



Priva Compass

The solution for perfect crop control



priva.com





Point your crops in the right direction

The world population continues to increase and climate conditions continue to change. These factors not only make successful crops ever more important, but an even greater challenge, too. To grow more efficiently, to use water and energy optimally and to produce vegetables, fruit, and ornamental plants safely, you need to use the right technology. The number of covered and irrigated crops have increased drastically over the last few years, and this trend will continue for the foreseeable future.

To get the most out of your installations and systems, a process computer is an essential part of your cultivation. Besides the optimization of your growing process, there are more demands a modern process computer should meet. Your computer should be flexible and able to adapt to your expectations. Reliability is key, but of course, you want a computer that's user-friendly, too. After all, you'll be using it every day, so you want it to be easy to operate.





An optimal control for every process

The Priva Compass process computer was developed to control not just irrigation, but climate, light, and CO₂ as well. Priva Compass is made up of compact and flexible hardware and software modules and is incredibly easy to operate. It's perfect for monitoring your processes any time of day. With its ultra-modern technology and affordable price point, Priva Compass is the only one of its kind on the market today.

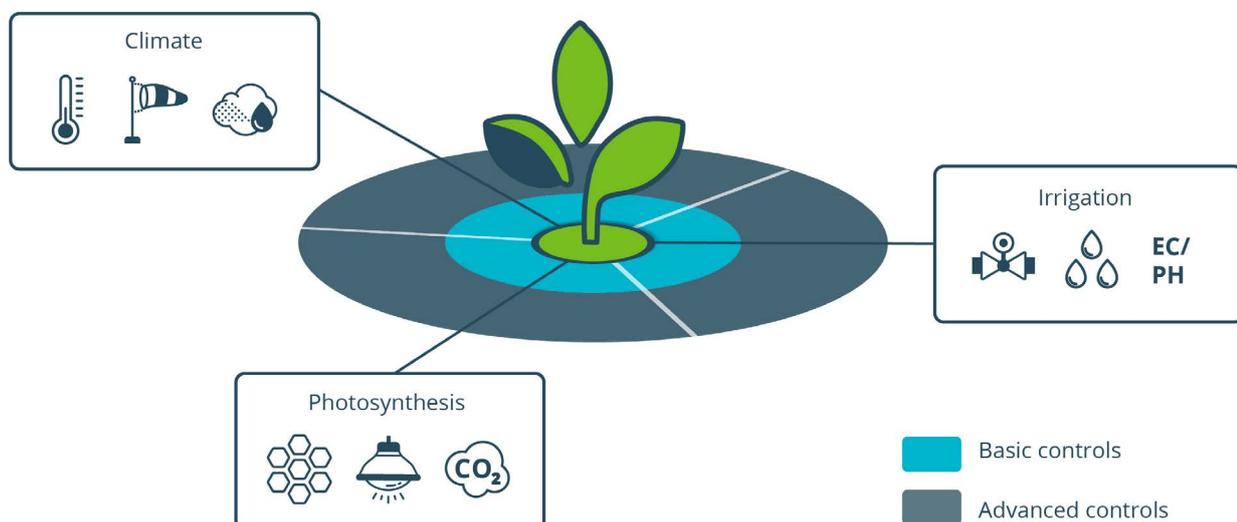


Priva Compass in three steps

Deciding on the right Priva Compass for your crops is simple:

1. Select your themes: Irrigation, climate, photosynthesis, water, and/or energy
2. Select your level: Basic or advanced
3. Select the I/O modules that are crucial to your installation

This will give the perfect solution for you, your crops, and your ambitions.





Crop control software

Within a crop zone, everything revolves around the crop. Using the crop zone control modules that are part of Priva Compass, you can operate your installations directly to control the amount of light, water dosage, and/or the humidity level and temperature within a crop zone. Priva Compass supports standard one weather station. In addition, two universal measurements and two universal time programs are being supported per zone. This allows Priva Compass to be used universally.

For every crop zone and every theme, you can select basic or advanced modules.

Irrigation module

Water is essential for any crop. With the irrigation modules, you can adjust the right amount of water at the right time, to the perfect combination for your crop. No more dehydration or poor root development.

Basic irrigation module

The basic irrigation module lets you control up to ten irrigation valves with a single irrigation strategy. When the strategy triggers an irrigation cycle, all the valves will turn on sequentially.

You can use this irrigation strategy to trigger an irrigation cycle based on daily schedules, multiday schedules or based on conditions such as solar radiation or radiation sum.

Advanced irrigation module

If your irrigation process is more complex, the advanced irrigation module is a better fit for you. This module supports up to forty irrigation valves and ten irrigation strategies. What's more, the module lets you optimize your irrigation strategies using one drain sensor and up to ten irrigation sensors. You can even connect up to forty drain valves.

The advanced irrigation module is especially suited to large-scale cultivation and cultivation on substrate using a mostly automated irrigation process, such as the cultivation of vegetables, cut flowers, and soft fruit.

Climate module

The environment conditions are important for the performance of your crop. With the climate modules, you can simply control and optimize temperature, air humidity and air flow. Now your crop can develop itself optimally with minimal risk of diseases.

Basic climate module

The basic climate module is perfect for use in garden centers and tunnel greenhouses, and ideal for the cultivation of bedding plants and trees.

Use this module to control two vents, two cooling stages, two heating stages and one curtain. This module gives you two periods for separate day and night control.



Advanced climate module

The advanced climate module has everything you need to fully control a crop area. All controls are based on four periods per day, with the possibility of installing four measuring boxes per crop zone. Using this module, you can control four vents, six cooling stages, four heating stages and two curtains. The module supports four mixing valves for use with tube heating

To even out your climate, you can also manage air circulation fans. The mist and humidity strategy control lets you manage humidity levels in your greenhouse. You have the possibility to use up to twelve temperature influences. The advanced climate module offers you a great deal of flexibility based on outside parameters and its fully configurable custom controls. You could, for instance, set the fans to stop running when the vents are opened. This way, the module allows you to attain the perfect climate at any given time.

The advanced climate module is perfect for you if you run a complex installation for the cultivation of cut flowers, vegetables, or house plants in plastic or glass greenhouses

Photosynthesis module

Photosynthesis is the starting point of every crop. With the photosynthesis modules, you can control and optimize light and CO₂ to have the right balance in your photosynthesis process. This results in a higher quality of your crop and a higher yield.

Basic photosynthesis module

The basic photosynthesis module lets you control one growing light circuit within one system. You can select a lighting strategy that switches based on time, radiation intensity and radiation accumulation. To keep your climate stable during lighting, your lighting strategy control can also manipulate your temperature strategy control.

The basic photosynthesis module is ideal for the cultivation of various cut flowers and ornamental plants.

Advanced photosynthesis module

Do you want to control multiple growing light circuits or dose CO₂? Then the advanced photosynthesis module is the perfect choice for you. This module lets you manage up to four growing light circuits, based on time, radiation intensity and radiation accumulation. CO₂ dosing is automatically controlled to maintain optimum CO₂ levels for your crop.

The advanced photosynthesis module is the key to optimizing your photosynthesis. This is especially beneficial for the cultivation of cut flowers, vegetables, and various ornamental plants in glass greenhouses.



Technical installation control software

Water and energy are scarce, but necessary for your growing operation. With Priva Compass, you can control your water systems and energy systems with minimal use of those natural resources. This is not only sustainable but will also save you a lot of money.

Energy module

The realization of an optimal climate is not attainable without energy. With the energy modules, you can control your boilers in the most efficient way.

Basic energy module

If your system makes use of hot water heating, your heat is probably supplied by a boiler. If this boiler has its own control system, you only need to send a heat demand. In this way, you'll find the basic energy module is great for you.

Advanced energy module

Using the advanced energy module, you can control the entire boiler with Priva Compass. This module handles up to four boilers plus one transport line. In addition, the advanced energy module offers completely customizable control programs. These programs allow you to control other installations based on the status of your energy installation. It's the flexibility you need to respond to your crop's specific needs.

Water module

At the moment your crop needs irrigation, you need to have a water system in place to supply it. With the water modules, you can provide your irrigation valves with the right amount of water and fertilizers.

Basic water module

Using the basic water module, you can control one pump and connect one flow sensor. It's the ideal water module to use if your water system has its own controls, when you don't apply fertigation, or when you use mechanical dosing systems.

Advanced water module

If you're looking for a water system with automatic fertilizer dosing, the advanced water module is what you need. This module supports not only pump control and flow measurement, but up to five dosing channels. Use them to add acid, lye or nutrients that your crop needs based on your flow, EC, or pH measurements.

You can define your target EC and pH levels as well as your nutrient mixtures in recipes. The Compass gives you twenty different recipes for your water system.

Using completely customizable control programs, you can control other installations based on the status of your water installation. The advanced water module

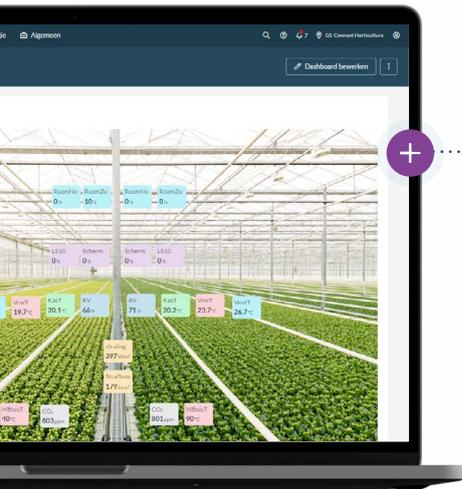
	IRRIGATION 	CLIMATE 	PHOTOSYNTHESIS 	ENERGY ROOM 	WATER ROOM
Basic	Irrigation/mist valves 10 Irrigation strategy 1	T/RH measurement 1 Strategy periods 2 Heating stages 2 Vents 2 Cooling stages 2 Curtains 1	Lights 1	Heat sources 2	Water supply pump 1 Flow sensor 1
Advanced	Irrigation/mist valves 40 Irrigation strategy 10 Misting strategy 1 Irrigation sensors 10 Drain valves 40 Drain measurement 1	T/RH measurement 4 Strategy periods 4 Heating stages 4 Vents 4 Cooling stages 6 Curtains 2x2 Local temperatures 4 Local heating 4 Soil temperatures 4 Soil heating 4 Mixing valves 4 Recirculation fans 1 Misting valve 1 Humidity strategy 1 Temp. influences 12 External overrides 2 Custom controls 6	Lights 4 CO ₂ dosing 1	Heat sources 4 Boilers 4 Transport mixing valve 1 Custom controls 6	Water supply pump 1 Flow sensor 1 Dosing channels 5 Custom controls 6 Recipes 20 EC sensors 2 pH sensors 2
					Enterprise
					Water supply pump 1 Flow sensor 1 Dosing channels 16 Custom controls 6 EC pre-control 1 Water tanks 20 Backwash control 1 Recipes 20 Rinse valve 1 EC sensors 2 pH sensors 2

way to control and manage your dosing channel water system.

Enterprise water module

If you use more than five dosing channels, the Enterprise water module is your ideal choice. It has all the features of the advanced water module, plus an extension of eleven dosing channels to bring your total up to twenty. On top of that, this module supports EC pre-regulation software. With the Enterprise water

module, you can manage up to twenty irrigation water storage tanks. A backwash program is also available to flush your filters when necessary. In short, this module gives you everything you need to control an enterprise water system.



Priva Operator

Have you ever been somewhere and wanted to make a quick change to one of your computer settings? Or you got an alarm and wanted to figure out what triggered it? With Priva Compass Operator, you are able to remotely access your Priva Compass. It does not matter if you are using a laptop, tablet or your mobile phone. The responsive design will fit any device.

Dashboards for easy operation

Whichever device you use, you always have insight into your operation in the form of a clearly laid-out dashboard. Your dashboards show you the information that is most relevant to you in a clean and simple layout. Thanks to the clear interface with intuitive dashboards and graphs, it only takes a glance to see the status of the various components of your system, including the components that may need adjusting. The dashboards give you control over all the parts connected to your installation, leaving you in charge of your processes at all times.

Priva in the cloud

Priva Compass enables for remote access to your computer. When you connect your Priva Gateway to the cloud, you have access to the Priva Compass Operator from anywhere in the world, as long as you have an internet connection. Your data is also stored in the cloud so you never have to worry about losing your data.

Security

Priva uses the highly secure Microsoft Azure cloud foundation to make sure that your data storage and remote access are protected.



Analysis and alarms

Priva Compass automatically generates predefined graphs and reports. Once you have insight into your process and you're able to analyze it, your job suddenly becomes a lot easier.

Analysis tool

Clear predefined graphs of your measurements and calculations give you insight about your crop and enable you to quickly analyze and refine your processes. In addition, graphs have a Quick Analysis function. This lets you add graph lines based on pre-defined sets. All data is stored for 14 days, so you can come back at a later date to analyze your past processes.

Alarms page

Priva Compass Operator comes with a crystal-clear alarms page. If one of your processes is not going as planned, an update will appear in the alarms overview. This tells you the location the alarm occurred, the time and date, and more. This helps you take appropriate action right away so all your processes run as desired.



Compass hardware installation

The Priva Compass is available in two sizes: Priva Compass 2S and 4S. Depending on the number of measurements and controls you need, you can select the size most suited to your situation.

Multi-controller network

What if you need more Priva Compass controllers in order to control your entire site? No problem! With the multi-controller network, you can easily link different Compass controllers in one network. The controllers communicate by an ethernet cable and all information – such as information of the weather station, boilers and water systems – is displayed seamlessly in Compass Operator. Per site, only one Gateway is needed to integrate up to five controllers in one network.

The Compass 2S and 4S come equipped with a Priva Gateway. One Gateway is needed for each network of Compass controllers. If you already have a Compass in your network, all you have to do is expand your network with the Compass 2X or 4X.



Priva Compass 2S

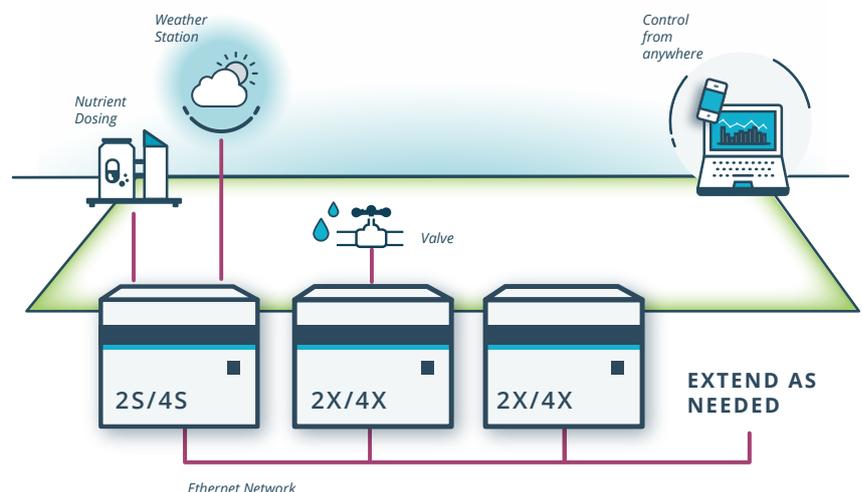


Priva Compass 4S

The Priva Compass 2S/2X or 4S/4X comes with the following:

- Priva Gateway (only in Compass 2S/4S)
- Priva Blue ID C4 controller(s)
- Flexibility thanks to small I/O modules
- Multi-voltage power 100-230 Vac 50-60Hz
- Separate power supply to Priva Compass and field devices (two 24 Volt DC supplies)
- Industrial quality (IP55 / NEMA12 rated) enclosure

As an alternate access in case of issues with your ethernet network, your Priva Compass comes equipped with a built-in service Wi-Fi enabling you to connect directly from within a radius of about 30 feet (10 meters).





Control

Priva Compass uses a Priva controller: The Priva Blue ID C4 controller. You can expand it with various modules: a mixed I/O module, a universal input module, and a relay output module, all of which are all available to fit your needs. As the modules are easy to install and the system is transparent and user-friendly, set-up and commissioning are wonderfully simple.



Priva Gateway

The Gateway is an industrial-quality PC that allows for fast and reliable management of your system. It stores historical data for the last two weeks and pushes all historical data to the cloud for secure long-term storage. Besides, the Gateway pushes live data to the cloud so that you have all the information at your fingertips regardless of where you are.



Priva Compass setup

Priva's web-based setup screens allow you configure your Compass to fit your needs. From here, you can activate your licenses, apply your software modules to the desired zones and select your inputs and outputs.

When you've completed the installation, one press of a button will save the I/O list as a PDF file or Excel spreadsheet to make installation and maintenance of your equipment that much easier to handle. For safety reasons, you can also make a backup of your entire controller

The easiest setup

We've created a number of different scenarios within Priva Compass Operator. By combining separate settings, it's now easier than ever to understand the relationship between settings and use that knowledge to benefit your crops.

Air temperature alarm

Trigger if temp sensor 1 rises above or falls below



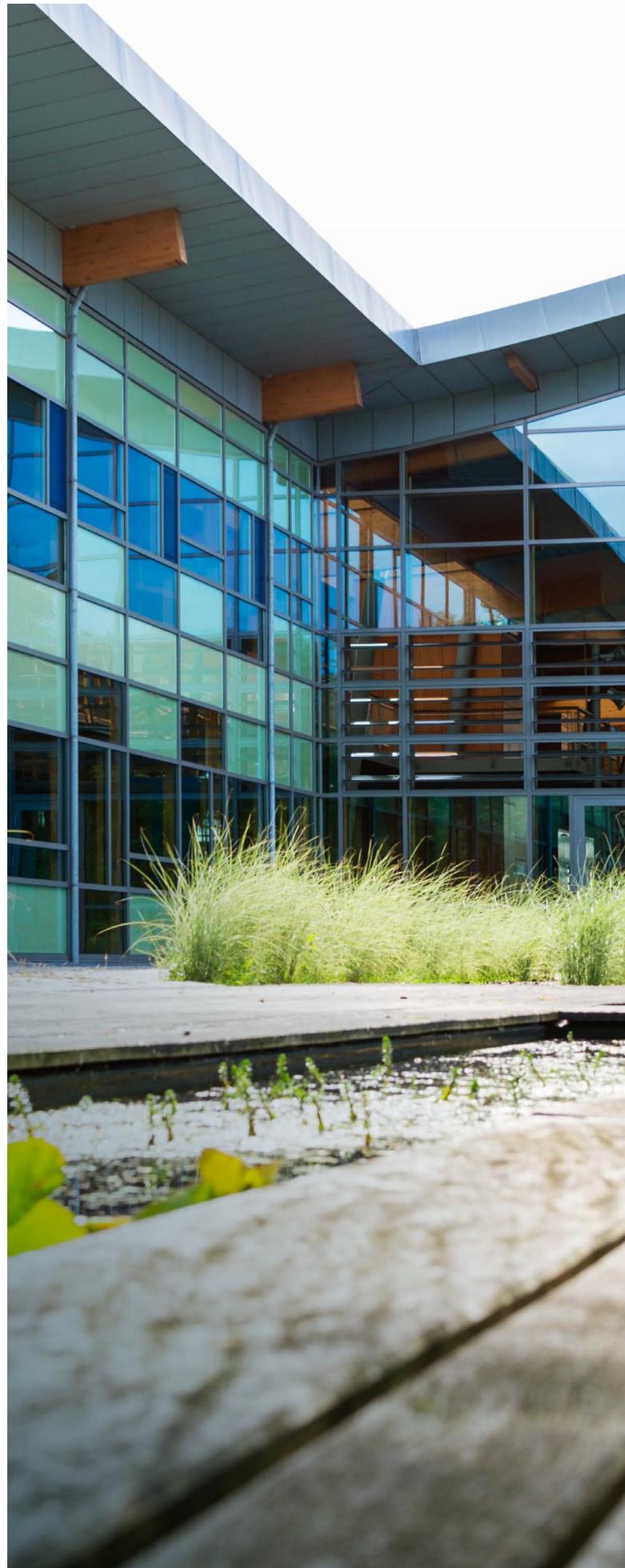
About Priva

Priva is a high-tech company that develops hardware, software and data services in the field of sustainable climate control, energy saving, and optimal reuse of water.

Our innovative solutions are used in a wide range of sectors such as greenhouses and polytunnels, vertical farming and indoor growing environments, offices, public buildings, retail, hotels, health care, and museums. Worldwide, we have a customer base of 10,000 companies and 450 international installation partners. We supply sustainable solutions and services in more than 100 countries.

With our activities in horticulture, building automation, and indoor growing, we want to help shape the cities of the future. We create an optimal environment in which people and plants experience the best way to grow. A place where people can enjoy a healthy working and living environment and have access to safe and nutritious food.

Using our horticultural expertise, we help entrepreneurs grow a profitable crop in a sustainable way. We enable them to organize their business processes more efficiently and make conscious decisions about water, labor, and energy. This goes hand in hand with helping growers to manage the cultivation process in a greenhouse in a way that creates more continuity in the business. With over 60 years of experience in greenhouse horticulture, we do this by offering total solutions for controlling and managing any form of horticultural activity anywhere in the world.





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