

# **EFM Simulator Driver Help**

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## EFM Simulator Driver Help

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Help version 1.006

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### Overview

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The EFM Simulator Driver provides an easy and reliable way to simulate EFM data for testing the EFM Exporter Plug-In without the use of an external device.

## Device Setup

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### Supported EFM Output Types

Alarms  
Configuration  
Events  
History

### Maximum Number of Channels and Devices

The maximum number of supported channels is 100. The maximum number of devices supported per channel is 999.

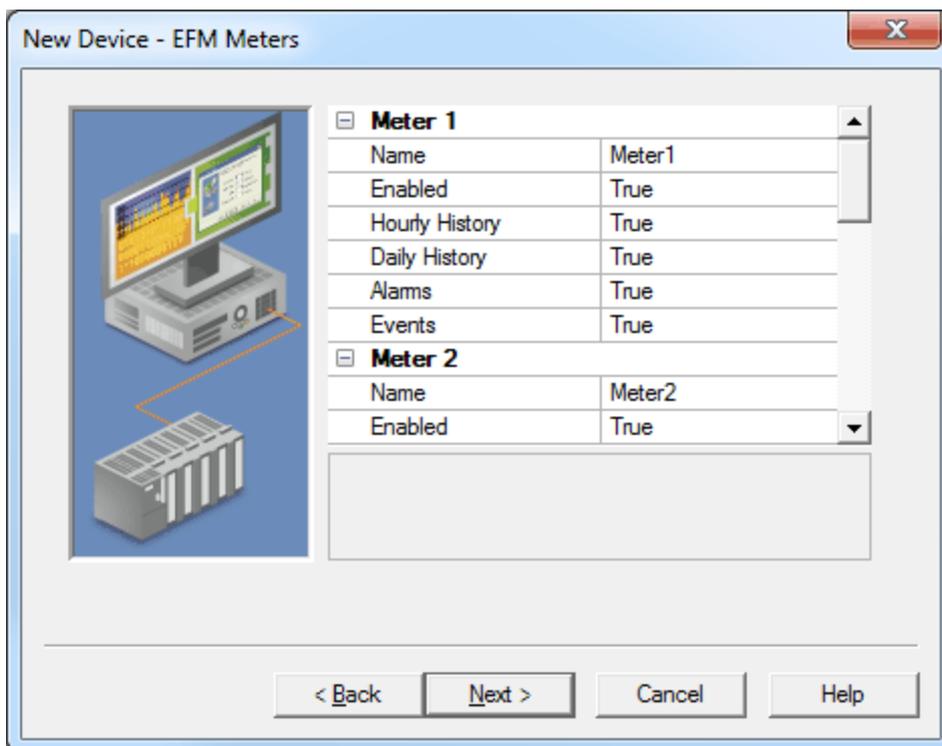
### Device ID

The EFM Simulator Driver supports decimal Device IDs in the range of 1 to 999. Unique Device IDs are required when creating multiple devices on the same channel. The default setting is 1.

## EFM Meters

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This dialog is used to specify EFM Meter settings. An EFM Meter gathers record line pressure, temperature, and differential pressure in pipes to determine total gas flow. The EFM Simulator Driver supports a maximum of four meters per channel.



Descriptions of the parameters are as follows:

- **Name:** This parameter specifies the name of the meter. The default setting is Meter1.
- **Enabled:** This parameter specifies whether the meter is enabled. The default setting is True.
- **Hourly History:** This parameter specifies whether the meter's Hourly History output is enabled. The default setting is True.
- **Daily History:** This parameter specifies whether the meter's Daily History output is enabled. The default setting is True.
- **Alarms:** This parameter specifies whether the meter's Alarms output is enabled. The default setting is True.
- **Events:** This parameter specifies whether the meter's Events output is enabled. The default setting is True.

## Simulated Meter Data

This dialog is used to specify settings for the simulated meters. To access these parameters, right-click on the device and then click **Device Properties | Simulated Meter Data**.

The screenshot shows the 'Device Properties' dialog box with the 'Simulated Meter Data' tab selected. The 'Test Data' section includes:
 

- Daily Records Per-File: 100
- Records Per-File: 100
- Record Interval: 60 (minutes)
- Start Date: 2/ 6/2013
- Start Time: 9:00:23 AM
- Simulate config upload failure

 The 'Scheduling' section includes:
 

- Autogenerate Test Data
- Period: 60 (radio buttons for Minutes, Hours, Days are visible)

 The 'File Path' field contains the text '<Root\_Directory>EFM Simulator\Channel1'. A 'Generate Test Data' button is located below the file path. At the bottom of the dialog are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

Descriptions of the parameters are as follows:

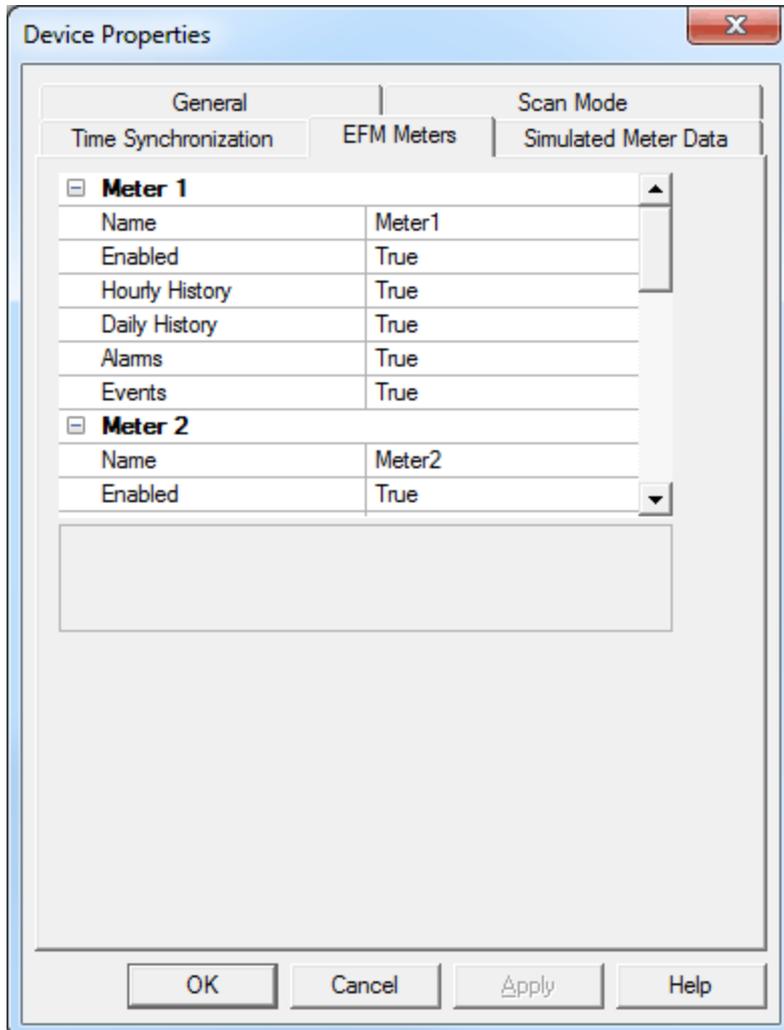
- **Daily Records Per-File:** This parameter specifies how many records will be included in the Daily History file. The valid range is 1 to 1000. The default setting is 100.
- **Records Per-File:** This parameter specifies how many records will be included per file. The valid range is 1 to 1000. The default setting is 100.
- **Record Interval:** This parameter specifies the amount of time between each record (in minutes). The valid range is 1 to 50,400. The default setting is 60 minutes.
- **Start Date:** This parameter specifies the date of the first generated record.
- **Start Time:** This parameter specifies the time stamp of the first generated record.
- **Simulate config upload failure:** When checked, this option will cause subsequent polls to simulate configuration file read errors. The default setting is unchecked.
- **Autogenerate Test Data:** When checked, this option specifies that test data will be automatically generated at the demand of the client. The default setting is unchecked.
- **Period:** This parameter specifies the period at which test data will be automatically generated. The valid range is 1 to 129,600 and may be specified in units of minutes, hours, or days. The default setting is 60 minutes.
- **File Path:** This field specifies the location where the test data will be placed. The default location is C:\ProgramData\Kepware\KEPServerEX\V5\EFM Simulator\EFM Simulator\*<device name>*.
- **Generate Test Data:** When clicked, this button will generate test XML.

**Note:** For more information on the contents of the generated file, refer to the EFM Exporter Plug-In help file.

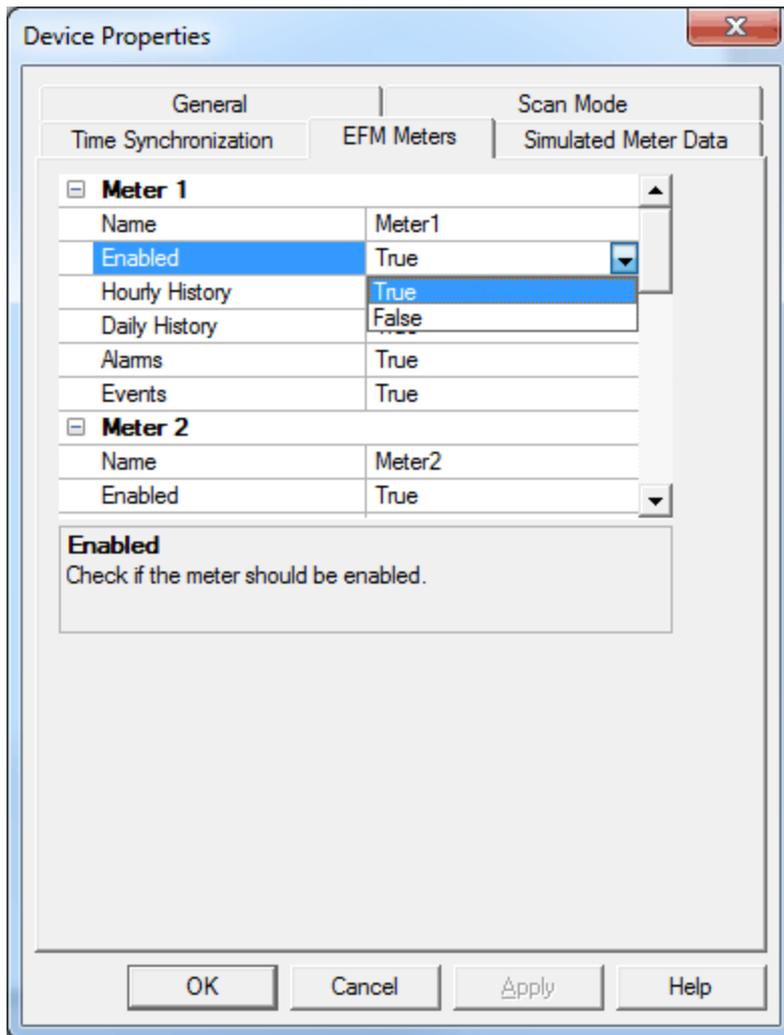
## Using the EFM Simulator

For information on using the EFM Simulator, refer to the example instructions below.

1. To start, create a channel using the EFM Simulator. Select the default values, and then click **Finish**.
2. Next, create a device. Select the default values, and then click **Finish**.
3. Right-click on the newly created device and then select **Properties**.
4. Next, open the **EFM Meters** tab.



5. This tab displays all accessible meters and is used to specify their settings. Users can assign unique names, turn them on or off, and specify the type of data that they will provide. To do so, simply click on a field and select the desired value from the drop-down menu located in the right-hand column. For example, changing Meter 1 from on to off would look as follows:



6. Once finished, click **Apply**.
7. Next, open the **Simulated Meter Data** tab. This tab contains information about the data that users can simulate, including the amount, the time interval between data records, and when the data starts. The EFM Simulator can also be configured to automatically generate new data every few minutes, hours, or days.

The screenshot shows the 'Device Properties' dialog box with the 'EFM Meters' tab selected. The 'Test Data' section includes fields for 'Daily Records Per-File' (100), 'Records Per-File' (100), 'Record Interval' (60 minutes), 'Start Date' (2/ 6/2013), and 'Start Time' (9:00:23 AM). There is a checkbox for 'Simulate config upload failure'. The 'Scheduling' section has a checkbox for 'Autogenerate Test Data', a 'Period' field (60), and radio buttons for 'Minutes', 'Hours', and 'Days'. The 'File Path' field contains '<Root\_Directory>EFM Simulator\Channel1'. A 'Generate Test Data' button is located below the file path. At the bottom of the dialog are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

**Note:** Users also have the ability to simulate a configuration upload failure, which provides the opportunity to observe what will happen if the device configuration files are corrupt and/or missing.

8. To view the location of the stored simulated data, locate **File Path**.

**Note:** When configuring automatic test data generation, users must have a client connected in order for it to work. Data will not be created without a client. Users must also be aware of both how many records are being generated and the interval between records. Many files will be created if the default values are used while polling for data on a short interval. Although this depends on the size of the project, testing even with just a few meters can cause this to happen.

9. After all the parameters have been configured, click **Generate Test Data**. A confirmation message will be posted to the Event Log if the generation was successful.

**Note:** This step is not necessary if the device is configured for automatic test data generation.

10. Once finished, select **Apply | OK**.

## **Data Types Description**

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The EFM Simulator Driver only supports the String data type, which is a null terminated ASCII character array.

## Address Descriptions

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The EFM Simulator Driver supports tags in the following syntax:

*\_EFM.Meter<number>.\_alarms*  
*\_EFM.Meter<number>.\_events*  
*\_EFM.Meter<number>.\_historyhourly*  
*\_EFM.Meter<number>.\_historydaily*  
*\_EFM.Meter<number>.\_configuration*

**Note:** A maximum of four meters may be defined for each output type.

**Important:** This driver is not intended to expose real-time data.

## Error Descriptions

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

### Address Validation

[Address '<address>' is out of range for the specified device or register](#)

[Data Type '<type>' is not valid for device address '<address>'](#)

[Device address '<address>' contains a syntax error](#)

[Device address '<address>' is Read Only](#)

[Missing address](#)

### Address Validation

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[Missing address](#)

## Address '<address>' is out of range for the specified device or register

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### Error Type:

Warning

### Possible Cause:

A tag address that has been specified statically references a location that is beyond the range of supported locations for the device.

### Solution:

Verify that the address is correct; if it is not, re-enter it in the client application.

## Data Type '<type>' is not valid for device address '<address>'

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### Error Type:

Warning

### Possible Cause:

A tag address that has been specified statically has been assigned an invalid data type.

### Solution:

Modify the requested data type in the client application.

## Device address '<address>' contains a syntax error

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### Error Type:

Warning

### Possible Cause:

A tag address that has been specified statically contains one or more invalid characters.

### Solution:

Re-enter the address in the client application.

## Device address '<address>' is Read Only

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### Error Type:

Warning

### Possible Cause:

A tag address that has been specified statically has a requested access mode that is not compatible with what the device supports for that address.

**Solution:**

Change the access mode in the client application.

**Missing Address**

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**Error Type:**

Warning

**Possible Cause:**

A tag address that has been specified statically has no length.

**Solution:**

Re-enter the address in the client application.

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