PC-based Automation

Industrial PC
*Parameter setting & configuration*
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1  About this documentation

This documentation provides general information on the parameterisation and configuration of an Industrial PC. The Industrial PC is the central control system of the PC-based Automation system.

The present manual is part of the "PC-based automation" manual collection which consists of the following components:

<table>
<thead>
<tr>
<th>Documentation</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>System manuals</td>
<td>• Control technology - <em>system structure &amp; configuration</em></td>
</tr>
<tr>
<td>PC-based Automation</td>
<td>• Visualisation - <em>system structure &amp; components</em></td>
</tr>
<tr>
<td>Communication manuals</td>
<td>• CANopen control technology</td>
</tr>
<tr>
<td>PC-based Automation</td>
<td>• EtherCAT control technology</td>
</tr>
<tr>
<td></td>
<td>• PROFIBUS control technology</td>
</tr>
<tr>
<td>(Software) manual</td>
<td>• Industrial PC - <em>Parameterisation &amp; Configuration</em></td>
</tr>
<tr>
<td>PC-based Automation</td>
<td></td>
</tr>
<tr>
<td>Operating Instructions</td>
<td>• EL x800 - Panel PC with TFT display</td>
</tr>
<tr>
<td>Embedded Line Panel PC</td>
<td></td>
</tr>
<tr>
<td>Operating Instructions</td>
<td>• CS x800 - Stand-alone operator terminal</td>
</tr>
<tr>
<td>Command Station</td>
<td></td>
</tr>
<tr>
<td>Operating Instructions</td>
<td>• CPC 2800 - Control cabinet PC</td>
</tr>
<tr>
<td>Control Cabinet PC</td>
<td></td>
</tr>
<tr>
<td>Operating Instructions</td>
<td>• EL 1xx - HMI with Windows® CE</td>
</tr>
<tr>
<td>HMI EL 100</td>
<td></td>
</tr>
<tr>
<td>Further software manuals</td>
<td>• Global Drive Control (GDC)</td>
</tr>
<tr>
<td></td>
<td>• IPC as gateway - <em>Parameterisation &amp; Configuration</em></td>
</tr>
<tr>
<td></td>
<td>• »Engineer«</td>
</tr>
<tr>
<td></td>
<td>• »PLC Designer« / »PLC Designer - SoftMotion« / »PLC Designer - CANopen for runtime systems«</td>
</tr>
<tr>
<td></td>
<td>• »VisiWinNET® Smart«</td>
</tr>
</tbody>
</table>

Information on the use of the IPCs beyond control technology can be found in the System manuals which are designed to meet the respective case of application.
Further technical documentation for Lenze components

Further information on Lenze components which can be used in connection with "PC based Automation" can be found in the following documentation:

### Mounting & wiring
- MA 8400 StateLine/HighLine
- MA 9400 StateLine/HighLine
- MA EPM-Txxx (I/O system IP20)
- MA EPM-Sxxx (I/O system 1000)
- MA 8200 vector
- EMC-compliant wiring 8200 vector
- MA ECSxS/P/M/A axis modules
- MA ECSxE power supply modules
  - Accordingly for built-in variants:
    - Built-in unit
    - Push-through technique
    - Cold plate technology
- MA MC-CAN2 communication card
- MA MC-ETC communication card
- MA MC-ETH communication card
- MA MC-PBM communication card
- MA MC-PBS communication card
- MA MC-MPI communication card
- MAs for the communication modules

### Parameterisation, configuration, commissioning
- SW 8400 StateLine/HighLine frequency inverters
- SW 9400 StateLine/HighLine/PLC controller
- 9400 HighLine commissioning guideline
- SHB I/O system IP20 (EPM-Txxx)
- SHB I/O system 1000 (EPM-Sxxx)
- SHB 8200 vector
- BA ECSxS “Speed and Torque” axis module
- BA ECSxP “Posi & Shaft” axis module
- BA ECSxM “Motion” axis module
- BA ECSxA “Application” axis module
- BA ECSxE power supply module
- KHBs for the communication modules

### Programming
- SW 9400 function library

### Establishing a network
- KHBs for the communication modules
Target group

This documentation is directed at persons who wish to parameterise, configure, and diagnose a PC-based control system using an Industrial PC in conjunction with the L-force »Engineer« Engineering software.
### Document history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1.0</td>
<td>07/2007</td>
<td>TD16 First edition control technology 1.0</td>
</tr>
<tr>
<td>1.5</td>
<td>11/2007</td>
<td>TD16 Updated parameter lists control technology 1.5, amended by the »WebConfig«</td>
</tr>
<tr>
<td>2.0</td>
<td>05/2008</td>
<td>TD11 Control technology 2.0, amended by the parameter lists for the MC-CAN2, MC-ETH, and MC-ETC communication cards.</td>
</tr>
<tr>
<td>2.1</td>
<td>08/2008</td>
<td>TD11 Control technology 2.1, &quot;[in preparation!]&quot; removed for Release EtherCAT, Update EtherCAT parameters.</td>
</tr>
<tr>
<td>2.2</td>
<td>05/2009</td>
<td>TD11 Control technology 2.2, update for the new software version</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Update of the German »WebConfig« user interface,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Added default settings of IP addresses,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Amended by the IP port in the system overviews,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Added contents from system verification,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Added ID numbers to document,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Amended by the parameter list of the MC-PBM communication card.</td>
</tr>
<tr>
<td>2.3</td>
<td>11/2009</td>
<td>TD11 Control technology 2.2.2, update for the new software version</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• New chapter: <a href="#">Lenze specifications - exception handling</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• New chapter: <a href="#">Configuration of the OPC tunnel</a></td>
</tr>
<tr>
<td>2.4</td>
<td>01/2011</td>
<td>TD11 Control technology 2.5, update for the new software version</td>
</tr>
<tr>
<td>2.5</td>
<td>01/2012</td>
<td>TD11 Control technology 2.6, update for the new software version</td>
</tr>
</tbody>
</table>

**Tip!**

Current documentation and software updates on Lenze products can be found on the Internet in the "Services & Downloads" area under:

1.2 Conventions used

This documentation uses the following conventions to distinguish between different types of information:

<table>
<thead>
<tr>
<th>Type of information</th>
<th>Writing</th>
<th>Examples/notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spelling of numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decimal separator</td>
<td>Point</td>
<td>Generally the decimal point is used. For example: 1234.56</td>
</tr>
<tr>
<td>Text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version information</td>
<td>Text colour blue</td>
<td>All pieces of information that only apply to or from a specific software version are indicated accordingly in this documentation. Example: This function extension is available from software version V3.0!</td>
</tr>
<tr>
<td>Program name</td>
<td>“ ”</td>
<td>The Lenze PC software »Engineer«...</td>
</tr>
<tr>
<td>Window</td>
<td>Italics</td>
<td>The Message window... / The Options dialog box...</td>
</tr>
<tr>
<td>Variable identifier</td>
<td></td>
<td>By setting bEnable to TRUE...</td>
</tr>
<tr>
<td>Control element</td>
<td>Bold</td>
<td>The OK button... / The Copy command... / The Properties tab... / The Name input field...</td>
</tr>
<tr>
<td>Sequence of menu commands</td>
<td></td>
<td>If several commands must be used in sequence to carry out a function, then the individual commands are separated by an arrow. Select File→Open to...</td>
</tr>
<tr>
<td>Keyboard command</td>
<td>&lt;Bold&gt;</td>
<td>Press &lt;F1&gt; to open the online help.</td>
</tr>
<tr>
<td>Program listings</td>
<td>Courier</td>
<td>If a command requires a combination of keys, a “+” is placed between the key symbols: With &lt;Shift&gt;+&lt;ESC&gt; you can...</td>
</tr>
</tbody>
</table>
| Keyword                      | Courier bold | IF var1 < var2 THEN \[
\begin{align*}
  a &= a + 1 \\
  \text{END IF}
\end{align*}
\[
\]
| Hyperlink                    | Underlined | Optically highlighted reference to another topic. Is activated via mouse-click in this documentation. |

Symbols

| Page reference               | (13)    | Optically highlighted reference to another page. Is activated via mouse-click in this documentation. |
| Step-by-step instructions    |         | Step-by-step instructions are indicated by a pictograph. |
## 1.3 Terminology used

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>»Engineer«</td>
<td>Lenze engineering tools which support you throughout the whole life cycle of a machine with an Industrial PC - from planning to maintenance.</td>
</tr>
<tr>
<td>»Global Drive Control« / »GDC«</td>
<td>Code &quot;Container&quot; for one or several parameters used for parameter setting or monitoring Lenze Servo Drives.</td>
</tr>
<tr>
<td>»PLC Designer«</td>
<td>Subcode If a code contains several parameters, the individual parameters are stored under &quot;subcodes&quot;. This manual uses a slash &quot;/&quot; as a separator between code and subcode (e.g. &quot;C00118/3&quot;).</td>
</tr>
<tr>
<td>Code</td>
<td></td>
</tr>
<tr>
<td>Subcode</td>
<td></td>
</tr>
<tr>
<td>IPC</td>
<td>Industrial PC</td>
</tr>
<tr>
<td>PLC</td>
<td>Programmable Logic Controller</td>
</tr>
</tbody>
</table>
1.4 Notes used

The following signal words and icons are used in this documentation to indicate dangers and important information:

Safety instructions

Structure of safety instructions:

⚠️ Pictograph and signal word!
(characterise the type and severity of danger)

Note
(describes the danger and gives information about how to prevent dangerous situations)

<table>
<thead>
<tr>
<th>Pictograph</th>
<th>Signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Danger!</td>
<td>Danger of personal injury through dangerous electrical voltage Reference to an imminent danger that may result in death or serious personal injury if the corresponding measures are not taken.</td>
</tr>
<tr>
<td>!</td>
<td>Danger!</td>
<td>Danger of personal injury through a general source of danger Reference to an imminent danger that may result in death or serious personal injury if the corresponding measures are not taken.</td>
</tr>
<tr>
<td>STOP</td>
<td>Stop!</td>
<td>Danger of property damage Reference to a possible danger that may result in property damage if the corresponding measures are not taken.</td>
</tr>
</tbody>
</table>

Application notes

<table>
<thead>
<tr>
<th>Pictograph</th>
<th>Signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Note!</td>
<td>Important note to ensure trouble-free operation</td>
</tr>
<tr>
<td>!</td>
<td>Tip!</td>
<td>Useful tip for simple handling</td>
</tr>
<tr>
<td>!</td>
<td></td>
<td>Reference to another documentation</td>
</tr>
</tbody>
</table>
2 Safety instructions

Please observe the following safety instructions when you want to commission a controller or system using the Industrial PC.

⚠️ **Read the documentation supplied with the corresponding field device thoroughly before starting to commission the devices with the Industrial PC!**

**The device documentation contains safety instructions which must be observed!**

⚠️ **Danger!**

According to our present level of knowledge it is not possible to ensure the absolute freedom from errors of a software.

If necessary, systems with built-in controllers must be provided with additional monitoring and protective equipment according to relevant safety regulations (e.g. law on technical equipment, regulations for the prevention of accidents), so that an impermissible operating status does not endanger persons or facilities.

During commissioning persons must keep a safe distance from the motor or the machine parts driven by the motor. Otherwise there would be a risk of injury by the moving machine parts.

⚠️ **Stop!**

If you change parameters in the »Engineer« or the »WebConfig« while a device is connected online, the changes will be directly accepted by the device!

A wrong parameter setting can cause unpredictable motor movements. By unintentional direction of rotation, too high speed or jerky operation, the driven machine parts may be damaged!
3 The PC-based Automation system

Industrial PCs (IPCs) keep finding their way into automation technology. Due to their scaling options and various possibilities of combining visualisation and control in one device, Industrial PCs offer great advantages for many applications.

Lenze Industrial PCs are available in the following software equipments:

- Industrial PC as component, on request with operating system, without further software
- Industrial PC as visualisation system
- Industrial PC as control and visualisation system

The PC-based Automation system enables central control of Logic and Motion systems.

For this purpose, Lenze provides well-matched system components:

- Industrial PCs as control and visualisation system
  - The IPC is the central component of the PC-based Automation system that uses the Runtime Software to control the Logic and Motion functionalities.
  - The IPC uses the fieldbus to communicate with the field devices.
  - The IPC is available in various designs.

**Note!**

The PC-based Automation system also includes the EL 1xx PLC HMI series. Regarding efficiency and other details, these devices differ considerably from the Industrial PCs. However, the devices of the EL 1xx PLC HMI series are able to perform smaller control tasks.

- Engineering tools for the Engineering PC
  - The Engineering PC uses the Ethernet to communicate with the IPC.
  - Use the various Engineering tools to configure and parameterise the system.
► Fieldbuses
► Field devices
4 Commissioning

This chapter provides general information on the first commissioning of an Industrial PC. Depending on the actual hardware installed, different settings are required to integrate the Industrial PC for machine control purposes into a network.

Note!

- Please observe the following predefined IP addresses when commissioning your IPC for the first time:
  - Engineering PC: 192.168.5.100
  - Industrial PC: 192.168.5.99

Further information on the setting of the IP address of your Industrial PC can be found in the following section:  › Enter the IP address of the Industrial PC (32)

Read the Mounting Instructions accompanying the controller first before you start working!
The Mounting Instructions contain safety instructions which must be observed!

Further information on the device-specific properties can be found in the Hardware Manual of the corresponding Industrial PC.
4.1 Identification

**Note!**

Here the documentation provides some general information on the commissioning of an Industrial PC. Depending on the design and version of the Industrial PC, the commissioning can vary.

Every Industrial PC is provided with a nameplate containing the device data. The device data is required for being able to select the IPC in the «Engineer» corresponding to the hardware components installed.

- The Industrial PC can be identified by means of the nameplate. [Nameplate](#21)
- The nameplate contains information on the components installed which is required for initial commissioning.
4.1.1 Nameplate

The nameplate is...

► ...on the back of the panel for Industrial PCs of the EL and CS series,
► For cabinet PCs of the CPC series on the housing.

![Nameplate Image]

**Tip!**

Data provided by module labelling facilitate the integration of IPC device modules into the L-force »Engineer«.

**Further information on the L-force »Engineer« can be found in the online documentation of the L-force »Engineer«.**

4.1.2 Module labelling

The extension module labelling indicates the connection options to the fieldbus. Depending on the configuration, one or more fieldbus adapter are mounted.

![Module Labelling Image]

**Tip!**

Data provided by module labelling facilitate the integration of IPC device modules into the L-force »Engineer«.
4.1.3 Baseboard label

The baseboard label illustrates possible connections to the main board of the IPC.

Therefore, quick wiring of the individual components is possible.

4.2 Control elements

Depending on the equipment level and the model series, the different series are provided with different control elements. The monitor panels and embedded line front modules are equipped with status LEDs, function keys and special keys.

The IPC can be operated

- as standard via the function keys of the command stations and embedded line PCs next to the panel,
- or via the on-screen keyboard or touchscreen.
- If extensive diagnostics and configurations are required, the Industrial PC can also be operated via external input devices such as a keyboard or mouse.

4.2.1 LEDs at the front of the monitor panel

- ![Power]
- ![Fail]
- ![Status]

The LEDs are located at the front of the panel. Depending on the model design, the LEDs are positioned in different places.

**Power LED**

- The green power LED is lit when an input voltage is supplied.
- If the LED is blinking, the Industrial PC is in service mode.

**Fail LED**

- The red fail LED is lit if a fault has occurred in the current supply.
- If the LED is blinking, there is no screen signal.
Status LED (optional)

Note!
In the case of some IPC variants the status LED has no function!

- Depending on the IPC design, the status LED can signalise the access to the respective storage medium.

Further information on the device-dependent function of the light-emitting diodes can be found in the Hardware Manual of the corresponding Industrial PC.

4.2.2 Function keys

At the least the panel is equipped with function keys F1, F2, F3 and a shift key at the front module. The following description applies to the IPC series ELxx00, MPxx00 and CSxx00. Here the function keys are located on the right of the display. Depending on the IPC design, the position and assignment of the keys may vary.

![Function keys](image)

The key assignment of function keys F1-F3 can be parameterised via the »Engineer« or the »WebConfig«.

- Changing the function key assignment in the »WebConfig« (p 26)
- Changing the function key assignment in the L-force »Engineer« (p 27)

Every function key has two functions. The additional functions can be activated via a service mode.

How to activate the service mode:

1. Keep the key pressed until the green LED is blinking.
   - While the LED is blinking, the service mode is active.
2. In the service mode the screen brightness can be changed via F2 and F3.
   - F1 starts the control panel.
3. To return to standard mode, wait until the green LED is lit permanently or press again.

Note!
In the case of some IPC variants the status LED has no function!

Further information on the device-dependent function of the light-emitting diodes can be found in the Hardware Manual of the corresponding Industrial PC.
Function key "F1"

Standard mode: The key sends the key code for <SHIFT>+<F1>.

- In the standard assignment, <F1> starts the input panel.

<table>
<thead>
<tr>
<th>Input Panel</th>
<th>Esc</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>F9</th>
<th>F10</th>
<th>F11</th>
<th>F12</th>
<th>Home</th>
<th>End</th>
<th>123</th>
</tr>
</thead>
<tbody>
<tr>
<td>`</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>0</td>
<td>-</td>
<td>=</td>
<td>ø</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tab</td>
<td>q</td>
<td>w</td>
<td>e</td>
<td>r</td>
<td>t</td>
<td>y</td>
<td>u</td>
<td>i</td>
<td>o</td>
<td>p</td>
<td>[</td>
<td>]</td>
<td>\</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caps Lock</td>
<td>a</td>
<td>s</td>
<td>d</td>
<td>f</td>
<td>g</td>
<td>h</td>
<td>j</td>
<td>k</td>
<td>l</td>
<td>:</td>
<td>'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shift</td>
<td>z</td>
<td>x</td>
<td>c</td>
<td>v</td>
<td>b</td>
<td>n</td>
<td>m</td>
<td>,</td>
<td>.</td>
<td>/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ctrl</td>
<td>Alt</td>
<td></td>
<td></td>
<td>Ins</td>
<td>Del</td>
<td>→</td>
<td>←</td>
<td>↑</td>
<td>↓</td>
<td>→</td>
<td>←</td>
<td>↑</td>
<td>Down</td>
<td>PgUp</td>
<td>PgDn</td>
<td></td>
</tr>
</tbody>
</table>

In the service mode, <F1> sends the key code for <SHIFT>+<F4> and starts the Windows® CE control panel: Control panel (25)

The View menu provides further options for representation.
Control panel

<table>
<thead>
<tr>
<th>Icon</th>
<th>Designation</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Network Connections" /></td>
<td>Network Connections</td>
<td>Open configuration of the network connections</td>
</tr>
<tr>
<td><img src="image.png" alt="Service Command" /></td>
<td>Service Command</td>
<td>Open command line box</td>
</tr>
<tr>
<td><img src="image.png" alt="System" /></td>
<td>System</td>
<td>Show system properties</td>
</tr>
<tr>
<td><img src="image.png" alt="Touch Calibration" /></td>
<td>Touch Calibration</td>
<td>Touch display calibration (§ 31)</td>
</tr>
</tbody>
</table>

> «VisiWinNET®» Project Manager
- Start «VisiWinNET®» Project Manager
- Manage «VisiWinNET®» projects

> «VisiWinNET®» Remote Access
- Start «VisiWinNET®» Remote Access
- Transferring an application to the target device (§ 116)

VisualStudio Connect
- VisualStudio2005 ConManClient

»WebConfig«
- Start »WebConfig«

Function key "F2"

Standard mode: The key sends the key code for <SHIFT>+<F2>

The standard assignment of the function key is the right mouse-click.

Service mode: The screen brightness is increased.

Function key "F3"

Standard mode: The key sends the key code for <SHIFT>+<F3>

Service mode: The screen brightness is reduced.

The codes C422 (0422) and C423 (0423) contain the parameters for screen brightness.

Further information on the codes containing the values of the screen brightness can be found in chapter Parameters of standard devices (§ 129)

Shift key "▲"

Standard mode: The key sends the key code for <SHIFT>+<F4>.

The shift key activates the Service mode. When the system is started, the shift key interrupts batch processing and executes the Windows® CE control panel.
4.2.3 Changing the function key assignment in the »WebConfig«

- The assignment of the function keys of the panel can be configured via the »WebConfig«.
- Each function key can be assigned with different functions via a selection list:
  - The **Start program** option enables linking a function key to the start of an application,
  - **Touch keyboard** assigns the function key to the on-screen keyboard,
  - **Right mouse-click** assigns the function key with the right mouse-click,
  - **Run AP script** starts an automation panel script,
  - **Start control panel** starts the Windows® CE control panel.

The function key assignment can be changed via the **Panel** button.  
Parameters of the standard device of the Industrial PC (§ 51)

<table>
<thead>
<tr>
<th>Keys</th>
<th>433</th>
<th>Key F1: function</th>
<th>Start Control Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>434</td>
<td>Key F1: parameter</td>
<td>Start program</td>
<td></td>
</tr>
<tr>
<td>435</td>
<td>Key F2: function</td>
<td>Right mouse-click</td>
<td></td>
</tr>
<tr>
<td>436</td>
<td>Key F2: parameter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>437</td>
<td>Key F3: function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>438</td>
<td>Key F3: parameter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>439</td>
<td>Key F4: function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>440</td>
<td>Key F4: parameter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[4-2] Representation of the function key assignment as a list field (example: the F4 key)
4.2.4 Changing the function key assignment in the L-force »Engineer«

- The panel function key assignment can be configured in the »Engineer«.
- Every function key has a selection list including different function assignments.

![Function key assignment in the L-force »Engineer« with an online connection to the Industrial PC]

**Note!**

The function key assignment can only be changed if an online connection to the Industrial PC has been established.

- **Online connection between the Engineering PC and Industrial PC** (45)
How to start the function key assignment in the »Engineer«:

1. Highlight the corresponding Industrial PC in the project view.
2. Establish the online connection to the Industrial PC selected.
   - Observe the chapter "Establishing the online connection to an Industrial PC" in the »Engineer« documentation.
3. Click the Settings tab.

For every function key a selection list with different functions is available:
- The Start program option enables linking a function key to the start of an application,
- Touch keyboard assigns the function key to the on-screen keyboard,
- Right mouse-click assigns the function key with the right mouse-click,
- Run AP script starts an automation panel script,
- Start control panel starts the Windows® CE control panel.

Alternatively the function key assignments can also be configured via codes C432 to C439.
4.3 System boot-up

**Note!**

Removing the CF card causes a failure of the system! The CF card is required for the system start, as the operating system and all the system files required for the boot process are stored on the CF card.

- The CF card is the storage medium of the Industrial PC.
- During the system start-up, the Industrial PC generates the required data in the main memory from the data bases of the CF card. Thus the Industrial PC can only be operated in connection with the CF card.
- Configurations which have been saved previously, e.g. the entry of the IP address and the touch calibration, are taken into account for the system start.

4.4 Technical background information

4.4.1 Data management

- During a system start the data management generates the required registry entries from the reference data saved. As the registry is not saved with mains failure protection, the Industrial PC regenerates the registry at every system start.
- The reference data base is composed of the IPC data and parameters which are saved to the files of the data manager. The remaining data are stored within the databases by the Industrial PC. The CF card serves as a storage medium for saved data.

4.4.2 Starting process

The operating system is stored in a binary file on the CF card. During system start-up the Industrial PC loads the system data and starts the operating system. The Industrial PC executes the following steps during a start-up:

1. Loading the system data from the binary file into the main memory and starting the operating system:

   ```
   Starting CF Flat VGA...
   ````

2. Unpacking the system programs and installing the device drivers:
   - Unpacking of the basic settings from the database,
   - Installation of the "backup and restore“ components,
   - Installation of the device scanner,
   - Installation of the data manager.

After unpacking the system files, the Industrial PC starts the system programs. The device scanner identifies the IPC configuration and establishes the topological addressing.
The preset IP configurations can be configured using the »Engineer« and »WebConfig«.

- Entering the IP address of the Industrial PC (p. 32)

4.5 Configuring the Industrial PC

This chapter will inform you on how to configure the Industrial PC during initial commissioning. The configuration of the IP address and the touch calibration are maintained when the system is restarted.
4.5.1 Touch display calibration

**Tip!**
Use a ballpoint pen with retracted cartridge for the touch calibration or a special PDA/touch pen. In this way the calibration can be carried out more precisely.

**Note!**
- The touch calibration can be viewed for 15 seconds. Then the touch display remains in an uncalibrated state so that the touch function does not properly work. When the system is started again, the Industrial PC carries out another touch calibration.
- The touch calibration can be started manually:
  - Via one of the function keys, standard setting <F3>,
  - In the Windows® CE control panel on the IPC ▶ Control panel (25)

Touch calibration is required if...
- ...you replace the CF card,
- ...you have updated the IPC software,
- ...a USB data carrier with backup / restore configuration has been connected,
- ...the Industrial PC remains in the service mode due to start-up problems,
- ...the Industrial PC detects a change in the hardware configuration when the system is started.

**How to calibrate the touch display:**
1. If the touch calibration cannot be viewed, press function key <F3>.
   - The icon appears on the screen surface.
2. Press the red-white icon displayed on the screen with your finger, PDA/touchpen, or similar.
   - The icon skips from its initial position to the upper left-hand corner.
3. Keep the icon pressed.
   - The icon gets smaller and after letting go skips to the right upper corner.

4. Repeat step 3 times.
   - Until the Accept button appears.

5. Press Accept.

4.5.2 Establishing an automatic dial-up connection

Further information on how to establish an automatic dial-up connection, remote maintenance and diagnostics options can be found under: Remote maintenance and diagnostics

In order to carry out a remote maintenance on the Industrial PC different mechanisms are provided:

- Remote Access Service (RAS) connection
- telnet connection
- FTP connection

4.5.3 Entering the IP address of the Industrial PC

The Industrial PC has the following network settings by default:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address</td>
<td>192.168.5.99</td>
</tr>
<tr>
<td>Subnetwork</td>
<td>255.255.255.0</td>
</tr>
<tr>
<td>Default gateway</td>
<td>192.168.5.1</td>
</tr>
</tbody>
</table>

- When the Industrial PC is commissioned for the first time, the desired IP address must be entered.
4.5.3.1 Industrial PCs with a touch panel/with an external monitor

-tip!
Connect a keyboard to the Industrial PC for entering the IP address. Alternatively you can start the input panel with the F1 function key on the Industrial PC. Make your entries afterwards:

- Start the control panel with <Shift+F4>.
- Start the network connections by double-click and enter the IP address, subnet mask, and the default gateway.
- After clicking the OK button the IP address is saved and need not be entered again when the system is restarted.

4.5.3.2 Industrial PC without touch panel/without external monitor

If no external monitor is provided, a laptop with a suitable IP address as well as a subnetwork template and a default gateway are required to carry out the settings. The preset IP address of the Engineering PC is 192.168.5.100.

- Connect the laptop to the Industrial PC by means of a "crossed" network cable.
- Change the settings on an HTML compliant browser:
  - Setting IP addresses (45)
- Establish the connection from the laptop to the Industrial PC. For this purpose enter the IP address of the Industrial PC on the browser: 192.168.5.99 (default setting).
- Select the Ethernet button and enter the desired IP address, subnet mask, and the default gateway of the Industrial PC.
- Click Accept & Save all
- Set Apply IP configuration to the value "Activate device"
- Re-click Accept & Save all to save the network settings.
4.5.4 Establishing Windows® CE access rights

In order to be able to establish a connection to the Industrial PC, each user must be allocated access rights. For this the respective user has to be set up as a Windows® CE user with a user name and a password. Windows® CE users can be set up via the »WebConfig« and the »Engineer«:

- Setting up Windows® CE users in the »WebConfig« (§ 34)
- Setting up Windows® CE users in the »Engineer« (§ 35)

4.5.4.1 Setting up Windows® CE users in the »WebConfig«

**Note!**

You have to be set up as Windows® CE user to have authorisations for further services like FTP, telnet, or web server access.

- Up to ten Windows® CE users can be set up in the »WebConfig« in the User management area.
- In codes 101 to 169 the user name, password, and various authorisations are set up for a maximum of ten users.

<table>
<thead>
<tr>
<th>User 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>161</td>
<td>Windows CE user name 1</td>
</tr>
<tr>
<td>162</td>
<td>Windows CE user password 1</td>
</tr>
<tr>
<td>163</td>
<td>Windows CE user RAS is allowed user 1</td>
</tr>
<tr>
<td>164</td>
<td>Windows CE user PDP is allowed user 1</td>
</tr>
<tr>
<td>165</td>
<td>FTP permission user 1</td>
</tr>
<tr>
<td>166</td>
<td>Windows CE user FTP user 1</td>
</tr>
<tr>
<td>167</td>
<td>FTP home user 1</td>
</tr>
<tr>
<td>168</td>
<td>Windows CE user FTP is allowed user 1</td>
</tr>
</tbody>
</table>

The representation for user 1 is displayed. Users 2 to 10 are represented analogously. Detailed information on the parameters can be found in the following section:

- Parameters of standard devices (§ 129)
4.5.4.2 Setting up Windows® CE users in the »Engineer«

Note!

You have to be set up as a Windows® CE user to be authorised for other services such as FTP, telnet or web server access. For the actual access you additionally have to be registered. The assigned user passwords are unencrypted!

- In the »Engineer« you can set up to ten Windows® CE users.
- The value for code C100 shows the number of users set up.
- In codes C101 to C170 you set up the user name, password, and different authorisations for the users.
5 System structure

This chapter gives you an overview of the general system structure in control technology.

Further information can be found in the respective documentation of the corresponding Engineering software.

5.1 Engineering PC

The Engineering PC serves to:
- parameterise, configure and maintain the IPC: »WebConfig«, »Engineer«,
- parameterise, configure, and maintain the field devices connected (»Engineer«, »Global Drive Control«),
- program the IPC (»PLC Designer«),
- creating a visualisation project (»VisiWinNET®«)
- the backup/restore preparation with »IPC Backup & Restore«.

5.2 Industrial PC

The following programs run on the Industrial PC:
- the control software (L-force Logic, L-force Motion),
- the fieldbus drivers,
- the optional visualisation software, and
- additional services (data manager, web server, logbook).
5.2.1 Centralised control system

- The PLC of the Industrial PC (Logic/Motion) is the central control component, consisting of the PLC runtime program with the running PLC application.
  - Via the data manager and the fieldbus driver the PLC (Logic/Motion) has access to the system components and field devices.

Field devices and the Industrial PC compose the machine to be commissioned by the Engineering PC.

- The Industrial PC can read parameters from and write parameters to the connected field devices via the fieldbus (Logic/Motion).

5.2.2 IPC data manager

With the Data manager, Lenze Industrial PCs contain a central tool for the configuration and data management of a system.

- A system in this connection is the combination of an Industrial PC and the field devices connected to it and registered via the fieldbus.
6 Parameterisation using the L-force »Engineer«

This chapter provides information on how to configure the Industrial PC using the L-force »Engineer«. Further information on the settings in the »Engineer« is provided in the corresponding topics of the online help.

6.1 Parameterisation via codes

- All settings by means of which you parameterise the Industrial PC are summarised in a parameter list that is numbered serially. The individual entries of this list are called "codes". Each code can be addressed via a number.

- Codes can also contain subparameters. They are also numbered and can be addressed via a subindex. With the code number and the subindex you can address each parameter unambiguously.

Tip!

In addition to the parameterisation via the »Engineer«, you can also parameterise the Industrial PC by means of the »WebConfig«.

The web-based parameterisation can be found in the chapter

- Web-based parameterisation with »WebConfig« (§ 44)

The parameter lists can be found in the chapters entitled

- Parameter reference (§ 125)
6.2 Addressing structure in the »Engineer«

In order to be able to address the individual components, the »Engineer« maps the complete Industrial PC in a linear code range. Each parameter is listed in a code which can either be changed or can only be read. The length of the code list depends on the corresponding hardware assembly.

- The basic IPC device uses the code range from 0 to 200;
- The Ethernet on board interface uses the code range from 220 to 260;
- The optional panel uses the code range from 400 to 600;
- The PLC (Motion/Logic) uses the code range from 600 to 800;
- If optional extension modules are used, the code range is extended accordingly. Every extension module is provided with the card and the interface parameters;
- A card plugged into a slot is equipped with one or more interfaces. If a card is plugged into a slot, the code range is extended accordingly:

  - The parameters of the extension modules use a maximum of 500 parameters each. The code number range depends on the slot:
    - Slot 1 uses codes 1000 to 1499,
    - Slot 2 uses codes 1500 to 1999.
6.2.1 Volatile data of an »Engineer« project

During operation, the Industrial PC manages the data in the main memory. Since the main memory is a volatile memory, all information which has not been saved permanently on the CF card will be lost in the case of a restart.

Changes on individual codes, which are carried out online with the »Engineer« for instance are volatile data.

💡 Tip!

An existing online connection is indicated in the »Engineer« by an animated icon below the project view bar:

Note!

Detailed information on the use of the »Engineer« software can be found in the corresponding »Engineer« documentation.

► The settings that you carry out in an »Engineer« project during an online connection is established remain volatile at first.
  – If changes carried out with regard to individual parameters during the online connection was established are incorrect, the last stable status can be retrieved by restarting the Industrial PC and the changes can be carried out again.

► Manual data backup is possible for saving the current settings permanently.
6.2.2 Saving data permanently

Code 18 enables you to transmit commands. A command overview can be found in the description of code 18 of the parameter lists.

Via the Persist all command you can permanently save the changes carried out with an online connection.

– The complete changes since the last restart of the Industrial PC are persistent.

The Industrial PC stores the data saved manually by the user on the CF card. For the project management within the Industrial PC, different device commands are available, which can be activated via code 18.

► When an online connection has been established, you can use the «Engineer» to activate a device command by selecting it from the Device commands tab in C0018.

6.3 Parameter reference

► The codes are numbered and marked in the documentation by a "C" in front of the code, e.g. "C00002".

► For the sake of clarity, some codes contain "subcodes" for storing parameters. This documentation uses a slash "/" as a separator between code and subcode, e.g. "C00118/3".

► The All parameters tab shows all available codes for parameterising the Industrial PC.
6.4 Representation of the parameters

6.4.1 Parameters with read access

- The »Engineer« displays the parameters with read access with a grey background or, when an online connection has been established, with a pale yellow background:

6.4.2 Parameters with write access

- Input values outside the valid setting range are represented in red font by the »Engineer«.

6.4.2.1 Parameters with a setting range

- In the »Engineer« parameters are set by entering the desired value into the input field or by means of the two arrow buttons:

  ![Parameter Set Example](image1)

- The two arrow buttons can be used to increase/decrease the displayed value stepwise.

6.4.2.2 Parameters with a selection list

- In the »Engineer« the parameters can be changed via a selection list:

  ![Parameter Selection List](image2)
6.4.2.3 Parameters with a bit-coded setting

- The »Engineer« uses a dialog box for the parameter setting in which the individual bits can be set or reset. Alternatively, the value can be entered as a decimal or hexadecimal value:

6.4.2.4 Parameters with subcodes

- In the »Engineer« parameter list each subcode is itemised individually.
7 Web-based parameterisation with »WebConfig«

This chapter provides information on the parameterisation of the Industrial PC using web-based parameterisation.

7.1 Parameterisation via codes

All settings by means of which you parameterise the Industrial PC are summarised in a parameter list that is numbered serially. The individual entries of this list are called “codes”. Each code can be addressed via a number.

Codes can also contain subparameters. They are also numbered and can be addressed via a subindex. With the code number and the subindex you can address each parameter unambiguously.

The web-based parameterisation can be carried out LOCALLY on the Industrial PC or REMOTELY via http by each Engineering PC transmitted which can be reached via the network. The Engineering PC is a workplace PC including the Windows® XP operating system.

Tip!

The web server and the »WebConfig« for the web-based parameterisation are preinstalled on the Industrial PC.

Parameterisation with the »Engineer« can be found in the chapter Parameterisation using the L-force »Engineer« (p 38)
7.2 Requirements for working with the web-based parameterisation

This chapter provides you with information on how to prepare a remote connection for the web-based parameterisation.

7.2.1 Online connection between the Engineering PC and Industrial PC

- Connect the Engineering PC directly to the Industrial PC using a network cable.
- or
- Connect the Industrial PC to the network to which the Engineering PC has access.

**Note!**

In the case of a direct connection between the Engineering PC and the Industrial PC, a crossed network cable is required.

The settings of the static IP address of the Engineering PC are only to be carried out for the direct connection between the Engineering PC and Industrial PC.

7.2.2 Setting IP addresses

**Note!**

Recommended setting for the Engineering PC:
IP address: `<192.168.5.100>`

Default setting of the Industrial PC:
IP address: `<192.168.5.99>`, subnetwork `<255.255.255.0>`.

Setting for the direct connection between the Engineering PC and Industrial PC:

**How to set the static IP address of the Engineering PC:**
1. Open the Network connections dialog box *Network connections*.
2. Select the network interface the Industrial PC is connected to. Right-click *Properties*.
3. Select *Internet protocol (TCP/IP)*.
4. Click the *Properties* button.
5. Select the *Alternative configuration* tab.
6. Select the **User configured** option.
   - Enter the IP address of the Industrial PC (default address: <192.168.5.99>).
   - Enter the subnet mask of the Engineering PC (standard setting: <255.255.255.0>)

7. Close the individual dialog windows with **OK** or **Close**

The **Properties of internet protocol (TCP/IP) dialog window**

**How to set the browser:**

1. Open the browser at the Engineering PC (This setting refers to the Microsoft Internet Explorer).

2. Select the **Proxy settings** dialog window (**Tools**→**Internet options**→**Connections**→**Settings**→**Advanced**)

3. Position the cursor in the **Exceptions** field at the end of the entries available.

4. Enter the IP address of the Industrial PC:
   <;172.31.217*> (example of the IP address of an Industrial PC, default address: <192.168.5.99>)

5. Close the individual dialog windows with **OK**.
7.3 Start of the web-based parameterisation

7.3.1 Start at the Engineering PC

Start a browser at the Engineering PC and enter the IP address of the Industrial PC.

– The dialog box for entering the connection data appears:

1. Enter `<User name:password>`. As default setting, `admin:admin` is preselected. Any user set up on the Industrial PC can log in. → **User management** (§ 55)

2. Confirm with **OK**.

3. Afterwards the user interface of the web-based parameterisation appears. → **User interface** (§ 49)

7.3.2 Start at the Industrial PC

After connection to the current supply, the Industrial PC starts automatically. If no external keyboard has been connected, the on-screen keyboard can be shown via the function key `<F1>`.

→ Change to `<Shift+F4>` in the **Control Panel**.
Double-click the **WebConfig** icon:

1. Enter `<User name:password>` in the **Enter Network Password** dialog box. As standard setting **admin:admin** is preselected. Every registered user can log in.

2. Confirm with **OK**.

3. Afterwards the user interface of the web-based parameterisation appears.
   - **User interface** (¶ 49)
7.4 User interface

The user interface of the »WebConfig« is divided into the following areas A - E:

- Parameter list 1
- Parameter list 2
- PLC
- Ethernet
- Panel
- Diagnostics
- Logviewer

- Device commands
- Remote access control
- User management
- Clock
- UPS settings
- Monitoring functions
- Memory
- Identification

- MC-ETC
- MC-ETC Interface
- MC-ETC Master
- MC-ETC Statistics
- MC-ETC Slaves

- MC-CAN2
- MC-CAN2 Interface 1
- MC-CAN2 Interface 2

- Polling
  - Interval: 5 sec
  - Active

- Language
  - English

Note!

The representation of the user interface in area E depends on the respective system configuration! The example shows an Industrial PC including the following extension cards: MC-ETC in slot 1 and MC-CAN2 in slot 2.
# Industrial PC | Parameter setting & configuration

Web-based parameterisation with »WebConfig«

## User interface

<table>
<thead>
<tr>
<th>Area</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Menu buttons</strong></td>
<td><strong>Parameters of the standard device of the Industrial PC</strong> (_parameter_51)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Parameter list 1</strong> - All parameters of the standard device</td>
</tr>
<tr>
<td></td>
<td>• <strong>Parameter list 2</strong> - All parameters of the installed extension cards</td>
</tr>
<tr>
<td></td>
<td>• PLC parameters</td>
</tr>
<tr>
<td></td>
<td>• Ethernet (on board) parameters</td>
</tr>
<tr>
<td></td>
<td>• Panel parameters</td>
</tr>
<tr>
<td><strong>Diagnostics/Command execution</strong> (parameter_52)</td>
<td>• Logbook parameters</td>
</tr>
<tr>
<td></td>
<td>• Logbook of the Industrial PC</td>
</tr>
<tr>
<td></td>
<td>• Device commands</td>
</tr>
<tr>
<td></td>
<td>• Remote control</td>
</tr>
<tr>
<td><strong>User management</strong></td>
<td>(parameter_55)</td>
</tr>
<tr>
<td></td>
<td>• Setting users 1-10</td>
</tr>
<tr>
<td><strong>General parameters</strong></td>
<td>(parameter_56)</td>
</tr>
<tr>
<td></td>
<td>• Time</td>
</tr>
<tr>
<td></td>
<td>• UPS settings</td>
</tr>
<tr>
<td></td>
<td>• Monitoring functions</td>
</tr>
<tr>
<td></td>
<td>• Memory</td>
</tr>
<tr>
<td></td>
<td>• Identification</td>
</tr>
<tr>
<td><strong>Extension card parameters</strong> (parameter_56)</td>
<td><strong>Note:</strong></td>
</tr>
<tr>
<td></td>
<td>• The represented parameters of slots 1 and 2 depend on the corresponding extension modules that are installed!</td>
</tr>
<tr>
<td></td>
<td>• The additional buttons for the actually installed extension cards are automatically added to the menu buttons.</td>
</tr>
<tr>
<td></td>
<td>• The top-down order of the buttons corresponds to the order in which the extension cards have been installed (slot 1, slot 2).</td>
</tr>
<tr>
<td></td>
<td>• In the following section, the parameters of the communication cards are listed in numerically ascending order: <strong>Industrial PC extension modules</strong> (parameter_161)</td>
</tr>
<tr>
<td><strong>Polling</strong></td>
<td>(parameter_58)</td>
</tr>
<tr>
<td><strong>Language selection</strong></td>
<td>(parameter_58)</td>
</tr>
<tr>
<td><strong>Buttons</strong></td>
<td><strong>Parameter list buttons</strong> (parameter_58)</td>
</tr>
<tr>
<td><strong>Display area</strong></td>
<td><strong>Parameter display</strong></td>
</tr>
<tr>
<td></td>
<td>Depending on the selected menu button, the parameters can be viewed in this area.</td>
</tr>
<tr>
<td></td>
<td>• Code numbers</td>
</tr>
<tr>
<td></td>
<td>• Name of the code</td>
</tr>
<tr>
<td></td>
<td>• Representation of the display, entry, selection, control and list fields.</td>
</tr>
</tbody>
</table>

According to the equipment of the Industrial PC, deviating components are shown by use of the menu control fields.

Detailed information on the parameters can be found in the section entitled [Parameter reference](parameter_125)
Representation of parameter values

In the display area of the web-based parameterisation, settings of device parameters are represented with different background colours which have the following meaning:

<table>
<thead>
<tr>
<th>Colour</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pale yellow</td>
<td>1,2345</td>
<td>Parameter (read only) • Display of status information and actual values.</td>
</tr>
<tr>
<td>Yellow</td>
<td>1,2345</td>
<td>Parameter (read and write) • The current parameter value of the device is displayed. Changes with regard to a parameter have to be transmitted to the device with Submit or Submit &amp; Persist all.</td>
</tr>
<tr>
<td>Red</td>
<td>0</td>
<td>Entry of a value beyond the valid range. • Via Refresh the original value is shown again. • A correct value can be entered in the red input field and transmitted to the device with Submit or Submit &amp; Persist All.</td>
</tr>
</tbody>
</table>

In the following the individual menus of the web-based parameterisation »WebConfig« are described.

7.4.1 Parameters of the standard device of the Industrial PC

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter list 1</td>
<td>Displays all parameters of the standard device of the Industrial PC in numerically ascending order. • This user interface helps you to e.g. – Find system properties and version numbers (read-only parameters), – Set the system time, – Activate the USB connection at the front of the monitor panel. Parameters of standard devices (129) The other menu buttons of areas A, C and D are a filtered view of parameter list 1.</td>
</tr>
<tr>
<td>Parameter list 2</td>
<td>Displays all parameters of the installed extension cards in numerically ascending order. • The parameters of the extension cards are listed according to the order in which they have been installed. Extension card parameters (56) The other menu buttons of area E are a filtered view of parameter list 2.</td>
</tr>
<tr>
<td>PLC</td>
<td>Displays the PLC parameters in numerically ascending order. • This user interface shows you e.g. – The PLC status, – Information on a PLC project. PLC (Logic/Motion) (51)</td>
</tr>
<tr>
<td>Ethernet</td>
<td>Displays the Ethernet (on board) parameters in numerically ascending order. • On this user interface the network settings of the on board network connection are displayed/set. Ethernet interface (on board) (153)</td>
</tr>
<tr>
<td>Panel</td>
<td>Displays the panel parameters in numerically ascending order. • This user interface helps you setting the settings for the monitor panel and the function keys. Here you can e.g. – Change the brightness of the monitor panel, – Edit the parameters of the F1 to F4 function keys. Panel (155) Further information on the parameterisation of the function keys: Commissioning (19)</td>
</tr>
</tbody>
</table>
### 7.4.2 Diagnostics/Command execution

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostics</td>
<td>Displays parameters of the following areas:</td>
</tr>
<tr>
<td></td>
<td>• Diagnostics</td>
</tr>
<tr>
<td></td>
<td>• Logbook</td>
</tr>
<tr>
<td></td>
<td>In the Logbook area you can configure settings regarding the Logbook.</td>
</tr>
<tr>
<td></td>
<td>Further information on remote maintenance options of the Industrial PC:</td>
</tr>
<tr>
<td></td>
<td>‣ Remote maintenance and diagnostics (<a href="#">82</a>)</td>
</tr>
<tr>
<td>LogViewer</td>
<td>Displays logbook contents.</td>
</tr>
<tr>
<td></td>
<td>• Different filter settings display, for instance, only the oldest or only the most recent logbook entries.</td>
</tr>
<tr>
<td></td>
<td>‣ Logbook (<a href="#">53</a>)</td>
</tr>
<tr>
<td>Device commands</td>
<td>Displays the commands to be executed of the Industrial PC. The available commands can be found in the following section in code 18 (<a href="#">C0018</a>)</td>
</tr>
<tr>
<td></td>
<td>‣ Parameters of standard devices (<a href="#">129</a>)</td>
</tr>
<tr>
<td>Remote access control</td>
<td>Displays the following parameters for remote control purposes of the Industrial PC:</td>
</tr>
<tr>
<td></td>
<td>• RAS settings</td>
</tr>
<tr>
<td></td>
<td>‣ RAS settings with the web-based parameterisation (<a href="#">84</a>)</td>
</tr>
<tr>
<td></td>
<td>• FTP settings</td>
</tr>
<tr>
<td></td>
<td>‣ FTP settings with the web-based parameterisation (<a href="#">88</a>)</td>
</tr>
<tr>
<td></td>
<td>• Telnet settings</td>
</tr>
<tr>
<td></td>
<td>‣ Settings of the web-based parameterisation (<a href="#">86</a>)</td>
</tr>
<tr>
<td></td>
<td>Information on the parameters can be found in the following section:</td>
</tr>
<tr>
<td></td>
<td>‣ Parameters of standard devices (<a href="#">129</a>)</td>
</tr>
</tbody>
</table>
7.4.3 Logbook

This user interface displays the logbook of the Industrial PC. The logbook provides various filter options to show specific logbook contents.

![Logbook Interface]

Note!

If the **ClearLog** button is clicked, the entire logbook contents of the Industrial PC are deleted without further query!

### 7.4.3.1 Explanations of the logbook entries, example

<table>
<thead>
<tr>
<th>Logbook entry, example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>00001</td>
<td>Consecutive number of the entry</td>
</tr>
<tr>
<td>2009-03-24 14:45:26</td>
<td>Date(Format: Year-Month-Day)/Time on the Industrial PC when the logbook entry was made</td>
</tr>
<tr>
<td>Log service</td>
<td>Application that has triggered the entry (application)</td>
</tr>
<tr>
<td>Logbook cleared</td>
<td>Description of the event</td>
</tr>
<tr>
<td>Continuous processing</td>
<td>Event origin within the application (area)</td>
</tr>
<tr>
<td>Warning</td>
<td>Severity of the event</td>
</tr>
</tbody>
</table>
### 7.4.3.2 Filter options

<table>
<thead>
<tr>
<th>Section</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Logbook</strong></td>
<td>Display logbook entries.</td>
</tr>
<tr>
<td><strong>Time period</strong></td>
<td>Select filter for the time period of the logbook entries shown.</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>Set filter for the application.</td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>Set filter for the severity of the error messages displayed.</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>Set filter for the origin of the event.</td>
</tr>
</tbody>
</table>

**Explanations of the logbook entries, example (l 53)**

**Time filter for the display of logbook entries**

<table>
<thead>
<tr>
<th>Time period</th>
<th>1: All</th>
<th>Filter entries according to date specified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2: From - to</td>
<td>Display last entries only. Possible filter options:</td>
</tr>
<tr>
<td></td>
<td>3: Last</td>
<td>- 1: Days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 2: Weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 3: Months</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 4: Years</td>
</tr>
</tbody>
</table>

**Area**

<table>
<thead>
<tr>
<th>Filter option</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Days</td>
<td>Display entries according to filter options.</td>
</tr>
<tr>
<td>2: Weeks</td>
<td>- To activate this filter option, in the Time period area of the selection list the last item must be selected!</td>
</tr>
<tr>
<td>3: Months</td>
<td></td>
</tr>
<tr>
<td>4: Years</td>
<td></td>
</tr>
</tbody>
</table>
7.4.3.4 Export logbook entries

How to export logbook entries into a text file (without using the »Engineer«):

1. Establish an online connection to the Industrial PC. ▶ Entering the IP address of the Industrial PC (§ 32)
2. The Logbook tab displays the available entries of the logbook.
3. Click the ExportLog button in the header of the logbook to export the logbook entries into a file.

The contents of the logbook is exported into a German file (._de) and English file (._en) to the CF card into the Storage \ export \ log directory (the directory has already been set by default on the CF card).

- **Note:** The contents of the logbook can additionally be exported to a USB flash drive (connected to the IPC). In order to be able to export the contents of the logbook to the USB flash drive, the \ export \ log directory has to be set manually onto the USB flash drive.
- When the ExportLog button is clicked, the IPC writes the contents of the logbook to the CF card and into the USB flash drive (directory \ export \ log).

▶ The execution of an ExportLog is entered into the logbook as Information. (Entries of the Information type can only been seen in the logbook if the corresponding filter option is set in the Logbook).

Export logbook entries via device command

The start of the logbook export can also be activated by writing the command code C18 via the PLC or via »VisiWinNET®«.

▶ Go to the Device command section (code 18) and execute the command 304: Export complete logbook to export the logbook entries.

7.4.4 Device commands

In this area, the available device command of code 18 ( C0018) can be executed.

▶ Code 19 (C0019) displays status information regarding the executed command.

More information on the supported device commands can be found in the following section: ▶ Parameters of standard devices (§ 129)

7.4.5 User management

This section sets up the Windows® CE users (users 1-10) and defines their access authorisations.

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User management</strong></td>
<td>Set up Windows® CE user, enter user-specific data</td>
</tr>
<tr>
<td></td>
<td>- Enter user name and password, and the home directory.</td>
</tr>
<tr>
<td></td>
<td>- Enter access authorisation of the user.</td>
</tr>
<tr>
<td></td>
<td>Standard value for user 1: admin:admin</td>
</tr>
</tbody>
</table>
7.4.6 General parameters

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clock</td>
<td>Displays the parameters for setting the time, date, system time, and time zone.</td>
</tr>
<tr>
<td>UPS settings</td>
<td>Displays the UPS settings for the parameterisation of optional UPS accessories.</td>
</tr>
<tr>
<td>Monitoring functions</td>
<td>Displays hardware/temperature data.</td>
</tr>
<tr>
<td>Memory</td>
<td>Displays information on program/Flash memories.</td>
</tr>
<tr>
<td>Identification</td>
<td>Displays information on system identification.</td>
</tr>
</tbody>
</table>

7.4.7 Extension card parameters

This area of the »WebConfig« gives on overview of the parameters of the installed extension cards. The Industrial PC is able to support a maximum of two communication cards at the same time. The following communication cards can be applied:

▶ MC-CAN2,
▶ MC-ETC,
▶ MC-PBM,
▶ MC-ETH.

A distinction is drawn between:
- Interface parameters,
- Communication card parameters.

A communication card can be equipped with several physical bus interfaces, such as the MC-CAN2 communication card.

▶ CAN communication card (MC-CAN2) (162)
▶ EtherCAT communication card (MC-ETC) (172)
▶ PROFIBUS master communication card (MC-PBM) (207)
▶ Ethernet communication card (MC-ETH) (209)
### 7.4.7.1 CAN communication card (MC-CAN2)

#### Note!

The parameters can only be viewed if the corresponding MC-CAN2 communication card is inserted. Two communication cards per IPC can be plugged in maximally!

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC-CAN2</td>
<td>The MC-CAN2 button displays the parameter list of the MC-CAN2 communication card.</td>
</tr>
<tr>
<td>MC-CAN2 interface x</td>
<td>Parameters of the x interface of the MC-CAN2 communication card.</td>
</tr>
<tr>
<td></td>
<td>- The MC-CAN2 Interface x button displays the parameters of the respective interface (1 or 2) of a MC-CAN2 communication card.</td>
</tr>
<tr>
<td></td>
<td>- In addition, the button displays which card the respective interface belongs to.</td>
</tr>
<tr>
<td></td>
<td>- The parameters of the communication card are listed in the following section in numerically ascending order:</td>
</tr>
<tr>
<td></td>
<td>- CAN communication card (MC-CAN2) <a href="#">§ 162</a></td>
</tr>
</tbody>
</table>

### 7.4.7.2 EtherCAT communication card (MC-ETC)

This user interface displays the parameters of the MC-ETC communication card. An Industrial PC can maximally have one MC-ETC card!

#### Note!

The parameters can only be viewed if the corresponding MC-ETC communication card has been installed!

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC-ETC</td>
<td>Display parameters of the MC-ETC EtherCAT communication card</td>
</tr>
<tr>
<td></td>
<td>- The parameters of the communication card are listed in the following section in numerically ascending order:</td>
</tr>
<tr>
<td></td>
<td>- EtherCAT communication card (MC-ETC) <a href="#">§ 172</a></td>
</tr>
<tr>
<td>MC-ETC Interface</td>
<td>Display interface parameters of the MC-ETC EtherCAT communication card</td>
</tr>
<tr>
<td></td>
<td>- This user interface displays the interface parameters of the EtherCAT communication card.</td>
</tr>
<tr>
<td>MC-ETC Master</td>
<td>Display master settings of the MC-ETC EtherCAT communication card</td>
</tr>
<tr>
<td></td>
<td>- On this user interface the parameters of the EtherCAT master are set or displayed.</td>
</tr>
<tr>
<td>MC-ETC Statistics</td>
<td>Parameters of the EtherCAT master</td>
</tr>
<tr>
<td></td>
<td>- This user interface sets and displays the statistics of the EtherCAT master.</td>
</tr>
<tr>
<td>MC-ETC Slaves</td>
<td>Parameters of the EtherCAT slaves</td>
</tr>
<tr>
<td></td>
<td>- This user interface sets and displays the parameters of the EtherCAT slaves.</td>
</tr>
<tr>
<td></td>
<td>- After pressing the button, the information of the first slave can be viewed. In order to display the information of another slave the desired node address must be entered in 1095.2.</td>
</tr>
</tbody>
</table>
7.4.7.3 **PROFIBUS master communication card (MC-PBM)**

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC-PBM</td>
<td>Display the parameters of the PROFIBUS master card.</td>
</tr>
<tr>
<td></td>
<td>• This user interface displays the parameters of the MC-PBM</td>
</tr>
<tr>
<td></td>
<td>communication card.</td>
</tr>
<tr>
<td></td>
<td>• The parameters of the communication card are listed in the following</td>
</tr>
<tr>
<td></td>
<td>section in numerically ascending order:</td>
</tr>
<tr>
<td></td>
<td>► PROFIBUS master communication card (MC-PBM) (LJ 207)</td>
</tr>
</tbody>
</table>

7.4.7.4 **Ethernet communication card (MC-ETH)**

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC-ETH</td>
<td>Display the parameters of the Ethernet communication card.</td>
</tr>
<tr>
<td></td>
<td>• The parameters of the communication card are listed in the following</td>
</tr>
<tr>
<td></td>
<td>section in numerically ascending order:</td>
</tr>
<tr>
<td></td>
<td>► Ethernet communication card (MC-ETH) (LJ 209)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC-ETH Address</td>
<td>Display the address parameters of the Ethernet communication card.</td>
</tr>
</tbody>
</table>

7.4.8 **Polling**

In this menu the polling of the screen is activated.

<table>
<thead>
<tr>
<th>Polling</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval</td>
<td>Setting the interval for the polling in seconds.</td>
</tr>
<tr>
<td></td>
<td>• Example value: 5.</td>
</tr>
<tr>
<td>Active</td>
<td>Click the control field to activate the polling.</td>
</tr>
</tbody>
</table>

7.4.9 **Language selection**

► In the *Language* section you can define the desired language settings from the selection list.

► The language settings take immediate effect, the »WebConfig« does not need to be restarted.

7.4.10 **Parameter list buttons**

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept</td>
<td>Accept data.</td>
</tr>
<tr>
<td></td>
<td>• After a system restart changed data are lost, as they are not persisted</td>
</tr>
<tr>
<td></td>
<td>automatically.</td>
</tr>
<tr>
<td>Accept &amp; Save all</td>
<td>Accept and save all changed data.</td>
</tr>
<tr>
<td></td>
<td>• The data will remain on your PC after a system restart.</td>
</tr>
<tr>
<td>Update</td>
<td>Reload data and update screen display</td>
</tr>
</tbody>
</table>
8 Programming with the »PLC Designer«

This chapter provides you with information on the programming of the control function of the Industrial PC.

Further information on working with the »PLC Designer« can be found in the documentation for the »PLC Designer«.

8.1 Basics

The »PLC Designer« is the PLC programming system to be installed on the Engineering PC. The »PLC Designer« is one of the Lenze Engineering tools. The »PLC Designer« accesses the IPC via Ethernet:

The »PLC Designer« serves to create PLC programs in the programming languages of IEC 61131. The IEC 61131 programming languages are:

- Instruction list (IL),
- Ladder diagram (LD),
- Function plan (FP),
- Structured text (ST),
- Sequential function chart (SFC),
- Function block diagram (FBD).
The completely created and compiled program is transferred to the Industrial PC with the »PLC Designer«. On the Industrial PC the program can be executed by the L-force Logic & Motion runtime software.

8.2 Configuration and parameterisation via the control application

For creating the control application diverse function blocks, like for example standardised libraries with motion functions according to PLCopen, are provided.

Furthermore there are function blocks that are suitable for the access to parameters of the Industrial PC.

The translated PLC program is loaded into the Industrial PC via the network by means of the »PLC Designer«. There it can be processed by the operating software of the Industrial PC.

Further information on working with the »PLC Designer« can be found in the documentation for the »PLC Designer«.
### 8.3 Accessing IPC parameters from the PLC

For the parameter access to parameters of the Industrial PC from the PLC an interface to the PLC is provided by means of the `PlcDataManagerAccess` library.

#### 8.3.1 The LDM_ParameterAccess_FB function block

With the `LDM_ParameterAccess_FB` function block the device parameters of the Industrial PC can be read and written by the PLC.

**Function library:** PlcDataManagerAccess

<table>
<thead>
<tr>
<th>Identifier/data type</th>
<th>Information/possible settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>bExecute</td>
<td>Rising edge starts the access</td>
</tr>
<tr>
<td>eDirection</td>
<td>Access direction</td>
</tr>
<tr>
<td>sTopoAddr</td>
<td>Topology address</td>
</tr>
<tr>
<td>wCode</td>
<td>Code of the parameter (Lenze)</td>
</tr>
<tr>
<td>wIndex</td>
<td>Index of the parameter (CANopen)</td>
</tr>
<tr>
<td>bySubIndex</td>
<td>Subindex/subcode of the parameter</td>
</tr>
<tr>
<td>eDataType</td>
<td>Specification of the type of the parameter to be written</td>
</tr>
<tr>
<td>sDataW</td>
<td>Value to be written (string) - table [8-1]</td>
</tr>
<tr>
<td>byDataW</td>
<td>Value to be written (1*byte) - table [8-1]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identifier/data type</th>
<th>Information/possible settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>edir</td>
<td>Access direction</td>
</tr>
<tr>
<td>sTopoAddr</td>
<td>Topology address</td>
</tr>
<tr>
<td>wIndex</td>
<td>Index of the parameter (CANopen)</td>
</tr>
<tr>
<td>bySubIndex</td>
<td>Subindex/subcode of the parameter</td>
</tr>
<tr>
<td>eDataType</td>
<td>Specification of the type of the parameter to be written</td>
</tr>
<tr>
<td>sDataW</td>
<td>Value to be written (string) - table [8-1]</td>
</tr>
<tr>
<td>byDataW</td>
<td>Value to be written (1*byte) - table [8-1]</td>
</tr>
<tr>
<td>Identifier/data type</td>
<td>Information/possible settings</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>wDataW</td>
<td>WORD</td>
</tr>
<tr>
<td></td>
<td>Value to be written (2*byte) - table [8-1]</td>
</tr>
<tr>
<td>dwDataW</td>
<td>WORD</td>
</tr>
<tr>
<td></td>
<td>Value to be written (4*byte) - table [8-1]</td>
</tr>
</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Identifier/data type</th>
<th>Value/meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bDone</td>
<td>TRUE if operation has been completed successfully</td>
</tr>
<tr>
<td>bBusy</td>
<td>TRUE as long as the operation is running without errors</td>
</tr>
<tr>
<td>bError</td>
<td>TRUE if an error has occurred</td>
</tr>
<tr>
<td>dwErrorID</td>
<td>Greater 0 if an error has occurred</td>
</tr>
<tr>
<td>eDataRType</td>
<td>Returned type of the parameter read (LDM_VT_EMPTY, LDM_VT_I4, ...)</td>
</tr>
<tr>
<td>sDataR</td>
<td>STRING(255)</td>
</tr>
<tr>
<td></td>
<td>Value read (string) - table [8-1]</td>
</tr>
<tr>
<td>byDataR</td>
<td>Byte</td>
</tr>
<tr>
<td></td>
<td>Value read (1*byte) - table [8-1]</td>
</tr>
<tr>
<td>wDataR</td>
<td>WORD</td>
</tr>
<tr>
<td></td>
<td>Value read (2*byte) - table [8-1]</td>
</tr>
<tr>
<td>dwDataR</td>
<td>DWORD</td>
</tr>
<tr>
<td></td>
<td>Value read (4*byte) - table [8-1]</td>
</tr>
</tbody>
</table>

**Input, output**

<table>
<thead>
<tr>
<th>Input, output</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>sDataR, sDataW</td>
<td>LDM_VT_BSTR</td>
</tr>
<tr>
<td>byDataR, byDataW</td>
<td>LDM_VT_I1, LDM_VT_UI1</td>
</tr>
<tr>
<td>wDataR, wDataW</td>
<td>LDM_VT_I2, LDM_VT_UI2</td>
</tr>
<tr>
<td>dwDataR, dwDataW</td>
<td>LDM_VT_I4, LDM_VT_UI4, LDM_VT_DATE</td>
</tr>
</tbody>
</table>

[8-1] Connection between the inputs and outputs and the data type
8.3.2 The LLS_AddLog function block - Generate logbook entry

Function library: PLCLoggingAccess

This function renders it possible to make an entry in the logbook of the Industrial PC.

The function supplies a return value TRUE if the entry was carried out.

<table>
<thead>
<tr>
<th>Identifier/data type</th>
<th>Information/possible settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>eSeverity</td>
<td>Logging Severity - risk of the error</td>
</tr>
<tr>
<td></td>
<td>• LLS_FatalError</td>
</tr>
<tr>
<td></td>
<td>• LLS_Error, LLS_Warning</td>
</tr>
<tr>
<td></td>
<td>• LLS_Information</td>
</tr>
<tr>
<td>T_LLS_Severity</td>
<td>The Enum parameter eSeverity (IEC_INT) transferred to Add2Log as severity (BYTE).</td>
</tr>
<tr>
<td>eFacility</td>
<td>Logging Facility - area from which the error is reported</td>
</tr>
<tr>
<td></td>
<td>• LLS_PLC_USER_LOG_SCOPE1</td>
</tr>
<tr>
<td></td>
<td>• LLS_PLC_USER_LOG_SCOPE2</td>
</tr>
<tr>
<td></td>
<td>• LLS_PLC_USER_LOG_SCOPE3</td>
</tr>
<tr>
<td>T_LLS_Facility</td>
<td>The Enum parameter eFacility (IEC_INT) is transferred to Add2Log as Facility (WORD).</td>
</tr>
<tr>
<td>sLogPayLoad</td>
<td>Logbook entry - The Ansi string from &quot;sLogPayLoad&quot; is transferred to Add2Log as 1-byte string parameter. (&quot;hs&quot;, SLOGPAYLOAD)</td>
</tr>
</tbody>
</table>

Inputs
9 IPC backup & restore

This chapter provides information on data backup and restore on the Industrial PC under Windows® CE.

- Furthermore, the device software can be updated via the USB interface. Generally, a complete update of the device software can be carried out. Individual software packets cannot be updated.

Further information on the use of »IPC Backup & Restore« can be found in the documentation of Windows® XP »IPC Backup & Restore«.

9.1 Introduction to »IPC Backup & Restore«

The »IPC Backup & Restore« functionality enables...

- ...the generation of backups,
- ...the restore of selected backups,
- ...the installation of software updates.

The backups can be saved to the storage medium in the form of individual software packets.

The standard storage medium for Backup & Restore is a USB stick which has been preconfigured using the »IPC Backup & Restore« Windows® XP software.

Depending on the IPC device type, the user either has to interact or the selected function is carried out automatically when the system is started.
9.2 Differences between archive, backup and restore

**Note!**

A backup written to the USB stick only contains individual system data!

For creating a complete backup you have to:
- Switch off the IPC,
- Remove the CF card,
- Insert the CF card in a CF card reader,
- Archive the data of the CF card under Windows® XP using »IPC Backup & Restore«

---

**Archive**

An "Archive" is created under Windows® XP using »IPC Backup & Restore« from the CF card. The term "Archive" defines the contents of a Compact Flash card.

The Compact Flash card...
- ...contains the complete "memory" of the Industrial PC,
- ...contains all permanently saved components such as:
  - the operating system,
  - software,
  - data.
- A Compact Flash card in an Industrial PC can be compared to the hard disk of an Engineering PC.

**Backup**

- A "Backup" is created using »IPC Backup & Restore« under Windows® CE.
- When a backup is carried out, individual components are copied from the Compact Flash card to a USB stick.

**Restore**

- A "Restore" of the backup data is carried out using »IPC Backup & Restore« under Windows® CE.
- "Restore" describes the process of restoring backup data from a USB stick to the Compact Flash card.
- A restore for instance is used
  - to transfer individual components from one Industrial PC to another IPC,
  - to restore individual data if a fault has occurred.
9.3 Function

The software and the operating system of the Industrial PC are stored on the CF card. With »IPC Backup & Restore« for Windows® CE you have the possibility of saving data from the CF card to a USB stick.

A backup created like this can be transferred from the USB stick to the CF card anytime by restoring the data.

Furthermore a software update from a USB stick can be installed on the CF card of the Industrial PC by means of »IPC Backup & Restore«.

The entire update process comprises several individual steps and is processed as follows.

- Backup of the current system before changes have been carried out, in the following referred to as Backup_orig.
- Migration of the existing databases to the new structure, in the case of a version change.
- Installation of the SW update containing the Lenze software and the operating system.

The update process contains several successive steps; the sequence step is only carried out if the previous step was carried out successfully. In order to be able to trace this sequencer, log messages are written throughout the procedure.

The log messages signal the steps that have been carried out.

![Update Process Diagram]
The log messages are named from M1 to M7. The following log messages can occur:

<table>
<thead>
<tr>
<th>Message</th>
<th>Message in the logbook</th>
<th>Remedy</th>
</tr>
</thead>
</table>
| M1      | System version is identical to the selected update packet. No action necessary. | The version of the Industrial PC is identical to that of the update.  
  • Remove the USB stick or  
  • Change the control file of the USB stick with «IPC Backup & Restore» under Windows® XP. |
| M2      | Backup finished with <<1>> errors. | During the creation of Backup_orig, errors have occurred. The update process cannot be continued.  
  • You can continue using the existing system, or you can try again. |
| M3      | Migration finished successfully. Update finished with <<1>> errors. Insert a backup CF card and restore old system. | The migration of the databases has been carried out successfully, but the installation of the update has failed. Try the following:  
  • Establish an existing archive on your Compact Flash card.  
  • Then you can restore Backup_orig from the USB stick to receive the original state. |
| M4      | Update finished successful | The installation of the SW update has been completely carried out successfully. |
| M5      | Migration failed. Rollback finished successfully. The system was not changed. Try Update again. | The migration of the databases has failed. The attempt to effect a change was carried out in the temporary directory, so that the Industrial PC was not changed.  
  • Repeat the update process. |
| M6      | Migration failed. Restore was successful. The system was not changed. Try Update again. | The migration of the databases has failed. Afterwards Backup_orig was restored successfully. Therefore the original system is available again.  
  • Repeat the update process. |
| M7      | Migration failed. Restore finished with <<1>> errors. Insert a backup CF card and restore old system. | The migration of the databases has failed. Backup_orig could not be restored either. Try the following:  
  • Establish an existing archive on your Compact Flash card.  
  • Then you can restore Backup_orig from the USB stick to receive the original state. |

**Tip!**

The online help provides detailed information on Windows® XP »IPC Backup & Restore«.

A backup covers the following data:

- Operating system file and bootloader
- Lenze software
- System configuration
- Data of the software

For the management of the backups created, an »IPC Backup & Restore« version for Windows® XP is available. This version enables you to store the contents of the USB stick or CF card on any hard disk. »IPC Backup & Restore« for Windows® XP is described in a separate document.

The backup, restore and software update processes are identical. For procedure details please refer to the specified chapters.
1. Configure USB stick with »IPC Backup & Restore« for Windows® XP.
   - Requirements (68)
2. Boot up the Industrial PC with the connected USB stick.
3. Carry out backup, restore, or software update.
   - Backup procedure (68)
   - Restore procedure (71)
   - Software update procedure (73)

9.4 Requirements

A USB stick has to be prepared appropriately for being used as a backup medium. For this purpose you have to write a control file to the USB stick using the »IPC Backup & Restore« tool under Windows® XP. When the Industrial PC detects a USB stick with this control file while the operating system starts up, this USB stick is recognised as a backup medium. Furthermore, you can set the backup behaviour by means of the control file.

For detailed information on the creation and configuration of a backup-capable USB stick, please refer to the »IPC Backup & Restore« software manual.

Note!
For carrying out a successful backup of the data of an Industrial PC a sufficient amount of memory has to be provided on the USB stick!

9.5 Backup procedure

With the help of »IPC Backup & Restore« you can create a backup of the compact flash card (CF card) on an accordingly prepared USB stick.
How to carry out a backup:

1. Configure USB stick with »IPC Backup & Restore« for Windows® XP.
2. Switch off the Industrial PC.
3. Connect the USB stick to the switched-off Industrial PC.
4. Restart the Industrial PC.
   • The Industrial PC recognises the USB stick and evaluates the control file.

   **Note!**

   The backup is carried out automatically if the **Record new backup** option under Windows® XP is used.

   In this case the following steps are unnecessary

5. Calibrate the touch display:  ➤ **Touch display calibration** (31)
   • The **IPC Backup & Restore** dialog appears.

<table>
<thead>
<tr>
<th>IPC Backup &amp; Restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>To generate a new backup - activate Backup.</td>
</tr>
<tr>
<td>For restore/update select a packet and activate Restore/Update.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Available Backup / Update Packets</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPCBackup_HC_107AT5656_20050204_111502</td>
</tr>
<tr>
<td>IPCBackup_JU_107AT5656_20080207_220740</td>
</tr>
<tr>
<td>IPCUpdate_PM_V2.0.0.314</td>
</tr>
</tbody>
</table>

6. Click the **Backup** button.
   • The data are stored on the USB stick. A progress bar signals the backup process.
7. After the backup process has been completed, the following is displayed in a dialog:
   • GUI backup done successfully
   or
   • GUI backup done with \(<n>\) errors. The error message is displayed in the logbook
   ‣ Remote maintenance and diagnostics (§ 82)
   ‣ logbook query via »WebConfig« (§ 97)

8. Click **Cancel** to start the Industrial PC.

   ► The backup packet is saved to a folder on the USB stick. The automatically assigned
   folder name is composed as follows:

   IPCBackupprefix>_<Serial number of the IPC>_<Date>_<Time>

   **Example:**

   IPCBackup_JU_107AT5656_20080227_220740
9.6 Restore procedure

A backup stored on a USB stick can be copied to the CF card with the »IPC Backup & Restore« tool. This process is referred to as "restore".

Note!
During the restore process the data on the CF card are overwritten!

How to carry out a restore:

1. Connect the USB stick with the backup files to the Industrial PC.
2. Restart the Industrial PC.
   • The Industrial PC recognises the USB stick and evaluates the control file.
   Note!
   The restore is carried out automatically if the Restore backup selected option under Windows ® XP is used.
   In this case the following steps are unnecessary.
3. Carry out the calibration Touch display calibration (III 31).
   • The IPC Backup & Restore dialog appears.
4. Select the required backup packet from the selection list.

IPC Backup & Restore
To generate a new backup - activate Backup
For restore/update select a packet and activate Restore/Update

Available Backup / Update Packages
IPCBackup_HS_107AT5656_20050204_111502
IPCBackup_SB_107AT5656_20080207_220740
IPCUpdate_PM_V2.0.0.314

Device Serial Number: 107AT5656

5. Click the Restore button.
   • The data are written to the CF card in the Industrial PC. A progress bar represents the restore process.
6. After the restore process has been completed, the following is displayed in a dialog:
   • GUI restore done successfully
   or
   • GUI restore done with <n> errors. The error message is displayed in the logbook
     ‣ Logbook query in the »Engineer« (p. 98)
     ‣ Logbook query via »WebConfig« (p. 97)

   IPC Backup & Restore
   GUI Restore done with 0 errors.

<table>
<thead>
<tr>
<th>Available Backup / Update Packets</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPCBackup_HC_107A75656_20050204_111502</td>
</tr>
<tr>
<td>IPCBackup_JU_107A75656_20080207_220740</td>
</tr>
<tr>
<td>IPCUpdate_PM_V2.0.0.314</td>
</tr>
</tbody>
</table>

   Device Serial Number: 107A75656
   Reboot    Restore   Update   Cancel

7. Press Reboot.
   • The IPC restarts.
9.7 Software update procedure

**Note!**

Lenze recommend archiving the Compact Flash card using »IPC Backup & Restore« under Windows® XP before carrying out a software update.

Steps to be carried out in the case of R1.5:

How to identify the currently installed version:

In the web-based parameterisation the software version can be found under:

- Parameter list 1 -> Device: Software version
- The first two version numbers are important.

Carrying out a SW update of R1.5

When you install an update of R1.5, e. g. to R2.0, you have to carry out the following steps:

How to carry out an R1.5 software update:

1. Prepare USB stick for an update with »IPC Backup & Restore« under Windows® XP.
2. Connect USB stick to the running Industrial PC
3. Copy the BackupRestoreX86Rel.Cab from directory \USBStorage\<UpdatePaket>\CAB\BackupRestoreX86Rel.Cab to \Storage\BackupRestoreX86Rel.Cab under Windows® CE.
4. Remove USB stick.
5. Restart Industrial PC.
   - By this the new runtime environment is extracted.
6. Restart Industrial PC with the USB stick prepared.
A software update saved to a USB stick can be copied to the CF card via »IPC Backup & Restore«.

**Note!**
During the update process, data on the CF card are overwritten.

How to carry out a software update:

1. Connect the USB stick with the software update to the Industrial PC.
2. Restart the Industrial PC.
   - The Industrial PC recognises the USB stick and evaluates the control file.
   - The software update is carried out automatically if the Install newly created update option has been selected from the »IPC Backup & Restore« menu under Windows® XP. *In this case, the following steps are unnecessary since the dialog box is not available.*
3. Carry out the calibration ➔ Touch display calibration  (31).
   - The IPC Backup & Restore dialog appears.
4. Select the required update from the selection list.

<table>
<thead>
<tr>
<th>IPC Backup &amp; Restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>To generate a new backup - activate Backup</td>
</tr>
<tr>
<td>For restore/update select a packet and activate Restore/Update</td>
</tr>
</tbody>
</table>

Available Backup / Update Packets

- IPCUpdate_PM_V2.0.0.314
- IPCUpdate_LX800_V2.0.0.314

5. Click the Update button.
   - If you require a backup copy of your present system configuration, click the Backup button. ➔ Backup procedure (68)
6. After the update process has been carried out successfully, the IPC displays a dialog window for three seconds:
   - GUI update done with <n> errors. The error message is displayed in the logbook ➔ Logbook query in the »Engineer« (98)
     ➔ logbook query via »WebConfig« (97)
7. The IPC restarts automatically.
10 Data integrity in the case of a voltage failure

If a voltage failure occurs, important volatile data must not be lost. Therefore the possibility of saving these data on the CF card is provided. You can also save the data via a PLC function. ▶ Persisting the PLC’s retain variables (p. 77)

Here you will learn
▶ what Retain variables of the PLC are,
▶ how the Backup for systems with UPS functions and
▶ how the Backup for systems without UPS functions

10.1 Retain variables of the PLC

Retain variables are variables of the PLC which in the case of a voltage failure are saved on the CF card of the Industrial PC. You can create retain variables in the »PLC Designer« by marking the variables with the keyword RETAIN.

Variables that are important for the resumption of the production process, and the actual value of which cannot be read out of the machine because no sensors are available, should be persistent.

Furthermore this is only reasonable if the value does not change without the influence of the PLC.

Examples:
Temperature: alters, requires sensors
Position: preferably via absolute encoders
Number of parts within buffer inventory: reasonable for RETAIN.

VAR RETAIN
remvar1:INT; (* 1st remanent variable*)
END_VAR

Note!

For the storage of variables type RETAIN and PERSISTANT a memory area of 1 MB is available.
10.2 Backup for systems with UPS

Note!

The UPS behaviour has to be configured via the <UPS parameter> codes, in a compatible manner with the UPS hardware components. By this a sufficient period of time for saving the data is provided.

If you use an industrial PC with UPS, all important data are saved automatically in the event of a voltage failure. Furthermore, the UPS guarantees that the industrial PC is shut down in a controlled manner by blocking the write access to the CF card when the backup process has been completed. The backup process comprises the following steps:

- Saving of the PLC’s retain variables
- Persisting of the logbook entries on the CF card
- Saving of logbook entries, trends and alarms of the »VisiWinNET®«-application

When the data is saved, the PLC is stopped. The log service does not accept any further log messages and deactivates itself.
10.3 Backup for systems without UPS

If you use an Industrial PC without UPS, you should ensure in advance that important data will not get lost in the event of a voltage failure. This backup involves:

- the saving of the PLC's retain variables
- the persisting of the IPC parameterisation and
- the persisting of the log files.

**Note!**

Only the use of a UPS guarantees that the data is saved in the event of a voltage failure.

10.3.1 Persisting the PLC's retain variables

The PLC offers the SysSaveRetains function by means of which all retain variables can be saved from the PLC program. Furthermore you can define cycles for saving the retain variables.

**Tip!**

Detailed information on this function can be found in the »PLC Designer« manual.

**Note!**

CF cards only have a limited number of write/read cycles. It is therefore not useful to save the retain variables at very short time intervals.

10.3.2 Persisting the IPC parameterisation

You can persist the IPC parameterisation manually using the »Engineer« and the web-based parameterisation.

»Engineer«

For this purpose, use command "279: Persist all data" in the »Engineer«, which you can execute via code 18.

**Web-based parameterisation**

- In the web-based parameterisation you press the **Device command** button.
- Select the entry "279: Persist all data" from the **Command** list field.
- Click the **Persist** button.
  - **OK** appears in the "Status" field.
10.3.3 Persisting log files

The log files are persisted automatically at certain events.  

However, you can also persist the log files manually using the »Engineer« and the web-based parameterisation.

»Engineer«

- For this purpose, use command 1282 (persist log file) in the »Engineer«, which you can execute via code 18.

Web-based parameterisation

- In the web-based parameterisation you press the Device command button.
- Select the entry "1282: Persist logbook" from the Command list field.
- Click the Persist button.
  - OK appears in the "Status" field.
11 Replacing the Industrial PC

Precondition

Only Industrial PCs of the same product type, e.g. CPCs (cabinet PCs), can be used for replacement purposes.

- Removing the connected Industrial PC (79)
- Connecting the new Industrial PC (80)
- Adapting the »Engineer« project (81)

Note!

The Industrial PCs have different designs. Connections and modules can only be shown exemplarily.

11.1 Removing the connected Industrial PC

Danger!

Electrical voltage! Switch the Industrial PC to a deenergised state before removing the connected Industrial PC.

Note!

If »VisiWinNET®« is protected with a LIC file, observe the corresponding information.
How to remove the connected Industrial PC:
1. Disconnect the system from the supply and check for correct disconnection.
2. Remove the current supply from the Industrial PC.
3. Remove bus connections and other connections.
4. Dismount the Industrial PC using appropriate tools.
5. Remove the Compact Flash card from the Compact Flash drive.
6. Remove the »VisiWinNET®« dongle (if plugged in).

11.2 Connecting the new Industrial PC

Note!
When connecting a new Industrial PC
• all cards are to be kept in the same slot,
• all connections are to be connected identically.

How to install and connect a new Industrial PC:
1. Use a new Industrial PC of the same product type.
2. Insert the Compact Flash card of the removed Industrial PC into the new Industrial PC.
3. Mount the Industrial PC using appropriate tools.
4. Connect bus connections and other connections.
5. Connect the Industrial PC to the current supply.
6. Switch on the voltage supply.
   • The new Industrial PC boots up.

Note!
The compact flash card contains all data.
If an Industrial PC of the same product type has been used, the Industrial PC is ready for operation after boot-up.
   • The network configuration has remained stored and has to be confirmed.
      – After 15 seconds the previous IP address is accepted automatically and the touch calibration is skipped.
Now the Industrial PC can be reached again.
### 11.3 Adapting the »Engineer« project

The »Engineer« project has to be adapted if you do not use the same Industrial PC type and the same equipment.

#### How to replace the Industrial PC in the »Engineer« project:

1. Highlight the old Industrial PC, e.g. EL 9700, in the project tree.
2. Select **Replace component...** from the right mouse button menu.
   - Only the Industrial PCs which are compatible to the old one are displayed.
3. Click **OK** to replace the Industrial PC.
   - Configured slots, control configurations and application data are maintained.
12 Remote maintenance and diagnostics

This chapter contains information on remote maintenance and diagnostics of the Industrial PC. The IPC provides different diagnostics options:

- Remote Access Service (RAS) connection (p. 82)
- Telnet connection (p. 86)
- FTP connection (p. 88)
- Windows® CE functions (p. 92)
- Logbook function (p. 96)

Tip!

The configuration of the individual diagnostics options can be carried out via the web-based parameterisation and the »Engineer«. The chapters will provide you with details on how the settings can be carried out.

12.1 Remote Access Service (RAS) connection

In general a client computer can be connected with a remote server computer or network via a modem or ISDN dial-up connection by RAS. The RAS client establishes a point-to-point network connection to the RAS server by dialling up the RAS server via a telephone line. For the connection a modem, ISDN or X.25 can be used. The RAS client establishes the connection to the network or server computer using the point-to-point protocol (PPP).

The RAS server installed on the IPC
- provides the RAS server functions for remote maintenance,
- accepts calls coming in via modem,
- ensures the authentication and connection to the network.
12.1.1 RAS client configuration

For being able to establish a RAS connection between the Engineering PC and the IPC RAS server, you have to establish a remote maintenance connection on the client PC. The following settings illustrate how to establish an automatic dial-up connection on the Engineering PC under Windows® XP.

**Note!**

In order to be able to establish a RAS connection, a RAS authorisation on the IPC has to be assigned to the corresponding Windows® CE user. The authorisation can be allocated via »Engineer« or via web-based parameterisation.

- Start the Assistant for new connections on the client computer:
  Start ➔ Settings ➔ Network connections
- Start the Wizard for new connections and follow the instructions on the screen.
- After the connection has been established successfully you establish a RAS connection to the Industrial PC using the »WebConfig« or the »Engineer«:
  - Enter the IP address of the RAS server in the connection dialog.
  - The IP address is generated dynamically by the RAS server.

- RAS settings with the web-based parameterisation (84)
- RAS settings in the »Engineer« (85)
12.1.2 RAS settings with the web-based parameterisation

Now the IPC has two IP addresses and can be reached via Ethernet and RAS. The Industrial PC allocates a generated IP address to the clients of the RAS connection.

▶ The server IP address is the address of the Industrial PC,
▶ The client IP address is the address of the client PC.

The RAS server is activated in the standard setting on the Industrial PC, so that the reception of calls does not require manual settings. The standard settings can be changed in the web-based parameterisation.

How to change the connection settings in the web-based parameterisation:

1. Select the Industrial PC the connection settings of which are to be changed,
2. If the Industrial PC is not connected, right-click on the IPC and select Go online,
3. Click the Remote control button.
   • The RAS settings of the Industrial PC can be configured via codes 175 to 179:

<table>
<thead>
<tr>
<th>RAS settings</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>175</td>
<td></td>
<td>Enable RAS server</td>
</tr>
<tr>
<td>176</td>
<td></td>
<td>RAS device name</td>
</tr>
<tr>
<td>177</td>
<td></td>
<td>RAS baud rate</td>
</tr>
<tr>
<td>178</td>
<td></td>
<td>RAS enable routing</td>
</tr>
</tbody>
</table>

Codes

▶ Code 175 activates the RAS server,
▶ Code 176 selects the hardware for the RAS connection,
▶ Code 178 selects the baud rate,
▶ Code 179 activates routing.
12.1.3 RAS settings in the »Engineer«

The IPC assigns a generated IP address to the clients of the RAS connection. To access the IPC via a client PC, enter the IP address of the IPC in the »Engineer«.

► The server IP address is the address of the Industrial PC,
► The client IP address is the address of the client PC.

The RAS server is activated in the standard setting on the Industrial PC, so that the reception of calls does not require manual settings. The standard settings can be changed in the »Engineer«.

How to change the connection settings in the »Engineer«:

1. Select the Industrial PC the connection settings of which are to be changed,
2. If the Industrial PC is not connected, right-click on the IPC and select Go online,
3. Click the All parameters→Remote control tab.
   • The RAS settings of the Industrial PC can be changed via codes 175 to 179:

Codes

► Code 175 activates the RAS server,
► Code 176 defines the hardware for the RAS connection,
► Code 177 selects the connection type,
► Code 178 selects the baud rate,
► Code 179 activates routing.
12.2 telnet connection

The term "telnet" refers to a method used for the connection with a host. In this way it is possible to operate a connected remote computer via the command line interface.

12.2.1 Settings of the web-based parameterisation

<table>
<thead>
<tr>
<th>Telnet settings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>✓</td>
</tr>
<tr>
<td>181</td>
<td>✓</td>
</tr>
</tbody>
</table>

The telnet settings can be configured via codes 180 to 181 via the **Remote maintenance** button of the web-based parameterisation.

- Code 180 activates authentication of the telnet user,
- Code 181 activates the telnet access to the Industrial PC.

**Note!**

The corresponding Windows® CE user must have a telnet authorisation.

- *Setting up Windows® CE users in the »Engineer«* (35)
- *Setting up Windows® CE users in the »WebConfig«* (34)

12.2.2 Settings in the »Engineer«

The telnet settings can be changed via codes 180 to 181 in the »Engineer«.

- Code 180 activates authentication of the telnet user,
- Code 181 activates the telnet access to the IPC.

**Note!**

The corresponding Windows® CE user must have a telnet authorisation.
How to establish a telnet connection to the Industrial PC:

1. Start the command line on the PC by means of which you want to log in,
2. **Start button** → **Execute**,
3. Establish the telnet connection to the IPC: Start **telnet** <IP address> of the IPC.
4. The user name and password for the authentication must correspond to the data stored in the user management, codes 101 to 170.

![Telnet Connection](image)

**Note!**
Access via telnet must only be used for diagnostic purposes. Changing system data may result in IPC faults.

- **Standard access data:**
  - login: **admin**
  - Password: **admin**

![Telnet Login](image)
12.3 FTP connection

The File Transfer Protocol (FTP) is a network protocol for the transfer of data in networks. FTP enables the exchange of files between the Industrial PC and other PCs. Via the FTP connection the user can access the files of the IPC’s Compact Flash card.

**Note!**

FTP must be used for system-diagnostic purposes only. Deleting or changing system files causes malfunctions of the Industrial PC!

12.3.1 FTP settings with the web-based parameterisation

The settings of the FTP connection can be managed via the web-based parameterisation. From codes 171 to 174 the FTP access for the Industrial PC can be activated and user rights can be specified. Click the **Remote control** button to call the FTP settings:

<table>
<thead>
<tr>
<th>Code</th>
<th>FTP setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>171</td>
<td>FTP user authentication</td>
</tr>
<tr>
<td>172</td>
<td>FTP allow anonymous</td>
</tr>
<tr>
<td>173</td>
<td>FTP allow anonymous upload</td>
</tr>
<tr>
<td>174</td>
<td>FTP enabled</td>
</tr>
</tbody>
</table>

- Code 171 activates authentication of the FTP user,
- Code 172 enables log-on of the anonymous FTP user "Anonymous",
- Code 173 activates the upload of files by anonymous FTP users,
- Code 174 activates the FTP service.

The user management, the **User management** button, specifies the following:
- The Windows® CE users who may use the FTP access.
- Which authorisations the Windows® CE users have.

The authorisations are required to be able to connect to the Industrial PC via FTP.

**Note!**

For accepting the FTP settings, the FTP server has to be restarted:

Click the **Device commands** button.
- Send the "Stop FTP server" command. The FTP server is stopped.
- Send the "Start FTP server" command. The FTP server is started with the changed settings.
- Send the "Update FTP server" command to update information to the FTP server.
12.3.2 FTP settings in the »Engineer«

Via the »Engineer« the settings for the FTP connection can be managed. With codes 171 to 174 you can activate the FTP access for the IPC and define user rights. For changing the FTP settings select **All parameters → FTP**.

- Code 171 activates authentication of the FTP user,
- Code 172 enables log-on of the anonymous FTP user "Anonymous",
- Code 173 activates the upload of files by an anonymous FTP user,
- Code 174 activates the FTP service.

### FTP user authorisations

In the *FTP: Authorisations of user n* dialog window you define
- The Windows® CE users who may use the FTP access.
- The authorisations of Windows® CE users. The authorisations are required to be connected to the Industrial PC via FTP.

![FTP: permissions user 1](image)

The allocation of rights can be changed via check boxes. To activate a right, the respective box must be marked with a check mark ✗. These rights can be allocated:
- Allow Read,
- Allow Write,
- "Allow Virtual Roots" as the virtual root directories of the FTP connection,
- Allow Hidden Files.

### Note!

For accepting the FTP settings, restart the FTP server. The **Stop FTP server** command under code 18 deactivates the FTP server, **Start FTP server** activates the FTP server.
12.3.3 FTP and web settings in the Internet Explorer

**Note!**

- You must change your browser settings to be able to establish an FTP / web connection to the IPC.
- Your firewall settings may be blocking your access via FTP and HTTP. Change your firewall settings or deactivate your firewall.
- You need administrator rights to be able to change your firewall settings.

► Open browser settings via **Tools** ➔ **Internet Options** ➔ **Advanced**,

► Activate folder view for FTP and passive FTP,

![Internet Options settings](image)

► Open the settings for the local area network via **Tools** ➔ **Internet options** ➔ **Connections** ➔ **Settings**,

► Switch off the proxy server or remove the Industrial PC from the proxy settings.

![Local Area Network settings](image)
How to start an FTP connection to the Industrial PC:

1. Select the file transfer protocol in the input line of the web browser or in the command line via Start→Execute...:

2. Enter:
   - FTP://<Username>:<password>@<IP address>
     The standard setting is FTP://admin:admin@<IP address>. Alternatively the IP address can be entered directly: FTP://<IP address>
   - In the following input window the user name and password have to be entered.

3. When the entry is correct, click the Log in button.
   - The Industrial PC can now be reached by the Engineering PC.

Note!
The settings for the local area network and the proxy settings depend on your own network settings on site.
12.4 Windows® CE functions

- During normal operation the Windows® CE functions are hidden on the Industrial PC. All IPC functions can be controlled via the Engineering PC.

- For diagnostic purposes and maintenance activities you can use the standard functions of the IPC operating system Windows® CE.

- You can access the Windows® CE functions
  - Via the service mode if the Industrial PC is operated directly,
  - Via a telnet connection with the corresponding administrator rights,

How to activate the user interface of Windows® CE on the Industrial PC:

1. Activate the service mode by keeping the **Shift** key pressed. There are two possibilities of activating the service mode:
   - **Shift** + **F4** starts the *Control panel*. The entry can be made via the on-screen keyboard or via an optionally connected keyboard.
   - When the green LED is blinking, you can start the *Control panel* with the function key **F1** on the monitor panel.

2. Start the *Service command* by double-click.
3. Activate the task bar by entering `explorer` in the command line box.

- The task bar facilitates the navigation by providing the basic functions of Windows® CE:
How to activate the user interface of Windows® CE via telnet:

1. Log in on the Industrial PC, which requires a diagnostics via telnet connection.
   - The standard settings of the Windows CE User 1 are: user name: admin, password: admin
   - explorer activates the user interface of Windows® CE on the Industrial PC.

Note!
In order to be able to use a telnet connection, you have to provide a telnet authorisation to the corresponding Windows® CE user.
12.4.1 Remote Display

The Engineering PC requires the Remote Display Control software (cerhost.exe) which can be downloaded from the AKB on the Lenze homepage. It is also provided on the CD that is delivered along with the devices.

How to establish a Remote Display connection to the Industrial PC:
1. Find out the IP address of the Engineering PC (e.g. by executing the IPConfig command),
2. Start Remote Display Control (cerhost.exe) on the Engineering PC,

![Remote Display Connection](image-url)
12.5 logbook function

The Industrial PC has a logbook function which records system events and error messages. The logbook entries are meant to facilitate the system diagnostics in the event of faults.

The logbook function
- displays the recorded error messages and events of the IPC applications,
- automatically stores the information on the CF card.

Structure of a logbook entry

Each logbook entry contains the following information:
- Ascending numbering,
- Date / time,
- Application causing the logbook entry,
- Severity of the event in the four categories
  - Information,
  - Warning,
  - Error,
  - Fatal error.
- Area as the event origin of the triggered error message.

The logbook of the Industrial PC can be called via »WebConfig« and »Engineer«:
- Logbook query via »WebConfig« (97)
- Logbook query in the »Engineer« (98)
12.5.1 logbook query via »WebConfig«

The logbook entries can be called via »WebConfig«.

- The browser of the Engineering PC accesses the web server of the IPC via Ethernet connection (http://).
- The data manager of the IPC provides for access to logbook contents.

How to call the logbook in the »WebConfig«:

1. Start your browser on the Engineering PC,
2. Enter the IP address of the IPC: http://<IP address>,
3. Enter your user name and password,
4. Click the Logbook button.

- The Logbook of the Industrial PC can be displayed via the Logbook button in the »WebConfig«.

Note!

The ClearLog command deletes all logbook entries on your Industrial PC without further query!
Tip!

The display of the logbook entries can be filtered according to the period, application, severity, and area.

Further information on the use of the logbook function in the »WebConfig« can be found in the following section:  › Logbook (p 53)

12.5.1 logbook codes

The logbook settings can be called in the »WebConfig« via the Diagnostics button.

More information on the parameters of the logbook (from code C0048) can be found in the following sequence:  › Parameters of standard devices (p 129)

12.5.2 Logbook query in the »Engineer«

In the »Engineer« the logbook entries can be queried. The »Engineer« accesses the logbook via the data manager of the IPC.
Via the Logbook button in the »Engineer« you can view the logbook of the Industrial PC.

How to display the logbook entries in the »Engineer«:

1. Select the Industrial PC to be diagnosed in the »Engineer«.
2. Establish an online connection with the IPC.
   - Right-click the IPC icon and select Go online,
   - Select Online→Set communication path and go online from the menu bar.
3. Select the Diagnostics tab.
   - When an online connection has been established, the Diagnostics tab displays status information (e.g. identification, time, main memory and CPU data) of the Industrial PC.
4. Click on the Logbook button.
   • The Logbook dialog box appears:

   ![Logbook dialog box]

Each logbook entry contains the following information:

- Ascending numbering,
- Date / time,
- Event causing the logbook entry,
- Application of the triggered error message,
- Process ID,
- Area as the event origin in the application,
- Severity of the event in the four categories
  - Information,
  - Warning,
  - Error,
  - Fatal error.

**Note!**

The *Delete logbook on IPC* command deletes all logbook entries on the Industrial PC!
Tip!

If you activate the **Change display filter** option, you can select logbook entries according to application, area and severity. It is also possible to select entries according to date and time periods via the selection lists. This enables you to selectively exclude certain events from being displayed in the logbook.
12.5.2.1 Filtering logbook entries

By means of the two filter options below the logbook entries can be displayed according to time filters.

By clicking the Export button you can save the logbook entries to a *.log or *.csv file. The LOG file saves the information in text format, CSV is a Comma Separated Values Format which can be displayed as a table with Microsoft Excel®.

12.5.2.2 Logbook codes

The »Engineer« manages the logbook settings in codes 48 to 64. The codes are described in the following section: Parameters of standard devices (129)
13 Visualisation with »VisiWinNET®«

This chapter provides information on the »VisiWinNET®« software. Apart from some general information, it basically gives an overview of how the software is connected to Lenze's control technology.

Further information on the operation of »VisiWinNET®« can be found in the software documentation of »VisiWinNET®«.

13.1 Introduction to »VisiWinNET®«

»VisiWinNET®« is a visualisation platform for mechanical and systems engineering.

- It can be used to create complex visualisation applications, the possibilities range from classical operate and monitor functions through to sophisticated SCADA systems.

»VisiWinNET®« consists of a developer software and a runtime component.

- The developer software is used to create visualisation applications on the Engineering PC which are run using the runtime component on the IPC.

- In order to transfer the visualisation applications created by means of the Engineering PC to the Industrial PC, the »VisiWinNET®« Remote Access Manager software is used. TCP/IP is used as a transmission standard.

13.1.1 »VisiWinNET®« Compact

»VisiWinNET®« Compact is a runtime version of »VisiWinNET®« especially designed for use on computer systems. »VisiWinNET®« Compact requires very little memory capacity and processor power. A version for the Windows® CE operating system and a version for Windows® XP embedded are available. Detailed information on the installation and use of »VisiWinNET®« COMPACT can be found in the manufacturer's original documentation.
13.1.2 Licensing of the visualisation (lic file)

»VisiWinNET®« is only executable with a licence file. The licence file for example is called "INOSOFT-03-04-C3-44-00-10.lic" and has to be stored in the "INOSOFT" directory or its subdirectory "License" on the "Storage" data medium of the IPC.

**Note!**

- Do not change the coded licence file. The licence file contains the MAC address of the computer on which »VisiWinNET®« is used.
- If you would like to use »VisiWinNET®« on another computer, please consult the Lenze Automation GmbH customer service under +49 (0)2132/9904-67 from 8.00 a.m. to 4.00 p.m. You will be given a new licence file.

Use FTP to transfer the licence file to the IPC.  »FTP connection« (88)

13.2 Basic functions

Further information on the use of »VisiWinNET®« can be found in the online documentation of »VisiWinNET®«.

13.2.1 Start the »VisiWinNET®« development system

13.2.1.1 »VisiWinNET®« Smart

Select the following entry in the Microsoft Windows® start menu to start the integrated »VisiWinNET®« development environment Smart: Programs→Lenze→VisiWinNet 2005→VisiWinNET Smart

13.2.1.2 »VisiWinNET®« Professional

Select the following entry in the Microsoft Windows® start menu to start the integrated »VisiWinNET®« development environment Professional: Programs→Lenze→VisiWinNet 2005→VisiWinNET Professional
13.2.2 Creating a new project

13.2.2.1 Creating a new project in »VisiWinNET®« Smart

How to create a new project:
1. Select the menu command File→New project.
   • Select the required project type
2. Select the required target device
   • A tree view with all relevant Lenze target devices appears. With a click on a target device a picture and a description of the device appear.
   • Select the operating system used on the target device.
   • Click the Next button.
3. Enter a project name in the Project name text field.
4. Click the OK button.

13.2.2.2 Creating a new project in »VisiWinNET®« Professional

In »VisiWinNET®« Professional there is no device catalog. The creation of a new project is described in the documentation for »VisiWinNET®« Professional.
13.2.3 Open the Project Explorer

An important tool for working with »VisiWinNET®« is the Project Explorer. It is a component of the integrated development environment and enables the central access to important data.

Select View → Project explorer in the menu bar to open the project explorer.
13.3 Constellation and connection

»VisiWinNET®« accesses the fieldbus driver (CAN and EtherCAT) of the Industrial PC via OPC tunnels.

Depending on the constellation, the servers are connected to »VisiWinNET®« either locally or via another computer (remote). A remote connection for instance is reasonable if an Industrial PC is only responsible for the visualisation and accesses the process data of another Industrial PC.

The following data can be accessed:

- Access to the data of the data manager (e.g. logbook data),
- Access to the data of the nodes on the fieldbus (e.g. CAN),
- Access to PLC variables.

During all accesses the OPC server is connected to the »VisiWinNET®« project via the OPC tunnel.

The following sections provide information on how...

- Inserting the OPC tunnel in »VisiWinNET®« (110),
- to access variables: The Lenze Variables Browser (111)
- Linking control elements and variables (116)
- Open the Project Explorer (106)

Note!

- There are no OPC tunnels available for PROFIBUS.
13.3.1 Use the CoDeSys direct driver

13.3.1.1 Use the direct driver for visualisations under Windows CE

Use of the CoDeSys direct driver under »VisiWinNET® Smart«.

How to use the direct driver:

1. Create a new project with the required target device and Windows CE. ▶ Creating a new project

2. Go to the Project explorer in the context menu von Variables→Channels and select the New command:

3. Select the ICoDeSys direct driver from the "Add channel" dialog window:

   • In the Project explorer a new CoDeSys channel has been inserted:

4. Go to the context menu and select the Browse variables command to add variables to the channel. ▶ The Lenze Variables Browser
5. In order to edit the properties of the CoDeSys direct driver, make the corresponding settings in the **Property pages**.
   - Select the CoDeSys direct driver in the project explorer in order to make the **Property pages** visible.

**Tip!**

Further information on how to use the CoDeSys direct driver can be found in the corresponding online help.

- Click the "Help" button on the **Property pages** to call the online help:

![Property pages](image)

### 13.3.1.2 Use the direct driver for visualisations under Windows XP

Use of the CoDeSys direct driver under »VisiWinNET® Smart«.

**How to use the direct driver:**

1. Create a new project with the required target device and **Windows XP**.  ▶️ **Creating a new project** (🏀 105)
2. The next steps are identical with the steps 2 to 5 of the CoDeSys direct driver under **Windows CE**:  ▶️ **Use the direct driver for visualisations under Windows CE** (🏀 108)
13.3.2 Inserting the OPC tunnel in »VisiWinNET®«

The OPC tunnel is the communication channel between »VisiWinNET®« and the OPC servers of the IPC. You have to integrate the OPC tunnel once into your project.

How to integrate the OPC server into your project:

1. Open the Project explorer.
2. Select the entry New in the context menu of the node Variables→Channels.
   • Go to the Add channel context menu and select the "OPC server" Channel type.

3. Go to OPC server/driver and press the button and select the OPC tunnel Lenze.Digitec.OPCTunnel.DA in the OPC server.

4. Click the Browser button.

5. Select the VisiWinNET.LenzeVariables.Brw.dll entry from the selection list.

6. Click the OK button.
   • The OPC tunnel can be selected in the Project Explorer.
13.3.3 The Lenze Variables Browser

The variables browser can be used to browse for variables on the devices connected to the Industrial PC and to transfer them to a »VisiWinNET®« project. For this purpose, a connection between the integrated »VisiWinNET®« development environment and the IPC is not required. The data is read from the locally available parameter files, which have been exported from the »Engineer« in advance.

How to call up the Variables Browser:

1. Open the Project Explorer (Open the Project Explorer).
2. Open the Variables ->Channels branch in the Project Explorer.
3. Select Browse variables in the context menu of the intended communication channel.

- The Lenze Variables Browser window appears. In the Devices selection list all devices available for reading variable definitions appear.

13.3.3.1 Browsing for variable definitions

When you have started the Lenze Variables Browser, you can select one or more devices and then read their variable definitions.
How to browse for variable definitions:

1. Click the Add button.
   - The Configure device dialog appears.

2. Select the required communication type from the Communication type drop-down menu:
   »VisiWinNET®« and the control system are on the same Engineering PC:
   - Data manager OPC Tunnel: Access to data of the data manager (e. g. logbook data),
   - CAN OPC Tunnel: Access to data of a node on the CAN bus,
   - SoftPLC OPC Tunnel: Access to variables of the PLC.

   »VisiWinNET®« and the control system are on different Engineering PCs:
   - Remote Data manager OPC Tunnel: Access to data of the data manager (e. g. logbook data),
   - Remote CAN OPC Tunnel: Access to data of a node on the CAN bus,
   - Remote SoftPLC OPC Tunnel: Access to variables of the PLC.

   The non-tunnel servers are not relevant for the configuration.

3. Enter the name of the parameter file in the Parameter file text field. The file extension depends on the device selected:
   - OPC server of the PLC: .sym
   - OPC CAN bus server and OPC DM server: .eds and .dcf
   - Click the ... button to search for a parameter file on a data medium.
   - If the CAN OPC tunnel is used, the CAN address and the CAN interface must be specified.

4. Enter a name in the Device alias text field. This device alias name is a designation for the device used internally in »VisiWinNET®«.

5. Click the OK button.
13.3.3.2 Accept variable definitions to project

You can transfer one or more "browsed" variable definitions to your »VisiWinNET« project.

How to transfer the variable definitions to the project:

1. Highlight the desired device in the Devices selection list of the Lenze variables browser.
2. Click the OK button.
   • A tree view of the read variable definitions appears.
3. Select the variable definitions required.
4. Click the OK button.
   • The variable definitions are transferred to the project database.
13.3.4  Entering variables manually

Variables can also be entered manually, as an alternative to using the Lenze Variables Browser. Depending on the server and the connection type (local or remote), you have to observe a special syntax. This syntax is described on the following pages.

How to enter a variable manually:
1. Open the Project Explorer.
2. Activate the variable editor by double-clicking on the desired channel in the node Variables→Channels.
3. Select the New item from the context menu.
4. Enter the variable name in the ItemID/address input field.
   - In doing this, observe the corresponding syntax!

13.3.4.1  Using the SoftPLC OPC tunnel

How to access the variables of the SoftPLC OPC tunnel:
1. Prefix the variable with PLC.PLC:
2. Enter the variable in the form of
   <CoDeSys block>.<CoDeSys variable>.
   Example: PLC.PLC:.EPMAP

13.3.4.2  Using the data manager OPC tunnel

How to access the variables of the data manager OPC tunnel:
1. Prefix the variable with DM.
2. Enter the variable in the form of
   .pari<24575 minus code>d<data type>.
   Example: DM.pari24572d8
   If an additional reference to a subindex is provided, supplement the following entry:
   Example with subindex "S1":pari24572s1d3
13.3.4.3 Local use of CAN OPC tunnel

How to access the variables of the CAN OPC tunnel:
Place the prefix CAN in front of the variable. Specify the variable in the following form:
\[ .can<Can\text{\ space} port>.dev<Device\text{\space} CAN\text{\space} address>.pari<24575\text{\space} minus\text{\space} code>d<Data\text{\space} type> \]

Example: CAN.can1.dev40.pari24572d8

13.3.4.4 Using the Remote SoftPLC OPC tunnel

How to access the variables of the Remote SoftPLC OPC tunnel:
1. Place the ID of the Remote IPC RemoteIPC and the prefix PLC.PLCL: in front of the variables,
2. Specify the variable in the form <CoDeSys\text{\space} block>.<CoDeSys\text{\space} variable>.  
Example: RemoteIPC.PLCL:.EPMAP

13.3.4.5 Using the Remote data manager OPC tunnel

How to access the variables of the Remote data manager OPC tunnel:
1. Place the ID of the Remote IPC RemoteIPC and the prefix DM in front of the variables,
2. Enter the variable in the form of .pari<24575\text{\space} minus\text{\space} code>d<data\text{\space} type>. 
Example: RemoteIPC.DM.pari24572d8

13.3.4.6 Local use of Remote CAN OPC tunnel

How to access the variables of the Remote CAN OPC tunnel:
1. Place the ID of the Remote IPC RemoteIPC and the prefix CAN in front of the variables,
2. Enter the variable in the form of .can<CAN\text{\space} port>.dev<CAN\text{\space} address\text{\space} device>.pari<24575\text{\space} minus\text{\space} code>d<data\text{\space} type>.  
Example: RemoteIPC.CAN.can1.dev40.pari24572d8
13.3.5 Linking control elements and variables

A user interface created with »VisiWinNET®« consists of different control elements such as buttons, check boxes and option fields. An important function of »VisiWinNET®« is to link these control elements with the variables available on the target device.

How to link control elements with variables:
1. Select the control element.
2. Click the ... button of the VWItem property.
3. Select the intended variable from the tree view.
4. Click the OK button.
   • The selected variable is assigned to the control element.

13.3.6 Transferring an application to the target device

Note!
In order to be able to transfer an application to the target device, you have to start the »VisiWinNET®« Remote Access Manager.

How to start the »VisiWinNET®« Remote Access Manager:
1. Change to the service mode.
2. Press F1 on the monitor panel.
   • The control panel is started.
   • Here the »VisiWinNET®« Remote Access icon can be found.
3. A double-click on this icon starts the Remote Access Manager.
How to transfer an application to the target device:

1. Select Project→Transmit to target device in the »VisiWinNET®« menu bar.
   - The Connect device window appears.

2. Enter the IP address of the IPC in the IP address or network name text field.
   You can view and alter the IP address of the IPC in the "Network Connections" program.  
   Configuring the Industrial PC (30)

3. Click the Connect button.

   Note!
   If the firewall of Windows® XP is active, you have to enable a port for 
   »VisiWinNET®«. In the standard setting this is port 10116.
   - The application is transferred to the target device.
13.4 Configuration of the OPC tunnel

The OPC tunnel permits »VisiWinNET®« access to the OPC servers of the IPC. Depending on the system on which the visualisation is run, the OCT tunnel needs to be configured accordingly.

Note!

If the Windows® XP firewall is activated, one of the ports (standard setting: port 56765) needs to be activated for the OPC tunnel!

The configuration is carried out in the oct.xml file.

- The file can be edited using Microsoft WordPad and Microsoft Editor.

The following cases are distinguished:

1. local Visu on the Lenze IPC control system: ▶ Local visualisation (integrated control system) (p. 119)
2. external Visu on a Lenze IPC: ▶ External visualisation (remote access) (p. 120)
3. external Visu on a WinXP or WinEmbeddedXP computer: ▶ External visu on a Windows XP/XP Embedded IPC (remote access) (p. 122)
13.4.1 Local visualisation (integrated control system)

The local »VisiWinNET®« application on the Lenze IPC (controller) accesses the corresponding OPC server via the local OPC tunnel.

The oct.xml configuration file in the \storage\OCT directory is used to configure the OPC tunnel.

Note!

For a local visualisation on the IPC, the configuration file need not be adapted! Do not change the standard settings of the configuration file.
13.4.2  External visualisation (remote access)

The »VisiWinNET®« application of the external Lenze IPC (Visu) accesses the OPC server of the control IPC (controller) via the OPC tunnel. In the example, the IP address of the IPC (controller) is: 192.168.5.99

¬ For configuring **OPC tunnel 1**, use the `oct.xml` configuration file in the `\storage\OCT` directory. Enter the corresponding IP address of the control IPC in the configuration file (as described in the following section).

¬ For configuring **OPC tunnel 2**, use the `oct.xml` configuration file. The standard settings need not be changed.

**Note!**

For using an external visualisation, the `oct.xml` configuration file on the visualisation IPC (Visu) must be adapted accordingly.
Preparation

- Read in the CF card of the visualisation IPC on your PC using a card reader

or

- Establish an FTP connection between your PC and the visualisation IPC

How to set up an external visualisation on a Lenze IPC:

1. Go to the \Storage\OCT directory
2. Rename the oct.xml file to oct_save.xml
3. Rename the octvisu.xml file to oct.xml
4. Open the oct.xml file using an editor. This is a text file. For file editing you can for instance use the Microsoft Editor software.
5. Go to the following section:

6. Enter the IP address of the Lenze control IPC.
7. Line contents (example):

8. Save the changed file on the CF card.
9. Restart visualisation IPC.
   - The OPC servers of the control IPC can now be accessed.

Tip!
To undo faulty changes in the configuration files, the original state of the configuration files can be restored. For this, delete all configuration files from the \Storage\OCT directory and restart the Industrial PC.
13.4.3 External visu on a Windows XP/XP Embedded IPC (remote access)

- The »VisiWinNET®« application of the external Windows XP/XP Embedded IPC accesses the OPC server of the control IPC (controller) (via OPC tunnel 1). In the example, the IP address of the IPC (controller) is: 192.168.5.99

- For configuring **OPC tunnel 1**, use the *oct.xml* configuration file in the \Programs\Lenze\Lenze Digitec OPC Tunnel directory. Enter the corresponding IP address of the control IPC in the configuration file (as described in the following section).

- For configuring **OPC tunnel 2**, use the *oct.xml* configuration file. The standard settings need not be changed.

**Note!**

For using an external Visu on a Windows XP/XP Embedded IPC, the *oct.xml* configuration file on the Windows XP IPC must be adapted.
Preparation

Install the OPC tunnel on the Windows XP IPC.

1. The required installation files are provided on the Lenze installation CD in the following directory:

![OPCTunnel directory]

2. Execute the `Setup_OPC_Tunnel_Vxxx.exe` installation file.

How to set up the external visualisation:

1. Open the Windows Explorer on the visualisation IPC
2. Go to the following directory: `...\Programs\Lenze\Lenze Digitec OPC Tunnel`
3. Open the `oct.xml` file using an editor.
   - The file can for instance be edited using the Microsoft Editor
4. Go to the following file section:

```
<!--
<Server ID="RemoteIPC" URL="tpda://172.31.207.16:56765"
ProvideItems="dynamic" ItemPre-fix="RemoteIPC" EstablishConnection="on demand">
<FilterFile Path=""/>
</Server>-->  
```
   - Remove the "<!-" and "-->
5. Enter the IP address of the Lenze control IPC.
   - In the example, the line contents is now as follows:

```
<Server ID="RemoteIPC" URL="tpda://192.168.5.99:56765" ProvideItems="dynamic"
ItemPre-fix="RemoteIPC" EstablishConnection="on demand"> <FilterFile Path=""/>
</Server>
```

6. Save the changed file.
7. Restart visualisation IPC.
   - The OPC servers of the control IPC can now be accessed.
13.5 Lenze specifications - exception handling

13.5.1 Install additional fonts

How to install additional fonts for visualisation:

1. Copy the additional font file to the \Storage\Fonts directory on the CF card.
2. In the PostStart.txt file, add the AddFont.exe entry.

The PostStart.txt file is in the \Storage directory (basic directory of the CF card).

13.5.2 No access to variables with AT declaration possible (CoDeSys direct driver)

If a variable in the PLC is to be directly assigned to a certain address, the corresponding variable »PLC Designer« variable is declared with the AT keyword (example: xSchalterHeizung7 AT %QX0.0: BOOL;).

Note!

The access to variables with AT declaration is not supported by the CoDeSys direct driver.
- Variable contents may be displayed incorrectly.
- Write accesses may cause incorrect data contents.
14 Parameter reference

This chapter lists all parameters of the Industrial PC and the extension modules in numerically ascending order. The parameters of a Lenze device are called codes. Each code can further be divided into subcodes.

Depending on the configuration and assembly of your Industrial PC, the parameter lists may vary.

This chapter contains the following parameters:

Parameters of the standard device of the Industrial PC: Parameters of standard devices (129)

- Ethernet interface (on board) (153)
- Panel (155)
- PLC (Logic/Motion) (159)

Extension modules of the Industrial PC: Industrial PC extension modules (161)

- CAN communication card (MC-CAN2) (162)
- EtherCAT communication card (MC-ETC) (172)
- PROFIBUS master communication card (MC-PBM) (207)
- Ethernet communication card (MC-ETH) (209)

14.1 Structure of the parameter description

Each parameter is described in the parameter list in the form of a table which consists of the following three areas:

Table header
The table header contains the following general information:

- Parameter number (Cxxxxx)
- Parameter name
  (Display text in the »Engineer« or in the web-based parameterisation)
- Data types
- Decimal and hexadecimal parameter index for access via bus systems

Table contents
The table contains further general explanations and notes on the parameter and the possible settings. The representation depends on the parameter type:

- Parameters with read access (126)
- Parameters with write access (126)
Table footer
The table footer contains the Parameter attributes.

14.1.1 Data types

The following data types are available for parameters:

<table>
<thead>
<tr>
<th>Data type</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGER_8</td>
<td>8-bit value with sign</td>
</tr>
<tr>
<td>INTEGER_16</td>
<td>16-bit value with sign</td>
</tr>
<tr>
<td>INTEGER_32</td>
<td>32-bit value with sign</td>
</tr>
<tr>
<td>INTEGER_64</td>
<td>64-bit value with sign</td>
</tr>
<tr>
<td>UNSIGNED_8</td>
<td>8-bit value without sign</td>
</tr>
<tr>
<td>UNSIGNED_16</td>
<td>16-bit value without sign</td>
</tr>
<tr>
<td>UNSIGNED_32</td>
<td>32-bit value without sign</td>
</tr>
<tr>
<td>UNSIGNED_64</td>
<td>64-bit value without sign</td>
</tr>
<tr>
<td>FLOAT_32</td>
<td>32-bit floating point number</td>
</tr>
<tr>
<td>FLOAT_64</td>
<td>64-bit floating point number</td>
</tr>
<tr>
<td>VISIBLE_STRING</td>
<td>String of characters from printable characters</td>
</tr>
<tr>
<td>OCTET_STRING</td>
<td>String of characters from any characters</td>
</tr>
<tr>
<td>BITFIELD_8</td>
<td>8-bit value bit coded</td>
</tr>
<tr>
<td>BITFIELD_16</td>
<td>16-bit value bit coded</td>
</tr>
<tr>
<td>BITFIELD_32</td>
<td>32-bit value bit coded</td>
</tr>
<tr>
<td>DATE</td>
<td>Date</td>
</tr>
</tbody>
</table>

14.1.2 Parameters with read access

Parameters not having the "write access" attribute can only be read. The user cannot change these parameters.

Description structure

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: Cxxxxx</th>
<th>Data type: _______</th>
<th>Index: _______</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.1.3 Parameters with write access

Parameters with a checkmark (☑) in front of the "write access" attribute can be changed by the user. The Lenze setting for these parameters is **printed in bold**.

- The user can change these settings
  - via a selection list or
  - by directly entering a value.
### 14.1.3.1 Parameters with a setting range

**Description structure**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: Cxxxxx</th>
<th>_____________</th>
<th>Data type: _______</th>
<th>Index: _______</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Setting range</strong> (min. value</td>
<td>unit</td>
<td>max. value)</td>
<td>Lenze setting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Read access</td>
<td>☑ Write access</td>
<td>☑ CINH</td>
<td>☑ PLC STOP</td>
<td>☑ No transfer</td>
</tr>
</tbody>
</table>

### 14.1.3.2 Parameters with a selection list

**Description structure**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: Cxxxxx</th>
<th>_____________</th>
<th>Data type: _______</th>
<th>Index: _______</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Selection list</strong> (Lenze setting printed in bold)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Read access</td>
<td>☑ Write access</td>
<td>☑ CINH</td>
</tr>
</tbody>
</table>

### 14.1.3.3 Parameters with a bit-coded setting

**Description structure**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: Cxxxxx</th>
<th>_____________</th>
<th>Data type: _______</th>
<th>Index: _______</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Value is bit-coded:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit 0</td>
<td>...</td>
<td>Bit 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Read access</td>
<td>☑ Write access</td>
<td>☑ CINH</td>
<td>☑ PLC STOP</td>
<td>☑ No transfer</td>
</tr>
</tbody>
</table>

### 14.1.3.4 Parameters with subcodes

**Description structure**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: Cxxxxx</th>
<th>_____________</th>
<th>Data type: _______</th>
<th>Index: _______</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Setting range</strong> (min. value</td>
<td>unit</td>
<td>max. value)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14.1.4 Parameter attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Read access</td>
<td>Read access to parameter possible.</td>
</tr>
<tr>
<td>☑ Write access</td>
<td>Write access to parameter possible.</td>
</tr>
<tr>
<td>☑ CINH</td>
<td>This attribute is not used for parameterising the Industrial PC!</td>
</tr>
<tr>
<td>☑ PLC STOP</td>
<td>This attribute is not used for parameterising the Industrial PC!</td>
</tr>
<tr>
<td>☑ No transfer</td>
<td>This attribute is not used for parameterising the Industrial PC!</td>
</tr>
</tbody>
</table>
### Parameters of standard devices

This chapter lists all parameters of the following series of standard devices of the Industrial PC in numerically ascending order.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type</th>
<th>Index</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0003</td>
<td>Device: Name</td>
<td>VISIBLE_STRING</td>
<td>24572d (5FFCh)</td>
<td>Device name of the IPC.</td>
</tr>
<tr>
<td>C0004</td>
<td>Device: Software version</td>
<td>VISIBLE_STRING</td>
<td>24571d (5FFBh)</td>
<td>Software version of the IPC standard device</td>
</tr>
<tr>
<td>C0005</td>
<td>Device: Hardware version</td>
<td>VISIBLE_STRING</td>
<td>24570d (5FFAh)</td>
<td>Hardware version of the IPC standard device</td>
</tr>
<tr>
<td>C0006</td>
<td>Device: Serial number</td>
<td>VISIBLE_STRING</td>
<td>24569d (5FF9h)</td>
<td>Serial number of the IPC standard device</td>
</tr>
<tr>
<td>C0007</td>
<td>Device: Manufacturer</td>
<td>VISIBLE_STRING</td>
<td>24568d (5FF8h)</td>
<td>Manufacturer of the IPC standard device</td>
</tr>
<tr>
<td>C0008</td>
<td>Device: Manufacturing date</td>
<td>VISIBLE_STRING</td>
<td>24567d (5FF7h)</td>
<td>Manufacturing date of the IPC standard device</td>
</tr>
<tr>
<td>C0013</td>
<td>System identification: Name</td>
<td>VISIBLE_STRING</td>
<td>24562d (5FF2h)</td>
<td>Name for the identification on the system</td>
</tr>
<tr>
<td>C0015</td>
<td>System identification: User name</td>
<td>VISIBLE_STRING</td>
<td>24560d (5FF0h)</td>
<td>User name for the identification on the system</td>
</tr>
</tbody>
</table>
### C0016
**Parameter | Name:** C0016 | System identification: Description

Description for the identification on the system

- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

### C0018
**Parameter | Name:** C0018 | Command

Load PLC program command. Here the PLC boot project is reloaded.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No command</td>
<td>Close the data manager</td>
</tr>
<tr>
<td>256 Exit</td>
<td>Save the data from the following tables to the management data base:</td>
</tr>
<tr>
<td>279 Persist all</td>
<td>• Data of the object table</td>
</tr>
<tr>
<td></td>
<td>• Data of all address tables</td>
</tr>
<tr>
<td></td>
<td>• Data of the file table</td>
</tr>
<tr>
<td>287 Restore all</td>
<td>Replace the following tables by the corresponding tables in the management data base:</td>
</tr>
<tr>
<td></td>
<td>• The object table</td>
</tr>
<tr>
<td></td>
<td>• All address tables</td>
</tr>
<tr>
<td></td>
<td>• The file table</td>
</tr>
<tr>
<td>302 Delete logbook</td>
<td>The old lists will be deleted permanently.</td>
</tr>
<tr>
<td>512 Start PLC</td>
<td></td>
</tr>
<tr>
<td>513 Stop PLC</td>
<td></td>
</tr>
<tr>
<td>515 PLC: Reload boot project</td>
<td></td>
</tr>
<tr>
<td>1281 Purge</td>
<td>Delete all files which are in the file system of the data manager and not registered in the file table.</td>
</tr>
<tr>
<td>1282 Persist logbook</td>
<td>Save the logbook with all entries to a log file</td>
</tr>
<tr>
<td>1538 Start FTP server</td>
<td></td>
</tr>
<tr>
<td>1539 Stop FTP server</td>
<td></td>
</tr>
<tr>
<td>1540 Start telnet server</td>
<td></td>
</tr>
<tr>
<td>1541 Stop telnet server</td>
<td></td>
</tr>
<tr>
<td>1561 Update telnet server</td>
<td></td>
</tr>
<tr>
<td>1542 Start web server</td>
<td></td>
</tr>
<tr>
<td>1543 Stop web server</td>
<td></td>
</tr>
<tr>
<td>1562 Update web server</td>
<td></td>
</tr>
<tr>
<td>1544 Start RAS server</td>
<td></td>
</tr>
<tr>
<td>1545 Stop RAS server</td>
<td></td>
</tr>
<tr>
<td>1563 Update RAS server</td>
<td></td>
</tr>
</tbody>
</table>

### C0019
**Parameter | Name:** C0019 | Command status

Code with the status of the running command

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**
### Industrial PC | Parameter setting & configuration

#### Parameter reference

#### Parameters of standard devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0020</td>
<td>CPU: Name</td>
<td>VISIBLE STRING</td>
<td>24555d = 5FEBh</td>
</tr>
<tr>
<td>C0030</td>
<td>CPU: Temperature</td>
<td>UNSIGNED_8</td>
<td>24545d = 5FE1h</td>
</tr>
<tr>
<td>C0031</td>
<td>Temperature: Housing</td>
<td>INTEGER_8</td>
<td>24544d = 5FE0h</td>
</tr>
<tr>
<td>C0032</td>
<td>Temperature: Board</td>
<td>INTEGER_8</td>
<td>24543d = 5FDFh</td>
</tr>
<tr>
<td>C0033</td>
<td>Temperature: Backplane</td>
<td>INTEGER_8</td>
<td>24542d = 5FDEh</td>
</tr>
<tr>
<td>C0034</td>
<td>Temperature: Video</td>
<td>INTEGER_8</td>
<td>24541d = 5FDDh</td>
</tr>
<tr>
<td>C0035</td>
<td>Temperature: Chipsets</td>
<td>INTEGER_8</td>
<td>24540d = 5FDCh</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0020</td>
<td>CPU: Name</td>
<td>VISIBLE STRING</td>
<td>24555d = 5FEBh</td>
</tr>
<tr>
<td>C0030</td>
<td>CPU: Temperature</td>
<td>UNSIGNED_8</td>
<td>24545d = 5FE1h</td>
</tr>
<tr>
<td>C0031</td>
<td>Temperature: Housing</td>
<td>INTEGER_8</td>
<td>24544d = 5FE0h</td>
</tr>
<tr>
<td>C0032</td>
<td>Temperature: Board</td>
<td>INTEGER_8</td>
<td>24543d = 5FDFh</td>
</tr>
<tr>
<td>C0033</td>
<td>Temperature: Backplane</td>
<td>INTEGER_8</td>
<td>24542d = 5FDEh</td>
</tr>
<tr>
<td>C0034</td>
<td>Temperature: Video</td>
<td>INTEGER_8</td>
<td>24541d = 5FDDh</td>
</tr>
<tr>
<td>C0035</td>
<td>Temperature: Chipsets</td>
<td>INTEGER_8</td>
<td>24540d = 5FDCh</td>
</tr>
</tbody>
</table>

#### Parameter Descriptions

**C0020**: CPU type designation
- Read access: Yes
- Write access: No
- PLC STOP: No transfer

**C0030**: Processor temperature [°C]
- Display range (min. value | unit | max. value): 0 °C | °C | 255
- Read access: Yes
- Write access: No
- PLC STOP: No transfer

**C0031**: Housing temperature [°C]
- Display range (min. value | unit | max. value): 0 °C | °C | 255
- Read access: Yes
- Write access: No
- PLC STOP: No transfer

**C0032**: Board temperature [°C]
- Display range (min. value | unit | max. value): 0 °C | °C | 255
- Read access: Yes
- Write access: No
- PLC STOP: No transfer

**C0033**: Backplane temperature [°C]
- Display range (min. value | unit | max. value): 0 °C | °C | 255
- Read access: Yes
- Write access: No
- PLC STOP: No transfer

**C0034**: Graphic board temperature [°C]
- Display range (min. value | unit | max. value): 0 °C | °C | 255
- Read access: Yes
- Write access: No
- PLC STOP: No transfer

**C0035**: Temperature of the chipsets [°C]
- Display range (min. value | unit | max. value): 0 °C | °C | 255
- Read access: Yes
- Write access: No
- PLC STOP: No transfer
### Parameter C0040 | Activate front USB

The optional USB socket located on the front monitor panel is
- activated by entering "1" and
- deactivated by entering "0".

| Setting range (min. value | unit | max. value) | Lenze setting |
|---------------------------|-------|-------------|
| 0                         |       | 1           |

- Read access  Write access  CINH  PLC STOP  No transfer

### Parameter C0041 | Operating time

Total operating time since the device has been switched on [s]

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>min</td>
<td>16777215</td>
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</tbody>
</table>

- Read access  Write access  CINH  PLC STOP  No transfer

### Parameter C0042 | Number of reboots

Number of boot processes of the device

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>65535</td>
</tr>
</tbody>
</table>

- Read access  Write access  CINH  PLC STOP  No transfer

### Parameter C0048 | Logbook: Time to auto persist

The time for the timer is entered in minutes. The timer is restarted when the log service has saved data. If the time has expired and no logbook entries have been saved in the meantime, the saving process will be activated.

| Setting range (min. value | unit | max. value) | Lenze setting |
|---------------------------|-------|-------------|
| min                       |       | 2 min       |

- Read access  Write access  CINH  PLC STOP  No transfer

### Parameter C0049 | Logbook: Entry count to auto persist

Enter the number of logbook entries after which the saving process is to be activated. Counting starts with the last saving.

| Setting range (min. value | unit | max. value) | Lenze setting |
|---------------------------|-------|-------------|
|                          |       | 900         |

- Read access  Write access  CINH  PLC STOP  No transfer

### Parameter C0050 | Logbook: Max. entries

Enter the maximum number of logbook entries. The logbook entries are taken from the main memory and from the CF memory card.

| Setting range (min. value | unit | max. value) | Lenze setting |
|---------------------------|-------|-------------|
|                          |       | 1000        |

- Read access  Write access  CINH  PLC STOP  No transfer
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Logbook: Size on CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_32</td>
<td>Index: 24524d = 5FCCh</td>
<td></td>
</tr>
<tr>
<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>☒ Read access</td>
<td>☐ Write access</td>
<td>☐ CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Logbook: Number of entries in RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_32</td>
<td>Index: 24523d = 5FCBh</td>
<td></td>
</tr>
<tr>
<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>☒ Read access</td>
<td>☐ Write access</td>
<td>☐ CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Logbook: Time of oldest entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: DATE</td>
<td>Index: 24522d = 5FCAh</td>
<td></td>
</tr>
<tr>
<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>(UTC)</td>
<td>☒ Read access</td>
<td>☐ Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Logbook: Index of oldest entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_32</td>
<td>Index: 24521d = 5FC9h</td>
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</tr>
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<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>☒ Read access</td>
<td>☐ Write access</td>
<td>☐ CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Logbook: Time of last entry on CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: DATE</td>
<td>Index: 24520d = 5FCAh</td>
<td></td>
</tr>
<tr>
<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>(UTC)</td>
<td>☒ Read access</td>
<td>☐ Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Logbook: Index of last entry on CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_32</td>
<td>Index: 24519d = 5FC7h</td>
<td></td>
</tr>
<tr>
<td>Display range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>☒ Read access</td>
<td>☐ Write access</td>
<td>☐ CINH</td>
</tr>
</tbody>
</table>
### Parameter | Name: C0057 | Logbook: Index of last entry

Number of the last entry in the logbook

<table>
<thead>
<tr>
<th>Display range</th>
<th>(min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

- Read access  | Write access  | CINH | PLC STOP | No transfer

### Parameter | Name: C0058 | Logbook: Time of last entry

Time of the last entry in the logbook

<table>
<thead>
<tr>
<th>Display range</th>
<th>(min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

- Read access  | Write access  | CINH | PLC STOP | No transfer

### Parameter | Name: C0064 | Logbook: Time of last error entry

Entry of the last time error in the logbook

<table>
<thead>
<tr>
<th>Display range</th>
<th>(min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

- Read access  | Write access  | CINH | PLC STOP | No transfer

### Parameter | Name: C0070 | Ratio: Data/program memory

- A part of the available memory is provided to the current programs as main memory.
- The other part is available as object store for saving files in the RAM.
- The percentage value indicated shows the ratio between object store (MemoryVirtualFilesAll) and total memory.

| Setting range | (min. value | unit | max. value) | Lenze setting |
|---------------|------------|-------|------------|
| 0 %           | 100 %      | 50 %  |

- Read access  | Write access  | CINH | PLC STOP | No transfer

### Parameter | Name: C0071 | Allocated program memory

Size of the reserved program memory

<table>
<thead>
<tr>
<th>Display range</th>
<th>(min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Bytes</td>
<td>4294967295</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Read access  | Write access  | CINH | PLC STOP | No transfer

### Parameter | Name: C0072 | Used program memory

Size of the occupied program memory

<table>
<thead>
<tr>
<th>Display range</th>
<th>(min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Bytes</td>
<td>4294967295</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Read access  | Write access  | CINH | PLC STOP | No transfer
### C0075
**Parameter | Name:** C0075 | Allocated virtual file memory  
Object store reserved for saving of virtual files  
**Display range (min. value | unit | max. value):**  
| | | 4294967295  
| Read access | Write access | CINH | PLC STOP | No transfer

### C0076
**Parameter | Name:** C0076 | Used virtual file memory  
Object store occupied by virtual files  
**Display range (min. value | unit | max. value):**  
| | | 4294967295  
| Read access | Write access | CINH | PLC STOP | No transfer

### C0078
**Parameter | Name:** C0078 | Allocated flash memory  
Flash memory reserved  
**Display range (min. value | unit | max. value):**  
| | | 4294967295  
| Read access | Write access | CINH | PLC STOP | No transfer

### C0079
**Parameter | Name:** C0079 | Used flash memory  
Flash memory occupied  
**Display range (min. value | unit | max. value):**  
| | | 4294967295  
| Read access | Write access | CINH | PLC STOP | No transfer

### C0090
**Parameter | Name:** C0090 | System: Date and time  
Date and time  
**Setting range (min. value | unit | max. value):**  
| | | NaN  
| Read access | Write access | CINH | PLC STOP | No transfer

### C0091
**Parameter | Name:** C0091 | Local date and time  
Local date and time.  
**Setting range (min. value | unit | max. value):**  
| | | NaN  
| Read access | Write access | CINH | PLC STOP | No transfer
Parameter | Name: C0092 | Time zone
---
Data type: UNSIGNED_8
Index: 244834 = 5FA3h

Time zone of the device.
Possible values: "Central European Standard Time", "North Pacific Standard Time", "GMT Standard Time", ...

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Afghanistan Standard Time</td>
<td></td>
</tr>
<tr>
<td>2 Alaska Standard Time</td>
<td></td>
</tr>
<tr>
<td>3 Arab Standard Time</td>
<td></td>
</tr>
<tr>
<td>4 Arabian Standard Time</td>
<td></td>
</tr>
<tr>
<td>5 Arabic Standard Time</td>
<td></td>
</tr>
<tr>
<td>6 Atlantic Standard Time</td>
<td></td>
</tr>
<tr>
<td>7 AUS Central Standard Time</td>
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<tr>
<td>8 AUS Eastern Standard Time</td>
<td></td>
</tr>
<tr>
<td>9 Azores Standard Time</td>
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<tr>
<td>10 Canada Central Standard Time</td>
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<td>11 Cape Verde Standard Time</td>
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<tr>
<td>12 Caucasus Standard Time</td>
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<tr>
<td>13 Cen. Australia Standard Time</td>
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</tr>
<tr>
<td>14 Central America Standard Time</td>
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<tr>
<td>15 Central Asia Standard Time</td>
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<tr>
<td>16 Central Europe Standard Time</td>
<td></td>
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<td>17 Central European Standard Time</td>
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<tr>
<td>18 Central Pacific Standard Time</td>
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<td>22 E. Africa Standard Time</td>
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<td>23 E. Australia Standard Time</td>
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<tr>
<td>24 E. Europe Standard Time</td>
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<td>25 E. South America Standard Time</td>
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<td>26 Eastern Standard Time</td>
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<td>27 Egypt Standard Time</td>
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<td>28 Ekaterinburg Standard Time</td>
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<tr>
<td>29 Fiji Standard Time</td>
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<tr>
<td>30 FLE Standard Time</td>
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<td>31 GMT Standard Time</td>
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<td>33 Greenwich Standard Time</td>
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<td>34 GTB Standard Time</td>
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</table>
### Parameter reference

#### Parameters of standard devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
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<th>Index: 24483d = 5FA3h</th>
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<td>53</td>
<td>Pacific Standard Time</td>
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<td>74</td>
<td>West Pacific Standard Time</td>
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<tr>
<td>75</td>
<td>Yakutsk Standard Time</td>
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</tr>
</tbody>
</table>

- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 24482d = 5FA2h</th>
</tr>
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<tbody>
<tr>
<td>C0093</td>
<td>Locale</td>
<td></td>
<td></td>
</tr>
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</table>

**Selection of regional and language options**

**Selection list (Lenze setting printed in bold)**

<table>
<thead>
<tr>
<th>Selection list</th>
<th>Information</th>
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</thead>
<tbody>
<tr>
<td>1030</td>
<td>Danish (Denmark)</td>
</tr>
<tr>
<td>1043</td>
<td>Dutch (Netherlands)</td>
</tr>
<tr>
<td>1033</td>
<td>English (United States)</td>
</tr>
<tr>
<td>2057</td>
<td>English (United Kingdom)</td>
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</tbody>
</table>
### Parameter Setting & Configuration

#### Parameter Reference

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 24482_{hex} = 5FA2_{hex}</th>
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<tbody>
<tr>
<td>C093</td>
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<tr>
<td></td>
<td></td>
<td>1031 German (Germany)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1037 Hebrew (Israel)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1040 Italian (Italy)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1044 Norwegian (Norway, Bokmål)</td>
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<tr>
<td></td>
<td></td>
<td>2070 Portuguese (Portugal)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>3082 Spanish (Spain, International Sort)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1053 Swedish (Sweden)</td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24475_{hex} = 5F9B_{hex}</th>
</tr>
</thead>
<tbody>
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<td>C0100</td>
<td>WinCe users: Number</td>
<td>Number of users registered</td>
<td>Display range (min. value</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24474_{hex} = 5F9Ah</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0101</td>
<td>WinCe users: User name 1</td>
<td>Name of the user</td>
<td>Default setting: admin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24473_{hex} = 5F99h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0102</td>
<td>WinCe users: Password 1</td>
<td>Password of the user</td>
<td>Default setting: admin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24472_{hex} = 5F98h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0103</td>
<td>WinCE users: User 1 with FTP permissions</td>
<td>User may use FTP</td>
<td>Setting range (min. value</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 24471_{hex} = 5F97h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0104</td>
<td>FTP: Permissions user 1</td>
<td>FTP rights of the user.</td>
<td>Value is bit-coded:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bit 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bit 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bit 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bit 3</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### Industrial PC | Parameter setting & configuration

**Parameter reference**

**Parameters of standard devices**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0105</td>
<td>FTP: Home user 1</td>
<td>VISIBLE_STRING</td>
<td>24470d = 5F96h</td>
</tr>
<tr>
<td>C0106</td>
<td>WinCE-User: User 1 with telnet permissions</td>
<td>UNSIGNED_8</td>
<td>24469d = 5F95h</td>
</tr>
<tr>
<td>C0107</td>
<td>WinCE-User: User 1 with RAS permissions</td>
<td>UNSIGNED_8</td>
<td>24468d = 5F94h</td>
</tr>
<tr>
<td>C0108</td>
<td>WinCe users: User name 2</td>
<td>VISIBLE_STRING</td>
<td>24467d = 5F93h</td>
</tr>
<tr>
<td>C0109</td>
<td>WinCe users: Password 2</td>
<td>VISIBLE_STRING</td>
<td>24466d = 5F92h</td>
</tr>
<tr>
<td>C0110</td>
<td>WinCE users: User 2 with FTP permissions</td>
<td>UNSIGNED_8</td>
<td>24465d = 5F91h</td>
</tr>
<tr>
<td>C0111</td>
<td>FTP: Permissions user 2</td>
<td>UNSIGNED_32</td>
<td>24464d = 5F90h</td>
</tr>
</tbody>
</table>

**C0105 - FTP: Home user 1**

Home directory of the user

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**C0106 - WinCE-User: User 1 with telnet permissions**

User may use telnet

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
|                          |      | 1           |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**C0107 - WinCE-User: User 1 with RAS permissions**

User may use RAS

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
|                          |      | 1           |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**C0108 - WinCe users: User name 2**

Name of the user

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**C0109 - WinCe users: Password 2**

Password of the user

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**C0110 - WinCE users: User 2 with FTP permissions**

User may use FTP

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
|                          |      | 0           |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**C0111 - FTP: Permissions user 2**

FTP rights of the user.

**Value is bit-coded:**

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Allow Read</td>
</tr>
<tr>
<td>1</td>
<td>Allow Write</td>
</tr>
<tr>
<td>2</td>
<td>Allow Virtual Roots</td>
</tr>
<tr>
<td>3</td>
<td>Allow Hidden Files</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### Parameter Reference

#### Parameters of Standard Devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type:</th>
<th>Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0112</td>
<td>FTP: Home user 2</td>
<td>VISIBLE_STRING</td>
<td>24463d = 5F8Fh</td>
</tr>
<tr>
<td>C0113</td>
<td>WinCE-User: User 2 with telnet permissions</td>
<td>UNSIGNED_8</td>
<td>24462d = 5F8Eh</td>
</tr>
<tr>
<td>C0114</td>
<td>WinCE-User: User 2 with RAS permissions</td>
<td>UNSIGNED_8</td>
<td>24461d = 5F8Dh</td>
</tr>
<tr>
<td>C0115</td>
<td>WinCE users: User name 3</td>
<td>VISIBLE_STRING</td>
<td>24460d = 5F8Ch</td>
</tr>
<tr>
<td>C0116</td>
<td>WinCE users: Password 3</td>
<td>VISIBLE_STRING</td>
<td>24459d = 5F8Bh</td>
</tr>
<tr>
<td>C0117</td>
<td>WinCE users: User 3 with FTP permissions</td>
<td>UNSIGNED_8</td>
<td>24458d = 5F8Ah</td>
</tr>
<tr>
<td>C0118</td>
<td>FTP: Permissions user 3</td>
<td>UNSIGNED_32</td>
<td>24457d = 5F89h</td>
</tr>
</tbody>
</table>

#### C0112 - FTP: Home user 2
- Home directory of the user
- **Read access**: Yes, **Write access**: Yes
- **CINH**: No, **PLC STOP**: No, **No transfer**: Yes

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### C0113 - WinCE-User: User 2 with telnet permissions
- User may use telnet

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### C0114 - WinCE-User: User 2 with RAS permissions
- User may use RAS

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### C0115 - WinCE users: User name 3
- Name of the user
- **Read access**: Yes, **Write access**: Yes

#### C0116 - WinCE users: Password 3
- Password of the user
- **Read access**: Yes, **Write access**: Yes

#### C0117 - WinCE users: User 3 with FTP permissions
- User may use FTP

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### C0118 - FTP: Permissions user 3
- FTP rights of the user
- **Value is bit-coded:**
  - Bit 0: Allow Read
  - Bit 1: Allow Write
  - Bit 2: Allow Virtual Roots
  - Bit 3: Allow Hidden Files
- **Read access**: Yes, **Write access**: Yes, **CINH**: No, **PLC STOP**: No, **No transfer**: Yes
## Industrial PC | Parameter setting & configuration

### Parameter reference

#### Parameters of standard devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0119</strong></td>
<td>FTP: Home user 3</td>
</tr>
</tbody>
</table>

Home directory of the user

- **Data type:** VISIBLE_STRING
- **Index:** 24456d = 5F88h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0120</strong></td>
<td>WinCE-User: User 3 with telnet permissions</td>
</tr>
</tbody>
</table>

User may use telnet

- **Setting range** (min. value | unit | max. value)
- **Lenze setting**

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

- **Data type:** UNSIGNED_8
- **Index:** 24455d = 5F87h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0121</strong></td>
<td>WinCE-User: User 3 with RAS permissions</td>
</tr>
</tbody>
</table>

User may use RAS

- **Setting range** (min. value | unit | max. value)
- **Lenze setting**

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

- **Data type:** UNSIGNED_8
- **Index:** 24454d = 5F86h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0122</strong></td>
<td>WinCe users: User name 4</td>
</tr>
</tbody>
</table>

Name of the user

- **Data type:** VISIBLE_STRING
- **Index:** 24453d = 5F85h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0123</strong></td>
<td>WinCe users: Password 4</td>
</tr>
</tbody>
</table>

Password of the user

- **Data type:** VISIBLE_STRING
- **Index:** 24452d = 5F84h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0124</strong></td>
<td>WinCE users: User 4 with FTP permissions</td>
</tr>
</tbody>
</table>

User may use FTP

- **Setting range** (min. value | unit | max. value)
- **Lenze setting**

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

- **Data type:** UNSIGNED_8
- **Index:** 24451d = 5F83h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0125</strong></td>
<td>FTP: Permissions user 4</td>
</tr>
</tbody>
</table>

FTP rights of the user.

- **Value is bit-coded:**
  - **Bit 0** | Allow Read
  - **Bit 1** | Allow Write
  - **Bit 2** | Allow Virtual Roots
  - **Bit 3** | Allow Hidden Files

- **Data type:** UNSIGNED_32
- **Index:** 24450d = 5F82h
- **Read access**
- **Write access**
- **CINH**
- **PLC STOP**
- **No transfer**
## C0126
**Parameter | Name:** C0126 | FTP: Home user 4  
**Data type:** VISIBLE_STRING  
**Index:** 24449d = 5F81h  
**Home directory of the user**

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|------------|
|                          | 0    | 1          |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

## C0127
**Parameter | Name:** C0127 | WinCE-User: User 4 with telnet permissions  
**Data type:** UNSIGNED_8  
**Index:** 24448d = 5F80h  
**User may use telnet**

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|------------|
|                          | 0    | 1          |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

## C0128
**Parameter | Name:** C0128 | WinCE-User: User 4 with RAS permissions  
**Data type:** UNSIGNED_8  
**Index:** 24447d = 5F7Fh  
**User may use RAS**

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|------------|
|                          | 0    | 1          |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

## C0129
**Parameter | Name:** C0129 | WinCE users: User name 5  
**Data type:** VISIBLE_STRING  
**Index:** 24446d = 5F7Eh  
**Name of the user**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

## C0130
**Parameter | Name:** C0130 | WinCE users: Password 5  
**Data type:** VISIBLE_STRING  
**Index:** 24445d = 5F7Dh  
**Password of the user**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

## C0131
**Parameter | Name:** C0131 | WinCE users: User 5 with FTP permissions  
**Data type:** UNSIGNED_8  
**Index:** 24444d = 5F7Ch  
**User may use FTP**

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|------------|
|                          | 0    | 1          |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

## C0132
**Parameter | Name:** C0132 | FTP: Permissions user 5  
**Data type:** UNSIGNED_32  
**Index:** 24443d = 5F7Bh  
**FTP rights of the user.**

<table>
<thead>
<tr>
<th>Value is bit-coded:</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit 0</td>
<td>Allow Read</td>
</tr>
<tr>
<td>Bit 1</td>
<td>Allow Write</td>
</tr>
<tr>
<td>Bit 2</td>
<td>Allow Virtual Roots</td>
</tr>
<tr>
<td>Bit 3</td>
<td>Allow Hidden Files</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
Industrial PC | Parameter setting & configuration
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Parameters of standard devices

C0133
Parameter | Name: C0133 | FTP: Home user 5
Data type: VISIBLE_STRING
Index: 24442d = 5F7Ah

Home directory of the user
Read access  Write access  CINH  PLC STOP  No transfer

C0134
Parameter | Name: C0134 | WinCE-User: User 5 with telnet permissions
Data type: UNSIGNED_8
Index: 24441d = 5F79h

User may use telnet
Setting range (min. value | unit | max. value)  Lenze setting
0  1  0
Read access  Write access  CINH  PLC STOP  No transfer

C0135
Parameter | Name: C0135 | WinCE-User: User 5 with RAS permissions
Data type: UNSIGNED_8
Index: 24440d = 5F78h

User may use RAS
Setting range (min. value | unit | max. value)  Lenze setting
0  1  0
Read access  Write access  CINH  PLC STOP  No transfer

C0136
Parameter | Name: C0136 | WinCe users: User name 6
Data type: VISIBLE_STRING
Index: 24439d = 5F77h

Name of the user
Read access  Write access  CINH  PLC STOP  No transfer

C0137
Parameter | Name: C0137 | WinCe users: Password 6
Data type: VISIBLE_STRING
Index: 24438d = 5F76h

Password of the user
Read access  Write access  CINH  PLC STOP  No transfer

C0138
Parameter | Name: C0138 | WinCE users: User 6 with FTP permissions
Data type: UNSIGNED_8
Index: 24437d = 5F75h

User may use FTP
Setting range (min. value | unit | max. value)  Lenze setting
0  1  0
Read access  Write access  CINH  PLC STOP  No transfer

C0139
Parameter | Name: C0139 | FTP: Permissions user 6
Data type: UNSIGNED_32
Index: 24436d = 5F74h

FTP rights of the user.
Value is bit-coded:

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Allow Read</td>
</tr>
<tr>
<td>1</td>
<td>Allow Write</td>
</tr>
<tr>
<td>2</td>
<td>Allow Virtual Roots</td>
</tr>
<tr>
<td>3</td>
<td>Allow Hidden Files</td>
</tr>
</tbody>
</table>

Read access  Write access  CINH  PLC STOP  No transfer
### Parameter C0140
**Name:** FTP: Home user 6  
**Data type:** VISIBLE_STRING  
**Index:** 24435d = 5F73h  
**Description:** Home directory of the user  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

### Parameter C0141
**Name:** WinCE-User: User 6 with telnet permissions  
**Data type:** UNSIGNED_8  
**Index:** 24434d = 5F72h  
**Description:** User may use telnet  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### Parameter C0142
**Name:** WinCE-User: User 6 with RAS permissions  
**Data type:** UNSIGNED_8  
**Index:** 24433d = 5F71h  
**Description:** User may use RAS  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### Parameter C0143
**Name:** WinCe users: User name 7  
**Data type:** VISIBLE_STRING  
**Index:** 24432d = 5F70h  
**Description:** Name of the user  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

### Parameter C0144
**Name:** WinCe users: Password 7  
**Data type:** VISIBLE_STRING  
**Index:** 24431d = 5F6Fh  
**Description:** Password of the user  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

### Parameter C0145
**Name:** WinCE users: User 7 with FTP permissions  
**Data type:** UNSIGNED_8  
**Index:** 24430d = 5F6Eh  
**Description:** User may use FTP  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### Parameter C0146
**Name:** FTP: Permissions user 7  
**Data type:** UNSIGNED_32  
**Index:** 24429d = 5F6Dh  
**Description:** FTP rights of the user. Value is bit-coded:  
- Bit 0: Allow Read  
- Bit 1: Allow Write  
- Bit 2: Allow Virtual Roots  
- Bit 3: Allow Hidden Files  
**Access:** Read access, Write access, CINH, PLC STOP, No transfer

<table>
<thead>
<tr>
<th>Value is bit-coded:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit 0</td>
</tr>
<tr>
<td>Bit 1</td>
</tr>
<tr>
<td>Bit 2</td>
</tr>
<tr>
<td>Bit 3</td>
</tr>
</tbody>
</table>

**Access:** Read access, Write access, CINH, PLC STOP, No transfer
### C0147
Parameter | Name: C0147 | FTP: Home user 7
---
Data type: VISIBLE_STRING
Index: 24428d = 5F6Ch

Home directory of the user
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0148
Parameter | Name: C0148 | WinCE-User: User 7 with telnet permissions
---
Data type: UNSIGNED_8
Index: 24427d = 5F6Bh

User may use telnet
- Setting range (min. value | unit | max. value)
  - 0
- Lenze setting
  - 0
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0149
Parameter | Name: C0149 | WinCE-User: User 7 with RAS permissions
---
Data type: UNSIGNED_8
Index: 24426d = 5F6Ah

User may use RAS
- Setting range (min. value | unit | max. value)
  - 0
- Lenze setting
  - 1
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0150
Parameter | Name: C0150 | WinCE users: User name 8
---
Data type: VISIBLE_STRING
Index: 24425d = 5F69h

Name of the user
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0151
Parameter | Name: C0151 | WinCE users: Password 8
---
Data type: VISIBLE_STRING
Index: 24424d = 5F68h

Password of the user
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0152
Parameter | Name: C0152 | WinCE users: User 8 with FTP permissions
---
Data type: UNSIGNED_8
Index: 24423d = 5F67h

User may use FTP
- Setting range (min. value | unit | max. value)
  - 0
- Lenze setting
  - 1
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0153
Parameter | Name: C0153 | FTP: Permissions user 8
---
Data type: UNSIGNED_32
Index: 24422d = 5F66h

FTP rights of the user.
- Value is bit-coded:
  - Bit 0: Allow Read
  - Bit 1: Allow Write
  - Bit 2: Allow Virtual Roots
  - Bit 3: Allow Hidden Files
- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### Parameter setting & configuration

#### Parameter reference

#### Parameters of standard devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24421d = 5F65h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0154</strong></td>
<td>FTP: Home user 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Home directory of the user</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24420d = 5F64h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0155</strong></td>
<td>WinCE-User: User 8 with telnet permissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>User may use telnet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24419d = 5F63h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0156</strong></td>
<td>WinCE-User: User 8 with RAS permissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>User may use RAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24418d = 5F62h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0157</strong></td>
<td>WinCe users: User name 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name of the user</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24417d = 5F61h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0158</strong></td>
<td>WinCe users: Password 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Password of the user</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24416d = 5F60h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0159</strong></td>
<td>WinCE users: User 9 with FTP permissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>User may use FTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting range (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 24415d = 5F5Fh</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0160</strong></td>
<td>FTP: Permissions user 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FTP rights of the user</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Read access</td>
<td>Write access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CINH</td>
<td>PLC STOP</td>
<td>No transfer</td>
</tr>
</tbody>
</table>

**Value is bit-coded:**

- Bit 0: Allow Read
- Bit 1: Allow Write
- Bit 2: Allow Virtual Roots
- Bit 3: Allow Hidden Files

Read access   Write access   CINH   PLC STOP   No transfer
### C0161

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24414d = 5F5Eh</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTP: Home user 9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Home directory of the user**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0162

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24413d = 5F5Dh</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCE-User: User 9 with telnet permissions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**User may use telnet**

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0163

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24412d = 5F5Ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCE-User: User 9 with RAS permissions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**User may use RAS**

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0164

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24411d = 5F5Bh</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCe users: User name 10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Name of the user**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0165

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 24410d = 5F5Ah</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCe users: Password 10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Password of the user**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0166

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index: 24409d = 5F59h</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCE users: User 10 with FTP permissions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**User may use FTP**

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0167

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 24408d = 5F58h</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTP: Permissions user 10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FTP rights of the user.**

**Value is bit-coded:**

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Allow Read</td>
</tr>
<tr>
<td>1</td>
<td>Allow Write</td>
</tr>
<tr>
<td>2</td>
<td>Allow Virtual Roots</td>
</tr>
<tr>
<td>3</td>
<td>Allow Hidden Files</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### C0168
**Parameter | Name:** C0168 | FTP: Home user 10
**Data type:** VISIBLE_STRING
**Index:** 24407d = 5F57h

- **Home directory of the user**
  - **Read access**
  - **Write access**
  - **CINH**
  - **PLC STOP**
  - **No transfer**
  - **Lenze setting:** 1

### C0169
**Parameter | Name:** C0169 | WinCE-User: User 10 with telnet permissions
**Data type:** UNSIGNED_8
**Index:** 24406d = 5F56h

- **User may use telnet**
  - **Setting range (min. value | unit | max. value):** 0
  - **Lenze setting:** 1

### C0170
**Parameter | Name:** C0170 | WinCE-User: User 10 with RAS permissions
**Data type:** UNSIGNED_8
**Index:** 24405d = 5F55h

- **User may use RAS**
  - **Setting range (min. value | unit | max. value):** 0
  - **Lenze setting:** 1

### C0171
**Parameter | Name:** C0171 | FTP: Use authentication
**Data type:** UNSIGNED_32
**Index:** 24404d = 5F54h

- **The FTP user has to identify himself/herself with name and password to establish a connection.**
  - Entering "1" activates the log-in procedure
  - Entering "0" deactivates the log-in procedure
  - **Setting range (min. value | unit | max. value):** 0
  - **Lenze setting:** 1

### C0172
**Parameter | Name:** C0172 | FTP: Allow anonymous
**Data type:** UNSIGNED_32
**Index:** 24403d = 5F53h

- **An unregistered users is allowed to log in. The user name is “anonymous”**
  - Entering “1” activates the log-in procedure
  - Entering “0” deactivates the log-in procedure
  - **Setting range (min. value | unit | max. value):** 0
  - **Lenze setting:** 1

### C0173
**Parameter | Name:** C0173 | FTP: Allow anonymous upload
**Data type:** UNSIGNED_32
**Index:** 24402d = 5F52h

- **An anonymous user is allowed to upload data to the IPC with the following code setting:**
  - FtpAllowAnonymousUpload = true and
  - FtpAllowAnonymous = true.
  - **Setting range (min. value | unit | max. value):** 0
  - **Lenze setting:** 1
### C0174  FTP: Enabled

**Activation of the FTP service**
- Entering "1" activates the FTP service
- Entering "0" deactivates the FTP service

**Setting range** (min. value | unit | max. value) | **Lenze setting**
--- | ---
0 | 1

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0175  Enable RAS server

**Activate or deactivate the RAS server**
- Entering "1" (re-)starts the RAS server
- Entering "0" stops the RAS server

**Setting range** (min. value | unit | max. value) | **Lenze setting**
--- | ---
1 | 1

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0176  RAS: Device name

Select the hardware required to establish remote access from the selection box.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hayes-compatible on COM1:</td>
</tr>
<tr>
<td>2</td>
<td>Hayes-compatible on COM2:</td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0178  RAS: Baud rate

**Baud rate of the RAS device**

**Setting range** (min. value | unit | max. value) | **Lenze setting**
--- | --- | ---
19200 | 19200 |

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0179  RAS: Enable routing

**Pass on RAS client data. An RAS client can, for instance, use the local area network to which the IPC is connected and on which the RAS server is running.**

**Setting range** (min. value | unit | max. value) | **Lenze setting**
--- | --- | ---
1 | 1 |

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0180  Telnet: Use authentication

**The telnet user has to identify himself/herself with name and password when connecting.**
- Entering "1" activates the log-in procedure
- Entering "0" deactivates the log-in procedure

**Setting range** (min. value | unit | max. value) | **Lenze setting**
--- | --- | ---
0 | 1 |

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer
### CO181
**Parameter | Name:** CO181 | Telnet: Enabled  
**Data type:** UNSIGNED_32  
**Index:** 24394d = 5F4Ah

Activation of the telnet service
- Entering "1" activates the telnet service
- Entering "0" deactivates the telnet service

| Setting range (min. value | unit | max. value) | Lenze setting |
|---------------------------|------|-------------|
| 0                         |      | 1           |

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### CO203
**Parameter | Name:** CO203 | UPS: UPS monitoring  
**Data type:** UNSIGNED_8  
**Index:** 24372d = 5F34h

Selection list (Lenze setting printed in bold)
<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 OFF</td>
</tr>
<tr>
<td>1 On</td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### CO204
**Parameter | Name:** CO204 | UPS: Status  
**Data type:** UNSIGNED_8  
**Index:** 24371d = 5F33h

Selection list (read only)
<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ACU controller missing</td>
</tr>
<tr>
<td>85 Battery/capacitor loaded</td>
</tr>
<tr>
<td>86 Battery/capacitor is loaded</td>
</tr>
<tr>
<td>87 -</td>
</tr>
<tr>
<td>88 -</td>
</tr>
<tr>
<td>89 UPS buffers system</td>
</tr>
<tr>
<td>90 Battery/capacitor short circuit</td>
</tr>
<tr>
<td>91 Battery/capacitor missing</td>
</tr>
<tr>
<td>92 Battery/capacitor defective</td>
</tr>
<tr>
<td>93 ACU controller defective</td>
</tr>
<tr>
<td>94 -</td>
</tr>
<tr>
<td>95 Battery/capacitor state undef.</td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### CO205
**Parameter | Name:** CO205 | UPS: Supply voltage  
**Data type:** FLOAT_32  
**Index:** 24370d = 5F32h

Display range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>V</td>
<td>34</td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### CO207
**Parameter | Name:** CO207 | UPS: Battery/capacitor voltage  
**Data type:** FLOAT_32  
**Index:** 24368d = 5F30h

Display range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer
## Industrial PC | Parameter setting & configuration
### Parameter reference
### Parameters of standard devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0208</strong></td>
<td>UPS: Display light after volt. fail.</td>
<td><strong>Selection list</strong> (Lenze setting printed in bold)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information</strong></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>On</td>
</tr>
<tr>
<td></td>
<td>☑ Read access</td>
<td>☑ Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0209</strong></td>
<td>UPS: Number of voltage dips</td>
<td><strong>Display range</strong> (min. value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>☑ Read access</td>
<td>☑ Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0210</strong></td>
<td>UPS: Supply voltage OK</td>
<td><strong>Selection list</strong> (read only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information</strong></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>☑ Read access</td>
<td>☐ Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0211</strong></td>
<td>UPS: Voltage failure</td>
<td><strong>Selection list</strong> (read only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information</strong></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>☑ Read access</td>
<td>☐ Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0212</strong></td>
<td>UPS: Firmware version</td>
<td><strong>Selection list</strong> (Lenze setting printed in bold)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information</strong></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>1750</td>
<td>1750</td>
</tr>
<tr>
<td></td>
<td>1500</td>
<td>1500</td>
</tr>
<tr>
<td></td>
<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>750</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>☑ Read access</td>
<td>☐ Write access</td>
</tr>
</tbody>
</table>

The UPS buffers the system without further action. If the voltage dip takes longer than the time set here:
- The PLC is stopped.
- The PLC saves the retain variables, logbook entries and visualisation data (trends and alarms).
- The timer **C00214** is started.
### Parameter Reference

#### Parameters of Standard Devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0213</strong></td>
<td>UPS: Buffer time without action</td>
<td>0 s</td>
<td>255</td>
<td>0 s</td>
<td></td>
</tr>
<tr>
<td><strong>C0214</strong></td>
<td>UPS: Buffer time until shutdown</td>
<td>0 s</td>
<td>255</td>
<td>0 s</td>
<td></td>
</tr>
<tr>
<td><strong>C0216</strong></td>
<td>UPS: Resp. after voltage failure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C0217</strong></td>
<td>UPS: Use ACPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 14.3 Ethernet interface (on board)

This chapter lists all parameters of the Ethernet interface (on board) of the Industrial PC in numerically ascending order.

### C0221

**Parameter | Name:** C0221 | **Device:** Type key  
Data type: VISIBLE_STRING  
Index: 24354d = 5F22h

Type key of the interface

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0222

**Parameter | Name:** C0222 | **Device:** Type version  
Data type: VISIBLE_STRING  
Index: 24353d = 5F21h

Version number of the interface

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0223

**Parameter | Name:** C0223 | **Device:** Name  
Data type: VISIBLE_STRING  
Index: 24352d = 5F20h

Device name of the interface

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0238

**Parameter | Name:** C0238 | **Device:** Apply IP configuration  
Data type: UNSIGNED_16  
Index: 24337d = 5F11h

Code for activating the set configuration. The interface is activated by writing a "1".

**Selection list (Lenze setting printed in bold)**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Activate device</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>No command</td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0240

**Parameter | Name:** C0240 | **Device:** Enable DhcP  
Data type: UNSIGNED_32  
Index: 24335d = 5F0Fh

Activation of the configuration. DHCP states:
- "0" = Inactive
- "1" = Active

If DHCP is active, the codes 21-25 do not have any function

**Setting range (min. value | unit | max. value)**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0241

**Parameter | Name:** C0241 | **Device:** IP address  
Data type: VISIBLE_STRING  
Index: 24334d = 5F0Eh

IP address of the interface

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C0242

**Parameter | Name:** C0242 | **Device:** Subnet mask  
Data type: VISIBLE_STRING  
Index: 24333d = 5F0Dh

Subnet mask of the interface

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### Parameter reference

**Ethernet interface (on board)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0243</strong></td>
<td>Default gateway</td>
<td>Index: 24332d = 5F0Ch</td>
</tr>
<tr>
<td><strong>C0244</strong></td>
<td>Domain</td>
<td>Index: 24331d = 5F0Bh</td>
</tr>
<tr>
<td><strong>C0245</strong></td>
<td>Host name</td>
<td>Index: 24330d = 5F0Ah</td>
</tr>
<tr>
<td><strong>C0246</strong></td>
<td>MAC address</td>
<td>Index: 24329d = 5F09h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C0243</strong></td>
<td>Default gateway</td>
<td>Index: 24332d = 5F0Ch</td>
</tr>
<tr>
<td><strong>C0244</strong></td>
<td>Domain</td>
<td>Index: 24331d = 5F0Bh</td>
</tr>
<tr>
<td><strong>C0245</strong></td>
<td>Host name</td>
<td>Index: 24330d = 5F0Ah</td>
</tr>
<tr>
<td><strong>C0246</strong></td>
<td>MAC address</td>
<td>Index: 24329d = 5F09h</td>
</tr>
</tbody>
</table>

#### C0243 | Default gateway
 Default gateway of the interface
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### C0244 | Domain
 Domain name of the interface
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### C0245 | Host name
 Host name of the interface
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### C0246 | MAC address
 MAC address (6 8-bit hexadecimal numbers) (e.g. 00:af:13:42:01:a8)
- Read access
- Write access
- CINH
- PLC STOP
- No transfer
14.4 Panel

This chapter lists all parameters of the optional panel in numerically ascending order.

C0401

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C0401</th>
<th>Device: Type key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: VISIBLE_STRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index: 24174d = 5E6Eh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type key of the panel. At the moment only "panel" is defined.

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C0402

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C0402</th>
<th>Device: Type version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: VISIBLE_STRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index: 24173d = 5E6Dh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Version number of the parameter description

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C0403

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C0403</th>
<th>Device: Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: VISIBLE_STRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index: 24172d = 5E6Ch</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Device name of the panel

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C0420

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C0420</th>
<th>Panel: Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index: 24155d = 5E5Bh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Horizontal resolution of the panel

Display range (min. value | unit | max. value)

| 160 | 2400 |

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C0421

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C0421</th>
<th>Panel: Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index: 24154d = 5E5Ah</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vertical resolution of the panel

Display range (min. value | unit | max. value)

| 100 | 2000 |

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C0422

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C0422</th>
<th>Dimming value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: UNSIGNED_8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index: 24153d = 5E59h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter the actual brightness value of the display. The numerical values are between the
- maximum = 0 and the
- minimum = 63

Setting range (min. value | unit | max. value) Lenze setting

| 0 | 63 | 0 |

Read access □ Write access □ CINH □ PLC STOP □ No transfer
### Parameter C0423: Brightness: Upper limit

Enter the maximum brightness value of the display. The numerical values are between the
- maximum = 0 and the
- minimum = 63

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
| 0                        |      | 63          |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### Parameter C0424: Auto dimming time

Enter the time after which the display is dimmed automatically. The numerical values are between the
- maximum = 0 and the
- minimum = 255

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
| 0 s                      |      | 255 s       |

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### Parameter C0431: Key status

Key status as a numerical value

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### Parameter C0432: Key F1: Function

Assignment of F1 key function. The different functions are assigned via a selection list.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 None</td>
<td></td>
</tr>
<tr>
<td>1 Start program</td>
<td></td>
</tr>
<tr>
<td>2 Touch keyboard</td>
<td></td>
</tr>
<tr>
<td>3 Right mouseclick</td>
<td></td>
</tr>
<tr>
<td>4 Run AP script</td>
<td></td>
</tr>
<tr>
<td>5 Start Control Panel</td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### Parameter C0433: Key F1: Parameter

Name of the script or program to be executed

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### C0434

**Parameter | Name:** C0434 | Key F2: Function  
**Data type:** UNSIGNED_32  
**Index:** 24141d = 5E4Dh  
Assignment of F2 key function. The different functions are assigned via a selection list.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 None</td>
<td></td>
</tr>
<tr>
<td>1 Start program</td>
<td></td>
</tr>
<tr>
<td>2 Touch keyboard</td>
<td></td>
</tr>
<tr>
<td>3 Right mouseclick</td>
<td></td>
</tr>
<tr>
<td>4 Run AP script</td>
<td></td>
</tr>
<tr>
<td>5 Start Control Panel</td>
<td></td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0435

**Parameter | Name:** C0435 | Key F2: Parameter  
**Data type:** VISIBLE_STRING  
**Index:** 24140d = 5E4Ch  
Name of the script or program to be executed

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0436

**Parameter | Name:** C0436 | Key F3: Function  
**Data type:** UNSIGNED_32  
**Index:** 24139d = 5E4Bh  
Assignment of F3 key function. The different functions are assigned via a selection list.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 None</td>
<td></td>
</tr>
<tr>
<td>1 Start program</td>
<td></td>
</tr>
<tr>
<td>2 Touch keyboard</td>
<td></td>
</tr>
<tr>
<td>3 Right mouseclick</td>
<td></td>
</tr>
<tr>
<td>4 Run AP script</td>
<td></td>
</tr>
<tr>
<td>5 Start Control Panel</td>
<td></td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0437

**Parameter | Name:** C0437 | Key F3: Parameter  
**Data type:** VISIBLE_STRING  
**Index:** 24138d = 5E4Ah  
Name of the script or program to be executed

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C0438

**Parameter | Name:** C0438 | Key F4: Function  
**Data type:** UNSIGNED_32  
**Index:** 24137d = 5E49h  
Assignment of F4 key function. The different functions are assigned via a selection list.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 None</td>
<td></td>
</tr>
<tr>
<td>1 Start program</td>
<td></td>
</tr>
<tr>
<td>2 Touch keyboard</td>
<td></td>
</tr>
<tr>
<td>3 Right mouseclick</td>
<td></td>
</tr>
<tr>
<td>4 Run AP script</td>
<td></td>
</tr>
<tr>
<td>5 Start Control Panel</td>
<td></td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0439</td>
<td>Key F4: Parameter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data type: VISIBLE_STRING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index: 24136e = 5E48h</td>
</tr>
</tbody>
</table>

Name of the script or program to be executed

- ☑ Read access
- ☑ Write access
- ☐ CINH
- ☐ PLC STOP
- ☐ No transfer
## 14.5 PLC (Logic/Motion)

In this chapter all parameters of the PLC (Logic/Motion) are listed in numerically ascending order.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0601</td>
<td>Type key</td>
<td>VISIBLE_STRING</td>
<td>23974d = 5DA6h</td>
</tr>
<tr>
<td>C0602</td>
<td>Type version</td>
<td>VISIBLE_STRING</td>
<td>23973d = 5DA5h</td>
</tr>
<tr>
<td>C0603</td>
<td>Name</td>
<td>VISIBLE_STRING</td>
<td>23972d = 5DA4h</td>
</tr>
<tr>
<td>C0620</td>
<td>Status</td>
<td>VISIBLE_STRING</td>
<td>23955d = 5D93h</td>
</tr>
<tr>
<td>C0621</td>
<td>PLC project: ID</td>
<td>INTEGER_32</td>
<td>23954d = 5D92h</td>
</tr>
<tr>
<td>C0622</td>
<td>PLC project: Name</td>
<td>VISIBLE_STRING</td>
<td>23953d = 5D91h</td>
</tr>
<tr>
<td>C0623</td>
<td>PLC project: Title</td>
<td>VISIBLE_STRING</td>
<td>23952d = 5D90h</td>
</tr>
<tr>
<td>C0624</td>
<td>PLC project: Version</td>
<td>VISIBLE_STRING</td>
<td>23951d = 5D8Fh</td>
</tr>
</tbody>
</table>
### C0625

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: <strong>C0625</strong></th>
<th>PLC project: <strong>Author</strong></th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23950 = 5D8Eh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmer of the PLC project</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Read access</td>
<td>☐ Write access</td>
<td>☐ CINH</td>
<td>☐ PLC STOP</td>
<td>☐ No transfer</td>
</tr>
</tbody>
</table>

### C0626

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: <strong>C0626</strong></th>
<th>PLC project: <strong>Description</strong></th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23949 = 5D8Dh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the PLC project</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Read access</td>
<td>☐ Write access</td>
<td>☐ CINH</td>
<td>☐ PLC STOP</td>
<td>☐ No transfer</td>
</tr>
</tbody>
</table>
14.6 Industrial PC extension modules

This section gives an overview of the parameters of the different extension modules for the Industrial PC. The Industrial PC is able to support a maximum of two communication cards at the same time. The following communication cards can be applied:

- CAN communication card (MC-CAN2) (\textsection 162)
- EtherCAT communication card (MC-ETC) (\textsection 172)
- PROFIBUS master communication card (MC-PBM) (\textsection 207)
- Ethernet communication card (MC-ETH) (\textsection 209)
14.6.1 CAN communication card (MC-CAN2)

In this chapter all parameters of the IPC MC-CAN2 communication card are listed in numerically ascending order.

Note!

If a CAN card is replaced, the parameters of the card previously used must be checked and deviant settings will have to be adjusted!

Card parameters, the card has been installed in slot 1

C1031 Parameter | Name: C1031 | Device: Type key
Card identification
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

C1032 Parameter | Name: C1032 | Device: Type version
Version number of the card
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

C1033 Parameter | Name: C1033 | Device: Name
Device name of the card
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

C1034 Parameter | Name: C1034 | Device: Software version
Software version of the card
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

C1035 Parameter | Name: C1035 | Device: Hardware version
Hardware version of the card
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

C1036 Parameter | Name: C1036 | Device: Serial number
Serial number of the card
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

C1037 Parameter | Name: C1037 | Device: Manufacturer
Manufacturer of the card
☐ Read access ☐ Write access ☐ CINH ☐ PLC STOP ☐ No transfer
### C1038

**Parameter | Name:** C1038 | Device: Manufacturing date

Manufacturing date of the card

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

#### Parameters of interface 1, card has been installed in slot 1

### C1073

**Parameter | Name:** C1073 | Device: Driver index

Index of the device driver. Since there can be more than one CAN interface, several instances can be run via the driver.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

### C1081

**Parameter | Name:** C1081 | Sync master: Interface index

Note: Restart the IPC after changing this parameter!

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

### C1082

**Parameter | Name:** C1082 | Baud rate

Baud rate of the CAN interface. The value is assigned from a selection list.

**Selection list** (Lenze setting printed in bold)

| 7  | 5 |
| 6  | 10 |
| 5  | 20 |
| 3  | 50 |
| 8  | 100 |
| 2  | 125 |
| 1  | 250 |
| 0  | 500 |
| 4  | 1000 |

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

### C1090

**Parameter | Name:** C1090 | Tx PDO counter

PDO counter for sent CAN messages

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>
### C1091 | Rx PDO counter

PDO counter for received CAN messages

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

Read access  □ Write access  □ CINH  □ PLC STOP  □ No transfer

### C1092 | Bus load

Specification of the average bus load. The bus load is calculated as follows:  \( \text{Bus load} = \text{Value in percent} \times 1000 \)

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

Read access  □ Write access  □ CINH  □ PLC STOP  □ No transfer

### C1093 | Error counter

Error counter since last initialisation of the CAN interface

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

Read access  □ Write access  □ CINH  □ PLC STOP  □ No transfer

### C1094 | Last error code

Code of the last error that occurred

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
</table>

Read access  □ Write access  □ CINH  □ PLC STOP  □ No transfer

### C1096 | CAN node ID

Setting range (min. value | unit | max. value)  Lenze setting

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
| 0                        | 128  | 63          |

Read access  □ Write access  □ CINH  □ PLC STOP  □ No transfer

### C1098 | Channel

Setting range (min. value | unit | max. value)  Lenze setting

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
| 0                        |      |             |

Read access  □ Write access  □ CINH  □ PLC STOP  □ No transfer
### Parameters of interface 2, card has been installed in slot 1

**C1113**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1113</th>
<th>Device: Driver index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index of the device driver. Since there can be more than one CAN interface, several instances can be run via the driver.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display range</strong> (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>○ Read access</td>
<td>○ Write access</td>
<td>○ CINH</td>
</tr>
</tbody>
</table>

**Note:** Restart the IPC after changing this parameter!

**C1121**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1121</th>
<th>Sync master: Interface index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lenze setting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4294967295</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Setting range</strong> (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>○ Read access</td>
<td>○ Write access</td>
<td>○ CINH</td>
</tr>
</tbody>
</table>

**C1122**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1122</th>
<th>Baud rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baud rate of the CAN interface. The value is assigned from a selection list.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Selection list</strong> (Lenze setting printed in bold)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>○ Read access</td>
<td>○ Write access</td>
<td>○ CINH</td>
</tr>
</tbody>
</table>

**C1130**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1130</th>
<th>Tx PDO counter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PDO counter for sent CAN messages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display range</strong> (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>○ Read access</td>
<td>○ Write access</td>
<td>○ CINH</td>
</tr>
</tbody>
</table>

**C1131**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1131</th>
<th>Rx PDO counter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PDO counter for received CAN messages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display range</strong> (min. value</td>
<td>unit</td>
<td>max. value)</td>
</tr>
<tr>
<td>○ Read access</td>
<td>○ Write access</td>
<td>○ CINH</td>
</tr>
</tbody>
</table>
Parameter | Name: **C1132 | Bus load**

Specification of the average bus load. The bus load is calculated as follows: $\text{Bus load} = \text{Value in percent} \times 1000$

Display range (min. value | unit | max. value)

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

Parameter | Name: **C1133 | Error counter**

Error counter since last initialisation of the CAN interface

Display range (min. value | unit | max. value)

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

Parameter | Name: **C1134 | Last error code**

Code of the last error that occurred

Display range (min. value | unit | max. value)

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

Parameter | Name: **C1136 | CAN node ID**

Setting range (min. value | unit | max. value)

- Lenze setting
  - 0
  - 128

Parameter | Name: **C1138 | Channel**

Setting range (min. value | unit | max. value)

- Lenze setting
  - 0
Industrial PC | Parameter setting & configuration
Parameter reference
Industrial PC extension modules

Card parameters, the card has been installed in slot 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Visible String</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1531</th>
<th><strong>Device:</strong> Type key</th>
<th>Visible String</th>
<th>23044d = 5A04h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Card identification</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1532</th>
<th><strong>Device:</strong> Type version</th>
<th>Visible String</th>
<th>23043d = 5A03h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Version number of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1533</th>
<th><strong>Device:</strong> Name</th>
<th>Visible String</th>
<th>23042d = 5A02h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Device name of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1534</th>
<th><strong>Device:</strong> Software version</th>
<th>Visible String</th>
<th>23041d = 5A01h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Software version of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1535</th>
<th><strong>Device:</strong> Hardware version</th>
<th>Visible String</th>
<th>23040d = 5A00h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Hardware version of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1536</th>
<th><strong>Device:</strong> Serial number</th>
<th>Visible String</th>
<th>23039d = 59FFh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Serial number of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1537</th>
<th><strong>Device:</strong> Manufacturer</th>
<th>Visible String</th>
<th>23038d = 59FEh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Manufacturer of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1538</th>
<th><strong>Device:</strong> Manufacturing date</th>
<th>Visible String</th>
<th>23037d = 59FDh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Manufacturing date of the card</strong></td>
<td>Read access</td>
<td>Write access</td>
</tr>
</tbody>
</table>
### Parameters of interface 1, card has been installed in slot 2

**C1573**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 23002d = 59DAh</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1573</td>
<td>Device: Driver index</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Index of the device driver. Since there can be more than one CAN interface, several instances can be run via the driver.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☐  Write access ☐  CINH ☐  PLC STOP ☐  No transfer

**C1581**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 22994d = 59D2h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1581</td>
<td>Sync master: Interface index</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Restart the IPC after changing this parameter!

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>4294967295</td>
</tr>
</tbody>
</table>

Read access ☐  Write access ☐  CINH ☐  PLC STOP ☐  No transfer

**C1582**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 22993d = 59D1h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1582</td>
<td>Baud rate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Baud rate of the CAN interface. The value is assigned from a selection list.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 5</td>
</tr>
<tr>
<td>6 10</td>
</tr>
<tr>
<td>5 20</td>
</tr>
<tr>
<td>3 50</td>
</tr>
<tr>
<td>8 100</td>
</tr>
<tr>
<td>2 125</td>
</tr>
<tr>
<td>1 250</td>
</tr>
<tr>
<td>0 500</td>
</tr>
<tr>
<td>4 1000</td>
</tr>
</tbody>
</table>

Read access ☐  Write access ☐  CINH ☐  PLC STOP ☐  No transfer

**C1590**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 22985d = 59C9h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1590</td>
<td>Tx PDO counter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PDO counter for sent CAN messages

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☐  Write access ☐  CINH ☐  PLC STOP ☐  No transfer

**C1591**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index: 22984d = 59C8h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1591</td>
<td>Rx PDO counter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PDO counter for received CAN messages

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☐  Write access ☐  CINH ☐  PLC STOP ☐  No transfer
### C1592 | Bus load

- **Parameter**: C1592
- **Name**: Bus load
- **Data type**: UNSIGNED_32
- **Index**: 22983d = 59C7h

Specification of the average bus load. The bus load is calculated as follows: \( \text{Bus load} = \text{Value in percent} \times 1000 \)

**Display range (min. value | unit | max. value)**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1593 | Error counter

- **Parameter**: C1593
- **Name**: Error counter
- **Data type**: UNSIGNED_32
- **Index**: 22982d = 59C6h

Error counter since last initialisation of the CAN interface

**Display range (min. value | unit | max. value)**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1594 | Last error code

- **Parameter**: C1594
- **Name**: Last error code
- **Data type**: UNSIGNED_32
- **Index**: 22981d = 59C5h

Code of the last error that occurred

**Display range (min. value | unit | max. value)**

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1596 | CAN node address

- **Parameter**: C1596
- **Name**: CAN node address
- **Data type**: UNSIGNED_8
- **Index**: 22979d = 59C3h

Setting range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>128</td>
</tr>
<tr>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1598 | Channel

- **Parameter**: C1598
- **Name**: Channel
- **Data type**: UNSIGNED_32
- **Index**: 22977d = 59C1h

Setting range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### Parameters of interface 2, card has been installed in slot 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1613</td>
<td>Device: Driver index</td>
<td>Index: 22962d = 59B2h</td>
</tr>
</tbody>
</table>

Index of the device driver. Since there can be more than one CAN interface, several instances can be run via the driver.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1621</td>
<td>Sync master: Interface index</td>
<td>Index: 22954d = 59AAh</td>
</tr>
</tbody>
</table>

Note: Restart the IPC after changing this parameter!

<table>
<thead>
<tr>
<th>Setting range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>4294967295</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1622</td>
<td>Baud rate</td>
<td>Index: 22953d = 59A9h</td>
</tr>
</tbody>
</table>

Baud rate of the CAN interface. The value is assigned from a selection list.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 5</td>
</tr>
<tr>
<td>6 10</td>
</tr>
<tr>
<td>5 20</td>
</tr>
<tr>
<td>3 50</td>
</tr>
<tr>
<td>8 100</td>
</tr>
<tr>
<td>2 125</td>
</tr>
<tr>
<td>1 250</td>
</tr>
<tr>
<td>0 500</td>
</tr>
<tr>
<td>4 1000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1630</td>
<td>Tx PDO counter</td>
<td>Index: 22945d = 59A1h</td>
</tr>
</tbody>
</table>

PDO counter for sent CAN messages

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1631</td>
<td>Rx PDO counter</td>
<td>Index: 22944d = 59A0h</td>
</tr>
</tbody>
</table>

PDO counter for received CAN messages

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>
Industrial PC | Parameter setting & configuration
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C1632

Parameter | Name: C1632 | Bus load
Data type: UNSIGNED_32
Index: 22943d = 599Fh

Specification of the average bus load. The bus load is calculated as follows: \( \text{Bus load} = \text{Value in percent} \times 1000 \)

Display range (min. value | unit | max. value)

Read access | Write access | CINH | PLC STOP | No transfer

C1633

Parameter | Name: C1633 | Error counter
Data type: UNSIGNED_32
Index: 22942d = 599Eh

Error counter since last initialisation of the CAN interface

Display range (min. value | unit | max. value)

Read access | Write access | CINH | PLC STOP | No transfer

C1634

Parameter | Name: C1634 | Last error code
Data type: UNSIGNED_32
Index: 22941d = 599Dh

Code of the last error that occurred

Display range (min. value | unit | max. value)

Read access | Write access | CINH | PLC STOP | No transfer

C1636

Parameter | Name: C1636 | CAN node address
Data type: UNSIGNED_8
Index: 22939d = 599Bh

Setting range (min. value | unit | max. value) Lenze setting

0 | 128 | 63

Read access | Write access | CINH | PLC STOP | No transfer

C1638

Parameter | Name: C1638 | Channel
Data type: UNSIGNED_32
Index: 22937d = 5999h

Setting range (min. value | unit | max. value) Lenze setting

0

Read access | Write access | CINH | PLC STOP | No transfer
### 14.6.2 EtherCAT communication card (MC-ETC)

**Note!**

EtherCAT is not available for Industrial PCs of the device series EL 1xx, EL x8xx, CS x8xx and CPC x8xx in combination with the Control technology release 2.5.

**Note!**

- An Industrial PC can maximally have one MC-ETC communication card. Irrespective of the slot the card has been installed in, the card’s name in the »WebConfig« is MC-ETC1.
- Depending on the used slot, the code numbers differ by an offset of '500'. So for a communication card in slot 2, an offset of '500' has been added to the code numbers of a slot 1 card.

In this chapter all parameters of the IPC EtherCAT MC-ETC communication card are listed in numerically ascending order.

#### Card parameters in slot 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1031</td>
<td></td>
<td></td>
<td>23544d = 5BF8h</td>
</tr>
<tr>
<td>C1032</td>
<td></td>
<td></td>
<td>23543d = 5BF7h</td>
</tr>
<tr>
<td>C1033</td>
<td></td>
<td></td>
<td>23542d = 5BF6h</td>
</tr>
<tr>
<td>C1034</td>
<td></td>
<td></td>
<td>23541d = 5BF5h</td>
</tr>
<tr>
<td>C1035</td>
<td></td>
<td></td>
<td>23540d = 5BF4h</td>
</tr>
</tbody>
</table>

**Card identification**

- Read access: Yes
- Write access: No
- CINH: No
- PLC STOP: No
- No transfer: Yes

**Version number of the card**

- Read access: Yes
- Write access: No
- CINH: No
- PLC STOP: No
- No transfer: Yes

**Device name of the card**

- Read access: Yes
- Write access: No
- CINH: No
- PLC STOP: No
- No transfer: Yes

**Software version of the card**

- Read access: Yes
- Write access: No
- CINH: No
- PLC STOP: No
- No transfer: Yes

**Hardware version of the card**

- Read access: Yes
- Write access: No
- CINH: No
- PLC STOP: No
- No transfer: Yes
## Interface parameters of the card in slot 1

### C1074

**Parameter | Name:**

C1074 | ECAT MAC address

**Data type:** VISIBLE_STRING

**Index:** 23501d = 5BCDh

**Description:**

MAC address of the interface

- **Read access:** Yes
- **Write access:** No
- **PLC STOP:** No
- **No transfer:** No

### C1080/1

**Parameter | Name:**

C1080/1 | ECAT master config.: Date

**Data type:** DATE

**Index:** 23495.1d = 0x5BC7.0x01h

**Description:**

Date of the master configuration file in the file system of the IPC

The data manager refers to the `..\storage\IPC\PLC` directory for the date of the master configuration file. If this file is not available, the date will be displayed as "01/01/1980 00:00:00".

- **Read access:** Yes
- **Write access:** No
- **PLC STOP:** No
- **No transfer:** No

### C1080/2

**Parameter | Name:**

C1080/2 | ECAT master config.: Checksum

**Data type:** UNSIGNED_32

**Index:** 23495.2d = 0x5BC7.0x02h

**Description:**

Checksum of the master configuration file in the file system of the IPC

The data manager refers to the master configuration file in the `..\storage\IPC\PLC` directory for the checksum. If this file is not available, the value will be displayed as "0x00000000".

- **Read access:** Yes
- **Write access:** No
- **PLC STOP:** No
- **No transfer:** No

### C1080/3

**Parameter | Name:**

C1080/3 | ECAT stack: Master checksum

**Data type:** UNSIGNED_32

**Index:** 23495.3d = 0x5BC7.0x03h

**Description:**

The stack determines the checksum of the loaded/active master configuration file. If no loaded/active master configuration file is available, the value will be displayed as "0x00000000".

- **Read access:** Yes
- **Write access:** No
- **PLC STOP:** No
- **No transfer:** No
### C1080/4

**Parameter | Name:** C1080/4 | ECAT bus scan result

Brief information on whether the master configuration complies with the physical bus structure or not. The stack compares the master configuration with the actual bus structure.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No compliance</td>
<td>Master configuration does not comply with bus structure</td>
</tr>
<tr>
<td>1 OK</td>
<td>Master configuration complies with bus structure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

### C1081/1

**Parameter | Name:** C1081/1 | ECAT state: State change

Change into master state via this code

**Note:** This parameter should only be set to examine start-up problems (e.g. master/bus does not reach the 'Operational' state). Setting this parameters only sets the state of the master stack. All other nodes remain in their current states. Changing into the master state via this code may cause unstable system states.

- The bus state can never be higher than initiated by PLC.
- A new loading process of the master configuration cannot be initiated.
- Normally, loading the PLC program will stop the bus and bring it to 'Pre-Operational' state. If this fails, the bus remains in either 'Unknown' or 'Initialisation' state.
- Normally, starting the PLC program will bring the bus to 'Operational' state. If this fails, the bus remains in either 'Pre-Operational' or 'Safe Operational' state.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No action</td>
</tr>
<tr>
<td>1 Init</td>
</tr>
<tr>
<td>2 Pre-Operational</td>
</tr>
<tr>
<td>4 Safe Operational</td>
</tr>
<tr>
<td>8 Operational</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

### C1081/2

**Parameter | Name:** C1081/2 | ECAT master: State

Display of the current state of the master

<table>
<thead>
<tr>
<th>Selection list (read only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Unknown</td>
</tr>
<tr>
<td>1 Init</td>
</tr>
<tr>
<td>2 Pre-Operational</td>
</tr>
<tr>
<td>3 Bootstrap mode</td>
</tr>
<tr>
<td>4 Safe Operational</td>
</tr>
<tr>
<td>8 Operational</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>
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C1081/3
Parameter Name: C1081/3 | ECAT master in requested state
Data type: UNSIGNED_8
Index: 23494.3d = 0x5BC6.0x03h

Normally, the state is requested by the PLC. For possible requested states see C1080/1 (174).
- Value "0": Master is not in a requested state.
- Value "1": Master is in a requested state.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C1081/4
Parameter Name: C1081/4 | ECAT slaves in requested state
Data type: UNSIGNED_8
Index: 23494.4d = 0x5BC6.0x04h

- Value "0": One or more slaves differ from the state requested by the master.
- Value "1": All slaves have the state requested by the master.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Read access □ Write access □ CINH □ PLC STOP □ No transfer

C1081/5
Parameter Name: C1081/5 | ECAT master: State information
Data type: UNSIGNED_32
Index: 23494.5d = 0x5BC6.0x05h

Display of additional information on the current state of the master
The bits are set to value 1 if the respective states are reached.
### Parameter Reference

#### Industrial PC Extension Modules

**Parameter | Name:**

**C1081/5 | ECAT master: State information**

<table>
<thead>
<tr>
<th>Value is bit-coded:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit 0</td>
<td>Master ok</td>
</tr>
<tr>
<td>Bit 1</td>
<td>Reserved 1</td>
</tr>
<tr>
<td>Bit 2</td>
<td>Reserved 2</td>
</tr>
<tr>
<td>Bit 3</td>
<td>Reserved 3</td>
</tr>
<tr>
<td>Bit 4</td>
<td>Init</td>
</tr>
<tr>
<td>Bit 5</td>
<td>Pre-Operational</td>
</tr>
<tr>
<td>Bit 6</td>
<td>Safe Operational</td>
</tr>
<tr>
<td>Bit 7</td>
<td>Operational</td>
</tr>
<tr>
<td>Bit 8</td>
<td>Slaves in requested state</td>
</tr>
<tr>
<td>Bit 9</td>
<td>Master in requested state</td>
</tr>
<tr>
<td>Bit 10</td>
<td>Bus scan result</td>
</tr>
<tr>
<td>Bit 11</td>
<td>Reserved 4</td>
</tr>
<tr>
<td>Bit 12</td>
<td>DC: Activated</td>
</tr>
<tr>
<td>Bit 13</td>
<td>DC: Synchronised</td>
</tr>
<tr>
<td>Bit 14</td>
<td>DC: Busy</td>
</tr>
<tr>
<td>Bit 15</td>
<td>Reserved 5</td>
</tr>
<tr>
<td>Bit 16</td>
<td>Link up</td>
</tr>
<tr>
<td>Bit 17</td>
<td>Reserved 6</td>
</tr>
<tr>
<td>Bit 18</td>
<td>Reserved 7</td>
</tr>
<tr>
<td>Bit 19</td>
<td>Reserved 8</td>
</tr>
<tr>
<td>Bit 20</td>
<td>Reserved 9</td>
</tr>
<tr>
<td>Bit 21</td>
<td>Reserved 10</td>
</tr>
<tr>
<td>Bit 22</td>
<td>Reserved 11</td>
</tr>
<tr>
<td>Bit 23</td>
<td>Reserved 12</td>
</tr>
<tr>
<td>Bit 24</td>
<td>Reserved 13</td>
</tr>
<tr>
<td>Bit 25</td>
<td>Reserved 14</td>
</tr>
<tr>
<td>Bit 26</td>
<td>Reserved 15</td>
</tr>
<tr>
<td>Bit 27</td>
<td>Reserved 16</td>
</tr>
<tr>
<td>Bit 28</td>
<td>Reserved 17</td>
</tr>
<tr>
<td>Bit 29</td>
<td>Reserved 18</td>
</tr>
<tr>
<td>Bit 30</td>
<td>Reserved 19</td>
</tr>
<tr>
<td>Bit 31</td>
<td>Reserved 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

**C1081/6**

**Parameter | Name:**

**C1081/6 | ECAT bus scan**

**Activation of the bus scan**

The bus scan updates all EtherCAT codes.

**Selection list (Lenze setting printed in bold)**

<table>
<thead>
<tr>
<th>0</th>
<th>No action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The bus is scanned</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>
C1082/1
Parameter | Name:
C1082/1 | ECAT DC: State

Display of the state of the distributed clocks
The bits are set to value 1 if the respective states are reached.

Value is bit-coded:

<table>
<thead>
<tr>
<th>Bit 0</th>
<th>DC: Activated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit 1</td>
<td>DC: Synchronised</td>
</tr>
<tr>
<td>Bit 2</td>
<td>DC: Busy</td>
</tr>
</tbody>
</table>

Read access  Write access  CINH  PLC STOP  No transfer

C1082/2
Parameter | Name:
C1082/2 | ECAT DC: Perm. dev. slave sync

Permissible deviation of the distributed clocks of all devices in nanoseconds. If the permissible deviation is exceeded, the master will initiate a resynchronisation of the distributed clocks.

Display range (min. value | unit | max. value)

| 0 | ns | 4294967295 |

Read access  Write access  CINH  PLC STOP  No transfer

C1082/3
Parameter | Name:
C1082/3 | ECAT DC: Current deviation

Current maximum deviation of the distributed clocks of all devices in nanoseconds.

Display range (min. value | unit | max. value)

| 0 | ns | 2147483647 |

Read access  Write access  CINH  PLC STOP  No transfer

C1086/2
Parameter | Name:
C1086/2 | ECAT config.: Checksum CRC-32

Checksum of the master configuration file (loaded/activated by the stack). The stack determines the checksum of the loaded/active master configuration file. If this file is not available, the value "0x00000000" will be displayed.

Read access  Write access  CINH  PLC STOP  No transfer

C1086/3
Parameter | Name:
C1086/3 | ECAT bus: Numb. slaves

Number of slaves connected to the fieldbus

Display range (min. value | unit | max. value)

| 0 | | 4294967295 |

Read access  Write access  CINH  PLC STOP  No transfer

C1086/4
Parameter | Name:
C1086/4 | ECATBus: Numb. slaves with DC

Number of slaves connected to the fieldbus and supported by distributed clocks

Display range (min. value | unit | max. value)

| 0 | | 4294967295 |

Read access  Write access  CINH  PLC STOP  No transfer
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Description:</th>
<th>Data type: UNSIGNED_32</th>
<th>Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1086/5</td>
<td>ECAT config.: No. of slaves</td>
<td>Number of slaves configured in the master configuration file</td>
<td></td>
<td>23489.5d = 0x5BC1.0x05h</td>
</tr>
<tr>
<td>C1086/6</td>
<td>ECAT config.: No. of mailbox slaves</td>
<td>Number of mailbox slaves configured in the master configuration file</td>
<td></td>
<td>23489.6d = 0x5BC1.0x06h</td>
</tr>
<tr>
<td>C1086/7</td>
<td>ECAT counter: Tx frames</td>
<td>Number of sent frames</td>
<td></td>
<td>23493.7d = 0x5BC5.0x07h</td>
</tr>
<tr>
<td>C1086/8</td>
<td>ECAT counter: Rx frames</td>
<td>Number of received frames</td>
<td></td>
<td>23489.8d = 0x5BC1.0x08h</td>
</tr>
<tr>
<td>C1086/9</td>
<td>ECAT counter: Lost frames</td>
<td>Number of lost frames</td>
<td></td>
<td>23489.9d = 0x5BC1.0x09h</td>
</tr>
<tr>
<td>C1086/10</td>
<td>ECAT counter: Cyclic frames</td>
<td>Number of cyclic frames</td>
<td></td>
<td>23489.10d = 0x5BC1.0x0Ah</td>
</tr>
</tbody>
</table>
### C1086/11

**Parameter | Name:** C1086/11 | **ECAT counter:** Cyclic datagrams  
**Data type:** UNSIGNED_32  
**Index:** 23489.11d = 0x5BC1.0x0Bh  

**Number of cyclic datagrams**  
| Display range (min. value | unit | max. value) | 0 | 4294967295 |
|---------------------------|-----|--------------|
| Read access               | Write access | CINH | PLC STOP | No transfer |

### C1086/12

**Parameter | Name:** C1086/12 | **ECAT counter:** Acyclic frames  
**Data type:** UNSIGNED_32  
**Index:** 23489.12d = 0x5BC1.0x0Ch  

**Number of acyclic frames**  
| Display range (min. value | unit | max. value) | 0 | 4294967295 |
|---------------------------|-----|--------------|
| Read access               | Write access | CINH | PLC STOP | No transfer |

### C1086/13

**Parameter | Name:** C1086/13 | **ECAT counter:** Acyclic datagrams  
**Data type:** UNSIGNED_32  
**Index:** 23489.13d = 0x5BC1.0x0Dh  

**Number of acyclic datagrams**  
| Display range (min. value | unit | max. value) | 0 | 4294967295 |
|---------------------------|-----|--------------|
| Read access               | Write access | CINH | PLC STOP | No transfer |
### C1086/14

**Parameter | Name:** C1086/14 | ECAT: Reset individual counters  
**Data type:** UNSIGNED_32  
**Index:** 23489.14d = 0x5BC1.0x0Eh

Reset frame and datagram counters (C1086/7 ... 13)

#### Selection list (Lenze setting printed in bold)

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No action</td>
</tr>
<tr>
<td>1</td>
<td>Reset - All counters</td>
</tr>
<tr>
<td>2</td>
<td>Reset - Tx frame counters</td>
</tr>
<tr>
<td>4</td>
<td>Reset - Rx frame counters</td>
</tr>
<tr>
<td>8</td>
<td>Reset - Lost frame counters</td>
</tr>
<tr>
<td>16</td>
<td>Reset - Cyclic frame counters</td>
</tr>
<tr>
<td>32</td>
<td>Reset - Cyclic datagram counters</td>
</tr>
<tr>
<td>64</td>
<td>Reset - Acyclic frame counters</td>
</tr>
<tr>
<td>128</td>
<td>Reset - Acyclic datagram counters</td>
</tr>
</tbody>
</table>

#### Read access | Write access | CINH | PLC STOP | No transfer

### C1095/1

**Parameter | Name:** C1095/1 | ECAT: Slave addressing mode  
**Data type:** UNSIGNED_8  
**Index:** 23480.1d = 0x5BB8.0x01h

The addressing mode refers to the slave address (C1095/2).

#### Selection list (Lenze setting printed in bold)

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Position addressing</td>
</tr>
<tr>
<td>1</td>
<td>Node addressing</td>
</tr>
</tbody>
</table>

#### Read access | Write access | CINH | PLC STOP | No transfer

### C1095/2

**Parameter | Name:** C1095/2 | ECAT: Slave address  
**Data type:** INTEGER_32  
**Index:** 23480.2d = 0x5BB8.0x02h

Use this code to select a slave whose parameters are to be displayed.  
The addressing mode is specified in code C1095/1. A maximum of 4096 slaves can be addressed after the master.

#### Setting range (min. value | unit | max. value)  

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
<th>Lenze setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>-65536</td>
<td></td>
<td>65536</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Read access | Write access | CINH | PLC STOP | No transfer

### C1096/1

**Parameter | Name:** C1096/1 | ECAT: Valid entry  
**Data type:** UNSIGNED_8  
**Index:** 23479.1d = 0x5BB7.0x01h

This code indicates whether the entries/values of the following subcodes C1096/2 ... 38 are valid or not.  
- Value "0": Invalid entry/value  
- Value "1": Valid entry/value (The parameters of an available slave are displayed.)

#### Display range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
## Industrial PC | Parameter setting & configuration

### Parameter reference

#### Industrial PC extension modules

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>ECAT: Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1096/2</td>
<td>ECAT: Slave manufacturer ID</td>
<td>Identification number of the slave manufacturer (e.g. 0x0000003B for Lenze)</td>
</tr>
<tr>
<td>C1096/3</td>
<td>ECAT: Product code</td>
<td>Product code of the slave</td>
</tr>
<tr>
<td>C1096/4</td>
<td>ECAT: Revision number</td>
<td>Revision number of the slave</td>
</tr>
<tr>
<td>C1096/5</td>
<td>ECAT: Serial number</td>
<td>Serial number of the slave</td>
</tr>
<tr>
<td>C1096/6</td>
<td>ECAT: Slave device name</td>
<td>Device name of the slave. The name is saved to the master configuration file.</td>
</tr>
<tr>
<td>C1096/7</td>
<td>ECAT: Auto increment address</td>
<td>The auto increment address is defined by the position of the slaves. The first node is assigned address &quot;0&quot;. The addresses are assigned consistently in descending order: 0, -1, -2 ...</td>
</tr>
<tr>
<td>C1096/8</td>
<td>ECAT: Physical address</td>
<td>Physical address of the slave. The addresses are assigned consistently in ascending order, starting with 1001.</td>
</tr>
</tbody>
</table>

### C1096/2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/2</th>
<th>ECAT: Slave manufacturer ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>UNSIGNED_32</td>
<td>Index: 23479.2d = 0x5BB7.0x02h</td>
</tr>
</tbody>
</table>

Identification number of the slave manufacturer (e.g. 0x0000003B for Lenze)

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/3

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/3</th>
<th>ECAT: Product code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>UNSIGNED_32</td>
<td>Index: 23479.3d = 0x5BB7.0x03h</td>
</tr>
</tbody>
</table>

Product code of the slave

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/4

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/4</th>
<th>ECAT: Revision number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>UNSIGNED_32</td>
<td>Index: 23479.4d = 0x5BB7.0x04h</td>
</tr>
</tbody>
</table>

Revision number of the slave

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/5

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/5</th>
<th>ECAT: Serial number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>UNSIGNED_32</td>
<td>Index: 23479.5d = 0x5BB7.0x05h</td>
</tr>
</tbody>
</table>

Serial number of the slave

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/6

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/6</th>
<th>ECAT: Slave device name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>VISIBLE_STRING</td>
<td>Index: 23479.6d = 0x5BB7.0x06h</td>
</tr>
</tbody>
</table>

Device name of the slave. The name is saved to the master configuration file.

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/7

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/7</th>
<th>ECAT: Auto increment address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>INTEGER_32</td>
<td>Index: 23479.7d = 0x5BB7.0x07h</td>
</tr>
</tbody>
</table>

The auto increment address is defined by the position of the slaves. The first node is assigned address "0". The addresses are assigned consistently in descending order: 0, -1, -2 ...

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/8

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1096/8</th>
<th>ECAT: Physical address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>UNSIGNED_16</td>
<td>Index: 23479.8d = 0x5BB7.0x08h</td>
</tr>
</tbody>
</table>

Physical address of the slave. The addresses are assigned consistently in ascending order, starting with 1001.

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

---

**Display range (min. value | unit | max. value)**

- C1096/2: -65536 | 0
- C1096/7: -65536 | 0
- C1096/8: 0 | 65536
### C1096/9

**Parameter | Name:**
**C1096/9 | ECAT config.: Physical address**

The physical address of the slave set in the master configuration file.
This address is specified by the »PLC Designer« and assigned consistently in ascending order, starting with 1001.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>65536</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/10

**Parameter | Name:**
**C1096/10 | ECAT: Alias address**

Alias addresses are addresses directly saved on the device (e.g., via DIP switches).
At present, our system does not support alias addresses.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>65536</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### C1096/11

**Parameter | Name:**
**C1096/11 | ECAT: Port state**

Display of the port states/connections (ports 0 ... 3) of slaves.
The structure is bit-coded (WORD).

<table>
<thead>
<tr>
<th>Value is bit-coded:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit 0 Port 0</td>
</tr>
<tr>
<td>Bit 1 Port 1</td>
</tr>
<tr>
<td>Bit 2 Port 2</td>
</tr>
<tr>
<td>Bit 3 Port 3</td>
</tr>
<tr>
<td>Bit 4 Port 0</td>
</tr>
<tr>
<td>Bit 5 Port 1</td>
</tr>
<tr>
<td>Bit 6 Port 2</td>
</tr>
<tr>
<td>Bit 7 Port 3</td>
</tr>
<tr>
<td>Bit 8 Port 0</td>
</tr>
<tr>
<td>Bit 9 Port 1</td>
</tr>
<tr>
<td>Bit 10 Port 2</td>
</tr>
<tr>
<td>Bit 11 Port 3</td>
</tr>
<tr>
<td>Bit 12 Port 0</td>
</tr>
<tr>
<td>Bit 13 Port 1</td>
</tr>
<tr>
<td>Bit 14 Port 2</td>
</tr>
<tr>
<td>Bit 15 Port 3</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
### C1096/12
**Parameter | Name:** C1096/12 | ECAT: DC support

<table>
<thead>
<tr>
<th><strong>Data type:</strong> UNSIGNED_8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index:</strong> 23479.12d = 0x5BB7.0x0Ch</td>
</tr>
</tbody>
</table>

**Support of the distributed clocks by the slave:**
- Value "0": Distributed clocks are not supported.
- Value "1": Distributed clocks are supported.

| **Display range (min. value | unit | max. value)** |
|---------------------|
| 0                   |
| 1                   |

- Read access □ Write access □ CINH □ PLC STOP □ No transfer

### C1096/13
**Parameter | Name:** C1096/13 | ECAT: DC support - 64 bits

<table>
<thead>
<tr>
<th><strong>Data type:</strong> UNSIGNED_8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index:</strong> 23479.13d = 0x5BB7.0x0Dh</td>
</tr>
</tbody>
</table>

**Support of the distributed clocks (64 bits) by the slave:**
- Value "0": Distributed clocks (64 bits) are not supported.
- Value "1": Distributed clocks (64 bits) are supported.

| **Display range (min. value | unit | max. value)** |
|---------------------|
| 0                   |
| 1                   |

- Read access □ Write access □ CINH □ PLC STOP □ No transfer

### C1096/14
**Parameter | Name:** C1096/14 | Mailbox support

<table>
<thead>
<tr>
<th><strong>Data type:</strong> UNSIGNED_8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index:</strong> 23479.14d = 0x5BB7.0x0Eh</td>
</tr>
</tbody>
</table>

**Mailbox support by the slave:**
- Value "0": Mailbox is not supported.
- Value "1": Mailbox is supported.

| **Display range (min. value | unit | max. value)** |
|---------------------|
| 0                   |
| 1                   |

- Read access □ Write access □ CINH □ PLC STOP □ No transfer

### C1096/15
**Parameter | Name:** C1096/15 | ECAT: Requested state

<table>
<thead>
<tr>
<th><strong>Data type:</strong> UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index:</strong> 23479.15d = 0x5BB7.0x0Fh</td>
</tr>
</tbody>
</table>

This code displays the state specified by the master. At the same time, the user can request a state here.

**Note:** This is a debug code. Setting this parameter only sets the state of the currently selected slave. All other nodes remain in their present states. Changing the state of the slave via this code may cause unstable system states.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0     Invalid</td>
</tr>
<tr>
<td>1     Init</td>
</tr>
<tr>
<td>2     Pre-Operational</td>
</tr>
<tr>
<td>4     Safe Operational</td>
</tr>
<tr>
<td>8     Operational</td>
</tr>
</tbody>
</table>

- Read access □ Write access □ CINH □ PLC STOP □ No transfer

### C1096/16
**Parameter | Name:** C1096/16 | ECAT: Current state

<table>
<thead>
<tr>
<th><strong>Data type:</strong> UNSIGNED_32</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index:</strong> 23479.16d = 0x5BB7.0x10h</td>
</tr>
</tbody>
</table>

Display of the current state of the slave
Parameter | Name: \textit{C1096/16} | ECAT: Current state

<table>
<thead>
<tr>
<th>Selection list (read only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

- Value "0": No error
- Value "1": An error is active

Display range (min. value | unit | max. value)

| 0 | 1 |

Parameter | Name: \textit{C1096/17} | ECAT: Active error

- Value "0": No error
- Value "1": An error is active

Parameter | Name: \textit{C1096/18} | ECAT: Activate link messages

Debug parameter: If the parameter is set to value "1", all state changes of the slave will be output in the form of a diagnostic frame via the Ethernet interface. In the event of an error, a wireshark record can be used for error diagnostic purposes.

- Value "0": No link messages
- Value "1": Activate link messages

Setting range (min. value | unit | max. value) Lenze setting

| 0 | 1 | 0 |
### Display of the AL status code (slave register "0x0134 : 0x0135")

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

### AL status codes

<table>
<thead>
<tr>
<th>Code (hex)</th>
<th>Description</th>
<th>Current state or state change</th>
<th>Resulting state</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0000</td>
<td>No error</td>
<td>Arbitrary</td>
<td>Current state</td>
</tr>
<tr>
<td>0x0001</td>
<td>Unspecified error</td>
<td>Arbitrary</td>
<td>Arbitrary + E</td>
</tr>
<tr>
<td>0x0011</td>
<td>Invalid requested state</td>
<td>I→S, I→O, P→O, O→B, S→B, P→B</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0012</td>
<td>Unknown requested state</td>
<td>Arbitrary</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0013</td>
<td>Bootstrap state is not supported</td>
<td>I→B</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0014</td>
<td>Invalid Firmware</td>
<td>I→P</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0015</td>
<td>Invalid mailbox configuration</td>
<td>I→B</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0016</td>
<td>Invalid mailbox configuration</td>
<td>I→P</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0017</td>
<td>Invalid sync manager configuration</td>
<td>P→S, S→O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0018</td>
<td>No valid inputs available</td>
<td>O, S, P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x0019</td>
<td>No valid outputs available</td>
<td>O, S→O</td>
<td>S + E</td>
</tr>
<tr>
<td>0x001A</td>
<td>Synchronisation error</td>
<td>O, S→O</td>
<td>S + E</td>
</tr>
<tr>
<td>0x001B</td>
<td>Sync manager watchdog</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x001C</td>
<td>Invalid sync manager types</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x001D</td>
<td>Invalid output configuration</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x001E</td>
<td>Invalid input configuration</td>
<td>O, S, P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x001F</td>
<td>Invalid watchdog configuration</td>
<td>O, S, P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x0020</td>
<td>Slave requires 'cold boot'</td>
<td>Arbitrary</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0021</td>
<td>Slave requires 'Initialisation' state</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0022</td>
<td>Slave requires 'Pre-Operational' state</td>
<td>S</td>
<td>S + E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>O</td>
<td>O + E</td>
</tr>
<tr>
<td>0x0023</td>
<td>Slave requires 'Safe Operational' state</td>
<td>O</td>
<td>O + E</td>
</tr>
<tr>
<td>0x0030</td>
<td>Invalid DC configuration</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0031</td>
<td>Invalid DC latch configuration</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0032</td>
<td>PLL error</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0033</td>
<td>DC I/O error</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0034</td>
<td>DC time-out error</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0042</td>
<td>MBX_EOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
</tbody>
</table>

**Legend:**

- I: Initialisation
- B: Bootstrap (is not supported)
- P: Pre-Operational
- S: Safe Operational
- O: Operational
- E: Error-Flag
### Legend:
- I: Initialisation
- B: Bootstrap (is not supported)
- P: Pre-Operational
- S: Safe Operational
- O: Operational
- E: Error-Flag

### Parameter: C1096/20 | ECAT: Active sync pulse
- **Data type:** UNSIGNED_8
- **Index:** 23479.20d = 0x5BB7.0x14h

<table>
<thead>
<tr>
<th>Code (hex)</th>
<th>Description</th>
<th>Current state or state change</th>
<th>Resulting state</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0043</td>
<td>MBX_COE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0044</td>
<td>MBX_FOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0045</td>
<td>MBX_SOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x004F</td>
<td>MBX_VOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
</tbody>
</table>

**Display range (min. value | unit | max. value):**
- 0 | | 1

**Read access:** ☑  | **Write access:** ☑
**CINH** ☑ | **PLC STOP** ☑ | **No transfer** ☑

### Parameter: C1096/21 | ECAT: DC sync 0 period
- **Data type:** UNSIGNED_32
- **Index:** 23479.21d = 0x5BB7.0x15h

Period in which setpoints are expected to be received from the control system if the distributed clocks support has been switched-on.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>4294967295</td>
</tr>
</tbody>
</table>

**Read access:** ☑  | **Write access:** ☑
**CINH** ☑ | **PLC STOP** ☑ | **No transfer** ☑

### Parameter: C1096/22 | ECAT: DC sync 1 period
- **Data type:** UNSIGNED_32
- **Index:** 23479.22d = 0x5BB7.0x16h

**Note:** At present, distributed clocks are not used on the sync 1 of Lenze slaves.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>4294967295</td>
</tr>
</tbody>
</table>

**Read access:** ☑  | **Write access:** ☑
**CINH** ☑ | **PLC STOP** ☑ | **No transfer** ☑

### Parameter: C1096/23 | ECAT: Bus scan error code
- **Data type:** UNSIGNED_32
- **Index:** 23479.23d = 0x5BB7.0x17h

Error code after bus scan

The parameter has the value "0" if the configuration and the slave are identical. In the event of an error, however, e.g. error code 0x9811001Ehex (bus scan mismatch) is saved here.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>4294967295</td>
</tr>
</tbody>
</table>

**Read access:** ☑  | **Write access:** ☑
**CINH** ☑ | **PLC STOP** ☑ | **No transfer** ☑
### Parameter | Name:

- **C1096/24** | ECAT: Rx error counter - port 0
- **C1096/25** | ECAT: Rx error counter - port 1
- **C1096/26** | ECAT: Rx error counter - port 2
- **C1096/27** | ECAT: Rx error counter - port 3
- **C1096/28** | ECAT: Forwarded Rx error counter - port 0

#### Data type:
- UNSIGNED_16
- UNSIGNED_8

#### Index:
- 23479.24d = 0x5BB7.0x18h
- 23479.25d = 0x5BB7.0x19h
- 23479.26d = 0x5BB7.0x1Ah
- 23479.27d = 0x5BB7.0x1Bh
- 23479.28d = 0x5BB7.0x1Ch

#### Display range (min. value | unit | max. value)

- **C1096/24**
  - 0 | 65535

- **C1096/25**
  - 0 | 65535

- **C1096/26**
  - 0 | 65535

- **C1096/27**
  - 0 | 65535

- **C1096/28**
  - 0 | 255

#### Access:
- Read access
- Write access
- CINH
- PLC STOP
- No transfer

**Number of errors that occurred during data reception at port 0.**

**Number of errors that occurred during data reception at port 1.**

**Number of errors that occurred during data reception at port 2.**

**Number of errors that occurred during data reception at port 3.**

**Number of errors that occurred during data reception at port 0 for those slaves standing in line before the current slave in bus topology.**
### C1096/29

**Parameter | Name:**
C1096/29 | ECAT: Forwarded Rx error counter - port 1

Number of errors that occurred during data reception at port 1 for those slaves standing in line before the current slave in bus topology.

| Display range (min. value | unit | max. value) |
|---------------------------|
| 0 | 255 |

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

**Data type:** UNSIGNED_8  
**Index:** 23479.29d = 0x5BB7.0x1Dh

### C1096/30

**Parameter | Name:**
C1096/30 | ECAT: Forwarded Rx error counter - port 2

Number of errors that occurred during data reception at port 2 for those slaves standing in line before the current slave in bus topology.

| Display range (min. value | unit | max. value) |
|---------------------------|
| 0 | 255 |

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

**Data type:** UNSIGNED_8  
**Index:** 23479.30d = 0x5BB7.0x1Eh

### C1096/31

**Parameter | Name:**
C1096/31 | ECAT: Forwarded Rx error counter - port 3

Number of errors that occurred during data reception at port 3 for those slaves standing in line before the current slave in bus topology.

| Display range (min. value | unit | max. value) |
|---------------------------|
| 0 | 255 |

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

**Data type:** UNSIGNED_8  
**Index:** 23479.31d = 0x5BB7.0x1Fh

### C1096/32

**Parameter | Name:**
C1096/32 | ECAT: Error counter processing unit

Number of errors that occurred in the processing unit.  
EtherCAT slave controller error counter register "0x030C": Internal error of the slave

| Display range (min. value | unit | max. value) |
|---------------------------|
| 0 | 255 |

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

**Data type:** UNSIGNED_8  
**Index:** 23479.32d = 0x5BB7.0x20h

### C1096/33

**Parameter | Name:**
C1096/33 | ECAT: PDI error counter

Number of internal errors of the slave, reported by the process data interface.

| Display range (min. value | unit | max. value) |
|---------------------------|
| 0 | 255 |

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

**Data type:** UNSIGNED_8  
**Index:** 23479.33d = 0x5BB7.0x21h
### Parameters of the card in slot 2

#### C1096/35

**Parameter | Name:**

C1096/35 | ECAT: Lost link counter - port 0

**Data type:** UNSIGNED_8  
**Index:** 23479.35d = 0x5BB7.0x23h

- **Number of lost links at port 0.**

| Display range (min. value | unit | max. value) |  |
|---------------------------|------|------------|
| 0                         |      | 255        |

- **Read access:** off  
- **Write access:** off  
- **CINH:** off  
- **PLC STOP:** off  
- **No transfer:** on

#### C1096/36

**Parameter | Name:**

C1096/36 | ECAT: Lost link counter - port 1

**Data type:** UNSIGNED_8  
**Index:** 23479.36d = 0x5BB7.0x24h

- **Number of lost links at port 1.**

| Display range (min. value | unit | max. value) |  |
|---------------------------|------|------------|
| 0                         |      | 255        |

- **Read access:** off  
- **Write access:** off  
- **CINH:** off  
- **PLC STOP:** off  
- **No transfer:** on

#### C1096/37

**Parameter | Name:**

C1096/37 | ECAT: Lost link counter - port 2

**Data type:** UNSIGNED_8  
**Index:** 23479.37d = 0x5BB7.0x25h

- **Number of lost links at port 2.**

| Display range (min. value | unit | max. value) |  |
|---------------------------|------|------------|
| 0                         |      | 255        |

- **Read access:** off  
- **Write access:** off  
- **CINH:** off  
- **PLC STOP:** off  
- **No transfer:** on

#### C1096/38

**Parameter | Name:**

C1096/38 | ECAT: Lost link counter - port 3

**Data type:** UNSIGNED_8  
**Index:** 23479.38d = 0x5BB7.0x26h

- **Number of lost links at port 3.**

| Display range (min. value | unit | max. value) |  |
|---------------------------|------|------------|
| 0                         |      | 255        |

- **Read access:** off  
- **Write access:** off  
- **CINH:** off  
- **PLC STOP:** off  
- **No transfer:** on

#### Parameters of the card in slot 2

#### C1531

**Parameter | Name:**

C1531 | Device: Type key

**Data type:** VISIBLE_STRING  
**Index:** 23044d = 5A04h

- **Card identification**

  - **Read access:** off  
  - **Write access:** off  
  - **CINH:** off  
  - **PLC STOP:** off  
  - **No transfer:** on

#### C1532

**Parameter | Name:**

C1532 | Device: Type version

**Data type:** VISIBLE_STRING  
**Index:** 23043d = 5A03h

- **Version number of the card**

  - **Read access:** off  
  - **Write access:** off  
  - **CINH:** off  
  - **PLC STOP:** off  
  - **No transfer:** on

#### C1533

**Parameter | Name:**

C1533 | Device: Name

**Data type:** VISIBLE_STRING  
**Index:** 23042d = 5A02h

- **Device name of the card**

  - **Read access:** off  
  - **Write access:** off  
  - **CINH:** off  
  - **PLC STOP:** off  
  - **No transfer:** on
### Interface parameters of the card in slot 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type:</th>
<th>Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1574</td>
<td>ECAT: MAC address</td>
<td>VISIBLE_STRING</td>
<td>23001d = 59D9h</td>
</tr>
<tr>
<td>C1580/1</td>
<td>ECAT master config.: Date</td>
<td>DATE</td>
<td>22995.1d = 0x59D3.0x01h</td>
</tr>
<tr>
<td>C1580/2</td>
<td>ECAT master config.: Checksum</td>
<td>UNSIGNED_32</td>
<td>22995.2d = 0x59D3.0x02h</td>
</tr>
</tbody>
</table>

Date of the master configuration file in the file system of the IPC
The data manager refers to the \storage\IPC\PLC directory for the date of the master configuration file. If this file is not available, the date will be displayed as "01.01.1900".

Checksum of the master configuration file in the file system of the IPC
The data manager refers to the master configuration file in the \storage\IPC\PLC directory for the checksum. If this file is not available, the value will be displayed as "0x00000000".
C1580/3

Parameter | Name: C1580/3 | ECAT stack: Master checksum

The stack determines the checksum of the loaded/active master configuration file. If no loaded/active master configuration file is available, the value will be displayed as "0x00000000".

<table>
<thead>
<tr>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
</table>

C1580/4

Parameter | Name: C1580/4 | ECAT bus scan result

Brief information on whether the master configuration complies with the physical bus structure or not. The stack compares the master configuration with the actual bus structure.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No compliance</td>
<td>Master configuration does not comply with bus structure</td>
</tr>
<tr>
<td>1 OK</td>
<td>Master configuration complies with bus structure</td>
</tr>
</tbody>
</table>

C1581/1

Parameter | Name: C1581/1 | ECAT state: State change

Change into master state via this code

**Note:** This parameter should only be set to examine start-up problems (e.g. master/bus does not reach the 'Operational' state). Setting this parameters only sets the state of the master stack. All other nodes remain in their current states. Changing into the master state via this code may cause unstable system states.

- The bus state can never be higher than initiated by PLC.
- A new loading process of the master configuration cannot be initiated.
- Normally, loading the PLC program will stop the bus and bring it to 'Pre-Operational' state. If this fails, the bus remains in either 'Unknown' or 'Initialisation' state.
- Normally, starting the PLC program will bring the bus to 'Operational' state. If this fails, the bus remains in either 'Pre-Operational' or 'Safe Operational' state.

<table>
<thead>
<tr>
<th>Selection list (Lenze setting printed in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No action</td>
</tr>
</tbody>
</table>

C1581/2

Parameter | Name: C1581/2 | ECAT master: State

Display of the current state of the master

<table>
<thead>
<tr>
<th>Selection list (read only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Unknown</td>
</tr>
</tbody>
</table>

The Bootstrap mode is not supported
### C1581/3

**Parameter | Name:**

**C1581/3 | ECAT master in requested state**

| Parameter | Name: C1581/3 | ECAT master in requested state | Data type: UNSIGNED_8 | Index: 22994.3 | 0x59D2.0x03h |

Normally, the state is requested by the PLC. For possible requested states see C1581/1 ([191]).

- **Value "0":** Master is not in a requested state.
- **Value "1":** Master is in a requested state.

| Display range (min. value | unit | max. value) | 0 | 1 |

| Read access | Write access | CINH | PLC STOP | No transfer |

### C1581/4

**Parameter | Name:**

**C1581/4 | ECAT slaves in requested state**

| Parameter | Name: C1581/4 | ECAT slaves in requested state | Data type: UNSIGNED_8 | Index: 22994.4 | 0x59D2.0x04h |

- **Value "0":** One or more slaves differ from the state requested by the master.
- **Value "1":** All slaves have the state requested by the master.

| Display range (min. value | unit | max. value) | 0 | 1 |

| Read access | Write access | CINH | PLC STOP | No transfer |

### C1581/5

**Parameter | Name:**

**C1581/5 | ECAT master: State information**

| Parameter | Name: C1581/5 | ECAT master: State information | Data type: BITFIELD_32 | Index: 22994.5 | 0x59D2.0x05h |

Display of additional information on the current state of the master.
The bits are set to value 1 if the respective states are reached.
### Parameter Reference

#### C1581/5 | ECAT master: State information

**Data type:** BITFIELD_32  
**Index:** \(22994.5d = 0x59D2.0x05h\)

**Value is bit-coded:**

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Master ok</td>
</tr>
<tr>
<td>1</td>
<td>Reserved 1</td>
</tr>
<tr>
<td>2</td>
<td>Reserved 2</td>
</tr>
<tr>
<td>3</td>
<td>Reserved 3</td>
</tr>
<tr>
<td>4</td>
<td>Init</td>
</tr>
<tr>
<td>5</td>
<td>Pre-Operational</td>
</tr>
<tr>
<td>6</td>
<td>Safe Operational</td>
</tr>
<tr>
<td>7</td>
<td>Operational</td>
</tr>
<tr>
<td>8</td>
<td>Slaves in requested state</td>
</tr>
<tr>
<td>9</td>
<td>Master in requested state</td>
</tr>
<tr>
<td>10</td>
<td>Bus scan result</td>
</tr>
<tr>
<td>11</td>
<td>Reserved 4</td>
</tr>
<tr>
<td>12</td>
<td>DC: Activated</td>
</tr>
<tr>
<td>13</td>
<td>DC: Sychronised</td>
</tr>
<tr>
<td>14</td>
<td>DC: Busy</td>
</tr>
<tr>
<td>15</td>
<td>Reserved 5</td>
</tr>
<tr>
<td>16</td>
<td>Link up</td>
</tr>
<tr>
<td>17</td>
<td>Reserved 6</td>
</tr>
<tr>
<td>18</td>
<td>Reserved 7</td>
</tr>
<tr>
<td>19</td>
<td>Reserved 8</td>
</tr>
<tr>
<td>20</td>
<td>Reserved 9</td>
</tr>
<tr>
<td>21</td>
<td>Reserved 10</td>
</tr>
<tr>
<td>22</td>
<td>Reserved 11</td>
</tr>
<tr>
<td>23</td>
<td>Reserved 12</td>
</tr>
<tr>
<td>24</td>
<td>Reserved 13</td>
</tr>
<tr>
<td>25</td>
<td>Reserved 14</td>
</tr>
<tr>
<td>26</td>
<td>Reserved 15</td>
</tr>
<tr>
<td>27</td>
<td>Reserved 16</td>
</tr>
<tr>
<td>28</td>
<td>Reserved 17</td>
</tr>
<tr>
<td>29</td>
<td>Reserved 18</td>
</tr>
<tr>
<td>30</td>
<td>Reserved 19</td>
</tr>
<tr>
<td>31</td>
<td>Reserved 20</td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

#### C1581/6 | ECAT bus scan

**Data type:** UNSIGNED_8  
**Index:** \(22994.6d = 0x59D2.0x06h\)

**Activation of the bus scan**

The bus scan updates all EtherCAT codes.

**Selection list (Lenze setting printed in bold)**

<table>
<thead>
<tr>
<th>Selection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No action</td>
</tr>
<tr>
<td>1</td>
<td>The bus is scanned</td>
</tr>
</tbody>
</table>

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

---

2.5 EN - 01/2012  

Lenze
### C1582/1

**Parameter | Name:**

**C1582/1 | ECAT DC: State**

**Data type:** BITFIELD_3  
**Index:** 22993.1d = 0x59D1.0x01h

Display of the state of the distributed clocks  
The bits are set to value 1 if the respective states are reached.

**Value is bit-coded:**

- **Bit 0** DC: Activated
- **Bit 1** DC: Sychronised
- **Bit 2** DC: Busy

**Read access**  |  **Write access**  |  **CINH**  |  **PLC STOP**  |  **No transfer**

### C1582/2

**Parameter | Name:**

**C1582/2 | ECAT DC: Perm. dev. slave sync**

**Data type:** UNSIGNED_32  
**Index:** 22993.2d = 0x59D1.0x02h

Permissible deviation of the distributed clocks of all devices in nanoseconds. If the permissible deviation is exceeded, the master will initiate a resynchronisation of the distributed clocks.

**Display range (min. value | unit | max. value):**

| 0 | ns | 4294967295 |

**Read access**  |  **Write access**  |  **CINH**  |  **PLC STOP**  |  **No transfer**

### C1582/3

**Parameter | Name:**

**C1582/3 | ECAT DC: Current deviation**

**Data type:** INTEGER_32  
**Index:** 22993.3d = 0x59D1.0x03h

Current maximum deviation of the distributed clocks of all devices in nanoseconds.

**Display range (min. value | unit | max. value):**

| 0 | ns | 2147483647 |

**Read access**  |  **Write access**  |  **CINH**  |  **PLC STOP**  |  **No transfer**

### C1586/2

**Parameter | Name:**

**C1586/2 | ECAT config.: Checksum CRC-32**

**Data type:** UNSIGNED_32  
**Index:** 22989.2d = 0x59CD.0x02h

Checksum of the master configuration file (loaded/activated by the stack). The stack determines the checksum of the loaded/active master configuration file. If this file is not available, the value "0x00000000" will be displayed.

**Read access**  |  **Write access**  |  **CINH**  |  **PLC STOP**  |  **No transfer**

### C1586/3

**Parameter | Name:**

**C1586/3 | ECAT bus: Numb. slaves**

**Data type:** UNSIGNED_32  
**Index:** 22989.3d = 0x59CD.0x03h

Number of slaves connected to the fieldbus

**Display range (min. value | unit | max. value):**

| 0 | 4294967295 |

**Read access**  |  **Write access**  |  **CINH**  |  **PLC STOP**  |  **No transfer**

### C1586/4

**Parameter | Name:**

**C1586/4 | ECAT bus: Numb. slaves with DC**

**Data type:** UNSIGNED_32  
**Index:** 22989.4d = 0x59CD.0x04h

Number of slaves connected to the fieldbus and supported by distributed clocks

**Display range (min. value | unit | max. value):**

| 0 | 4294967295 |

**Read access**  |  **Write access**  |  **CINH**  |  **PLC STOP**  |  **No transfer**
### Parameter Settings and Configuration

#### Industrial PC Extension Modules

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data Type: UNSIGNED_32</th>
<th>Index: 22989.&lt;sub&gt;i&lt;/sub&gt; = 0x59CD.0x0&lt;i&gt;&lt;sub&gt;i&lt;/sub&gt;&lt;/i&gt;h</th>
</tr>
</thead>
</table>

#### C1586/5
**Parameter Name:** C1586/5 | ECAT config.: Numb. slaves

- **Description:** Number of slaves configured in the master configuration file.
- **Display range:**
  - **Index:** 22989.5d = 0x59CD.0x05h
  - **Value:** 0-4294967295
- **Access:** Read access, Write access, CINH, PLC STOP, No transfer

#### C1586/6
**Parameter Name:** C1586/6 | ECAT config.: Numb. mailbox slaves

- **Description:** Number of mailbox slaves configured in the master configuration file.
- **Display range:**
  - **Index:** 22989.6d = 0x59CD.0x06h
  - **Value:** 0-4294967295
- **Access:** Read access, Write access, CINH, PLC STOP, No transfer

#### C1586/7
**Parameter Name:** C1586/7 | ECAT counter: Tx frames

- **Description:** Number of sent frames.
- **Display range:**
  - **Index:** 22989.7d = 0x59CD.0x07h
  - **Value:** 0-4294967295
- **Access:** Read access, Write access, CINH, PLC STOP, No transfer

#### C1586/8
**Parameter Name:** C1586/8 | ECAT counter: Rx frames

- **Description:** Number of received frames.
- **Display range:**
  - **Index:** 22989.8d = 0x59CD.0x08h
  - **Value:** 0-4294967295
- **Access:** Read access, Write access, CINH, PLC STOP, No transfer

#### C1586/9
**Parameter Name:** C1586/9 | ECAT counter: Lost frames

- **Description:** Number of lost frames.
- **Display range:**
  - **Index:** 22989.9d = 0x59CD.0x09h
  - **Value:** 0-4294967295
- **Access:** Read access, Write access, CINH, PLC STOP, No transfer

#### C1586/10
**Parameter Name:** C1586/10 | ECAT counter: Cyclic frames

- **Description:** Number of cyclic frames.
- **Display range:**
  - **Index:** 22989.10d = 0x59CD.0x0Ah
  - **Value:** 0-4294967295
- **Access:** Read access, Write access, CINH, PLC STOP, No transfer
### C1586/11

Parameter | Name: C1586/11 | ECAT counter: Cyclic datagrams  
Data type: \text{UNSIGNED}_32  
Index: 22989.11d = 0x59CD.0x0Bh  

Number of cyclic datagrams

| Display range (min. value | unit | max. value) | 0 | 4294967295 |
|--------------------------|-----|-----------|

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C1586/12

Parameter | Name: C1586/12 | ECAT counter: Acyclic frames  
Data type: \text{UNSIGNED}_32  
Index: 22989.12d = 0x5BC1.0x0Ch  

Number of acyclic frames

| Display range (min. value | unit | max. value) | 0 | 4294967295 |
|--------------------------|-----|-----------|

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

### C1586/13

Parameter | Name: C1586/13 | ECAT counter: Acyclic datagrams  
Data type: \text{UNSIGNED}_32  
Index: 22989.13d = 0x59CD.0x0Dh  

Number of acyclic datagrams

| Display range (min. value | unit | max. value) | 0 | 4294967295 |
|--------------------------|-----|-----------|

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer
**C1586/14**

Parameter Name: C1586/14 | ECAT: Reset individual counters

**Data type:** UNSIGNED_32

**Index:** 22989.14d = 0x59CD.0x0Eh

Reset frame and datagram counters (C1586/7 ... 13)

**Selection list (Lenze setting printed in bold)**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No action</td>
</tr>
<tr>
<td>1</td>
<td>Reset - All counters</td>
</tr>
<tr>
<td>2</td>
<td>Reset - Tx frame counters</td>
</tr>
<tr>
<td>4</td>
<td>Reset - Rx frame counters</td>
</tr>
<tr>
<td>8</td>
<td>Reset - Lost frame counters</td>
</tr>
<tr>
<td>16</td>
<td>Reset - Cyclic frame counters</td>
</tr>
<tr>
<td>32</td>
<td>Reset - Cyclic datagram counters</td>
</tr>
<tr>
<td>64</td>
<td>Reset - Acyclic frame counters</td>
</tr>
<tr>
<td>128</td>
<td>Reset - Acyclic datagram counters</td>
</tr>
</tbody>
</table>

Read access: Yes
Write access: Yes
CINH: No
PLC STOP: Yes
No transfer: No

**C1595/1**

Parameter Name: C1595/1 | ECAT: Slave addressing mode

**Data type:** UNSIGNED_8

**Index:** 22980.1d = 0x59C4.0x01h

The addressing mode refers to the slave address (C1595/2).

**Selection list (Lenze setting printed in bold)**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Position addressing</td>
</tr>
<tr>
<td>1</td>
<td>Node addressing</td>
</tr>
</tbody>
</table>

Auto increment addresses: The addresses depend on the position of the respective slave in the EtherCAT bus (i.e. 0, -1, -2, ...).

Physical addresses: The addresses are assigned consecutively by the »PLC Designer« (i.e. 1001, 1002, ...)

Read access: Yes
Write access: Yes
CINH: No
PLC STOP: Yes
No transfer: No

**C1595/2**

Parameter Name: C1595/2 | ECAT: Slave address

**Data type:** INTEGER_32

**Index:** 22980.2d = 0x59C4.0x02h

Use this code to select a slave whose parameters are to be displayed.

The addressing mode is specified in code C1595/1. A maximum of 4096 slaves can be addressed after the master.

**Setting range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>Value</th>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-65536</td>
<td></td>
<td>65536</td>
</tr>
</tbody>
</table>

Read access: Yes
Write access: Yes
CINH: No
PLC STOP: Yes
No transfer: No

**C1596/1**

Parameter Name: C1596/1 | ECAT: Valid entry

**Data type:** UNSIGNED_8

**Index:** 22979.1d = 0x59C3.0x01h

This code indicates whether the entries/values of the following subcodes C1596/2 ... /38 are valid or not.

- Value "0": Invalid entry/value
- Value "1": Valid entry/value (The parameters of an available slave are displayed.)

**Display range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>Value</th>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Read access: Yes
Write access: Yes
CINH: No
PLC STOP: Yes
No transfer: No
## Industrial PC | Parameter setting & configuration

### Parameter reference

### Industrial PC extension modules

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>ECAT:</th>
<th>Data type:</th>
<th>Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1596/2</td>
<td></td>
<td>Slave manufacturer ID</td>
<td>UNSIGNED_32</td>
<td>0x59C3.0x02h</td>
</tr>
<tr>
<td>C1596/3</td>
<td></td>
<td>Product code</td>
<td>UNSIGNED_32</td>
<td>0x59C3.0x03h</td>
</tr>
<tr>
<td>C1596/4</td>
<td></td>
<td>Revision number</td>
<td>UNSIGNED_32</td>
<td>0x59C3.0x04h</td>
</tr>
<tr>
<td>C1596/5</td>
<td></td>
<td>Serial number</td>
<td>UNSIGNED_32</td>
<td>0x59C3.0x05h</td>
</tr>
<tr>
<td>C1596/6</td>
<td></td>
<td>Slave device name</td>
<td>VISIBLE_STRING</td>
<td>0x59C3.0x06h</td>
</tr>
<tr>
<td>C1596/7</td>
<td></td>
<td>Auto increment address</td>
<td>INTEGER_32</td>
<td>0x59C3.0x07h</td>
</tr>
<tr>
<td>C1596/8</td>
<td></td>
<td>Physical address</td>
<td>UNSIGNED_16</td>
<td>0x59C3.0x08h</td>
</tr>
</tbody>
</table>

### Parameter Details

#### C1596/2
- **Parameter**: Slave manufacturer ID
- **Data type**: UNSIGNED_32
- **Index**: 0x59C3.0x02h
- **Description**: Identification number of the slave manufacturer (e.g., 0x0000003B for Lenze)
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer

#### C1596/3
- **Parameter**: Product code
- **Data type**: UNSIGNED_32
- **Index**: 0x59C3.0x03h
- **Description**: Product code of the slave
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer

#### C1596/4
- **Parameter**: Revision number
- **Data type**: UNSIGNED_32
- **Index**: 0x59C3.0x04h
- **Description**: Revision number of the slave
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer

#### C1596/5
- **Parameter**: Serial number
- **Data type**: UNSIGNED_32
- **Index**: 0x59C3.0x05h
- **Description**: Serial number of the slave
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer

#### C1596/6
- **Parameter**: Slave device name
- **Data type**: VISIBLE_STRING
- **Index**: 0x59C3.0x06h
- **Description**: Device name of the slave
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer

#### C1596/7
- **Parameter**: Auto increment address
- **Data type**: INTEGER_32
- **Index**: 0x59C3.0x07h
- **Description**: The auto increment address is defined by the position of the slaves. The first node is assigned address "0". The addresses are assigned consistently in descending order: 0, -1, -2 ...
- **Display range**: -65536 to 0
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer

#### C1596/8
- **Parameter**: Physical address
- **Data type**: UNSIGNED_16
- **Index**: 0x59C3.0x08h
- **Description**: Physical address of the slave
- **Access**: Read access, Write access, CINH, PLC STOP, No transfer
- **Display range**: 0 to 65536

---

*Lenze*

2.5 EN - 01/2012
### C1596/9  
**Parameter | Name:**  
C1596/9 | ECAT config.: Physical address  

The physical address of the slave set in the master configuration file  
This address is specified by the »PLC Designer« and assigned consistently in ascending order, starting with 1001.  

| Display range (min. value | unit | max. value) |  |
|---|---|---|
| 0 | 65536 |  |

- [x] Read access  
- [ ] Write access  
- [ ] CINH  
- [ ] PLC STOP  
- [ ] No transfer  

### C1596/10  
**Parameter | Name:**  
C1596/10 | ECAT: Alias address  

Alias addresses are addresses directly saved on the device (e.g. via DIP switches)  
At present our system does not support alias addresses.  

| Display range (min. value | unit | max. value) |  |
|---|---|---|
| 0 | 65536 |  |

- [x] Read access  
- [ ] Write access  
- [ ] CINH  
- [ ] PLC STOP  
- [ ] No transfer  

### C1596/11  
**Parameter | Name:**  
C1596/11 | ECAT: Port state  

Display of the port states/connections (ports 0 ... 3) of a slave  
The structure is bit-coded (WORD).  

<table>
<thead>
<tr>
<th>Value is bit-coded:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit 0 Port 0 1 (TRUE) = Slave is connected (logic result of bits 0 ... 11)</td>
<td></td>
</tr>
<tr>
<td>Bit 1 Port 1</td>
<td></td>
</tr>
<tr>
<td>Bit 2 Port 2</td>
<td></td>
</tr>
<tr>
<td>Bit 3 Port 3</td>
<td></td>
</tr>
<tr>
<td>Bit 4 Port 0 1 (TRUE) = Link is known</td>
<td></td>
</tr>
<tr>
<td>Bit 5 Port 1</td>
<td></td>
</tr>
<tr>
<td>Bit 6 Port 2</td>
<td></td>
</tr>
<tr>
<td>Bit 7 Port 3</td>
<td></td>
</tr>
<tr>
<td>Bit 8 Port 0 1 (TRUE) = Loop is closed</td>
<td></td>
</tr>
<tr>
<td>Bit 9 Port 1</td>
<td></td>
</tr>
<tr>
<td>Bit 10 Port 2</td>
<td></td>
</tr>
<tr>
<td>Bit 11 Port 3</td>
<td></td>
</tr>
<tr>
<td>Bit 12 Port 0 1 (TRUE) = Signal received</td>
<td></td>
</tr>
<tr>
<td>Bit 13 Port 1</td>
<td></td>
</tr>
<tr>
<td>Bit 14 Port 2</td>
<td></td>
</tr>
<tr>
<td>Bit 15 Port 3</td>
<td></td>
</tr>
</tbody>
</table>

- [x] Read access  
- [ ] Write access  
- [ ] CINH  
- [ ] PLC STOP  
- [ ] No transfer
Parameter | Name:  
C1596/12 | ECAT: DC support  
Data type: UNSIGNED_8  
Index: 22979.12d = 0x59C3.0x0Ch

Support of the distributed clocks by the slave:  
- Value "0": Distributed clocks are not supported.  
- Value "1": Distributed clocks are supported.

Display range (min. value | unit | max. value)  
0 | | 1

Read access:  
Write access:  
CINH:  
PLC STOP:  
No transfer: 

Parameter | Name:  
C1596/13 | ECAT: DC support - 64 bits  
Data type: UNSIGNED_8  
Index: 22979.13d = 0x59C3.0x0Dh

Support of the distributed clocks (64 bits) by the slave:  
- Value "0": Distributed clocks (64 bits) are not supported.  
- Value "1": Distributed clocks (64 bits) are supported.

Display range (min. value | unit | max. value)  
0 | | 1

Read access:  
Write access:  
CINH:  
PLC STOP:  
No transfer: 

Parameter | Name:  
C1596/14 | Mailbox support  
Data type: UNSIGNED_8  
Index: 22979.14d = 0x59C3.0x0Eh

Mailbox support by the slave:  
- Value "0": Mailbox is not supported.  
- Value "1": Mailbox is supported.

Display range (min. value | unit | max. value)  
0 | | 1

Read access:  
Write access:  
CINH:  
PLC STOP:  
No transfer: 

Parameter | Name:  
C1596/15 | ECAT: Requested state  
Data type: UNSIGNED_32  
Index: 22979.15d = 0x59C3.0x0Fh

This code displays the state specified by the master. At the same time, the user can request a state here.  
Note: This is a debug code. Setting this parameter only sets the state of the currently selected slave. All other nodes remain in their present states. Changing the state of the slave via this code may cause unstable system states.

Selection list (Lenze setting printed in bold)  
- 0: Invalid  
- 1: Init  
- 2: Pre-Operational  
- 4: Safe Operational  
- 8: Operational

Read access:  
Write access:  
CINH:  
PLC STOP:  
No transfer: 

Parameter | Name:  
C1596/16 | ECAT: Current state  
Data type: UNSIGNED_32  
Index: 22979.16d = 0x59C3.0x10h

Display of the current state of the slave
### Parameter | Name: C1596/16 | ECAT: Current state

<table>
<thead>
<tr>
<th>Selection list (read only)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Unknown</td>
</tr>
<tr>
<td>1</td>
<td>Init</td>
</tr>
<tr>
<td>2</td>
<td>Pre-Operational</td>
</tr>
<tr>
<td>4</td>
<td>Safe Operational</td>
</tr>
<tr>
<td>8</td>
<td>Operational</td>
</tr>
</tbody>
</table>

**Data type:** UNSIGNED_32  
**Index:** 22979.16 = 0x59C3.0x10

#### Display range (min. value | unit | max. value)

| 0 | 1 |

**Value "0": No error**  
**Value "1": An error is active**

**Read access | Write access | CINH | PLC STOP | No transfer**

### Parameter | Name: C1596/17 | ECAT: Active error

**Data type:** UNSIGNED_8  
**Index:** 22979.17 = 0x59C3.0x11

- **Value "0": No error**  
- **Value "1": An error is active**

#### Display range (min. value | unit | max. value)

| 0 | 1 |

**Read access | Write access | CINH | PLC STOP | No transfer**

### Parameter | Name: C1596/18 | ECAT: Activate link messages

**Data type:** UNSIGNED_8  
**Index:** 22979.18 = 0x59C3.0x12

**Debug parameter:**  
If the parameter is set to value "1", all state changes of the slave will be output in the form of a diagnostic frame via the Ethernet interface. In the event of an error, a wireshark record can be used for error diagnostic purposes.  
(*Wireshark*: Program for the analysis of network communication links)

- **Value "0": No link messages**  
- **Value "1": Activate link messages**

#### Setting range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>Lenze setting</th>
</tr>
</thead>
</table>

**Read access | Write access | CINH | PLC STOP | No transfer**
Display of the AL status code (slave register "0x0134 : 0x0135")

<table>
<thead>
<tr>
<th>Code (hex)</th>
<th>Description</th>
<th>Current state or state change</th>
<th>Resulting state</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0000</td>
<td>No error</td>
<td>Arbitrary</td>
<td>Current state</td>
</tr>
<tr>
<td>0x0001</td>
<td>Unspecified error</td>
<td>Arbitrary</td>
<td>Arbitrary + E</td>
</tr>
<tr>
<td>0x0011</td>
<td>Invalid requested state</td>
<td>I→S, I→O, P→O, O→B, S→B, P→B</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0012</td>
<td>Unknown requested state</td>
<td>Arbitrary</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0013</td>
<td>Bootstrap state is not supported</td>
<td>I→B</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0014</td>
<td>Invalid Firmware</td>
<td>I→P</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0015</td>
<td>Invalid mailbox configuration</td>
<td>I→B</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0016</td>
<td>Invalid mailbox configuration</td>
<td>I→P</td>
<td>I + E</td>
</tr>
<tr>
<td>0x0017</td>
<td>Invalid sync manager configuration</td>
<td>P→S, S→O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0018</td>
<td>No valid inputs available</td>
<td>O, S, P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x0019</td>
<td>No valid outputs available</td>
<td>O, S→O</td>
<td>S + E</td>
</tr>
<tr>
<td>0x001A</td>
<td>Synchronisation error</td>
<td>O, S→O</td>
<td>S + E</td>
</tr>
<tr>
<td>0x001B</td>
<td>Sync manager watchdog</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x001C</td>
<td>Invalid sync manager types</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x001D</td>
<td>Invalid output configuration</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x001E</td>
<td>Invalid input configuration</td>
<td>O, S, P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x001F</td>
<td>Invalid watchdog configuration</td>
<td>O, S, P→S</td>
<td>P + E</td>
</tr>
<tr>
<td>0x0020</td>
<td>Slave requires 'cold boot'</td>
<td>Arbitrary</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0021</td>
<td>Slave requires 'Initialisation' state</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0022</td>
<td>Slave requires 'Pre-Operational' state</td>
<td>S</td>
<td>S + E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>O</td>
<td>O + E</td>
</tr>
<tr>
<td>0x0023</td>
<td>Slave requires 'Safe Operational' state</td>
<td>O</td>
<td>O + E</td>
</tr>
<tr>
<td>0x0030</td>
<td>Invalid DC configuration</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0031</td>
<td>Invalid DC latch configuration</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0032</td>
<td>PLL error</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0033</td>
<td>DC I/O error</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0034</td>
<td>DC time-out error</td>
<td>O, S</td>
<td>S + E</td>
</tr>
<tr>
<td>0x0042</td>
<td>MBX_EOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
</tbody>
</table>

Legend:
I: Initialisation
B: Bootstrap (is not supported)
P: Pre-Operational
S: Safe Operational
O: Operational
E: Error-Flag
Industrial PC | Parameter setting & configuration

Parameter reference

Industrial PC extension modules

<table>
<thead>
<tr>
<th>Code (hex)</th>
<th>Description</th>
<th>Current state or state change</th>
<th>Resulting state</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0043</td>
<td>MBX_COE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0044</td>
<td>MBX_FOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x0045</td>
<td>MBX_SOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
<tr>
<td>0x004F</td>
<td>MBX_VOE</td>
<td>B, P, S, O</td>
<td>Current state + E</td>
</tr>
</tbody>
</table>

Legend:

- I: Initialisation
- B: Bootstrap (is not supported)
- P: Pre-Operational
- S: Safe Operational
- O: Operational
- E: Error-Flag

C1596/20

Parameter Name: C1596/20 | ECAT: Active sync pulse

- Value "0": Sync pulse of distributed clocks not activated on the slave.
- Value "1": Sync pulse of distributed clocks activated on the slave.

Display range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Value (hex)</th>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C1596/21

Parameter Name: C1596/21 | ECAT: DC sync 0 period

Period in which setpoints are expected to be received from the control system if the distributed clocks support has been switched-on.

Display range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Value (hex)</th>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C1596/22

Parameter Name: C1596/22 | ECAT: DC sync 1 period

Distributed clocks sync 1 period

Note: At present, distributed clocks are not used on the sync 1 of Lenze slaves.

Display range (min. value | unit | max. value)

<table>
<thead>
<tr>
<th>Value (hex)</th>
<th>Read access</th>
<th>Write access</th>
<th>CINH</th>
<th>PLC STOP</th>
<th>No transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Parameter | Name: C1596/23 | ECAT: Bus scan error code
---
Error code after bus scan
The parameter has the value "0" if the configuration and the slave are identical. In the event of an error, however, e.g. error code 0x9811001Ehex (bus scan mismatch) is saved here.
Also see:

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4294967295</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

Parameter | Name: C1596/24 | ECAT: Rx error counter - port 0
---
Number of errors that occurred during data reception at port 0.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65535</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

Parameter | Name: C1596/25 | ECAT: Rx error counter - port 1
---
Number of errors that occurred during data reception at port 1.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65535</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

Parameter | Name: C1596/26 | ECAT: Rx error counter - port 2
---
Number of errors that occurred during data reception at port 2.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65535</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer

Parameter | Name: C1596/27 | ECAT: Rx error counter - port 3
---
Number of errors that occurred during data reception at port 3.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65535</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer
### Industrial PC | Parameter setting & configuration

#### Parameter reference

**Industrial PC extension modules**

#### C1596/28

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1596/28</th>
<th>ECAT: Forwarded Rx error counter - port 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type:</td>
<td>UNSIGNED_8</td>
<td>Index: 22979.28d = 0x59C3.0x1Ch</td>
</tr>
</tbody>
</table>

Number of errors that occurred during data reception at port 0 for those slaves standing in line before the current slave in bus topology.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>0</th>
<th>255</th>
</tr>
</thead>
</table>

- Read access | Write access | CINH | PLC STOP | No transfer

#### C1596/29

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1596/29</th>
<th>ECAT: Forwarded Rx error counter - port 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type:</td>
<td>UNSIGNED_8</td>
<td>Index: 22979.29d = 0x59C3.0x1Dh</td>
</tr>
</tbody>
</table>

Number of errors that occurred during data reception at port 1 for those slaves standing in line before the current slave in bus topology.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>0</th>
<th>255</th>
</tr>
</thead>
</table>

- Read access | Write access | CINH | PLC STOP | No transfer

#### C1596/30

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1596/30</th>
<th>ECAT: Forwarded Rx error counter - port 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type:</td>
<td>UNSIGNED_8</td>
<td>Index: 22979.30d = 0x59C3.0x1Eh</td>
</tr>
</tbody>
</table>

Number of errors that occurred during data reception at port 2 for those slaves standing in line before the current slave in bus topology.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>0</th>
<th>255</th>
</tr>
</thead>
</table>

- Read access | Write access | CINH | PLC STOP | No transfer

#### C1596/31

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1596/31</th>
<th>ECAT: Forwarded Rx error counter - port 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type:</td>
<td>UNSIGNED_8</td>
<td>Index: 22979.31d = 0x59C3.0x1Fh</td>
</tr>
</tbody>
</table>

Number of errors that occurred during data reception at port 3 for those slaves standing in line before the current slave in bus topology.

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>0</th>
<th>255</th>
</tr>
</thead>
</table>

- Read access | Write access | CINH | PLC STOP | No transfer

#### C1596/32

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1596/32</th>
<th>ECAT: Error counter processing unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type:</td>
<td>UNSIGNED_8</td>
<td>Index: 22979.32d = 0x59C3.0x20h</td>
</tr>
</tbody>
</table>

Number of errors that occurred in the processing unit.

EtherCAT slave controller error counter register "0x030C": Internal error of the slave

<table>
<thead>
<tr>
<th>Display range (min. value</th>
<th>unit</th>
<th>max. value)</th>
<th>0</th>
<th>255</th>
</tr>
</thead>
</table>

- Read access | Write access | CINH | PLC STOP | No transfer
## Parameter Reference

### Industrial PC Extension Modules

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name:</th>
<th>Data type: UNSIGNED_8</th>
<th>Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1596/33</td>
<td>ECAT: PDI error counter</td>
<td></td>
<td>22979.33d = 0x59C3.0x21h</td>
</tr>
<tr>
<td>C1596/35</td>
<td>ECAT: Lost link counter - port 0</td>
<td></td>
<td>22979.35d = 0x59C3.0x23h</td>
</tr>
<tr>
<td>C1596/36</td>
<td>ECAT: Lost link counter - port 1</td>
<td></td>
<td>22979.36d = 0x59C3.0x24h</td>
</tr>
<tr>
<td>C1596/37</td>
<td>ECAT: Lost link counter - port 2</td>
<td></td>
<td>22979.37d = 0x59C3.0x25h</td>
</tr>
<tr>
<td>C1596/38</td>
<td>ECAT: Lost link counter - port 3</td>
<td></td>
<td>22979.38d = 0x59C3.0x26h</td>
</tr>
</tbody>
</table>

#### Number of Internal Errors of the Slave, Reported by the Process Data Interface

**Display range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>255</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### Number of Lost Links at Port 0

**Display range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>255</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### Number of Lost Links at Port 1

**Display range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>255</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### Number of Lost Links at Port 2

**Display range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>255</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer

#### Number of Lost Links at Port 3

**Display range (min. value | unit | max. value)**

<table>
<thead>
<tr>
<th>min. value</th>
<th>unit</th>
<th>max. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>255</td>
</tr>
</tbody>
</table>

- Read access
- Write access
- CINH
- PLC STOP
- No transfer
14.6.3 PROFIBUS master communication card (MC-PBM)

This chapter lists all parameters of the MC-PBM IPC communication card in numerically ascending order.

Card parameters in slot 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1031</th>
<th>Device: Type key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card identification</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23544d = 5BF8h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1032</th>
<th>Device: Type version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version number of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23543d = 5BF7h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1033</th>
<th>Device: Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device name of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23542d = 5BF6h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1034</th>
<th>Device: Software version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software version of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23541d = 5BF5h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1035</th>
<th>Device: Hardware version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware version of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23540d = 5BF4h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1036</th>
<th>Device: Serial number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial number of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23539d = 5BF3h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1037</th>
<th>Device: Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23538d = 5BF2h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1038</th>
<th>Device: Manufacturing date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing date of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23537d = 5BF1h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>
### Parameters of the card in slot 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23044d = 5A04h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1531</td>
<td>Device: Type key</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Card identification

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23043d = 5A03h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1532</td>
<td>Device: Type version</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Version number of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23042d = 5A02h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1533</td>
<td>Device: Name</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Device name of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23041d = 5A01h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1534</td>
<td>Device: Software version</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Software version of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23040d = 5A00h</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1535</td>
<td>Device: Hardware version</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hardware version of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23039d = 59FFh</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1536</td>
<td>Device: Serial number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Serial number of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23038d = 59FEh</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1537</td>
<td>Device: Manufacturer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Manufacturer of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index: 23037d = 59FDh</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1538</td>
<td>Device: Manufacturing date</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Manufacturing date of the card

- Read access  
- Write access  
- CINH  
- PLC STOP  
- No transfer
14.6.4 Ethernet communication card (MC-ETH)

In this chapter all parameters of the IPC MC-ETH communication card are listed in numerically ascending order.

Card parameters in slot 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1031</th>
<th>Device: Type key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card identification</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23544d = 5BF8h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1032</th>
<th>Device: Type version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version number of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23543d = 5BF7h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1033</th>
<th>Device: Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device name of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23542d = 5BF6h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1034</th>
<th>Device: Software version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software version of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23541d = 5BF5h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1035</th>
<th>Device: Hardware version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware version of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23540d = 5BF4h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1036</th>
<th>Device: Serial number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial number of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23539d = 5BF3h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1037</th>
<th>Device: Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23538d = 5BF2h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name: C1038</th>
<th>Device: Manufacturing date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing date of the card</td>
<td>Data type: VISIBLE_STRING</td>
<td>Index: 23537d = 5BF1h</td>
</tr>
<tr>
<td>Read access</td>
<td>Write access</td>
<td>CINH</td>
</tr>
</tbody>
</table>
Interface parameters of the card in slot 1

C1078
Parameter | Name: C1078 | Apply IP configuration
Data type: UNSIGNED_16
Index: 23497d = 5BC9h
Code for activating the set configuration. The interface is activated by writing a "1".

<table>
<thead>
<tr>
<th>Selection list (lenze setting printed in bold)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Activate device</td>
</tr>
<tr>
<td>0</td>
<td>No command</td>
</tr>
</tbody>
</table>

Read access | Write access | CINH | PLC STOP | No transfer

Parameter | Name: C1080 | Dhcp
Data type: UNSIGNED_32
Index: 23495d = 5BC7h
Activation of the configuration. DHCP states:
• "0" = Inactive
• "1" = Active
If DHCP is active, the codes 21-25 do not have any function

| Setting range (min. value | unit | max. value) | Lenze setting |
|--------------------------|------|-------------|
| 0 | 1 | 1 |

Read access | Write access | CINH | PLC STOP | No transfer

Parameter | Name: C1081 | IP address
Data type: VISIBLE_STRING
Index: 23494d = 5BC6h
IP address of the interface

Read access | Write access | CINH | PLC STOP | No transfer

Parameter | Name: C1082 | Subnet mask
Data type: VISIBLE_STRING
Index: 23493d = 5BC5h
Subnet mask of the interface

Read access | Write access | CINH | PLC STOP | No transfer

Parameter | Name: C1083 | Default gateway
Data type: VISIBLE_STRING
Index: 23492d = 5BC4h
Default gateway of the interface

Read access | Write access | CINH | PLC STOP | No transfer

Parameter | Name: C1084 | Domain
Data type: VISIBLE_STRING
Index: 23491d = 5BC3h
Domain name of the interface

Read access | Write access | CINH | PLC STOP | No transfer

Parameter | Name: C1086 | MAC address
Data type: VISIBLE_STRING
Index: 23489d = 5BC1h
MAC address (6 8-bit hexadecimal numbers) (e.g. 00:af:13:42:01:a8)

Read access | Write access | CINH | PLC STOP | No transfer
### Parameters of the card in slot 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Data type: VISIBLE_STRING</th>
<th>Index:</th>
<th>Device properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C1531</strong></td>
<td>**C1531</td>
<td>Device: Type key**</td>
<td></td>
<td>Index: 23044d = 5A04h</td>
</tr>
<tr>
<td></td>
<td>Card identification</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1532</strong></td>
<td>**C1532</td>
<td>Device: Type version**</td>
<td></td>
<td>Index: 23043d = 5A03h</td>
</tr>
<tr>
<td></td>
<td>Version number of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1533</strong></td>
<td>**C1533</td>
<td>Device: Name**</td>
<td></td>
<td>Index: 23042d = 5A02h</td>
</tr>
<tr>
<td></td>
<td>Device name of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1534</strong></td>
<td>**C1534</td>
<td>Device: Software version**</td>
<td></td>
<td>Index: 23041d = 5A01h</td>
</tr>
<tr>
<td></td>
<td>Software version of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1535</strong></td>
<td>**C1535</td>
<td>Device: Hardware version**</td>
<td></td>
<td>Index: 23040d = 5A00h</td>
</tr>
<tr>
<td></td>
<td>Hardware version of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1536</strong></td>
<td>**C1536</td>
<td>Device: Serial number**</td>
<td></td>
<td>Index: 23039d = 59FFh</td>
</tr>
<tr>
<td></td>
<td>Serial number of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1537</strong></td>
<td>**C1537</td>
<td>Device: Manufacturer**</td>
<td></td>
<td>Index: 23038d = 59FEh</td>
</tr>
<tr>
<td></td>
<td>Manufacturer of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
<tr>
<td><strong>C1538</strong></td>
<td>**C1538</td>
<td>Device: Manufacturing date**</td>
<td></td>
<td>Index: 23037d = 59FDh</td>
</tr>
<tr>
<td></td>
<td>Manufacturing date of the card</td>
<td></td>
<td></td>
<td>Read access □ Write access □ CINH □ PLC STOP □ No transfer</td>
</tr>
</tbody>
</table>
Interface parameters of the card in slot 2

**C1578**
Parameter | Name: **C1578 | Apply IP configuration**
Data type: UNSIGNED_16
Index: 22997d = 59D5h

Code for activating the set configuration. The interface is activated by writing a "1".

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<th>Information</th>
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<td>1</td>
<td>Activate device</td>
</tr>
<tr>
<td>0</td>
<td>No command</td>
</tr>
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</table>

Read access  Write access  CINH  PLC STOP  No transfer

**C1580**
Parameter | Name: **C1580 | Dhcp**
Data type: UNSIGNED_32
Index: 22995d = 59D3h

Activation of the configuration. DHCP states:
- "0" = Inactive
- "1" = Active
If DHCP is active, the codes 21-25 do not have any function

| Setting range (min. value | unit | max. value) | Lenze setting |
|------------------------|-----|-------------|
| 0                      |     | 1           |

Read access  Write access  CINH  PLC STOP  No transfer

**C1581**
Parameter | Name: **C1581 | IP address**
Data type: VISIBLE_STRING
Index: 22994d = 59D2h

IP address of the card

Read access  Write access  CINH  PLC STOP  No transfer

**C1582**
Parameter | Name: **C1582 | Subnet mask**
Data type: VISIBLE_STRING
Index: 22993d = 59D1h

Subnet mask of the card

Read access  Write access  CINH  PLC STOP  No transfer

**C1583**
Parameter | Name: **C1583 | Default gateway**
Data type: VISIBLE_STRING
Index: 22992d = 59D0h

Default gateway of the card

Read access  Write access  CINH  PLC STOP  No transfer

**C1584**
Parameter | Name: **C1584 | Domain**
Data type: VISIBLE_STRING
Index: 22991d = 59CFh

Domain name of the card

Read access  Write access  CINH  PLC STOP  No transfer

**C1586**
Parameter | Name: **C1586 | MAC address**
Data type: VISIBLE_STRING
Index: 22989d = 59CDh

MAC address (6 8-bit hexadecimal numbers) (e.g. 00:af:13:42:01:a8)

Read access  Write access  CINH  PLC STOP  No transfer
15 Glossary

A

Axis
Is a special variant of a system module and usually comprises at least a controller and a motor, but can - depending on the application - also comprise other devices (e.g. gearbox, encoder).

AIF
Abbreviation for “AutomationInterface”. Lenze-specific interface at the controller onto which a communication module can be plugged.
› Communication module

System module
Generic term for a mechatronic unit which can include several devices, one or several networks, information on parameter values, program logic and documentation.

A system module provides a specific technological function. It interacts with its environment and can usually be reused in another environment or system. The interfaces of a system module are provided by the interfaces of its components.

Controller
Generic term for Lenze frequency inverters, servo inverters, and PLCs.

Application
Implementation of a specific function (e.g. speed control) on an individual device.

Application variable
Structure consisting of element variables, communicated via network(s) using a certain transmission mode. The definition of an application variable is completely independent of a concrete network type.
› Element variable

B

Bus server
Fieldbus-specific OPC server according to DRIVECOM specification.
› OPC
› DRIVECOM

C

CAL
Abbreviation for “CAN Application Layer”. Communication standard (CiA DS 201-207) providing objects, protocols and services for the event or polling-controlled transmission of CAN messages and for the transmission of larger amounts of data between CAN nodes. Furthermore, CAL provides efficient methods for the automatic assignment of message identifiers, for the initialisation and monitoring of network nodes and for the assignment of an individual identifier to a network node.

CAN
Abbreviation for “Controller Area Network”. Serial, message-oriented (not node-oriented) bus system for max. 63 nodes.

CANopen
Communication profile (CIADS301, version 4.01), developed under the CiA umbrella association (“CAN in Automation”) in conformity with CAL (“CAN Application Layer”).

CiA
Abbreviation for “CAN in Automation (e. V.)”: International manufacturer and user organisation with the target to distribute worldwide the knowledge about the internationally standardised CAN bus system (ISO 11898) and promote its further technical development.
› Internet: http://www.can-cia.org/

Code
Parameter of a Lenze device for setting the device functionality.

COM
Abbreviation for “Component Object Model”: Architecture developed by Microsoft® for the interaction of individually executable software components (objects) which communicate with each other in the same way and which are only linked when the program is running.
DCOM
Abbreviation for "Distributed Component Object Model": COM, where the executable objects are distributed to different computers within one local area network.
- COM

DRIVECOM
"DRIVECOM User Group e.V." : International organisation of manufacturers of drive technology, universities and institutes with the target to develop an easy integration of drives into open automation structures.
- Internet: http://www.drivecom.org/

DriveServer
Lenze software which can be used to implement a simple integration of drives in open automation structures on the basis of OPC ("OLE for process control").
- OPC

Element variable
Variable which is used in an application to implement a specific function of the respective device.
- Application

Window icon
Button in the right-most position of the title bar to change the window presentation or close the window.

FIF
Abbreviation for "Function Interface". Lenze-specific interface at the controller on which a function module can be plugged.
- Function module

Function module
Device extension for the FIF interface, which on its own (i.e. if not equipped with a device) does not fulfill a function and is not capable to communicate.
- FIF

Device
Mechatronic unit which serves a certain purpose and can be provided with mechanical, electrical and logical interfaces with regard to its environment. A device is called a "communication-capable device" if it is able to communicate as a node in a network.
In contrast to the mechatronic "system module" unit, a device usually is not developed in the course of a concrete system installation project, but is designed and produced by a manufacturer.
Examples for devices: Controllers, PLCs, motors, gearboxes, sensors, encoders

Hyperlink
Optically highlighted reference which is activated by means of a mouse-click.

IPC
Abbreviation for "Industrial PC". The IPC is the central system for controlling and/or visualising machines.
K

Catalogue  A catalogue contains descriptive information on all element types that form an »Engineer« project. The »Engineer« uses various catalogue types, e.g. for devices, device modules, technology applications, function blocks, and motors. Each catalogue is labelled by versioning.

Catalogue package  A catalogue package consists of several related catalogues and is named and versioned. Multiple versions of a catalogue package can be added to an »Engineer« installation. Every »Engineer« project can use an optional number of catalogue packages.

Communication unit  Generic term for Lenze function modules and communication modules.

Communication module  Extension module which for instance extends a controller by a communication interface. On its own (i.e. if not equipped with a device) it does not fulfil a function and is not capable to communicate.

M

Machine application  Implementation of a functionality which is generated by the interaction of several communication-capable devices. A machine application is defined by the (device) applications involved and the exchange of application variables between them.

Menu bar  Bar at the top of the application window (below the title bar) which shows the names of menus that open with a mouse-click.

N

NMT  Abbreviation for “Network Management”: Services and protocols for initialisation, configuration, management and network monitoring within a CAN network according to the master/slave principle.

OLE  Abbreviation for “Object Linking and Embedding”: Insertion of functional objects in other applications, e.g. a Microsoft® Excel table into a Microsoft® Word document.

OPC  Abbreviation for “OLE for Process Control”: Defines an interface based on the Microsoft® Windows® technologies OLE, COM and DCOM which enables data exchange between different automation devices and PC programs without driver and interface problems.

The OPC server provides the data, the OPC client receives them.

OPC tunnel  OPC server and OPC client can be on different PCs networked via Ethernet. Communication between the PCs requires a special DCOM configuration. For OPC communication from several computers, Lenze uses an OPC tunnel that does not require any configuration.
P

PDF
Abbreviation for "Portable Document Format", a universal file format developed by Adobe for the exchange of electronic documents. With the free Adobe® Reader® software, PDF files can be displayed and printed independently of the application and platform used for the creation.


PLC Designer
Integrated development environment for the creation of IEC 61131 programs for Lenze PLCs.

Port
Connection point or interface of an application or machine application. Input ports serve to transmit e.g. setpoints and control commands to an application, output ports serve to provide e.g. actual values and status messages of an application.

- Application
- Machine application

Project element
The topmost element (root element) in the project view with the global properties of the project.

R

RAS server
With the Remote Access Service (RAS), Windows allows you to connect clients via a modem, ISDN, or X.25-connection with the local network. Different clients are supported and the selection and possible combinations of the network protocols used are very flexible.

The clients connected with the Windows network via RAS can use all network functions as if they were directly locally connected with the network.

Reset node
Function of Lenze devices with system bus (CAN) interface by which the device can be reinitialised if changes with regard to the data transfer rate, node address, or identifiers are carried out. NMT [CAN]

S

PLC
Abbreviation for "Programmable Logic Controller".

ST
Abbreviation for "Structured Text": Standardised programming language (IEC 61131-3) for programmable logic controllers (PLC).

System bus (CAN)
Lenze bus system based on the CANopen communication profile (CiADS301, version 4.01).

- CAN

T

Title bar
Bar at the top of the application window which contains the program icon in the left-most position and the window icons in the right-most position.

- Window icon

Top-down method
Design and implementation method which provides a step-by-step transition from the general comprehensive structure to more and more special details until the entire project structure has been created.

V

Variable
Name of a data memory which can adopt values which are defined by the data type and information on the variable declaration.

X

XML
Abbreviation for "EXtensible Markup Language", a meta language which describes the structure of documents.
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Your opinion is important to us

These instructions were created to the best of our knowledge and belief to give you the best possible support for handling our product.

If you have suggestions for improvement, please e-mail us to:

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Thank you for your support.

Your Lenze documentation team