ACS410
PC software for microprocessor-based burner controls

Installation and Operating Instructions

For use with software version 4.0 or higher
Date of issue: July 1, 2015
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<td>18</td>
<td>Glossary</td>
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<td>Index</td>
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</table>
1 Typographical conventions

Safety guidelines
These Installation and Operating Instructions contain notes which must be observed to ensure your personal safety and to protect the product and the connected equipment. Such notes are highlighted by a warning triangle:

![Warning]
Indicates that death, personal injury or substantial property damage can result if adequate precautions are not taken.

Additional notes
The following symbols are used for notes and references:

![Note]
Draws your attention to particularly important information on the product, product handling, or to a special part of the documentation.

![Reference]
Makes reference to additional information given in other pieces of technical documentation or chapters.

Qualified personnel
ACS410 is protected by access levels. These access levels define the scope of functions for the respective user group.

Naturally, special qualifications are required for the different user groups. For example, it is the OEM’s or the heating engineer’s responsibility to ensure that the settings made on the burner control are in compliance with the standards applying to the relevant plant.

Correct usage
This software may only be used on the applications described in the technical documentation, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.
2 Introduction

Note
When using the ACS410, compliance with the technical documentation on the respective type of burner control (LMV2…/LMV3…/LME1…-/LME2…-/LME4… standard/LME39…/LME6…/LME7…/LME8…/LMO… standard) is mandatory!

Suitable types of burner controls and relevant pieces of documentation:

<table>
<thead>
<tr>
<th>Burner control</th>
<th>Data Sheet no.</th>
<th>Basic Documentation no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LME1...-/LME2...-/LME4... Standard</td>
<td>N7101</td>
<td>---</td>
</tr>
<tr>
<td>LME39…</td>
<td>N7106</td>
<td>P7106</td>
</tr>
<tr>
<td>LME6…</td>
<td>N7104</td>
<td>---</td>
</tr>
<tr>
<td>LME7…</td>
<td>N7105</td>
<td>P7105</td>
</tr>
<tr>
<td>LME81…</td>
<td>---</td>
<td>P7109</td>
</tr>
<tr>
<td>LMO…-Standard</td>
<td>N7130</td>
<td>---</td>
</tr>
<tr>
<td>LMO39…</td>
<td>N7154</td>
<td>P7154</td>
</tr>
<tr>
<td>LMV2…</td>
<td>---</td>
<td>P7541</td>
</tr>
<tr>
<td>LMV3…</td>
<td>---</td>
<td>P7546</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface module</th>
<th>Data Sheet no.</th>
<th>Basic Documentation no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCI410...</td>
<td>N7616</td>
<td>---</td>
</tr>
<tr>
<td>OCI400</td>
<td>N7614</td>
<td>---</td>
</tr>
</tbody>
</table>

General

The ACS410 is a convenient tool designed to visualize, save and transmit all data delivered by advanced microprocessor-based burner controls made by Siemens.

The ACS410 provides the following functions for burner controls with BCI interface (LMV2…/LMV3…/LME39…/LME7…/LME8…) via OCI410…, or for burner controls with UDS interface (LME39…/LMO… standard/LME… standard) via OCI400):

- Reading the settings and parameters, operating states and types of errors of burner controls
- Data logger (recording, triggering and presenting the data delivered by the burner controls)
- **Reporting** functions for printing the burner control settings for documentation purposes

Extra functions available when using burner controls with BCI interface (LMV2…/LMV3…/LME39…/LME7…/LME8…) via OCI410…:

- Parameter settings
- Backup/restore

All key data can be saved in files and retrieved later, even without having the burner control connected.

Operation of the program is primarily based on Windows standards and requires basic knowledge of the software used by this operating system.

Note
This document was issued on July 01, 2015, and covers ACS410 version 4.0 or higher.
3 System requirements

Operating system:
- Windows (r) XP min SP2
- Windows (r) Windows 7
- Windows (r) Windows 8.1

The system requirements are determined mainly by the choice of Microsoft operating system used!

Example: Minimum hardware requirements!

<table>
<thead>
<tr>
<th>System</th>
<th>32 bit</th>
<th>64 bit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>1 GHz (x86) or higher</td>
<td>1 GHz (x64) or higher</td>
</tr>
<tr>
<td>(Win8, with support for PAE, NX and SSE2)</td>
<td>(Win8, with support for PAE, NX and SSE2)</td>
<td></td>
</tr>
<tr>
<td>Main memory (RAM)</td>
<td>1 GB</td>
<td>2 GB</td>
</tr>
<tr>
<td>Hard disk memory</td>
<td>16 GB</td>
<td>20 GB</td>
</tr>
<tr>
<td>Graphics card</td>
<td>DirectX 9 graphics card with WDDM driver</td>
<td></td>
</tr>
<tr>
<td>Screen resolution</td>
<td>Minimum screen resolution 1024 x 786.</td>
<td></td>
</tr>
</tbody>
</table>

Different, higher requirements may apply due to the choice of operating system or hardware used.

More detailed information is available at www.microsoft.com.
3.1 Prerequisites for using ACS410

When using online help, you need Acrobat Reader. To make a download, go to Adobe’s homepage at www.adobe.com

For connection of ACS410 with the burner control, the following additional components are required:

- In the case of communication via UDS interface (with optical data transmission): OCI400
- In the case of communication via BCI (Burner Communication Interface): OCI410...
- 25 MB free hard disk memory (for the data logger function, additional memory is required for saving data files)
- Free serial RS-232-COM interface, for operation with OCI400, a USB-RS-232 adapter can be used on an existing USB-COM interface as an alternative
- Free USB 1.1 interface or higher, for operation with OCI410
- Input devices: Keyboard and mouse or touchpad
- Optional: CD-ROM drive for installing the ACS410 via CD
- Optional: Internet access, for sending e-mails from the ACS410 or downloading the ACS410 via the Siemens Extranet

4 Safety notes

Warning!
The ACS410 is a convenient tool for use by qualified personnel, designed to commission and optimize combustion plant. Since the required actions and settings are safety-related, the user has a special obligation to exercise due care. Although specific technical measures have been taken to prevent incorrect entry of data and wrong parameter values, the user must check the correct function of the plant in a conventional way both during and after commissioning and – if required – ensure manual shutdown.

4.1 Setting the correct system parameters

Warning!
It should be noted that the characteristics of the burner control are determined primarily by the parameter settings to be made, rather than by the type of unit. It is especially the OEM which is responsible for making certain that the unit's parameter settings are in compliance with the standards covering the respective application or type of plant. Responsibility for the parameter settings is assumed by the person who, in accordance with the access rights, makes or has made changes on the respective setting level. The detailed descriptions and safety notes given in the Basic Documentation on the system components must also be observed.

4.2 Setting the electronic fuel-air ratio control system (only with LMV2…/LMV3…)

Warning!
When setting the electronic fuel-air ratio control system, the user is required to make checks with the help of a flue gas analysis system. If necessary, the plant must be shut down manually. This applies to both modulating and multistage operation. In addition, the user must fully operate the parameterized plant without the ACS410, but using the AZL2… display and operator unit, and to verify the correct settings.
4.3 Changing the parameters or the plant's configuration

Warning!
The procedure (checking the savings) described in chapter Parameters window including checking of Required und Actual must be strictly observed. For that, the program offers special support. If there are deviations, the relevant notes must be observed. In addition, the user must verify the correct setting of all parameters with the help of the AZL2…display and operator unit, without using the ACS410.

4.4 Shutdown function of LME…/LMV2…/LMV3… burner controls via ACS410

Warning!
To ensure shutdown of plant in case of emergency, direct-acting means (mains isolator for opening the safety loop) should be used. Reason: Execution of shutdown via the PC could be impaired by a faulty PC, for example, or a disrupted connection.

4.5 Place of installation

Warning!
The ACS410 is designed for use on site, that is, within viewing and hearing distance of the respective combustion plant. This means that remote control is not permitted.

4.6 ACS410 with Modbus (LMV2 / LMV3 only)

Note!
If the ACS410 is started when Modbus mode is activated on a LMV2 / LMV3, it is no longer possible to write data via Modbus! Modbus data points can only be read in this state.

Exception!
If data recording is activated with ACS410 (trending), individual pieces of data for the LMV2 / LMV3 can be written via Modbus.
If the data recording is stopped or the window is exited, the write access for Modbus to the LMV2 / LMV3 is also blocked.

Warning!
When the ACS410 is ended, the Modbus data of the overriding control system may have to be re-installed (e.g. target load).
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6 Procurement of ACS410

For ordering the ACS410 software and updates plus the drivers for the interface module OCI410... BCI (Burner Communication Interface), please contact your distributor or heating engineer.

7 Languages

The ACS410 is available in English and German. To select one of them, go to program menu item Settings (chapter Settings – languages).

8 General note!

The visual appearance of the relevant screen content is influenced by the settings of the Windows operating system.
In Windows 7, for example, the relevant settings can be found under Control Panel > Appearance and Personalization.

All screenshots in this documentation have been created using the standard Windows setting.
9 Installing/deinstalling the ACS410

Note
To install the software, you need to have administrator rights on your PC.

Before installing the software package, all active applications that are not really required should be closed. Also take care that your virus scanner is not activated.

Load all installation files of the ACS410 and the associated subdirectories to a directory of your choice.

9.1 Installing the ACS410

To start installing the ACS410, select the setup.exe file from the directory selected by you for installing the files of the ACS410.

To start the installation, double-click the setup.exe file.

Choose either German or English as the installation language!
Installing the ACS410
(cont’d)

Follow the installation instructions.

Click Next.>

Read the EULA carefully.
The agreement must be accepted before continuing with the installation.
If you reject the agreement, the installation is canceled.

Click Next.>
The setup will install the ACS410 in the following folder.

Click on **Browse** … to select a different folder.

Click on **Next >** to continue.
The setup will create the program links in the following start menu folder.

Click on **Browse** ... to select a different folder. 
Click on **Next >** to continue.

Check the box **☑ next to Create a desktop icon** if you would like to create a desktop icon.

The setup will then create the icon during the installation of ACS410.

Click on **Next >** to continue.
Click on **Install** to start the installation.

The ACS410 is installed. The device driver of OCI410 is then installed as part of the setup process.
The device driver installation assistant opens.
The device drivers for the interface module OCI410 are installed with this assistant.

Click on **Next** to continue.
The device drivers are installed.
Click on Finish to end the installation successfully.

Note! Connect an OCI410 to the USB port on your computer.

To start the ACS410, click on Finish.
The ACS410 has been successfully installed.

If no burner control is connected, the following error message appears:

Click on OK.
End the ACS410 application and connect a burner control to the OCI410.
Start the ACS410 application again.
9.2 Deinstalling the ACS410

This function deinstalls the ACS410, installs missing files, or corrects corrupted files, connections and registration entries. From the Windows start menu under Settings – Control Panel, select the Programs and Features icon and open the program.

Click to open the menu for uninstalling programs.

Highlight ACS410 and click Change or Remove.

The ACS410 Version 4.0 is removed.
9.3 Files included in the scope of delivery

The following files are required and must be installed for running the ACS410:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>bin</td>
<td>7/26/2013 8:03 AM</td>
<td>File folder</td>
<td>1.42 KB</td>
</tr>
<tr>
<td>setup.exe</td>
<td>7/26/2013 8:03 AM</td>
<td>File</td>
<td>3 KB</td>
</tr>
<tr>
<td>setup_&lt;version&gt;.exe</td>
<td>7/26/2013 8:03 AM</td>
<td>File</td>
<td>5 KB</td>
</tr>
<tr>
<td>24/02/2015 2:22 PM</td>
<td>Application</td>
<td>2,085 KB</td>
<td></td>
</tr>
</tbody>
</table>

Installation directory:

Contents of the bin folder:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>config</td>
<td>7/26/2013 8:03 AM</td>
<td>File folder</td>
<td>96 KB</td>
</tr>
<tr>
<td>data</td>
<td>7/26/2013 8:03 AM</td>
<td>File folder</td>
<td>40 KB</td>
</tr>
<tr>
<td>hlp</td>
<td>7/26/2013 8:03 AM</td>
<td>File folder</td>
<td>40 KB</td>
</tr>
<tr>
<td>loc</td>
<td>7/26/2013 8:03 AM</td>
<td>File folder</td>
<td>40 KB</td>
</tr>
<tr>
<td>sac</td>
<td>7/26/2013 8:03 AM</td>
<td>File folder</td>
<td>40 KB</td>
</tr>
<tr>
<td>TACProgram</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
<tr>
<td>TACSetup</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
<tr>
<td>TACSetup</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
<tr>
<td>SAC410_AllRegisterOn.bat</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
<tr>
<td>SAC410_AllRegisterOn.bat</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
<tr>
<td>SAC410_AllRegisterOn.bat</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
<tr>
<td>SAC410_AllRegisterOn.bat</td>
<td>7/26/2013 8:03 AM</td>
<td>Application</td>
<td>40 KB</td>
</tr>
</tbody>
</table>

10 Connecting to the plant

Ensure compliance with the relevant national safety regulations!

Warning:
- Before making any wiring changes in the connection area of a burner control completely isolate the unit from mains supply (all-polar disconnection)
- Ensure protection against electric shock hazard by providing adequate protection for the burner control’s connection terminals
10.1 Data exchange via the OCI410

Connect the OCI410 interface for BCI communication with LMV2.../LMV3... or LME... burner controls to the USB port of your PC (without any further extensions) as shown in the example below.

Authorization for making use of the respective functionality of the ACS410 is enabled by the different types of OCI410... The table below shows the different types of OCI410... with the relevant authorizations and the resulting functions in connection with the ACS410.

<table>
<thead>
<tr>
<th>Type of OCI...</th>
<th>Authorization</th>
</tr>
</thead>
</table>
| OCI410.20 IS (installer) | Functionality is dependent on the type of unit:  
- Reading info/service data  
- Reading parameters  
- Reading and printing status data  
- Recording and saving trending data  
- Resetting the startup counter and the hours run and fuel meter  
- Changing the preselected manual output |
| OCI410.30 SO (heating engineer) | Functionality is dependent on the type of unit (see IS):  
Changing parameters (SO level)  
In addition:  
- Setting the ratio control curves of the LMV2.../LMV3...  
- Changing burner ID on the burner control  
- Executing backup and restoring data in the burner control |
| OCI410.31 OEM (burner or boiler manufacturer) | Only with LME39...!  
Functionality is dependent on the type of unit (see IS):  
In addition:  
- Changing burner ID in the burner control  
- Changing parameters (OEM level)  
- Changing passwords on the burner control  
- Executing backup and restoring data in the burner control |
| OCI410.40 OEM (burner or boiler manufacturer) | Functionality is dependent on the type of unit (see IS or SO):  
In addition:  
- Changing parameters (OEM level)  
- Changing passwords on the burner control |
10.2 Data exchange via the OCI400 (only with LME…/ LMO…)

Connect the OCI400 interface for diagnostics via optical communication (UDS) with LMO… or LME… burner controls to the respective port of your PC (without any further extensions) as shown in the example below.

<table>
<thead>
<tr>
<th>Type of OCI…</th>
<th>Authorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCI400</td>
<td>IS (installer) Handling data from UDS-compatible units (LMO1…/LMO2…/LMO4…/LME1…/LME2…/LME3…/LME4…/LME6…), such as:</td>
</tr>
<tr>
<td></td>
<td>- Reading and printing info/service data, parameters, status data (see SO)</td>
</tr>
<tr>
<td></td>
<td>- Accepting and saving trending data</td>
</tr>
</tbody>
</table>

OCI400

LMO… / LME…

OCI400

ACS410
PC software

RS232
11 Starting the program

Connect the burner control to your PC via the OCI400 or OCI410... interface. To start the ACS410, click the ACS410 icon on the Desktop or select ACS410 from the Windows start menu under Programs.

Note

ACS410 automatically identifies the COM port used. Selection of the COM port to which the OCI4... interface is connected is required in rare cases only (» chapter Settings – General).

If the basic unit is exchanged, the ACS410 must be closed and restarted.

11.1 Logging on to the burner control – online operation

First, the following message appears. Please read it carefully and confirm by clicking OK.

![Login - LMVZx/3x](image)

Depending on the user level in accordance with the type of OCI410..., select IS (installer), SO (heating engineer), or OEM (burner or boiler manufacturer).
User IS (installer) requires no password. The available operations are limited (chapter Connecting to the plant).

Users SO and OEM require specific passwords.

Note
If you don’t have the required password, or if you forgot it, contact the boiler, burner or burner control manufacturer!
# Click this button to access the start menu with all available letters and numbers.

Click on the required numbers and letters to copy them to the password box. After entering the password, close the display by clicking OK.

☑ Creating a backup file

When ticked, a file is created after logging on, where the parameters and the burner control's current operating state are saved. This file can be viewed in offline mode or restored as a restore file in online mode.

Note
Prerequisite: Basic unit must have a burner ID.

When clicking Connect, the ACS410 is connected to the relevant burner control.

Note
If the connection attempt proves unsuccessful, the following messages may appear:
- Message box when no OCI4... interface was found at the selected COM port

Remedy: Select the COM port where the OCI4... interface is connected (☞ chapter Settings – General).

- Only customized OCI410... with customized burner controls may be used, or standard OCI410... with standard burner controls. Otherwise, the following message box appears:

Confirm by clicking OK and select the required combination of devices.

### 11.2 Offline operation without burner control

When starting the program offline, it is possible to view backup files and trending files without having a connection to the burner control. Using the trending and backup files, it is also possible to print a status report of the burner control at the time of recording.
11.2.1 Offline backup files

After selecting **Backup** from the log-on screen under **Offline** and confirming with **OK**, the **Backup / Restore** selection window opens (Û chapter Backup/restore).

Here, a backup file can be selected. Column **Description** on the right displays the free text that was saved together with the file.

- **Load** Copies the parameter and status data to the **Info / Service, Parameters and Ratio Control** windows of the ACS410

- **Delete** Removes and deletes the selected file from the list

**Note**

Restoring or backup of the saved data and settings in the burner control is only possible in online mode.
## 11.2.1.1 Info / Service window based on the backup files

Here, the info, service and parameter data from the time of recording can be viewed.
### 11.2.2 Offline trending and report function

After selecting **Trending** from the log-on screen under **Offline** and confirming with **OK**, the selection window with the archived files opens.

When selecting a file, the **Information** window shows the type of burner control and the relevant burner ID.

- **Load**: Copies the file to the graph of the **Trending** window
- **Delete**: Removes and cancels the selected file from the directory and the list
- **Cancel**: Closes the display and the selection window
11.2.2.1 Trending window offline

(→ chapter Data recording (trending))

Here, the trend recording can be checked and analyzed.
11.2.3 Report function/printout (offline)

After selecting **Report** from the drop-down menu **File**, the following dialog box appears:

```
Product no.  
LM27.100A2  

Description:  
Demo LM27 Startup
```

Here, a description of the report can be entered, which will then be printed out together with the report.

When clicking **OK**, the preview window for the **Print** function opens (chapter **File**).
12 Program window

After logging on to the burner control via the ACS410, the program window opens.

12.1 Menu bar

12.1.1 File

Note
Print preview and Print…can be selected only if you are logged on to the burner control (online operation).

Page view: Print view of the table(s) with the current data from the selected program view (Info / Service)

Example of window showing the page view

Print: Prints the report on the selected printer
Next Page: Scrolls the display to the next page
Prev Page: Scrolls the display to the previous page
One Page: Shows one page of the report on the screen
Zoom In: Enlarges the current view
Zoom Out: Reduces the current view
Close: Closes the preview window
**Print:** The *Print* command opens the Windows menu for making the printer settings.

Here, you can change the printer settings and output the current data from the selected program view.

**Report**

Use this command to print a status report of the burner control in offline mode (overview of all relevant data).

**Exit**

Use this command to close the application.

### 12.1.2 Logging on

Calling up the *Login* window:

Here, you can switch between program start online and offline, and between access levels, while the program is running.

**Program start offline**

To show burner control files that have been saved (backup files) or trend files (trending) and to print status reports (☞ chapter *Offline operation without burner control*).

**Program start online**

To log on to the burner control via the relevant online user level (requiring a password for SO or OEM), or to change to another logging on level (☞ chapter *Logging on to the burner control*).
12.1.3 Settings

Languages: The available languages can be selected

General: COM ports: Available COM connections
- Period: Setting the rate of communication and the interval for refreshing data
OEM:

Start picture and program logo in ACS410 can be changed (only by OEM). ACS410 target directory per default is the OEM subfolder. This window can also be used to enter data paths and files other than those of the standard settings.

- Background picture: Start picture used in the main window.
  Format: 944 x 629 pixels as a Bitmap (.bmp)
- Print logo: Company logo used with printouts and print views.
  Format: 104 x 19 pixels as a Bitmap (.bmp)
- OEM logo: Company logo in the program windows.
  Format: 104 x 19 pixels as a Bitmap (.bmp)
- OEM web address
Backup: The storage time for the backup files (files with parameters and the current operating state of the burner control) can be entered here

0 = no limitation of storage time
\( \geq 1 \) = storage time in months

The files are saved in subfolder \textit{b kp} of the ACS410 directory as standard (\( \Rightarrow \) chapter \textit{Files included in the scope of delivery}).
Log: The storage time for the log files can be entered here. Operations, actions and program messages exchanged between ACS410 and burner control during the time logging on took place are automatically saved in these files.

0 = no limitation of storage time
≥1 = storage time in months

The files are saved in subfolder bkp of the ACS410 directory (⇒ chapter *Files included in the scope of delivery*).
**E-mail:** E-mail settings for sending e-mails from the **Trigger** menu (refer to chapter *Creating a trigger event*)

- **Name:** Name or IP address of a provider’s mail output server and online service which offers e-mail services, such as “mailto.t-online.de” (SMTP of T-Online)
- **Port:** Port used to provide the service (usually port 25). If e-mail services shall be provided via some other port, contact your system administrator or your e-mail provider
- **To:** Recipient’s e-mail address
  (e.g. "first name.familyname@provider.com")
- **Subject:** Entry on the e-mail’s subject line (e.g. recording of plant)
- **Text:** Free text for e-mail (e.g. alarm message of plant XY including recording of trigger event)

---

**Note**
If changes were made to these text boxes (with the exception of language changes), the ACS410 must be closed and restarted, enabling the changes of the basic settings to be adopted when starting the program.
The language can be changed while the program is running, without necessitating a restart of the ACS410.
12.1.4 Extras

**Change the password:** Here, the OEM can change its own OEM password plus the subordinate SO password saved in the connected burner control.

**Note**
The passwords of the OEM and SO are saved in the connected burner control! ACS410 only sends the passwords! Enabling of access from the ACS410 is controlled by the connected burner control.

If you don’t have the required password, or if you forgot it, contact the boiler, burner or burner control manufacturer!

![Change the password](image)

- OEM password: Enter the current OEM password the burner control knows
- User: Select the user whose password you wish to change
- New password: Enter the new password you want to use
- Confirm password: Enter the new password a second time

When clicking #, you reach a start menu with all available letters and numbers. Confirm by clicking **OK**. The new password is then transmitted to the burner control.

During transmission, the following message appears:

![ACS410](image)

Successful saving of the password is indicated.

![ACS410](image)

Confirm by clicking **OK**.
12.1.5 Help

Help topics: Retrieval of ACS410 software documentation

About ACS410: Information about the software state of the ACS410

![About ACS410](image)

12.1.6 Locking the ACS410

Locking operation of the ACS410 and retrieving the Login window

![Login](image)

This menu item can be used to lock operation of the ACS410. Further accesses to the Program functions are possible only when logging on again.
## 12.2 Toolbar

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Print" /></td>
<td>Click this button to open the menu for the printer settings</td>
</tr>
<tr>
<td><img src="image" alt="Settings" /></td>
<td>Click this button to open the menu for the settings</td>
</tr>
<tr>
<td><img src="image" alt="Reset" /></td>
<td>If the burner control has locked out (lockout position), you can start the reset sequence here</td>
</tr>
</tbody>
</table>

**Only one of the 2 functions is active, depending on the burner control’s state!**

<table>
<thead>
<tr>
<th>Locking</th>
<th>When the burner control is in operation, you can start the locking sequence by clicking this button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Locking" /></td>
<td>When clicking this button, operation via the ACS410 is locked. Locking can be canceled only when logging on again</td>
</tr>
<tr>
<td><img src="image" alt="Help" /></td>
<td>When clicking this button, the PDF version of the documentation covering the ACS410 opens</td>
</tr>
</tbody>
</table>
12.2.1 Resetting via the PC tool

The following dialog box appears:

![Reset dialog box]

- **Yes** Starts the reset
- **Confirm** Confirm here within 5 seconds after clicking **Yes**
- **Cancel** Closes the dialog box

If the action was successful, another dialog box appears:

![Reset was successful]

Confirm by clicking **OK**.

If resetting is not confirmed within 5 seconds, another dialog box appears:

![Reset failed]

- **Yes** Repeats the action
- **No** Aborts the action and closes the dialog box
12.2.2 Units that cannot be reset

The *Reset* function might not be enabled, depending on the type of basic unit!

**Note**

Such units can only be reset directly via the respective reset button on the basic unit – after lockout.

The following message may appear:

![Resetting failed](image)

Confirm the message by clicking **OK** and make a reset directly on the basic unit.
12.2.3 Locking via the PC tool

<table>
<thead>
<tr>
<th>Lock</th>
<th>Click this button to bring the burner control into the lockout position</th>
</tr>
</thead>
</table>

The following dialog box appears:

- **No** Closes the dialog box
- **Yes** Starts lockout, followed by a message box

If the action was successful, another dialog box appears:

Confirm by clicking **OK**.

The following error message from the burner control appears:

Confirm by clicking **OK**.

<table>
<thead>
<tr>
<th>Help</th>
<th>Click this button to open the Help topics menu</th>
</tr>
</thead>
</table>
12.3 Status bar

- **Connection status**: Indicates an online connection to the burner control.
- **Lockout position**: Indicates when the burner control is in the lockout position.
- **Send password**: Indicates when a password is sent.
- **Trend recording**: Indicates when graphs are plotted in the Trending window.
- **Trigger handling**: Indicates when trigger handling in the Trending window is active.

- **Status**: Indicates the burner control’s current operating state.
- **Errorfree**: If an error occurred, the error message appears on the message line together with the respective diagnostics.
13  Working with the ACS410

13.1  Info / Service window

The Info / Service window gives an overview of the burner control's operating states. The data are cyclically refreshed. Data in the process of refreshing appear blue.

Additional information about the error history or the diagnostic code is displayed by moving the scroll bar (a).

Brief explanations of the causes of error are displayed when moving the cursor over the respective Code (b) (under Error history). For more detailed information about the meaning of error codes, refer to the Technical Documentation on the respective type of burner control.

The current operating state of the unit is displayed on the first line (b).

More detailed information about the cause of error is displayed by moving the pointer to the Diagnostics column.
13.2 Parameters window
13.2.1 Parameter changes (general)

All parameters displayed blue are editable. Parameters in black cannot be changed. You are authorized to change parameters, depending on your user level (chapter Connecting to the plant). Only certain parameters are displayed or can be changed, depending on the user level.

Select the required parameter from the list on the left. Move it to the table on the right by highlighting and double-clicking or by clicking the arrow button > (a). If you want to remove parameters from the table on the right, select them from the table. Then, use the arrow button < (a) for individual parameters, or << (a) for all parameters.

Highlight the individual entry cells in the table on the right under Parameters and change the value by moving the slider on the right (c) or by clicking the + (b) or – button (d).

First, the changed parameter is displayed, highlighted in blue.

**Note**

Value changes are accelerated by keeping the + / - button or the > / < / << arrow button depressed.

Click Save (e) to highlight in yellow the changes in the entry cell; then, the following dialog box appears:

![Dialog box](image)

**- OK** Sends the change value to the burner control

**- Cancel** Aborts the entry and closes the dialog box

After clicking **OK**, the changed parameter is shown highlighted in dark gray.
Checking the memory

After sending the parameters, the ACS410 automatically retrieves data from the burner control. If the action is successful, the ACS410 ensures that the text box will be highlighted in green. In addition, the user must make a visual comparison of **Current value** and **Entry**. Since the relevant values are highlighted in green, the values to be verified are easy to identify.

**Warning!**

If the changed parameter is highlighted in red, copying to the burner control was not successful. If this error message occurs while a parameter is changed, the change on the basic unit was most probably not made. For this reason, the correct setting on the basic unit must be verified (repeat the action with the ACS410, or use the AZL2... display and operator unit).

**Warning!**

This visual check by the user is mandatory!

Click **Refresh** (e) to reload the data; this is especially required when refreshing process data.
13.2.2 Resetting parameters

By clicking **Reset** (e), individual parameters, such as fuel volume, number of startups, number of operating hours, or operating mode, can be reset to 0, or to their default values.

After clicking **Reset** (e), the following dialog box appears:

- **Yes** Copies 0 or the default value to the text box
- **No** Aborts the entry and closes the dialog box

13.2.2.1 Deleting curves (only with LMV2.../LMV3...)

To delete the set curve parameters in the LMV2.../LMV3..., proceed as follows:

- From the list in the **Parameters** window on the left under directory 200: **Burner control**, select parameter 201: **Operating mode of burner** ... in the case of a dual-fuel unit
  Parameter 301: ... for fuel 1.
  Highlight it and double-click, or use the arrow button > (a) to copy it to the table on the right

- Click **Reset** (e)

- Click **Save** (e)

⇒ In case parameter 201: **Operating mode of burner** ... is reset, all curvepoints that were previously set, plus the previously selected fuel train, will be reset
### 13.2.2.2 Changing the burner ID

A double click or use of arrow button > transfers the parameter for burner ID to the editing window on the right. Burner ID may be highlighted and can now be changed. The change is made with arrow button + or -. A new entry window opens where the new burner ID can be entered. If a burner ID has not yet been entered, the dialog box shows a numerical value or text. This represents the default setting. Once the burner ID is entered, the default setting cannot be entered anymore.

Numerical value or text for factory setting:
- LMV2.../LMV3...: 2147483648
- LME39...: burnErID
- LME7.../LME8...: ---- ----

Example:

![Change parameter value dialog box](image)

Here, a maximum of 8 digits for the burner's ID can be entered.

- **OK**: Copies the number to the text box
- **Cancel**: Aborts the entry and closes the dialog box

Then, click **Save** to permanently file the burner's ID in the basic unit.
13.3 Ratio control settings (only with LMV2…/LMV3…)  

The steps to be taken for the initial settings of the LMV2…/LMV3… follow the operation of the AZL2… display and operator unit and are primarily determined by the type of basic unit.

**Note**  
For fuel-air ratio control, compliance with the Basic Documentation on the respective type of burner control is mandatory!

With the initial ratio control settings, or after curvepoints of ratio control have been reached, the preselection of output on the basic unit is only possible via the ACS410. A preselection of load on the basic unit via contact, analog input or BACS is not possible anymore. Readjustment of load via contact, analog input or BACS is released on the basic unit only after the ratio control settings have been made.

When making the initial settings of an LMV2…/LMV3… burner control, start by selecting the fuel train (a). Then, click **Save** to adopt the fuel train and retrieve the mask for setting the curvepoints.

If previously set curvepoints shall be deleted, follow the procedure described in chapter *Resetting parameters – Deleting curves*. 

![Diagram](image-url)
13.3.1 Modulating operation
13.3.1.1 Activating the VSD (optional)

When ticking Activation of VSD in connection with LMV2.../LMV3..., the control of VSDs is switched on. Then, the following window opens:
After activation of the VSD, column VSD appears.

If Activation of VSD is selected, standardization of the VSD is required.

To start the process, click Standardization (b).
If valid standardization is already available, you can start by entering the curvepoints.

ACS410

Please wait...

Standardization of VSD started...

ACS410

Please wait...

Waiting for completion of VSD standardization...

ACS410

VSD standardization completed
If speed standardization has failed, an error message appears!

![Error Message]

Click **OK** to confirm.

A numerical value providing more detailed information for cause of the error in the standardization (value <0) appears in box **Activation of VSD** under **Result**.

**Reference!**
The Basic Documentation covering the respective type of burner control must be observed!

Rectify the error and restart standardizing the VSD.

**Note:**
After successful standardization, new standardization of the VSD in the mask for the ratio control settings is not possible. This can only be done via the parameter settings (parameter 641).

**Procedure:**
- Go to the mask for the parameters
- Select parameter 641
- Set the parameter to 1 and save it

After storage, new standardization is started.
- Click **Refresh** to check the result of the standardization (0 = standardization was successful, negative values = error during standardization)

The result appears in the **Result** box:

![Result Box]

After standardization, the curvepoints can be set.
Table \textit{Function curvepoints}:

<table>
<thead>
<tr>
<th>Setting point</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>(P0)</td>
<td>Curvepoint Ignition load</td>
</tr>
<tr>
<td>(P1)</td>
<td>Curvepoint Low-fire</td>
</tr>
<tr>
<td>(P2 \text{–} P8)</td>
<td>Curvepoint Ratio control</td>
</tr>
<tr>
<td>(P9)</td>
<td>Curvepoint High-fire</td>
</tr>
</tbody>
</table>

\textbf{Initial settings}

Select \textbf{Fuel train} (f) and the required mode, then click \textbf{Save} (c).

The example given below shows the steps to be followed when making the initial settings for fuel train mode \textit{G mod}.

\textbullet \textbf{Reference!}

The Basic Documentation covering the respective type of burner control must be observed!
13.3.1.2 Cold settings

Burner is shut down.

Select curvepoints $P0$ (ignition load), $P9$ (high-fire load) and $P1$ (a) from the table. Highlight the air, fuel or VSD cell (only if VSD operation is activated) and change the values with the scroll bar on the right, or the + and – buttons (b), or the arrow keys of your keyboard according to (b).

After a setting or change, every curvepoint must be copied to the burner control by clicking Save (c). By clicking Discard (c), the changes made last can be canceled prior to saving.

Enter curvepoint $P1$ (the ACS410 proposes the value of $P0$). Save curvepoint $P1$. Now, curvepoints $P2…P8$ are automatically calculated.

It is then possible to recalculate curvepoints manually in order to linearize the ratio control curve from the selected point, in the + or – direction.

Note
When making the calculation, the curvepoints of all actuators and of the VSD – if installed - are recalculated.

Select curvepoint $P4$, for example.

Calc – (d)  Curvepoints between $P4$ and $P1$ are recalculated
Calc + (d)  Curvepoints between $P4$ and $P9$ are recalculated

When selecting a curvepoint from the table on the left (a), the graph displays a crosshair for that particular curvepoint in the respective color:
- Blue = air
- Red = fuel
- Green = VSD
When clicking **Calc +** or **Calc –** (d), the following dialog box appears:

- **Yes** Starts calculation of the curve and copies it to the burner control. The curvepoints are read in again and the display is refreshed
- **No** Aborts the entry and closes the dialog box

On completion of the cold settings and after a heat request from the boiler controller to the burner, the burner can be put into operation by clicking **Burner on** (e).
13.3.1.3 Warm settings

Burner is started up

From the table on the left (a), select curvepoint P0 (ignition load) and then curvepoint P9 (high-fire). Highlight the air, fuel or VSD cell (only when the VSD is working) and change the value as required using the slider on the right, or the + and – buttons (b), or the arrow keys of your keyboard. After a setting or change, every curvepoint must be copied to the burner control by clicking Save (c) – or by clicking Discard (c), the changes made last are canceled prior to saving.

With Burner on (e) and the boiler controller’s heat request to the burner, the curve’s further parameterization is started:

The following dialog box appears:

The burner control travels to the ignition position. To ensure the burner control stops at the ignition position, the ACS410 automatically sets a program stop.

When making the initial settings, the burner control sets a program stop per default, which is indicated by the following dialog box:

Confirm and close by clicking OK.
Remove the tick ☑️ for the program stop ☐.

The burner control proceeds.

Program stop is deleted.

Entries made for **P0** are automatically copied to **P1**, if nothing else is entered here.

Save the curvepoints by clicking **Save** (c)

Then, the burner control performs a linear calculation of the curvepoints between **P1** and **P9**.

The data are copied to the burner control. Then, the curvepoints are read in again and the display is refreshed. After that, it is also possible in this case to recalculate the curvepoints via **Calc +** or **Calc –** (e) to linearize the ratio control curve from the selected point, in the + or – direction.
Driving to and changing curvepoints

From the table on the left (a), select the curvepoint to be approached by highlighting it with the mouse. When clicking Drive (c), the burner control starts approaching the curvepoint. It is now possible to check or optimize the setting point. The values of a curvepoint can be changed in the table on the left (a). When clicking Drive (c), the system travels to the changed curvepoint. When clicking Cancel (c), the changes are canceled and the system returns to the initial curvepoint. By clicking Save (c), the changed values are transferred to the burner control for permanent use.

Note
The impact of curvepoint changes on the combustion process must be checked on the burner!

Repeat the process with all curvepoints until all settings are correct.

Note
The ACS410 highlights in yellow the curvepoints which have not yet been approached.
13.3.1.4 Completing the initial settings

To complete the curve settings, all curvepoints from P1 to P9 must be approached and verified. Then, a message appears relating to the minimum and maximum output value settings. This message window concludes the initial ratio control settings.

After all curvepoints P1...P9 have been approached and verified in initial setting mode, the following message appears:

![Message Window]

Then, the minimum/maximum load can be matched to the specific application. In the process, the possible modulation range is restricted.

The following message appears:

![Message Window]

When clicking Yes, the initial settings are completed. Minimum and maximum load are not limited and the ratio control curve from P1 to P9 is completely traversed.

The following message appears:

![Message Window]

The LMV2... changes from the initial settings to automatic operation.

The minimum/maximum load can be limited by clicking No.
In the ratio control box **Load limit (a)**, select **Min:** or **Max:**, depending on the required limitation.

Use the slider (b) to select the required value.

Example of minimum limit:
Example of maximum limit:

![Image](https://example.com/image.png)

Click **Save** to adopt the values.

The following message appears again:

![Image](https://example.com/image2.png)

Click **No** if you want to change the minimum/maximum load again; click **Yes** to conclude the initial settings.

The following message appears:

![Image](https://example.com/image3.png)

The LMV2... changes from the initial settings to automatic operation. The initial settings are thus concluded.
13.3.2 Multistage operation

If a multistage fuel train was parameterized, the respective load points are displayed (see following illustration).
13.3.2.1 Activation of VSD (optional)

When ticking **Activation of VSD** in connection with LMV2.../LMV3..., the control of VSDs is permitted. If you selected **Activation of VSD**, there will be no valid standardization of the VSD. Standardization can be started by clicking **Standardization**. After ticking **Activation of VSD**, the following window opens:

**Please wait...**

**Activation of VSD...**
To start the process, click **Standardization** (b).
If valid standardization is already available, you can start by entering the curvepoints.
If speed standardization has failed, an error message appears.

![Error Message]

Click **OK** to confirm. A numerical value delivering more detailed information appears in box **Activation of VSD (b) under Result.**

Reference! 
The Basic Documentation covering the respective type of burner control must be observed!

Rectify the error and restart standardizing the VSD.

**Note:** After successful standardization, new standardization of the VSD in the mask for the ratio control settings is not possible. This can only be done via the parameter settings (parameter 641).

**Procedure:**
- Go to the mask for the parameters
- Select parameter 641
- Set the parameter to 1 and save it

After storage, new standardization is started.
- Click **Refresh** to check the result of the standardization (0 = standardization was successful, negative values = error during standardization)

The result appears in the **Result** box.
Upon completion of standardization, the curvepoints can be set. The example given below shows the steps to be followed when making the initial settings for fuel train mode LO 2 stage.

**Reference!**
The Basic Documentation covering the respective type of burner control must be observed!

Select the type of **Fuel train** (f) and the required mode, then click **Save** (c).

**Table Function curvepoints**

<table>
<thead>
<tr>
<th>Setting point</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>Curvepoint Ignition load position</td>
</tr>
<tr>
<td>P1</td>
<td>Curvepoint Low-fire</td>
</tr>
<tr>
<td>P2 on</td>
<td>Curvepoint Switch-on point for fuel valve V2</td>
</tr>
<tr>
<td>P2</td>
<td>Curvepoint Operating point stage 2</td>
</tr>
<tr>
<td>P3 on</td>
<td>Curvepoint Switch-on point for fuel valve V3 (only in 3-stage mode)</td>
</tr>
<tr>
<td>P3</td>
<td>Curvepoint Operating point stage 3 (only in 3-stage mode)</td>
</tr>
<tr>
<td>P2 off</td>
<td>Curvepoint Switch-off point for fuel valve V2</td>
</tr>
<tr>
<td>P3 off</td>
<td>Curvepoint Switch-off point for fuel valve V3 (only in 3-stage mode)</td>
</tr>
</tbody>
</table>
13.3.2.2 Cold settings

Burner is shut down

In multistage operation, the curvepoints are set using point \textbf{P0} as the starting point. After saving the changed curvepoint, ACS410 proposes a value to be used as the next curvepoint.

\textbf{Note}

In this operating mode, curvepoints cannot be recalculated via \textbf{Calc +} or \textbf{Calc –} (d), which means that the buttons cannot be clicked here.

On completion of the cold settings and after a heat request from the boiler controller to the burner, the burner can be put into operation by clicking \textbf{Burner on} (e).
13.3.2.3 Warm settings

Burner is started up

![Image of ACS410 interface]

Enter the minimum setting point \( P_0 \) (ignition load) in the table on the left (a). Highlight the respective setting point and change the value as required using the scroll bar on the right, or the + or – button (b), or the arrow keys of your keyboard. After every setting or change, the setting point must be copied to the burner control by clicking Save (c). When clicking Discard (c), the changes made last are deleted before saving. When clicking Burner on (e) and with the heat request from the boiler controller to the burner, further curve parameter settings are started.

The following dialog box appears:

```
ACS410

Please wait ...
Driving to the ignition position ...
```

The burner control travels to the ignition position. To make certain it stops there, the ACS410 automatically sets a program stop.

![Image of ACS410 message]

Confirm and close by clicking OK.
Remove the tick ☑ for the program stop ☐.

The burner control proceeds. Program stop is canceled.

The values of $P0...P2$ ($P3$) are automatically copied, proposed, and can be changed. Check the curvepoints, change them if required, and click **Save** (c).

All setting points are selected in the order given in table *Function curvepoints* for multi-stage operation.

**Driving to the curvepoints**

In the table (a), highlight the curvepoint to be approached. When clicking **Drive** (c), the burner control starts driving to the curvepoint. Here, it is possible to check the setting point or to optimize it by making readjustments. The values of a curvepoint can be changed in the table on the left (a). When clicking **Drive** (c), the system travels to the changed curvepoint. When clicking **Discard** (c), the changes are canceled and the system returns to the initial curvepoint. Click **Save** (c) if you wish the burner control to adopt the changed values.

**Note**
When making the initial settings and during commissioning, every curvepoint must be approached to check and optimize the combustion values.

Repeat this process with all curvepoints until all settings are correct.

**Note**
The ACS410 highlights in yellow the curvepoints which have not yet been approached.
13.3.2.4 Concluding the initial settings for multistage operation

Note
Switch-off points $P2\text{off}/P3\text{off}$ cannot be approached in a stationary manner. For the change to automatic operation, these switch-off points must be approached from above:
- $P2\text{off}: P2 \rightarrow P1$
- $P3\text{off}: P3 \rightarrow P2$

After all curvepoints $P1...P2$ (2-stage) or $P1...P3$ (3-stage) have been approached and checked in initial setting mode, the following message appears:

ACS410

**SIEMENS**

Please wait...

Last curvepoint reached. All curvepoints are set. Curve status will be updated

Then, the following message appears:

ACS410

**SIEMENS**

Please wait...

Curve state changing to automatic operation...

The LMV2... changes from the initial settings to automatic operation. This means that the initial settings are completed.
13.4 Status window of burner control

Example of LME...

The **Status** window shows the current state of the available inputs and outputs plus operating data.

The displayed values are cyclically refreshed.

The refreshment rate (interval) is adjustable (☞ chapter Settings – General).
13.5 Data recording (trending)

Note:
During data recording (trending), data are acquired at an average sampling rate of 1 second. The capacity of the PC system may delay the sampling of signals.

During data recording, it is possible to plot the current process data over time (e.g. states of inputs and outputs, actuator positions, program phases, etc.) of the connected burner controls and to save the data in a file.

Note
Trending can also be performed over longer periods of time on the plant itself.

Note
The (data) recordings saved in a file for a period of time exceeding 24 hours are subdivided into several recording files. One file per day is created.

Note!
If the ACS410 is started when Modbus mode is activated on a LMV2 / LMV3, it is no longer possible to write data via Modbus! Modbus data points can only be read in this state.

Exception!
If data recording is activated with ACS410 (trending), individual pieces of data for the LMV2 / LMV3 can be written via Modbus.
If the data recording is stopped or the window is exited, the write access for Modbus to the LMV2 / LMV3 is also blocked.

Warning!
When the ACS410 is ended, the Modbus data of the overriding control system may have to be re-installed (e.g. target load).
### 13.5.1.1 Parameter selection LME39…/LME7…/LME8…

In the case of burner controls LME39…/LME7…/LME8…, the display of certain I/Os varies, due to the different program structures in use.

In principle, for the display of these I/Os, an extended range of parameter numbers applies.

The following table shows the parameters used with the LME39…/LME7…/LME8… models.

Complete list of available parameters (the parameters displayed depend on the type of unit):

<table>
<thead>
<tr>
<th>Parameter no.</th>
<th>Input/output</th>
</tr>
</thead>
<tbody>
<tr>
<td>3001</td>
<td>Flame signal 01</td>
</tr>
<tr>
<td>3002</td>
<td>Flame signal 02</td>
</tr>
<tr>
<td>3007</td>
<td>Flame signal 01</td>
</tr>
<tr>
<td>3008</td>
<td>Flame signal 02</td>
</tr>
<tr>
<td>3033</td>
<td>Fan motor</td>
</tr>
<tr>
<td>3034</td>
<td>Ignition</td>
</tr>
<tr>
<td>3035</td>
<td>Safety fuel valve SBV</td>
</tr>
<tr>
<td>3036</td>
<td>Fuel valve BV1</td>
</tr>
<tr>
<td>3037</td>
<td>Fuel valve BV2</td>
</tr>
<tr>
<td>3038</td>
<td>Alarm</td>
</tr>
<tr>
<td>3039</td>
<td>Ignition fuel valve ZBV</td>
</tr>
<tr>
<td>3040</td>
<td>Oil preheater OVW</td>
</tr>
<tr>
<td>3041</td>
<td>Fuel valve BV3</td>
</tr>
<tr>
<td>3042</td>
<td>Pump</td>
</tr>
<tr>
<td>3043</td>
<td>AUX</td>
</tr>
<tr>
<td>3044</td>
<td>Test</td>
</tr>
<tr>
<td>3082</td>
<td>Safety loop</td>
</tr>
<tr>
<td>3083</td>
<td>Air damper position Closed</td>
</tr>
<tr>
<td>3084</td>
<td>Flue gas supervision</td>
</tr>
<tr>
<td>3085</td>
<td>Enable signal for oil preheater (firing on oil)</td>
</tr>
<tr>
<td>3086</td>
<td>Air damper actuator opening</td>
</tr>
<tr>
<td>3087</td>
<td>Flue gas damper opening</td>
</tr>
<tr>
<td>3088</td>
<td>Reset</td>
</tr>
<tr>
<td>3089</td>
<td>Remote reset</td>
</tr>
<tr>
<td>3090</td>
<td>Air pressure switch LP</td>
</tr>
<tr>
<td>3091</td>
<td>Gas pressure switch GP (firing on gas)</td>
</tr>
<tr>
<td>3092</td>
<td>Thermostat/controller (R/T)</td>
</tr>
<tr>
<td>3093</td>
<td>Load controller 2nd stage</td>
</tr>
<tr>
<td>3094</td>
<td>Fuel oil 0/gas 1</td>
</tr>
<tr>
<td>3095</td>
<td>Actuator cam position Close</td>
</tr>
<tr>
<td>3096</td>
<td>Actuator cam position KL</td>
</tr>
<tr>
<td>3097</td>
<td>Actuator cam position ZL</td>
</tr>
<tr>
<td>3098</td>
<td>Actuator cam position BV</td>
</tr>
<tr>
<td>3099</td>
<td>Actuator cam position NL</td>
</tr>
<tr>
<td>3133</td>
<td>Alarm</td>
</tr>
<tr>
<td>3301</td>
<td>Flame signal 01 (analog)</td>
</tr>
<tr>
<td>3302</td>
<td>Flame signal 02 (analog)</td>
</tr>
<tr>
<td>3303</td>
<td>Mains voltage</td>
</tr>
<tr>
<td>3304</td>
<td>Oil preheater temperature</td>
</tr>
<tr>
<td>3307</td>
<td>Flame intensity 01 (analog)</td>
</tr>
<tr>
<td>3308</td>
<td>Flame intensity 02 (analog)</td>
</tr>
</tbody>
</table>
Example: **Trending** window for LME39.100...

Presentation of digital I/Os in the trending picture.

The digital I/Os are arranged above one another in the form of graphs. Each channel is assigned a specific scale in a different color.
13.5.2 Selecting the parameters (general)

From the list on the left, select the required parameters that shall be displayed or recorded. Highlight and copy them to the table on the right by double-clicking or by using the arrow button > (a). If you want to remove certain parameters from the table on the right, use arrow button < (a) for individual parameters, or << (a) for all parameters. A maximum of 9 parameters can be selected.

When ticked ☑ in the table on the right, the selected parameters appear in the graph, or will be hidden.

Changing the presentation scale

In the table on the right, select box X at the parameter to be changed. A pull down menu opens, showing the available choices for the presentation multiplier of the parameter.

Changing graph colors

From the table on the right, select the color at the parameter to be changed.

You can select any color.

Starting the graph

Click Start (b) to plot the graph. All parameters selected from the table on the right will be shown.
Displaying the graph

The graph’s scale can be changed.

Click the + (top) or – (bottom) button to increase or decrease the scale of the y-axis. Use the + (left) or – (right) button to increase or decrease the scale of the x-axis. Click the 0-button to return to the initial scale.

When ticking ☑ the check box at Cursor (e), a vertical double line appears for the cursor’s position plus a pop-up window in the graphic display. This pop-up window shows the exact values of the selected parameters. Using the mouse or the <- -> buttons, the cursor’s position in the display range can be changed in the horizontal direction. In addition, the values are displayed in a pop-up window appearing at the cursor’s location.

When ticking ☑ the check box at Scroll (f), the display runs with current data of the burner control’s over the time axis. If the tick is removed, the current display is stopped. If ticked again, the display continues from the respective point. The data for the display are temporarily buffered in the background.

The pointer at the bottom (g) can be used to shift the view position in the direction of x or y.
13.5.3 Recording data
13.5.3.1 Trending profile

The trending profile is used to file the settings (parameter selection) that shall be shown on the trending display.

The selected parameters can be saved in the form of a profile file. The trending profile proposes a file name (format of file name: JJJJMMTThhmmssTrend (year = 4 digits, month and day = 2 digits each, hour minute second = 2 digits each, followed by Trend)). This file name can be randomly selected or can also be overwritten. In text box Description, any free text can be entered, which will then be saved together with the trending profile. By clicking Save (h), the profile is saved under the entered file name with extension *.ptd. Saving in the ACS410 program file takes place in subfolder \tn.

Confirm by clicking OK.
Use the **Load** button (i) to open the selection window of the saved trending profiles.

The mouse can be used to select a profile. The **Information** window displays the parameters of the trending profile.

- **Load** - Copies the profile to the trend settings
- **Delete** - Removes the selected profile from the list and deletes it
- **Cancel** - Closes the display and the selection window
13.5.3.2 Data file

The data file is used to file the process data of the selected parameters. In text box Record to file (i), it is possible to save curve data. When ticking the check box at Record to file (i), a file with the curve data is created. A file name will be proposed (format of file name: YYYYMMDDssmmTrend). This file name can be randomly selected or can also be overwritten. When clicking Start (b), the recording process is started. Clicking a second time stops the recording process and saves the file.

Filing location: In ACS410 program subfolder tn. A recording consists of 3 partial files.

File names:
- *.unl – parameter settings of active parameter configuration
- *.dtd – data file
- DeviceASN.unt (e.g. 3LMV37.400A2 0x171.unt)

To open the selection window with the archived files, click Load (i).

When selecting a data file, all required partial files are loaded, and the Information window shows the type of burner control and the associated burner ID.

- Load Copies the file to the graph (offline operation)
- Delete Removes the selected file from the list and deletes it
- Cancel Closes the display and the selection window
13.5.4 Creating a trigger event

When clicking **Definition** (k), you reach the **Trigger** window. There, you can select one or several interconnected parameters for a trigger event, which triggers data recording and/or an e-mail message.

From the list on the left, select the required parameters that shall lead to a trigger event. Highlight the parameters and copy them to the table on the right by double-clicking, or by using the arrow button > (a). If you wish to remove selected parameters from the table on the right, use arrow button < (a) for individual parameters, and << (a) for all parameters. A maximum of 20 parameters can be selected.
Using \& / I (b), you can select several trigger events and connect them with logic AND or logic OR.

**Note**
The individual trigger events must always be connected with AND (both criteria must be satisfied) or with OR (one of the 2 criteria must be satisfied). Note that the AND operation is given priority over OR.

Using **Event** (c), various events can be defined:

- Greater than >, smaller than <, or equal to = value
- Level change digital value, rising ramp 0/1, falling ramp 1/0
- Bit masking for parameter query

The **Value** (d) can be changed here. Using the scroll bar, or the + and – buttons on the right, the value can be set to 0…255, or 0/1 (digital values).
Example of LME.../LMO...:

= fan motor (M)

OR

(fuel valve V1 AND fuel valve V2)

OR

alarm

\[
\begin{align*}
\text{M} & \text{ OR V1} \\
& \text{ AND V2 OR} \\
\text{Alarm} & \\
\text{Trigger release}
\end{align*}
\]

<table>
<thead>
<tr>
<th>G/P</th>
<th>Parameters</th>
<th>Event</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3033</td>
<td>Fan motor</td>
<td>=</td>
<td>1</td>
</tr>
<tr>
<td>&amp;</td>
<td>3036: V1</td>
<td>=</td>
<td>1</td>
</tr>
<tr>
<td>&amp;</td>
<td>3037: V2</td>
<td>=</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3133: Alarm</td>
<td>0/1</td>
<td>0</td>
</tr>
</tbody>
</table>
Example of LMV2.../LMV3...:

- Phase = 60 (operating position)
- OR
- (fuel actuator > 60° and air actuator > 40°)

<table>
<thead>
<tr>
<th>By</th>
<th>Parameters</th>
<th>Event</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>961:Phase</td>
<td>&gt;</td>
<td>operation</td>
<td></td>
</tr>
<tr>
<td>&amp;x 922:[0]Fuel</td>
<td>&gt;</td>
<td>60.00°</td>
<td></td>
</tr>
<tr>
<td>&amp;x 922:[1]Air</td>
<td>&gt;</td>
<td>40.00°</td>
<td></td>
</tr>
</tbody>
</table>
13.5.4.1 Bit masking with parameters

With the help of \& or 1, the state of a single or of several bits of a process or parameter value can be evaluated. \& is the query for logic 1, 1 the query for logic 0.

Example of parameter 947 (LMV2.../LMV3...)
The states of various inputs of the basic unit are read in as logic 0/1 information in the form of words having a width of 8 bit.

![Image](image.png)

**Warning!**
In this case of the logic column, the \& character assumes the function of a logic \& connection of 2 or more trigger events; in the event column \&, the query means logic 1.

### Selecting one bit

<table>
<thead>
<tr>
<th>Masking value</th>
<th>Bit 7</th>
<th>Bit 6</th>
<th>Bit 5</th>
<th>Bit 4</th>
<th>Bit 3</th>
<th>Bit 2</th>
<th>Bit 1</th>
<th>Bit 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>128</td>
<td>64</td>
<td>32</td>
<td>16</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

A bit can be selected by entering the masking value of the respective bit in the value column.

The trigger shall be released when the input assigned to bit 6 (load controller Closed) receives an input signal (logic 1).

#### Example

<table>
<thead>
<tr>
<th>&amp;</th>
<th>Parameter</th>
<th>Event</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;</td>
<td>947:[0] Contact sensing</td>
<td>&amp;</td>
<td>64</td>
</tr>
</tbody>
</table>

### Selecting several bits

Several bits can be selected by entering in the value column the value obtained from the addition of the respective masking values.

#### Example

The trigger shall be released when the input assigned to bit 5 (heat request On) and bit 3 (air pressure switch) receives no input signal (logic 0).

#### Settings in the trigger menu

<table>
<thead>
<tr>
<th>&amp;</th>
<th>Parameter</th>
<th>Event</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;</td>
<td>947:[0]contact request</td>
<td>!</td>
<td>40</td>
</tr>
</tbody>
</table>

The value (d) can be changed here. Using the scroll bar or the + and – buttons on the right, the value can be set to 0...255, or 0 or 1 (for digital values).
13.5.4.2 Saving trigger actions

Trigger profile (e) offers you the choice of saving the trigger events in a file. The system proposes a file name (format of file name: YYYYMMDDssmmTrend). This file name can be randomly selected or can also be overwritten. Filing location is ACS410 program subfolder in, file name with extension *.ptg. Click Save (h) to save the settings. In addition, Description (f) offers you a text box where you can enter any text which shall be saved together with your trigger settings. This text will make it easier to identify and administer the recordings at a later stage.

The Load button (h) opens the selection window to the saved trigger settings.

A trigger file can be selected with the mouse. The Information window shows the trigger settings and the associated description text.

- **Load** Copies the settings to the Trigger window
- **Delete** Removes the selected file from the list and deletes it
- **Cancel** Closes the display and the selection window
**Record file** (g) offers you the choice of saving the related graphs and of parameterizing various responses to the selected trigger event.

The system proposes a file name (format of file name: YYYYMMDDssmmTrigg). This name can be overwritten by any other name. The graphs of the parameters selected from the **Trending** window are recorded in this file.

In text box **Activate after** (i), you can enter the number of trigger events upon completion of which the selected event shall be triggered.

When ticking ☑ the check box at **Number of events** (k), you can state whether a single or multiple recording shall be started based on the following trigger events. It is also possible here to enter the recording time **before:** or **after:** (m) the trigger event.
Prerequisites for **Send e-mail** (n):

- E-mail settings are made (→ chapter *Settings – General*)
- Internet access via a data network, analog modem, GSM, ISDN or DSL modem and a provider which supports *E-mail* functions must be installed on your PC. For support, contact your system administrator
- Check box ☑ at **Send e-mail** (n) ticked

**Note**
Also note that use of this function leads to further connection costs. Check your modem settings (e.g. disconnection during idle operation). Due to the complex transmission path of e-mail messages via the Internet, it is not possible to make certain that e-mail messages forwarded by the ACS410 will actually reach the recipient.

Enter the recipient’s e-mail address in the text box to the right of **Send e-mail** (n).

**Test** (n) enables you to check your e-mail connections and to send test e-mail messages.

Confirm the entries made in the **Trigger** window by clicking **OK** (a).
13.5.5 Triggering

⇒ You reach the Trending window again.

Tick ☑ the check box at Trigger on (b).

After opening the Trending window, the next trigger event starts recording data.

On completion of the preset periods of time (in the case of several trigger events on completion of the last event), the respective file is saved.

Confirm by clicking OK.

Filing location is ACS410 program subfolder tn.

A trigger data file consists of 3 partial files:

File names:

*.ptg – configuration of trigger settings in binary format
*.dtg – contains the trending data after the trigger event
*.unl – contains the parameter settings of the current parameter configuration

DeviceASN.unt (e.g. 3LMV37.400A2 0x171.unt)
13.6 Backup/restore

13.6.1 Backup

Here, it is possible to set up a backup file of the connected burner control. This means that the burner control’s parameters and settings are saved in files.

When clicking **Backup**, the window for entering free description text opens. Click **Delete** if you wish to delete a selected backup file.

Prerequisite for backup is setting the burner’s ID via parameter 113.
13.6.1.1 Selecting the backup directory

Click \( \text{select button} \) to select the directory where the backup files shall be archived.

To make the entry, Windows Explorer is opened.

When clicking **Make New Folder**, you can create a directory for saving backup files. By selecting an existing directory and confirming with **OK**, the new directory is opened and the available data files appear in the **Backup / Restore** window for further handling.
Setting up backup and selecting archiving

Dialog box **Description** can be used to enter free text. Boxes **Device no.**, **Burner type** and **BurnerSN** can be used to enter customer-specific burner description to be saved together with the backup file. To start the backup process, click **OK**.

Click **...** to open the **Save As** window.

Here, a new storage directory can be set up or selected. At the same time, the name proposed for the backup file can be adopted or overwritten. To start the backup process, click **Save**.

To start the process, click **Save**.
Note
Creation of a backup may take several minutes, depending on the type of basic unit and the selected rate of communication.

The following status message appears.

Confirm by clicking **OK**.
13.6.2 Restore

The Restore button is used to write the stored parameters and settings back to the burner control. Prerequisite is that the burner control is in online operation. Before the restore process is started, a compatibility check is made.

From the Backup / Restore window, select the required restore file.

Click Restore to open the following window:

- Yes Starts the restore process
- No Aborts the restore process

When starting the restore process, the following message appears:

Successful execution of the restore process is reported:

Confirm by clicking the OK button.

Warning! If the LMV2…/LMV3… basic unit uses fan motor control, the fan speed must be standardized again after the restore process.
Restrictions with restore

- **Incompatible parameter sets**
  The current software version of the basic unit and the version used for making the backup are incompatible.

The software version used for making the backup can be read out from the LMV2.../LMV3... data set (parameter 107). For that purpose, the backup file must be opened in offline mode.

With the LMV2.../LMV3... basic units, the following combinations are possible:

<table>
<thead>
<tr>
<th>Basic unit version</th>
<th>Condition for successful backup</th>
</tr>
</thead>
<tbody>
<tr>
<td>V01.30</td>
<td>Backup data set version V01.20 or V01.30</td>
</tr>
<tr>
<td>V01.37</td>
<td>Backup data set version V01.20 to V01.38</td>
</tr>
<tr>
<td>V01.38</td>
<td></td>
</tr>
<tr>
<td>V01.40 to V01.70</td>
<td>Backup data set version V01.40 or higher</td>
</tr>
<tr>
<td>V01.80 or higher</td>
<td>Backup data set version V01.30 or higher</td>
</tr>
</tbody>
</table>

- **Different types of units**
  - It is not possible to copy a parameter set to another type of basic unit (other product no. (ASN))
  - In the case of LME7.../LME8... with software version 2.0 or higher (see type field), data can be restored on basic units as supplied

- **Burner ID**
  The burner ID of the data set to be restored must accord with the burner ID of the basic unit.

If any of the above mentioned restrictions applies, the respective error message appears. After confirmation of the messages by clicking OK, the restore process is aborted.

### 13.6.3 Copying a parameter set

Using backup/restore, the parameter set can be copied to some other unit. This may become necessary when a data set shall be copied to a non-parameterized unit.

**Warning!**
If the ACS410 is not used, all parameter settings are to be verified via an AZL2... display and operator unit, and safe functioning of the plant is to be checked!

If compatibility is ensured, data can be restored on a non-parameterized basic unit as supplied.

Basic unit as supplied applies if the burner’s ID (parameter 113) is invalid,

- LME39...: **burnEr ID**
- LME7.../LME8...:----- ----
- LMV2.../LMV3...: **2147483647** or --- on the **Parameters** menu

The restore process also copies the burner ID of the data set to the basic unit.
14   PME... backup/restore

Note
This function is for use with LME7.../LME8... only. It cannot be activated with any other type of burner control.

Explanation of text
Product no. (ASN) of basic unit: ASN matching the PME... module after the successful restore process. ASN of the current configuration

Software version basic unit: Current PME... software version of the basic unit

Ident. No. of stamped PME: Unique PME... ID of the program module

Description: Here, free text or customer-specific burner descriptions for the respective process can be entered in the log file

Warning!
During a backup or restore process, the connected basic unit initiates safety shut-down! If there is a request for heat after backup, the burner is started up. After the restore process, the burner control must be reset and the settings checked!

State of basic unit: Shows the respective state between basic unit and PME... module

The restore, backup and OEM backup process can be performed, depending on the basic unit's state.
### Possible status messages

<table>
<thead>
<tr>
<th>Status message</th>
<th>Meaning</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>LME... requires no PME... module</td>
<td>Basic unit with internal program sequence. Use of PME... module not possible</td>
<td>Do not use a PME... module</td>
</tr>
<tr>
<td>LME... is stamped on the current PME... module</td>
<td>PME... program has already been restored on the basic unit. Basic unit and PME... module can be used</td>
<td>Restore and backup possible</td>
</tr>
<tr>
<td>LME... is stamped on the current OEM PME... module</td>
<td>OEM PME... program has already been restored on the basic unit. Basic unit and PME... module can be used</td>
<td>Restore/backup/OEM backup possible</td>
</tr>
<tr>
<td>LME... with unknown (non-stamped) PME... module</td>
<td>PME... program has not yet been restored on the basic unit. Basic unit does not start operation</td>
<td>Start restore process! Reset basic unit and check settings and combustion process</td>
</tr>
<tr>
<td>LME... with configuration as supplied, with unknown (non-stamped) OEM PME... module</td>
<td>Basic unit was not yet stamped and OEM program module was plugged in</td>
<td>Start restore process! Reset basic unit and check settings and combustion process</td>
</tr>
<tr>
<td>LME... with unknown (non-stamped) OEM PME... module</td>
<td>OEM PME... program has not yet been restored on the basic unit. Basic unit does not start operation</td>
<td>Start restore process! Reset basic unit and check settings and combustion process</td>
</tr>
<tr>
<td>LME... with OEM PME... module, configuration as supplied</td>
<td>OEM PME... module is plugged in. OEM PME... module still without program</td>
<td>Start OEM backup process! Assign specific OEM PME... product type (ASN)! Mark PME... module as specified by the OEM. Finally, start new PME... restore process</td>
</tr>
<tr>
<td>LME... with configuration as supplied, with OEM PME... module, with configuration as supplied</td>
<td>Neither basic unit nor OEM program module have an operable program</td>
<td>Restore/backup/OEM backup not possible. OEM program module must be set or LME... must be checked beforehand</td>
</tr>
<tr>
<td>LME... requires no PME... module, PME... module is plugged in</td>
<td>Basic unit with internal program sequence. Use of PME... module not possible</td>
<td>Remove PME... program module</td>
</tr>
<tr>
<td>LME... with missing PME... module</td>
<td>Basic unit without program</td>
<td>Plug in PME... program module</td>
</tr>
<tr>
<td>Restore process was successfully completed</td>
<td>PME... restore process was successfully completed</td>
<td>Reset basic unit and check settings and combustion process</td>
</tr>
</tbody>
</table>
| Restore process was aborted. Product no. (ASN) incompatible | PME... restore process was aborted. Basic unit does not start operation | Check product no. (ASN) of basic unit and of PME... module. Only matching PME... module can be used.  
\[Reference! The Basic Documentation covering the respective type of burner control must be observed!\]
| Restore process was aborted. Version incompatible    | PME... restore process was aborted. Software version incompatible. Basic unit does not start operation | PME... restore process was aborted. Software version incompatible.  
\[Reference! The Basic Documentation covering the respective type of burner control must be observed!\]
<p>| Restore process was aborted                         | PME... restore process was aborted                                       | Repeat PME... restore process                                           |
| Backup process was successfully completed           | PME... backup process was successfully completed                         | --                                                                    |
| Backup process was aborted                          | PME... backup process was aborted                                        | Repeat PME... backup process                                            |
| OEM backup process was successfully completed        | PME... OEM backup process was successfully completed                      | Mark PME... module as specified by OEM                                  |</p>
<table>
<thead>
<tr>
<th>Status message</th>
<th>Meaning</th>
<th>Action</th>
</tr>
</thead>
</table>
| OEM backup process was aborted. Product no. (ASN) incompatible | PME... OEM backup process was aborted. Product no. (ASN) incompatible | Check product no. (ASN) of basic unit and of PME... module. Only matching PME... module can be used.  
⇒ Reference!  
The Basic Documentation covering the respective type of burner control must be observed! |
| OEM backup process was aborted                      | PME... OEM backup process was aborted                                  | Repeat PME... OEM backup process                                      |

All actions (restore/backup/OEM backup) plus entries and results are archived in the respective log file.

Click ![click](image) to change the file archiving directory.

Windows Explorer opens.

![Open](image)

Here, a new file archiving directory can be set up or selected. The name proposed for the log file can be adopted or overwritten.
14.1 PME... program module restore process

During the restore process, the program sequence with all settings is transferred from the PME... program module to the internal storage of the basic unit.

To start the restore process, click **Restore**.

Click **Yes** to confirm.

The following message appears:

```
ACS410

Please wait...

Restore action was started
```
Then, the following message appears:

![ACS110]

A new initialization with the basic unit is made.

![ACS110]

Then, upon successful completion of the restore process, the following **Login** box might appear, depending on the password:

![Login - LME7.8]

Here, new logging on to the burner control is required.

Upon successful completion of the restore process, the burner control is locked.

The following message appears:

![ACS110]

Confirm by clicking **OK**; then, reset the burner control for another function.

**Note**

After the restore process, the basic unit is locked (Loc138); the burner control must be reset and the settings must be checked.
14.2 PME... program module backup process

To start the process, click **Backup**.

A box opens. Click **Yes** to confirm.

The following message appears:

Then, the following message appears:

The result is shown on the status line and in window **Last actions**: Actions highlighted in red were not successful and must be repeated, if required.
14.3 PME... program module OEM backup

The OEM backup function is for use with LME7.../LME8... basic units only!

**Warning!**
On the basis of existing program sequences, this function allows the OEM at its own responsibility to create time and setting variants and to store program sequences on special OEM PME program modules. Approval, release and identification of the program modules are the responsibility of the OEM or of the person that creates such program modules.

**Note**
Prerequisite is the use of an OEM/PME... module. The basic unit is in the safety shutdown position and reports error Err PrC. A program sequence is started only upon completion of an OEM backup. The OEM PME... module comes with no program sequence, but allows the user to adopt or store a program sequence filed in the basic unit. This function is intended for exclusive use by the OEM.

To start the OEM backup process, click **Copy**.

![Image](Define OEM product no. (ASN))

In this box, an OEM-specific product no. (ASN) in the value range 70...99 must be assigned.

To do this, click on the little white box and assign the respective number.

![Image](Define OEM product no. (ASN))

To start the OEM PME... backup process, click **Copy**.
The following message appears:

ACS410

SIEMENS

Please wait...

OEM backup action was started

Then, the following message appears:

ACS410

SIEMENS

Please wait...

Updating PME status information ...

Upon successful completion, Status basic unit: shows the message OEM backup successfully completed.

After a short time, the message displayed after Status basic unit: changes to LME with unknown (unstamped) OEM-PME.

To operate the basic unit, a PME... restore is required. (chapter PME... program module restore).
15 UDS operation

Close the OCI400 communication interface as described in chapter Connecting to the plant.

In UDS mode, the UDS-compatible small burner control types LMO… and LME… can forward info/service, parameter, status, trending and backup/restore data, which can then be displayed via the ACS410.

In addition, it is possible to create a backup of the burner control parameters, to make burner control settings in the Backup / Restore window, and to plot a graph in the Trending window, either manually or via automatic trigger.

Note
In principle, operation is the same as that described in chapter Working with the ACS410.

Exception:
It is not possible to change burner control parameters in the Parameters window, or to make a restore in the Backup / Restore window.

Example: Report offline backup
## 16 List of the most important error messages

### 16.1 Error messages Error...

Note

The list only shows the most important error messages. Other error messages may appear as well!

<table>
<thead>
<tr>
<th>Error code</th>
<th>Display</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error2141</td>
<td>AbeCom initialization has failed!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2142</td>
<td>AbeCom-ReqData() has failed!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2143</td>
<td>AbeCom: Order number discrepancy!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2144</td>
<td>AbeCom error!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2145</td>
<td>AbeCom-SendTime() has failed!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2146</td>
<td>AbeCom: Time has elapsed – no communication with the basic unit</td>
<td>Communication between ACS410 and basic unit was cut for more than the timeout period</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2147</td>
<td>Size of long page is ZERO!</td>
<td>Data set is faulty</td>
<td>Contact the supplier of the ACS410</td>
</tr>
<tr>
<td>Error2148</td>
<td>UDS: GetParamValue has failed!</td>
<td>UDS reading error</td>
<td>Check to see if the OCI400 is correctly attached to the basic unit – check wiring between OCI400 and ACS410</td>
</tr>
<tr>
<td>Error2149</td>
<td>UDS: GetParamTree has failed!</td>
<td>UDS reading error</td>
<td>Check to see if the OCI400 is correctly attached to the basic unit – check wiring between OCI400 and ACS410</td>
</tr>
<tr>
<td>Error2165</td>
<td>Backup not possible. Burner ID is invalid</td>
<td>Thus far, no value has been entered for parameter Burner identification</td>
<td>On the Parameters menu, enter a correct value for parameter Burner ID</td>
</tr>
</tbody>
</table>
### Error messages

<table>
<thead>
<tr>
<th>Error code</th>
<th>Display</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error2166</td>
<td>Restore not possible. Burner ID of burner control and that of backup file is different</td>
<td>If burner ID of the burner control and that of the backup file are different, execution of the restore process is not possible</td>
<td>Is the selected restore data set the correct one? On the Parameters menu, check the value given for Burner ID</td>
</tr>
<tr>
<td>Error2167</td>
<td>Restore not possible. Software version of burner control and that of backup file is different</td>
<td>The burner control’s software version and the required software version saved in the backup file are incompatible</td>
<td>Use the restore file compatible with the basic unit. Refer to the ACS410 compatibility table in chapter Backup/restore</td>
</tr>
<tr>
<td>Error2168</td>
<td>Data corrupted! (Wrong CRC)</td>
<td>Backup file is faulty</td>
<td>Create a new backup file</td>
</tr>
<tr>
<td>Error2172</td>
<td>Basic unit is not connected or selected interface is invalid</td>
<td>ACS410 cannot receive data from the basic unit</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2173</td>
<td>User is not authorized to access this function</td>
<td></td>
<td>Log on to the correct user level</td>
</tr>
<tr>
<td>Error2174</td>
<td>Communication with the basic unit has been cut!</td>
<td></td>
<td>Log on again to the login dialog</td>
</tr>
<tr>
<td>Error2175</td>
<td>No basic unit connected to the OCI</td>
<td>ACS410 cannot receive data from the basic unit</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>Error2184</td>
<td>Curvepoint could not be read!</td>
<td>Read access to one or several points of the ratio control curve has failed</td>
<td>Repeat process</td>
</tr>
<tr>
<td>Error2185</td>
<td>Curvepoint could not be read!</td>
<td>Read access to one or several points of the ratio control curve has failed</td>
<td>Repeat process</td>
</tr>
<tr>
<td>Error2186</td>
<td>Required function cannot be started, data access currently disabled!</td>
<td></td>
<td>Repeat process</td>
</tr>
<tr>
<td>Error2187</td>
<td>Burner ID could not be read!</td>
<td>Parameter Burner identification could not be read</td>
<td>If the error occurred on the Parameters menu, repeat the read access by clicking Refresh. Restart the ACS410</td>
</tr>
<tr>
<td>Error2204</td>
<td>File cannot be read. This file contains parameters the logged on user is not authorized to access</td>
<td>The user currently logged on is not authorized to access the parameters saved in the file</td>
<td>Log on to the correct user level</td>
</tr>
<tr>
<td>Error2207</td>
<td>SMTP server not specified!</td>
<td></td>
<td>Complete the settings required for e-mails. For more information, contact your provider</td>
</tr>
</tbody>
</table>
### Error messages Error… (cont’d)

<table>
<thead>
<tr>
<th>Error code</th>
<th>Display</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error2208</td>
<td>E-mail subject not entered!</td>
<td>No text has been entered on the Subject line of mask <strong>Settings → E-mail</strong></td>
<td>Complete the settings required for e-mails (Subject)</td>
</tr>
<tr>
<td>Error2209</td>
<td>E-mail address not entered!</td>
<td>In mask <strong>Settings → E-mail</strong> no e-mail address has been entered on the To: line</td>
<td>Complete the settings required for e-mails or the <strong>Trigger</strong> menu (under Trending → Trigger → <strong>Definition</strong> button)</td>
</tr>
<tr>
<td>Error2210</td>
<td>Connection to SMTP server has failed:</td>
<td>Connection to the server for sending e-mails could not be established</td>
<td>Check the connection to your e-mail server and the settings made in <strong>Settings → E-mail</strong>, line <strong>E-mail server – name</strong>. Compare the settings made with the information given by your provider</td>
</tr>
<tr>
<td>Error2211</td>
<td>SMTP message could not be sent:</td>
<td>E-mail could not be sent</td>
<td>Check the connection to your e-mail server and the settings made in <strong>Settings → E-mail</strong>, line <strong>E-mail server – name</strong>. Compare the settings made with the information given by your provider</td>
</tr>
<tr>
<td>Error2212</td>
<td>Trigger list is empty! Trigger cannot be started!</td>
<td>The <strong>Trigger</strong> menu does not contain a trigger event. Trigger cannot be activated without this entry</td>
<td>Create at least one trigger event in the <strong>Trigger</strong> window</td>
</tr>
<tr>
<td>Error2213</td>
<td>Driving to undefined point not permitted!</td>
<td>Ratio control curve contains one or several undefined curvepoints</td>
<td>Set the ratio control parameters or copy a valid parameter backup to the basic unit</td>
</tr>
<tr>
<td>Error2214</td>
<td>Unload file (UNL) does not exist</td>
<td>Backup of a parameter set consists of 2 files: *.unl = backup data, and *.bkp = information on backup. File *.unl has not been found</td>
<td>Create a new backup</td>
</tr>
<tr>
<td>Error2216</td>
<td>Software version check has failed</td>
<td>Basic unit not compatible with ACS410</td>
<td>Basic unit does not support connection of PC tool</td>
</tr>
<tr>
<td>Error2217</td>
<td>Product no. (ASN) check has failed</td>
<td>Backup data set and connected basic unit have different product nos. (ASN)</td>
<td>Use data set with the same product no. (ASN) as the connected basic unit. For product no. of data set, refer to backup/restore in column <strong>Basic unit</strong> of the data set list</td>
</tr>
<tr>
<td>Error2218</td>
<td>Standardization of VSD has failed</td>
<td>Error occurred when standardizing the speed of the VSD</td>
<td>For cause of the error, refer to the display of results in the ratio settings. Clear text diagnostics is offered by the error history on the <strong>Info/Service</strong> page. On startup, the pointer translates the diagnostic code to clear text</td>
</tr>
<tr>
<td>Error2220</td>
<td>Backup not possible. Burner ID invalid</td>
<td>Basic unit still without valid burner ID</td>
<td>Enter burner ID</td>
</tr>
</tbody>
</table>
### Error messages

#### Error messages (cont’d)

<table>
<thead>
<tr>
<th>Error code</th>
<th>Display</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error2222</td>
<td>Backup/restore has failed</td>
<td>Error occurred during backup or restore process</td>
<td>Check cable connection. Check to see if basic unit operates correctly (e.g. power supply). Repeat the process. Restart the ACS410</td>
</tr>
<tr>
<td>Error2223</td>
<td>PME... action was not started</td>
<td>Execution of required action was not possible at this point in time</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Error2224</td>
<td>PME... restore has failed</td>
<td>Action could not be fully completed</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Error2225</td>
<td>PME... backup has failed</td>
<td>Action could not be fully completed</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Error2226</td>
<td>PME... OEM backup has failed</td>
<td>Action could not be fully completed</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Error2227</td>
<td>General PME... error + supplementary error text</td>
<td>Error occurred during the action</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Error2228</td>
<td>Restore not possible. No compatibility</td>
<td>PME module and basic unit do not match. Product no. (ASN), software version are not compatible</td>
<td>Use a matching PME module</td>
</tr>
</tbody>
</table>
| Error2300  | During recalculation of the ratio control curves, the type of fuel was changed. The curve changes cannot unambiguously be assigned to one type of fuel. For this reason, the ratio control curves of both types of fuel must be checked and possibly set again | During the time the curves were recalculated (Calc + / -), the type of fuel was changed. For safety reasons, the ratio control curves of both types of fuel are set invalid, depending on the point in time fuel changeover took place (the set positions are maintained) | ![Important!]

The ratio control curves of both types of fuel must be checked and possibly set again. During the time the ratio control curves are set, the type of fuel should not be changed. |
| Error2301  | You are not authorized to change the initial parameter settings        | The initial parameter settings have a higher access right for writing                                                                 | Log on again with a higher user access right                                                             |
# 16.2 Error messages in alphabetical order

<table>
<thead>
<tr>
<th>Error message</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>AbeCom: Order number discrepancy!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check interface settings of the ACS410 ( ⇒ chapter Settings)</td>
</tr>
<tr>
<td>AbeCom: Time has elapsed – no communication with</td>
<td>Communication between ACS410 and basic unit was cut for more than the</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check</td>
</tr>
<tr>
<td>the basic unit</td>
<td>timeout period</td>
<td>interface settings of the ACS410 ( ⇒ chapter Settings)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AbeCom error!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check interface settings of the ACS410 ( ⇒ chapter Settings)</td>
</tr>
<tr>
<td>AbeCom initialization has failed!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check interface settings of the ACS410 ( ⇒ chapter Settings)</td>
</tr>
<tr>
<td>AbeCom-ReqData() has failed!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check interface settings of the ACS410 ( ⇒ chapter Settings)</td>
</tr>
<tr>
<td>AbeCom-SendTimeData() has failed!</td>
<td>Communication between basic unit and ACS410 is disturbed</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check interface settings of the ACS410 ( ⇒ chapter Settings)</td>
</tr>
<tr>
<td>ACS version not correct.</td>
<td>ACS410 version used is incompatible with the basic unit</td>
<td>Update of ACS410 required. Contact the supplier of the ACS410</td>
</tr>
<tr>
<td>Use a current version of this program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backup not permitted for the logged on user</td>
<td>Backup on the current user level not possible</td>
<td>Log in on the correct user level</td>
</tr>
<tr>
<td>Backup not possible. Burner ID is invalid</td>
<td>Thus far, no value has been entered for parameter <em>Burner identification</em></td>
<td>On the <strong>Parameters</strong> menu, enter a correct value for parameter <em>Burner identification</em></td>
</tr>
<tr>
<td>Backup not possible. Burner ID invalid</td>
<td>Basic unit still without valid burner ID</td>
<td>Enter burner ID</td>
</tr>
<tr>
<td>Backup/restore has failed</td>
<td>Error occurred during backup or restore process</td>
<td>Check cable connection. Check to see if basic unit operates correctly (e.g. power supply). Repeat the process. Restart the ACS410</td>
</tr>
</tbody>
</table>
### Error messages in alphabetical order (cont’d)

<table>
<thead>
<tr>
<th>Error message</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
</table>
| Basic unit not connected                            | ACS410 cannot receive data from the basic unit                                                                                          | Check wiring between basic unit and OCI4... interface.  
Check interface settings of the ACS410 (⇒ chapter Settings) |
| Basic unit is not connected or selected interface is invalid | ACS410 cannot receive data from the basic unit                                                                                          | Check wiring between basic unit and OCI4... interface.  
Check interface settings of the ACS410 (⇒ chapter Settings) |
| Burner ID could not be read!                        | Parameter Burner identification could not be read                                                                                       | If the error occurred on the Parameters menu, repeat the read access by clicking Refresh.  
Restart the ACS410 |
| Burner ID invalid.  
Valid value required                                          | Thus far, no value has been entered for parameter Burner identification                                                               | On the Parameters menu, enter a correct value for parameter Burner identification                                                             |
| Communication with the basic unit has been cut!     | Connection to the server for sending e-mails could not be established                                                                   | Check the connection to your e-mail server and the settings made in Settings → E-mail, line E-mail server – name.  
Compare the settings made with the information given by your provider |
| Curvepoint could not be read!                       | Read access to one or several points of the ratio control curve has failed                                                             | Repeat the process                                                                                                                                  |
| Data corrupted! (Wrong CRC)                         | Backup file is faulty                                                                                                                   | Create a new backup file                                                                                                                              |
| Driving to undefined point not permitted!           | Ratio control curve contains one or several undefined curvepoints                                                                       | Set the ratio control parameters or copy a valid parameter backup to the basic unit                                                                |
| During recalculation of the ratio control curves, the type of fuel was changed. The curve changes cannot unambiguously be assigned to one type of fuel. For this reason, the ratio control curves of both types of fuel must be checked and possibly set again | During the time the curves were recalculated (Calc + / -), the type of fuel was changed. For safety reasons, the ratio control curves of both types of fuel are set invalid, depending on the point in time fuel changeover took place (the set positions are maintained) | Important! The ratio control curves of both types of fuel must be checked and possibly newly set. During the time the ratio control curves are set, the type of fuel should |
| E-mail address not entered!                         | In mask Settings → E-mail no e-mail address has been entered on the To: line                                                           | Complete the settings required for e-mails or the Trigger menu (under Trending → Trigger → Definition button) |
| E-mail subject not entered!                         | No text has been entered on the Subject line of mask Settings → E-mail                                                                  | Complete the settings required for e-mails (Subject)                                                                                               |
### Error messages in alphabetical order (cont’d)

<table>
<thead>
<tr>
<th>Error message</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error when accessing data!</td>
<td>Error occurred during data handling by the ACS410</td>
<td>If this error message appears while changing a parameter, the change is not necessarily made on the basic unit. For this reason, check the correct setting on the basic unit (repeat the process with the help of the ACS410 or connect the AZL2...). If this error message is displayed repeatedly, reinstall the ACS410</td>
</tr>
<tr>
<td>File cannot be read. This file contains parameters the logged on user is not authorized to access</td>
<td>The user currently logged on is not authorized to access the parameters saved in the file</td>
<td>Log on to the correct user level</td>
</tr>
<tr>
<td>General PME... error + supplementary error text</td>
<td>Error occurred during the action</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Hard disk is full. Logging and trending cannot be saved</td>
<td>File for ACS410 display text is faulty.</td>
<td>Provide additional storage space on the hard disk</td>
</tr>
<tr>
<td>Language file faulty</td>
<td>File for ACS410 display text is faulty.</td>
<td>Reinstall the program or contact the supplier of the ACS410</td>
</tr>
<tr>
<td>Language file faulty. Contact the ACS410 supplier</td>
<td>File for ACS410 display text is faulty.</td>
<td>Reinstall the program or contact the supplier of the ACS410</td>
</tr>
<tr>
<td>No authorization for this parameter</td>
<td>Change of parameter on the current user level not possible</td>
<td>Log in on the correct user level</td>
</tr>
<tr>
<td>No basic unit connected to the OCI</td>
<td>ACS410 cannot receive data from the basic unit</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>No basic unit found. Check the connection and try again</td>
<td>ACS410 cannot receive data from the basic unit</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>OCI not enabled</td>
<td>Use of a wrong type of OCI4... or technical component problem</td>
<td>Replace the OCI4... Always use approved types of OCI4... as per type summary in chapter Data exchange via OCI410</td>
</tr>
<tr>
<td>OCI not found! Check the OCI410</td>
<td>ACS410 cannot receive data from the OCI410</td>
<td>Check wiring between basic unit and OCI4... interface. Restart the ACS410. Check interface settings of the ACS410 (☞ chapter Settings)</td>
</tr>
<tr>
<td>PME... action was not started</td>
<td>Execution of required action was not possible at this point in time</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>PME... backup has failed</td>
<td>Action could not be fully completed</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Error message</td>
<td>Meaning</td>
<td>Recommended measure</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PME... OEM backup has failed</td>
<td>Action could not be fully completed</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>PME... restore has failed</td>
<td>Action could not be fully completed</td>
<td>Restart the required action</td>
</tr>
<tr>
<td>Product no. (ASN) check has failed</td>
<td>Backup data set and connected basic unit have different product nos. (ASN)</td>
<td>Use data set with the same product no. (ASN) as the connected basic unit. For product no. of data set, refer to backup/restore in column Basic unit of the data set</td>
</tr>
<tr>
<td>Required function cannot be started, data access currently disabled!</td>
<td>Error occurred during operation of actuators</td>
<td>Repeat the process</td>
</tr>
<tr>
<td>Required position could not be approached!</td>
<td>Error occurred during operation of actuators</td>
<td>Repeat the process</td>
</tr>
<tr>
<td>Resetting cannot be started. Another operation requires exclusive access to the basic unit</td>
<td>Before a reset can be made, a started function must be executed first</td>
<td>Repeat the reset process</td>
</tr>
<tr>
<td>Resetting sequence not fully completed</td>
<td>Execution of reset was not possible</td>
<td>Repeat the reset process</td>
</tr>
<tr>
<td>Restore not possible. Burner ID of burner control and that of backup file is different</td>
<td>If burner ID of the burner control and that of the backup file are different, execution of the restore process is not possible</td>
<td>Is the selected restore data set the correct one? On the Parameters menu, check the value given for Burner ID</td>
</tr>
<tr>
<td>Restore not possible. Software version of burner control and that of backup file is different</td>
<td>The burner control's software version and the required software version saved in the backup file are incompatible</td>
<td>Use the restore file compatible with the basic unit. Refer to the ACS410 compatibility table in chapter Backup/restore</td>
</tr>
<tr>
<td>Restore not possible. No compatibility</td>
<td>PME module and basic unit do not match. Product no. (ASN), software version are not compatible</td>
<td>Use a matching PME module</td>
</tr>
<tr>
<td>Serial interface (e.g. COM1) cannot be initialized. Check cable connection or port number and try again</td>
<td>Serial interface cannot be initialized</td>
<td>Contact the supplier of the ACS410</td>
</tr>
<tr>
<td>Size of long page is ZERO!</td>
<td>Data set is faulty</td>
<td>Contact the supplier of the ACS410</td>
</tr>
<tr>
<td>SMTP message could not be sent:</td>
<td>E-mail could not be sent</td>
<td>Check the connection to your e-mail server and the settings made in Settings → E-mail, line E-mail server – name. Compare the settings made with the information given by your provider</td>
</tr>
<tr>
<td>SMTP server not specified!</td>
<td>In Settings → E-mail, line E-mail server – name, no server for sending e-mails is specified</td>
<td>Complete the settings required for e-mails. For more information, contact your provider</td>
</tr>
<tr>
<td>Software version check has failed</td>
<td>Basic unit not compatible with ACS410</td>
<td>Basic unit does not support connection of PC tool</td>
</tr>
</tbody>
</table>
## Error messages in alphabetical order (cont’d)

<table>
<thead>
<tr>
<th>Error message</th>
<th>Meaning</th>
<th>Recommended measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardization of VSD has failed</td>
<td>Error occurred when standardizing the speed of the VSD</td>
<td>For cause of the error, refer to the display of results in the ratio settings. Clear text diagnostics is offered by the error history on the Info/Service page. On startup, the pointer translates the diagnostic code to clear text</td>
</tr>
<tr>
<td>Trigger could not be started. Number of selected parameters is limited to a total of:</td>
<td>Total number of trigger events is limited to 9 trigger points</td>
<td>Reduce to a maximum of 9 trigger points</td>
</tr>
<tr>
<td>Trigger list is empty! Trigger cannot be started!</td>
<td>The Trigger menu does not contain a trigger event. Trigger cannot be activated without this entry</td>
<td>Create at least one trigger event in the Trigger window</td>
</tr>
<tr>
<td>UDS: GetParamTree has failed!</td>
<td>UDS reading error</td>
<td>Check to see if the OCI400 is correctly attached to the basic unit – check wiring between OCI400 and ACS410</td>
</tr>
<tr>
<td>UDS: GetParamValue has failed!</td>
<td>UDS reading error</td>
<td>Check to see if the OCI400 is correctly attached to the basic unit – check wiring between OCI400 and ACS410</td>
</tr>
<tr>
<td>Unload file (UNL) does not exist</td>
<td>Backup of a parameter set consists of 2 files: *.unl = backup data, and *.b kp = information on backup. File *.unl has not been found</td>
<td>Create a new backup</td>
</tr>
<tr>
<td>UnLockSeq delivers undefined output</td>
<td>Execution of reset was not possible</td>
<td>Repeat the resetting process</td>
</tr>
<tr>
<td>User is not authorized to access this function</td>
<td></td>
<td>Log on to the correct user level</td>
</tr>
<tr>
<td>Version of basic unit is not suited for use with this ACS410 version</td>
<td>ACS410 version used is incompatible with the basic unit</td>
<td>Use an older ACS410 version. If functionality of the new ACS410 version is required, replace the basic unit</td>
</tr>
<tr>
<td>You are not authorized to change the initial parameter settings</td>
<td>The initial parameter settings have a higher access right for writing</td>
<td>Log on again with a higher user access right</td>
</tr>
</tbody>
</table>

**Note**

If, during the use of ACS410, the display shows errors not contained in the above lists, please contact your supplier.
## 17 Legend of symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Print" /></td>
<td><strong>Print</strong>: Click this button to open the menu for making the printer settings</td>
</tr>
<tr>
<td><img src="image" alt="Settings" /></td>
<td><strong>Settings</strong>: Click this button to open the menu for making the settings</td>
</tr>
<tr>
<td><img src="image" alt="Lock" /></td>
<td><strong>Lock</strong>: When the burner control is in operation, you can click this switch to start the locking sequence</td>
</tr>
<tr>
<td><img src="image" alt="Unlock" /></td>
<td><strong>Unlock</strong>: If the burner control has locked out (lockout position), you can click this switch to start the resetting sequence</td>
</tr>
<tr>
<td><img src="image" alt="Locking ACS410" /></td>
<td><strong>Locking the ACS410</strong>: Click this button to lock operation via the ACS410. Locking can only be canceled by logging on again</td>
</tr>
<tr>
<td><img src="image" alt="Help" /></td>
<td><strong>Help</strong>: Click this button to open menu <strong>Help topics for operating the ACS410 and documentation</strong></td>
</tr>
<tr>
<td><img src="image" alt="Status" /></td>
<td><strong>Status</strong>: Indicates an online connection to the burner control</td>
</tr>
<tr>
<td><img src="image" alt="Error message" /></td>
<td><strong>Error message</strong>: Indicates that the burner control has locked out</td>
</tr>
<tr>
<td><img src="image" alt="Periodic password" /></td>
<td><strong>Periodic password</strong>: Indicates that the password is sent</td>
</tr>
<tr>
<td><img src="image" alt="Plotting in Trending" /></td>
<td><strong>Plotting in the Trending window</strong></td>
</tr>
<tr>
<td><img src="image" alt="Indicating active trigger handling" /></td>
<td><strong>Indicating active trigger handling in the Trending window</strong></td>
</tr>
<tr>
<td><img src="image" alt="Indicating burner control's current operating state" /></td>
<td><strong>Indicating the burner control’s current operating state</strong></td>
</tr>
</tbody>
</table>
# 18 Glossary

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASN</td>
<td>Device type</td>
</tr>
<tr>
<td>BCI</td>
<td><strong>Burner Communication Interface</strong></td>
</tr>
<tr>
<td>DFÜ</td>
<td>Data exchange via the telephone line (Internet) over longer distances</td>
</tr>
<tr>
<td>DSL</td>
<td><strong>Digital Subscriber Line</strong></td>
</tr>
<tr>
<td>FA</td>
<td>Burner control, equivalent to basic unit</td>
</tr>
<tr>
<td>GSM</td>
<td><strong>Global System for Mobile Communications</strong></td>
</tr>
<tr>
<td>ISDN</td>
<td><strong>Integrated Services Digital Network</strong></td>
</tr>
<tr>
<td>LAN</td>
<td><strong>Local Area Network</strong></td>
</tr>
<tr>
<td>LME…</td>
<td>Microprocessor-based burner controls from Siemens for gas burners of small capacity</td>
</tr>
<tr>
<td>LMO…</td>
<td>Advanced microprocessor-based burner controls from Siemens for oil burners</td>
</tr>
<tr>
<td>LMV2…</td>
<td>Microprocessor-based burner controls from Siemens for gas or oil burners of small to high capacity</td>
</tr>
<tr>
<td>LMV3…</td>
<td></td>
</tr>
<tr>
<td>MAPI</td>
<td><strong>Messaging Application Programming Interface</strong> (defined interface used to send e-mails from any Windows software)</td>
</tr>
<tr>
<td>OCI400</td>
<td>Optoelectronic interface module for communication with all types of LMO… and LMG… burner controls from Siemens</td>
</tr>
<tr>
<td>OCI410…</td>
<td>Interface used between ACS410 and basic unit</td>
</tr>
<tr>
<td>PME</td>
<td>Program module for basic unit LME7…/LME8…</td>
</tr>
<tr>
<td>Trending</td>
<td>Program section used for the display and recording of activities performed by burner controls</td>
</tr>
<tr>
<td>UDS</td>
<td>Unidirectional interface)</td>
</tr>
<tr>
<td>USB</td>
<td><strong>Universal Serial Bus</strong></td>
</tr>
<tr>
<td>VSD</td>
<td><strong>Variable Speed Drive</strong></td>
</tr>
</tbody>
</table>
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