
ABB TotalFlow Enhanced Master v2.00+ Driver

Information Sheet for Crimson v3.0+

Compatible Devices

- ABB TotalFlow XSeries Flow Computers

Verified Devices

- TotalFlow XRC^{G4}

Overview

The enhanced TotalFlow driver provides easier configuration and more precise control over the communication with a TotalFlow device. It improves performance and introduces the ability to configure periodic polling in order to reduce the processing load of the TotalFlow device.

Device Configuration

Serial Communications

PCCU Settings:

In the Entry setup in PCCU32, under Communications, configure the TotalFlow device to use the TotalFlow Remote protocol. Make a note of the baud rate, data bits, stop bits, and parity settings, as the equivalent settings must match when configuring the driver in Crimson 3.0. If using RS-485, also make note of the Unkey Delay found under the advanced tab in the COM port settings.

Crimson 3.0 Settings:

Select a desired Serial port, and then use the "Pick..." button to launch a dialog to select the driver. The enhanced TotalFlow driver is found under Manufacturer ABB; the driver is named TotalFlow Enhanced Master.

If communicating over 2-Wire RS-485, be sure to set the Unkey Delay setting for the device. For best results, this value should be set about 10 milliseconds longer than the Unkey Delay in PCCU32. For example, if the Unkey Delay in PCCU32 is set to 40 milliseconds, it should be set to 50 milliseconds in Crimson 3.0.

Ethernet Communications

PCCU Settings:

In the Entry Setup in PCCU32, under Communications, set up the TotalFlow device to use the TotalFlow TCP protocol. Make a note of the TotalFlow device's IP address and the port number for the TotalFlow TCP protocol.

Crimson 3.0 Settings:

Select a desired Network port, and then use the "Pick..." button to launch the Driver Picker Dialog. The enhanced TotalFlow driver is found under Manufacturer ABB, and the driver is named TotalFlow Enhanced Master.

Under the device settings, configure the IP address and TCP port to match those of the TotalFlow device.

General Device Settings:

These settings apply equally to Ethernet and serial communications.

- Identifier – this should be set to the Station ID for the target TotalFlow device.
- Passcode – this is the passcode to log onto the TotalFlow device. Note that there are two levels of passcodes, if the level 1 passcode is entered, Crimson 3.0 will only have read-only access. If the level 2 passcode is used, Crimson 3.0 will have full read and write access.
- XRC String Size – set the size of strings, based on the type of TotalFlow device used. If using an XRC G3, select that option from the drop down box. Otherwise, use the XRC G4 setting.
- Data Update Period – this option selects how frequently Crimson 3.0 will poll the TotalFlow device for data. Any setting from 0.5 to 60 seconds can be used. It will request all configured data in as few requests as possible. The period can be increased to reduce the CPU load on the TotalFlow device.
- Link Establishment – set the number of frames to be sent while establishing the link.
- Reply Timeout – set how long to wait for a reply before abandoning a request.

Accessing Data

Managing Applications

For convenience, Crimson 3.0 provides a method of associating a TotalFlow application name with its application number when "Use Device Configured Application Numbers" is enabled. This makes it easier to map tags to applications without having to constantly check PCCU32 to determine which number goes to which application.

Applications are managed by Configure, Import, and Export Applications links found under the device options in Crimson 3.0. Applications are configured by clicking the Configure Applications link, which will show a new dialog. To associate an application number with its name, type a name into the Application Name box, and select a number that corresponds with the Application's number in PCCU. Then click the add button to add the association to the list. An association can be removed by highlighting it in the list and clicking the Remove button.

A list of application associations can be exported to a CSV file with the Export Applications link. This will prompt a new dialog to choose the name and location for the exported file. These can later be imported into other databases by clicking the Import Applications link and navigating to the file.

Application number editing is now available in the TotalFlow Enhanced driver v2.10+. This will allow changes in the Application Number to be applied to all tags mapped to the TotalFlow device in Crimson 3.0. Since Application Names will be used in mappings, please ensure that Application Names are unique.

Mapping Tags

From the Data Tags pane in Crimson 3.0, create a tag of the desired type. Then select the configured TotalFlow device from the Data Source drop-down box. A new dialog will appear.

If you have previously configured application names, the App Name drop-down box will be populated. Click the drop-down box and select the desired application name. This will automatically fill in the corresponding application number in the App box. Then, enter the desired Array and Register in the corresponding boxes. Select the type of the register from the Type drop-down box, and click OK when done.

If no applications have been configured, you can simply type in the desired application number, array, and register, select the type and click OK.

Rebuild Register List

The Rebuild Register List is an action that has been provided within the Register Management area of the TotalFlow Device Options in Crimson 3.0. This action forces the internal register list to be deleted and rebuilt. It is most useful in optimizing communications in databases where many tags may have been deleted.

Upgrading From Previous Driver Versions

Databases that contain mappings to ABB strings and were created using a version earlier than v2.10 of the TotalFlow Enhanced driver must perform the Rebuild Register List action to allow access to strings more than 32 characters in length.

Cable Information

Standard Ethernet cable for Ethernet Devices.

RS-232 Communications:

Red Lion Unit	TotalFlow
2 – Rx	9 – TXD
3 – COMM	2 – GND
5 – Tx	7 – RXD

RS-485 2-Wire Communications:

Red Lion Unit	TotalFlow
1 – TxB	6, 7 – BUS-
2 – TxA	8, 9 – BUS+
6 – COMM	2 – GND

Revision History

11/3/2014 – Created.

2/12/2015 – Updated for revised UI.

4/17/2015 – Updated with Unkey Delay settings.

6/16/2015 – Added general and editing notes to Managing Applicatons.

6/16/2015 – Added Rebuild Register List and Upgrading notes.