



**BEDFORD PUMPS LTD.**

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**USER MANUAL**

For

**BEDFORD PUMPS LTD**

**PUMP CONDITION  
MONITOR Mk II:**

**Data Viewing Software**

**EQUIPMENT SUPPLIED BY:**

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# PCM II: Data Viewing Software

Software Version 1.0

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## Section 1: Introduction

This software package has been developed for users and engineers to quickly and easily access and review the PCM II data.

The data is tabulated, with the option of creating printable graphs of a pump status.

## Section 2: Installation

### **2.1 System requirements**

The *PCM II: Data viewing Software* requires the Windows XP or later, operating system.

### **2.2 Connection requirements**

Connection from the unit/display to your PC requires a USB 'B' cable.

### **2.3 Preparations**

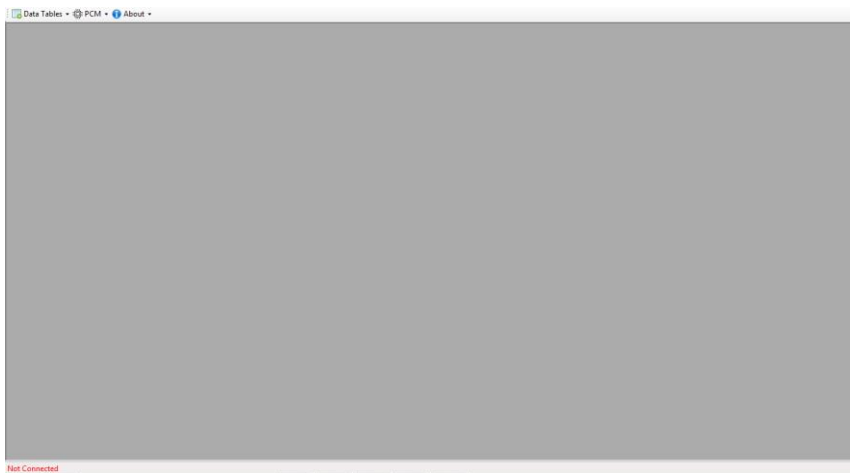
Ensure all programs have been closed before attempting to install the *PCM II: Data viewing Software* and the operating system meets the minimum requirements set out in Section 2.1.

### **2.4 Software installation**

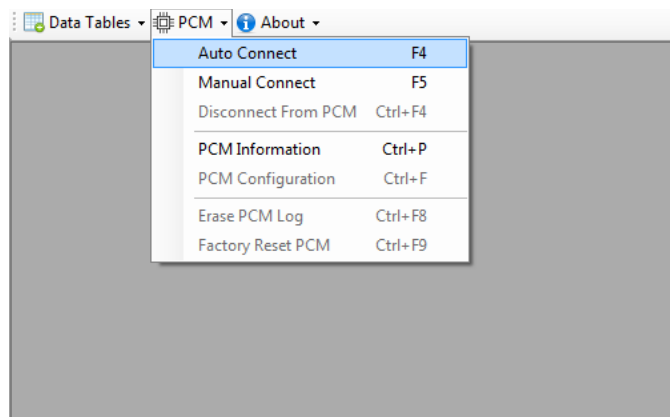
1. Insert the *BPL PCM II: Data viewing Software* USB memory stick into your computer
2. Double click on the icon; **Setup.exe**
3. Start the setup Wizard.
4. Select a file to store the operating software or continue using the recommended default location.
5. Select if you are happy for the Wizard to create an icon on your Desktop.
6. Click 'Finish'. Your *PCM II: Data viewing Software* is now installed and ready for use.

### **Section 3: Quick start**

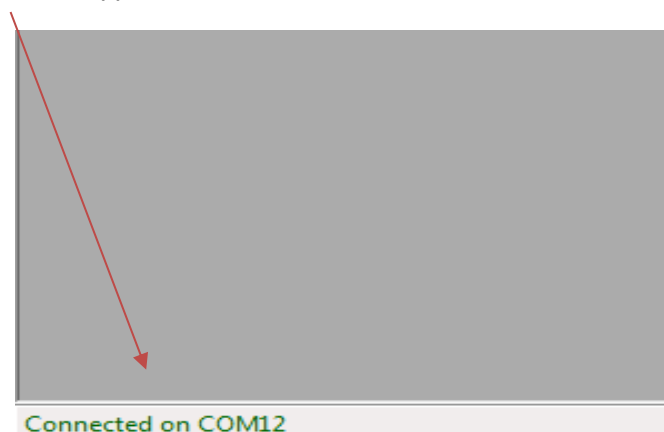
1. Open the *PCM II: Data viewing Software* programme



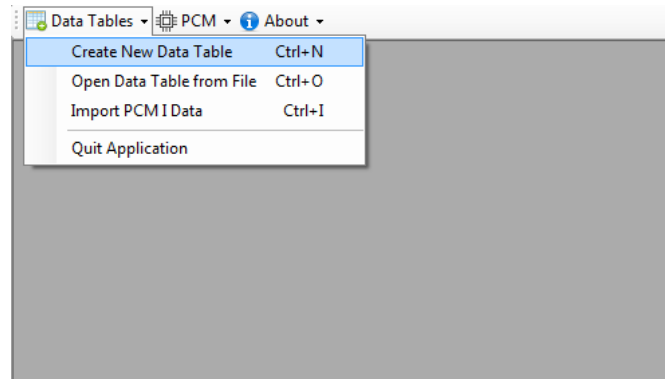
2. Connect your PC directly to the PCM II or front of the display via the female USB-B port.
3. From the 'PCM' drop-down tab on the top toolbar, select 'Auto Connect to PCM'. This will open communication between the *PCM II: Data viewing Software* and your PC.



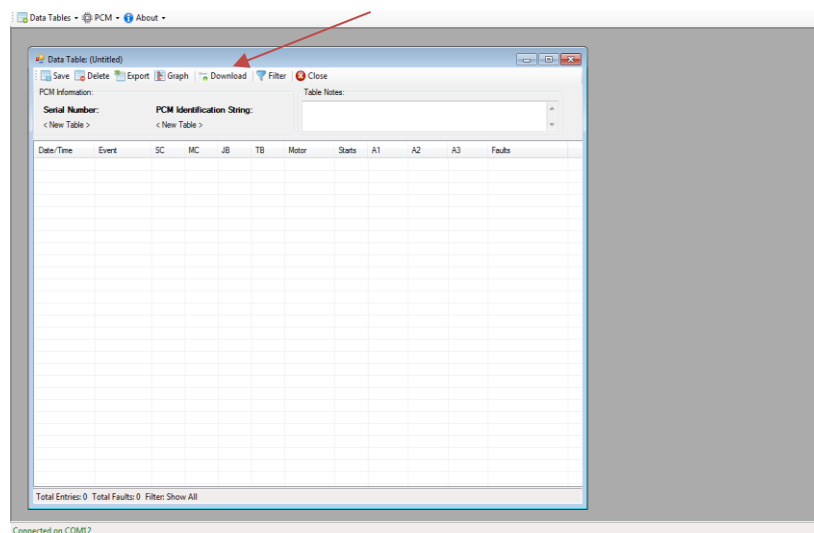
A green 'Connected' will appear at the bottom left hand corner.



- From the 'Data Tables' drop-down tab on the top toolbar, select 'Create New Data Table'.



- The following screen will appear. Select 'Download' from pop table:



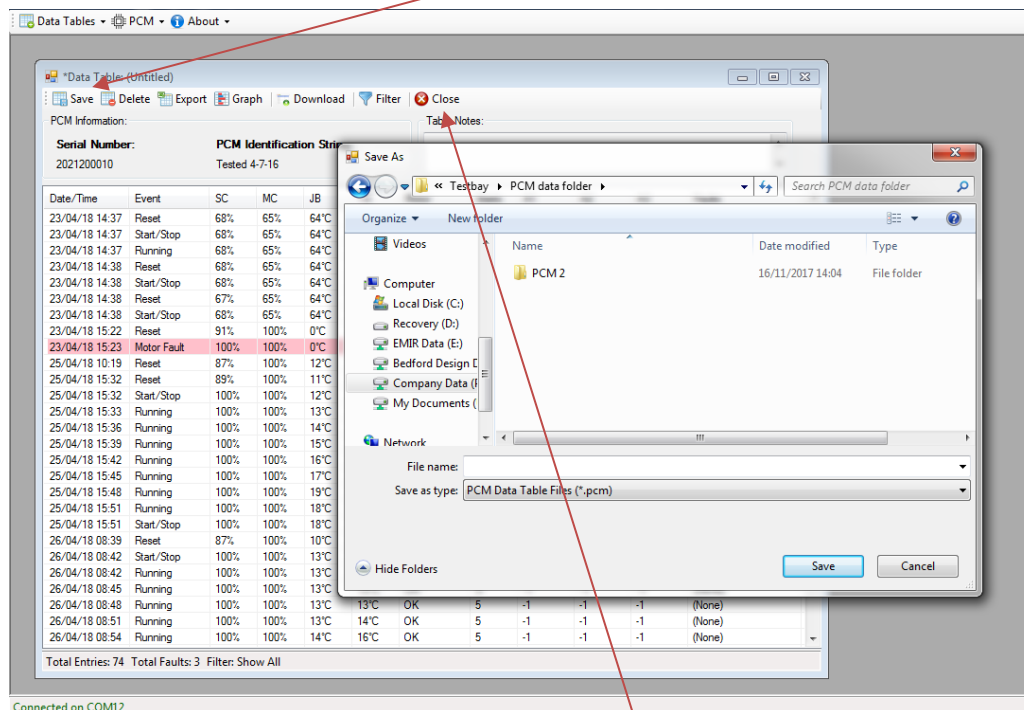
- A pop-up screen will inform you of how many entries there are to download and whether you wish to continue. Click 'Yes' if you wish to continue or 'No' to cancel.
- The data from the PCM II will then populate the table in date order.

PCM Information:  
Serial Number: 2021200010  
PCM Identification String: Tested 4-7-16

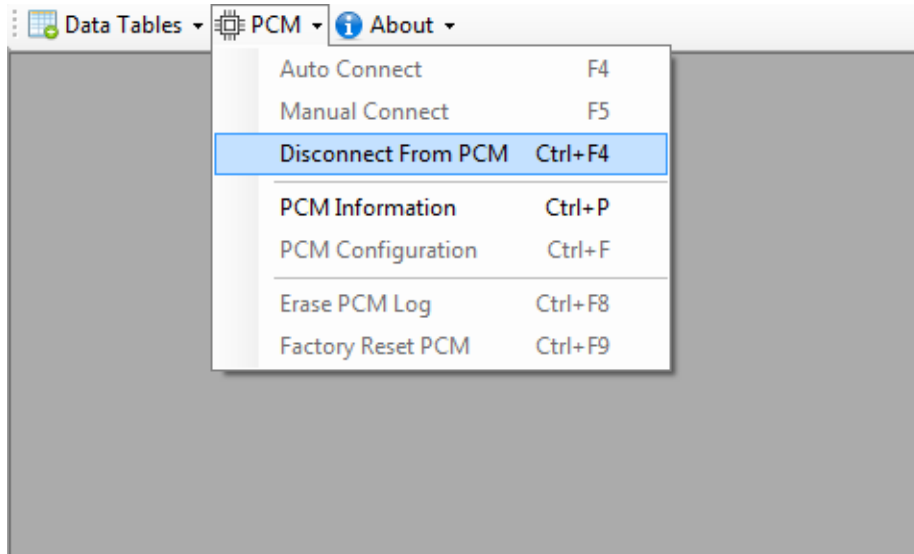
Date/Time	Event	SC	MC	JB	TB	Motor	Starts	A1	A2	A3	Faults
23/04/18 14:37	Reset	68%	65%	64°C	64°C	OK	1	-1	-1	-1	(None)
23/04/18 14:37	Start/Stop	68%	65%	64°C	64°C	OK	1	-1	-1	-1	(None)
23/04/18 14:37	Running	68%	65%	64°C	64°C	OK	1	-1	-1	-1	(None)
23/04/18 14:38	Reset	68%	65%	64°C	64°C	OK	2	-1	-1	-1	(None)
23/04/18 14:38	Start/Stop	68%	65%	64°C	64°C	OK	2	-1	-1	-1	(None)
23/04/18 14:38	Reset	67%	65%	64°C	64°C	OK	3	-1	-1	-1	(None)
23/04/18 14:38	Start/Stop	68%	65%	64°C	64°C	OK	3	-1	-1	-1	(None)
23/04/18 15:22	Reset	91%	100%	0°C	0°C	OK	3	-1	-1	-1	(None)
23/04/18 15:23	Motor Fault	100%	100%	0°C	0°C	Open.Trip	3	-1	-1	-1	(None)
25/04/18 10:19	Reset	87%	100%	12°C	12°C	OK	3	-1	-1	-1	(None)
25/04/18 15:32	Reset	89%	100%	11°C	10°C	OK	3	-1	-1	-1	(None)
25/04/18 15:32	Start/Stop	100%	100%	12°C	11°C	OK	4	-1	-1	-1	(None)
25/04/18 15:33	Running	100%	100%	13°C	12°C	OK	4	-1	-1	-1	(None)
25/04/18 15:36	Running	100%	100%	14°C	13°C	OK	4	-1	-1	-1	(None)
25/04/18 15:39	Running	100%	100%	15°C	13°C	OK	4	-1	-1	-1	(None)
25/04/18 15:42	Running	100%	100%	16°C	15°C	OK	4	-1	-1	-1	(None)
25/04/18 15:45	Running	100%	100%	17°C	15°C	OK	4	-1	-1	-1	(None)
25/04/18 15:48	Running	100%	100%	19°C	18°C	OK	4	-1	-1	-1	(None)
25/04/18 15:51	Running	100%	100%	18°C	18°C	OK	4	-1	-1	-1	(None)
25/04/18 15:51	Start/Stop	100%	100%	18°C	18°C	OK	4	-1	-1	-1	(None)
25/04/18 08:39	Reset	87%	100%	10°C	10°C	OK	4	-1	-1	-1	(None)
26/04/18 08:42	Start/Stop	100%	100%	13°C	13°C	OK	5	-1	-1	-1	(None)
26/04/18 08:42	Running	100%	100%	13°C	13°C	OK	5	-1	-1	-1	(None)
26/04/18 08:45	Running	100%	100%	13°C	13°C	OK	5	-1	-1	-1	(None)
26/04/18 08:48	Running	100%	100%	13°C	13°C	OK	5	-1	-1	-1	(None)
26/04/18 08:51	Running	100%	100%	13°C	14°C	OK	5	-1	-1	-1	(None)
26/04/18 08:54	Running	100%	100%	14°C	16°C	OK	5	-1	-1	-1	(None)

Total Entries: 74 Total Faults: 3 Filter: Show All

8. To save the data for future reference, click the 'Save' tab and select where the data is to be saved.



9. To end communication with the PCM II click the 'Close' tab (if the data has not been saved, you will be reminded to do so now). Go to the 'PCM' tab on the top toolbar and click 'Disconnect from PCM'. It is now safe to remove your PC from the PCM and close the software.



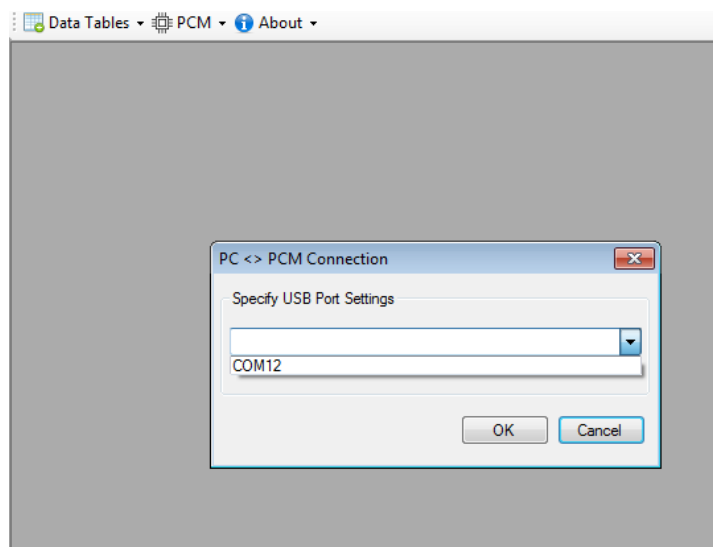
## **Section 4: Connecting to PCM II**

### **4.1 Auto Connect**

See *Section 3 part 3*.

### **4.2 Manual Connect**

If Auto Connect does not recognise a live COM port, try Manual Connect. From the PCM drop-down (See *Section 3 part 3*) select Manual Connect. You will be requested to select the COM port you are connected to from the drop-down list.



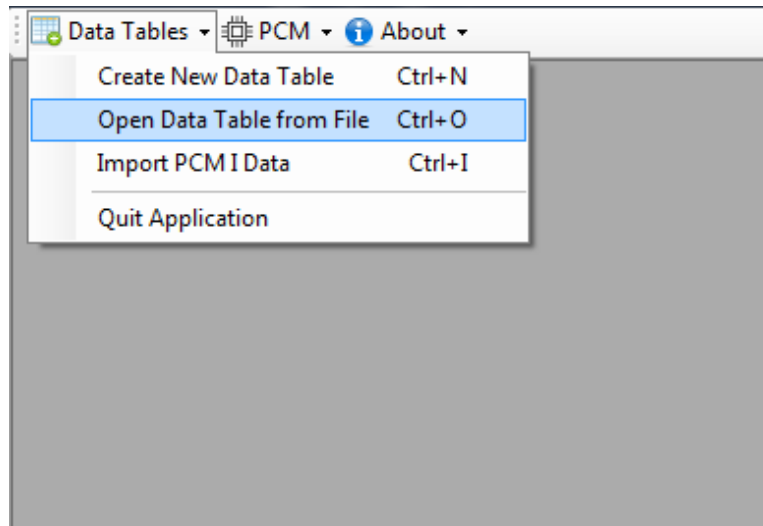
## **Section 5: Creating a new Data Table**

See Section 3 part 4-7.

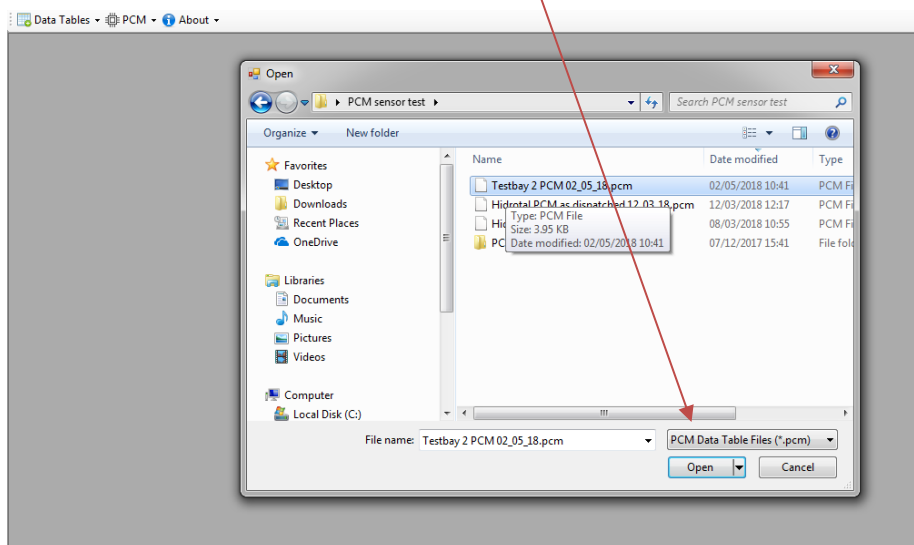
## Section 6: Opening previously saved data

Data that has been saved can be reviewed at any time on a PC that has the software downloaded on to.

1. From the 'PCM Tables' drop-down select 'Open Data Table from File'.

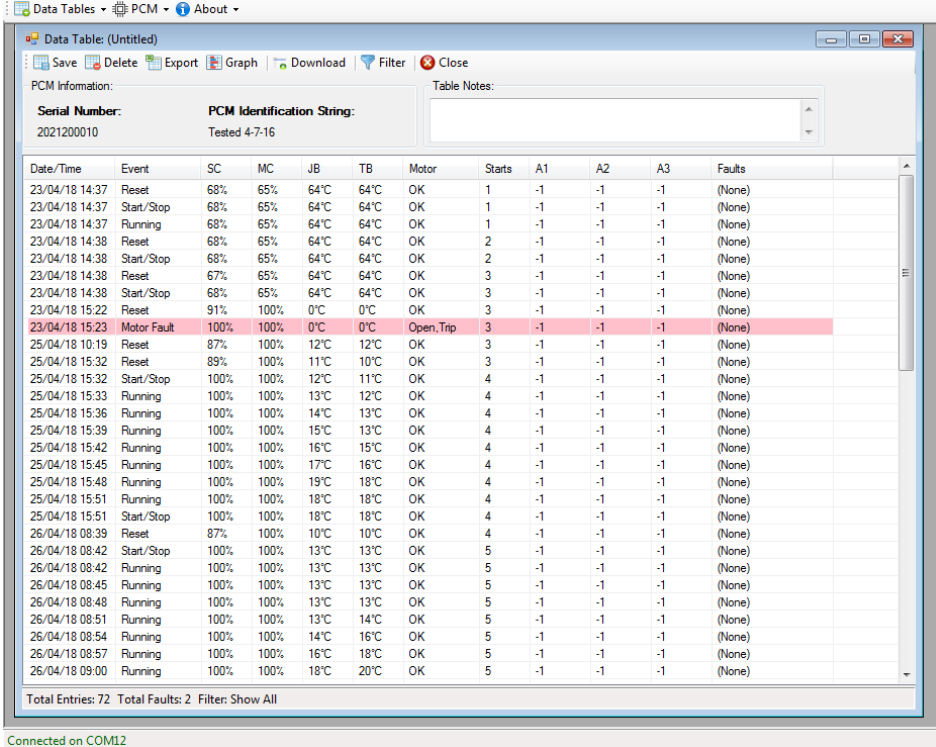


2. Select the file that is to be reviewed and click 'Open'.



## Section 7 Data Table identification

The Data Table is split into columns which denote each individual sensor. The data is made up of readings taken directly from the sensors fitted to the system and from pre-determined figures from the registry to highlight events.

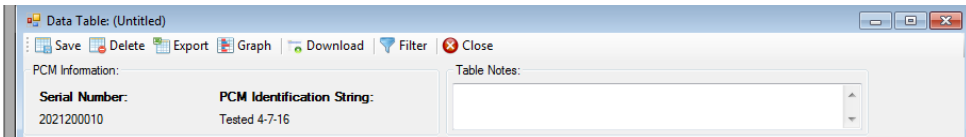


The screenshot shows a software window titled "Data Table: (Untitled)". It includes a menu bar with options like Save, Delete, Export, Graph, Download, Filter, and Close. Below the menu, there is a section for "PCM Information" with fields for "Serial Number" (2021200010) and "PCM Identification String" (Tested 4-7-16). A "Table Notes" field is also present. The main area is a data table with columns: Date/Time, Event, SC, MC, JB, TB, Motor, Starts, A1, A2, A3, and Faults. The table contains 72 entries, with one entry on 23/04/18 at 15:23 highlighted in red, indicating a "Motor Fault" with a description of "Open.Trip". At the bottom, it shows "Total Entries: 72 Total Faults: 2 Filter: Show All" and "Connected on COM12".

## 7.1 Abbreviations

Column name	Meaning
Date/Time	Day, Month, Year. Time in 24-hour clock
Event	Lists any action that has been recorded by the PCM II
SC	Seal Chamber status
MC	Motor Chamber status
JB	Journal Bearing temperature
TB	Thrust Bearing temperature
Motor	Motor temperature status
Starts	Incremental log of pump starts
A1, A2, A3	Auxiliary analogue Inputs. If no device fitted -1 is recorded.
Faults	If a fault is detected, a brief description of the issue is given

## 7.2 Data Table toolbar



The screenshot shows the top part of the software window, focusing on the toolbar and information fields. The toolbar includes icons for Save, Delete, Export, Graph, Download, Filter, and Close. Below the toolbar, the "PCM Information" section shows the "Serial Number" (2021200010) and "PCM Identification String" (Tested 4-7-16). A "Table Notes" field is also visible.

Toolbar Identification	Action
Save	Data will be saved to a chosen location for future reviewing
Delete	<i>Not yet known!</i>
Export	Data can be exported to a CSV to be reviewed in packages like Excel.
Graph	Data can be viewed on a graph

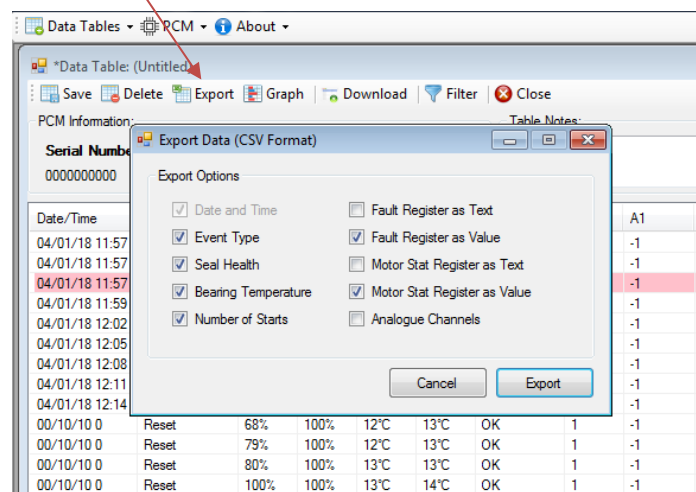


Download	Populates the table with entries from the PCM II that is connected.
Filter	Allows the user to select a date period or to show only faults.
Close	Closes the Data Table. The user will be hinted as to whether they want to save the data.

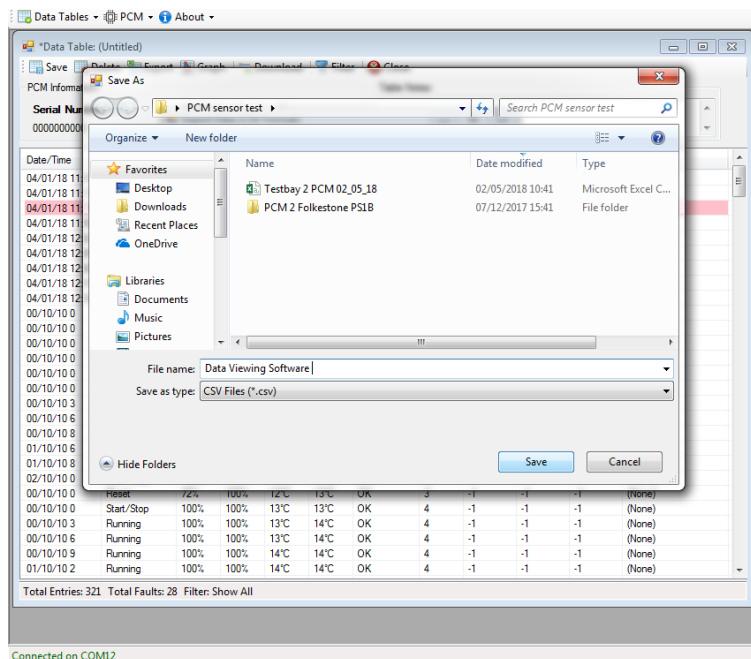
### 7.3 Exporting data to CSV

Data can be saved as a CSV file to be reviewed in another application like Excel.

1. Click on 'Export' on the toolbar and with the use of the tick box highlight which information the information to be exported.



2. Click the highlighted 'Export' button to save the data to a file of the users choosing.



3. The exported data can later be reviewed as a CSV file

AutoSave [On] Data Viewing Software - Excel

File Home Insert Page Layout Formulas Data Review View Developer Help Nitro Pro 9 Nitro Pro 10 Nitro Pro Search

Clipboard Font Alignment Number Styles

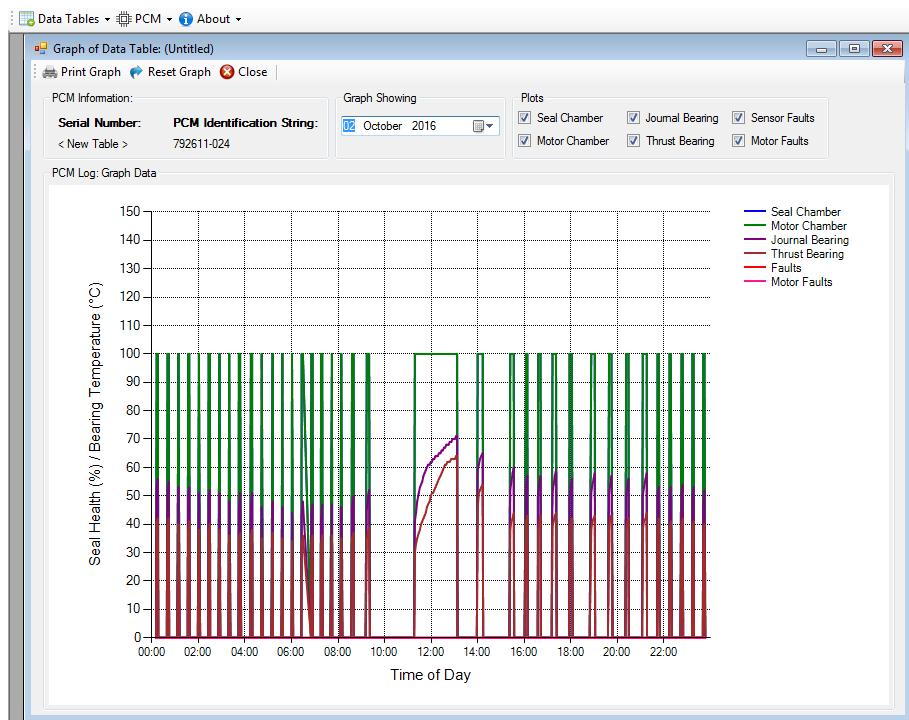
A1 Date/Time

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date/Time	Event	Seal Chamber	Motor Chamber	Journal Bearing	Thrust Bearing	Motor Stat	Fault Register	Starts			
2	04/01/2018 11:57	Reset	100	100	0	0	0	0	0	1		
3	04/01/2018 11:57	Start/Stop	100	100	0	0	16	0	1			
4	04/01/2018 11:57	Motor Fault	100	100	0	0	26	0	1			
5	04/01/2018 11:59	Running	100	100	0	0	26	0	1			
6	04/01/2018 12:02	Running	100	100	0	0	26	0	1			
7	04/01/2018 12:05	Running	100	100	0	0	26	0	1			
8	04/01/2018 12:08	Running	100	100	0	0	26	0	1			
9	04/01/2018 12:11	Running	100	100	0	0	26	0	1			
10	04/01/2018 12:14	Running	100	100	0	0	26	0	1			
11	00/10/10 0:14	Reset	68	100	12	13	0	0	1			
12	00/10/10 0:14	Reset	79	100	12	13	0	0	1			
13	00/10/10 0:14	Reset	80	100	13	13	0	0	1			
14	00/10/10 0:14	Reset	100	100	13	14	0	0	1			
15	00/10/10 0:14	Reset	73	100	12	13	0	0	1			
16	00/10/10 0:14	Start/Stop	100	100	13	13	16	0	2			
17	00/10/10 3:14	Running	100	100	13	14	16	0	2			
18	00/10/10 6:14	Running	100	100	14	14	16	0	2			
19	00/10/10 8:14	Start/Stop	100	100	14	14	0	0	2			
20	01/10/2010 06:14	Start/Stop	100	100	14	14	16	0	3			
21	01/10/2010 08:14	Running	100	100	14	14	16	0	3			
22	02/10/2010 00:14	Start/Stop	100	100	14	14	0	0	3			
23	00/10/10 0:14	Reset	72	100	12	13	0	0	3			
24	00/10/10 0:14	Start/Stop	100	100	13	13	16	0	4			
25	00/10/10 3:14	Running	100	100	13	14	16	0	4			

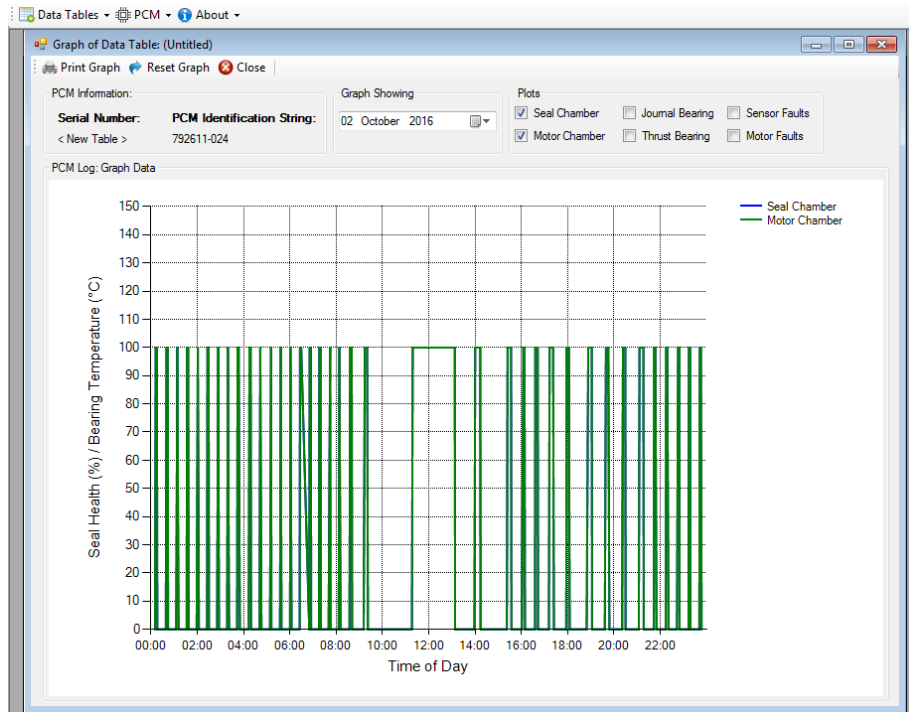
Ready

## 7.4 Creating a graph

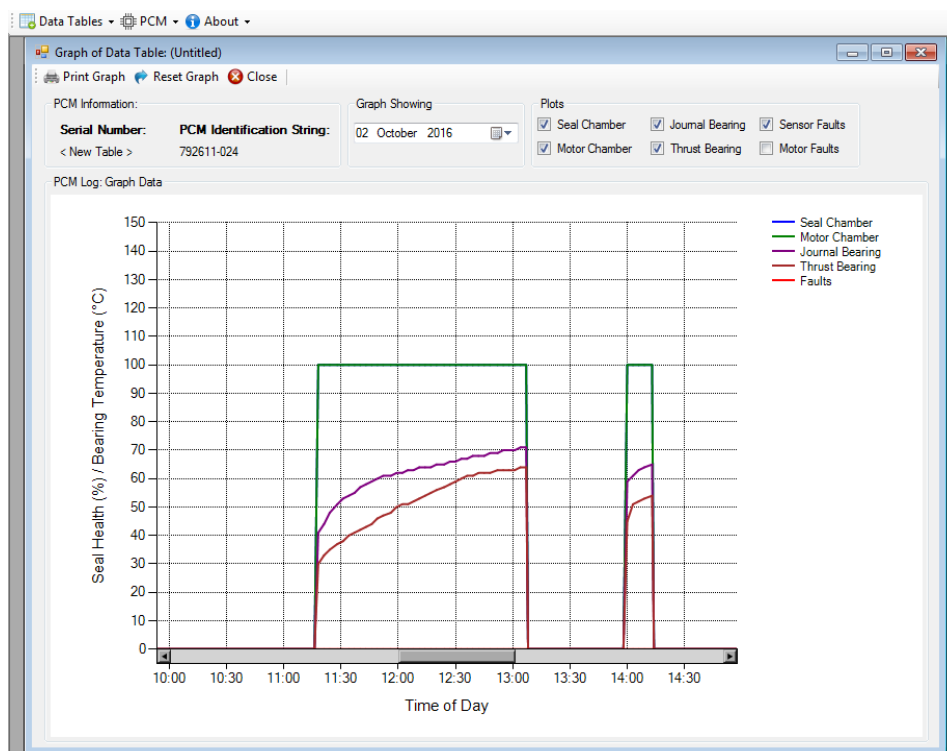
1. Click on 'Graph' from the Data Table toolbar.



- The graph will show a 24-hour time period selected from the 'Graph Showing' drop-down menu.
- Pump sensors and faults can be deselected if required in the 'Plots' box



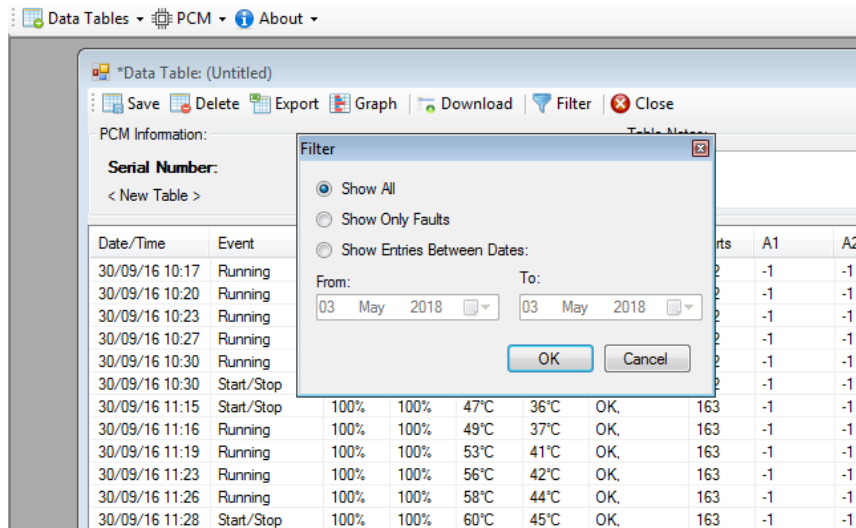
- Areas of interest can be zoomed into by using the cursor to highlight an area.



5. To go back to the original view, click the 'Reset Graph' button on the graph toolbar.
6. Graphs can be printed from the 'Print Graph' button from the graph toolbar.
7. 'Close' in the graph toolbar close the graphing application.

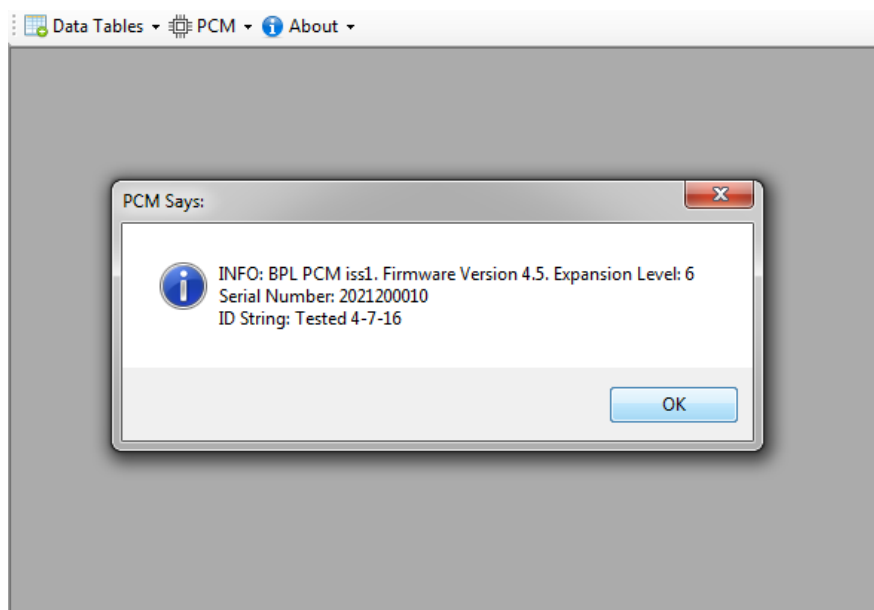
## 7.5 Filtering data

Data can be filtered to reduce the amount of information displayed on the table. Data can be filtered by date or faults.



## Section 8: PCM II Information

Details of the PCM II serial number and software version can be found from the 'PCM' drop-down tab and selecting 'PCM Information'.



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