



enCore Device Series

Flow Computer

Gas Analyzers

Q.Sonic Series 6

Update Instructions
Update of the Device Software

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1 About this manual

This update guide contains information for all users of the enCore device series. This document describes how to update the software of enCore devices, the special case of bugfix software, possible requirements and steps after the update.

1.1 Device types

This manual is applicable for the following device types¹ :

Flow Computer

enCore FC1, enCore MC1

Gas Analyzers

EnCal3000 proChain GC,
GasLab Q2 (for Basic System V 03-08-A and higher)

Q.Sonic series 6



Update Instructions for firmware 03-40-A or higher

These instructions allow you to perform a firmware update for Q.Sonic devices on which firmware version 03-40-A or higher is installed.

If you want to update a Q.Sonic with firmware version 02-xx, contact our technical support.

Q.Sonic-plus, Q.Sonic-max8

¹ Whether an AFB is already present in the delivery state of a device or is optionally available depends on the individual device type.

1.2 What is a software update for enCore devices

Since the device software consists of different modules, the software update works individually for each module.¹ enSuite ensures the compatibility of the software modules.

These software modules include the *Basic System* (with its SFBs), all available AFBs as well as the approval file for devices in legal metrology, which defines the official access rights. Whether an AFB is already present in the delivery state of a device or is optionally available depends on the individual device type.

Structure of the version information for software modules

The version information for software modules is structured as follows, for example:

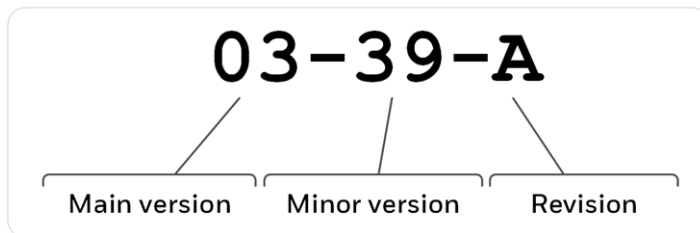


Fig. 1-1: Structure of version information – example V 03-39-A

- **Main version (two-digit number)**
The main version changes only in case of major structural changes to the *Basic System*. It is the same for all software modules within a device.
- **Minor version (two-digit number)**
The minor version is typically increased in new developments and indicates that the parameter structure has changed. It may vary between the modules.

¹ In special cases there may be a requirement to downgrade to older software modules. In this case, it is possible to exchange more recent versions for older ones.

- Revision (letter)
The revision letter changes for small changes such as bug fixes. For AFBs, the revision is also adjusted as soon as the minor version of the Basic System is increased.

2 Considerations and first steps

2.1 Is an update relevant for my device?

You can use the change history of a new software version to check whether the new functions, improvements, bug fixes and resolved security problems are relevant for your enCore device. The change history is available for software releases on the Honeywell website since 2020 as a PDF file in the download area of the respective device type.

process.honeywell.com/us/en/site/elster-instromet/support#software-downloads

2.2 Download current software from Honeywell website

The Honeywell website contains the latest software releases for the Elster Gas device series. Download the required enCore version from the download area to the service PC and unzip it.

process.honeywell.com/us/en/site/elster-instromet/support#software-downloads

2.3 Use compatible enSuite version

In most cases, a new enSuite version is required for a device release - only in case of a bug fix software, no new enSuite is required. The current enSuite is available in the download area of the Honeywell website.

process.honeywell.com/us/en/site/elster-instromet/support#software-downloads

Use the enSuite change history on this website to check which enSuite version is compatible with the current device version.

If necessary, download the enSuite version and update the existing installation.

2.4 Current manuals available in Docuthek

Elster Gas provides the latest user documentation such as manuals, certificates, data sheets, technical information for various device types in the Docuthek. The documents are updated regularly.

www.docuthek.com

Use the device type as search term, for example **enCore FC1**.



Check PDF after download

You can use SHA-1 checksum information to verify the file integrity of a PDF after download with an appropriate tool.

The nominal value of the SHA-1 checksum for a PDF can be found in the Docuthek in the detailed information in the remarks section, or - if you download the PDF from the Honeywell website - in brackets next to the down



Which manuals are relevant for earlier device software versions?

Only the latest manuals are available in the Docuthek. If you are using an older software version, you can look up the corresponding manuals for each version since 2020 in the change history on the Honeywell website:

process.honeywell.com/us/en/site/elster-instromet/support#software-downloads

2.5 Required access rights

The exchange of legally relevant and operational (i.e., not legally relevant) software modules may be restricted by special access rights and may, for example, require opening the security switch.

⇒ enCore manual “Basic System with SFBs”

In the following use cases, a distinction is made between the use cases "legally relevant update" and "operational update" as examples and listed with the minimum required rights:

⇒ [2.5.1 Use case 1: legally relevant update](#) (p. 11)

⇒ [2.5.2 Use case 2: operational update](#) (p. 12)

2.5.1 Use case 1: legally relevant update

Update legally relevant software and approval file.

OR

Update or install selected legally relevant software modules.

Primary actor(s)

service technicians with additional qualification as metrology expert¹

OR

service technician plus metrology expert

Goals

- open security switch if necessary
- change software (operational, legally relevant)
- change approval file

Minimum required rights

- on system level:
Update non-fiscal firmware, Update fiscal firmware, Update approval file
- on parameter level:
AFBs and/or individual parameters can be under the protection of the security switch

User profiles in enSuite

Administrator profile (*no adjustment required*)

¹ How an update of legally relevant software may be performed is determined by the applicable legal regulations and country-specific relevant standards and may vary from country to country.

In Germany, for example, changing legally relevant software is protected by the security switch. Here, the security switch may only be opened if either a fiscal verification officer or a test center manager is present. A service technician can also be authorized as test center manager (additional qualification).

2.5.2 Use case 2: operational update

Update operational software.

OR

Update or install selected operational software modules.

Main actor(s)

service technician

Goals

- change software (operational)
- open security switch if necessary¹

Minimum required rights

- on system level:
Update non-fiscal firmware
- on parameter level:
AFBs and/or individual parameters can be under protection of the security switch

User profiles in enSuite

Administrator profile (*no adjustment required*)

OR

User profile 1..5

Parameterize minimum required rights

¹ The replacement of legally relevant and/or operational (i.e., not legally relevant) software modules may be under the protection of the security switch. These settings can be found in the parameterization in branch **Basis System-Users** on the **Special user rights** tab .

3 Update device software

3.1 Steps in a nutshell

Perform all steps one after the other, if necessary:

- ⇒ 3.2 Preparation(s) (p. 13)
 - 3.2.1 Open security switch (p. 13)
 - 3.2.2 Read out archives (p. 14)
 - 3.2.3 Read out parameterization (p. 14)
 - 3.2.4 Special case: bugfix software (p. 15)
- ⇒ 3.3 Update software modules (p. 16)
- ⇒ 3.4 Check conformity with approval (only for devices in legal metrology) (p. 19)
- ⇒ 3.5 Check update (p. 19)
- ⇒ 3.6 Tasks following the update (p. 20)
 - 3.6.1 Convert original parameterization (optional) (p. 20)
 - 3.6.2 Transfer (converted) parameterization to the device (p. 21)
 - 3.6.3 Close security switch (p. 22)
- ⇒ 4 Excursus: Activate chargeable AFBs in the device (p. 23)

3.2 Preparation(s)

3.2.1 Open security switch

Background

The exchange of legally relevant and operational (i.e., not legally relevant) software modules can be under the protection of the security switch and is therefore only possible when the security switch is open.

When opening the security switch, observe the legal requirements of the respective country.

Steps at the device

- ▶ Open the security switch.

3.2.2 Read out archives

Background

To avoid data gaps in the archives as much as possible, readout the archives from the enCore device immediately before the update.

Steps in enSuite

- ▶ Connect enSuite to the enCore device.
- ▶ In the lower area of the navigation window, select the action **Readout archives**.
- ▶ Save the archives under the desired name.

⇒ enCore manual “Configuring the Device with enSuite”

3.2.3 Read out parameterization

Background

As soon as the version numbers of the software modules differ in the version number (and not only in the version letter), the current parameterization - hereinafter referred to as original parameterization - is no longer compatible after the update. In this case, readout the original parameterization from the device. It can be easily converted in enSuite and transferred to the device after the update.

⇒ [3.6.1 Convert original parameterization \(optional\)](#) (p. 20)

Steps in enSuite

- ▶ Connect enSuite to the enCore device again if necessary.
- ▶ In the lower area of the navigation window, select the action **Parametrierung auslesen**.
- ▶ Save the data under the desired name.

⇨ enCore manual “Configuring the Device with enSuite”

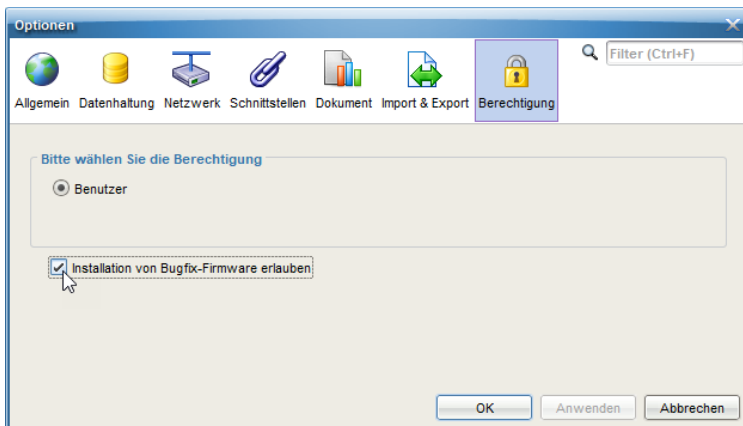
3.2.4 Special case: bugfix software

Background

The special thing about a bugfix software is that typically only one AFB is published. With this AFB only the revision letter is increased. No suitable enSuite is published, which means that your enSuite installation does not know the new device software. To enable the transfer of a bugfix software to the enCore device, you have to explicitly allow this installation in enSuite.

Steps in enSuite

- ▶ Open the menu item **Extras - Options** in enSuite.
- ▶ Select the **Allow bugfix installation** checkbox.



- ✓ As soon as you confirm the setting with **[OK]**, software modules with a revision change can be transferred to the enCore device.

3.3 Update software modules



Activate chargeable AFBs

If you want to unlock chargeable AFBs in the device, first transfer the resource ticket with the unlocked AFBs to the device.

⇒ [4 Excursus: Activate chargeable AFBs in the device](#)
(p. 23)

Prerequisite(s)

- Data connection to the device exists.
 - Required access rights are granted, if necessary the security switch is open.
- ▶ In the **Navigation** pane, highlight the device in either the **Devices** folder or the **Connections** folder.
 - ▶ Select the action **Software configuration**.
 - ✓ The **Configure software** window lists in a table (📘) all software modules that are currently contained in the device with version information in the **Current** column .
In addition, the column **Fiscal** informs whether a module is legally relevant.

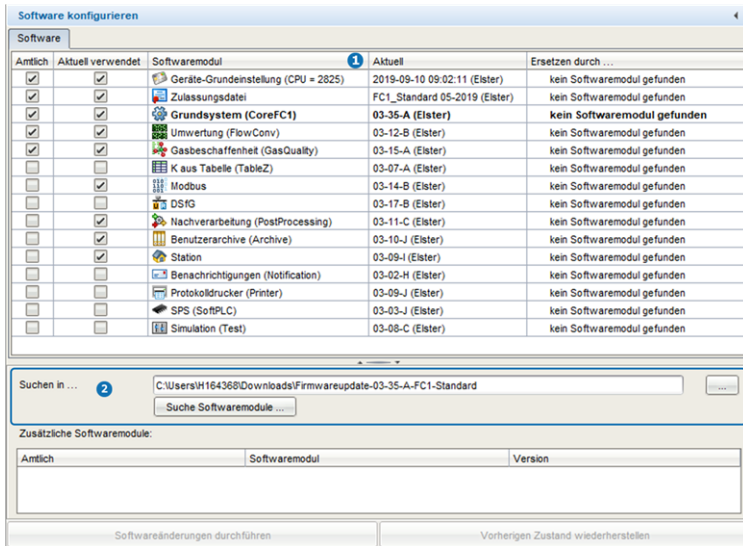


Fig. 3-1: Current software modules in the device (1) – example FC1 V 03-35-A

To search for the current software (2), ...

- ▶ ... under **Search in...** enter the directory with the unpacked software.
- ▶ Click on the button [**Search software modules...**].
- ✓ The specified directory is searched for other software versions:
 - In the **Replace by...** column, newer module versions are highlighted in bold and green and preselected for an update by default.
The text **do not replace** is displayed if there is no newer version for a module.
 - The **Additional software modules** (3) area displays modules that are not available in the device by default.

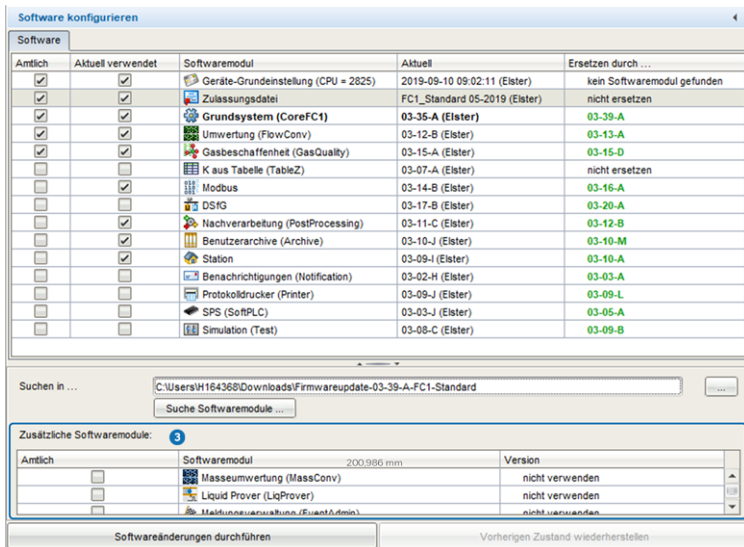


Fig. 3-2: Possibly newer versions in searched software – example FC1 V 03-39-A

- ▶ In columns **Replace by...** and **Version**, define one of the actions for each module:
 - update **<version>**. (default)
 - to keep a module version in the device, select the entry **do not replace**.
 - to delete module version in the device, select the entry **remove**.



Explicitly select approval file

Note that approval files do not have a version, but are identified by their name. If a current approval with a new approval file must be taken into account, select it explicitly.

To transfer the selected software to the device, ...

- ▶ ... click on the button **[Perform software changes]**.
- The status of the security switch is checked:

- The process is aborted if the security switch is closed and a change of the software configuration is prohibited in this case.
- The login dialog appears when...
 - ... the security switch is open.
 - ... the security switch is closed and the action is permitted with the security switch being closed.
- ▶ If the action is allowed, log in with username and password.
- ✓ If authentication is successful, enSuite lists the modified modules before transmission.
- ▶ To transfer the modified software to the device, confirm this dialog.
- ▣ After successful transmission, the device restarts automatically with an empty basic parameterization (without AFBs).
- ▶ If necessary, check on the device in the **Info - Software status** display whether the parameterization conforms to the approval file contained in the device.
 - ⇨ [3.4 Check conformity with approval \(only for devices in legal metrology\)](#) (p. 19)

3.4 Check conformity with approval (only for devices in legal metrology)

An identifying code for the approval file, such as FC1_NMI_2013, is shown on the device in the **Info - Software status** display. If both, the legally relevant access rights of the parameterization and the versions of the legally relevant software modules, are conform to the approval file, this text is black, but in case of deviations the text is marked **red**.

With the hyperlink [<abbreviation of the approval file>](#) you will receive detailed information about the approval.

3.5 Check update

To ensure that the desired software modules have been transferred to the device, compare the version numbers in enSuite (**Configure software** window) with the version numbers of the device.

- ▶ To view the version numbers of the software modules in the device, change to the home display at the enCore device if necessary.
- ▶ Open **Info** – **Software status** – **<Basic System or name of legally relevant AFBs>**.
- ▶ Here (among other things) the Basic System and the used AFBs are listed with their version number.

Info	Software-Status	07:52:12
LEAD	2.0.7	E4209D03
MFE7	1.0.9	6A251F79
Grundsystem	03-35-A	54C6F663
Gasbeschaffenheit	03-15-A	328F0321
Umwertung	03-12-B	06CBE582
Station	03-09-I	AA74484F
Nachverarbeitung	03-11-C	707C2479
Benutzerarchive	03-10-J	3DFF4EF0
Modbus	03-14-B	7BD2343E

Fig. 3-3: Basic System and AFBs with version number – example

3.6 Tasks following the update

3.6.1 Convert original parameterization (optional)

Background

If the versions of the Basic System in the device and the parameterization no longer match after the software update, the original parameterization is no longer compatible with the new software, but can be easily converted.

Steps in enSuite

To make the original parameterization compatible with newer software modules, ...

- ▶ ... open the original parameterization that you have just read out of the device for editing.
- ▶ In the parameter window, select the root of the parameter tree with the device name.
- ✓ The **Configuration** tab shows the parameterizable software modules, i.e., the *Basic System* and all AFBs used in the parameterization with version information.
- ▶ Select the new version for the *Basic System* in the **Version** column. enSuite searches for the versions of the AFBs that match the *Basic System* and highlights them in *green*.
- ▶ Click on **[Commit changes]**.
- ▶ Check the parameterization of the changed modules for new parameters and edit the parameterization if necessary. It is also possible that individual AFBs are marked *red*. In this case the parameterization is invalid and must be reworked.
- ▶ Save the device parameterization and close the parameterization window.
- The converted device parameterization can now be transferred to the device.

3.6.2 Transfer (converted) parameterization to the device

Optionally you can transfer a new or converted parameterization to the device.¹

Steps in short

- ▶ Establish a data connection to the device with enSuite.
- ▶ Select the action **Transfer parameterization to device**.
- ▶ Authenticate yourself in the login dialog.
- ✓ After successful login the transmission starts.
- After successful transmission, the device restarts automatically.

¹ Editing and transmission of a parameterization ↔ enCore manual “Configuring the Device with enSuite”

3.6.3 Close security switch

Steps at the device

- ▶ Close and seal the security switch if necessary.

4 Excursus: Activate chargeable AFBs in the device

Background

Since software version 03-38, the enCore device series supports additional, chargeable AFBs. Fee-based AFBs are typically not included in the delivery state of the device software. As soon as you have purchased a chargeable AFB, you will receive a new resource ticket with the basic device settings for your device, in which the purchased AFBs are activated. To unlock chargeable AFBs, first transfer only the basic device settings to your device.

In enSuite chargeable AFBs are marked with this symbol 📄 .



Purchase chargeable AFBs from the Honeywell Sales Team

Contact your Honeywell Sales Team to purchase a chargeable AFB. The following information is required to create a new `Basic device settings.SDM2` for your device:

- customer/name
- AFB name, such as Event Administration AFB
- year of manufacture
- serial number of the device (e.g., 7ELS962522xxxx)
- device type (e.g., enCore FC1)
- CPU serial number (4 digits)

Serial number, device type and CPU serial number can be found in the info display of the device.

Steps in enSuite

- ▶ To transfer the resource ticket to the device, establish a data connection to the device with enSuite.
- ▶ Call up **Software configuration** in the action menu.

- ▶ In the software configuration with [...] you specify the path to the current resource ticket.
- ▶ Confirm with **[Search software modules...]**.
- ✓ In column **Replace by...**, the new basic device settings of the resource ticket are detected and the text **do not replace** is displayed.
- ▶ Select the new version of the **Basic device settings**.

Software				
Amtlich	Aktuell verwendet	Softwaremodul	Aktuell	Ersetzen durch
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Geräte-Grundensteking (CPU = 2825)	2020-02-05 14:06:47 (Ester)	nicht ersetzen
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Zulassungsdatei	keine (Ester)	nicht ersetzen
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Grundsystem (CoreZMT)	03-38-A (PTB)	2019-09-27 09:32:02 (DEMO)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Umwertung (FlowConv)	03-13-A (PTB)	kein Softwaremodell gefunden

- ▶ Transfer the new basic device settings to the device with **[Perform software changes]**.
- ▶ Follow the dialog guidance of enSuite.
- ▶ After the successful transfer of the new basic device settings, the device restarts.
- ▶ (Optional) To view the list of enabled AFBs, switch to the **Info** display on the device:

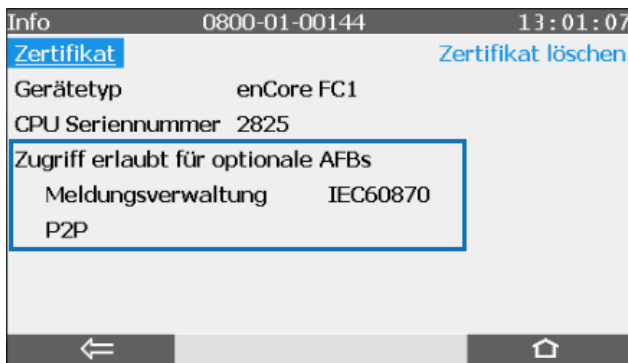


Fig. 4-1: **Info** display with enabled AFBs – example

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