



USER MANUAL

DataCan Digital Chart Recorder – V2.3.2

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History of Changes

Rev. No.	Date	Pages	Description of Changes
1.0.0	June - 2010	39	Initial Draft
1.1.7	March – 2012	42	Added Reporting Feature
1.2.9	Jan – 2015	6	Boundary point for low pressure test range
1.2.9	Jan – 2015	25,28	Export to Excel and samples generated by application
			Removed driver install section. Update to the latest
2.3.2	March 26, 2020		Chart Recorder software.

1 About This Guide

This document is intended as a supplement to formal training. DataCan is constantly working to improve its products. We must therefore reserve the right to change designs, materials, specifications and prices without notice. DataCan declines any liability that may arise out of the potential inaccuracies in this guide.

This guide assumes that you have some computing and tool knowledge. For more information, contact your local service representative.

www.datacan.ca

info@datacan.ca

We thank you for any feedback or comments that will help us to continue to improve our products and service.

2 Introduction

DataCan Services Corp. provides technology driven downhole measurement solutions that deliver productivity, quality and safety. We design, manufacture and service 200°C plus hybrid platform instruments, patent pending multi-cycle instant close shut-in tools, reservoir management systems and a suite of quartz and piezo-resistive pressure measurement instruments. We offer specialized solutions that will help you improve productivity in your applications.

We are the leader in ultra high temperature circuit design, manufacturing and packaging.

- Our part selection process ensures the best long term reliability is provided.
- Our fully automated surface mount assembly procedures ensure the highest quality circuit is constructed every time with minimal heat impact.
- Our Hybrid design and construction techniques will enable DataCan and its customers to reliably enter the 177°C to 225°C market.
- Our metal to metal seal and fully welded designs prevent potential leaks.

3 Product Description

3.1 Digital Chart Recorder Software

DataCan's digital chart recorder software provides real time graphing and digital recording for DataCan's surface transmitters. The software can be used to create custom graphs of temperature and pressure readouts as well as a text file of the data. The software runs on Windows 7/8/8.1/10.

DataCan digital chart recorder software is designed to be as user friendly as possible while offering features not found on the competition's software.

DataCan's transmitters are designed to provide surface data in real time. With the digital chart recorder software the data from the transmitters is converted into a text file which is saved to the computer. This data can also be graphed in two formats with the digital chart recorder software.

3.2 Pressure and Temperature Transmitters

There are two types of transmitters available; pressure and temperature. Each is available with some variations. Cables for connecting the tools to USB are available in 25, 50, or 100ft lengths.

Pressure transmitters are available for a range of maximum pressure ratings as shown in the table below:

1.25" OD Pressure Transmitter		
Pressure	Temperature	Part No.
750 psi	85°C	101631
1,500 psi		101630
3,000 psi		101629
5,000 psi		101628
10,000 psi		101627
15,000 psi		101626
20,000 psi		101625

Removable connection adapters are available with HF4, 1/2" NPT, or 3/4" NPT connections. Custom connections are available upon request.

Temperature transmitters have a 1/2" NPT connection and are available with a 3" or 6" temperature probe. Custom connections are available upon request.



Pressure Transmitter



Temperature Transmitter

4 DataCan Digital Chart Recorder Software Installation

Each tool shipment comes with a DataCan USB Flash Drive that contains all of the files you need to install the software program and USB drivers.

Before installing DataCan Digital Chart Recorder Software, you should have your computer ready with one of the following operating systems: Windows 7/8/8.1/10.

To install DataCan Digital Chart Recorder Software from the Flash Drive:

- Insert the Flash Drive into a USB Port
- Open the **DataCan Digital Chart Recorder Software** folder.
- Double click the **setup.exe** file to launch the software installation.
- Follow the instructions leading to the completion of the software installation.

New releases are available for download on our website <https://www.datacan.ca/downloads>.

5 Connecting the Tool

Please reference the **Quick Driver Install RevX_X.pdf** user guide on how to install USB drivers.

Once the DataCan Digital Chart Recorder Software and the USB drivers have been installed you are ready to initiate communication with the tool.

Connect the green tool connection end of the DataCan Communication Cable to the transmitter.
Connect the USB end to a receptacle on your computer.



6 Starting a Job

Open DataCan Digital Chart Recorder Software. You will see the main screen which displays a blank circle graph. To begin logging press the green play button shown below.



6.1 Configuring Job Options

The **Job Options** window will appear for the user to fill out. The **Company Information** shown below should be filled out with customer and job information.

The **Scale** section can be filled out with the minimum and maximum pressure and temperatures or left to the default values. Make sure that the scale encompasses all possible values because the graph will not adjust if the data exceeds this scale. Instead the readings will be off the graph.

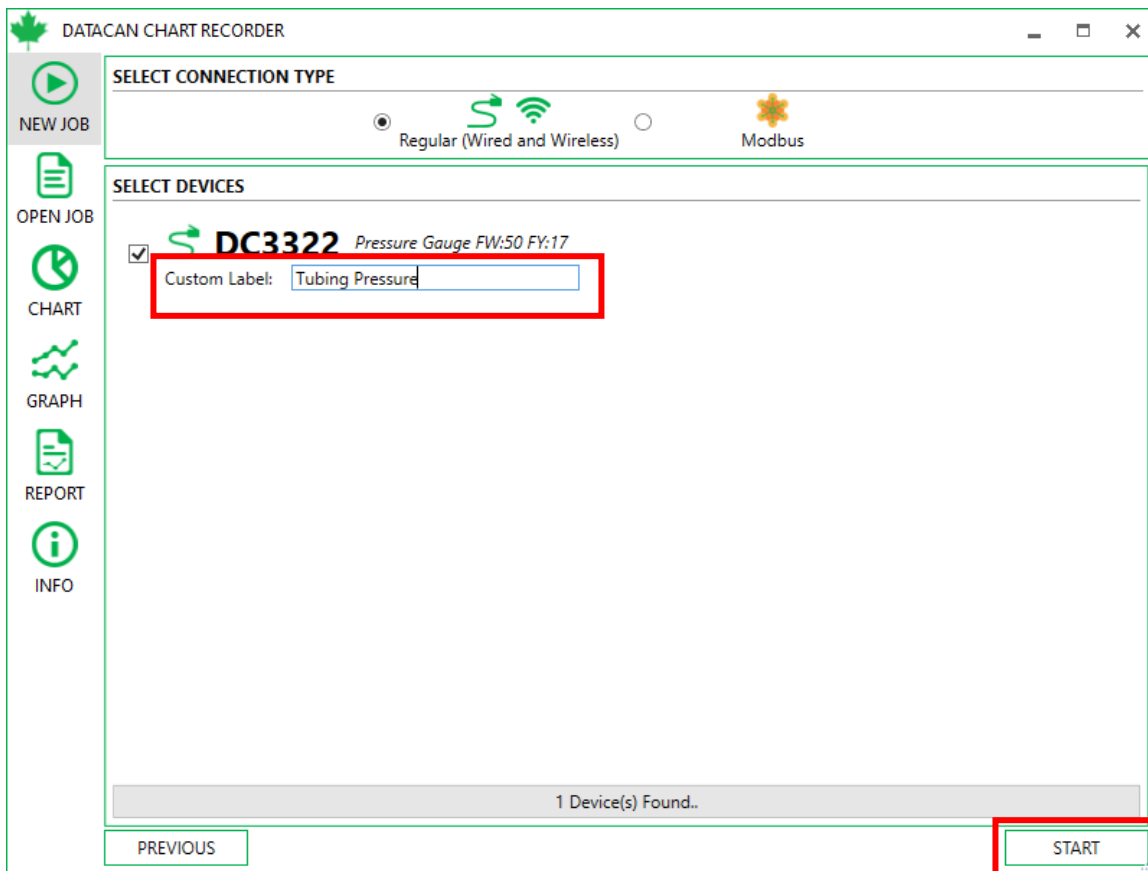
The bottom section, **Options**, allows the user to configure the data output to their specific needs.

- You can change the units of pressure, temperature, and time. As well you can change time between real value, elapsed time or both.
- The Date Format determines how the date will be displayed in the text file generated.
- The Chart Time Frame determines what amount of time will be displayed on the graph. If the transmitter is connected for longer than the initial time frame the graph will automatically update to accommodate it in the increments of time frame. For example, if you choose a time frame of one hour the graph will change to show 2 hours as soon as

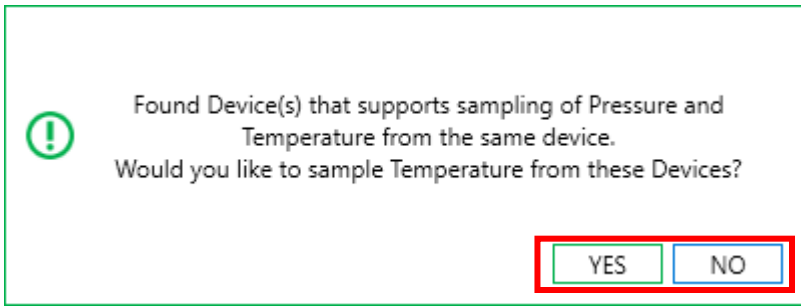
the elapsed time exceeds one hour. Likewise if you choose 24 hours the graph will automatically change to show 48 hours as soon as 24 hours is exceeded.

- Choose a desired sample rate for the transmitter
- The Data Folder is the location where the generated text file will be saved.
- Choose optional Boundary point to designate the low pressure test range if required.

When all the information is filled out, click **NEXT**. The software will then load as it searches for recorder devices. Once that is complete a window will indicate how many devices it has found. Click on the device you would like to log. At this point you can enter a **Custom Label** (like "Tubing Pressure") that will show on the graph legend. Click **START** and the software will begin recording data.



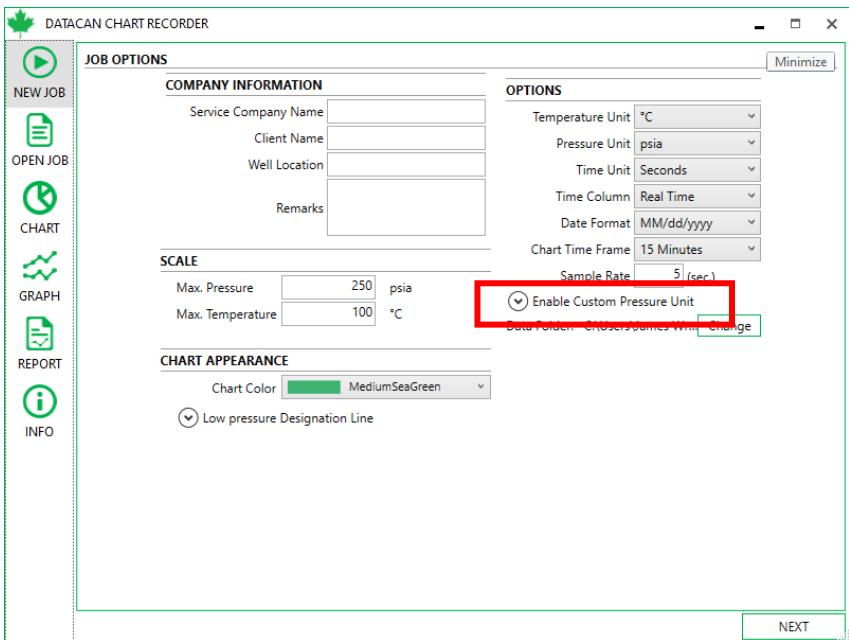
For a pressure and temperature transmitter you will be prompted to answer if you would like to show and log temperature from the transmitter. Choose your choice and the job will start recording.



6.2 Using Custom Units (Example: Force)

Custom Units Mode allows the user to convert data from the pressure into another unit of measure. For instance, pressure readings from a press could be used to calculate the force, using a conversion factor.

This mode can be enabled on the Job Options screen when a recording is started. First, select the **Enable Custom Units Mode** drop-down.



This will bring up the Custom Units selection area, which allows the user to define the units and specify the conversion factor to use. The conversion factor will be applied to the pressure values. The user can use this dialog to test that the conversion factor is correct by entering pressure values (in psi) and converting them to the new unit, or vice-versa.

sample rate [] (sec.)

⬆ Enable Custom Pressure Unit

Unit Definition

Unit Name or Type (ex: Force)
Force

Unit Abbreviation (ex: lbs)
lbs

Conversion Factor (ex: psia *factor = unit)
67.024

Test your conversion factor here

Pressure (in psia)
100

Custom Unit
6702.4

7 Graphs and Sampling Window

DataCan’s digital chart recorder software allows the user to display the data in two different graph formats, as well as in a separate resizable sampling window.

7.1 Circle Graph

The graph that is displayed by default is the circle graph. It records the data as a line which moves clockwise around the graph. The circles represent both the temperature and pressure units. The lines moving from the center of the circles outward represent the time units.

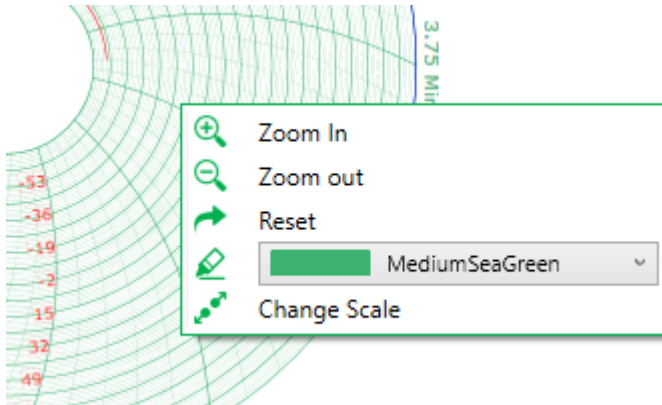
Above the graph there will be a legend showing the serial numbers and the corresponding colors. The numbers in brackets are the real time readings of each tool.

The job information entered by the user is displayed in the top left corner.



7.1.1. Changing Graph Scale

Right clicking on the graph provides the user with two options. **Change Axis Scale** allows the user to alter the maximum and minimum for pressure and temperature on the graph.



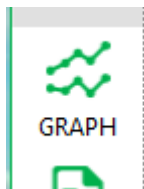
A dialog appears where the user can enter their desired graph scale. Press **Apply** to continue.

Custom Scale	
Min Press:	0 psia
Max Press:	13660 psia
Min Temp:	-70 °C
Max Temp:	100 °C

APPLY CANCEL

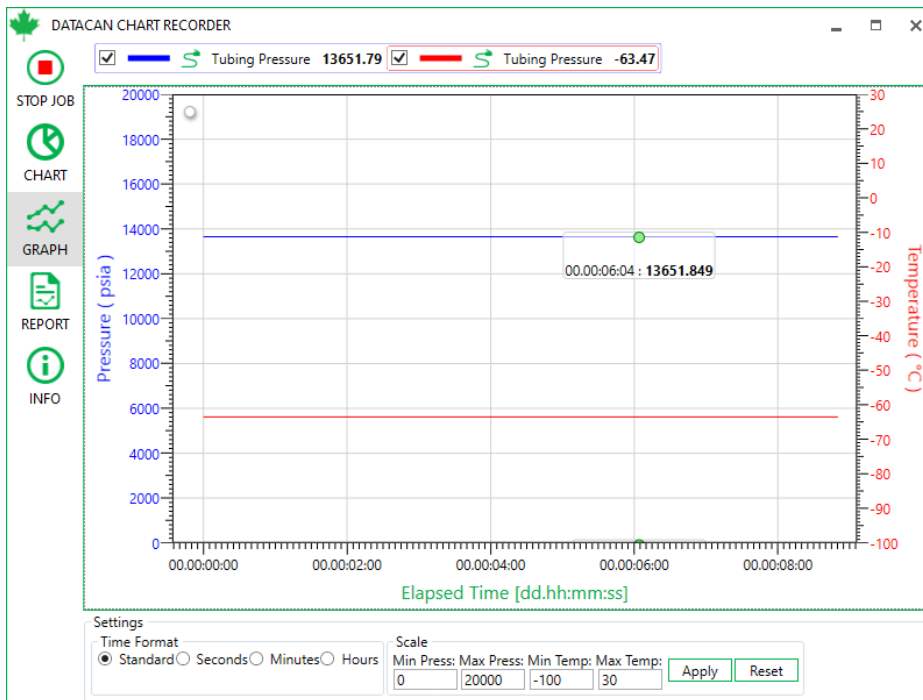
7.2 Line Graph

To change from the circle graph to the line graph the user simply needs to press the graph button in the top right corner. The user can return to circle graph format by pressing the same button.



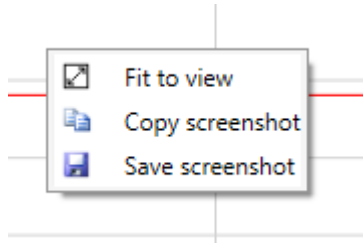


In the line graph the pressure and temperature are displayed on the left and right vertical axis and the time is on the horizontal axis. The same legend that is displayed in the circle graph is displayed here as well.



In this graph format the user has more options available when right clicking the graph:

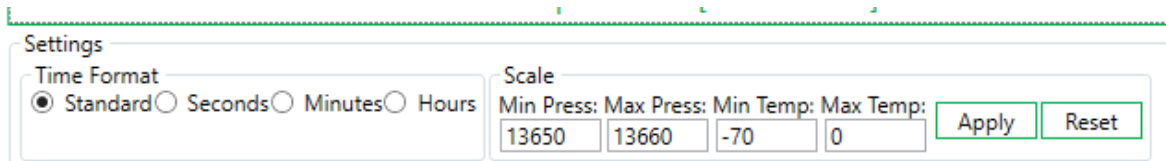
- **Fit to view** puts all of the data from this job on the screen at the same time.
- **Copy screenshot** will copy the graph to the clipboard so it can be pasted into other programs.
- **Save screenshot** allows the user to save the graph to their computer in a number of different formats.



To zoom hold down **Ctrl**, left click the mouse anywhere on the graph and move the mouse in order to zoom or use the scroll wheel to zoom in and out of the screen. To pan left click the mouse anywhere on the graph and move the mouse.

7.1.2. Changing graph scale

At the bottom of the graph window the scale and time format can be modified. Once changed, click **Apply** to apply the settings. The **Reset** button can be used to go back to the default axis scales.

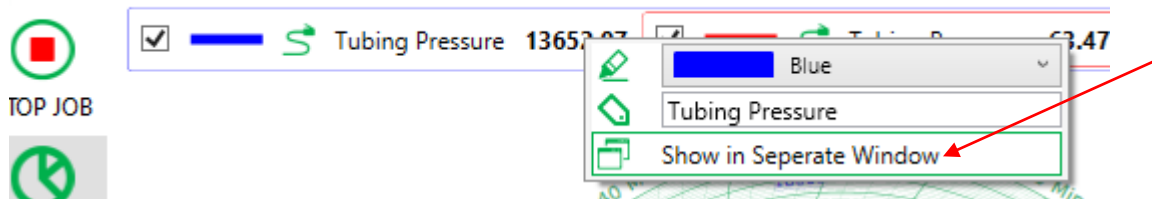


7.3 Sampling Window

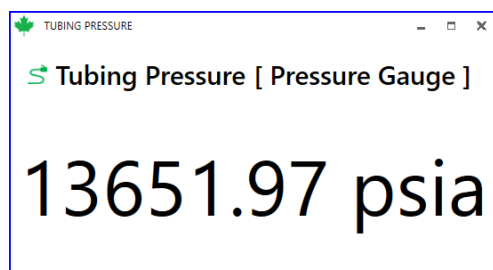
The sampling window provides the user with a view of the most recent sample received from each connected device. The sampling windows will show either pressure or both pressure and temperature together. Right-clicking on the pressure in the legend and clicking **Show in Separate Window** will open the pressure-only window, whereas, right-clicking the temperature

in the legend will either open just temperature (for temperature only transmitters) or both pressure and temperature (for pressure / temperature transmitters).

DATA CAN CHART RECORDER



This will bring up the sampling window.



The sampling window can be moved and resized (or maximized) independently of the main window. This allows the user to see the most recent pressure and temperature readings at a glance.

7.4 Stopping a Job

To stop sampling click the **STOP JOB** button.



Confirm that you would like to stop recording.

! Are you sure you want to stop this job?

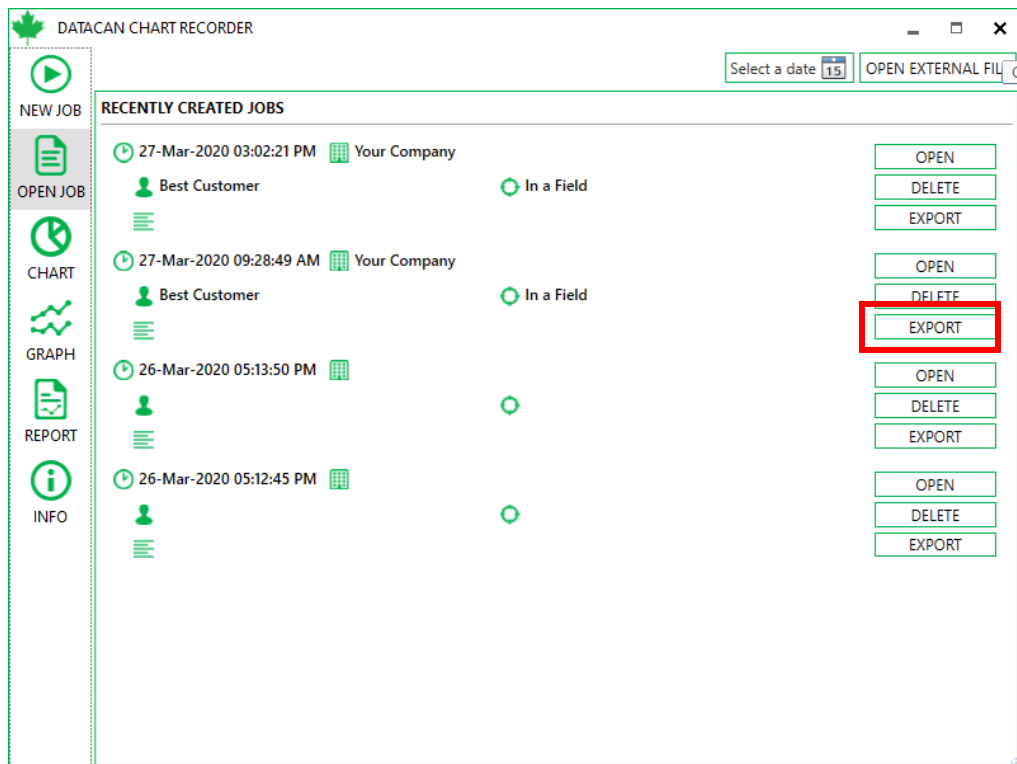
YES NO

8 Importing, Exporting, and Reporting

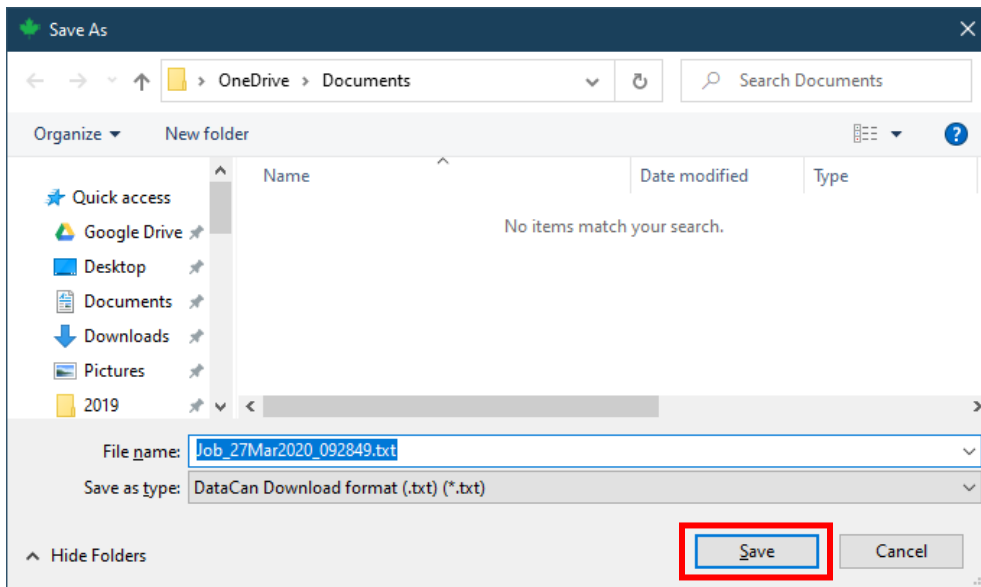
The data is automatically saved to the location that the user input in job information but the graphs can be exported as PDF as well. The text files can also be imported back into the software to create the graphs again.

8.1 Exporting

In order to export the data the user must first stop logging. Click the **OPEN JOB** button on the left and the following screen appears.

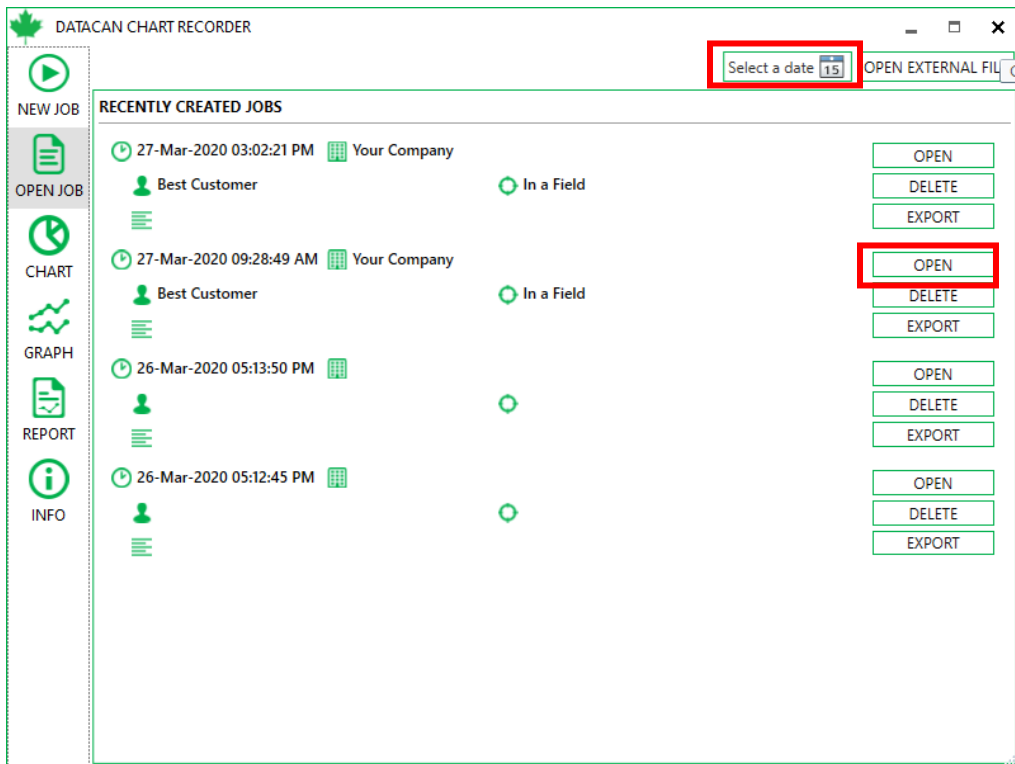


Select the job that you would like to export and click the **EXPORT** button on the right-hand side of the window for that job. In the file dialog that appears, navigate to the folder you would like to save the file to, optionally change the file name, and click **Save**.



8.2 Opening an existing log from this computer

All data logged from this computer are stored in a database on this computer. By clicking the **OPEN JOB** button all jobs stored on this computer will be listed. Click the **OPEN** button to the right of the job you would like to open to be graphed or to print a report. If there are too many jobs listed to easily scroll, you can use the **Select a date** option and choose a specific date for which you would like jobs to be listed.

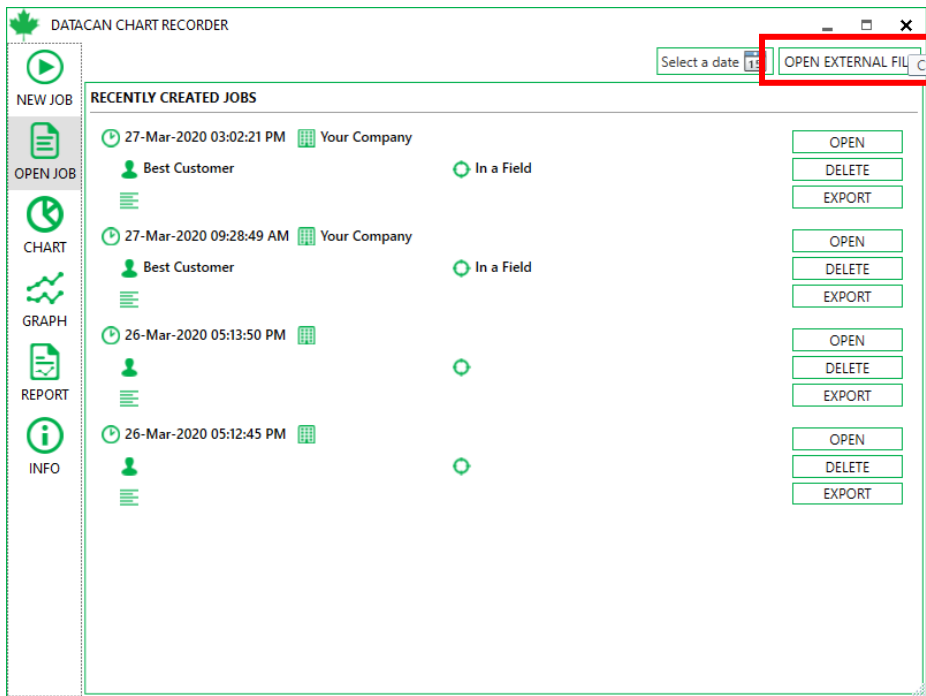


The job will then be displayed on the circle graph.

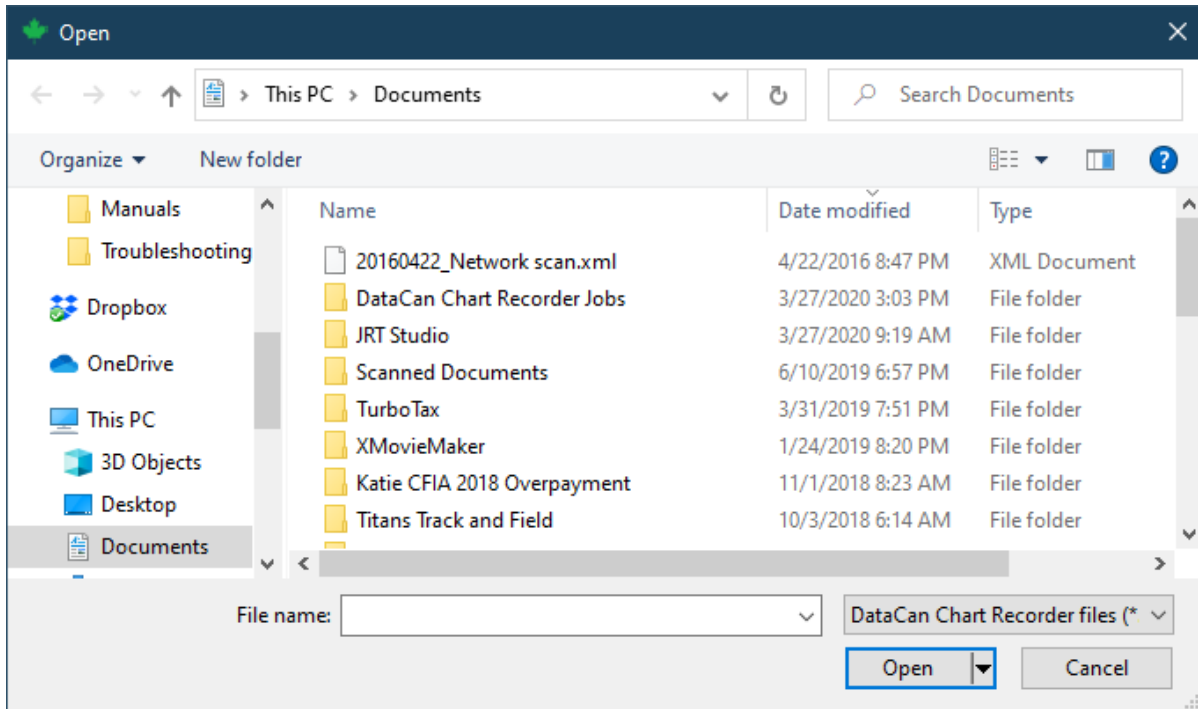


8.3 Importing (Open external file)

Existing text data files can be imported to be displayed in the graph. In the **OPEN JOB** screen click on the **OPEN EXTERNAL FILE BUTTON**.



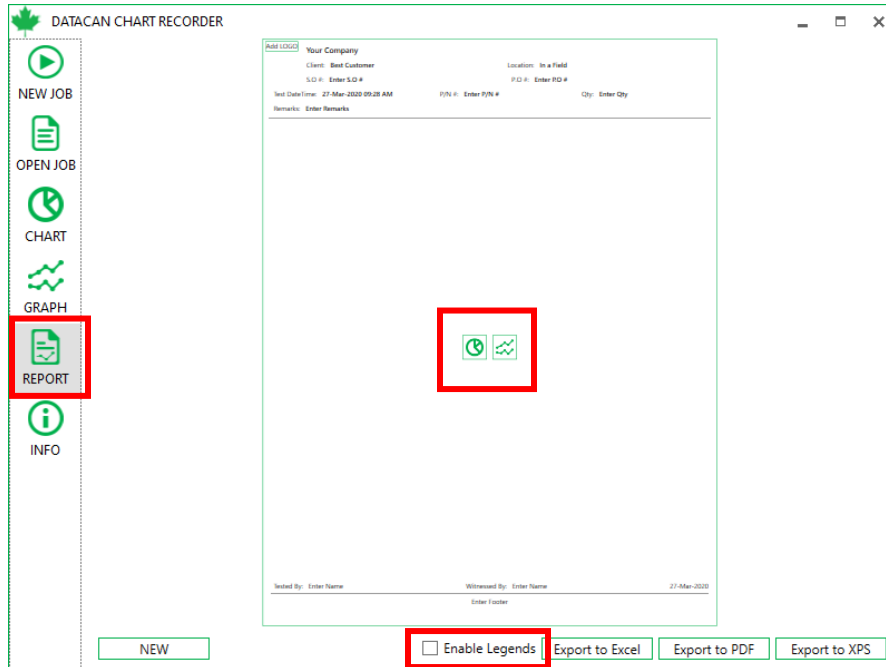
An open file dialog appears. Navigate to the folder where your .xml or .txt file is stored. The file type that is being looked for can be changed at the bottom-right of the dialog.



Select the file you would like to graph and click **Open**.

8.4 Generating Reports

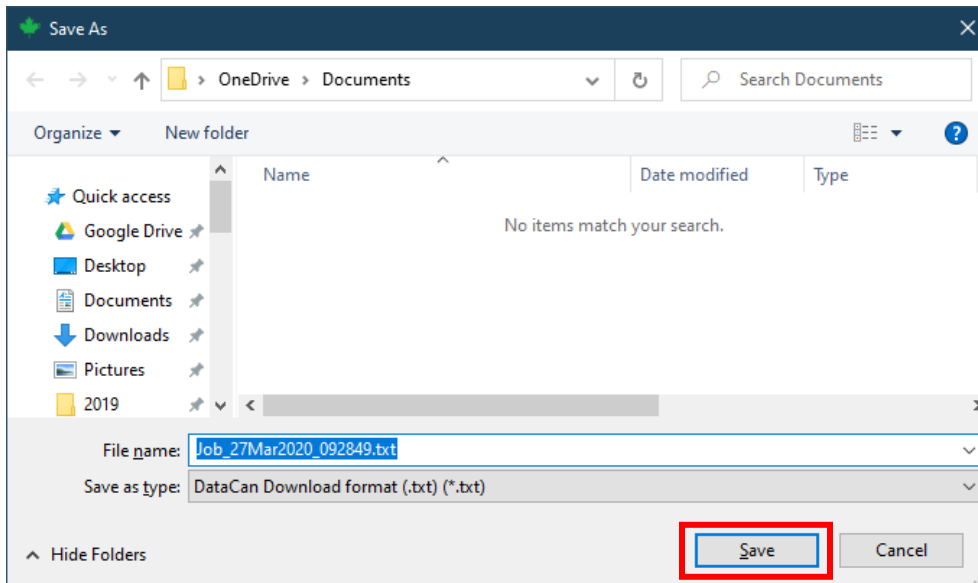
To generate a report that can be printed or e-mailed, data must first be loaded into either the **CHART** or **GRAPH**. Click the **REPORT** button. In this dialog, choose whether to show a circle or standard line graph by clicking one of the two icons in the middle of the report. At the bottom of the screen you can choose to show the legend by checking the **Enable Legends** checkbox.



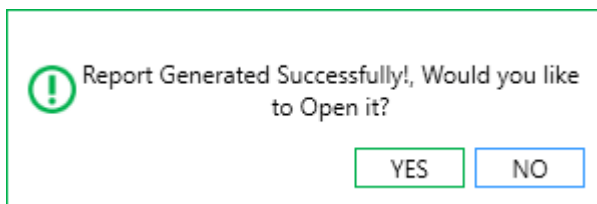
Once the report looks the way you would like it to, click one of the export options to export it to a file (which can be printed).



In the file dialog that appears, navigate to the folder you would like to save the file to, optionally change the file name, and click **Save**.

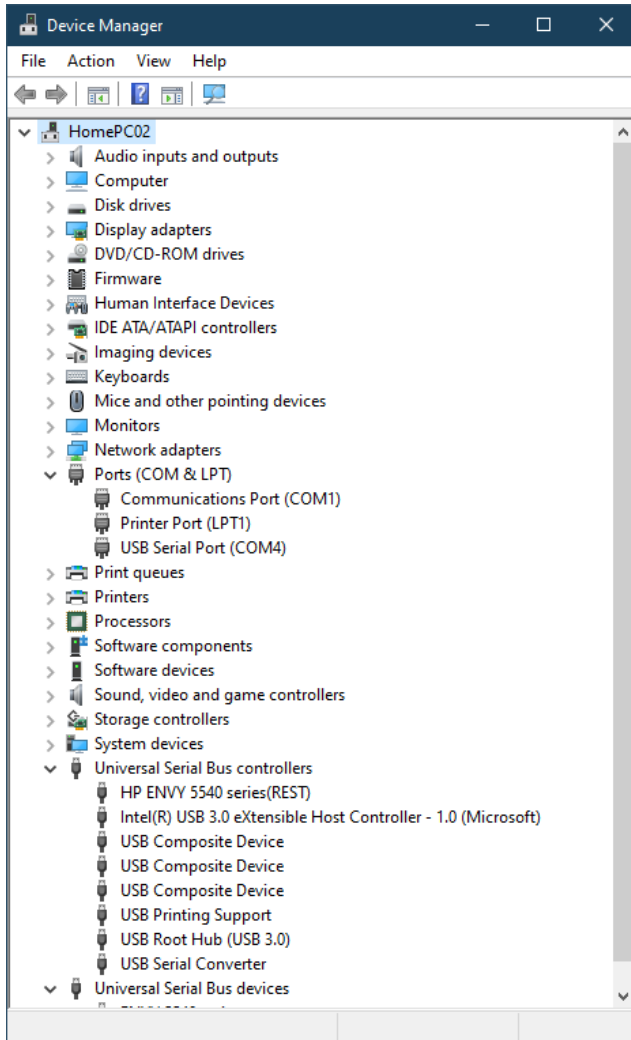


A dialog will appear asking if you would like to open the created report. Choose **YES** or **NO**.



9 Troubleshooting

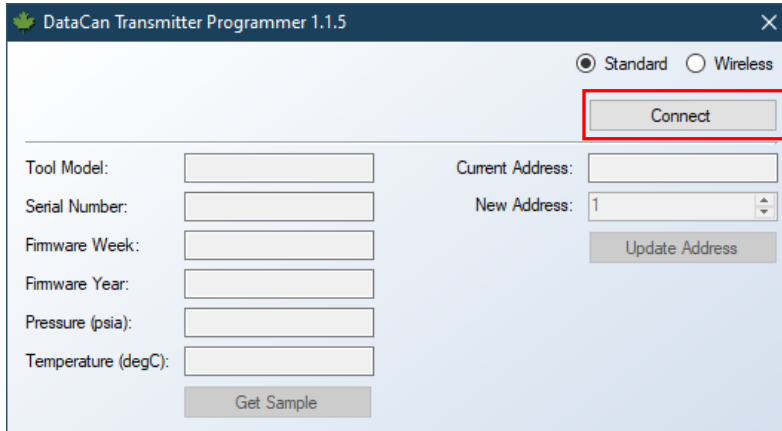
9.1 Check drivers



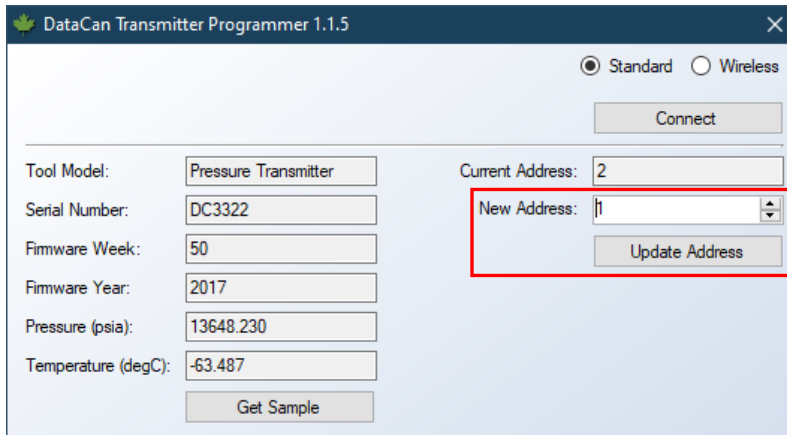
9.2 Check the transmitter address

The Chart Recorder requires that each transmitter be on its own USB cable and have an address of 1. Since transmitters are often used for other applications that require addresses other than 1 to be used it may be necessary to change the address. To do so connect the transmitter to the

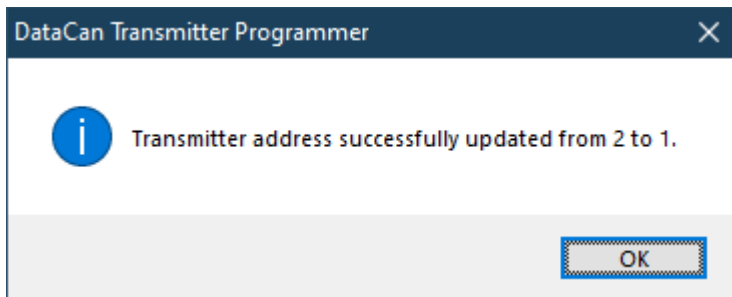
USB cable and the USB cable to your computer. Run the **DataCan Transmitter Programmer** software. Click **Connect** to find your transmitter.



Change the **New Address** field to the address you would like to use (for the Chart Recorder software this must be 1) and press the **Update Address** button.

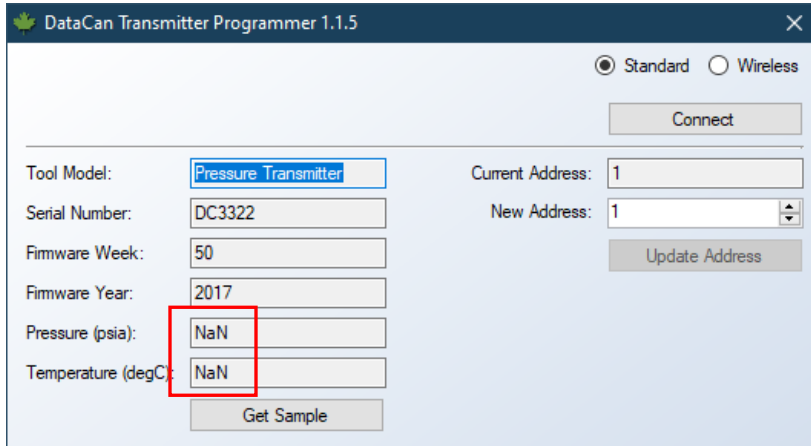


Once the process is complete (should take only a second or two) the following pop-up window will appear. Click **OK** and close the software.

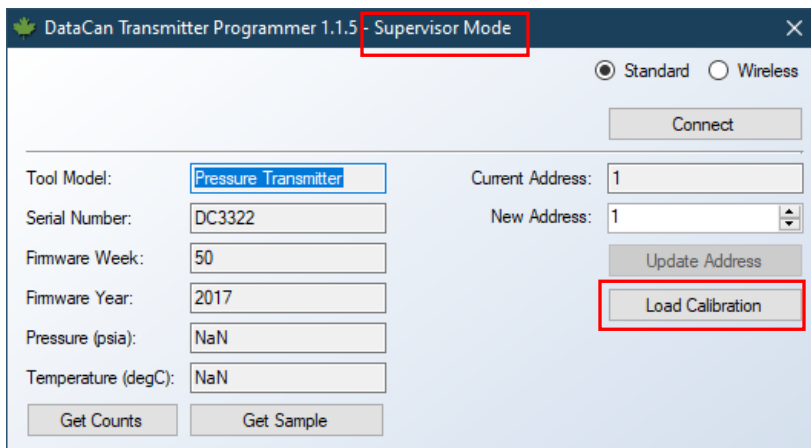


9.3 Update calibration files

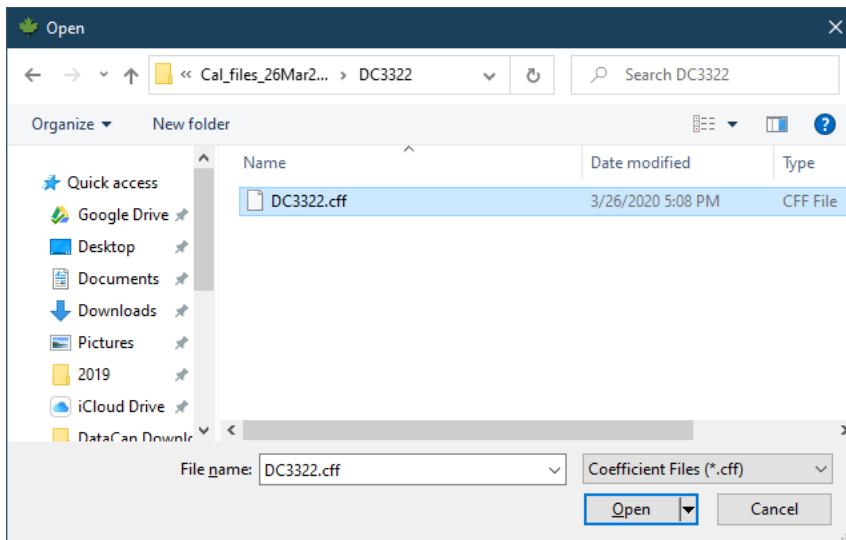
If upon connecting the transmitter either shows **NaN** or has out-of-date calibration files when newer calibration files are available, use the following procedure.



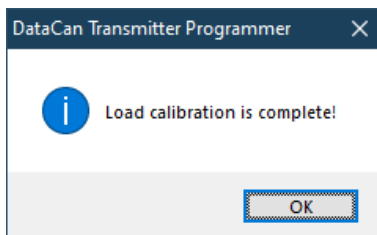
On your keyboard press **CTRL+SHIFT+D** to enter **Supervisor Mode**. Press the **Load Calibration** button.



Navigate to the calibration files using the file browser that pops up. Either double-click on the calibration file or select the file and click the **Open** button.



The following window should appear showing that the process was successful.



9.4 Still not working

The transmitters can have their firmware changed to switch between two communication protocols: Modbus and JamesBus. Please contact DataCan if you need to switch your transmitter between the two communication protocols.

If it is still not working please return your transmitter to DataCan for diagnostics and repair.