

RPM Plugin - User Documentation

1. Getting the Source Code and the Built Libraries

The source code and the built libraries can be downloaded from:

<https://github.com/ArcNI/FlexLogger-RPM-Plugin>

There are separate folders by the name Source Code and RPM Measurement for the source code and the built libraries.

The software versions used for building the code are:

- LabVIEW 2020 64-bit
- FlexLogger Plugin Development Kit 1.3

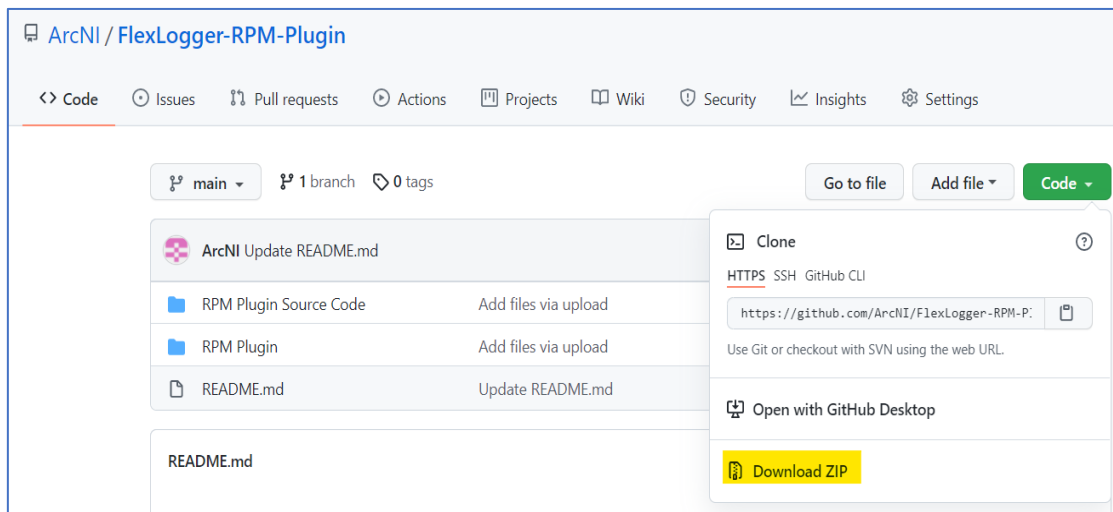


Figure 1 Download the Plugin as a zip file

This code is being shared under the [NI Sample Code License](#)

2. Installing the Plugin

Unzip the zip file and copy the folder RPM Plugin to:

C:\Users\Public\Documents\National Instruments\FlexLogger\Plugins\IOPlugins

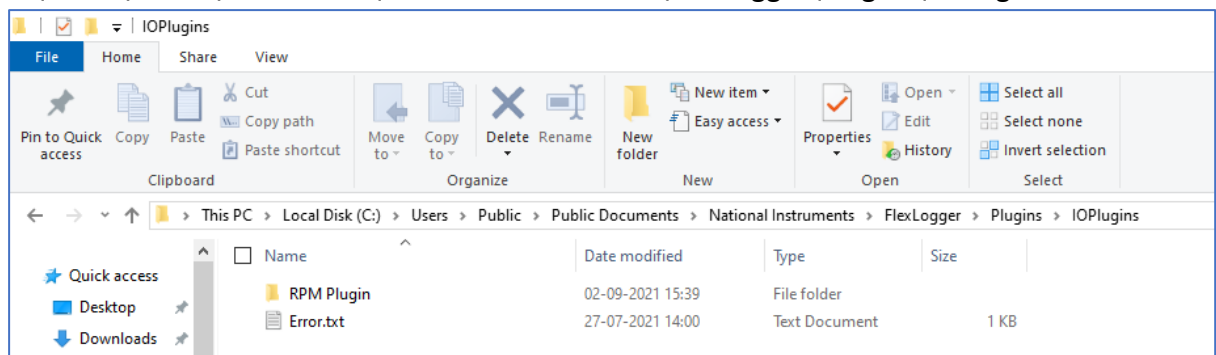


Figure 2 Copy the plugin in the correct folder

3. Launching and Adding the Plugin in FlexLogger

- Launch NI FlexLogger
- Open a Data Logging Project
- Go to Add Channels Dropdown on the Top, select Plugin → RPM Plugin

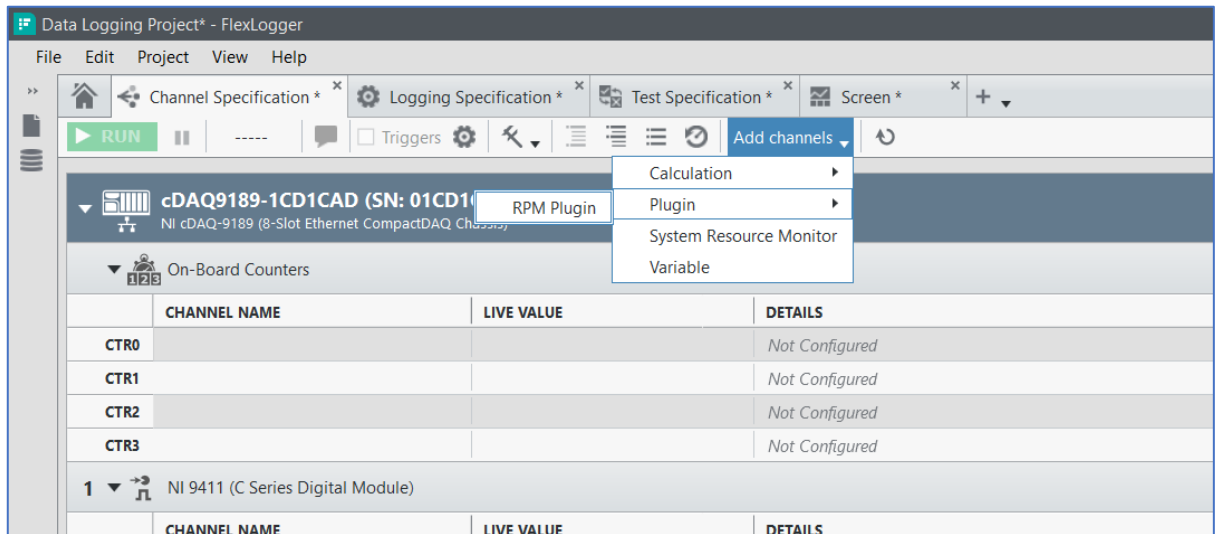


Figure 3 Add Plugin into the Project

4. Configuring the Plugin

Go to the plugin settings using the Configure button on the right

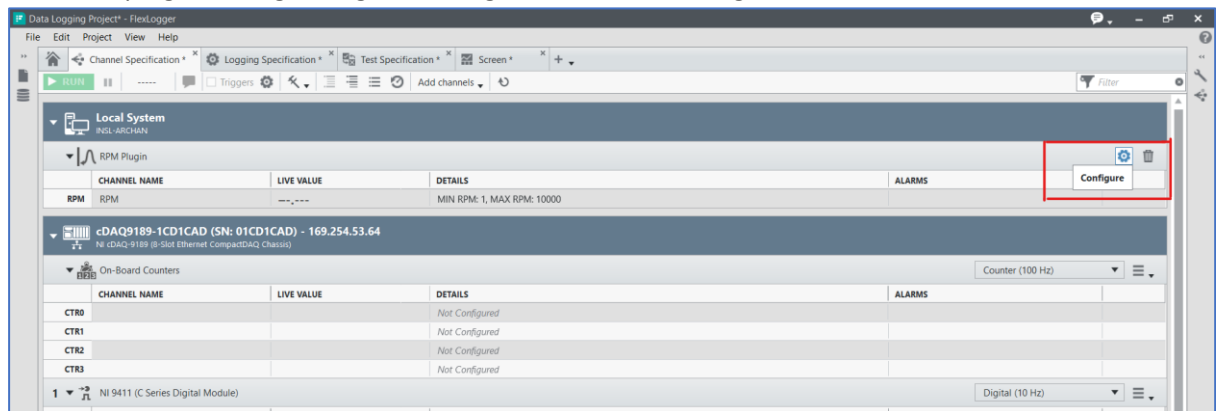
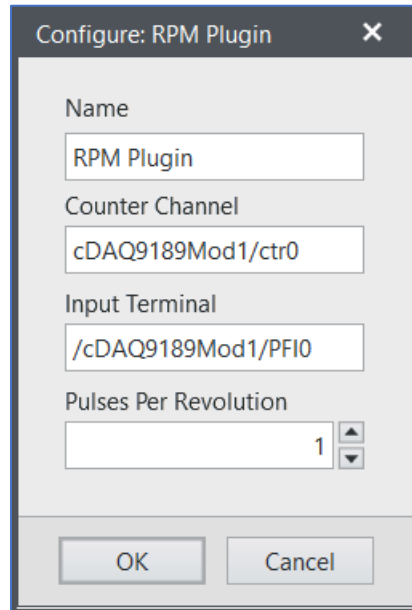


Figure 4 Configure the Plugin

This should open a Window looking like below:



The 'Configure: RPM Plugin' dialog box contains the following fields and controls:

- Name:** A text box containing 'RPM Plugin'.
- Counter Channel:** A text box containing 'cDAQ9189Mod1/ctr0'.
- Input Terminal:** A text box containing '/cDAQ9189Mod1/PFI0'.
- Pulses Per Revolution:** A numeric spinner box set to '1'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

Figure 5 Configuring Plugin Parameters

There are 4 parameters to Configure:

- **Name:** Represents the name of the Plugin. You can set any value that you like here
- **Counter Channel:** In this parameter, you need to enter the value of the Counter Channel you are using. This name is composed of 2 parts:
 - **Device Name:** Needs to be checked in NI MAX. Use the device name of the device on which you are connecting your sensor. For e.g., as per the snapshot below, the device name is cDAQ9189Mod1

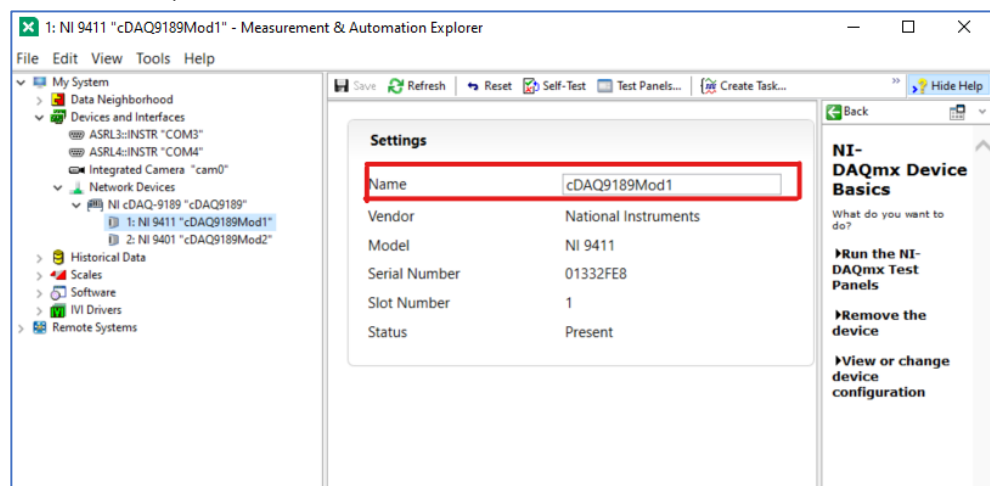


Figure 6 Checking for the device name in NI MAX

- **Counter Channel Name:** This needs to be picked up from the device pinouts. Follow the steps below:
 - Go to NI MAX → Right click on the device and select Device Pinouts

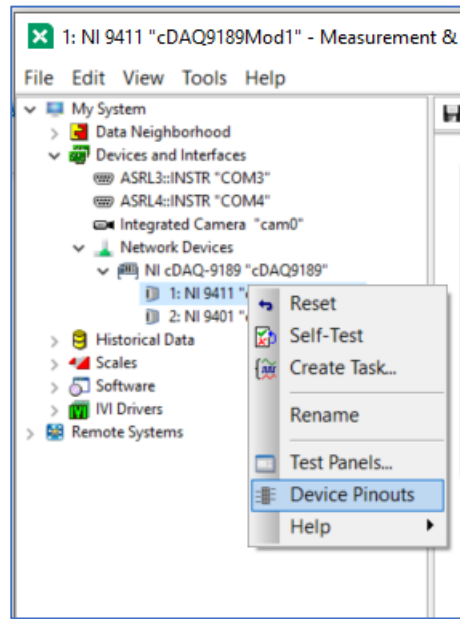
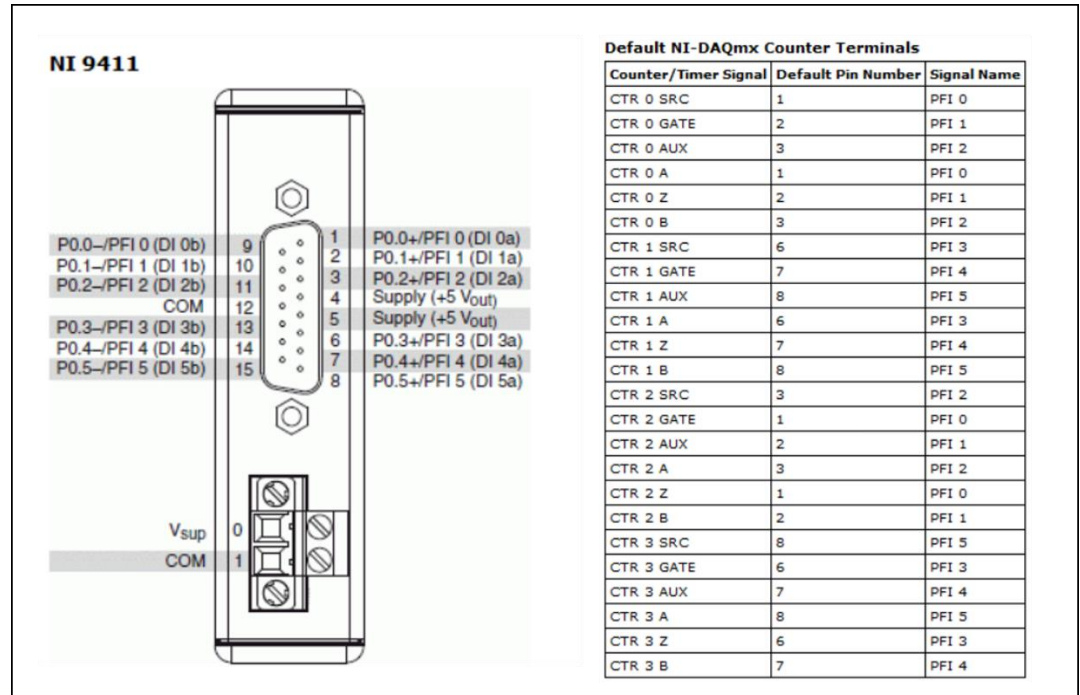


Figure 7 Open Device Pinouts

- Once Device Pinouts open, based on the channel to which you are connecting your sensor, figure out the counter number. For e.g., let us say that we want to use counter 0 (CTR 0) for our measurement, then as per the table, we will have to connect our sensor to CTR 0 SRC (Counter 0 Source) which is pin 1 with a signal name PFIO. Take a note of these pins as we will require it for our next setting.

Hence, in this case, our Counter Channel will be ctr0



In this example, merging the device name and the counter name, we get the Counter Channel name as <device name>/<counter name> i.e., cDAQ9189Mod1/ctr0

- **Input Terminal:** Input terminal specifies the pin on which you have connected the signal. As explained in the example above, we had connected our signal to CTR 0 SRC (pin 1) with a Signal name as PFI 0. Hence for input terminal, we will have to give the name as /<device name>/<signal name of the pin where you have connected the signal>. For this example, it will be /cDAQ9189Mod1/PFI0
- **Pulses Per Revolution:** In this parameter, we will have to specify the number of pulses per revolution coming from the sensor.

Once these settings are done, click on OK.

Important Consideration: Since this plugin internally is using the same counters on the chassis as well as the same channels on the NI 9411, please make sure not to configure these channels in the main FlexLogger interface

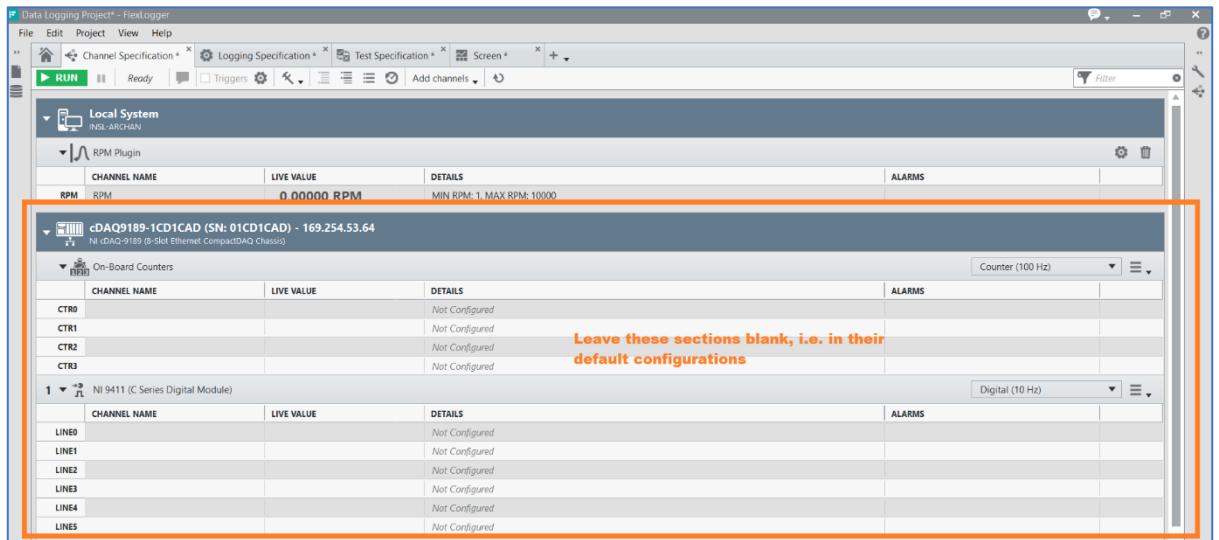


Figure 8 Don't configure the On-Board Counters and the NI 9411 sections

5. Configure the Plugin Channel

Click on the configure button on the Plugin Channel

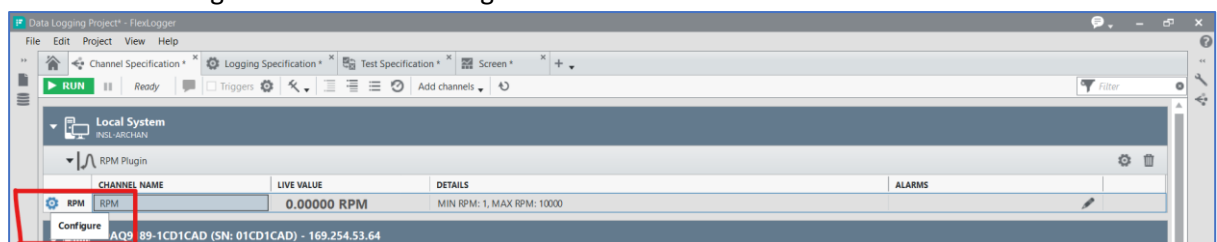


Figure 9 Configure the Plugin Channel Parameters

This should open a window where you can set the Minimum and Maximum RPM expected. The Min RPM should be greater than 0.16667

Once you make these settings, the RPM should start showing up in FlexLogger