers will change and will show a calibration or setup message.

The blue keys below the LED display, labeled CH-1, CH-2, TOTAL, AUTO, and TEST, either switch between the different weight selections or are used as part of the meter setup and calibration.

CH-1	Channel 1 or truck weight
CH-2	Channel 2 or trailer weight
TOTAL	Total weight
AUTO	Autocycle between Ch 1, Ch 2, and Total
TEST	

The gray keys on the right-hand side of the front panel are used for setup and calibration or to turn the meter on or off.



Do not use pencils or other sharp-pointed objects to press the meter keys.

CHAPTER 1 INTRODUCTION

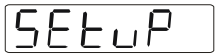
The PNT 2103 meter's setup mode is used to:

- select the proper weight unit, such as pounds or kilograms.
- calibrate channel 1 or 2.
- Post calibration feature.

The next two chapters will guide you through the setup and calibration of the meter. If a key on the right-hand side of the meter needs to be pressed, a small drawing of the key will be shown,

like this: 

Messages displayed during the setup and calibration will be shown in the format as they would be seen, like the example to the right of this paragraph.



CHAPTER 2 METER SETUP

INTRODUCTION

This chapter will guide you through the meter setup prior to doing the calibration.

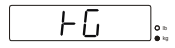
STARTING THE METER SETUP

Turn on the meter by firmly pressing the ON/OFF key. The display will show the meter model and the software version. During this time, the meter is also performing an internal self-test which includes briefly lighting all of the small red indicator lights. If the display shows any error messages, refer to the troubleshooting chapter at the end of the manual.

SETTING THE LOAD UNITS (LB or KG)

It is important to see if the meter is displaying the weight in kilograms (kg) or pounds (lb). Look at which of the small red LED lamps is on at the right of the weight display, next to the **lb** or **kg** label. If not correct, do the following:

for example, to change from LB to KG,

1. Press and hold the SETUP key about 3 seconds until the weight display shows SEtuP
2. Press the ⇧ or ⇩ key to select **KG**. 
3. Press the TEST/ENTER key to store the desired setting. The weight display will SEt KG show for few seconds and then will show SEtuP
4. Press the ⇧ or ⇩ key for another SETUP or press the AUTO/CANCEL key to cancel. The display will show CAnCEL

CHAPTER 3 CALIBRATION

INTRODUCTION

The calibration process allows you to fine tune your weighing system to provide the greatest degree of accuracy. The accuracy of the PNT 2103, however, depends on the accuracy of the information you provide. You will be required to have the weights of your truck and trailer when they are empty (tare weight) and when they are loaded (gross weight).

Find a certified platform scale of known accuracy, such as a state-operated weight-enforcement highway scale or a mill scale. Have your empty log truck weighed with the trailer down. Get the truck weight (including the steer axle and the drive axles) and the trailer weight. For future reference, record the weights here:

Truck (drive axles): _____ LB KG

Trailer (trailer axles): _____ LB KG

Total weight: _____ LB KG

Not all platform scales read the same, so try to use the same scales whenever you need to recalibrate the meter or check the calibration. Use the same scales for recording loaded weights that you used for getting your empty weights.

ENTERING THE EMPTY WEIGHT INTO THE METER

Before entering the empty weights (also called tare weights) into the meter, make sure the truck and trailer are empty and the trailer is on the ground with the meter cable connected.

Press and hold SETUP the key about 2 seconds for the SETUP mode.

Press the ⇧ or ⇩ key to select TARE 1 or TARE 2.

Press the TEST ENTER key to change tare value. The TARE LED will light and the display will show a series of numbers, with one of the numbers flashing.

Press the ⇧ or ⇩ key to change the value of the flashing number.

Press the CH-1 ⇦ or CH-2 ⇨ key to select another number for changing.

Continue in this manner until the desired value shows on the display.

Press the TEST ENTER key to enter and store the new tare value.

At any time, you can exit the calibration process by pressing the AUTO CANCEL key. The display will show CAnCEL

Example: Change the tare weight of channel 1 to 19200.

1. Press and hold SETUP the key about 2 seconds until the display shows SEtuP

2. Press the ⇧ or ⇩ key until shows tArE 1 on the display.

3. Press the TEST ENTER key to set tare for CH-1.

The display will briefly show and then show a EntEr series of numbers

4. The fourth number of the weight display will be flashing, telling you that number is ready to be changed.

To select one of the other numbers, press the CH-1 ⇦ or CH-2 ⇨ key.

5. To change the value of the number, press the ⇧ or ⇩ key.

6. When the number on the display matches 19200 press the TEST ENTER key to store the weight in the meter's memory. EntEr

The display will briefly show and the return to SEtuP

7. To exit SETUP, press the AUTO CANCEL key.

The display will briefly show CAnCEL

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

ENTERING THE LOADED WEIGHT INTO THE METER

The following steps can be completed only after having your loaded truck weighed at a certified and accurate platform scale. The accuracy of your meter will completely depend upon the accuracy of the platform scale. For best results, use the same scales you used for getting your empty weights.

The steps involved are similar to those used for entering the empty weights.

Press and hold the SETUP key about 2 seconds for the SETUP mode.

Press the ⇧ or ⇩ key to select FULL 1 or FULL 2.

Press the TEST ENTER key to calibrate full weight. The FULL LED will light and the display will show a series of numbers, with one of the numbers flashing.

Press the ⇧ or ⇩ key to change the value of the flashing number.

Press the CH-1 ⇦ or CH-2 ⇨ key to select the other digit number.

Press the TEST ENTER key to enter and store the full weight in the meter's memory.

Do not use pencils or other sharp-pointed objects to press the meter keys.

Example: Calibrate the full weight of channel 1 to 43200.

1. Press and hold the key SETUP about 2 seconds until the display shows SEtuP

2. Press the ⇧ or ⇩ key until 

shows on the display.

3. Press the key TEST ENTER to calibrate the full weight of CH-1.

   The display will briefly show EntEr and then show a series of numbers. The fourth number of the weight display will be flashing, telling you that number is ready to be changed.

4. To select one of the other numbers, press the CH-1 ⇦ or CH-2 ⇨ key.

5. To change the value of the number, press the ⇧ or ⇩ key.

6. When the number on the weight display matches 43200,

   press the TEST ENTER key to store the weight in the meter's memory.

   The display will briefly show EntEr and then return to SEtuP

7. To exit SETUP press the AUTO CANCEL key.

   The display will briefly show CAnCEL

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

POST CALIBRATION

Another way to enter the loaded weight into the meter is with the **post calibration** feature. This method allows the calibration of several trucks to be centrally controlled. The driver does not have to enter the setup mode of the meter, even for calibration. After setting in the tare weight, the driver need only record two sets of numbers:

1. the truck and trailer separate loaded weights shown by the platform scale
2. the channel 1 and channel 2 weights recorded on the PNT 2103 while the truck was on the platform scale.

The following steps are used for the advanced calibration, which can be done on an empty truck, if necessary.

Press and hold the SETUP key about 2 seconds for the SETUP mode.

Press the ⇧ or ⇩ key to select PCAL 1 or PCAL 2.

Press the TEST ENTER key to change the meter's display weight. The TARE and FULL LEDs will light and the display will show a series of numbers. A "**d**" letter will show on the display to the left of the numbers.

Enter the number that was earlier recorded as the number shown on the meter's weight display for channel 1 or channel 2 while sitting on the platform scale.

Press the ⇧ or ⇩ key to select the correct number.

Press the CH-1 ⇦ or CH-2 ⇨ key to select another digit.

When the desired number shows on the display, press TEST ENTER to enter the meter's display weight.

Do not use pencils or other sharp-pointed objects to press the meter keys.

The TARE and FULL LEDs will stay lit and the display will again show a series of numbers. This time, an "**A**" letter will show on the display to the left of the numbers.

Enter the number that was earlier recorded as the legal truck weight from the platform scale.

Press the ⇧ or ⇩ key to select the correct number.

Press the CH-1 or CH-2 key to select the another number.

Press the TEST ENTER key to enter the legal truck weight from the platform scale.

Example: Calibrate full weight of channel 1. For this example, the meter displayed 42000 while you were on the platform scale and 43000 was the true weight given by the platform scale.

1. Press and hold the SETUP key about 2 seconds until the display shows SEtuP

2. Press the ⇧ or ⇩ key until show 

on the display.

3. Press the TEST ENTER key to enter the meter's display weight. The TARE and FULL LEDs will light and the display will show a series of numbers. A "**d**" letter will show on the display in front of the numbers.

4. The fourth number of the weight display will be flashing, telling you that number is ready to be changed.

   Press the ⇧ or ⇩ key

to change the number or press the CH-1 or CH-2 key to select another digit.

5. When the number on the weight display matches 42000, 

   press the TEST ENTER key to store the weight in the meter's memory.

   The display will briefly show EntEr and then will

   show another series of numbers but this time an **"A"** will be to the left of the numbers. Also, the TARE and FULL LEDs will be lit. Enter the number (43000) that was earlier recorded as the legal truck weight from the platform scale.

6. The last number of the weight display will be flashing, telling you that number is ready to be changed. To change the value of the number, press the ⇧ or ⇩ key.

   To select one of the other numbers, press the CH-1 or CH-2 key.

7. When the number on the weight display matches 43000, 

   press the TEST ENTER key to store the legal weight in the meter's memory. The display will briefly show EntEr and the return to SETUP.

   To exit SETUP, press the AUTO CANCEL key.

   The display will briefly show CAnCEL

CHAPTER 4
OPERATING THE METER

INTRODUCTION

Now that the meter is set up and calibrated, it will continuously monitor the truck's load. The operator can lock the weight display to always show the truck weight or trailer weight or the total weight. Auto-cycling can also be selected to continuously and automatically switch the weight display between the three channels.

SELECTING THE WEIGHT DISPLAY CHANNEL

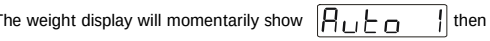
1. Press the CH-1 key to have the red LED weight-display window show the channel 1 weight.
2. Press the CH-2 key to have the red LED weight-display window show the channel 2 weight.
3. Press TOTAL the key to have the red LED weight-display window show the channel 1 and channel 2 weight.
4. Press the TEST ENTER key to test individual load cell.

SELECTING THE AUTO-CYCLE FUNCTION

The auto-cycle function lets the meter continuously change the weight display from the channel 1 weight to the channel 2 weight to the total weight, then repeats the cycle.

1. Press the AUTO CANCEL key to continuously cycle the weight display

through the three channels.

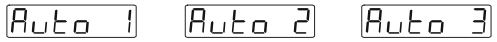
2. The weight display will momentarily show  then switch to the appropriate weight. The red LED lamp labeled **AUTO** will turn on and the LED lamps labeled **1** and **2** will alternately turn on, depending on which channel is being displayed.
3. To leave the **AUTO CYCLE** function, press either the CH-1 or the CH-2 key. The weight display will then show whichever channel you selected.

CHANGING THE AUTO-CYCLE SPEED

The time that the meter dwells on each channel display when in auto cycle can be selected by the operator. The three available times are:

AUTO 1	10 seconds
AUTO 2	6 seconds
AUTO 3	3 seconds

Press and hold the AUTO CANCEL key to change from AUTO 1, AUTO 2 or AUTO 3. The weight display will show these options.



RECALLING THE TARE WEIGHT

During normal day-to-day operations, one or both of the channels may slightly drift from the originally-set empty-weight (tare-weight) calibration. Various reasons can explain a small drift, for example:

1. large changes in outdoor temperature from morning to mid-day,
2. dropping a log on the front or rear bunks,
3. mud or snow accumulations.

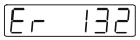
To recall the tare weight, perform the following steps:

1. Press and hold the CH-1 ⇦ or CH-2 ⇨ key until the display shows

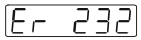
or

Also you can press and hold the TOTAL key to recall the tare of both channels.

2. An error message may be shown for a few seconds if the tare weight of channel 1 or channel 2, for example, has drifted more than 3000 lbs or 2500 kgs.

The display will then change to show 

for channel 1

or 

for channel 2.

and the weight display will return to the tare weight shown before the attempted change.

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

RECORDING THE CAL FACTOR

The cal factor is a number related to the calibration of each channel of the meter. Should you need to change meters, using the cal factor will considerably speed the process. By entering into the new meter the cal factors from the old meter, the new meter will have the same calibration.

Press and hold the SETUP key about 2 seconds for the SETUP mode.

Press the ⇧ or ⇩ key to select CAL 1 or CAL 2.

Press the TEST ENTER key to set cal factor. The CAL LED will light

and the display will show a series of numbers, with one of the numbers flashing. Those numbers are the cal factor. Record The number in the appropriate space below:

Truck (channel 1) cal factor _____

Trailer (channel 2) cal factor _____

Press the AUTO CANCEL key to exit the SETUP mode.

ENTERING A CAL NUMBER INTO A NEW METER

The same cal numbers can be used on the new meter as long as the same load cells and transmitters remain in place.

Press and hold the SETUP key about 2 seconds for the SETUP mode.

Press the ⇧ or ⇩ key to select CAL 1 or CAL 2.

Do not use pencils or other sharp-pointed objects to press the meter keys.

Press the TEST ENTER key. The CAL LED will light and the display will show a series of numbers, with one of the numbers flashing.

Press the ⇧ or ⇩ key to change the value of the flashing number.

Press the CH-1 ⇦ or CH-2 ⇨ key to select another number.

Press the TEST ENTER key to store the new cal factor in the meter's memory.

To exit SETUP, press the AUTO CANCEL key.

The display will briefly show CAnCEL

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

CHAPTER 5 TROUBLESHOOTING

Troubleshooting is a systematic process of testing, identifying, and eliminating areas of the weighing system that are causing problems or malfunctions. The PNT 2103 is designed to aid in troubleshooting by providing error codes, such as Er 13, to identify problems. The following list will show how the error codes are displayed, identify some possible causes, and give some troubleshooting hints.

Er 0	Low input voltage. Check the battery; voltage must be more than 10VDC. Check all transmitters cables.
Er 2	Insufficient RAM (random-access memory). Return the meter to the dealer for service.
Er 4	Defective ROM (read-only memory). Return the meter to the dealer for service.
Er 13	Cable between the meter and the transmitter of channel 1 may be disconnected. Check for a secure connection.
Er 14	Cable of channel 1 has a short. Check the cable.
Er 16	Channel 1 has a transmitter overload or load-cell short. Check cables, transmitter pigtails, and load cells.
Er 23	Cable between the meter and the transmitter of channel 2 may be disconnected. Check for a secure connection.
Er 24	Cable of channel 2 has a short. Check the cable.
Er 26	Channel 2 has a transmitter overload or load-cell short. Check cables, transmitter pigtails, and load cells.
Er 130	The full-weight calibration of channel 1 is smaller than the channel 1 tare weight.
Er 131	Channel 1 has been calibrated with no load or with too light of a load. Requires a heavier load to calibrate full weight.
Er 132	Channel 1 tare weight has changed more than 3000 lb (2500 kg) over or under the original tare.
Er 133	The display weight or actual weight of channel 1 is less than the tare weight.
Er 134	Channel 1 requires re-calibration.

Do not use pencils or other sharp-pointed objects to press the meter keys.

Er 135 The tare weight for channel 1 must be set.

Er 230 The full-weight calibration of channel 2 is smaller than the channel 2 tare weight.

Er 231 Channel 2 has been calibrated with no load or with too light of a load. Requires a heavier load to calibrate full weight.

Er 232 Channel 1 tare weight has changed more than 3000 lb (2500 kg) over or under the original tare.

Er 233 The display weight or actual weight of channel 2 is less than the tare weight.

Er 234 Channel 2 requires re-calibration.

Er 235 The tare weight for channel 2 must be set.

CHAPTER 6 TEST MODE

INTRODUCTION

Test numbers provide a way to verify that your system's load cells are working as they should. Since the test number is related to the actual output of the load cell, it will also give you a warning of impending load-cell failure. With a properly working system, the test numbers for all the load cells should be similar. Load cells that are perfectly balanced (meaning no offset) will have test numbers very close to 5500 when the truck is unloaded. Many load cells are not perfectly balanced, however, which means the test numbers will be someplace between 5000 and 6500. If you record a test number outside of the 4000 to 7500 range, the load cell has an abnormal offset and may be ready to fail.

As the truck is loaded, the test numbers should increase proportionately. If you notice one of the test numbers slowly increasing or decreasing but the load is stable, that load cell output may be drifting and the load cell may be failing. Another sign of impending failure would be if one of the test numbers increases much greater or less than the other for that channel.

These are the typical test numbers for
PNT 8705
Empty 0 = 5500, 1 = 5500, 2 = 5500
Full 0 = 5500, 1 = 6500, 2 = 6500

PNT 8305
Empty 5500, *Full* 6400

The following steps will show you how to get test numbers for each load cell. If your system is working properly, record the empty-weight test numbers for future reference. If you change load cells, be sure to change the appropriate test number.

Channel 1

Driver side = _____ Passenger side = _____

Channel 2

Driver side = _____ Passenger side = _____

RECORDING CHANNEL 1 TEST NUMBERS

(2103, 2107 program or PNT 8305, PNT 2002 transmitter)

1. Press the CH-1 key to select channel 1.
2. Press the TEST ENTER key. The display will show tESt 1

   Disconnect the load cell on the passenger side from transmitter and the meter display will show the test number for the driver-side load cell. Record that number in the appropriate space on the previous page.
3. Reconnect the passenger-side load cell.
4. Disconnect the load cell on the driver side from transmitter and the meter display will show the test number for the passenger-side load cell. Record that number in the appropriate space on the previous page.
5. Reconnect the driver-side load cell.
6. To exit the test mode, press the AUTO CANCEL key.

   The display will briefly CAnCEL show and then return to displaying channel 1.

RECORDING CHANNEL 2 TEST NUMBERS

(PNT 8305, PNT 2002 transmitter)

1. Press the CH-2 key to select channel 2.
2. Press the TEST ENTER key. The display will show tESt 2

   Disconnect the load cell on the passenger side from transmitter the meter display will show the test number for the driver-side load cell. Record that number in the appropriate space on the page 26.
3. Reconnect the passenger-side load cell.
4. Disconnect the load cell on the driver side from transmitter and the meter display will show the test number for the passenger-side load cell. Record that number in the appropriate space on the previous page.
5. Reconnect the driver-side load cell.
6. To exit the test mode, press the AUTO CANCEL key.

   The display will briefly show CAnCEL and then return to displaying channel 2.

CHAPTER 7 INSTALLATION

INTRODUCTION

The PNT 2103 meter system includes the meter, two transmitters with cables to connect to the load cells, one single-piece cable for the truck (channel 1), a two-piece cable for the trailer (channel 2), and a power cable. Items to be supplied by the operator include a plug and socket for the trailer (channel 2) cable, mounting hardware for the meter and transmitters, and an inline fuse holder with a 3-amp slow-blow fuse.

Before starting the installation, tape over the ends of the connectors to keep them free of dirt and grease. Small plastic bags, like sandwich bags, could also be used for protection.

Plan the location of the meter to minimize exposure to direct sunlight on the meter face. Even though the weight display has super-bright numbers, direct sunlight makes them more difficult to view.

The transmitters should be mounted in a location protected from road debris and sticks and branches. The typical mounting areas are inside the frame rails or on the back-side of a crossmember. Remember to keep cable loops to a minimum to avoid having them snagged on debris or tools.

INSTALLING THE METER

1. Find a suitable location where the meter will be convenient to the operator.
2. Remove the U-bracket from the meter and use it as a template to mark the drilling locations for the four mounting screws.
3. Use four #10 or #12 screws to mount the U-bracket.
4. Install the meter back into the U-bracket and verify that the meter is in a desirable location.
5. Unplug the cable connector from the back of the meter by pulling straight away from the meter back. Set next to the meter for later installation.

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

MOUNTING THE TRANSMITTERS

1. Find a protected location for each transmitter. Drill two 5/16 -inch or 8 mm mounting holes for each transmitter.
2. Install the transmitters so the cable connector is easily accessible and is pointed in the direction the cable will go to the meter.
3. Do not let the load-cell cables get sharply kinked where they come out of the transmitter.

ROUTING THE SIGNAL CABLES

1. Route the two cables from the truck (channel 1) transmitter to the two truck load cells. Secure the cables with nylon cable ties or tape so the cables are protected and without exposed loops.
2. Similarly route and secure the two cables from the trailer (channel 2) transmitter. As an aid in troubleshooting, connect the shorter cable to the same side as on the truck.
3. Check the load cell and cable connectors to be sure they are free of dirt, grease, and moisture.
4. Plug the cables into the load cells and tighten the connectors until resistance is felt. Tighten the connectors an additional 1/4 turn using only your fingers; pliers are not necessary. The additional tightening will seat the weather-proofing O-ring that is inside the cable connectors.
5. Route the truck (channel 1) cable from the transmitter to the meter. Wherever the cable passes through a body panel, such as floor, toe-board, or firewall, provide protection for the cable to prevent chafing. At the meter, put a tag on the cable to identify it as channel 1.
6. Next, route the cable from the trailer (channel 2) transmitter to the front of the trailer and locate a place for the trailer half of the cable connector. Install the cable on the connector and fasten the connector to the trailer.
7. Install the other half of the connector on the forward portion of the cable and route the cable into the cab for connection to the meter. Observe the same precautions as in step 5, above. Identify the cable as channel 2.

Do not use pencils or other sharp-pointed objects to press the meter keys.

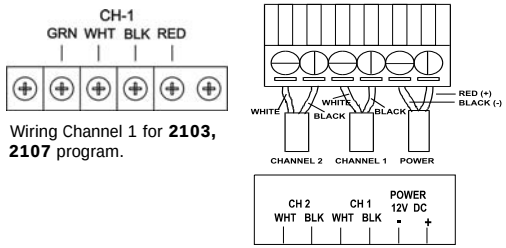
8. Secure the cables in the cab, next to the meter, and cut them to the proper length for connection to the meter. Be sure and maintain the channel identification.

ROUTING THE POWER CABLE

1. *The power cable must be connected directly to the batteries. DO NOT connect to an accessory terminal on the ignition switch, fuse panel, or behind the dash. The meter must have a "clean" source of 12 volts.*
2. Route the power cable from the batteries to the meter. DO NOT connect to the batteries yet.
3. Observe the previous precautions about protecting the cable from undo chafing and abrasion.

CONNECTING THE CABLES

1. Carefully cut back 1-inch of the outer insulation on the meter end of each cable. Do not cut into the white or black insulation of the signal wires or the red or black insulation of the power cable.
2. Strip off 1/4-inch of the individual wire insulation.
3. Install the wires into the green meter connector and snugly tighten each terminal. Use Figure 7-1 as a guide.



Wiring Channel 1 for **2103, 2107** program.

Figure 7-1. Meter connections.

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

4. Review all of your installations and cable routings, looking for unnecessary loops, tight bends or kinks in the cables, properly inserted connectors, and connection of the trailer cable.
5. Connect the battery end of the power cable to the batteries. ***Use an inline fuseholder with a 3-amp slow-blow fuse***. Put the fuseholder and fuse in the red wire and next to the positive battery terminal.
6. ***Make sure you are connecting to 12 volts and not 24 volts.***

   See Figure 7-2.

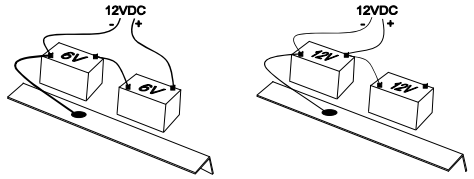


Figure 7-2. Connecting to 6 volt or 12 volt batteries.

FINAL STEP

1. Position the meter plug for insertion into the back of the meter. Insure that the screws for the connector terminals are visible on the top side. That will position the red battery wire next to the edge of the meter case. Verify by looking at the label on the back of the meter.
2. Insert the connector into the meter by gently pushing straight in.
3. At the front of the meter, press the ON/OFF key in the lower right-hand corner of the meter front panel. The display will first show **-2103-** and then the software version , such as **2.20**. During this time, the meter is also performing an internal self-test. If the display shows any error messages, refer to Chapter 5, Troubleshooting.

Do not use pencils or other sharp-pointed objects to press the meter keys.

CHAPTER 8 MAINTENANCE

INTRODUCTION

Proper maintenance of your PNT 2103 on-board weighing system, including preventive maintenance, is necessary to insure accurate and consistent weight readings. The best practice is to develop both daily and a weekly inspection procedures.

DAILY INSPECTIONS

1. Look at both the truck, trailer, and load cell cables to see if they are:
   - kinked
   - torn
   - cut or frayed
   - properly secured away from debris
2. Be sure the plug and socket in the trailer cable are free of dirt and grease.
3. Insure that the meter is still securely fastened at its mounting location and the connector is pushed all the way into the back of the meter.
4. Inspect the load cells and clean out any buildup of mud, snow and ice, rocks, or other debris from between the load cells and the truck or trailer frame.

WEEKLY INSPECTIONS

1. While looking at the truck, trailer, and load cell cables, run you hand along the cables to help detect any cuts or abrasions.
2. Verify that the connectors at the load cells and transmitters are still screwed in tight and the transmitters are still securely mounted.

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

3. Inspect the connector at the back of the meter, looking for loose or frayed wires.
4. Be sure the power cable is still securely connected at the battery, the connection is not showing signs of corrosion, and the insulation is not being worn through where it could cause a short to the truck frame.

Do not use pencils or other sharp-pointed objects to press the meter keys.

SELECTING THE DESIRED PROGRAM

The PNT 2103 indicator is designed to replace all newer models of the S.I. 100M-12V meter. The 2103 can directly replace your SI-100M-12V meter and it allows you to upgrade your S. I. system one component at a time as those SI parts fail.
The PNT 2103 can be programmed to accept various SI wiring configurations, including 2 wire SI-100M-12V transmitters and the SI-9100 transmitters.

Program 2103
(replaces the 100M 4 wire- 2 wire, 8100183-05 transmitter)
CH-1 will use millivolt signal directly from the Load Cells. CH-2 will use SI transmitter or PNT 8305

Program 2107
(replaces the 100M 4 wire-2 wire, 8100187-05 transmitter)
CH-1 will use millivolt signal directly from the Load Cells. CH-2 will use SI transmitter or PNT 8705

Program 2133
(replaces the 100M 2 wire-2 wire, 8100183-05 transmitters)
CH-1 will use with PNT 8305 transmitter. CH-2 will use with PNT 8305 transmitter.

Program 2173
(can be used with 100M 2-wire transmitter & 9100 transmitter)
CH-1 will use with PNT 8705 transmitter. CH-2 will use with PNT 8305 transmitter.

Program 2177
(replaces the SI 9100 meter)
CH-1 will use with PNT 8705 transmitter. CH-2 will use with PNT 8705 transmitter.

Turn off and turn on the meter. The display will show the current program.

Press and hold SETUP key until the display show SEt Pr

Press ⌂ to select different program.

And press TEST ENTER to store program number.

Example:

To select program 2107 from 2103

Turn off and turn on the meter.

Press and hold the SETUP key, until the display shows SEt Pr

Press ⌂ key twice the display will show 2107

Press TEST ENTER key. The display will show.

-2107-

-2107-

Turn off and on the meter. It should show program -2107-

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

Do not use pencils or other sharp-pointed objects to press the meter keys.

Unplug the connector from the back of the meter before jump-starting, battery charging, or welding on the truck.

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