

# ABB TotalFlow Enhanced v3.00+ Communications Drivers

## Information Sheet for Crimson v3.0+

### Compatible Devices

ABB TotalFlow devices equipped with a serial or Ethernet port supporting ABB's TotalFlow Protocol Specification.

### Verified Device

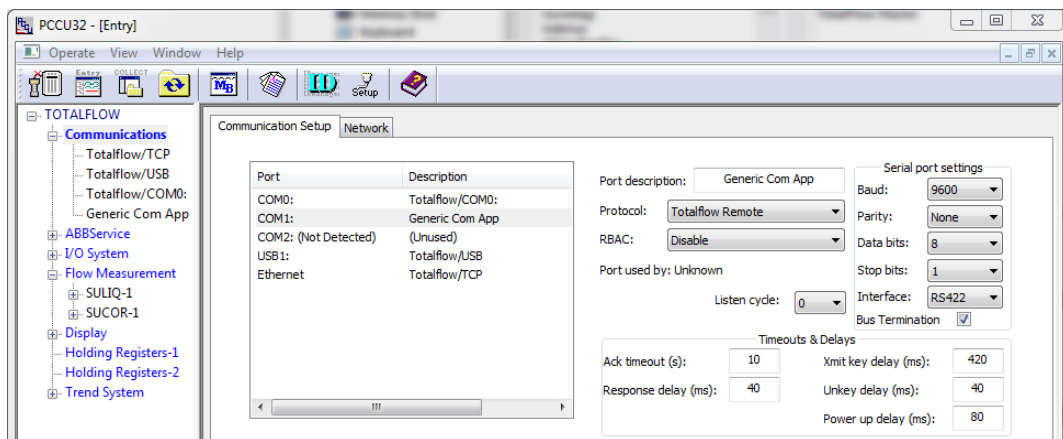
RMC-100-01  
 XRC G4 2104446-005

### Overview

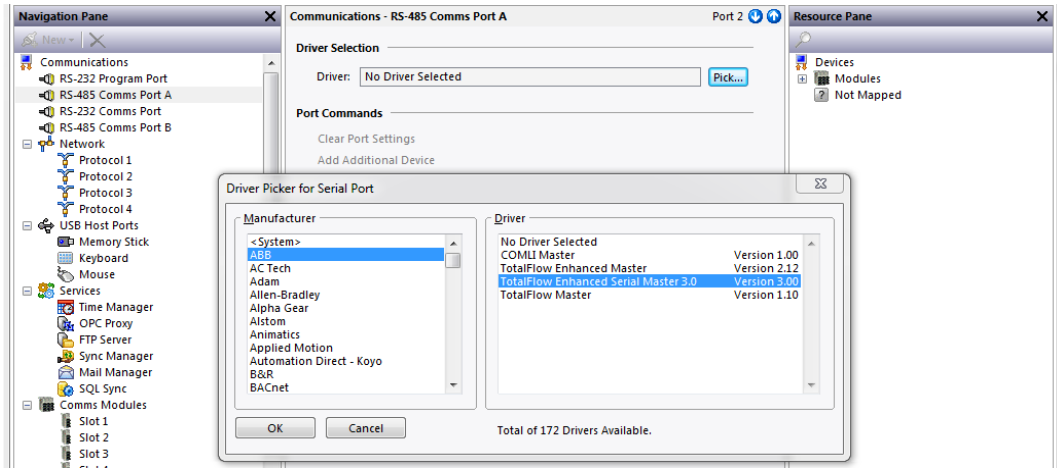
Red Lion's Enhanced v3.0 communication drivers provides ABB TotalFlow data access with the ability to use data arrays.

### Serial Port Configuration

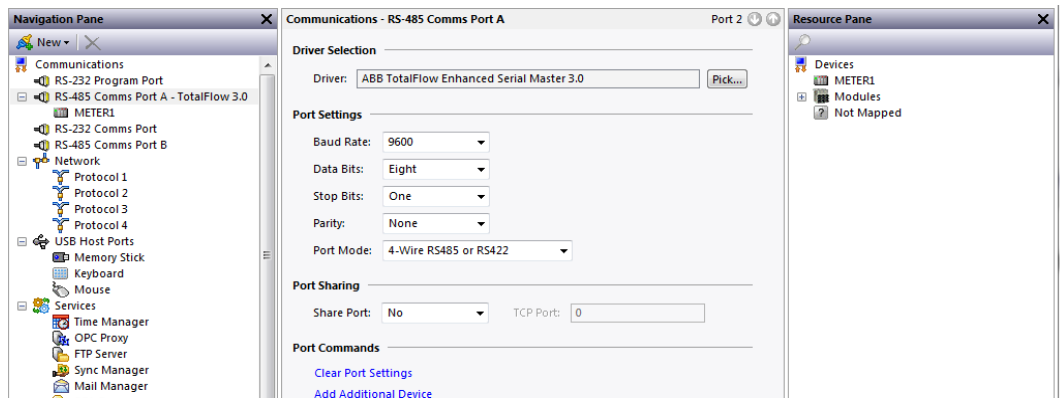
Using ABB's PCCU32 software connect to the ABB TotalFlow device and click on the Entry Setup button. Select the Communications item in the tree then click on the desired Port in the Communication Setup tab. Choose the Totalflow Remote protocol as shown below.



In Crimson's Communications category select the desired serial port in the Communications tree and click on the Pick... button.



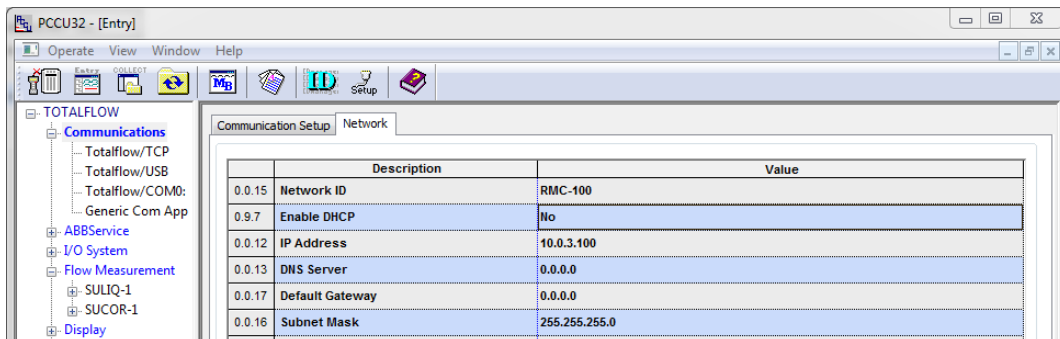
Find the ABB TotalFlow Enhanced Serial Master 3.0 communications driver as shown above and click OK.



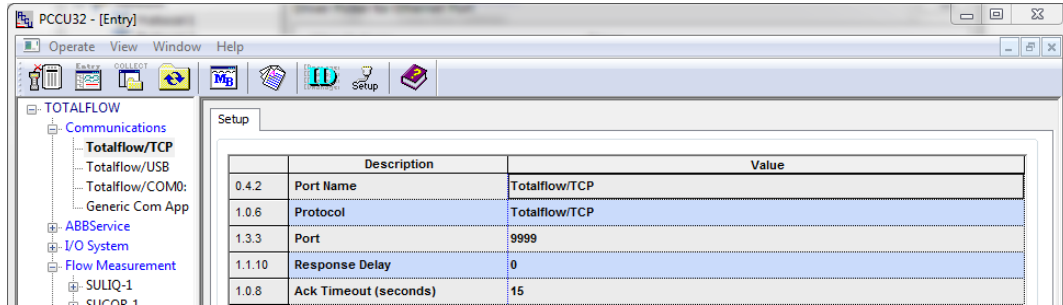
Modify the Baud Rate, Data Bits, Stop Bits, Parity and Port Mode settings such that it mirrors the port settings in the PCCU32 software.

## Ethernet Port Configuration

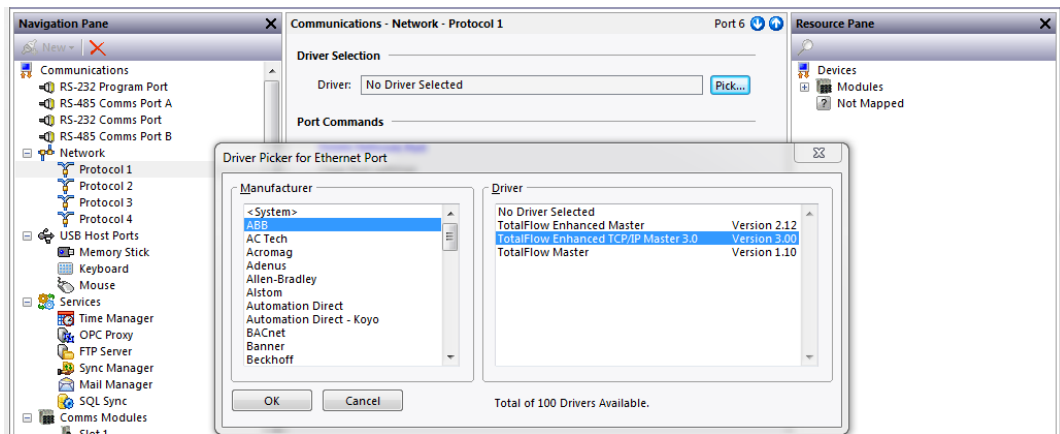
Using ABB's PCCU32 software connect to the ABB TotalFlow device and click on the Entry Setup button. Select the Communications item in the tree then click on the Network tab. Configure the Network parameters as needed for the application.



Next click on the Totalflow/TCP item in the Communications tree. Take note of the Port setting. This setting may be modified dependent of the application.

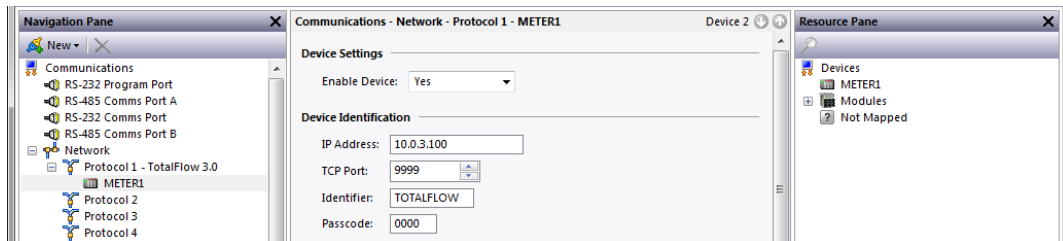


In Crimson's Communications category select an available protocol in the Network element of the Communications tree and click on the Pick... button.



Find the ABB TotalFlow Enhanced TCP/IP Master 3.0 communications driver as shown above and click OK.

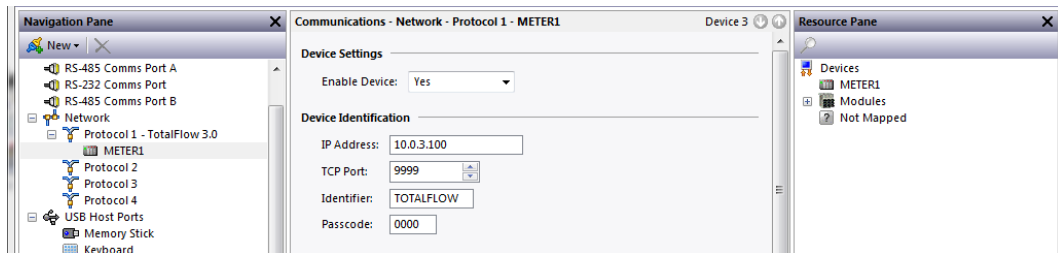
Next select the METER device and configure the IP Address and the TCP Port such that it matches the IP Address and the Port number in PCCU32 configuration respectively.



Also ensure that the Red Lion device's Ethernet Port Settings are configured – please refer to the **NETWORK CONFIGURATION** section within the Crimson manual.

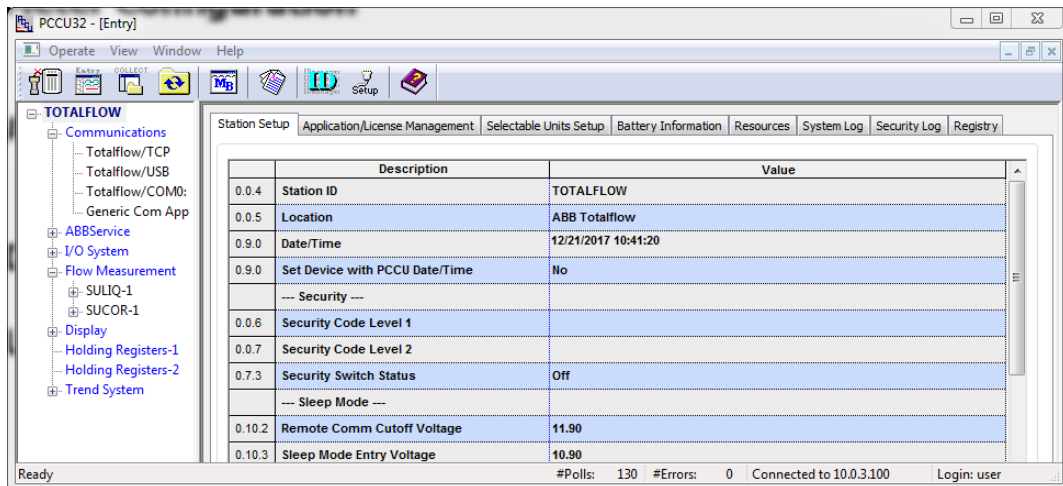
## Device Identification Settings

In Crimson select the METER device in the Communications tree.



Modify the Identifier field equivalent to the setting in PCCU32 shown as the Station ID.

The Passcode corresponds to Security Code Level 1 and 2 in PCCU32, where Level 1 is read only and Level 2 is read/write access. Note, a Passcode of "0000" in Crimson corresponds to a non-configured setting in both Security Code Level 1 and 2.



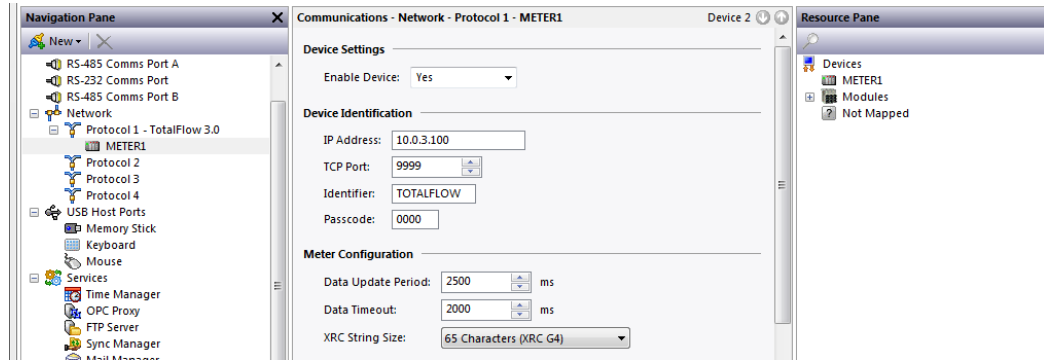
## Meter Configuration

Select the appropriate settings for the Data Update Period, Data Timeout and XRC String Size as explained below. The default settings are shown in the image below.

**Data Update Period** – This setting determines the polling interval (in milliseconds) the Red Lion device will request all required data in the most efficient manner from the target device. This period may be tuned for each application, decreasing for faster data acquisition and increasing to reduce CPU load of the ABB device.

Data Timeout – Indicate the amount of time in milliseconds that data will be considered valid after an update. This setting should be set to a value less than the Data Update Period.

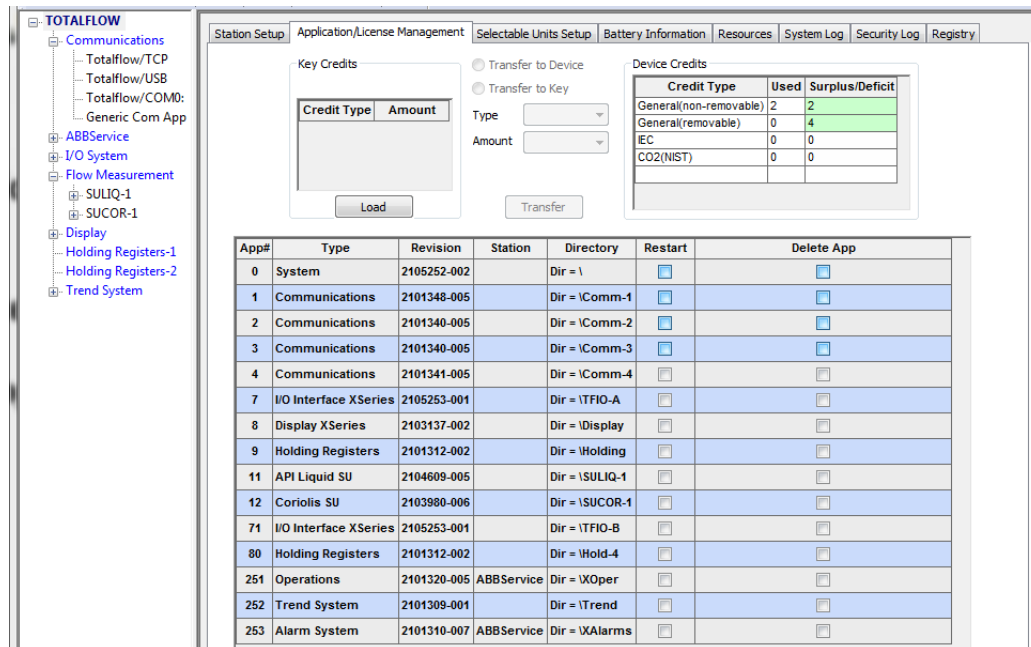
XRC String Size – Indicate the string size used in the ABB target device. If not using an XRC G3 select the 65 Characters (XRC G4) setting.



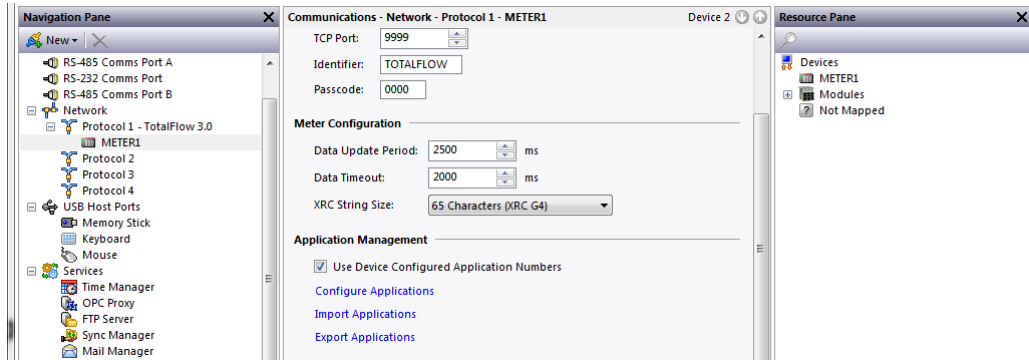
## Application Management

An application manager is provided for each meter configuration as a means to associate an application name with an application number for ease of database configuration and readability.

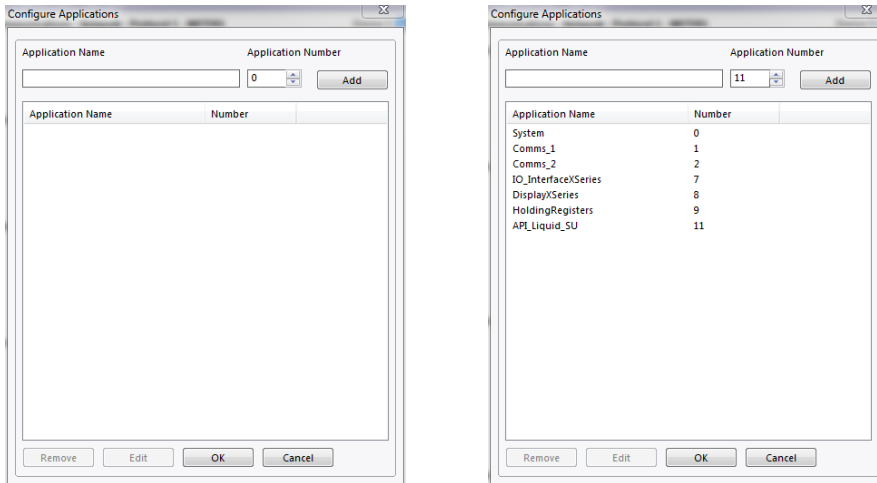
The TotalFlow applications available can be viewed. In ABB's PCCU32 software connect to the ABB TotalFlow device and click on the Entry Setup button. Select the top level of the tree and click on the Applications/License Management tab.



In Crimson select the METER device in the Communications tree then activate the Use Device Configured Application Numbers check box.



Application associations can be entered by clicking on the Configure Applications link which will show the following dialog.

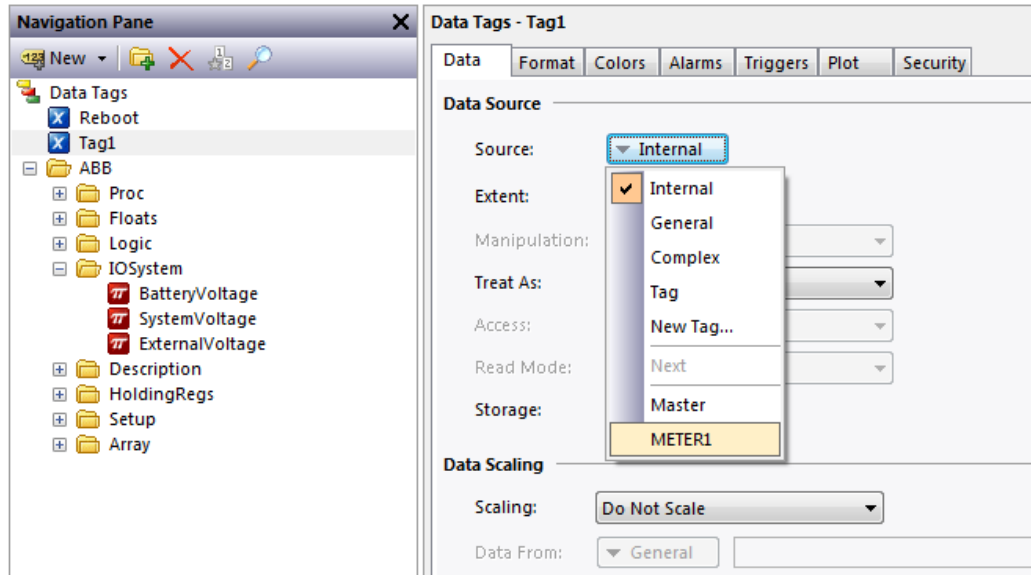


Simply enter an Application Name and Application Number then click the Add button to add the association to the list. Application associations may be edited or removed by highlighting the association in the list and clicking on the appropriate button.

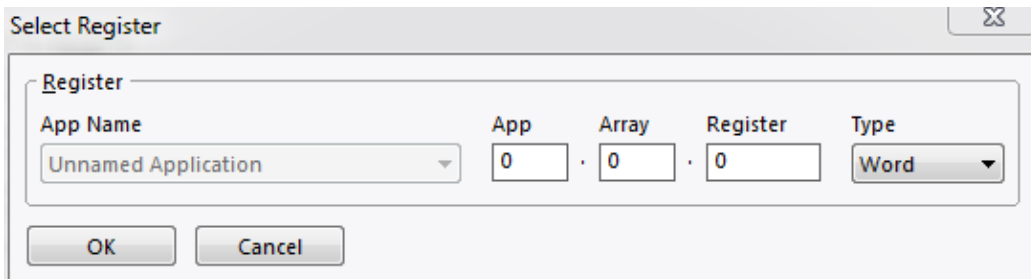
Application association lists may also be exported/imported via a CSV file for fast configuration of TotalFlow devices in Crimson.

## Data Access

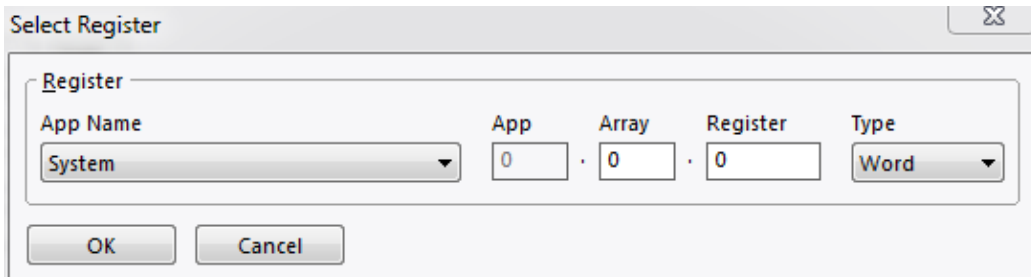
The "Select Register" dialog box can be found by selecting the device representing the TotalFlow METER device in the Source drop down box of a Tag created in the Data Tag category in Crimson.



Here the Application, Array, Register and data type can be selected as according to the data in the TotalFlow device.



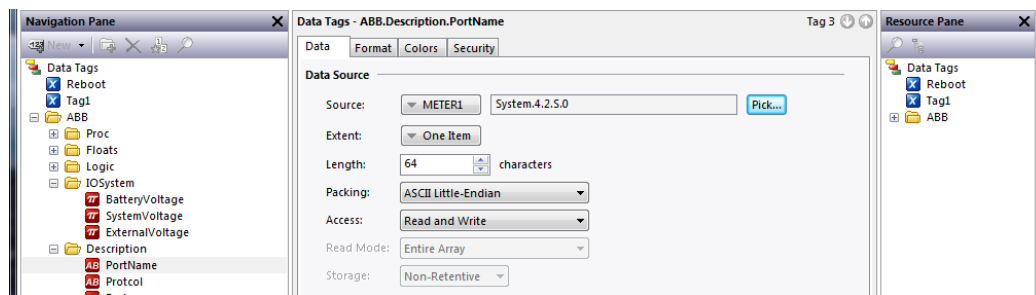
When using application associations in Crimson (see Application Management section above) the Application name will be selectable via the App Name drop down box.



The following ranges are supported:

Data Field	Selection Range
Application Number	0 - 255
Array Number	0 – 255
Register Number	0 – 65535
Data Type	Byte, Word, Long, Real, String

A string tag should be configured for a length of 64 unless the target device is a XRC G3 device. XRC G3 device strings should be configured for 32 characters. The packing field should always be set to ASCII Little-Endian.



**NOTE:** During the evolution of a database as tags are added, manipulated and/or deleted, the internal tag list may need to be purged to provide the best optimization. This operation will be performed during the Rebuild Comms Block command which may be found in the Utilities submenu on the File menu in Crimson 3.0+.



## Serial Cable Information

### RS232

<b>Red Lion RS232 RJ12 Port</b>	<b>ABB COM Port</b>
Pin 2 - Rx	Pin 7 - TX
Pin 5 - Tx	Pin 8 - RX
Pin 3 - COMM	Pin 2 - GND

### 4-Wire RS485 or RS422

<b>Red Lion RS485 RJ45 Port</b>	<b>ABB COM Port</b>
Pin 1 - TxB	Pin 8 – RBUS+
Pin 2 - TxA	Pin 9 – RBUS-
Pin 3 - RxA	Pin 7 – TBUS-
Pin 4 - RxB	Pin 6 – TBUS+
Pin 6 - COMM	Pin 2 - GND

### 2-Wire RS485

<b>Red Lion RS485 RJ45 Port</b>	<b>ABB COM Port</b>
Pin 1 - TxB	Pin 6 – BUS+
Pin 2 - TxA	Pin 7 – BUS-
Pin 6 - COMM	Pin 2 - GND

## Ethernet Cable Information

Standard Ethernet Cable

## Revision History

01/05/18 – Created.