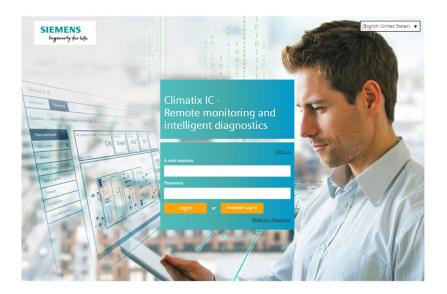
SIEMENS



Climatix IC

Remote monitoring and intelligent diagnostics for POL controllers

User Guide – Getting started

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Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks which should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit https://www.siemens.com/global/en/home/company/topic-areas/future-of-manufacturing/industrial-security.html.

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends to comply with security advisories on the latest security threats, patches and other related measures, published, among others, under https://www.siemens.com/cert/en/cert-security-advisories.htm.

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Legal note

Legal note concept

This guide includes notes that must be followed to prevent damage to property. Notes dealing only with damage to property use the signal word NOTE and an exclamation point.

They are depicted as follows:

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NOTICE

Type and source of hazard

Consequences in the event the hazard occurs

Measures/prohibitions to prevent the hazard

Qualified personnel

Only qualified personnel may commission the device/system. In this regard, qualified personnel have the training and experience necessary to recognize and avoid risks when working with this device/system.

Proper use

The device/system described here may only be used on building technical plants and for the described applications only.

The trouble-free and safe operation of the device/system described here requires proper transportation, correct warehousing, mounting, installation, commissioning, operation, and maintenance.

You must comply with permissible ambient conditions. You must comply with the information provided in the Section "Technical data" and any notes in the associated documentation.

Fuses, switches, wiring and grounding must comply with local safety regulations for electrical installations. Observe all local and currently valid laws and regulations.

Exemption from liability

The content of this document was reviewed to ensure it matches the hardware and firmware described herein. Deviations cannot be precluded, however, so that we cannot guarantee that the document matches in full the actual device/system. The information provided in this document is reviewed on a regular basis and any required corrections are added to the next edition.

Software used

All open source software components used in this solution/service (including copyright owners and license agreements) can be viewed at the following link:

- Go to https://www.climatixic.com in the footer on entry "OSS".
- Direct: https://www.climatixic.com/Content/OSS_ClimatixIC.htm

1 About this document

1.1 Getting to know Climatix IC

Videos

Videos				
Climatix IC on Youtube	https://www.youtube.com/watch?v=5_NuNjhyHyg			
Specific user roles in Climatix IC (Youtube)	https://youtu.be/gtZJ9AwfLe0 (German) https://youtu.be/kiPp014jrZA (English)			
The Climatix IC product page includes additional videos and information offerings	https://www.siemens.com/climatixic			

Try out Climatix IC

Start	https://www.climatixic.com	
The following test tenants are available	 DEMO.IC.OZW: OZW772, OZW672, OCI670 DEMO.IC.S300: S300HRV DEMO.IC.GetConnected: POL DEMO.IC.CLX: POL (AHU, Chiller) 	
Account names (roles)	demo.climatixic.ch@siemens.com service.climatixic.ch@siemens.com	
Password	Password.01	

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2 Climatix IC, remote monitoring and intelligent diagnostic

HVAC plants with Climatix controllers can connect to Climatix IC - 'Cloud-based solution for remote monitoring and intelligent diagnostic'.

Climatix IC supports your organization with remote maintenance 24/7, available anywhere to significantly reduce maintenance costs.

2.1 Key benefits

Climatix IC web applications offer:

- Remote access to plant devices worldwide and 24/7
- Plant owners and managers can analyze:
 - Current status
 - History
 - Access to schedules and settings
- Real-time consumption data (currently available as an history export) helps identify "consumption anomalies" that often point to underlying mechanical problems. This permits preventive maintenance.
- Climatix IC web operation simplifies and modernizes operation at all access levels.

Remote maintenance - at any time from any location

HVAC systems often operate a considerable distance from OEM production centers, supplier or service organizations, resulting in high service and travel costs, especially during warranty periods.

Climatix IC facilitates diagnostics, optimization of settings, or system upgrades from any location. Even if a visit to the plant does prove necessary, however, the available data enables service engineers to work more efficiently.

Connection – straightforward and effective

Today, most Climatix controllers are equipped with a built-in IP interface. The controller connects automatically to the Climatix IC via this interface.

Web-based – always up to date

Climatix IC operates with standard web browsers that support HTML5. The service engineer logs on via a laptop and directly accesses the plant. No special software or cables required.

2.2 Key functions

Climatix IC includes the following key functions:

- Collects alarms and routes them to the responsible service organization.
- Upgrades to installed plants: Application and firmware enhancements or saving control parameters to the cloud. Everything can be scheduled for specific times.
- Process data analysis permits systematic improvements to plant efficiency.
- The application can be used by any PC or laptop; no additional software required.

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3 Requirements

3.1 Technical requirements

The current Climatix controllers are preconfigured to automatically connect to Climatix IC as soon as they are connected to the Internet. First review the following system requirements:

Internet access

- The Ethernet cable must be connected to the controller's IP connection (T-IP).
- The controller requires a direct connection to the Internet, i.e. without proxy.
- Port 443 (https) is open, from the device to the outside on the Internet.
- Broadband Internet is recommended for the controller due to the program size.
- It is further important that the Internet connection is stable.

Web browser

The browser must support HTML5.

- The latest versions (as of the publication date) of the following browsers were tested: Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari (based on iOS) by Apple
- Internet Explorer is no longer supported.

3.1.1 Required output states: POL controller

Climatix controller BSP

- POL63x: 10.36 or higher.
- POL68x: 10.36 or higher.

The new POL6x8 and POL69U controllers have the appropriate BSPs from the factory.

Controller loaded with SAPRO application

- Climatix controllers must be loaded with a valid SAPRO application.
- The BSP LED must be green.

SCOPE tool version

The SCOPE tool maps, generates, and uploads to controllers as of VVS 10.32 or higher.

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3.2 Scan and use codes

3.2.1 Data Matrix Code

The activation code for your Climatix controller is included in the controller's firmware and can be read there using the SCOPE tool. The activation code is also printed on the actual controller as a DMC.

You can scan the code using a code reader app. The result is a text string.

Example

1PS55396-C488-A100+**31P**POL648.80/STD+**S**160908Z0000000005+**23S**00-A0-03-EB-01-04+**3C**AAAAAA-BBBBB-CCCCC-DDDDD-EEEEE

The text string is subdivided into code letters:

- 1P: Siemens stock number (SSN); fixed
- 31P: Siemens device type (ASN); fixed
- S: Date (YYMMDD), series, serial number, variable
- 23S: MAC address (hex); variable
- 3C: Climatix IC activation key; unique device ID

Conclusion

Your Climatix supports the automation of your business processes, e.g. during sign-up or pre-registration. You no longer need to connect the controller to get its ID.

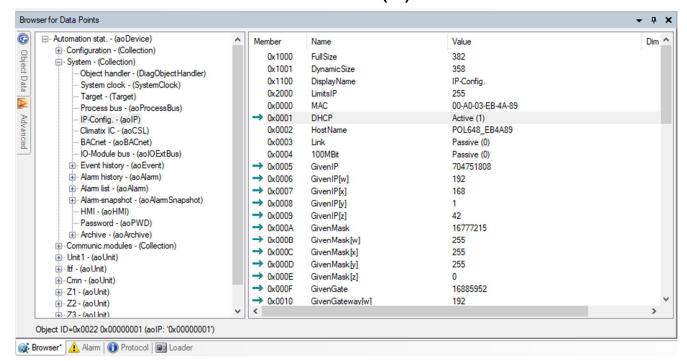


The data matrix code on the box includes information such as the Siemens device type (ASN) and date of manufacture. The activation code is not included on the box.

4 Engineering with SCOPE

4.1 Connect and exchange data

4.1.1 Connect to the Internet (IP)



- > SCOPE tool is connected locally to the target controller.
- 1. Go to "Menu > View > Browser".
- 2. In SCOPE, in the "Browser for Data Points", go to "System > IP-Config".
- 3. Check the following member settings

DHCP

The network configuration is taken from the DHCP server, if available.

Member ID	Member name	Setting
0x0001	DHCP	Active

The DHCP server provides the following information:

- Current controller IP address
- Correct subnet mask
- · Gateway IP address, if needed

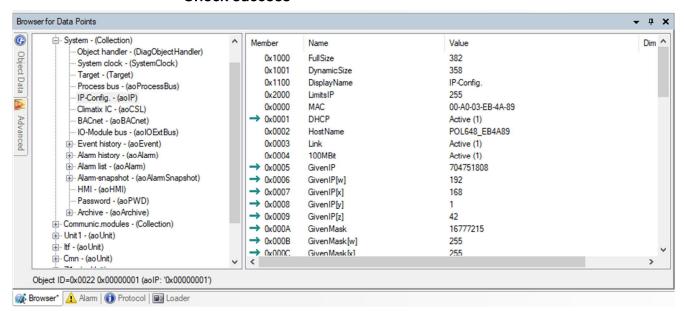
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Fixed IP address

Make the following settings if no DHCP server is available:

Member ID	Member name	Setting
0x0001	DHCP	Passive
0x0035	IP	Local controller IP address
0x0036	SubnetMask	Correct subnet mask for the local network
0x0037	Gateway	Gateway IP address or 0.0.0.0, if no Gateway is required
0x0038	PrimaryDNS	Valid DNS server address, e.g. 8.8.8.8 (Public DNS Google). DNS-Server to resolve internet domains
0x0039	SecondaryDNS	Backup for PrimaryDNS

Check success



Both members provide a note on success in this step:

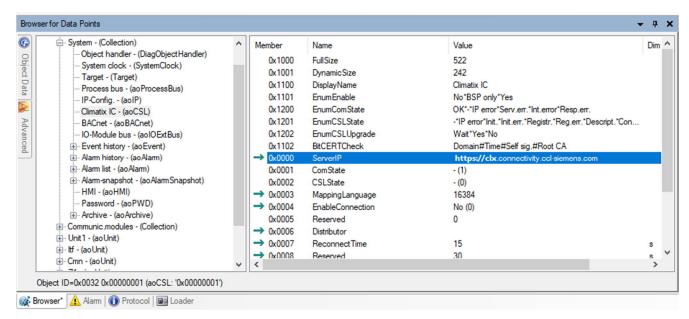
- 0x0003: Link: Must be set to active (1)
- 0x0004: 100MBit: Must be set to active (1)

The next step "Connect to cloud (CSL) [\rightarrow 11]", lists all other criteria to ensure the controller communicates with Climatix IC (Cloud).

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4.1.2 Connect to cloud (CSL)

Table overview



- 1. Go to "Browser for Data Points", "System > IP-Config".
- 2. Check the following member settings:

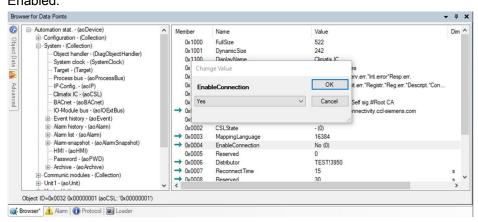
Member ID	Member name	Setting	
0x0000	ServerIP	Server URL with connection protocol. NOTICE! As a rule, do not change this value; it comes from the BSP of the controller.	
		• https://www.connectivity.ccl-siemens.com	
		https://clx.connectivity.ccl-siemens.com (as of VVS11.46)	
0x0004	EnableConnection	"Switch" for connecting. Is run as the last step.	
0x0006	Distributor	The distributor key assigns the controller to the correct tenant.	
0x0007	ReconnectTime	Wait in seconds between two connection attempts	

Workflow in detail and chronologically

- You have the distributor information (compare: "Basic data/tenant key (distributor)").
- > SCOPE tool is open and connected to the target controller.
- 1. In SCOPE, go to "Browser for Data Points", "System > Climatix IC".
- **2.** Check the ServerIP: Do not change the default setting https://clx.connectivity.ccl-siemens.com.

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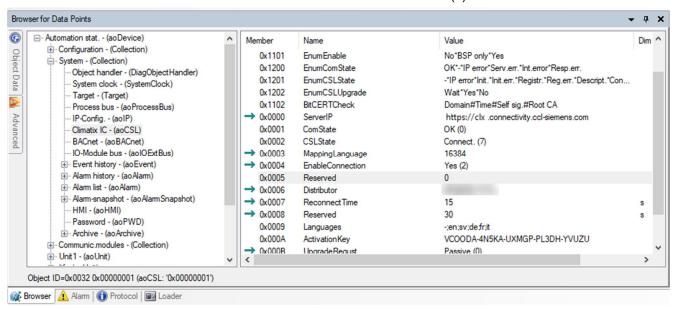
- **3.** Enter the distributor/tenant key in Distributor. The key is provided by the tenant administrator or is preset in the SAPRO project (aoCCL Block).
- **4.** The "switch" is used for connecting only at the end: Set EnableConnection to Enabled.



Check success

You can assume, according to the criterion indicated for both members that the controller is communicating with Climatix IC (Cloud):

- 0x0001: ComState must be on OK (0)
- 0x0002: CSLState must be on Connected (7)



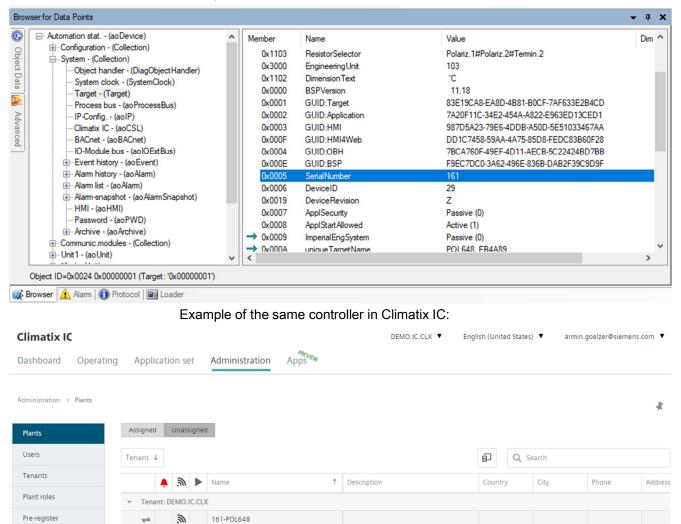
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4.1.3 Result in Climatix IC

The controller is logged in to Climatix IC with the steps described in "Connect to the Internet (IP) [\rightarrow 9]" and "Connect to cloud (CSL) [\rightarrow 11]" and entered in the list of "Non-assigned plants". Compare the documentation starting at "Plants".

The serial number or the activation key is helpful for finding your controller in Climatix IC; both are always an element of the initial plant name (you change them as a rule). The data is also readable in the SCOPE tool.

Example of the controller in the SCOPE tool:

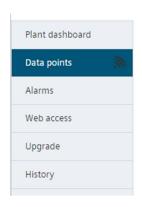


The number "161" is also an element of the initial name in Climatix IC.

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Result

After performing the various steps described in the complete documentation, you now have the following situation in Climatix IC "Operation > Data points". This information can be used as an example for engineering watch pages and data points:

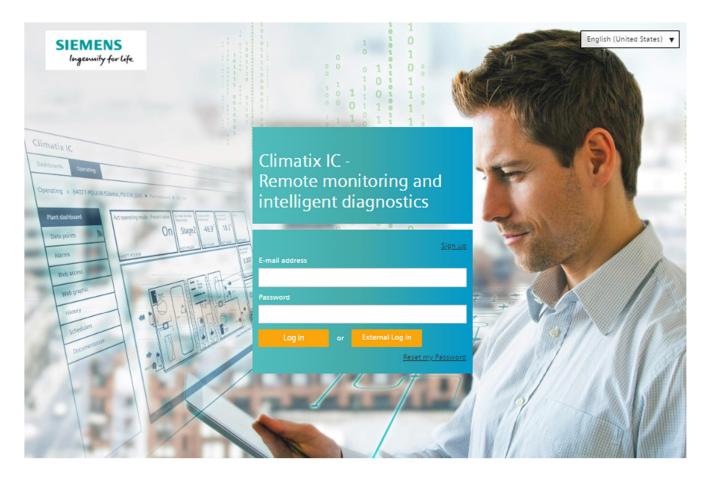




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5 Entering Climatix IC

Enter the portal at https://www.climatixic.com.



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5.1 Assistance on the start page



Accessible documentation

- "Support" on the start page provides an introduction.
- The comprehensive help for reading is located at the same location after log in.

Information on unsupported browsers

A clear information window indicates when Climatix IC is opened by an unsupported browser.



dnesday 23rd. 11:00am (CET

Central maintenance information from the Climatix IC Operations Team

Maintenance and important improvements are prominently displayed on the start page.

A color code (green, yellow, red) intuitively indicates the relevance of the information. Once logged in, you can access the same information at any time using the Info symbol (upper right). The Info symbol flashes for news.



Climatix IC dashboard

You are investigating an event and want to know whether Climatix IC was online at a specific time? The Climatix IC dashboard provides an objective overview whether services are or were available. You can also subscribe to the RSS feed for the service.



Cookie information

You must confirm the cookie information every 90 days.

Language selection

• Set the language in the portal navigation ribbon to the right.

5.2 Accessing Climatix IC

Systematic security during access

Climatix IC provides two access methods that ensure systematic security.

- A user who already has access to Climatix IC, triggers an invitation e-mail: Access via "Login using a local login [→ 19]".
- You possess a device activation code. You can simultaneously activate the device and create a user account. Access via "Sign up - Register a plant [→ 23]".

Integrate external logins

Additionally, Climatix IC follows the trend of integrating external login providers. A user, e.g. that often uses Google tools and is logged on to Google, can also use this login data to log into Climatix IC.

Climatix IC provides the following:

The opportunity to use the login data for a Siemens ID, Google or LinkedIn. In the background and not visible to the user, the third-party providers are also forwarded through the Siemens ID process.

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NOTICE

Reliably delete persistent external login data from the browser

External login procedures store information in the browser to increase user comfort. We recommend **Private or incognito mode** for personal PCs, especially for public PCs. These browser modes reliably delete information when exiting the browser.

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Frequently asked questions on external logins

The following answers FAQs on external logins.

How does the login with an external login provider work?

- You still need the Climatix IC user account as the starting point.
- The procedures described below, an external login account (e.g. Google, Siemens ID) connects to your Climatix IC account.
- After connecting, you can login by clicking "External login". It queries your external login data.
- You can simply click "External login" to return to Climatix IC as long as the login data for the external login is saved in a browser session.

When is an external login not recommended or what should I look out for?

- Unprotected PCs without a windows login (e.g. private PC or Internet café) are not suitable, since the login data can remain in the browser.
- We recommend the incognito mode for your browser.
- Delete the browser data beforehand if you intend to switch the login role and use external logins for both roles (check the browser's online help on how to do this).

What is the bill of quantity for IC user accounts and external logins?

• 1 external login for 1 Climatix IC account and vice-versa.

What is considered a secured login and log off?

• The terms and conditions of the login provider applies

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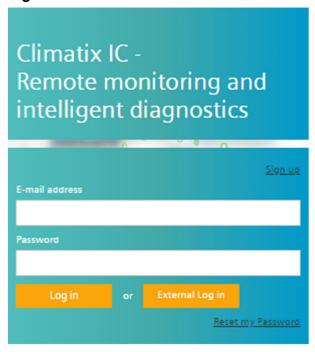
5.3 Sign in

5.3.1 Login using a local login



The internal "Login" described here is required the first time. A user account is created. Afterwards, the user can switch to an external login (Log in via external login $[\rightarrow 21]$).

Sign in



- > You have received an e-mail with an invitation link and temporary password.
- **1.** Enter the User name (your e-mail address) and (temporary) password and click "Sign in".
 - ⇒ You are requested to change the password.
- 2. NOTICE! Read the note below for permissible Climatix IC passwords. Create a secure password and confirm the new password below it.
- 3. Click "Change password" to confirm the change.
- ⇒ Your individual password is active and you are now forwarded to an entry mask.



NOTICE

Climatix IC accepts the following passwords:

A secure password consists of at least 8 characters and includes at least one of the 4 character groups:

- Latin capital letters (A...Z)
- Latin low-case letters (a...z)
- Digits (0...9)
- Non-alphabetic characters (e.g. !, \$, +,?)

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Secure sign in and out

Note the following functions for sign in/out:

 The connection is ended after 30 minutes of inactivity. The web page returns to the sign-in screen.

NOTICE! Only the activity on the first tab is registered when working in multiple browser tabs.

- The user account is locked after 5 attempts with the wrong password.
- The user is notified as soon as a new password is set using the "Forgot password?".
- For security reasons, a new sign in is required after 24 hours of uninterrupted user activity.



NOTICE

Protect passwords

- Do not pass on your user name and password for Climatix IC to just any third party.
- Encrypt e-mails that include the user name and password.

Forgotten password

Use the "Forgot password" function if you have forgotten your password and follow the instructions.





This dialog box is hidden for security reasons when using an external login.

5.3.2 Log in via external login



NOTICE

What you need to know in advance

- The external login described here requires an internal user account in advance, see "Login using a local login [→ 19]".
- Switching to external login disabled the local login using IC login data.
- The internal login procedure can be used again once the external login is deleted. An initial password is resent to the original IC e-mail address.

The following external login providers are supported:

- Google
- LinkedIn
- Siemens ID

The login providers support two-step authentication.



Consult the documentation from applicable login provider on how to set up twostep authentication.

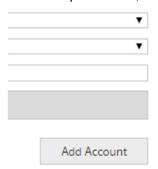
Connect a Climatix IC account with an external login provider

- You have a Climatix IC user account and an account that supports external login providers.
- 1. Log in using your Climatix IC login data.
- 2. In the header, click 'Login name > Profile details'.



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3. Below the profile data, click "Add account".

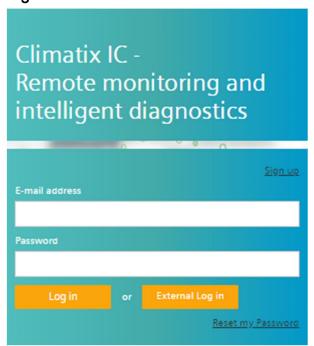


- ⇒ A selection of external login providers is listed.
- **4.** Comply with the login procedures of the external login providers.



As of now, the external login is available as a login procedure and the local IC login is disabled.

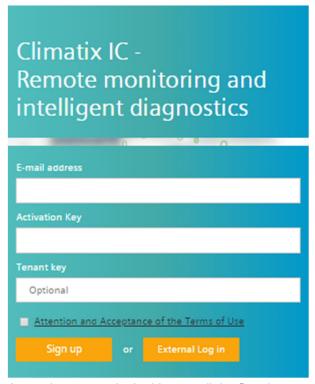
Sign in



You decided in favor of external access using the procedure described above, in other words, you log in using the login dialog box, enter the e-mail address of the external login and select the "External login" button.

5.4 Sign up - Register a plant

5.4.1 Register using a local login



As a rule, you are invited by e-mail the first time you contact Climatix IC, in other words, you follow the workflow as described under "Sign in [\rightarrow 19]".

Registration is a process that combines multiple steps:

- First time log in by a new user without an invitation by a higher role
- Plant activation using a valid activation key
- The new user is added to the plant with the user role Owner
- Optional: Direct moving of the plant to a sub-tenant area

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5.4.2 Register using an external login



NOTICE

What you need to know in advance

- The registration process using an external login described here does not require an internal user account.
- After successful registration, the external access is listed in the user profile and can be deleted there.
- The internal login procedure can be used again once the external login is deleted. An initial password is sent.

The following external login providers are supported:

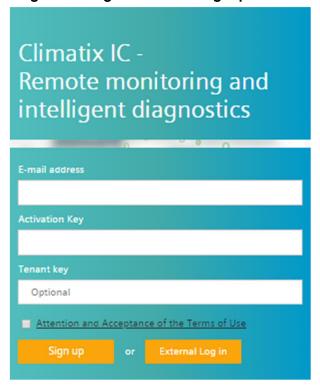
- Google
- LinkedIn
- Siemens ID

The login providers support two-step authentication.



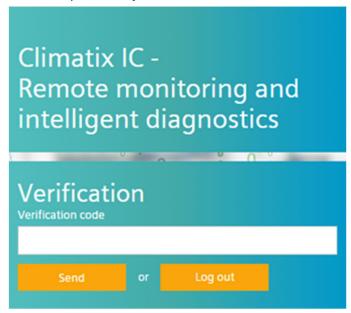
Consult the documentation from applicable login provider on how to set up twostep authentication.

Register using an external login provider



- You have an activation code for your controller.
- You have the login data of a supported, external login provider.
- 1. Enter the e-mail address of the external login, the activation key, and, as an option, the tenant key in the entry mask.
- 2. Confirm "Accept..." and select the "Externes login" button.

- **3.** Following the instructions of the external login provide to ID yourself using the provider's login data.
 - Climatix IC sends a confirmation code to the indicated e-mail address and requests entry.



- 4. Enter the confirmation code and select "Send".
- ➡ Climatix IC opens with the activated plant. You are entered in the header with the login name.

You decided in favor of external access using the procedure described above, in other words, you log in using the login dialog box, enter the e-mail address of the external login and select the "External login" button.

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6 Climatix IC portal security

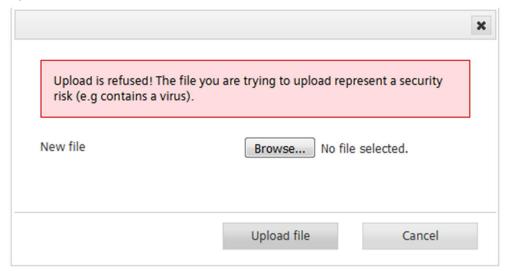
6.1 Climatix IC

The portal provides thorough security, e.g. data security, security data storage, and reliable data transportation.

- All connections are encrypted (HTTPS) to prevent tapping into the line and man-in-the-middle attacks.
- Data security as per EU Data Privacy Chapter 5
- Geo-redundant data storage from northern Europe (primary) to western Europe (secondary).

Virus scan

Uploaded files are scanned for viruses.



6.2 Climatix controller

The Climatix controller is not suitable for connecting directly to the Internet; it must be connected via a Firewall. This type of router typically has a firewall.

The firewall must be configured to permit only outgoing connections. Incoming connections must be suppressed.

7 Support

Extranet registration

Register for the OEM extranet and access exclusive information and resources: http://www.siemens.com/buildingtechnologies-oem.

Support on technical problems

Please adhere to the following sequence on support issues:

- 1. Contact the supplier of the device or plant.
- 2. If unknown, Siemens provides the following tools:
- Own information via the Download Center: http://www.downloads.siemens.com.
- Own information via the Service and Support Portal https://support.industry.siemens.com.
- Submit a support request: http://www.siemens.com/automation/support-request.

Climatix IC status page

Neutral and objectively reported online state of Climatix IC: https://status.climatixic.com.

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