

Vishay PM 1155

On-board Vehicle Weighing Display and Equipment



Vishay PM Onboard



User Manual

Software Version 01 - 04

IMPORTANT INFORMATION

PM Onboard Ltd design and manufacture on-vehicle weighing equipment. PM Onboard Ltd accepts no responsibility or liability for consequences arising from any misapplication or misinterpretation of the information contained herein. PM Onboard Ltd also reserve the right to alter system specifications at any time without notice.

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.

Because of variations available in software installed in displays and intelligent junction boxes, not all features described may be available unless the items are upgraded to the latest specification.

Vehicle Loading Stability

An indication is given as to vehicle loading error stability. This is only intended as a guide and the customer is recommended to set a suitable value, this can be changed with experience over time.

The customer is responsible for the safe operation and legality of the vehicle during use.

Vishay PM Onboard Ltd

Design, manufacture and service of on-vehicle weighing systems.

Airedale House

Canal Road Bradford West Yorkshire BD2 1AG
United Kingdom

Tel: 01274 771177 Fax: 01274 781178

e-mail:

uksales@pmonboard.com
service@pmonboard.com
manufacturing@pmonboard.com

www.pmonboard.com

Document Information

*The reference number for this document is: **1155/user/v1/150408***

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

pm1155 *This designation is for documents covering the series 1155 display equipment supplied by Vishay PMOnboard.*

user *This designation refers to the type of equipment supplied, in this case a user manual*

v1 *This denotes that this documentation is version 1.*

150408 *This is the date on which the document was compiled. In this case the date was April 15th 2008*

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Vishay PM 1155 Introduction

The PM 1155 is a display used to show information from weighing systems fitted to vehicles.

The display has available a number of main screens as standard, these are:

- Time / Date
- Net Weight
- Gross Weight

Also available, depending on which functions are enabled are additional main screens, these are:

- Axle Weights
- Twin / 5 + Air
- Drawbar
- Load / Deliver
- Stability

A number of other screens are used to setup the display and weighing system and also to show diagnostic information.

Password (number) protection is a feature of this equipment.

Alarms are also used to show if the vehicle is out of load limits and also to show if the body is raised on a tipper vehicle.

This display and system information is applicable to software version 01-4 onwards and junction boxes to version 02-03 onwards.

Accessing the Available Display Screens

The various screens and on-screen options are accessed by using the display buttons A - E and observing the changes on the LCD display screen F:

Button - A

This is on the left of the display and is used to power ON or power OFF the display.

NOTE:

The display is often set to come ON when the ignition is turned on.



Button - B

This button is used to access menus and select menu items.



Button - C

This button is used to scroll up an on-screen list and increment selected values in Edit.



Button - D

This button is used to scroll down an on-screen list and decrement selected values in Edit.



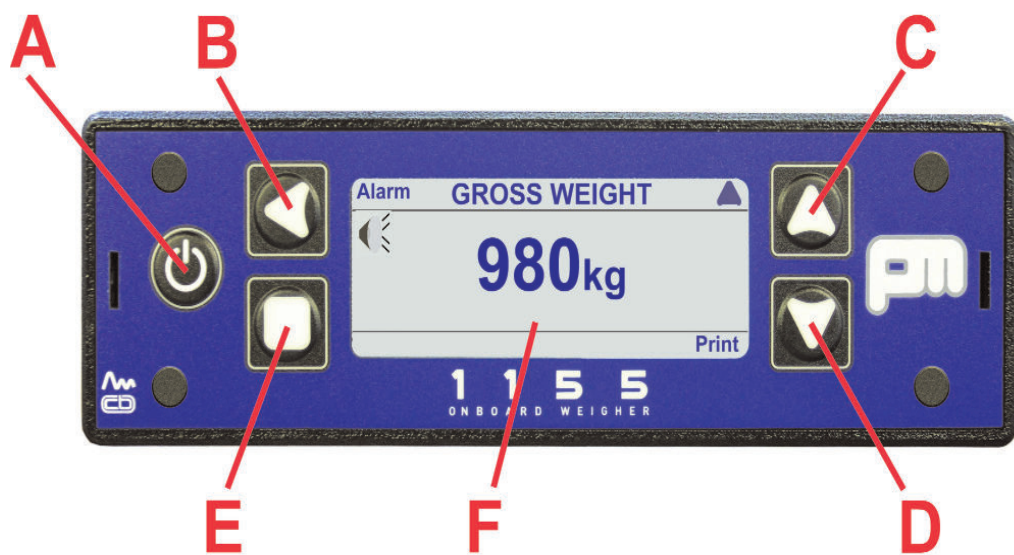
Button - E

This button is used to accept changes to screens or parameters and exit the screen.



LCD display - F

For display of Gross, Net menus etc.



Startup Screens

When the display is first powered up it will show a screen with the PM logo, display type and the software version, as shown here:



This is followed by a P.O.S.T. (Power On Self Test) screen while the display checks various parameters.



When this process is complete the first of the main information screens appear.

This can be one of a number of different 'Main' screens available, depending on the options setup in the display.

These are always available when the display is on. Use the button to scroll through the available main screens. The standard options available are:

Net Weight



Gross Weight



Time / Date

See page 43 for details










Additional Available Startup Screens

Other 'Main' screens can appear here if the appropriate options are turned on from within Setup etc, these are:

- Axles** See page 27 for details
- Load / Deliver** See page 35 for details
- Twin / 5 + Air** See page 31 for details. This option cannot be selected at the same time as Drawbar.
- Drawbar** See page 31 for details. This option cannot be selected at the same time as Twin / 5+ Air.
- Stability** See page 39 for details

Setting CAN or Analogue Load Cells

1. In the Time / date main screen press the Menu  button
2. Press  button to select the Setup option.
3. Press the  button to go into the Setup menu
4. Press the  to go to the Vehicle Config option
5. Press the  button to select
6. This option should be pre-set to CAN load cells, if not scroll through the available options using the  button to select
7. Press the Exit  button 3 times to return to the main screens

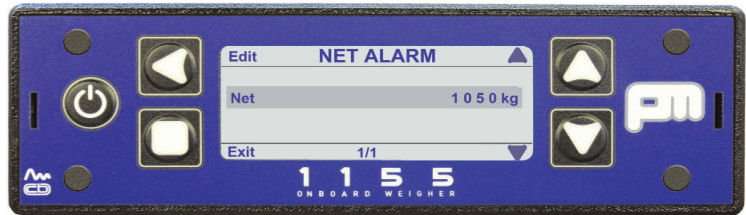
NOTE:

If using peripherals (511 remote, packer switch etc) that may be analogue then set the display to 'CAN AUTO' in stead of 'CAN' in step 6.

Changing a Parameter Value

Where an on-screen parameter has a changable value against it and the value has to be changed then a standard method can be used to alter the value regardless of which screen is used.


A typical example of this would be the NET ALARM screen shown here:








To Change a Parameter Value

The selected parameter is shown by the long grey bar on the parameter and value.

The value shown here is 1050kg.

1. To change this press button  (Edit). This will clear the long bar and highlight the first changable value, as shown in the screen below:



2. Use buttons  &  to alter the original value to the required value.
3. To move to the next value in line press button  and repeat as for line 2.
4. Once the required value is fully changed press button , this will show the new value.
5. Press button  again to leave the screen.

How to identify your Vishay PM 1155 System type

This page shows you how to identify the type of PM 1155 system fitted to your vehicle and to calibrate that system.

How to Identify:

1. Look under the vehicle at the load cells:
 If the cable from the load cells are about 18" - 20" long to a connector then the load cells are CAN types.
 If the cables are much longer, running directly from the load cell to the junction box and there are no plugs fitted, then the load cells are the Analogue types.

2. Look at the type of junction box fitted:
 In most instances this is located near the centre of the chassis on the inside, all the load cell cables run to this item.
 If the junction box is yellow then this is a CAN junction box.
 If the junction box is grey with a red label then this is an Analogue junction box.
 NOTE:
 In certain cases the vehicle may have been painted after the weighing system was fitted, in these cases scrape a small amount of paint from the junction box to determine the base colour.

3. Identify the type of vehicle:
 Setup and calibration will vary slightly depending on the type of vehicle that the weighing system is fitted to, the main types of vehicle are:

 Standard - this is a normal heavy goods vehicle using 2 or more axles. This type can be a normal body type, a roll on - roll off type or a refuse vehicle, etc., 1 junction box and up to 8 load cells.

 Tipper - this is similar to the above but the body can be raised to remove the load.

 5th Wheel and Air - this type uses a separate prime mover cab to pull separate trailers using a 5th wheel coupling and air suspension on the trailer. Only available with 4 or 8 load cell systems.

 Drawbar - this type has a ring and pin type coupling on the prime mover (cab or vehicle) to pull a separate trailer. Only available with 4 or 8 load cell systems.

Additional information you may need:

When calibrating the PM 1155 system there are additional pieces of information you may need:

1. If you are using Axle Weighing to weigh the load on individual axles you will need to know the number of axles fitted to the vehicle, i.e. one front + one rear, one front + two rear, two front + two rear, etc

2. The Tare and Gross weight of the vehicle - these can be obtained during the calibration process using a weighbridge etc.

Definitions

Tare Weight

The weight of an empty vehicle but including the weight of a full fuel tank and the weight of the driver.

Net Weight

The weight of the maximum load that the vehicle is legally allowed to carry. This is the Gross weight less the Tare weight.

Gross Weight

The maximum legally allowed overall weight of the vehicle, i.e. the Tare weight plus the Net weight.

Order of calibration - Examples

Example 1

This example uses CAN load cells and Weigh Mode set to 'Standard'.

Use with the 'Order of calibration for a basic Vishay PM 1155 system' on the next page.

Tare weight - 2000kg See step 9.

The main screens will now show: Net - 0kg
Gross - 2000kg

Net (load weight) added - 20,000kg - then span. See step 12.

The main screens will now show: Net - 2000kg
Gross - 22 0000kg

Example 2

This example uses CAN load cells and Weigh Mode set to 'Twin/5 +Air' (or 'Drawbar')

Use with the 'Order of calibration for a basic Vishay PM 1155 system' on the next page.

Front Tare weight - 1200kg, rear Tare weight - 800kg As step 9 but set Front and Rear Tares instead of an overall total Tare weight.

The main screens will now show: Net - 0kg
Gross - 2000kg
Twin/5+Air - 1200kg F / 800kg R

Net (load weight) added - 20,000kg - then span. As step 12. but set front Tare to 8000kg and rear Tare to 12000kg.

The main screens will now show: Net - 20000kg
Gross - 22 0000kg
Twin/5+Air - 9200 F / 12800 R

Order of calibration for a basic Vishay PM 1155 System

With all the weighing equipment fitted and the required information known from the initial checks the vehicle and weighing system can be calibrated. A sequence for carrying this out is below. Use this in conjunction with the examples on the previous page.

Power - on screen Items 1 - 3.

1. Power the system up - the weighing system will be powered up when the ignition is turned on in most cases, an exception to this could be a tipper vehicle.
2. Watch the opening P.O.S.T. (Power On Self Test) screens carefully, these will show that the load cells and junction box have been detected correctly.
3. On an initial calibration a message will be shown saying that new load cells have been detected.
4. If the vehicle is a tipper then raise the body until clear of the guides, ensure the body does not catch anywhere.
5. Go to the Main Menu screen - set the time and date and then return to the Main screen.
6. Go to Vehicle Configuration.
7. Select the load cell type fitted, CAN or Analogue.

Calibrate Zero Items 8 - 10

The steps from here must be carried out on a weighbridge. See also page 19 for full details.

8. With the EMPTY vehicle on a weighbridge enter the Tare weight (2000kg in example) and then zero the vehicle.
9. Select Calibrate.
10. With the vehicle as level as possible zero the inclinometer.

Span the vehicle Items 11 - 16. See also page 23 for full details.

11. Exit to the Main screens, this should in most cases be the NET screen, if not go to the NET screen.
12. LOAD THE VEHICLE - as near to the maximum allowed load weight as can be managed (20,000kg in the example).
13. Go to the Main screens again.
14. Go to Setup.
15. Go to Calibrate.
16. With the vehicle on a weighbridge span the display - Minimum weight (Tare) to Maximum weight (Gross) - see page 23 for more information.
17. Customise any other settings to your own requirements, i.e axle weighing, twin / 5 + air, drawbar, password etc.
18. Set the alarms - set the NET alarm to about 100kg less than the weight of the load carried (NET), i.e. if the load carried is 20000kg (20 Tonnes in example) then set the alarm to 19900kg - (19 Tonnes, 900 kg).





Entering the Vehicle Tare weight



The Tare weight of a vehicle is the weight of the empty vehicle, but including the weight of a full tank of fuel and the weight of the driver.



This page is used when the 'Axles' setup option is not used, i.e. the Tare weight applies to the whole vehicle NOT the Tare weight of each axle.

To set the Tare weight of each axle see the 'Axle Weighing' page.

With vehicle as above drive the vehicle onto a weighbridge and obtain the Tare weight.


In the display go to: Menu - Setup - Vehicle Config - Tare Weight by pressing the  button until the Time / Date screen can be seen, then pressing the  button to get the Menu screen.

Press the  button to get Setup, followed by the  button to open the Setup screen.

Press the  button to go to Vehicle Config, followed by the  button to open the screen.

Press the  button to scroll to the Tare Weight option.

Set the Tare weight to the value shown on the weighbridge ticket using the method shown on the 'Changing a Parameter Value' screen. **See page 11 for full details.**

Press  4 times to return to the main screen.

NOTE:

You can also obtain the Tare weight of a vehicle using weighpads under each wheel, if available.



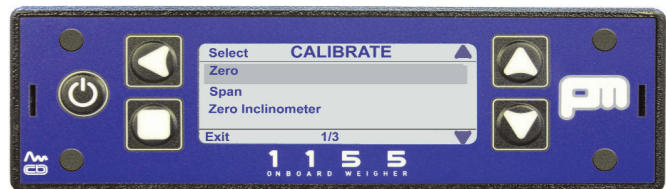
Zeroing the Tare

Body

With vehicle empty go to: Menu - Setup - Calibrate by pressing the button until the Time / Date screen can be seen, then pressing the button to get the Menu screen.

Press the button to get Setup, followed by the button to open the Setup screen.

Press the button to go to Calibrate, followed by the button to open the screen. Zero will be highlighted.



Press the button. The screen shows "Are you sure ? Yes / No". Press Yes, (button).












The screen shows "Zero OK" then returns to the previous screen.



Press 3 times to go to the main screen.

Zeroing an inclinometer (CANbus only)

1. In the Time / Date main screen use the  to open the Menu screen
2. Use  to select Setup
3. Use  to open Setup screen
4. Use  to go to Calibrate option
5. Use  to open option screen
6. Use  to go to Zero Inclinometer
7. Use  to select, confirmation screen opens
8. Use  to select Yes, screen closes
9. Press  3 times to go back to main screen

Spanning the Vehicle

The idea of spanning a vehicle is to take the Tare (empty vehicle) weight from the maximum (gross) weight for the vehicle and to input the weight left (Net or load weight) into the display so that the display can typically use the Tare weight as EMPTY and the Gross weight as FULL when working out the amount of load weight actually in the vehicle at a given point in time.

Example:

Tare weight = 25000kg

Gross weight = 45000kg

Gross weight less Tare weight = Net weight: $45000\text{kg} - 25000\text{kg} = 20000\text{kg}$

Therefore Net (load) weight = 20000kg

When the vehicle is spanned the display would use the 20000kg Tare weight as the net span weight.


Load vehicle to as near full load as possible (20000kg).





1. In the Time / Date main screen use the to open the Menu screen
2. Use to select Setup
3. Use to open Setup screen
4. Use to go to Calibrate option
5. Use to open option screen
6. Go to Span with the button and then press the button. Screen shows "Net Span Weight" and "Calibrate". Net Span Weight should be selected by pressing .




To alter weight press button, first figure will be highlighted. Alter figure using & buttons to alter values and button to move along figure until correct value is reached (in this instance 20000kg).




Press  to go to the previous screen.

Press the  button to go to the "Calibrate" option followed by the  button to select. The screen will say "Are you sure ? Yes / No", with a YES next to the  button and a NO next to the  button.









Press Yes ( button), screen shows "Calibrated OK".



Press  4 times to go to the main screen.

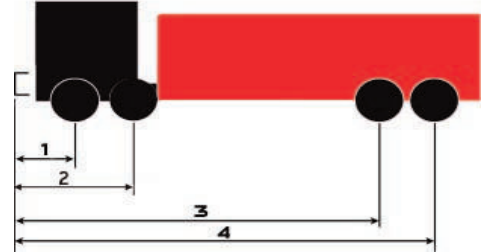
Setting the NET and GROSS Alarms

1. In the main Time / Date screen use the  to select the menu screen
2. Use the  to go to the Setup option
3. Use the  to select the option
4. The Setup screen will open with the Alarms option selected
5. Use the  to select the option
6. Use the  to select the NET or GROSS options as required
7. See 'Changing a parameter Value' for how to alter the values. See also page 11.
8. When values altered to your requirements press the  3 times to return to the main screen

Axle locations and load cell distances record

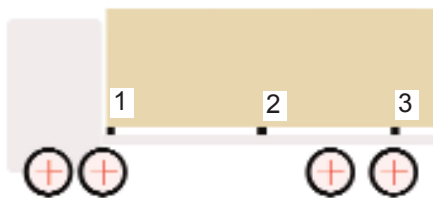
Use this page to record the axle and load cell distance settings used for a vehicle.
Copy this page as required for additional or new vehicles.

Axle Locations



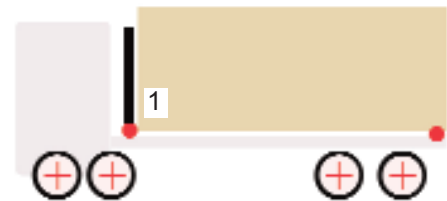
Axle Distances

Axle Distances - in Centimetres				
Vehicle Identification:				
Axle No.	1	2	3	4
Distance from front bumper				



Bulkweigh Type Vehicle

Tipper Type Vehicle



Load Cell Distances

Load Cell Distances - in Centimetres				
Vehicle Identification:				
Axle No.	1	2	3	4
Distance from front bumper				

Axle Weighing

When the Axle options are turned on :

1. In the main Time / Date screen use the button to select the menu screen
2. Use the button to go to the Setup option
3. Use the button to select the option
4. The Setup screen will open
5. Use the button to select the Vehicle Config option and then press .
6. Use the button to select the Weigh Mode option
7. Use the button to scroll through the available options and select Axle

6. Various axle related items appear in the screen list, these are:

Number of axles
 Cell positions
 Axle positions
 Axle tares
 Axle spans

The number of axles on the vehicle is added using the to select the 'Number of Axles' option and then the button to scroll through the options. The number of axles can be set to 2, 3 or 4.

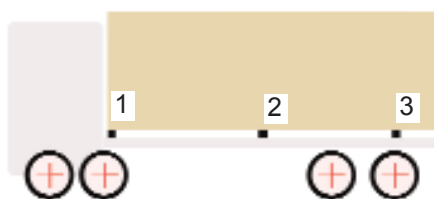
You now need to set the distances of the load cells and axles from a datum - in this case the front face of the front bumper. (see diagrams following).

Cell Positions

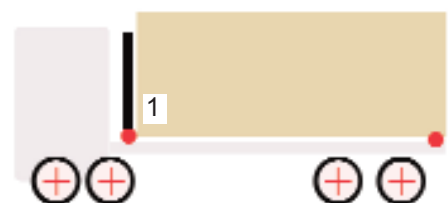
Scroll down to Cell Positions with the button and select with the button. This screen shows each axle location with an associated distance in Centimetres from the datum. Each distance can be altered as for the standard parameter screens. Measure each distance on the vehicle and record the details - a table is provided later in the manual. Photocopy the table page if more than one vehicle is to be recorded.

When all measurements are correct press the button to leave the screen.

Press the button to go to the next axle option - Axle Positions



Bulkweigh Type Vehicle Cell Positions



Tipper Type Vehicle Cell Positions


Axle Positions


This screen shows each axle location with an associated distance in Centimetres from the datum.

Each distance can be altered as for the standard parameter screens

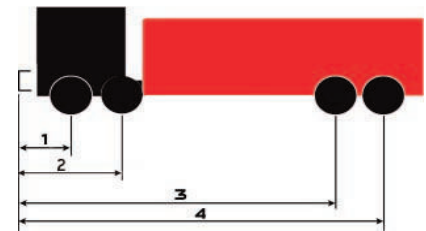
Measure each distance on the vehicle and record the details - a table is provided later in the manual.

Photocopy the table page if more than one vehicle is to be recorded.

1. Use the  button to select the option
2. The Axle Positions screen will open, with a separate line for each axle selected previously.
3. Alter the figure for each axle position - see standard parameter screens.


When all measurements are correct press  to leave the screen.

Press the  arrow button to go to the next axle option - Axle Tares.




Vehicle Axle Positions


Axle Tares

Use the  button to open the Axle Tares screen.

This screen shows the Tare weight for each axle location and is similar to the Axle Positions screen.

1. Use the  button to select the option.
2. The Axle Tares screen will open, with a separate line for each axle selected previously.
3. Alter the figure for each axle Tare weight - see standard parameter screens for method.


When all measurements are correct press  to leave the screen.

Press the  arrow button to go to the next axle option - Axle Spans

Axle Spans

Use the  button to open the Axle Spans screen.

This screen shows the Span weight for each axle location.

1. Use the  button to select the option.
2. The Axle Spans screen will open, with a separate line for each axle selected previously.
3. Alter the figure for each axle span weight - see standard parameter screens for method.

When all measurements are correct press  to return to the Setup screen.

Axle Alarm Weights

1. Use the button to go to the Alarms option.
2. Use the button to select the option.
3. use the button to scroll down the list of options, added to the list will be an option for each axle that has been added, (Axle 1, Axle 2 etc.).

A weight is shown against each axle location, this is the weight on that axle at which the alarm will sound. Highlight each axle in turn and edit the weight as for the standard parameters screen.

When all measurements are correct press three times to go to the main screens.

Main Screen

In the main screens there will be a new screen available, press the button to go to the new Axles screen.



This has the current weight, in Tonnes, shown for each axle.

To activate or de-activate the alarm facility press the button, an icon will appear on screen when the alarm is activated.

With the alarm ON, when the weight on an axle exceeds the preset weight the alarm will sound.

To print out the weights on each axle press the button.

Twin / 5 + Air and Drawbar Screens

Use the Menu function in the Time / Date screen to access settings.










To access any Settings screens you must have password access, unless the display has not been setup previously.

Setting Up the display with Twin / 5 + Air

NOTES:

1. These instructions show how to setup and use the Twin / 5 + Air options but the method is the same for the 'Drawbar' option, just select 'Drawbar' instead of 'Twin/5 + Air'.
2. These options are **ONLY** available with either 4 or 8 load cells fitted and is **NOT** available when 6 load cells are fitted.

Setting Up Display:

1. In the Time / Date screen press the  button.
2. Use the  Button to scroll down to the Setup option.
3. Press the  Button, the Setup screen will open.
4. Use the  Button to scroll down to the Vehicle Config. option.
5. Press the  Button, the Vehicle Config. screen will open.
6. Use the  Button to scroll down to the Weigh Mode option.
7. Use the  Button to toggle between the available options and select Twin / 5 + Air.
8. Press the  button 3 times to go back to the main screens.
9. Press the  button to toggle through the main screens until the Twin / 5 + Air screen can be seen.

Twin / 5 + Air Screen

This shows the overall gross weight (weight of the load and the vehicle combined) of the vehicle and the percentage of that weight on the front and rear axles.

The weights can be shown either as a weight in Kilogrammes, as in this screen,





or as percentages, as in this screen.




Options Available in the Twin / 5 + Air Screen:


Alarm

An alarm symbol  is shown in the top left hand corner. This can be turned on or off using the  button.

% or Kg

The display can be toggled between percentages or Kilogrammes using the  button. If Kilogrammes are chosen then % will be shown next to the button. If percentages are chosen then Kg will be shown next to the button.

Print

The  button can be pressed to print out the weights onto a ticket. The word 'Printing' will appear briefly at the base of the screen.

Exiting

The  button closes the screen and moves you to the next main screen available.

Calibrating Twin / 5+Air

This example uses CAN load cells and Weigh Mode set to 'Twin/5 +Air' (or 'Drawbar')

Use with the 'Order of calibration for a basic Vishay PM 1155 system' on the next page.

This repeated from page 16

Front Tare weight - 1200kg, rear Tare weight - 800kg

As step 9 but set Front and Rear Tares instead of an overall total Tare weight.

The main screens will now show:

Net - 0kg
Gross - 2000kg
Twin/5+Air - 1200kg F / 800kg R

Net (load weight) added - 20,000kg - then span.
rear

As step 12. but set front Tare to 8000kg and Tare to 12000kg.

The main screens will now show:

Net - 20000kg
Gross - 22 0000kg
Twin/5+Air - 9200 F / 12800 R

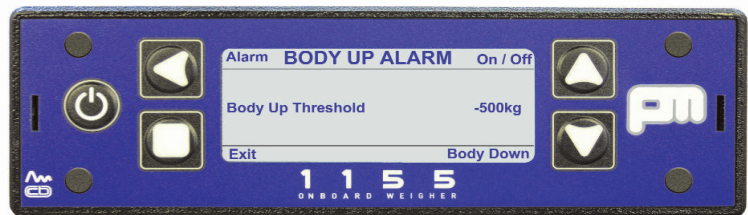
Body Up Alarm Details

Purpose:

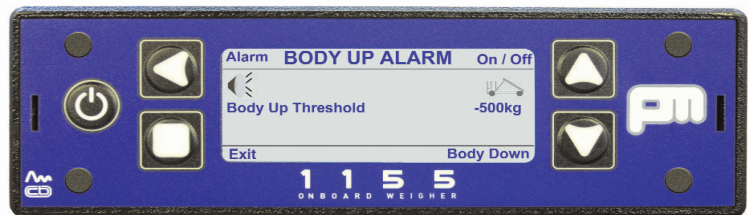
This alarm sounds when a tipper body is raised.

To access the Body Up Alarm screen from the main Time / Date screen:

1. Press the button to go to the main menu.
2. Press the button to go to the Setup option.
3. Press the button to open the option screen, Alarms is highlighted.
4. Press the button again to open the Alarm option, the Alarms screen will open.
5. Press the button to go to the Body Up option.
6. Press the button to open the Body Up Alarm screen.



The alarm can be set to On or Off using the button. An alarm symbol and a vehicle with its body up symbol will be shown on screen if On is selected - see screen below:

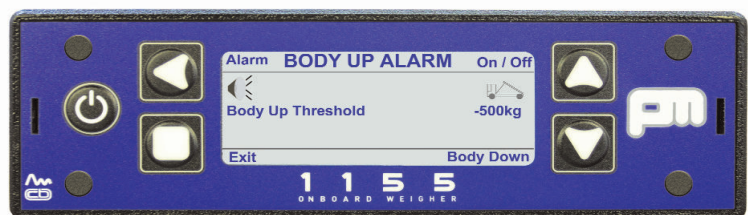


NOTE:

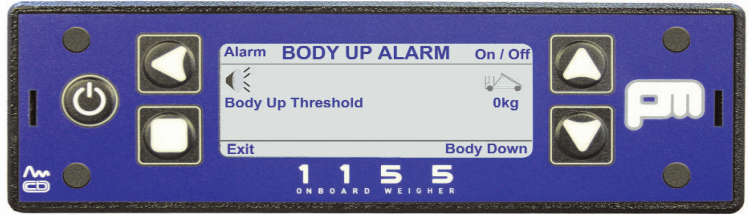
Pressing the button will also turn on the Stability option in the Alarms screen.

The Body Up alarm will beep at intervals. Pressing the button will turn off the beep.

With the vehicle body down, pressing the button will show the message "Body Down" at the bottom right of the screen.




The Body Up alarm point will be set to zero:




Example:

If the body up alarm is ON and the weight is set to -500kg then if the body is raised the system will detect the decrease in weight and when this reaches approximately the start weight the alarm will sound.

Press the  button 4 times to return to the main screens.

Body Down option - main screen








Set the alarm with the vehicle empty and the body down.

Press the  button, the alarm and vehicle symbols will appear and the alarm will be on.

Setting and altering the Body Up alarm weight.

NOTE:










In most cases the default setting can be left as supplied.

1. Press the  button to go to the main menu.
2. Press the  button to go to the Setup option.
3. Press the  button to highlight the Settings option
4. Press the  button to open the option screen
5. Press the  button to go to the Zero Limit option
6. Press the  button again to open the option, the figure can now be altered as for a Standard Parameter screen.
7. Press the  button 3 times to return to the main screens.

Load / Deliver Screen

This feature is designed to allow a user to fully load up a vehicle and then drop off parts of the total load with different customers. The weight of the part load can be printed out.











To Setup and Use Load / Deliver:

1. In the Time / Date main screen press the  button to open the main menu.
2. Press the  button to highlight the Setup option.
3. Press the  button to open the option.
4. Use the  button to scroll to and highlight the Settings option.
5. Press the  button to open the option.
6. Use the  button to scroll down to the Load / Deliver option.
7. Use the  button to toggle the option between ON and OFF as required.
8. Press the  button 3 times to return to the main screens.
9. Use the  button to scroll to the Load / Deliver screen shown here:



Adding part loads to a vehicle - example







These details assume that the Tare, Net Weight and Gross Weight are set. The example assumes a net weight of 20 000kg, and a gross weight of 50 000kg. There are three part loads: 7000kg, 8000kg and 5000kg, giving a total of 20 000kg. The Net Weight and Gross Weight should appear on their respective main screens.

1. Press the  button.
2. Load the vehicle with the first part load (7000kg). The weight will be shown on the screen.
Press  to print the first weight on the load ticket.
3. Press and hold the  button until the weight resets to zero.
4. Load the second part (8000kg) and zero. Press  to print the second weight on the load ticket.
5. Load the third part (5000) and zero. Press  to print the third weight on the load ticket..
6. Access the Load / Deliver main screen using the  button.
7. Press the  button, the alarm symbol  will disappear.
8. Press the  button again, a load figure will appear and the ALARM at the top of the screen will change to EDIT.
9. Print out the ticket with the  button.

Load / Deliver continued

The figure shown on the previous screen (5000kg) is the amount at which the alarm will sound.





For this example set the figure to the first part load weight of 7000kg.

1. Press the  button until the word 'Edit' appears at the top left of the screen and the load figure of 5000kg is highlighted.
2. Press the  button again and the figure will have the first digit highlighted.
3. Use the  button to move along the figure and the  and  buttons to alter the figure to suit the first part of the load required (7000kg)
4. Press  twice to return to the first screen.

The weights for the second and third part loads are set in the same manner.

The accumulated load is shown on the screen.

Delivering a load to three different sites - example

1. These details assume that the Tare, Net Weight and Gross Weight are set.
2. The example assumes a net weight of 20 000kg, and a gross weight of 50 000kg.
3. There are three part loads: 7000kg, 8000kg and 5000kg, giving a total of 20 000kg
4. The Net Weight and Gross Weight should appear on their respective main screens.
5. Load the total delivery weight onto the vehicle (20000kg)
6. On arrival at the first delivery site set the alarm to the first weight (7000kg) - see previous example.
7. Press the  (ON-SITE) button, this will print out the load ticket header and time etc.
8. Deliver the first part of the load. The alarm will sound when the set weight is reached.
9. Press and hold the  button until the weight on screen is zeroed.
10. Press the  button, the weight of the first part of the load will be added to the ticket. Pass over the weight ticket.
11. Press the  (OFF-SITE) button.

Load / Deliver continued

To deliver the rest of the load move to the next delivery point.

Reset the alarm to the weight required for the second delivery (8000kg).
Repeat parts 7 to 11.

Reset the alarm to the weight required for the third delivery (5000kg).
Repeat parts 7 to 11.

Example Load / Deliver Tickets:

1. If Tare is Zero - no gross.

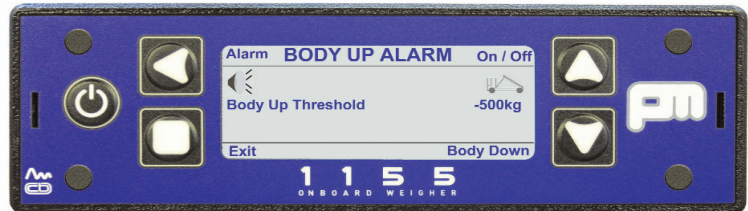
PM Onboard Ltd PM 1155	
Tel: 01274 - 822999	
Time	14:36
Date	09/01/08
Net	1940kg
Gross	6940kg

2. Net and Gross weights used.

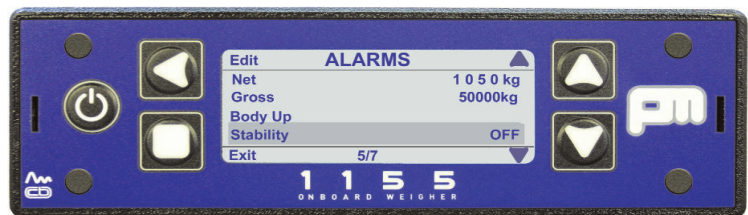
PM Onboard Ltd PM 1155	
Tel: 01274 - 822999	
Arrive Site	
Time	14:36
Date	09/01/08
Net	1940kg
Gross	6940kg
Load	1440kg
Load	2060kg
Deliver	1600kg
Site Total	1900kg
Depart Site	
Time	15:07
Date	09/01/08
Net	1900kg
Gross	6980kg

Vehicle Stability

An indication of vehicle stability can be shown on a main screen if this option is setup.
To setup the stability option:



1. In the Time / Date screen press the button to open the main menu.
2. Use the button to select the Setup option.
3. Press the button to open the already selected Alarms option.
4. Use the button to select the Body Up option.
5. Press the button to open the Body Up option
6. Use the button to select the ON / OFF option in the top right corner of the screen.
6. A loudspeaker icon and a vehicle with a raised body icon will appear on the screen.
7. Press the button to return to the Alarms screen, the Stability option will now be available and should already be selected.
8. Use the button to toggle the stability option ON or OFF as required - see screen below.



The stability screen, shown here:



has a picture of a vehicle in the centre, this picture tilts to show the direction of any vehicle lean.

Also on screen is an indication of the amount of lean in degrees and as a percentage of the total allowed lean, with an arrow to show the direction.

When the vehicle leans more than a set amount the alarm will come on to warn the user.

The amount of lean before the alarm comes on is pre-set and cannot be altered.

At the right hand side of the screen is an indication of the net weight in the vehicle.

PIN Numbers Access

PIN Numbers

A PIN number is required to access the Setup screens etc.

There are separate PIN numbers allowed for the User and the Manager.

The Manager can access all available options.

The user can only access Alarms, on the main menu and only if User Alarms are turned on in the Pin Access screen.

Default PIN Number

The default PIN number is 0000 (four zeros) and can be left unaltered by the PM Onboard engineer or changed to something different. This number is changed as below:

Entering New PIN Numbers

To enter a new Manager PIN number:

1. From the Time / Date screen use the button to open the main menu.
2. Use the button to open the PIN Access option.
3. Select "Set Manager PIN" with the button. A new screen will open:



4. Enter the required PIN number using the button to move along the number and the or arrow button to alter the individual figures.
5. When the new number is on screen press the arrow button. A confirmation screen will open:



5. select YES using the button. The password is now set.

PIN Control

To enter a new User PIN number highlight the "Set User PIN" option and follow the same process as for the Manager PIN.

Highlight the PIN Control option on the screen with the buttons and press the button to toggle the option to USER / MANAGER. This allows the use of PIN controls with the display.

User Alarms





To allow the user to access the user alarm options of the display highlight the "User Alarms" option on the screen with the buttons and use the button to toggle to YES.

Turning this option to YES means the user can alter the alarm settings on the display main screens. Turning this option OFF means that the user cannot alter the alarm settings.



Optional Settings

Display Settings

To go to these options:










1. In the Time / Date screen press the  button to open the main menu options, the Display option will already be selected.
2. Press the  button to open the display option.
3. Use the  and  buttons to move between the various options.

This screen deals with the general setup parameters affecting the display. The options are:

1. **Contrast.**
To alter the contrast of the screen use the  button to increase / decrease the controlling value between 1 and 8.
2. **Power on screen.**
This shows which information screen will be displayed initially. The options are: NET Weight or GROSS Weight.
3. **Key bleep.**
This can be set to Off or On by using the  button.

When all these options are set press the  button twice to go back to the main screens.

Setting the time and date

1. In the Time / Date main menu screen press the  to open the main menu
2. Press the down arrow to go to the Setup option
3. Press the  to open the option
4. Use the  button to go to the Set Time / Date option
5. Press the  to open the option
6. Highlight the figures requiring changing and change to the new date / time - see 'Changing a Parameter Value'
7. Turn daylight saving On as required - only used in the UK.
8. When all set press the  button to save changes, a new screen will open saying 'Set Clock - Yes / No'
9. Press the  button to OK changes (or the  button to discard).
10. Press the  button twice to return to the main screens
11. Press the  button to go to the main Time / Date screen to check the settings

Setting a printer

The Vishay PM 1155 weighing system can use a variety of printers, thermal or impact.

In most cases a 'Sprint' thermal printer will be used

The default printer settings are:








9600 Baud Rate

Handshake Off

Print header On

These settings will be OK to use without alteration.




If an impact type printer is used in a situation requiring large data transfer rates then the handshaking can be turned on, to do this:

1. In the Time / Date main menu screen use the  to select the menu
2. Use the  button to select the Setup option
3. Use the  button to select the Outputs option
4. Use the  to open the Outputs screen, the screen opens with the Serial Output option selected
5. Use the  to open the option
6. Use the  button to select the Handshake option
7. Use the  to select On

Print Header

The print header appears at the top of a printer load weight ticket and by default is: PM Onboard Ltd and the PM service telephone number.


To change the print header

1. In the Serial Output screen (item 5 in the list above) use the  button to scroll down the list to the 'Change Print Header' option
2. Use the  button to open the option
3. Select and change the existing text - see 'Changing a Parameter Value' for how to do this, there is a maximum of 64 characters including spaces available.
4. When the text has been changed to your requirements then press the  button 5 times to exit out to the main screens

Front Panel Zero


This option gives you the ability to zero the Net weight main screen. This has three options: On, Off, Single.
OFF: This option is not available.



ON: The word Zero appears in the bottom corner of the main 'Net Weight' screen.



Press the  button and hold down for 3 to 5 seconds, 'Zero OK' will appear briefly on the screen and the Net weight will be zeroed.
This operation can be carried out as many times as possible.


SINGLE: The operation is the same as 'ON' but can only be carried out once.

To activate Front Panel Zero:

In the Time / Date main screen press the  button to open the main menu.

Use the  button to go to the 'Setup' option and the  button to open this.

Use the  button to go to the 'Settings' option and the  button to open this.

Use the  button to go to the 'Front Panel Zero' option.

Use the  button to select either OFF, ON or Single.

Press the  button 3 times to return to the main screens.

User Password Access

If you have user password access you will have access to an extra item on the Menu screen. These are the user alarms.

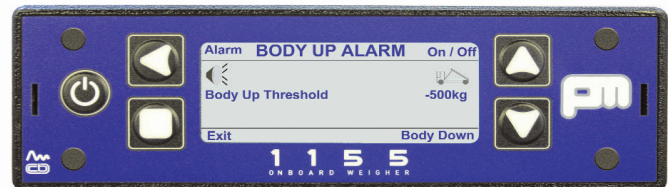
Select the Alarms option with the button and press the button, the Alarms screen will open.



Here you can set the operating mode to Auto or Manual, set the Gross and Net weights at which the alarm will sound and set the Body Up alarm threshold.

Use the button to select an option. Use the and buttons to move between options and to increase or decrease the weights.

Pressing Body Up will open the Body Up Alarm screen:



This shows the (negative) weight at which the body up alarm will sound.

Use the button to turn the alarm on or off - when turned on symbols will appear on the screen.

Alarms - Manual or Auto

In the Setup - Alarms screen the alarms can be toggled between Manual and Auto:

Manual The alarm sounds when the weight is over the set weight. The alarm goes off when the weight is less than the set point and will not go back on if the weight is increased again. The alarm symbol disappears.

Auto The alarm sounds when the weight is over the set weight. The alarm goes off when the weight is less than the set point and goes back on if the weight is increased again. The alarm symbol will be back on the screen.

Turning the Display Off

Press the button once to turn off the display.



Diagnostics Information - CAN mode

When the option is selected this screen opens in the first of ten screens. These screens are only for information and cannot be altered.

Use the or buttons to access the other diagnostic screens available.

Use the PRINT facility (button) from any screen to print out a list of parameters shown in diagnostics.

1. System
2. J/box configuration
3. J/box Software version
4. Adjusted Net
5. Raw Net
6. Millivolts
7. P.I. Value
8. P.I. Percent
9. Serial Number (of each load cell)
10. Software Version (of each load cell)
11. Inclinator

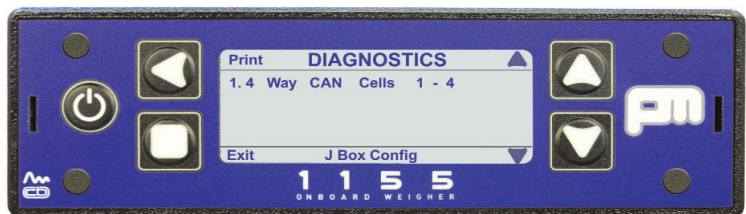
1 System Screen

This screen shows the battery voltage, the excitation voltage and the installed software serial number and version.



2 J / Box Configuration

This screen shows the configuration of the junction box. Shown is a 4 way junction box with CAN cells 1 to 4.



3 J / Box Software Version

This screen shows the installed software version of the junction box. Shown is version 01 - 03.



4. Adjusted Net Screen

This shows the payload weight seen by each load cell, using a diagram to show where each load cell is positioned on the vehicle. If a zero figure is shown against a load cell this could indicate a faulty cell or faulty or broken cable. This could also be a faulty Suzi connector, if used.



5. Raw Net Screen

This shows the total weight seen by each load cell, not taking into account zero. If a zero figure is shown against a load cell this could indicate a faulty cell or faulty or broken cable. This could also be a faulty Suzi connector, if used.



6. Signal (Millivolts) Screen

This is the millivolt representation of the A / D and shows the millivolt output from the strain gauge bridge, for each load cell. If a zero figure is shown against a load cell this could indicate a faulty cell or faulty or broken cable. This could also be a faulty Suzi connector, if used.

This screen is intended to be mainly used by a PM engineer, or when passing on information to a PM engineer.



7. P.I. Value Screen

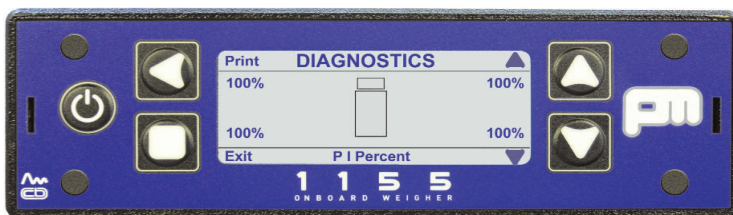
This shows the P.I. (after calibration) value for each load cell. Ideally this should be 16384 for each cell. If one of the readings is very different from the others this would indicate a faulty cell. This could also be a faulty Suzi connector, if used.

This screen is intended to be mainly used by a PM engineer, or when passing on information to a PM engineer.



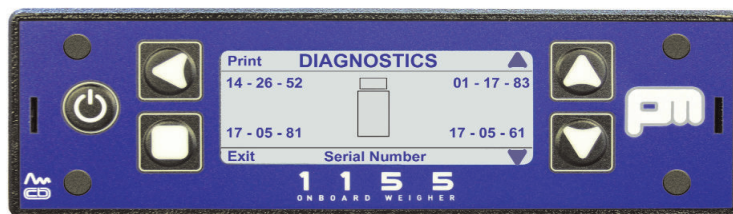
8. P.I. Percentage Screen

This shows the P.I. percentage for each load cell. Acceptable values are from approximately 80% to 120%. If one of the readings is very different from the others this would indicate a faulty cell. If the system is set up as a 5th wheel and air then the front and rear may differ but must match left and right.



9. Serial Number Screen

This shows the current serial number of each load cell. Every load cell is given a unique serial number when the initial factory calibration is carried out. These numbers will be updated automatically if a load cell is changed. If no serial number is shown against a load cell this is an indication that the cell is faulty or a cable is faulty or broken. This could also be a faulty Suzi connector, if used.



10. Software Version Screen

This shows the current software version of each load cell. Every load cell is given the current software version number when the initial factory calibration is carried out. The version number will be updated automatically if a load cell is changed for one with a different version. If no version number is shown against a load cell this could indicate a faulty cell or faulty or broken cable. This could also be a faulty Suzi connector, if used.



11. Inclinometer







This screen shows the degree of Pitch (front to back movement of the vehicle) and Roll (side to side movement of the vehicle). The inclinometer is set on level ground or a weighbridge, if a reading is seen that is obviously wrong (e.g. 15 degrees when the vehicle is on level ground) then re-zero the inclinometer.



Using the Display with Analogue Load Cells


Using analogue cells with the PM1155 display alters several of the screens and the way that they operate.

Changing To Analogue Cells


1. In the Time / Date screen use the  button to open the main menu.
2. Use the  button to select the Setup option.
3. Use the  button to go to the Vehicle Config option.
4. Open the Vehicle Config option with the  button.
5. Press the  button to select the Load Cells option.
6. Press the  button to select the Analogue option.
The screen options available will change to those shown here:



The first option - Load Cells - will be highlighted.

7. Use the  button to cycle through the options until 'Analogue' appears. This will let you use the display with analogue load cells instead of CAN load cells.

The rest of the screen options will disappear and a new "Tare Weight (Analogue)" option will appear.

8. Use the  button to scroll to the Tare Weight option.

The Tare Weight of the vehicle using analogue cells is set here, using the standard parameter screen to alter the values.

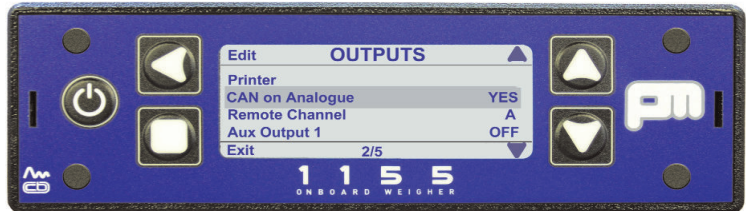
After setting the Tare Weight press the  button twice to return to the Settings screen.

Other screens changed when using the Analogue option.

The options that appear on some other screens are changed when Analogue Load Cells is selected are listed here:

1. Outputs

The outputs screen will appear as here:



There is a new option on this screen, 'CAN on Analogue', this lets you use CAN devices with analogue load cells, e.g. 511 remote, packer plate or 6 point alarm.

This option can be toggled ON or OFF using the  button.

2. Alarms

In the Alarms screen the 'Body Up' option is no longer available.

3. Calibrate

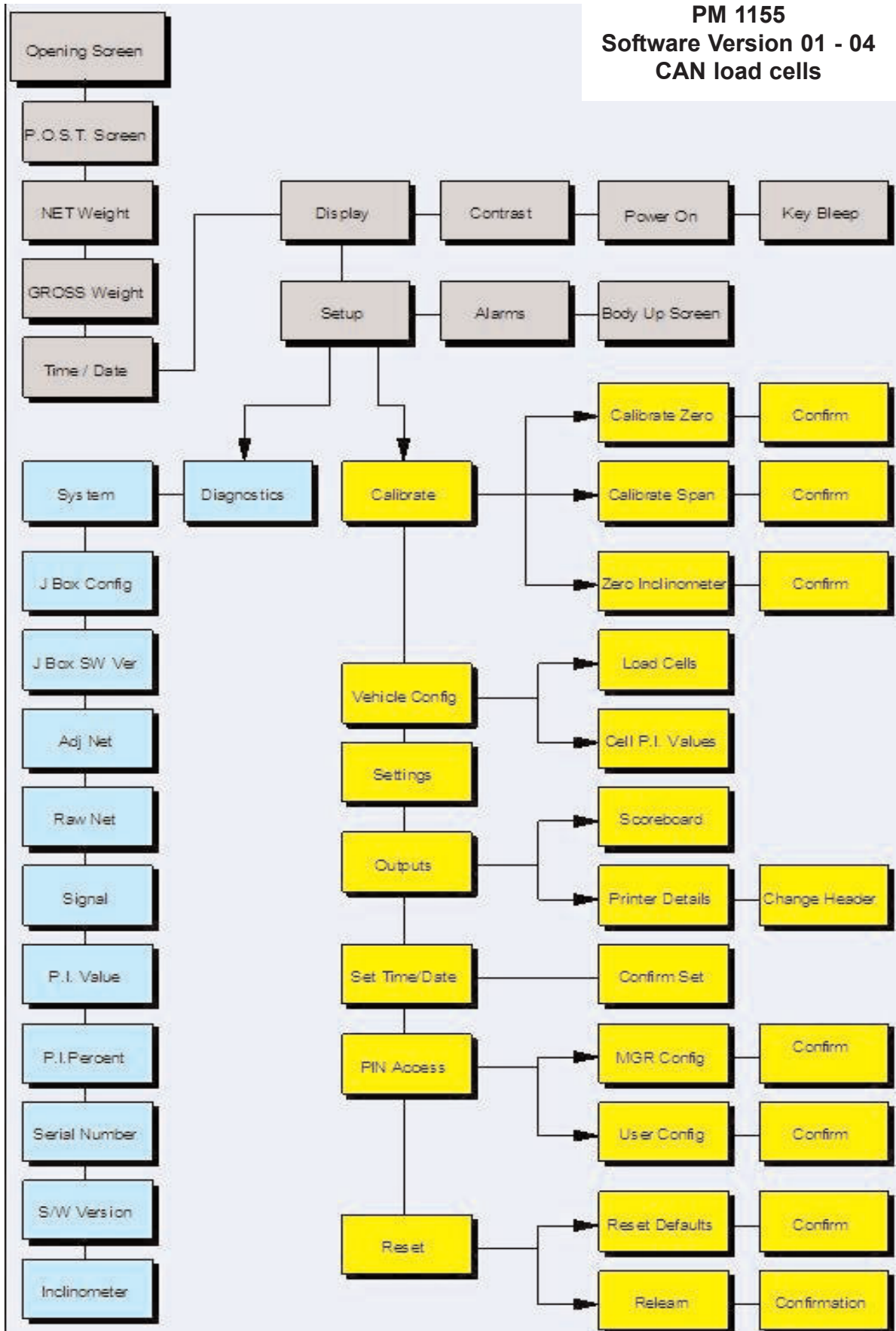
In the Calibrate screen the 'Zero Inclinator' option is no longer available.

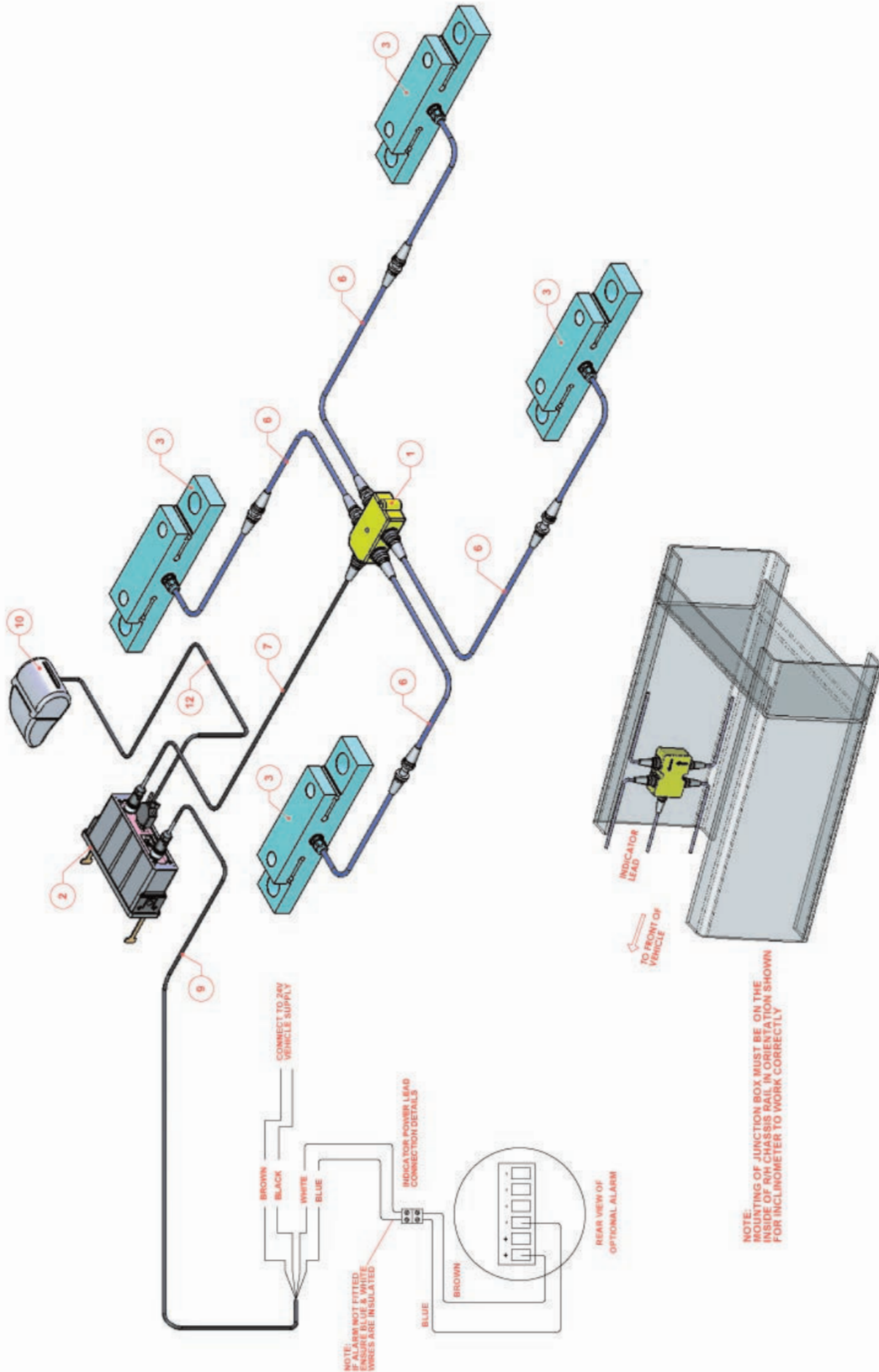
4. Diagnostics

Only the first 'System' screen will be available.

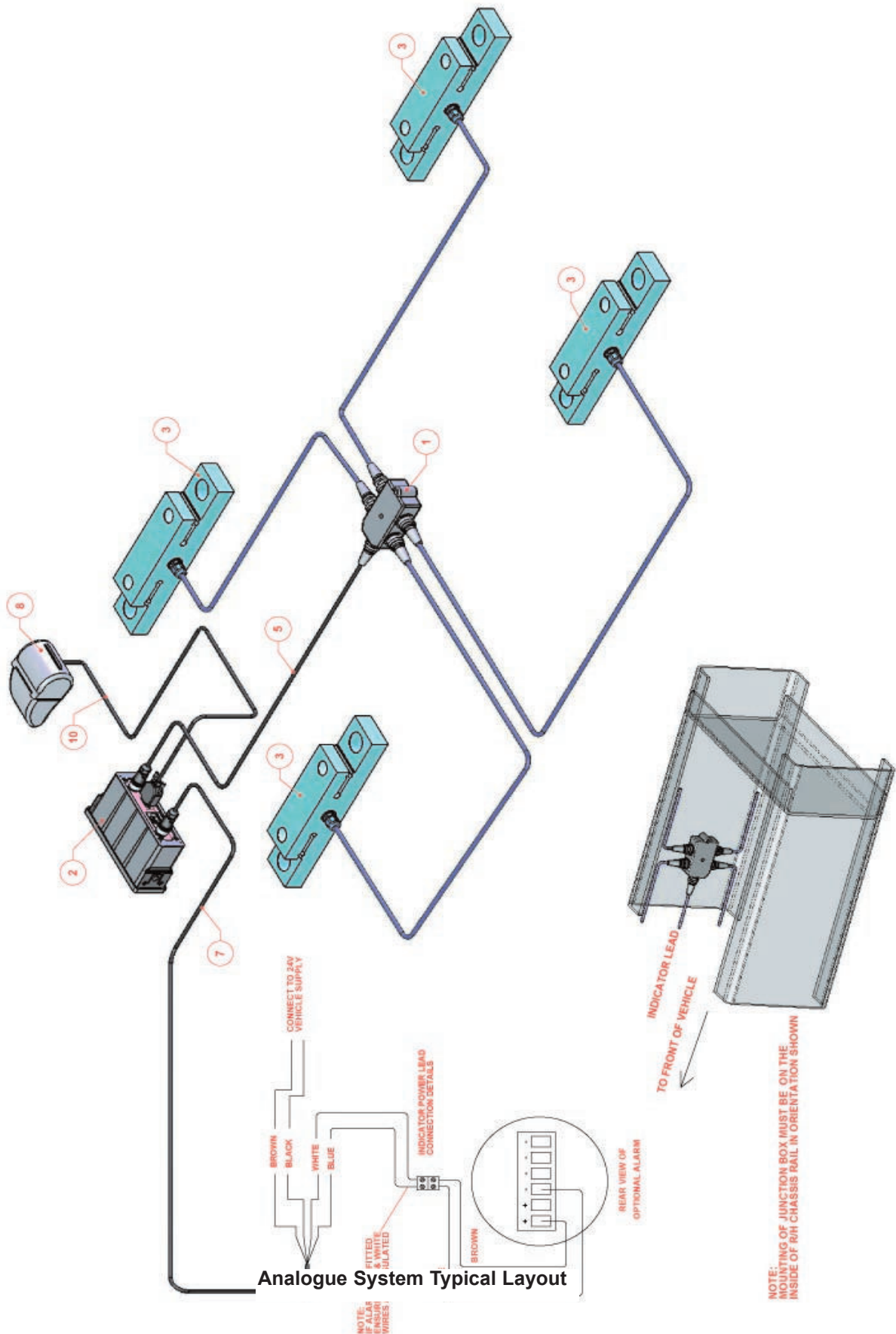
Screen Layouts & Drawings

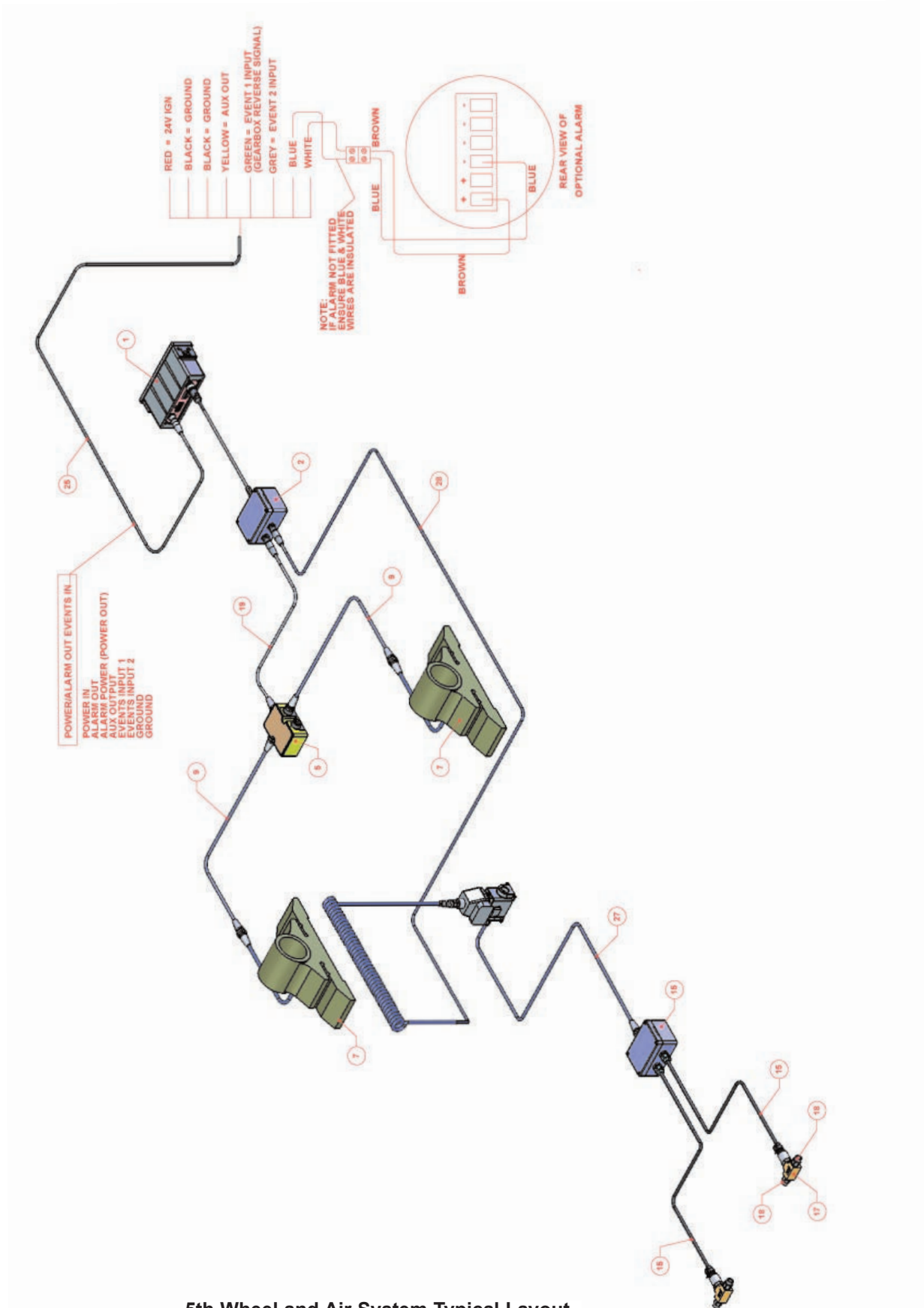
PM 1155
Software Version 01 - 04
CAN load cells





CAN System Typical Layout





5th Wheel and Air System Typical Layout

