



boss range

The new platform for controlling
and monitoring more efficient and
sustainable systems

New boss

The new boss and boss mini represent the natural evolution of CAREL's supervisors, introducing a more modern and high-performance platform for controlling and monitoring HVAC/R systems.

- **Simplification:** management of HVAC/R systems on a single supervisory level, eliminating fragmentation between different interfaces.
- **Operational intelligence:** raw data become strategic insights to optimise performance and ensure precise control.
- **Interoperability:** open architecture for seamless communication between field devices and cloud services in an integrated ecosystem.
- **Security:** highly-secure access protocols and cybersecurity compliance ensure data integrity.

New increased memory capacity to handle more devices and more variables

By default, boss mini manages 50 devices and 750 logged variables, while boss manages up to 300 devices and 4500 logged variables. These limits can be increased by activating a SW plug-in that allows boss mini to manage 60 devices and 1000 logged variables, and boss 350 devices and 6000 logged variables.

New plug-in activation logic

Modular system customisation through a vast library of plug-ins - ranging from system optimisation to field and cloud protocols - all easily activated via a flexible credit system.

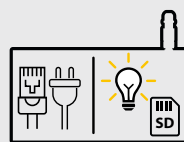
Integration with CAREL cloud solutions

boss can be connected to the RED optimise platform for complete supervisor control, including administrative functions, as well as the possibility to centrally configure the data that are logged and transferred to RED optimise from multiple boss systems, directly from the platform. The combination of RED optimise and boss is therefore a turnkey solution, ideal for services managed using pre-configured supervisors.



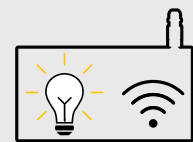
Easy installation

A compact and lightweight design makes boss installation quick and easy, without requiring any accessories.



Connector layout based on use

Rear for permanent wiring, side for local user interface connection, and front for more frequent interactions.



Built-in user interface

WiFi hotspot, HDMI video output and LED indicators are always available for verifying system status even when no other external device is connected.

bCore 2.0

The new boss family software that simplifies the user experience, optimises maintenance, and guarantees the highest IT security standards through a simplified interface.

bCore 2.0 overcomes operational complexity, with a neat and intuitive design that transforms system management into a fluid and immediate experience.

Main strengths:

- **Quick search, favourites and notifications:** instant access to functions, devices and alarms. The quick search, favourites, and contextual notifications based on the principle of progressive disclosure, mean user only see what they need, when they need it.
- **Dynamic menu:** adaptive navigation that evolves based on the context and user profile. By eliminating the rigidity of traditional tabs, b.Core 2.0 makes interaction more natural.
- **Floating actions and intelligent dialogue boxes:** commands always available at the right point in the work flow. Guided dialogue boxes simplify frequent operations, drastically reducing the possibility of errors.
- **Smart wizard:** wizards simplify the setup process, guiding users step-by-step through the configuration and optimal use of the supervisor.

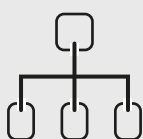
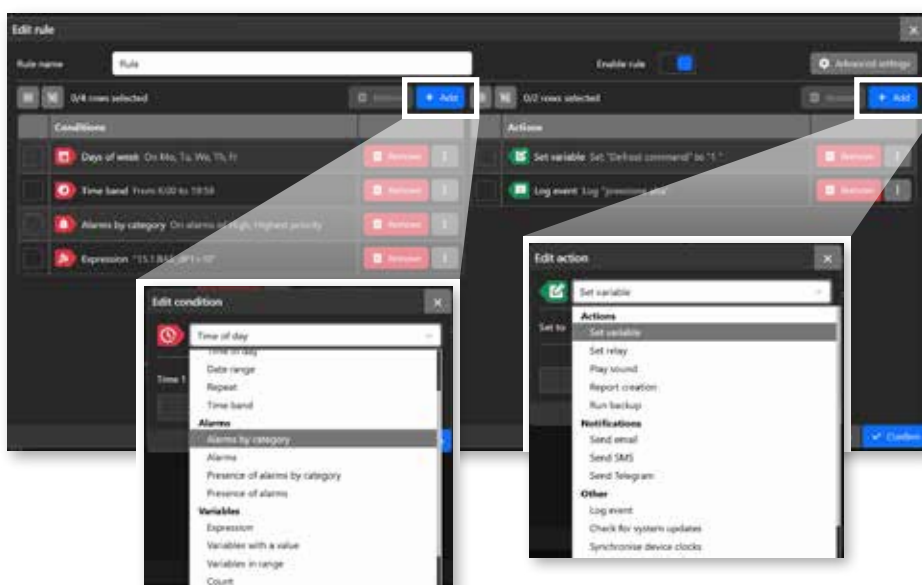
No-Code rules engine

The rules engine offers a code-free graphic interface for creating control logic based on predefined conditions, simplifying configuration and scheduled maintenance.

This feature unifies alarm and schedule management into a single interface, allowing actions to be triggered based on both alarms and specific events, with a consistent and intuitive work flow.

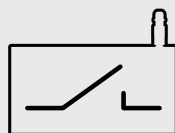
By using intuitive lists to select conditions and actions, without requiring any programming language, every single aspect of the system can be managed, from I/O signals and notifications, to load control for energy efficiency.

Conditions can also be defined via formulas, using Excel-style syntax.



Highly-reliable serial ports in critical environments

Six built-in opto-isolated RS485 ports for stable and reliable communication in all types of applications.



Built-in relays

Three built-in double contact relays for interaction with external electromechanical systems to signal alarms or activate external devices



Cybersecurity

Complete protection through a secure-by-design approach, combining hardware security with Secure Boot, role-based access control (RBAC), and constant validation certified by external organisations.

Integrated graphic maps: unlimited creation and customisation

boss comes with a **new integrated Map Editor** for creating and customising system maps and supervisor pages **directly from the device**. The process is entirely guided and intuitive, eliminating the need for development or graphics programming skills.

Users can therefore design their own maps in just a few clicks, placing icons and data on the system backgrounds for immediate visual monitoring, without needing to install external software: everything is managed in the browser, keeping the interface aligned with the evolution of the system at all times.

As an alternative to basic graphic customisations, more complex needs can

be met using the c.Web development environment.



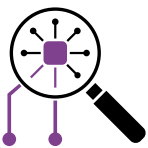
New Energy plug-in: complete energy management

The **new Energy plug-in** revolutionises the monitoring of energy consumption and production, unifying these into a single structured and intuitive view.

- **System energy hierarchy:** view energy consumption based on the actual system layout across multiple levels (e.g., global refrigeration, medium temperature, low temperature, and other secondary units) to immediately identify where energy expenditure is concentrated.
- **Smart tagging:** functional labels can be used to categorise and identify energy consumption in uniform groups, making data analysis more immediate and better organised.

- **Renewable energy integration:** energy production (e.g., photovoltaic systems) can be monitored for

activating optimisation logic based on self-consumption, using custom rules.



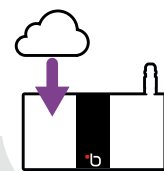
Autodiscovery

A powerful autodiscovery tool simplifies device recognition on Modbus (RTU/IP), CAREL, BACnet IP, and M-Bus networks, through an intelligent wizard that optimises the scanned parameters for fast and accurate detection of network components.



Single user interface

Every aspect of the system, from network settings to application logic, can be managed from a single web server, without needing to change websites or credentials, offering a single access point for system monitoring, control, and maintenance.



Automatic updates

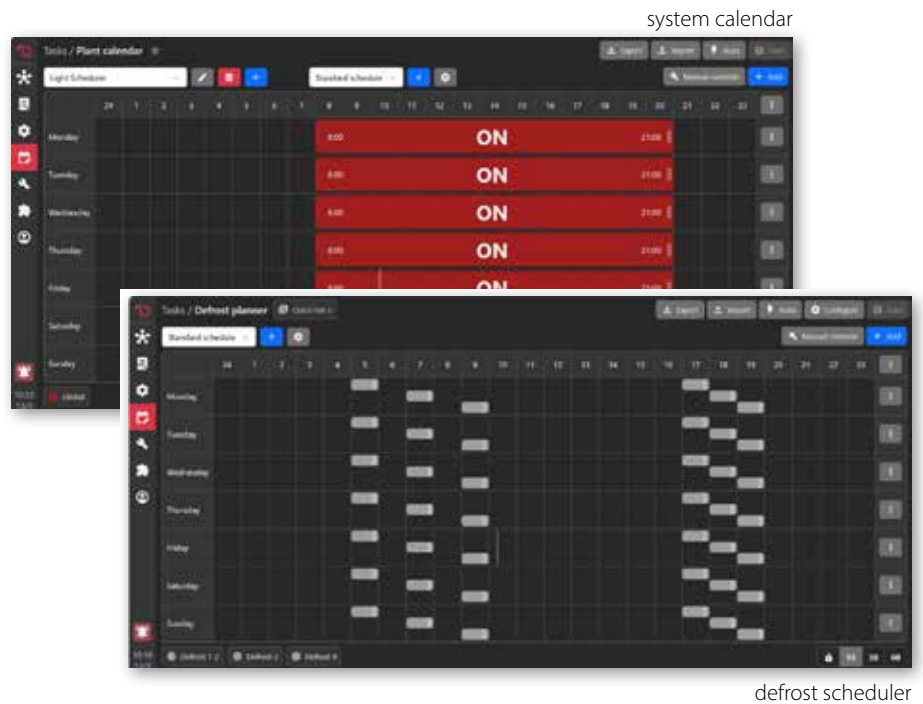
New software packages are automatically detected and downloaded in the background, with the latest features and security patches. Users are then notified when the update is ready to be applied, so that the process can be completed safely.

usability and continuous updates

System calendar and defrost scheduler

- **System calendar:** this function is designed to optimise the system's automatic settings, such as switching the unit on and off and adjusting control temperatures based on the system's actual needs.
- **Defrost scheduler:** this function optimises the defrosting cycles on refrigerated cabinets. Defrosts can be spread evenly throughout the day or scheduled for the most suitable periods, ensuring thermal stability and energy savings.

Two separate interfaces are available to set only the options needed for the current operation.

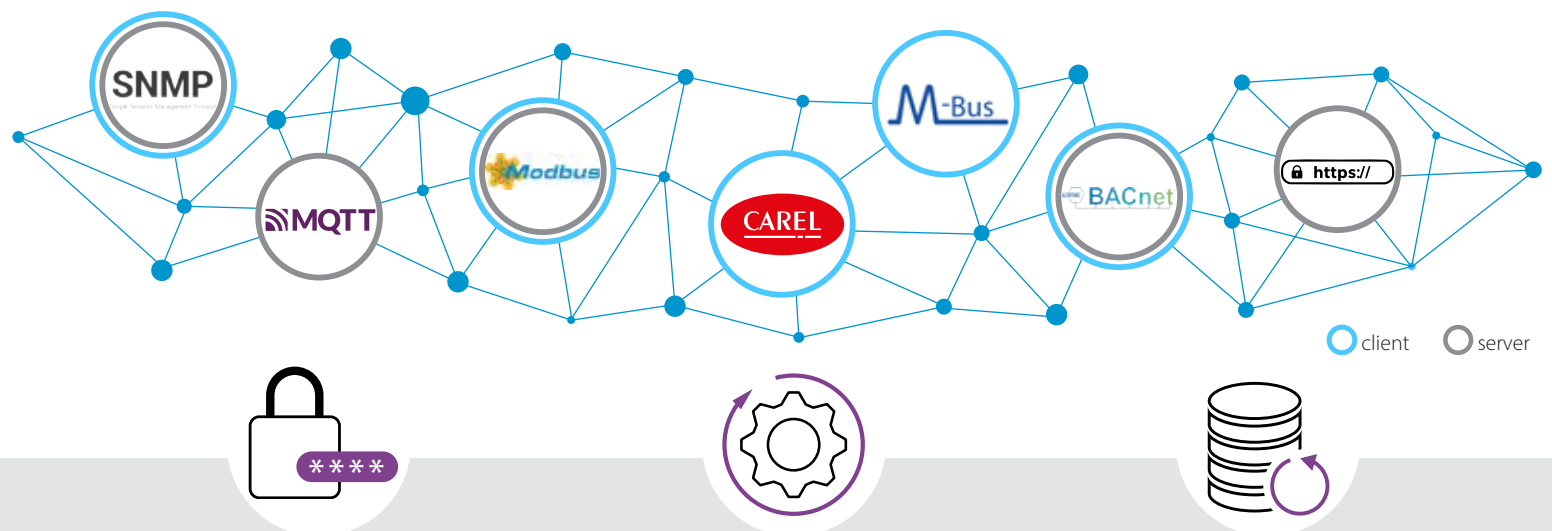


Universal connectivity and total integration

The boss architecture is designed to ensure maximum freedom of integration, supporting the main standard protocols on the market. Its versatility means the system can operate as a data aggregation node and as an interface to the outside world.

Client mode: boss interacts directly with field devices (refrigeration units, HVAC controllers, meters). Thanks to a vast library of protocols, data is aggregated from heterogeneous devices into a single interface, centralising monitoring of the entire system.

Server mode: boss can be integrated into the company IT infrastructure, sharing information with external management systems (BMS, supervisory software or cloud applications). This two-way exchange enables synergistic building management and advanced, wide-scale data analytics.



Secure and autonomous password recovery

The self-service OTP system allows users to reset passwords independently and securely, even offline. This quick procedure ensures system protection by verifying physical access to the device through unique passwords.

Factory reset

The new software reset button allows users to restore the unit to its factory state completely independently. Through a specific sequence of pressing and releasing the button, the system is restored to its original configuration.

Automatic backups

Automatic creation of data backups, ensuring information is secure in the event of system malfunctions or faults and enabling subsequent recovery, minimising the risk of data loss and optimising business continuity.

autonomous unit reset

Industrial design and ease of use

New HW that combines industrial power and operational simplicity. The highest reliability even in the most challenging conditions, without compromising usability: designed to make installation and day-to-day management intuitive and immediate.



Immediate diagnostics at your fingertips

The top of the unit features 14 highly-visible status LEDs, designed to provide instant feedback on system operation even without a PC monitor or network access. The software status and activity of all I/O components are available at a glance:

- Power LED: power status.
- Plant Status LED: system operating status.
- SW Engine Status: software execution status.
- Digital I/O LEDs: digital input and output activity.
- Meter Bus Port LED: Meter Bus port status.
- RS485 Ports LEDs: activity on the RS485 communication ports.

Native Meter Bus (M-Bus) integration

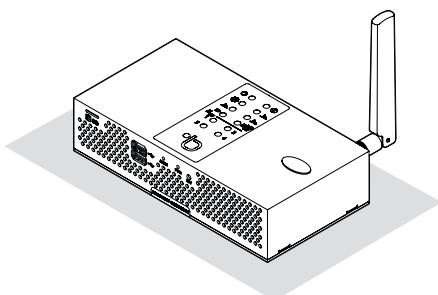
boss natively integrates the M-Bus protocol via a dedicated port, allowing the direct connection of up to nine energy, gas or water meters.

This solution eliminates the need for expensive external gateways and dramatically reduces installation time. The autodiscovery function, moreover, ensures the correct reading of each device's variables, making commissioning significantly faster.

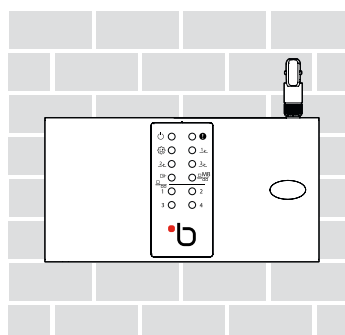


Mounting

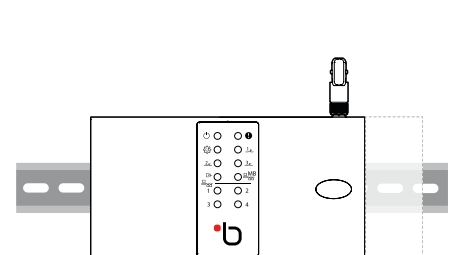
Desktop installation



Wall mounting



DIN rail mounting



Part numbers

boss

P/N	Description
HW 100 dev	
BNHST00XS0	NEW boss - 100 devices - 0 credit
BNHST06XS0	NEW boss - 100 devices - 6 credits
BNHST20XS0	NEW boss - 100 devices - 20 credits
HW 300 dev	
BNHST00XE0	NEW boss - 300 devices - 0 credit
BNHST06XE0	NEW boss - 300 devices - 6 credits
BNHST20XE0	NEW boss - 300 devices - 20 credits
Credits boss	
BNHST01P00	1 credit for NEW boss
BNHST06P00	6 credits for NEW boss
BNHST20P00	20 credits for NEW boss

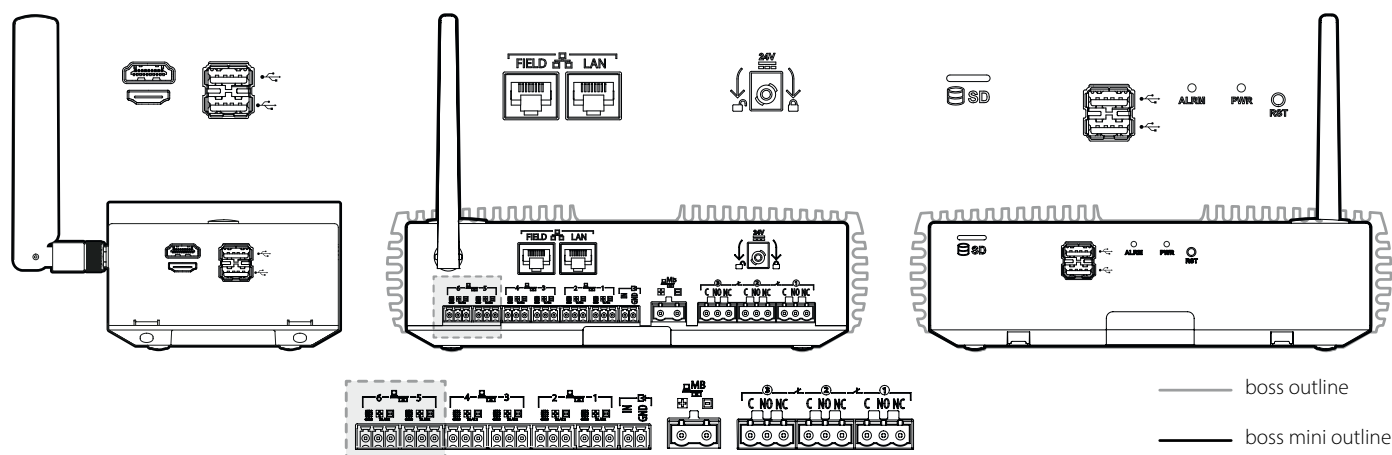
boss mini

P/N	Description
HW 50 dev	
BNEST00XS0	NEW boss mini - 50 devices - 0 credit
BNEST06XS0	NEW boss mini - 50 devices - 6 credits
BNEST20XS0	NEW boss mini - 50 devices - 20 credits
Credits boss mini	
BNEST01P00	1 credit for NEW boss mini
BNEST06P00	6 credits for NEW boss mini
BNEST20P00	20 credits for NEW boss mini

Plug-ins table

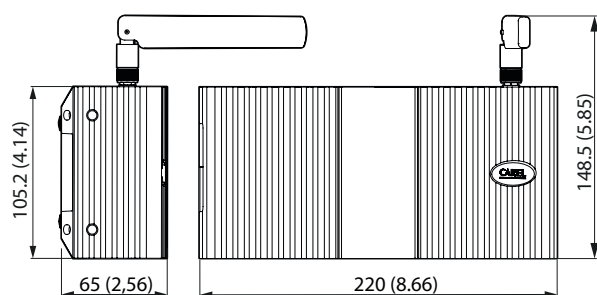
Plug-in	Description	Credits
3rd Parties Connection	To send data to third-party cloud systems via MQTT or Azure IoT HUB	3
Extension device & variables NEW boss-mini	To add 10 devices and 250 logged variables	3
Extension device & variables NEW boss 100 dev (Standard)	To add 20 devices and 500 logged variables	3
Extension device & variables NEW boss 300 dev (Extended)	To add 50 devices and 1500 logged variables	3
BACnet Client	To read BACnet devices	2
BACnet Server	To manage queries from third-party BACnet client systems (BMS)	2
Dewpoint BroadCast	To share calculated dew point temperatures with cabinet controllers	1
ECO-HVAC Nightpurge	To enable freecooling on HVAC units at night even when the units are off	2
ECO-HVAC Smart Start	To optimise HVAC unit switch on/off	2
Energy management	To monitor unit energy consumption	3
Floating suction	To optimise compressor rack set points	1
GeoLighting	To switch outdoor lights on and off based on sunrise and sunset times	1
Heos Dashboards	To display the behaviour of HEOS systems	0
KPI management	To monitor unit performance	2
Logic Devices	To create virtual devices and derived variables from real device variables	2
Modbus Server	To manage queries from third-party Modbus client systems (BMS)	1
Parameter Control	To monitor unwanted or unauthorised changes to critical unit variables	2
RED optimise	To send data to CAREL RED Cloud systems	0
Redfish Server	To manage queries from third-party Redfish client systems (BMS)	2
Safe Restore	To manage cabinet status in the event of compressor rack issues	2
SNMP Manager	To read SNMP devices	2
Usage balancer	To sending control signals to humidification units based on an average humidity value	2
Very Low Superheat	To manage cabinet status in VLSH mode in the event of compressor rack issues	2
M-Net Client - FREE	To read values from Mitsubishi condensing units	0
SCEP	To automatically update security certificates via remote server	1
Extension layers on embedded maps	To add more than 2 maps created with the embedded editor and unlock levels	1
Extension number of computed variables	To reduce the time window (from 30 min to 10 min) used when adding more than 50 variables	1
Extension number of rules	To add more than 25 rules (unlock limit)	1
Technology Switch	To switch cabinet management between EXV and EEV	2
XML Push	To send data to third-party cloud system XML servers	3
XML Server	EN: To manage queries from third-party XML client systems	3

I/O positioning

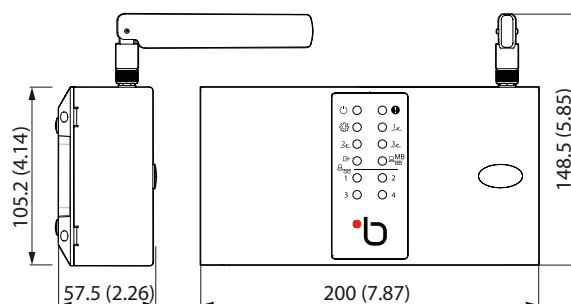


Dimensions

boss



boss mini



Headquarters

CAREL INDUSTRIES HQs
Via dell'Industria, 11
35020 Brugine - Padova (Italy)
carel@carel.com



Arion S.r.l.

Sede operativa:
Via Pizzo Camino, 28
24060 Chiuduno (BG) - Italy
www.arionsensors.com

HygroMatik GmbH

Lise-Meitner-Straße 3
24558 Henstedt-Ulzburg - Germany
www.hygromatik.com

RECUPERATOR

Via Valfurva 13
20027 Rescaldina (MI) - Italy
www.recuperator.eu

C.R.C. S.r.l.

Via Selva di Pescarola 12/9
40131 Bologna - Italy
info@crc-srl.net
www.carel.com

Klingenburg GmbH

Brüsseler Str. 77
45968 Gladbeck - Germany
www.klingenburg.de

Sauber

Via Don Doride Bertoldi, 51
46047 Porto Mantovano (MN) - Italy
www.sauberservizi.it

ENGINIA S.r.l.

Viale Lombardia, 78
20056 Trezzo Sull'Adda (MI) - Italy
www.enginiasrl.com

Klingenburg International Sp. z o.o.

ul. Metalowców 5
PL-58-100 Świdnica, Poland
www.klingenburg.pl

Senva

1825 NW 167th Pl, Beaverton,
OR 97006, Stati Uniti
www.senvainc.com

Authorised distributor

CAREL

To the best of CAREL INDUSTRIES S.p.A. knowledge and belief, the information contained herein is accurate and reliable as of the date of publication. However, CAREL INDUSTRIES S.p.A. does not assume any liability whatsoever for the accuracy and completeness of the information presented without guarantee or responsibility of any kind and makes no representation or warranty, either expressed or implied. A number of factors may affect the performance of any products used in conjunction with user's materials all of which must be taken into account by the user in producing or using the products. The user should not assume that all necessary data for the proper evaluation of these products are contained herein and is responsible for the appropriate, safe and legal use, processing and handling of CAREL's products. The Information provided herein does not relieve the user from the responsibility of carrying out its own tests, and the user assumes all risks and liabilities related to the use of the products and/or information contained herein. © 2026 CAREL INDUSTRIES S.p.A. All rights reserved.