Special documentation
Proline Promag 800
OPC Server

Endress+Hauser [EH]

People for Process Automation

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1   General information

This OPC Server manages the battery-operated Promag L/W 800 flowmeter. It enables data access to e-mails sent by the Endress+Hauser Promag L/W 800 flowmeter. The data is made available to OPC clients in a CSV file (comma separated values). The data is accessed via e-mail.

Software update
Software updates for the Promag 800 OPC Server are available on the Internet at www.endress.com.

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1.1   System requirements

Operating system:	Windows XP SP2 and higher, Windows Server 2003 / 2008, Windows 7 Pro
Processor:	300 MHz or higher
RAM:	215 MB or higher
Access:	E-mail access may not be blocked by a firewall or other access authorization systems.

1.2   Copyright and liability

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1.3   Scope of delivery

The delivery comprises an installation package for OPC Server Promag 800. This also includes a Quick Guide (Brief Operating Instructions).

1.4   License

By installing the software you agree to the conditions of the licensing agreement concerned.

2   Overview

Open Platform Communications (OPC) was designed to provide a bridge for Windows-based applications and process hardware and software. OPC is a common standard that enables access to measurement data from field devices. This access method remains the same regardless of the type and source of data.

The OPC Server provides a method of supplying the measurement data of a flowmeter to many different software packages. Previously, customized software or a device driver generally had to be written for this purpose.

The aim of the OPC standard is to define a common interface that can be used by any business-specific, SCADA, HMI or custom software package.

Once an OPC Server has been developed for a particular measuring device, it can be used by any OPC client application. OPC Servers use Microsoft's Distributed Component Object Model (DCOM) to communicate with clients. DCOM technology allows the real-time exchange of information between software applications and process hardware.

2.1   Specification

This OPC Server meets the requirements of the OPC specifications to provide data to an OPC client. This server permits OPC Data Access (DA) Version 2.05 and 3.0.
The OPC Server only requires minor configuration settings after installation. Communication takes place through automatic measuring device detection; the operator does not need to make any additional settings.
The OPC Server provides a flexible and powerful method of exchanging data that is convenient and easy to use.

2.2   Mode of operation

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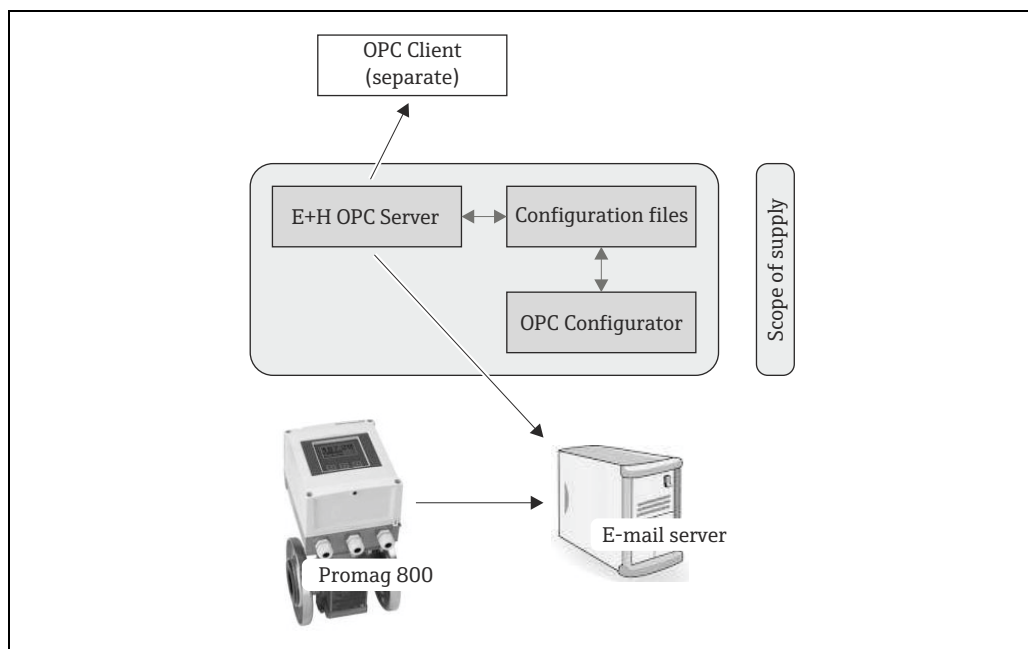
The OPC Configurator acts as the user interface for the necessary configuration of the OPC Server. This configuration is saved for the OPC Server and is therefore available for data exchange when retrieving e-mails.

3   Installation

This section explains how to install the OPC Server. Please read the instructions carefully in order to avoid any problems.

Before you start installing the software please make sure that you have administrator rights on your computer.

✎ Note!
- If User Account Control (UAC) is enabled, it is also necessary to confirm the installation.
- We recommend removing (uninstalling) any previously installed versions of the OPC Server before installing the current version:
  → To do so, open the "Programs and Features" menu in the Windows Control Panel.
- Failure to uninstall an existing version of the OPC Server could cause problems when the new OPC Server is installed.

Installation process

1. Using Windows Explorer (or a similar file management program), open the installation folder and run the "Setup.exe".

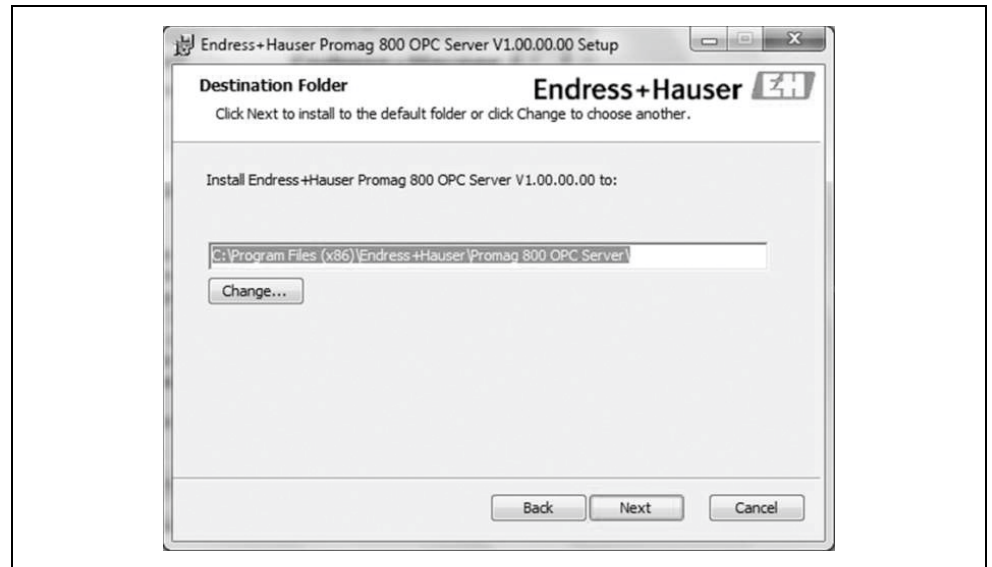2. Follow the instructions of the Installation Wizard.

    ✎   Note!
    The Wizard proposes installing the program in the following folder:
    C:\Program Files (x86)\Endress+Hauser\Promag 800 OPC Server
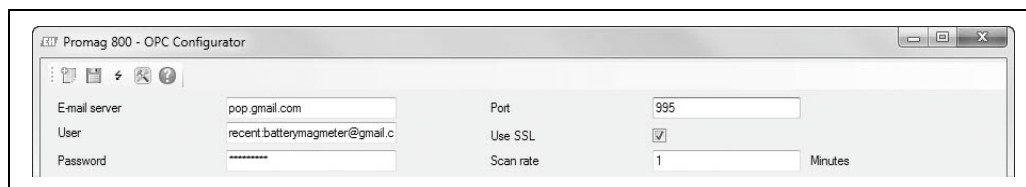

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3.   The installation program of the OPC Server copies all the necessary files and libraries to the computer.

4.   An entry is made in the main menu "Start → All Programs → Endress+Hauser → OPC Server" and a shortcut for "Promag 800 Configurator" is created on the desktop.

4   Functional description of the OPC Configurator

4.1   Quick start icons

The OPC Configurator offers the user five quick start icons.

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These quick start icons provide the following functions:

Quick start icons	Description
A0022536	**Delete** Clear complete device list
A0022537	**Apply** Save OPC configuration
A0022538	**Scan** Check connectivity to email server, scan for available emails and update device list
A0022539	**Preferences** Input language and connection settings to the email server
A0022540	**Help** Open the online help of the OPC Configurator

4.2   Settings

The following settings can be made with the ⚒ quick start icon:
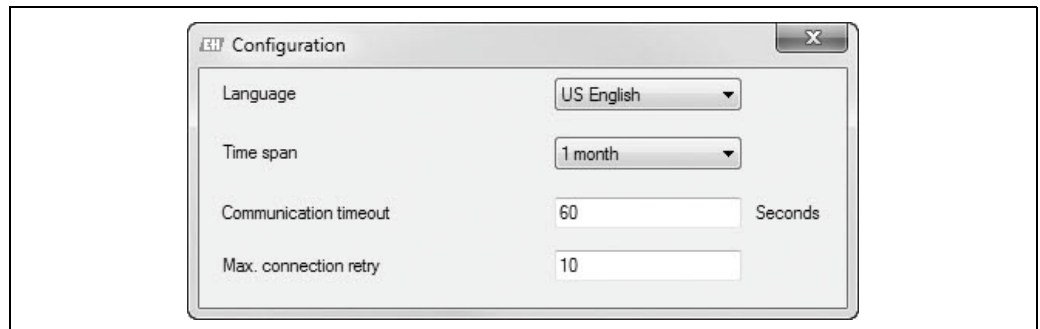
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Setting	Description
Language	Set the language
Time span	The "Scan" function is used to access the e-mail server and analyze the e-mails that are available. The "Time span" parameter defines the extent of the analysis. This function prevents long analysis times.
Communication timeout	Define a timeout for establishing a connection to the e-mail server (Minimum value: 0 seconds; maximum value: 999 seconds)
Max. connection retry	Specifies the maximum number of times the system repeatedly tries to connect to the e-mail server (Minimum value: 0 retries; maximum value: 99 retries)

The following settings must be made for e-mail access:

Setting	Description
E-Mail server	Enter the name of the e-mail server of the provider (e.g.: pop.gmail.com)
User	Create user access data for the e-mail account
Password	Enter a password for the e-mail account
Port	Enter the port of the e-mail server (for secure POP3 → use port 995)
Use SSL	Enable connection with SSL encryption for communication with e-mail server
Scan rate	Enter the interval after which new e-mails are checked and analyzed (Minimum value: 1 minute; maximum value: 99999 minutes)

4.3   Scanning

By clicking the ⚡ quick start icon the user can check the e-mail account for relevant e-mails. The results are displayed in the live list (list of instruments).

All the available field devices are shown in the live list. Several different field devices can be processed through one e-mail account. Therefore it is not necessary to create or use a separate e-mail account for each field device.

The device is identified by the serial number and tag name. The date of the last e-mail is displayed.

4.3.1 Live list status indicators

Status	Color	Description
◯ A0022543	Green	**Available** One or more device e-mails are available
⬤ A0022542	Red	**Not available** No device e-mails are available
? A0022544	–	**Not checked** The user has not yet checked for e-mails → Use the Scan function

4.3.2 Managing available e-mails

The user can manage the available e-mails for the OPC link. The following options are available here:

Option	Description
Available	Field device e-mails are available but an update of the process values is not requested.
Selected	Field device e-mails are available and an update of the process values is requested.
Remove	Once the "Apply" quick start icon is activated, the related entry is deleted from the live list. As a result the device in question is no longer displayed.

"Selected" is the standard setting for e-mail use once the "Scan" ⚡ quick start icon has been clicked and relevant e-mails have been found .

The user can change the setting to "Available" or "Remove" via the configuration settings. Changes to the option ("Available", "Selected" or "Remove") are activated by clicking the "Apply" quick start icon 💾 to save the settings.

An example of the result of an e-mail account scan is shown in the following table. Four field devices are displayed. Two of these devices are used for active data transfer ("Selected" devices). The other two devices use the "Available" option and are therefore not used for the OPC link.

Status	Color	Option	Serial number	Tag name	Last e-mail
◯ A0022543	Green	**Available** ▼	06190	PT100	2013-13-11 09:11:15
◯ A0022543	Green	**Selected** ▼	06192	PT101	2013-13-11 09:12:15
◯ A0022543	Green	**Available** ▼	06196	PT102	2013-13-11 09:13:15
◯ A0022543	Green	**Selected** ▼	06198	PT103	2013-13-11 09:14:15

5 Commissioning

The following conditions must be met:
- The Promag 800 field device has been configured in accordance with the specifications of the Operating Instructions (BA00147D, BA00148D). In this connection please note that only SD and PD file formats (transmission of **p**rocess **d**ata) are supported.
- The configured e-mail account makes the relevant e-mails available.

Observe the following procedure for commissioning:

1. Start the "OPC Server" application (e.g. by double-clicking the "Promag 800 Configurator" application)
2. Configure the "E-mail server"
3. Configure the "User"
4. Configure the "Password"
5. Configure the "Port"
6. Configure "Use SSL"
7. Configure the "Scan rate"
8. Via ⚙ make the settings for the language, time span etc.
9. Via ⚡ start searching for device e-mail(s) at the configured e-mail address
10. Select the relevant devices from the live list (configuration: "Select" ▼)
11. Via 💾 save the configuration
12. Check the status in the live list

→ The data for the OPC link are available.

6   OPC variables
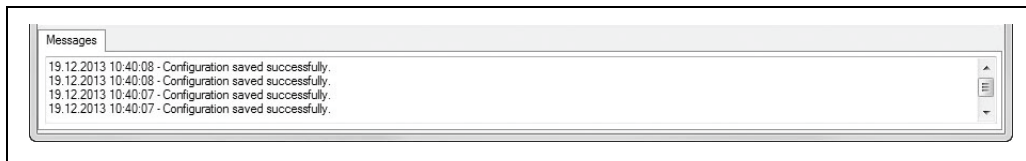
The following data are available as OPC variables:

OPC variable	Data type	Promag 800 parameter
Serial number	String	SRNUM
Firmware	String	MODSV
Device tag	String	INTAG
Battery status	String	DLMSE
Actual power source	String	→ Operating Instructions, Section 7.3.1
Antenna signal	String	ANTSS
Free memory	String	SDSTA
Active alarms	String	ALARM
Alarms/warnings	String	ALARM
ProcessData.Reference.Date	String	DTIME
ProcessData.Reference.Time	String	DTIME
ProcessData.Total Positive.Unit	String	VTMUT, VTMUV, VTDPP
ProcessData.Total Positive.Value	Float	VTTPV
ProcessData.Total Negative.Unit	String	VTMUT, VTMUV, VTDPP
ProcessData.Total Negative.Value	Float	VTTNV
ProcessData.Flow Rate.Unit	String	FRMUT, FRMUV
ProcessData.Flow Rate.Value	Float	FRVTU
ProcessData.Flow Rate Percentage.Unit	String	FRVPC
ProcessData.Flow Rate Percentage.Value	Float	FRVPC
ProcessData.Partial Positive.Unit	String	VTMUT, VTMUV, VTDPP
ProcessData.Partial Positive.Value	Float	VTPPV
ProcessData.Partial Negative.Unit	String	VTMUT, VTMUV, VTDPP
ProcessData.Partial Negative.Value	Float	VTPNV
ProcessData.Total Net Value.Unit	String	VTMUT, VTMUV, VTDPP
ProcessData.Total Net Value.Value	Float	VTTNT
ProcessData.Partial Net Value.Unit	String	VTMUT, VTMUV, VTDPP
ProcessData.Partial Net Value.Value	Float	VTPNT
ProcessData.Measured cycles per Hour.Symbol	String	TOMCY
ProcessData.Measured cycles per Hour.Value	Float	TOMCY
ProcessData.Battery Status1.Symbol	String	BATTS
ProcessData.Battery Status1.Value	Float	BATTS
ProcessData.Battery Status2.Symbol	String	BATTS
ProcessData.Battery Status2.Value	Float	BATTS
ProcessData.Battery Status3.Symbol	String	BATTS
ProcessData.Battery Status3.Value	Float	BATTS
ProcessData.Antenna Signal.Symbol	String	ANTSS
ProcessData.Antenna Signal.Value	Float	ANTSS
ProcessData.Board Temperature.Unit	String	BTMPV
ProcessData.Board Temperature.Value	Float	BTMPV

7   Error messages/notice messages

Messages are displayed below the live list (see the following example).

Messages
19.12.2013 10:40:08 - Configuration saved successfully.
19.12.2013 10:40:08 - Configuration saved successfully.
19.12.2013 10:40:07 - Configuration saved successfully.
19.12.2013 10:40:07 - Configuration saved successfully.

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The following error messages/notice messages are provided:

Error/notice message	Action	Category
OPC configuration has been changed. Do you want to accept your changes?	Confirm to save the modified configuration. Cancel to reject the changes.	Notice / Info
Error saving the current configuration. The file name is being used by another application or is write-protected.	Save the configuration under another file name.	Error
Unable to connect to the e-mail server!	Check the name of the e-mail server, user name and password for the e-mail account. Check the configuration of the e-mail server (Port, Use SSL)	Error
Unable to establish connection between e-mail server and OPC Server. Server not responding.	Increase communication timeout or max. number of retries.	Error
The e-mail account is already in use or is locked.	Contact the system administrator.	Error
Unable to establish connection between e-mail server and OPC Server.	Contact the system administrator.	Error
PDF Viewer unavailable.	Install PDF Viewer.	Error
No help available.	Install the help file (→ www.endress.com).	Error
Devices available for OPC integration.	No action required.	Notice / Good
Retrieving e-mails.	No action required.	Notice / Good

8 Software history

The release number on the front page of the Operating Instructions provides information on the software release version.

Date	Software version	Software change
10/2013	5.04.zz	Initial software version

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