Hoval

HovalSupervisor cloud

The professional control system with location-independent plant access.

Efficient | Intelligent | Flexible

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HovalSupervisor cloud
Realising the potential of the energy system.

Whether you are a commercial operator or a hotelier, anyone who manages one or more buildings also manages an energy system, and wants to ensure that the heat supply operates reliably.

Those who build energy systems through an enterprise and sell heat to different stakeholders through contracting also face the same situation.

You can take a considerable step towards greater efficiency by networking your own plants with plant components!

With the HovalSupervisor cloud control system, plants and their operation are visualised, controlled and monitored from a single location.
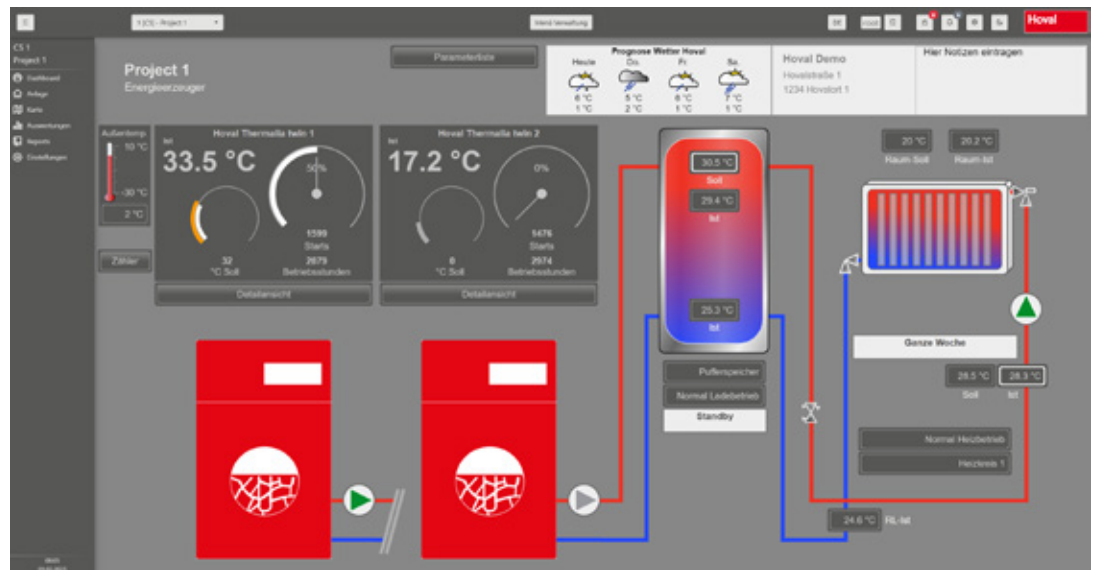
Power generation plants and processes in complete distribution networks can thus be dramatically optimised.

All this is possible from any location. It doesn't matter if you're on-site at a plant or managing assets from your home office. It doesn't matter whether the end device consists of a laptop, a tablet or a smartphone. All that is needed is an up-to-date web browser.

Added value for your benefit:
- Efficient and reliable plant operation
- Intelligent solutions
- Flexible application

Efficient and reliable plant operation

- **Always up to date**
  Our solutions are always up to date. And we are constantly delivering new features or enhancements through agile development methods.

- **High availability**
  Use of high-quality cloud servers with exclusively European locations. Any necessary maintenance windows are carefully planned.

- **Always there: expert support**
  If you want to concentrate on the essentials, you can rely on an expert team at your side. Online and onsite training is also available.

- **More control and efficiency**
  The software was developed with a focus on simplifying everyday tasks. As a result, not only do you get a better overview of the plant with optimised alarm functions and improved reporting, you also benefit from easier commissioning, group settings, etc., allowing everyday organisation to be completed more quickly and efficiently.

- **Investment costs**
  By using the software on a subscription basis, it can be used as a service. In this way, investment and maintenance costs for IT equipment can be reduced, thus freeing up resources.

- **Automated backups**
  Data is backed up automatically at defined intervals.

- Ongoing asset reporting upon request. Increased efficiency by detecting deviations in operation.

- **Operating costs**
  Electricity costs for running a computer on a 24/7 basis are completely eliminated with the cloud.

- Existing plant computers and hardware components must be kept up-to-date on an ongoing basis and replaced at the end of their useful life.

Intelligent solutions

- **Quick to deploy**
  One of the biggest differences with tra-
  ditional software is that a cloud solution
  does not require extensive installation. As
  a result, no IT support is required for setup
  and maintenance. After registration, the
  product is ready for immediate use.
- **Accessible at any time and from anywhere**
  The solution is optimised accordingly for
  mobile devices and thereby available at any
  time and from anywhere.
- **Provider's responsibility**
  As a provider, we consider it our responsibility
  to ensure that the software is accessible at
  all times, and we take care of providing the
  features. We guarantee data security through
  encryption standards, such as 256-bit SSL
  encryption or ISO 27001 certifications for data
  centres, which is in line with the specifications
  for information management system security.
- **Regular updates**
  As a provider, we not only take care of the
  maintenance of the software, but also the
  continuous development of features. New
  functions are automatically provided in the
  software and can often be tested in advance
  during operation. This means that users can
  benefit directly and do not have to down-
  load and install updates.
- Compliance with the highest safety stan-
  dards is guaranteed by TÜV certification,
  which is currently being implemented.

Flexible application

- **Multiple uses for data**
  The data collected can also be used in other
  business management areas (e.g. accoun-
  ting) and operating systems (e.g. energy
  management, etc.).

- **Continuously updated virus protection**
  On the server, we provide comprehensive
  and professional virus protection that is
  always kept up to date.
- **Transparent, standardised and networked**
  - The HovalSupervisor cloud offers
    investment security through the use of
    standardised communication and data
    protocols (UPC-UA standard).
  - The HovalSupervisor cloud offers ready-
    to-use standard integrations for all
    TopTronic®E controllers (Hoval products),
    which enable a quick connection. Never-
    theless, any adaptation to object-specific
    requirements is possible at any time with
    little effort.
  - The use of pre-prepared standards allows
    short implementation times, reduces
    complexity and allows you to focus on
    your core business.
  - In addition to the extensive range of
    Hoval solutions, any other products with
    open data protocols such as Modbus,
    BACnet, MQTT, KNX and other PLC
    protocols can also be connected on a
    project-specific basis.
  - The Hoval GatewayModule OPC UA is
    primarily used for secure communica-
    tion with Hoval products. In the special
    area of district heating, the LON or IP
    interface can also be used as an alter-
    native for secure communication of the
    plants, which communicate via a special,
    encrypted Hoval router.
  - Plant-specific and more elaborate solu-
    tions for visualisation are also available
    for more complex plants. Depending on
    the plant and complexity, a choice can be
    made between different solutions.

HovalSupervisor cloud
Why rely on a cloud solution?

Many areas of our lives are already digitalised

The I&C sector (instrumentation & control) is particularly affected by digitalisation. A decade ago, an on-site server/client installation was the usual form of installation for a control system.

This was chosen primarily so that operators could manage all data exclusively in their own infrastructure, and also to protect it from unauthorised access. However, this form of installation is an obstacle due to the administrative burden, which is increasing every year.

Digitalisation requires cloud installations

This is being driven not only by familiarisation with this technology from the IT sector, but also cost savings in the areas of administration, backup, virus protection, system updates, compatibility and cybercrime, for which the company itself must be responsible in its own infrastructure.

Another key factor is the simpler and thus much more cost-effective connection of (heating) plants to cloud servers, without the need for expensive VPN connections. This also significantly simplifies access for operators. These can self-manage from one plant to a thousand plants or more.

HovalSupervisor cloud

With HovalSupervisor cloud, you can benefit from all the advantages of a responsibly and securely implemented cloud solution. However, HovalSupervisor cloud also offers many other advantages, such as detailed plant evaluations or regular reports on the condition of your plant. The HovalSupervisor cloud is used to profitably manage Hoval's premium products, such as heat generation and distribution systems, drinking water heating plants and, with additional interfaces, Hoval indoor climate systems and a wide range of external data sources.

Areas of application and use
Adapted to the place.

Housing associations
- Plant management: increasing availability
- Early alarming
- Reduced time spent travelling, due to remote diagnosis

Solutions for all locations
Smart configuration.

Whether property management, commercial, hotel or contracting companies – the Hoval-Supervisor cloud offers customised solutions for different requirements.
Hoval's product range includes end-to-end complete solutions of intelligent heating and air conditioning systems. More than 10 years ago, Hoval expanded its range of plants with solutions for local and district heating, including its own control system. The range focuses not only on small and medium-sized decentralised plants, but also on large plants and entire city utilities.

Hotel industry/Hotel chains
For building and operating hotel systems.
- Plant management: increasing availability
- 24/7
- Alarming

Contracting company
For builders and operators of plants.
- Plant management: increasing availability
- Alarming
- Increasing efficiency
- Providing data for accounting

Commercial buildings
For builders and operators of plants.
- Plant management: increasing availability
- Alarming
- Increasing efficiency
- Providing data for accounting

Functions
Safe plant management – easier and more efficient than ever before.

Basic functions
Administration from the desktop.

Even though the HovalSupervisor cloud system is highly sophisticated, its functions are easy to understand. Visualisation ensures that processes are monitored at all times.

Data recordings and evaluations in real time ensure control of usage. Adaptations can be made by changing parameters.
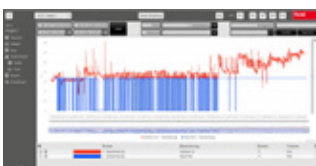
Safe plant management

Full access to all parameters according to a rights concept
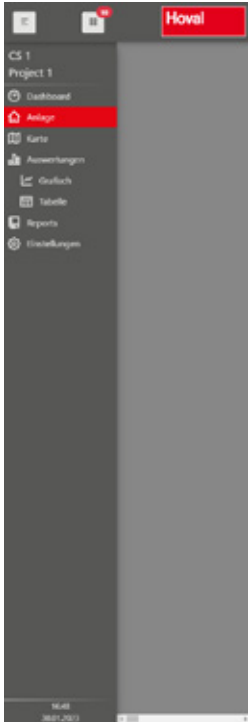

Increasing efficiency

Statistics/reporting

Basic functions
Possibilities and capacities.

Main menu

- The HovalSupervisor cloud is used for visualisation of plant statuses, error messages, actual and setpoint values of energy centres or individual energy generator systems.
- Graphical representation of the energy centres and the distribution network, in order to be able to carry out an analysis of processes, and further, an optimisation.
- Energy efficient operation of the energy centre, energy generator or distribution of multiple plant networks through transparency.
- Complete project overview with all controllers and connected heat meters, temperatures and operating data.
- Visualisation of the total amount of heat delivered, instantaneous output, operating data such as operating hours, starting frequency and efficiency values.
- Export of all energy data in standard formats for further processing (e.g. as xls file).
- Graphical efficiency overview of the plants.
- Consumption analysis

- Overview of DHW and heating circuit switching times to optimise load profiles.
- Overview of heating circuit switching times to optimise load profiles.
- Graphical comparison of the energy consumption of different plants.
- Weather forecast.
- Energy balance for energy centres, energy producers and consumers.
- E-mail notifications of various plant states.
- On request, ongoing reporting with plant data, reference values and deviations.
- Cartographic representation of all connected equipment and consumers.

Settings submenu

- All functions are subject to the user rights check, with different levels available (owner, plant operator, customer service).
- Remote diagnosis of the entire plant is possible via remote maintenance.
- Project management for multiple project sites is optionally possible.

- The HovalSupervisor cloud control technology communicates both with the TopTronic®E modules and optionally with third-party products (definition of interfaces required) and is therefore versatile.
- Straightforward integration of energy generators and other data points into a comprehensive system through the OPC UA server.

Statistics submenu

- Statistic evaluation of recorded and archived data via graph plotter and tables, in which case heat meter readings can be read out via the MBus interface on the heat meter.
- Recording of all adjustable parameters, switching times, counter data, temperatures of the sensors and switch settings (operating selector switch).

- Direct setting of output relays or activation of heating circuits of the TopTronic® E controller.
- Complete alarm handling, i.e. logging of all alarms such as sensor break, communication fault, etc. with date and time, and forwarding of messages.

Further functions

- Generic controllers with allocation of external data points (integrate external controllers via OPC (UA)).
- Central software update for all connected TopTronic® E controllers.
- Several users can access the plant simultaneously because of the integrated multi-user system (max. 3 users in the standard version). More are available as an option.
- Access via smartphone, tablet PC or display with web browser is possible without installing additional software

- All data is transmitted in encrypted form from the individual controllers to the Hoval-Supervisor cloud control technology, so that no consumption or customer data can be recorded or tampered with by third parties.
- Data can be exchanged between various plants (ERP (e.g. SAP) or higher-level systems) using an OPC UA server.
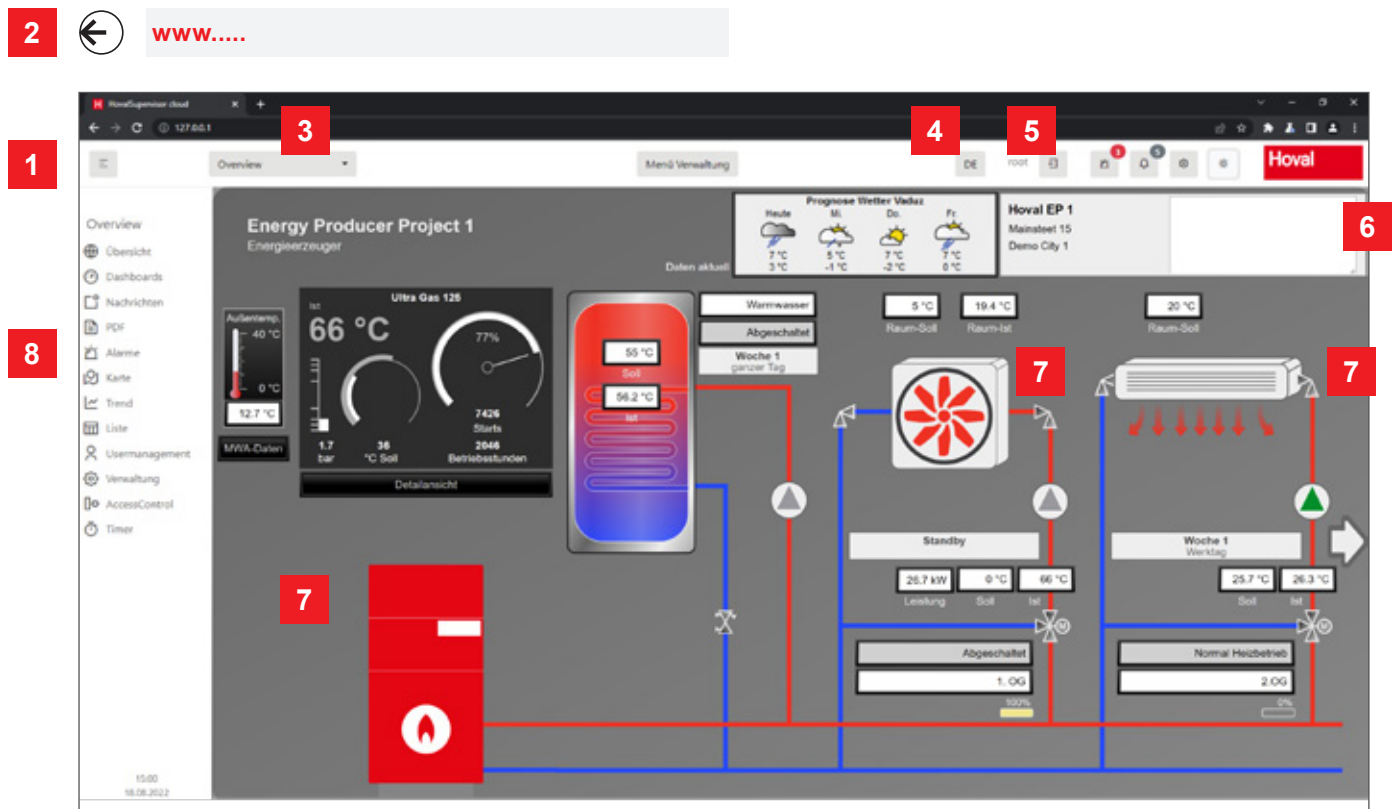
Optional additional packages

- Optional use of the QM interface, i.e. evaluation of all data relevant to customers and energy, with export into the QM document provided for this purpose.
- Optional optimisation of the cost effectiveness and energy distribution by controlling external energy sources by switching consumers on or off.

- Optional display of the energy centre with visualisation of external energy generators, plant components and the associated information variables.
- Optional display of warning messages from leakage warning devices.

The HovalSupervisor cloud system
Intelligent communication control centre.

1 For energy generators and energy centres, project-specific functions are available in the navigation area: overview of plant, operating data and settings, evaluations and statistics are just some of them. Clicking the menu adds a description to the function icon. Clicking an icon switches to another function. An overview of the functions can be found in the Functions chapter.

2 The HovalSupervisor cloud was implemented according to the latest standards as a pure web-based application. It starts in a web browser. Special add-ons such as plug-ins or Java have been completely dispensed with. Installation of clients on individual PCs is not necessary. The HovalSupervisor cloud can be accessed if an Internet connection and access authorisation are available. Since vector graphics are used, continuous zoom is possible. This facilitates the evaluation especially in case of graphical representation.

3 The HovalSupervisor cloud enables an overview of several projects in one system. The desired project is selected from the existing projects via a pull-down menu. If many projects have already been created, the search function helps to find the desired project.

4 Menus, reports and also error messages are available in German, English, French and Italian, and the language can be changed during operation. Additional languages can be added easily and quickly via a language file if desired.

5 A user management system is integrated into the HovalSupervisor cloud. Each user must log on. Rights and roles for employees must be defined. Three project-typical user levels have already been created for a quick and clear assignment of access rights: plant operator, energy supplier and customer service.

6 The information area is divided into the following sections: weather forecast for several days, details of the selected plant, its assigned controllers, and the controller-related comments field. Selecting and clicking another controller will display it in the graphical overview.

7 The graphical overview shows the individual components of a project and their associated operating data. The Hoval-Supervisor cloud has ready-made building blocks for energy generators from Hoval. They enable a simple and quick setup of the graphical plant overview. The blocks contain detailed information about the respective energy generator such as temperature, pressure and number of starts. Plant components from other manufacturers can be integrated, monitored and operated via PLC or DDC controllers with ready-made and tested programming modules.

8 If there is a fault in a plant, the alarm button indicates this immediately. Clicking the alarm button switches to the alarm overview. All alarms are listed there and additional information about the alarm is available. This helps to quickly intervene and eliminate the malfunction.
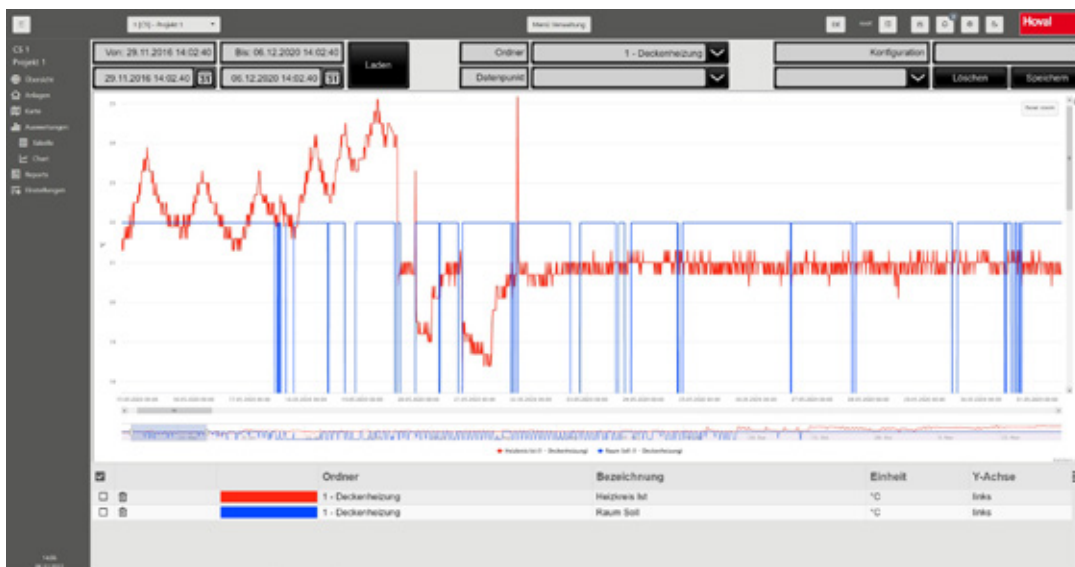
Operation
Simply uncomplicated.

Operation
As easy as surfing the web.

Despite the complexity of the plants displayed and the wealth of information, the intuitive user interface of the HovalSupervisor cloud control system allows users to handle it easily – almost like surfing the web. A logically structured menu guides the user through the program. A few clicks and the desired data of energy generators, controllers or consumers can be seen; the statistical evaluation is available. Data is ready for export quickly, so that it can be imported into an ERP system and invoices can be created.

Yellow or white display fields? Colours show which data comes from calibrated meters. But first, the project is selected.
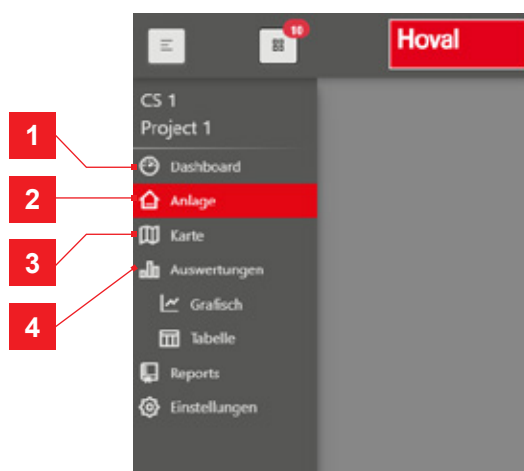
Configured Solution (CS)

Configured visualisation of plants with TopTronic® E plant control, e.g. heat pumps, biomass boilers, gas boilers, district heating transfer stations, drinking water systems, cascades, etc.

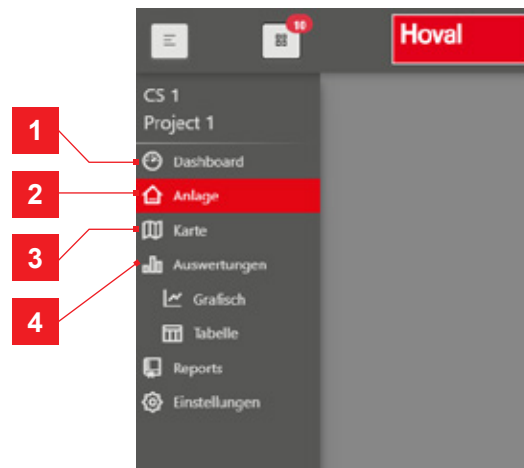## Menu with functions

Configured Solution (CS)
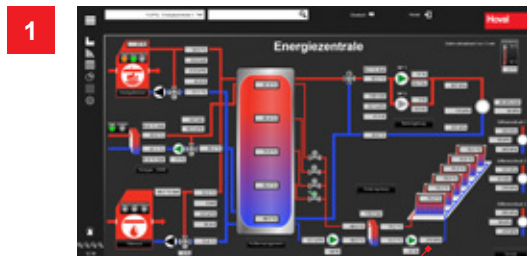

Pre-prepared elements for energy generators

Engineered Solution (ES)

Customised visualisation of plants with TopTronic® E plant control, PLC control or external data sources.
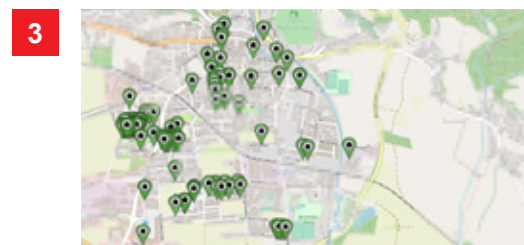
Menu with functions

1. Dashboard
2. Anlage
3. Karte
4. Auswertungen

Engineered Solution (ES)

1

Detail view Solar

2

3

4

Efficiency in just a few steps
Scope of services of HovalSupervisor cloud.

1	**Setup of the customer (one-time)**

- Debtor setup

Setting up a debtor
- Required once for access to HovalSupervisor cloud
- Prerequisite for plant connection
- Includes one administrator user (customer receives access data by e-mail, additional users can be created by the customer when the system is switched on)
- Max. 1500 CCDs per instance (actively displayed data points for all concurrent users)

Enjoy an all-round feeling of comfort
Everything from a single source.

System operators benefit from different services. Hoval brings heating, cooling and ventilation into the digital future.

The modular design of its control equipment enables Hoval to meet extensive and complicated requirements, regardless of how many components there are in the plant. The solution is put together individually for the respective application, depending on the complexity and scope.

2 Set-up of a plant (one-time)	3 Sub (annual)		4 Further services
	Basic sub	Add-ons sub	
■ Coordination visit before commissioning ■ Commissioning of the required hardware on site (e.g. GW module OPC UA TT-E or PLC) ■ Creation of the visualisation (configured or individual visualisation) ■ Extended commissioning if necessary (e.g. function check or supplementary activities) ■ Readjustment (optimisation of the plant)	■ TTE sub ■ Engineered solution sub	■ External data source sub ■ Additional package user/ DP/CCDs sub ■ SMS fault messages sub	■ General training ■ Engineering services

Technology
Ingenious.

Technical solution
Made usable online.

Technical prerequisites
- Any plant schematics can be created in a time-optimised manner
- Very good possibilities for analysis and evaluation
- No software needs to be installed on the clients – a current browser is sufficient
- Integration of different hardware/products flexibly possible after engineering
- Network connection required on the plant

Advantages of the solution
- High security standard to protect customer systems and data
  - Modern and secure connection technology
  - Encrypted data transmission from the control unit to the control system
- Straightforward commissioning
- User and plant management
- Assignment of rights for access to plants and countless other options

Security
Always our focus.

Data is the new gold nowadays. Your "gold" is in safe hands with HovalSupervisor cloud. Due to the technology used, they have many advantages on your side.

The HovalSupervisor cloud is web-based and starts in your default browser with which you access the Internet. No plug-ins are required to use the HovalSupervisor cloud. Manufacturers of Internet browsers are eager to close possible security loopholes as soon as possible, so you will benefit from this effort. In addition, you have the advantage of being able to access your plant from mobile devices with an existing Internet connection.

Access to the plant by unauthorised persons is prevented by means of a logon and encrypted data transmission. Create users for the employees who work with the system. In this way, you manage the group of people who have access to your data. The standard HovalSupervisor cloud includes 3 predefined profiles that you can easily and quickly assign to an employee. Each employee can only access the areas for which he/she is actually responsible.

The system continuously provides a variety of relevant operational data and prepares the data for analysis. Changes are thus implemented immediately. You can intervene quickly before a potential disruption to your plant occurs. If a malfunction does occur nonetheless, the service technician can access the plant remotely and react quickly and purposefully. This may eliminate the need to visit the plant, and increase the operational reliability of your plant.

Security by Design – The HovalSupervisor cloud was designed according to the latest security standards. This means that Hoval is currently considered a pioneer on the market, as no other solutions can boast such a solution. This creates trust and the security of using the best possible solution on the market.

TÜV certification underway

A quick guide to terminology
Extra knowledge.

SCADA
(Supervisory Control and Data Acquisition)

The abbreviation SCADA stands for Supervisory Control and Data Acquisition, and describes the basic functions of a computer system. Companies use SCADA systems to control their assets across sites, and to collect and record data about their operations.

In addition, SCADA systems allow companies to use real-time data to monitor and document their processes, and archive the data for subsequent processing and evaluation.

OPC UA
(OLE for Process Control)
Open Platform Communications
Unified Architecture

OPC Unified Architecture is the new technology generation from the OPC Foundation for secure, reliable and non-proprietary data communication.
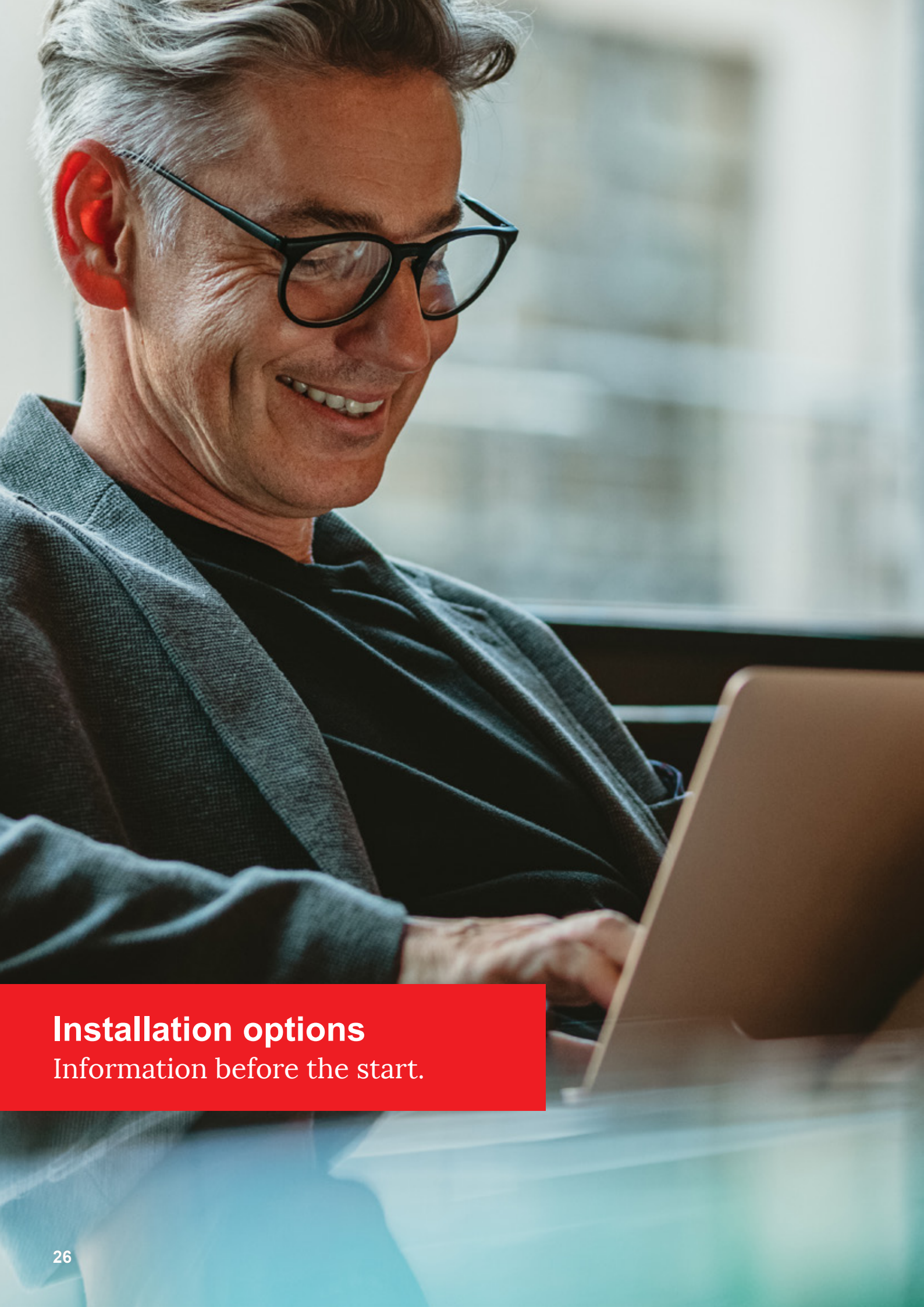
OPC UA forms the bridge between the instrumentation and control system to the smallest embedded automation component – irrespective of whether it is from Microsoft, UNIX or other operating systems.

Key features
- Industry standard
- Non-proprietary
- Platform-neutral
- Security
- Scope for future expansion

Installation options
Information before the start.

Installation/setup

Easier than you thought.

- The HovalSupervisor cloud replaces the HovalSupervisor and is installed exclusively in the cloud.
- There will not be any expansions to HovalSupervisor from the time of change-over. Bugfixes and adjustments due to operating system changes excluded.
- The central server usually eliminates the need to install or set up a server at the customer's site, with all the time-consuming activities (installing the PC, setting up the operating system, installing drivers, etc.) that this entails. Likewise, there is no need for instruction on securing the server (backup), virus protection, firewall setup, user account setup, etc.
- The actual setup is limited to pure project installations or adjustments to the visualisation of the customer installation.

- Fieldbus commissioning/router configuration/VPN setup/OPC UA gateways
- All that needs to be done locally on the plant is to set the required UPC UA gateway and connect to the cloud.
- Individual boiler or heat pump systems communicate very easily using this UPC UA gateway, as well as with the HovalSupervisor cloud using encrypted transfers.
- In this form of installation, the TopTronic®E controllers communicate directly with the HovalSupervisor cloud and transmit encrypted data.
- If other controllers or PLCs are used without an encrypted connection, a VPN will have to be integrated.

Hoval quality.
You can count on us.

Hoval

As a specialist in heating and climate technology, Hoval is your experienced partner for system solutions. For example, you can heat water with the sun's energy and your rooms with oil, gas, wood or a heat pump. Hoval ties together the various technologies and also integrates room ventilation into the system. So you can save energy while looking after the environment and your costs – and still enjoy the same level of comfort.

Hoval is one of the leading international companies for indoor climate solutions. More than 75 years of experience continuously motivate us to design innovative system solutions. We manufacture complete systems for heating, cooling and ventilation to more than 50 countries.

We take our responsibility for the environment seriously. Energy efficiency is at the heart of the heating and ventilation systems we design and develop.

Responsibility
for energy and environment

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Your Hoval partner