

PM 1200 In-cab Display

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Operating Instructions

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IMPORTANT INFORMATION

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PM Onboard Ltd do not accept responsibility for the structural integrity of the vehicle concerned or any part thereof. Failure, due to poor workmanship or incorrectly installed elements, remains solely the responsibility of the installer. Strict observance of these guidelines however, should help to ensure accurate weight measurement. The company also reserves the right to make any amendments and alterations to this document deemed necessary.

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1.2 Overview

		Within the PM1200 indicator are 4 standard application programs, each designed for a specific application. Once the correct program has been selected for your vehicle then it is unnecessary to change this selection. A brief description of each program is on the next page.
		Confirmation of the application in use is given on the display at switch on after the PM1200 sign on message and program version number.
		Selection of alternative application programs is done using MODE SELECT in the SETUP program.
		The rest of this manual is divided into sections. There is a section describing the operation of each application. You need only read the section for the application that you are using. The section on SINGLE CHANNEL operation should also be read as this contains basic information common to all other applications.
		Throughout this manual are notes enclosed within square brackets []. These notes describe advanced features that may not be of interest to all users and can be ignored if not required.
Prog	rams Available	The PM 1200 can be operated in any one of 4 basic operating modes:-
1.	Net Mode	This is the main weighing mode of the instrument and when calibrated displays the vehicle NET weight, that is the weight of product being carried. When the vehicle is empty, the NET weight display will show zero.
2.	GROSS MODE	In GROSS mode the indicator will display the total vehicle weight. The GROSS weight is the addition of the TARE weight (weight of vehicle when empty) plus the NET weight. When the vehicle is empty, the GROSS weight display will show the TARE weight of the vehicle. Note As the vehicle tare weight is not actually weighed by the system, hence the gross display will not respond to changes due to differences in amount of fuel being carried or the number of people in the cab.
3.	LOAD MODE	This mode is designed for use by drivers who either collect or deliver part loads to several locations. This enables them to display the amount delivered or collected from each location individually, while retaining the NET display to show the amount left on the vehicle at any time.
4.	TOTAL MODE	This mode is designed for use by operators of on board loading cranes, into which has been incorporated a weighing system. It enables the weight of a number individual loads to be added together and displayed as a total. Total mode can also be used with standard weighing systems to total the amount of material carried during a day or week. The total register can accumulate up to 999 Tonnes, which can be printed on demand.
MODE SELECTION		Each particular vehicle, depending on the type of work that it will be used for, will only require the need to use some of the available operating modes. During SETUP, MODE SELECTION can be used to customize your PM 1200 by turning off modes that are not required. This can be done by pressing the CHANNEL button when MODE SEL is on the screen.
		When scrolling down with the CHANNEL button it is possible to turn OFF or ON the application which is or is not needed by pressing the PRINT button.

1.3 ALARM OPERATION

Alarms	Each operating mode has associated with it its own alarm. Alarms are used to signal when the weight reading has reached a value preset by the driver, for example when the vehicle is full. When an alarm set point is reached both an internal and external sounder will be heard.
SPECIAL NOTE FOR DRIVERS OF TIPPING VEHICLES	The weighing system fitted to tipping vehicles will only function while the body is lifted clear of the chassis. The body MUST be lifted into the weighing position prior to using the weigher.
Programs Available	1. SINGLE CHANNEL PROGRAM - see section two This is the standard weighing program for the PM1200 indicator. It is designed for use on vehicles with typically 4 or 6 load cells, where the indicator is required to display the combined weight from all cells. The program will allow the use of all standard PM1200 functions.
	2. TWIN CHANNEL PROGRAM - see section three. This program enables the use of the second channel of the PMI200 indicator. Both channels work independently, each one having the features of a single channel. The display can be used to indicate the weight for each channel separately or the total weight of both channels. To calibrate the system, it is necessary to know the weight loaded onto each separate channel. The twin channel program has been designed for use in two specific applications. Firstly on systems that use two different types of sensor, for example fifth wheel cells and air sensors where each sensor type must be calibrated separately. Secondly where the trailer is independent from the tractor and it is necessary to display the two weights separately.
	3. DUAL CHANNEL PROGRAM - see section four. The Dual program has been designed for use on rigid vehicles fitted with 4 cells. It enables the display to show the weight on each pair of cells separately but can be calibrated by knowing only the total net weight of the vehicle. Note that the program requires that each channel is connected to the same number and type of load cell.
	 CRANE PROGRAM - see section five. The Crane program provides specific features for use by operators of vehicle mounted loading cranes, fitted with a single load cell within the crane lifting mechanism. The features allow special use of the totalising accumulator and the remote controls.

FRONT PANEL CONTROLS 1.4

POWER ON/OFF KEY The ON/OFF key is used to turn the indicator on or off.



The ENTER key is used to complete an editing operation. The use of the editing procedure is described below.

ZERO/CANCEL KEY This key is dual purpose.

1.) This is used to Zero the currently displayed weight. To avoid accidental zeroing of the display, the ZERO key must be held until the bleep is heard; otherwise the zeroing function will not be activated.

2.) This key is also used to cancel an activated alarm.

PRINT KEY

This key is multipurpose. 1.) This is used to print the currently displayed weight. NOTE Prior to printing ensure that the printer is turned on and the select light is lit. If the printing is not correct check that the Baud Rate in the setup menu is set to the correct baud rate for the printer in use.

2.) This key is used to commence an editing operation. It is also used to step the cursor along the line during editing. The use of the editing procedure is described later.

CHANNEL KEY

The channel key is used to display the different channel readings associated with the currently selected mode.

A further press of the Channel key will cause the Alarm set point for that mode to be displayed.

The channel key is also used during editing.

MODE KEY

The MODE key is used to step the display through all of the available modes in turn. Modes that have been turned off during setup will not be displayed, which simplifies operation of the indicator.

Continued pressing of the Mode key will cause the Time to be displayed followed by the DISPLAY Menu.

The mode key is also used during editing.











1.5 EDITING PROCEDURE

The editing procedure is used to edit the numeric value of items such as the alarm set points, date, time and calibration.

The keys are as numbered on the picture below.

1.) Display the item to be edited by use of the MODE [1] and CHANNEL [2] Keys in the normal way. Start the editing by pressing the **PRINT** key [3].

During editing, the display will include a flashing cursor and the keys will adopt their alternative function, as engraved at the bottom of each key.

The highlighted digit can be increased or decreased by using the UP [4] or DOWN [5] Arrow keys. Other digits can be selected by use of the LEFT Arrow key [6].

When the whole display is correct, press the ENTER key [7] to complete the editing procedure, this will also store the new value.

If it is discovered that a mistake has been made, prior to pressing the ENTER key, then pressing the CANCEL key [8] can restore the original value.

The editing procedure for each setting is described in detail in the following pages.



2.0 SINGLE CHANNEL SETUP & OPERATION

2.1. OPERATING IN NET MODE

2.1.1. ZEROING THE NET DISPLAY

When the vehicle is empty the **NET** display should show zero. Small variations can be corrected by pressing the **ZERO** key on the front panel. To avoid accidental zeroing of the display, the **ZERO** key must be held until the bleep is heard; otherwise the zeroing function will not be activated. 1) Turn on display with **POWER ON/OFF** button.



the display will run through the start up procedure showing the program version.



2) If the vehicle is a tipper lift the body to the weighing position (approximately 12 inches off the chassis)

Okg"

- 3) Ensure the vehicle is empty
- 4) Press and hold the ZERO button until a bleep is heard



5) Display should show "NET



If the vehicle is not empty then the zeroing function will be aborted and the message "TRUCK NOT EMPTY" will be displayed.

If the vehicle is in fact empty then the zero calibration procedure in SETUP will need to be completed.

[The preset level at which the indicator decides if the truck is empty or not is decided by the value of **NET LIMIT** in **SETUP**. This has a default value of 500Kg but can be changed to suit special applications.]

To do this, use the following procedures.





2.1.2. PRINTING THE NET DISPLAY

The Net weight on the vehicle can be printed at any time by selecting the **NET** display and pressing the **PRINT** key.

The current Net weight along with the date and time will be printed.

To do this use the following procedure.

- 1) Lift the body off the chassis (if the vehicle is a tipper) approximately 12 inches.
- If NET is not shown on the display, press the MODE button to show "NET".



3) "NET" should now be on the screen.



4 Press the **PRINT** button.

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2.1.3. OPERATING THE NET ALARM

The alarm can be preset to operate at any value but is normally set just under the maximum capacity of the vehicle.

If loading is halted when the alarm sounds then overloading can be avoided.

To use the alarm, the set point must be set correctly and the alarm turned on (see next section).

When the alarm sounds the indicator will display the Net Alarm Set point, the internal buzzer will bleep and if fitted the external sounder will also sound.

The **CANCEL** key should be pressed once to cancel the alarm. When an alarm is cancelled the sounders will be turned off and the display will automatically return to the previously displayed mode.

If this was the **NET** mode then the final true weight on the vehicle can be checked.

To prevent the alarm from sounding while driving on the road, the alarm should be turned off. Remember to turn the alarm on again when next loading the vehicle.

Note: the alarm set point will not be changed by turning the alarm on or off.

2.1.4. SETTING THE NET ALARM

- 1) Press the MODE button to show "NET".
- 2) Press the CHANNEL button.



This will show "NET ALMX XXXXXkg".







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2.2. OPERATIONS IN GROSS MODE

2.2.1. TARE WEIGHT

In Gross mode the indicator will display the total vehicle weight i.e. Gross weight.

The GROSS weight is the addition of the TARE weight (weight of vehicle when empty) plus the NET weight.

When the vehicle is empty, the GROSS weight display will show the TARE weight of the vehicle.

Note

The vehicle tare weight is not actually weighed by the system; hence the gross display will not respond to changes due to differences in amount of fuel being carried or the number of people in the cab.

To use Gross mode the Tare must be set during calibration, for full details refer to the SET TARE information.

2.2.2. ZEROING THE GROSS DISPLAY

When the vehicle is empty the GROSS display should show the Tare weight. The front panel Zero key has no effect in Gross Mode, however, small variations can be corrected by entering the Net operating Mode and using the front panel zero as described previously.

To do this, use the following procedure.

1) If GROSS is shown press the MODE button to show "NET".





2)

Note

calibration to zero the display.



If the display does not go to 0 kg and says "TRK NOT EMPTY" when the truck is empty use the ZERO

3) Press the MODE button to show "GROSS".



This should now show the tare weight of the vehicle.



2.2.3. PRINTING THE GROSS DISPLAY

The Gross weight on the vehicle can be printed at any time by selecting the **GROSS** display and pressing the **PRINT** key. The current Gross weight along with the date and time will be printed. To do this use the following procedure.

- 1) Load the vehicle to the desired weight.
- 2) Press the MODE button to show "GROSS".



3) Press the **PRINT** button to print a ticket (if a printer is fitted).



2.2.4. OPERATING THE GROSS ALARM

The alarm can be preset to operate at any value but is normally set just under the maximum capacity of the vehicle; if loading is halted when the alarm sounds then overloading can be avoided.

To use the alarm, the set point must be set correctly and the alarm turned on (see next section).

When the alarm sounds the indicator will display the Gross Alarm Set point, the internal buzzer will bleep, and if fitted, the external sounder will also sound.

The CANCEL key should be pressed once to cancel the alarm.

When an alarm is cancelled the sounders will be turned off and the display will automatically return to the previously displayed mode.

If this was the GROSS mode then the final true weight on the vehicle can be checked.

To prevent the alarm from sounding while driving on the road, the alarm should be turned off.

important note

Remember to turn the alarm on again when next loading the vehicle.

The alarm set point will not be changed by turning the alarm on or off.

2.2.5.







2.2.6. TURNING THE GROSS ALARM ON/OFF

2.3. OPERATING IN LOAD MODE

Load Mode is used in association with Net Mode to enable the operator to zero the display numerous times without affecting the overall net weight in the body.

This is particularly useful for vehicles requiring an individual ticket for each bin they pick up or for discharging partial loads and then resetting.

The LOAD mode should first be turned on in the setup mode.

To use load press the MODE button until "LOAD" is displayed.

By pressing the **ZERO** button it is then possible to zero the display after every individual weight is picked up or dropped off and a ticket printed if required.

To enable the LOAD mode use the ENTERING SETUP MODE procedure.

1) With "MODE SEL" shown







If "LOAD OFF" is displayed press the PRINT button to turn "LOAD ON".





3)







2.3.1



2.3.2. SET ZERO (calibration)

Ensure vehicle is empty, if the vehicle is a tipping body, lift the body to the Normal weighing position - 12 inches raised approximately.

1. Use the MODE key to select the "SET ZERO" function.



2. Use the CHANNEL key to select "ZERO 1?".



ENTER

3. Press ENTER.

The PM1200 will display "ZERO OK" while completing the set zero operation.





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2.3.3. SET SPAN(CALIBRATION)

Enter setup mode using the information on page 27.

Weigh the vehicle to determine its **NET** payload. Enter setup mode, see page 27. If the vehicle has a tipping body, lift the body to the normal weighing position.

1.

(Approximately 12 inches or until the body is clear of the chassis)

2) Use the MODE key to select the "SET SPAN" function.







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2.3.4. SET TARE

NOTE

To enable the setting of Tare weight, Gross Mode must first be Turned ON using MODE SELECT. To do this use the following procedure.

1.) Press and hold the **ON/OFF** button until the display shows "SETUP", then release.



2) Display will show "MODE SEL".



3) Press the CHANNEL button until the display shows "GROSS ON".





NOTE

If display shows "GROSS OFF", Press the PRINT button to turn "GROSS ON".



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1200

5000kg

TWIN CHANNEL SETUP & OPERATION 3.0

3.1 **ZEROING THE** DISPLAY

As described in the first chapter on 1200 applications where the system needs to have both channels calibrated separately, it is also possible to look at both channels independently to see exactly where the load is in/on the vehicle.

GROSS

The following guide will help to use and setup the system.

- 1) Ensure that the vehicle is empty.
- 2) If GROSS is shown press the MODE button to show NET.





Note:

3)

If the display does not show NET Okg it will be necessary to do a zero calibration in the setup mode which is described in the ZERO calibration information on page 28.



3.2 CHECKING CHANNEL 1 & 2 IN NET & GROSS MODES

CHECKING NET WEIGHTS

The following procedures will enable the operator to check what weight is over the front and back of the vehicle, ensuring that an even load is placed on the vehicle.

When the vehicle is empty the weight shown on **NET** will be Okg. When the vehicle is full the **NET** weight shown will be the sum of the **NET/PAYLOAD** weights from channels 1 and 2.

1) If NET is not shown on the display press the MODE button until NET is shown.





2) Press the CHANNEL button to show NET CH 1 XXXXXkg. (Weight/payload over the front of vehicle/unit)





3) Press the CHANNEL button to show NET CH2 XXXXXkg. (Weight/payload over the back of the vehicle/trailer)



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3.3 CHECKING GROSS WEIGHTS

When the vehicle is empty the **GROSS** weight displayed will be the sum of the **TARE** weights from channels 1 and 2.

When the vehicle is full the **GROSS** weight displayed will be the sum of the **TARE** weights from channels 1 and 2 plus the NET/payloads from channels 1 and 2.

1) If GROSS is not shown on the display press the MODE button to show GROSS.





2) Press the CHANNEL button to show GROSS CH1 XXXXXkg.



XXXXXkg.

Press the CHANNEL button to show GROSS CH2

3)





5) Press the CHANNEL button to return to GROSS.





3.4 SET TARE WEIGHTS

Before entering the TARE weights it will be necessary to weigh the vehicle empty.

- With the unit and trailer still connected drive the unit onto a flat level weighbridge so that all the wheels on the unit are on the weighbridge and note the weight down.
- Drive the unit off the weighbridge so that only the wheels of the trailer are on the weighbridge and note the weight down.

With this done it is now possible to enter the tare weights into the display.

- 1) Enter setup using the ENTERING SETUP MODE information.
- 2) With MODE SEL on the display press the CHANNEL button once to show which application is in operation.



The display will show one of the following: SINGLE, TWIN, DUAL or CRANE.

3) If the display does not show TWIN, press the PRINT button until TWIN? Is shown on the display.



4) Press the ENTER button to change the application.





EW





3.5

SET ZERO 1) Ensure that the vehicle is empty. (calibration) Enter SETUP using the ENTERING SETUP MODE procedure. 2) Press the MODE button to show SET ZERO. 3) 4) Press ENTER. 5) 6) Press the MODE button to show DONE ?.

7)

1200 SET ZERO F Press the CHANNEL button to show ZERO ALL ?. ZERO ALL 7 . DONE ? Press ENTER.





SET SPAN (calibration)	1)	Load the vehicle with a full load as close to the maximum permissible weight as possible.
	2)	With the unit and trailer still connected drive the unit onto a flat level weighbridge so that all the wheels on the unit are on the weighbridge. Note the weight down.
	3)	Drive the unit off the weighbridge so that only the wheels of the trailer are on the weighbridge. Note the weight down.
	4)	To calculate the NET/payload on the unit/ CHANNEL 1. Subtract the TARE weight for the unit/ CHANNEL 1 away from the loaded/GROSS weight on the unit.
		Example TARE 1 = 5000KG UNIT/GROSS =20000KG PAYLOAD/NET=15000KG
	5)	To calculate the NET/payload for the trailer/CHANNEL 2, Subtract the TARE weight for the trailer/CHANNEL 2 away from the Loaded/GROSS weight on the trailer. Example TARE 2 = 5000KG UNIT/GROSS = 24000KG PAYL OAD/NET = 19000KG
	6)	Enter setup using the ENTERING SETUP MODE procedure.
	7)	Press the MODE button to show SET SPAN.
		SET SPAN

3.6



[=...)





The display should now show the correct NET/payload.

To check that the overall GROSS weight is correct as well, press the MODE button to show GROSS.





Document Information

The reference number for this document is:

PM1200/opinst1.08/vi/160605

This reference filename is divided into 4 areas, these are:

pm1200	This designation is for documents covering the series 1200 display equipment supplied by PMOnboard.
opinst1.08	<i>This designation refers to the type of equipment supplied, in this case Operating Instructions to software version 1.08.</i>
v1	This denotes that this documentation is version 1.
160605	This is the date on which the document was compiled. In this case the date was June 16th 2005.