ABB Totalflow Driver Help

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ABB Totalflow Driver Help

Help version 1.019

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Overview

The ABB Totalflow Driver is designed to work with ABB Totalflow devices that support the native DB1 and DB2 Serial Protocols (which are typically used by ABB's gas flow computers and analyzers). ABB's Totalflow Communication Interface (TCI) toolkit is used to implement the application stack for the driver.

Important: EFM functionality is not available in all server versions. To determine whether support is available, refer to the "Server Summary Information" topic located in the server help file.

Device Setup

Supported Device Families

The following device families are supported under the "Totalflow FCU" model:

6000 Series microFLO
6000 XSeriesG4
6000 XSeriesG3
6000 Series FCU

Maximum Number of Channels and Devices

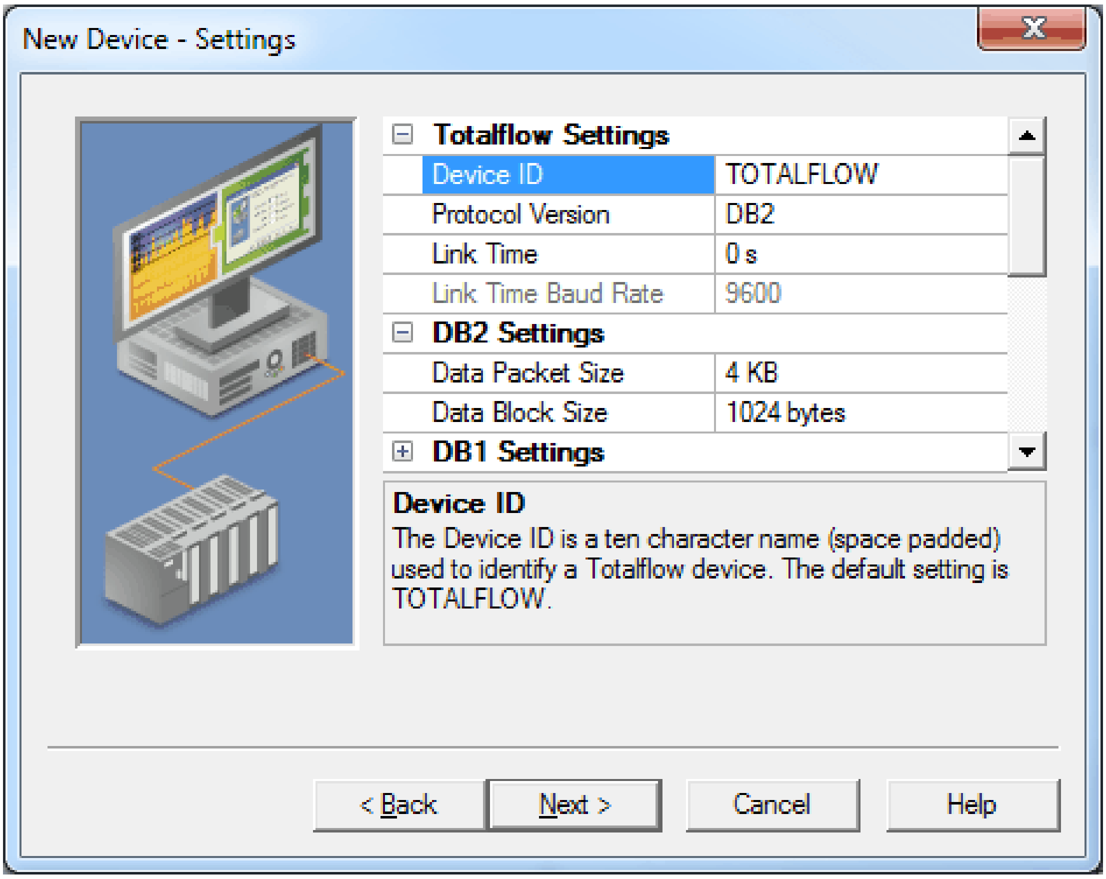
The maximum number of supported channels is 1024. The maximum number of supported devices is 256.

Ethernet Encapsulation

This driver supports Ethernet Encapsulation, which allows the driver to communicate with serial devices attached to an Ethernet network using a serial-to-Ethernet terminal server. It also allows the driver to directly communicate with a device that is equipped with a TCP/IP port. It may be invoked through the Communications tab in Channel Properties. For more information, refer to the server help file.

Settings

Totalflow Settings



⊟ **Totalflow Settings**	
Device ID	TOTALFLOW
Protocol Version	DB2
Link Time	0 s
Link Time Baud Rate	9600
⊟ **DB2 Settings**	
Data Packet Size	4 KB
Data Block Size	1024 bytes
⊞ **DB1 Settings**	

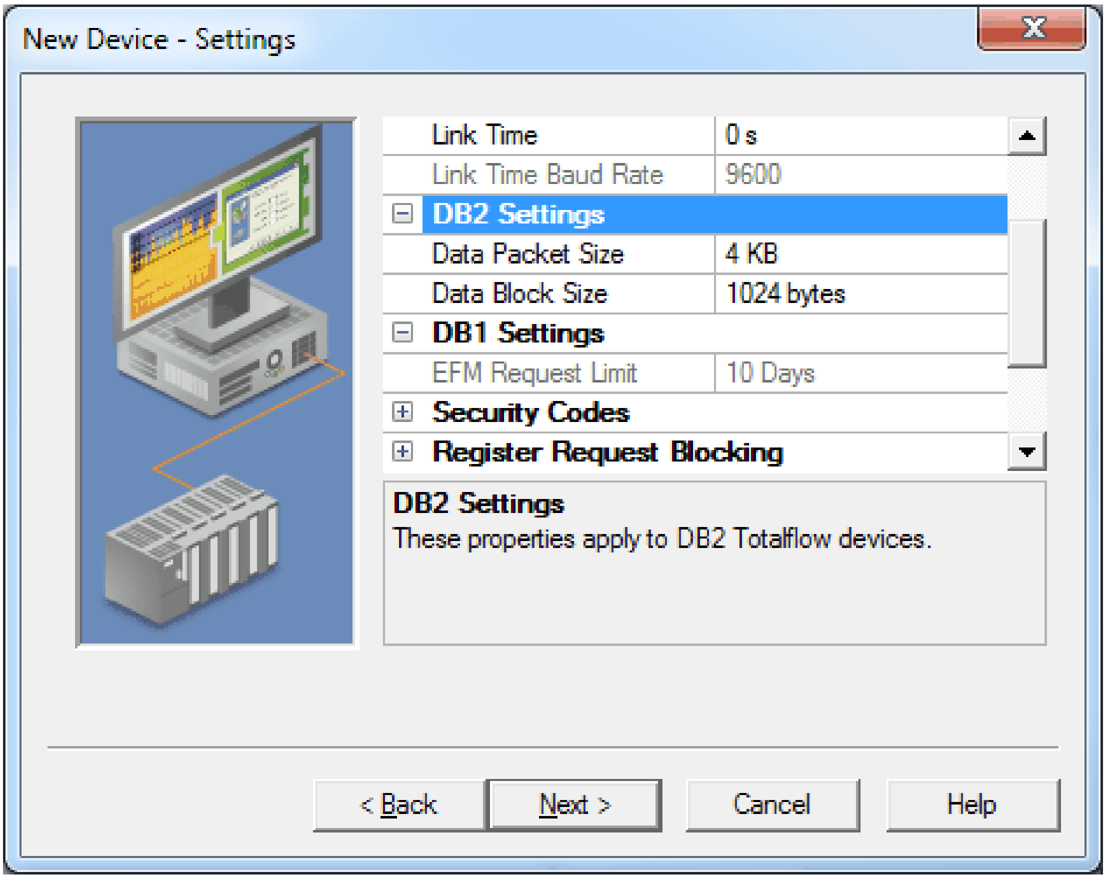
Device ID
The Device ID is a ten character name (space padded) used to identify a Totalflow device. The default setting is TOTALFLOW.

Descriptions of the parameters are as follows:

- **Device ID:** This parameter specifies an ASCII string that is used to identify an ABB Totalflow device. A maximum length of 10 characters is supported. The default setting is "TOTALFLOW".
- **Protocol Version:** This parameter specifies the protocol version to be used for communications. Options include DB1 (not packet-based) and DB2 (packet-based). The default setting is DB2.
- **Link Time:** This parameter specifies the interval that the device will open the receive channel. It is used to determine how many supervisory frames to send so that a remote device's receive channel is on and the request is detected. Options include 0 seconds, 1 second, 2 seconds, and 4 seconds. The default setting is 0 seconds.

- **Link Time Baud Rate:** This parameter is required for the Link Time calculation when communicating with a serial device while Ethernet Encapsulation is enabled. When a COM port is being used, this parameter will be fixed to the COM port's baud rate. The valid range is 300 to 256,000 bits per second. The default setting is 9600 bits per second.

DB2 and DB1 Settings



Link Time	0 s
Link Time Baud Rate	9600
⊟ DB2 Settings	
Data Packet Size	4 KB
Data Block Size	1024 bytes
⊟ DB1 Settings	
EFM Request Limit	10 Days
⊞ Security Codes	
⊞ Register Request Blocking	

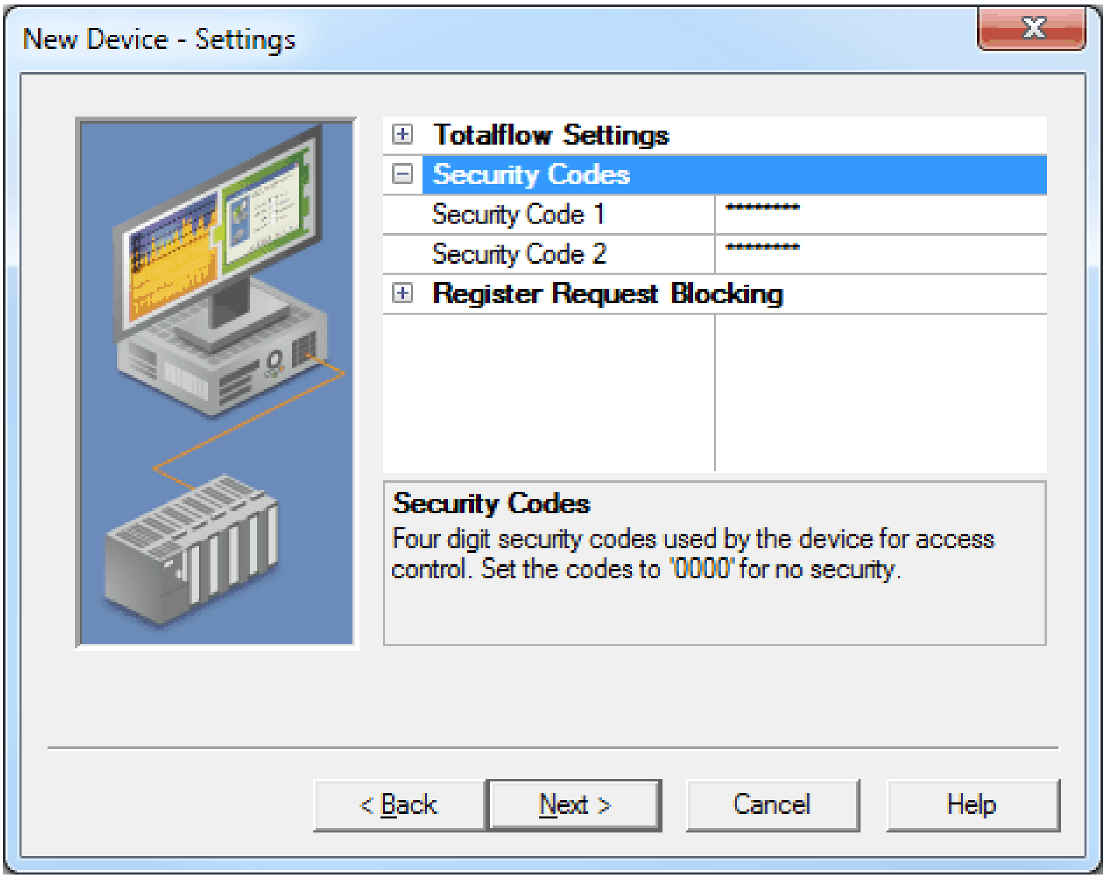
DB2 Settings
These properties apply to DB2 Totalflow devices.

Descriptions of the parameters are as follows:

- **Data Packet Size:** This parameter specifies the size of each remote packet that will be transmitted using packet control. Options include 1 KB, 2 KB, 4 KB, 8 KB, 16 KB, and 32 KB. The default setting is 4 KB.
- **Data Block Size:** This parameter specifies the size of each transmitted data block that can be CRC checked. Options include 128 bytes, 256 bytes, 512 bytes, and 1024 bytes. The default setting is 1024 bytes.
- **EFM Request Limit:** This parameter limits the amount of EFM data that is requested to the specified number of days. Options include 3 days, 10 days, and 35 days. The default setting is 10 days.

Security Codes

Users can configure security codes in the device to provide communications with additional security. The codes are stored securely.



New Device - Settings

Security Code 1 *********

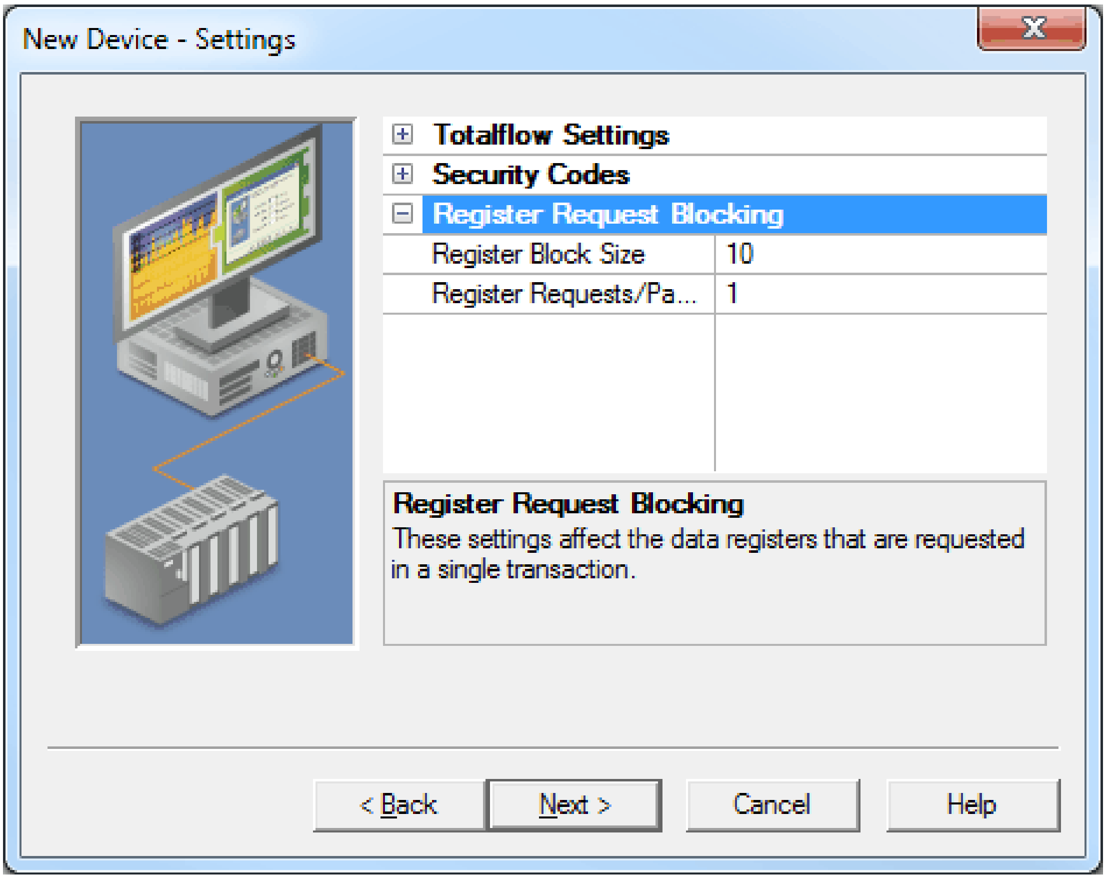
Security Code 2 *********

Security Codes
Four digit security codes used by the device for access control. Set the codes to '0000' for no security.

Descriptions of the parameters are as follows:

- **Security Code 1:** This parameter specifies a four digit code that is used for read-only access. It has a maximum length of 4 characters. The default setting is 0000.
- **Security Code 2:** This parameter specifies a four digit code that is used for read/write access. It has a maximum length of 4 characters. The default setting is 0000.

Register Request Blocking



Register Block Size	10
Register Requests/Pa...	1

Register Request Blocking
These settings affect the data registers that are requested in a single transaction.

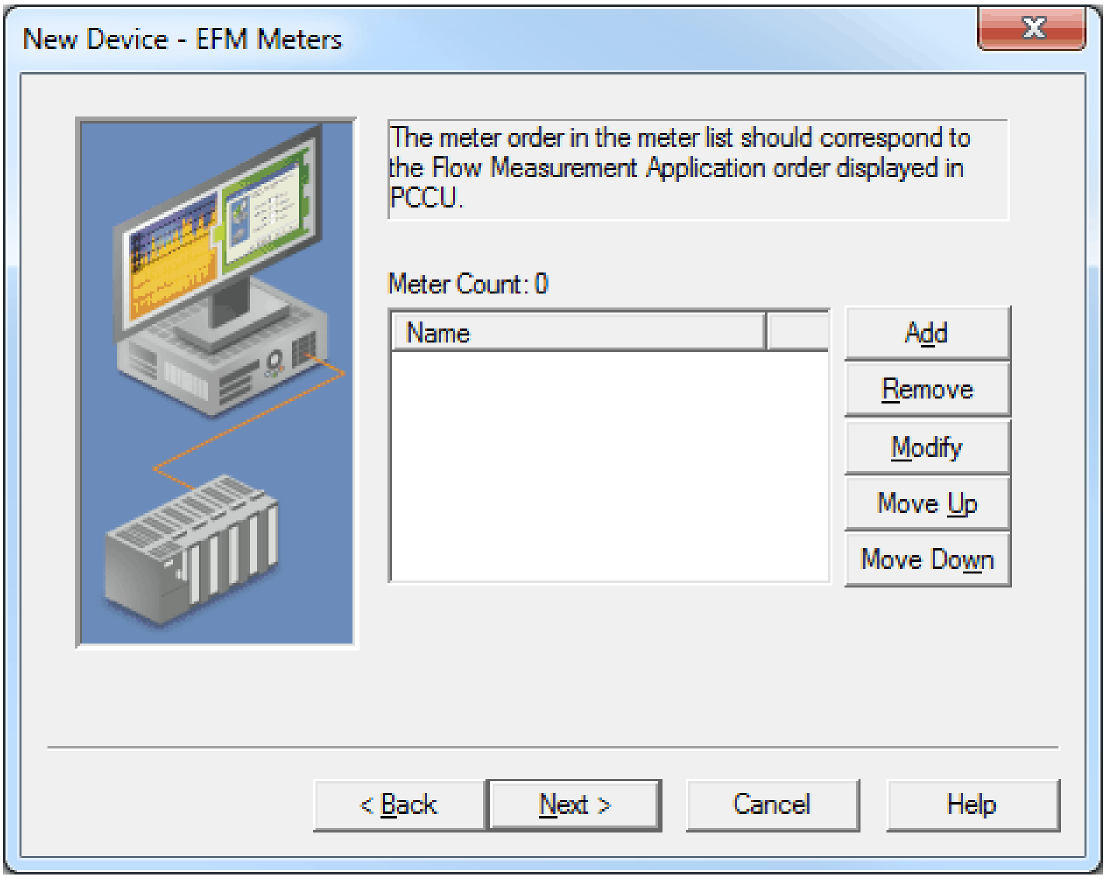
Descriptions of the parameters are as follows:

- **Register Block Size:** This parameter specifies the maximum number of registers that can be read in a single request. The valid range is 1 to 100. The default setting is 10.
- **Register Requests/Packet:** This parameter specifies the maximum number of register blocks that can be read in a single packet. The valid range is 1 to 16. The default setting is 1.

Note: These parameters are only available when the selected protocol version is DB2.

EFM Meters

This dialog is used to add, remove, and modify EFM Meters. The meter order determines the association with the ABB Totalflow Flow Measurement application. This list must coincide with the order of the Flow Applications in ABB's Portable Configuration and Calibration Unit (PCCU) tool. To access these parameters after device creation, right-click on the device and then select **Device Properties** | **EFM Meters**.



The meter order in the meter list should correspond to the Flow Measurement Application order displayed in PCCU.

Meter Count: 0

Name

Descriptions of the parameters are as follows:

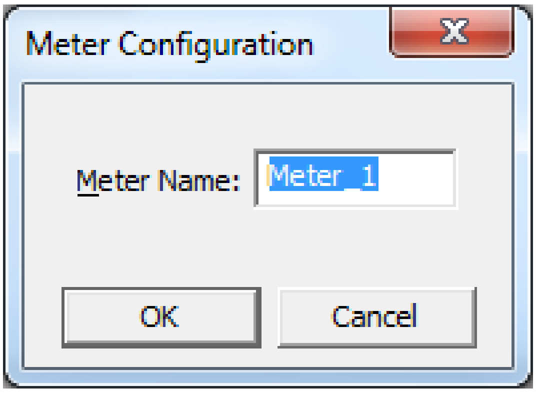
- **Meter Count:** This parameter displays the number of meters that have been added to the device.
- **EFM Meter List:** This list view displays the meters that are currently supported by the device.
- **Add:** When clicked, this button will invoke the Meter Configuration dialog for adding a new meter to the device.
- **Remove:** When clicked, this button will remove the selected meter from the EFM Meter List.
- **Modify:** When clicked, this button will invoke the Meter Configuration dialog for modifying the selected meter in the EFM Meter List.
- **Move Up:** When clicked, this button will move the selected meter up in the EFM Meter List.
- **Move Down:** When clicked, this button will move the selected meter down in the EFM Meter List.

Note: Changing a meter's order or removing it from the EFM Meter List will cause the EFM cache to be cleared on the next upload. Although this ensures data integrity, users can avoid it by unchecking the **Clear cache on next upload** option before applying any changes. For more information, refer to "Clear Cache on Next Upload" below.

Clear Cache on Next Upload

Users have the option to clear any cached EFM data from the device during the next upload. This feature will also remove pointer files, which are used to track EFM uploads in order to prevent uploading the same records twice. All EFM data will be re-uploaded. Once the cache is cleared, this parameter will automatically be disabled. To enable this option, open **Device Properties** | **EFM Meters**. Then, click **Clear cache on next upload**. The default setting is unchecked.

Meter Configuration



Description of the parameter is as follows:

- **Meter Name:** This parameter specifies the meter name. Each meter must be assigned a unique name in order to request EFM Config, Daily History, Hourly History, and Event records from an ABB Totalflow device.

Data Types Description

Data Type	Description
Bool	Single bit
Char	Signed 8-bit value
Byte	Unsigned 8-bit value
Short	Signed 16-bit value
Word	Unsigned 16-bit value
Long	Signed 32-bit value
DWord	Unsigned 32-bit value
Float	32-bit floating point value
String	Null terminated character array

Address Descriptions

ABB Totalflow devices organize data by application, array, and register. Although the meaning and type of data is specific to the application type, a fully-qualified ABB Totalflow address requires all three of these parameters. Its syntax is as follows: *<application #>.<array #>.<register #>*.

Each application is usually designed to perform a specific task, calculation, or function in the ABB Totalflow device. The application numbers are not standardized, meaning that the application number for a Flow Measurement application AGA3-1 can differ from device-to-device. The application numbers are based on the application category and the order in which they are added to the device. The ABB Totalflow Driver follows this addressing convention, supporting the following syntax:

<Application>.<Array>.<Register>/<bit>
<Application>.<Array>.<Register>[*row*][*column*]

Note: The valid range for the register identifier fields are 0-255, 0-255, and 0-65535 respectively. The bit index will be validated against the specified OPC type. In the event that the register type does not support the specified bit index, the read will fail and an appropriate error message will be logged once per tag. The product of rows multiplied by columns cannot exceed the maximum register block size of 100. A 1-length row/column is allowed.

For more information, select a link from the list below.

Characteristic Address Descriptions
DB2 Protocol Address Descriptions

Characteristic Address Descriptions

Data Blocking

G1 and G2 devices do not use registers. Data can be requested from a number of categories: the processing will be the same for all of them. Data is requested in two blocks based on the method of data request. Characteristics items cannot be requested individually. The driver supports the Current Measurement and/or Device Setup tag categories. Due to blocking limitations, it is recommended that data be retrieved by register for DB2 devices. Only the Characteristic Address Tags are available for DB1 devices (because they do not use a register-based architecture). For more information, refer to **DB2 Protocol Address Descriptions**.

The Characteristic Items are described by three functional groups: Last Volume Period (LVP) Tags, Current Measurement Tags, and Device Setup Tags. All tags are read only.

Last Volume Period (LVP) Tags

ABB Totalflow devices calculate volume in a user-configurable interval between 1 and 60 minutes.

Address	Data Type	Description
LVPALARMS	Byte	Alarms
LVPACF	Float	Accumulated Flow
LVPDP	Float	DP
LVPAP	Float	AP
LVPTF	Float	Temperature
LVPVOLUME	Float	Volume
LVPQV	Float	Qv
LVPIRANGE	Float	Turbine Range
LVPICOUNTS	Float	Turbine Counts
LVPEXT	Float	Extension
LVPCP	Float	Cp
LVPFB	Float	Fb
YSTACFLOW	Float	Yesterday's Low ACF
LVPFR	Float	F(r)
YSTACFHIGH	Float	Yesterday's High ACF
LVPY	Float	Y
YSTACFTOTAL	Float	Yesterday's Total
LVPFPB	Float	Pressure Base Factor
LVPFTB	Float	Temperature Base Factor
LVPFTF	Float	Flowing Temperature Factor

LVPFG	Float	Gravity Factor
LVPFPV	Float	Supercompressibility Factor
LVPFA	Float	Auxiliary
LVPFW	Float	Water Vapor Factor
LVPFAUX	Float	Auxiliary Factor
LVPBTU	Float	BTU/SPC
LVPGRAVITY	Float	Specific Gravity
LVPN2	Float	Mole %
LVPCO2	Float	Mole %
LVPH2S	Float	Mole %
LVPH2O	Float	Mole %
LVPHELIUM	Float	Mole %
LVPMETHANE	Float	Mole %
LVPETHANE	Float	Mole %
LVPPROPANE	Float	Mole %
LVPNBUTANE	Float	Mole %
LVPIBUTANE	Float	Mole %
LVPNPENTANE	Float	Mole %
LVPIPENTANE	Float	Mole %
LVPNHEXANE	Float	Mole %
LVPNHEPTANE	Float	Mole %
LVPNOCTANE	Float	Mole %
LVPNNONANE	Float	Mole %
LVPNDECANE	Float	Mole %
LVPOXYGEN	Float	Mole %
LVPCO	Float	Mole %
LVPHYDROGEN	Float	Mole %
LVPARGON	Float	Mole %
LVPFIP	Float	FIP
LVPS	Float	F(pv)^2
LVPEV	Float	Ev
LVPFPM	Float	Fpm
LVPCORORIF	Float	Corrected orifice diameter for the effect of temperature
LVPFTM	Float	Ftm
LVPCORPIPE	Float	Corrected pipe diameter (ID) for the effect of temperature
LVPPULSECOUNT	Float	Pulse Count
LVPRHOB	int16	Rhob
FLOWPERIOD	int16	Flow Period (seconds)
LVPQM	Float	Qm
LVPCD	Float	Cd

Current Measurement Tags

Address	Data Type	Description
CURACCVOL	Float	Current Accumulated Volume
CURACCVOLTURBINE	Float	Current Accumulated Volume (Turbine)
CURAP	Float	Current Static Pressure
CURDP	Float	Current Differential Pressure
CURMACF	Float	Current Actual MCF
CURTF	Float	Current Temperature
CURFLOW	Float	Current Flow Rate (SCF)
CURVOLTAGE	Float	Current Voltage
YSTACCVOL	Float	Yesterday's Accumulated Volume
YSTMCFTOTAL	Float	Yesterday's Total MCF

Device Setup Tags

Address	Data Type	Description
CONTRACTHOUR	Byte	Contract Hour (0-23)
STREAMID	Int32	4 Bytes. In ASCII, the Stream ID is *iiii-aa-ss*. Bytes 0 & 1: AIU number (*iiii*); 0000 to 9999, with the bytes reversed from Microsoft Byte 2: Analyzer number (*aa*); 1-32 Byte 3: Stream number in the analyzer (*ss*); 1-32
FIXEDAXONERR	Bool	If STREAMATTACHED is 1 and the received analysis is not correct or, if no analysis is received, then: False = Use last known good analysis True = Use fixed analysis
STREAMATTACHED	Bool	False = Always use fixed analysis True = Attached to AIU

RTDINSTALLED	Bool	False = No
		True = Yes

USEMEASTEMP	Bool	False = Fixed Temp
		True = Live

CHECKSEC	Bool	Use Security

MONELORIF	Bool	False = Stainless
		True = Monel

USEFB	Bool	Use FB in Calculations
USES	Bool	Use S (F(pv)^2); Turbine Only
USEFR	Bool	Use Flow Rate
USEFTC	Bool	Use Temperature Correction Factor
USEY	Bool	Use Expansion Factor
USEFPC	Bool	Use Pressure Correction Factor
USEFTB	Bool	Use Temperature Base Factor
USEFPB	Bool	Use Pressure Base Factor
USEFTF	Bool	Use Flowing Temperature Factor
USEFG	Bool	Use Gravity Factor
USEFPV	Bool	Use Super Compressibility Factor
USEFA	Bool	Auxiliary
LCCONTACT	Bool	Charger Low
DPLOWCONTACT	Bool	DP Low Contact
DPHICONTACT	Bool	DP High Contact
APLOWCONTACT	Bool	AP Low Contact
APHICONTACT	Bool	AP High Contact
REMSENSECONTAC	Bool	Use Remote Sense
AUTORESET	Bool	Automatic Reset
VOLSPCONTACT	Bool	Use Volume Set Point
USEFW	Bool	Use Water Vapor Factor
USEFAUX	Bool	Use Auxiliary Factory
FIXEDAP	Float	Fixed AP
USEMEASAP	Float	Use Measured AP
FB	Float	Basic Orifice Factor
ORIFICE	Float	Orifice Diameter (inches)
PIPE	Float	Pipe Diameter (inches)
GRAVITY	Float	Specific Gravity
DPLOWLIM	Float	DP Low Limit
DPHILIM	Float	DP High Limit
APLOWLIM	Float	AP Low Limit
APHILIM	Float	AP High Limit
CO2	Float	Mole % CO2
N2	Float	Mole % N2
APLOWCAL	Float	AP Calibration: Low Point

APMIDCAL	Float	AP Calibration: Mid Point
APHICAL	Float	AP Calibration: High Point
DPLOWCAL	Float	DP Calibration: Low Point
DPMIDCAL	Float	DP Calibration: Mid Point
DPHICAL	Float	DP Calibration: High Point
ZEROCUTOFF	Float	DP Zero Cutoff
TBASE	Float	Temperature Base
PBASE	Float	Pressure Base
FIXEDTF	Float	Fixed Temperature
TEMPBIAS	Float	Temperature Bias
VISC	Float	Centipose
RSPH	Float	Ratio of Specific Heats
FT	Float	Mass Flow Calibration Temperature Coefficient
FP	Float	Pressure
BTU	Float	BTU/SCF
ACFLOWLIM	Float	Turbine: Low Limit
ACFHILIM	Float	Turbine: High Limit
FAUX	Float	Auxiliary Factory
K	Float	Turbine
CALCUNITS	Byte	Bit Definitions 0 = US Units 1 = IP Units 2 = MT Units 3 = SI Units
ACFLOWLIM	Float	Accumulated Flow Limit
ZMETHOD	Float	Bit Definition 0 = NX19, fixed Ft, Fp 1 = NX19 GCN or GCNM 2 = NX19 GCN 3 = NX19 GCNM 7 = AGA-8 HGCN 8 = AGA-8 GCN Limited Number of High Pressure FCUs 10= AGA-8 GCNM 11= AGA-8 Gross 1992 (Gross 2) 12= AGA-8 Detail 1992
TAPLOCATION	Bool	0 = Downstream 1 = Upstream
TAPTYPE	Bool	0 = Flange 1 = Pipe
VOLCALCMETHOD	Byte	Value Definition 0= No Volume Calculation 1 = AGA-3 1985 2= AGA-3 1992, API 14.3
FIXEDCD	Bool	0 = Fixed 1 = Calculated CD
PIPEREFTEMP	Float	Reference Temperature (F)
ORIFREFTEMP	Float	Orifice Temperature (F)
ZBA	Float	Z of Air at Base Conditions
VOLCALCPER	int16	Volume Calculation Period in Seconds
VOLLOGPER	int32	Volume Log Period in Seconds
H2S	Float	Mole %
H2O	Float	Mole %
HELIUM	Float	Mole %
METHANE	Float	Mole %
ETHANE	Float	Mole %

PROPANE	Float	Mole %
NBUTANE	Float	Mole %
IBUTANE	Float	Mole %
NPENTANE	Float	Mole %
IPENTANE	Float	Mole %
NHEXANE	Float	Mole %
NHEPTANE	Float	Mole %
NOCTANE	Float	Mole %
NNONANE	Float	Mole %
NDECANE	Float	Mole %
OXYGEN	Float	Mole %
CO	Float	Mole %
ORIFEXP	Float	Orifice Plate Coefficient of Expansion
PIPEEXP	Float	Pipe Coefficient of Expansion
BAROP	Float	Barometric Pressure
USECALCCD	Bool	Use Calculated Cd
HYDROGEN	Float	Mole %
ARGON	Float	Mole %
APMIDLOWCAL	Float	AP Calibration: Mid-Low
APMIDHICAL	Float	AP Calibration: Mid-High
DPMIDLOWCAL	Float	DP Calibration: Mid-Low
DPMIDHICAL	Float	DP Calibration: Mid-High
SQRTAVG	Float	Square Root Mean
VOLSP	Float	Volume Set Point
TFLOWLIM	Float	Temperature Low Limit
TFHILIM	Float	Temperature High Limit
FLOWLOWLIM	Float	Flow Low Limit
FLOWHILIM	Float	Flow High Limit
PASSWORDMODE	Bool	0 = No Password Mode 1 = Mode Enabled
FIRSTAX	Bool	At Least One Good Analyzer
PRIMARYELEM	Byte	0= Orifice 1= Turbine
REPORTUNITS	Byte	Report Unite Bit Definition: 0 = US 1 = IP 2 = MT 3 = SI

DB2 Protocol Address Descriptions

DB2 Protocol addressing information applies to G2, G3, and G4 devices.

Data Blocking

Due to blocking limitations, it is recommended that data be retrieved by register for DB2 device. A DB2 register request consists of a base address (in the form of <*application*>.<*array*>.<*register*>) and a register count. The registers retrieved in a request are always in the same Totalflow array and have the same data type. For example, if 10 registers are requested beginning at "9.3.0," the response will contain data for "9.3.0" through "9.3.9" with a uniform data type. The driver will block data in the same manner.

Register data is retrieved from the TCI toolkit as an array of bytes. The data type will be inferred from the size of the array and the number of elements that were requested. The element size within a data block is fixed based on the largest atomic type (because the data type cannot be accurately deduced until data is retrieved from the device). Encoding the data length provides greater flexibility for the client tag data type. This means that users do not need to know the Totalflow data type when defining client tags in the driver. Data type mismatches will result in truncation. No special handling is done for floating point values. Examples are as follows:

1. A Word tag is defined with an address of "9.3.0". The ABB Totalflow device has this register defined as an int32. The driver will read the tag and set its quality to Bad because a Word cannot properly represent all int32 values. An error message will be posted to the Event Log.
2. A DWord tag is defined with an address of "9.5.0". The ABB Totalflow device has this register defined as a Float. The driver will read the tag, receive the value "1.523," and store it in the block memory. When the tag is updated, its value is 1069740458 (which is the binary equivalent of 1.523).

Strings are not blocked by the driver due to their fixed size. A Runtime error (including an Event Log message) will be posted when a string register is assigned a blockable type. Strings are not converted to any other data type. Furthermore, multiple register requests can be included in a single DB2 transaction. This means that the driver can service multiple block tag reads with a single device request/response. The number of register requests per packet is user-configurable. The driver will pool tags based on the following criteria:

- All tags will be read or write.
- All tags must be for the same device.
- The number of tags is limited to the number specified by the user.

Bit-within-Word Booleans

Bit-within-Word Booleans provide a mechanism for interpreting register data as a bit field. For reads, this involves using a mask to determine the Boolean value for a desired bit (which is specified in the tag's address). In order to write bit values, the driver must perform a Read/Modify/Write operation to ensure that only a single bit is being set.

Error Descriptions

The following error/warning messages may be generated. Click on the link for a description of the message.

Communication Error Messages

A communication error occurred while <reading/writing> address <tag address> on device <device name>: <verbose communication error>.
A communication error occurred while reading address <tag address> on device <device name>: General remote NACK error.
A communication error occurred while reading address <tag address> on device <device name>: Illegal register read or write.
A communication error occurred while reading address <tag address> on device <device name>: Invalid data structure.
A communication error occurred while reading address <tag address> on device <device name>: Received data had a CRC error.
A communication error occurred while reading address <tag address> on device <device name>: Transaction ID did not match.

Device-Specific Error Messages

<Device name> - Failed to read EFM pointer file. <Extended error>.
<Device name> - Failed to write EFM pointer file. <Extended error>.
Bit index out of range for register address <tag address> on device <device name>.
Device <device name> is not responding.
EFM meter <meter name> on device <device name> is invalid.
Failed to send communication request for address <tag address> on device <device name>.
Invalid address for register block <App>.<Array>.<Register X> - <App>.<Array>.<Register Y> on device <device name>.
Invalid data type <data type> for address <tag address> for device <device name>
Register blocking error, verify that data type <data type> is valid for address <tag address> on device <device name>.
Serialization of EFM data to temporary file <file name> failed. Reason: <file I/O error>.
Unable to write to <address> on device <device name>.

Communication Error Messages

The following error/warning messages may be generated. Click on the link for a description of the message.

Communication Error Messages

A communication error occurred while <reading/writing> address <tag address> on device <device name>: <verbose communication error>.
A communication error occurred while reading address <tag address> on device <device name>: General remote NACK error.
A communication error occurred while reading address <tag address> on device <device name>: Illegal register read or write.
A communication error occurred while reading address <tag address> on device <device name>: Invalid data structure.
A communication error occurred while reading address <tag address> on device <device name>: Received data had a CRC error.
A communication error occurred while reading address <tag address> on device <device name>: Transaction ID did not match.

A communication error occurred while <reading/writing> address <tag address> on device <device name>: <verbose communication error>.

Error Type:
Warning

Possible Cause:
There was an error in communications.

Solution:

1. For more information, refer to the verbose error message.
2. Verify the ABB Totalflow device's configuration.

A communication error occurred while reading address <tag address> on device <device name>: General remote NACK error.

Error Type:
Warning

Possible Cause:
There is a response mismatch.

Solution:
Increase the Request Timeout to allow time for the response to complete.

A communication error occurred while reading address <tag address> on device <device name>: Illegal register read or write.

Error Type:
Warning

Possible Cause:
The device does not recognize the register address.

Solution:
Verify that the register address is valid.

A communication error occurred while reading address <tag address> on device <device name>: Invalid data structure.

Error Type:
Warning

Possible Cause:
The data that was requested is not supported by the destination device.

Solution:
Verify that the device supports the DB2 protocol.

A communication error occurred while reading address <tag address> on device <device name>: Received data had a CRC error.

Error Type:
Warning

Possible Cause:

1. The response's integrity could not be validated.
2. There is a response mismatch resulting in an invalid CRC check.

Solution:

1. Investigate for sources of noise or errors in the transmission media.
2. Increase the Request Timeout to prevent unnecessary request retries.

A communication error occurred while reading address <tag address> on device <device name>: Transaction ID did not match.

Error Type:
Warning

Possible Cause:

1. The specified tag data type and Totalflow register data type do not match. This prevents the tag from being blocked with other Totalflow registers.
2. There is a response mismatch.

Solution:

1. Ensure that the tag data type and the register data type match.
2. Increase the Request Timeout to allow time for the response to complete.

Device-Specific Error Messages

The following messages may be generated. Click on the link for a description of the message.

Device Specific Error Messages

<Device name> - Failed to read EFM pointer file. <Extended error>.

Error Type:
Warning

Extended Error:
When supplied by the operating system, this describes the file error that occurred.

Possible Cause:

1. A permission error was encountered when the EFM pointer cache was read.
2. The EFM pointer cache file is corrupt.

Solution:
The ABB Totalflow Driver will automatically generate a new EFM pointer file; however, the server will re-poll (uploading all EFM data) during the next EFM poll for meters in the device.

Note:
For more information, refer to the extended error.

<Device name> - Failed to write EFM pointer file. <Extended error>.

Error Type:
Warning

Extended Error:
When supplied by the operating system, this describes the file error that occurred.

Possible Cause:

1. The disk is full.
2. A permission error was encountered when the EFM pointer cache was written.

Solution:
The server will attempt to update the EFM pointer file periodically, in addition to when the server is shutdown. If the pointer file cannot be written, the server will re-poll (uploading all EFM data) during the next EFM poll for meters in the device.

Note:
For more information, refer to the extended error.

Bit index out of range for register address <tag address> on device <device name>.

Error Type:
Warning

Possible Cause:
The bit index specified in the tag address is incompatible with the register data type.

Solution:
Verify the register data type. Then, adjust the bit index accordingly.

Device <device name> is not responding.

Error Type:
Serious

Possible Cause:

1. The serial connection between the device and the Host PC is broken.
2. The communications parameters for the serial connection are incorrect.
3. The named device may have been assigned an incorrect Device ID.
4. The response from the device took longer to receive than the amount of time specified in the "Request Timeout" device setting.

Solution:

1. Verify the cabling between the PC and the PLC device.
2. Verify that the specified communications parameters match those of the device.
3. Verify that the Device ID given to the named device matches that of the actual device.
4. Increase the Request Timeout setting so that the entire response can be handled.

EFM meter <meter name> on device <device name> is invalid.

Error Type:
Warning

Possible Cause:
The specified meter name was modified or removed while being referenced by an active EFM Exporter meter.

Solution:
Update the EFM Exporter's meters to reference the latest EFM meter names for the affected device.

Failed to send communication request for address <tag address> on device <device name>.

Error Type:
Warning

Possible Cause:
Failed to send the request for the specified tag and device.

Solution:
Verify the Totalflow protocol and communication port settings.

Invalid address for register block <App>.<Array>.<Register X> - <App>.<Array>.<Register Y> on device <device name>.

Error Type:
Warning

Possible Cause:

1. An attempt has been made to reference a nonexistent location in the specified device.
2. There is a response mismatch.

Solution:

1. Verify the tags that are assigned to the addresses in the specified range on the device. Then, eliminate ones that reference invalid locations.
2. Increase the Request Timeout to allow time for the response to complete.

Invalid data type <data type> for address <tag address> for device <device name>.

Error Type:
Warning

Possible Cause:
A tag data type has been selected that cannot properly represent the Totalflow register data type.

Solution:
Select a tag data type that matches the Totalflow register data type.

Register blocking error, verify that data type <data type> is valid for address <tag address> on device <device name>.

Error Type:
Warning

Possible Cause:
The specified tag data type and Totalflow register data type do not match. This prevents the tag from being blocked with other Totalflow registers.

Solution:
Ensure that the tag data type and the register data type match.

Serialization of EFM data to temporary file <file name> failed. Reason: <file I/O error>.

Error Type:

Warning

Possible Cause:

1. The driver was unable to create the specified file directory.
2. The driver was unable to access the specified file.

Solution:

1. Verify that the disk has sufficient disk space.
2. Verify user permissions for the specified file directory.

Unable to write to <address> on device <device name>.

Error Type:

Serious

Possible Cause:

1. The serial connection between the device and the Host PC is broken.
2. The communications parameters for the serial connection are incorrect.
3. The named device may have been assigned an incorrect Device ID.

Solution:

1. Verify the cabling between the PC and the PLC device.
2. Verify that the specified communications parameters match those of the device.
3. Verify that the Device ID given to the named device matches that of the actual device.

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