Carrier

United Technologies

DESIGNING INNOVATIVE SOLUTIONS

CONNECTIVITY, MONITORING AND REMOTE MANAGEMENT SYSTEM

BOSS supervisor

APRIL 2018

boss- the product

The new mobile ready local supervisor

Plant control on your mobile
- integrated wifi hotspot
- fully mobile compatible from first boot to ordinary maintenance

Tough for all environment
- rugged HW fanless mounted in a strong case
- secure SW in compliance with advanced standards (https, embedded os, backup on sd card)
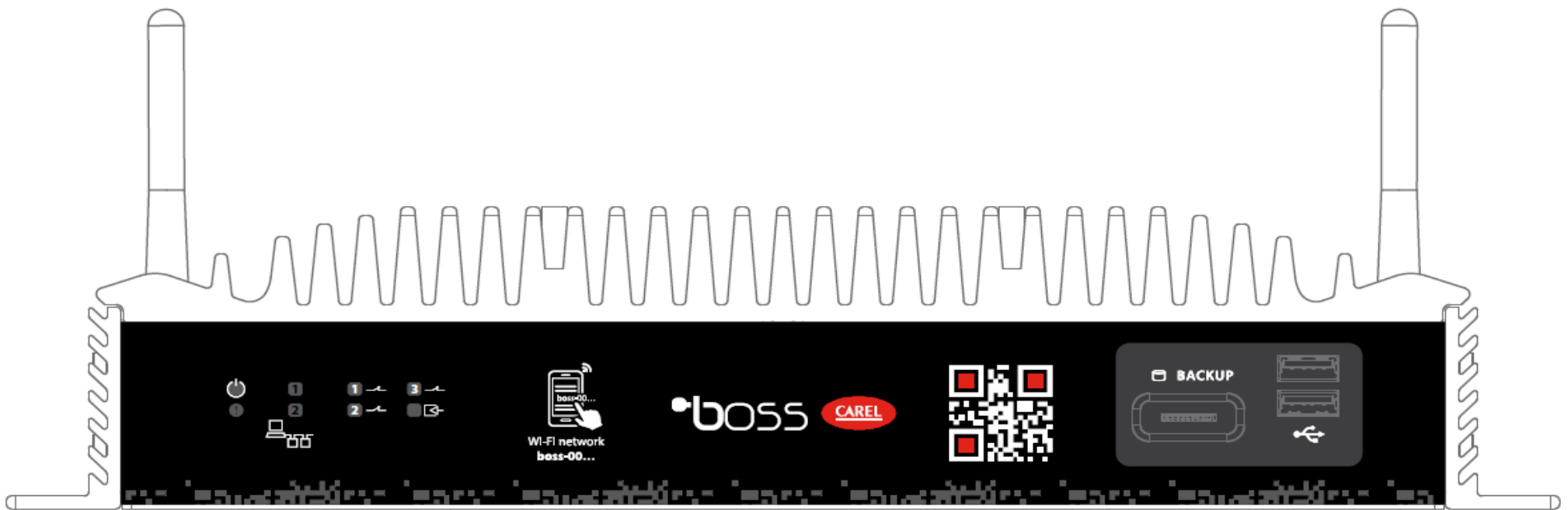
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boss – news

Based on PVPRO2 software (same SW/HW features) but empowered thanks to:

- **fully mobile compatible of all its pages from first boot to ordinary maintenance**
- **integrated Wi-Fi hotspot**
- **rugged HW fanless mounted in a strong case**
- **Bacnet protocol**
- **Linux OS**
- **Instant messaging (Telegram)**
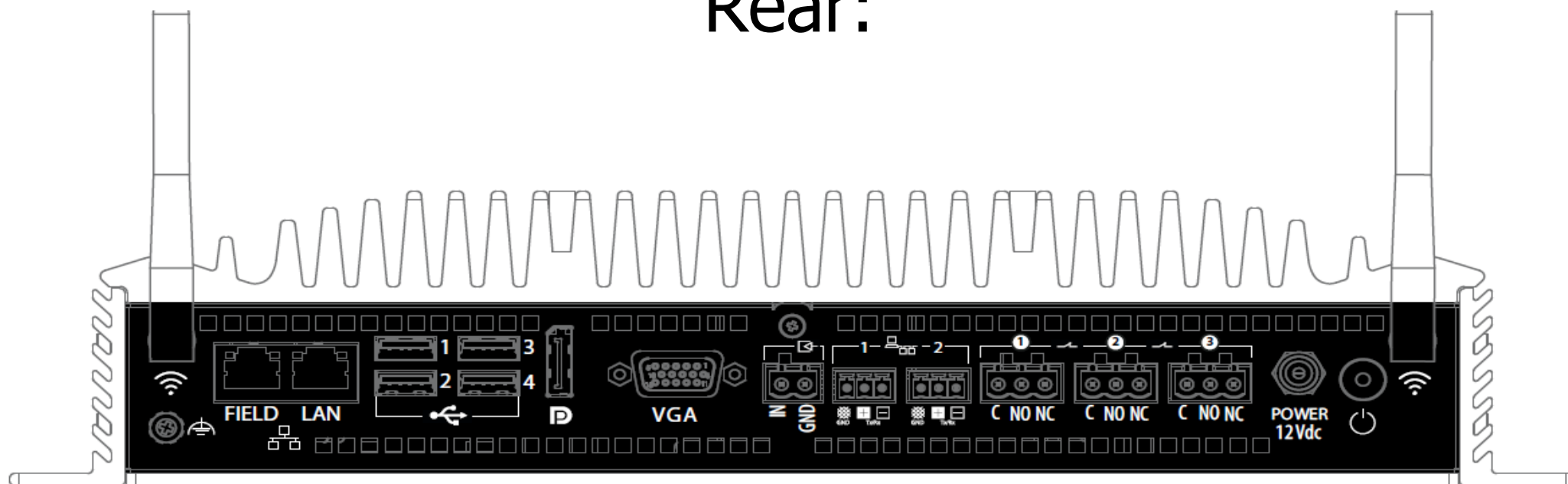- **uSD for backup**

boss – overview 1/2

Front:

8 status led, uSD slot, 2 USB ports

boss – overview 2/2

Rear:

2 Wi-Fi antennas, 2 Ethernet ports,

4 USB ports, display and VGA ports, 1 dig. Input, 2 RS485 port, 3 relays, power connector/button

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boss – Installation

Desk   **Wall**   **DIN Rail**

Adapter DIN (BMHSTDNA00) not included in the package

- With a strong fanless case, customer has the possibility to install it in different place and in different mode (desktop, wall, din)

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boss – Protocols 1/2

- **CAREL Master**

- **MODBUS Master RTU**

- **MODBUS Master TCP/IP**

- **MODBUS Slave RTU**

- **MODBUS Slave TCP/IP**

- **BACnet Master MS/TP &
TCP/IP**
- **BACnet Slave TCP/IP**

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boss – Protocols 2/2

◆ With new Bacnet master protocol (IP and MS/TP) , and Modbus master (TCP/IP and RTU) customers can integrate also third party HVAC devices and enlarge the proposal of CAREL supervisor.

• Carel master, Modbus master (RTU and TCP/IP) are <u>always activated on boss</u>

• With new BACnet slave (IP) , and Modbus slave (TCP/IP and RTU) protocols, boss can be integrated also in third party BMS HVAC system, for sharing some data of the boss to other systems.

• Modbus slave (RTU and TCP/IP), BACnet master (MS/TP and IP) and BACNet slave, are not activated as default, <u>they have to been enabled as extra features </u>(plug-in)

boss – Instant messaging

boss is the fist supervisor system which offers the possibility to send message, in case of alarm, using the and instant messaging APP : "Telegram" (similar to WhatsApp).

The message received, in addition of the alarm info (site name, description, timestamp...), gives also a screen-shot of the last 3 hours trend of the devices in alarm condition.

The same message moreover can be send to a chat group for having a better team coordination / time reaction.

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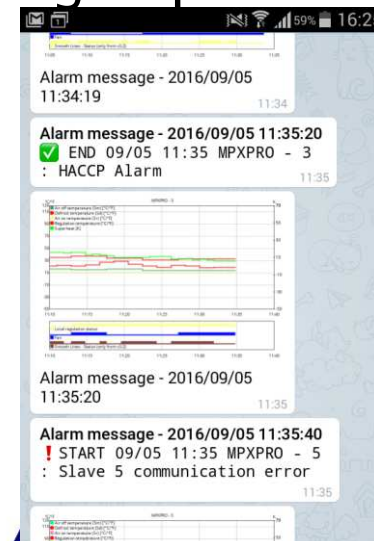
boss – Other advantages

- ◆ uSD card allows to make backup easily on a standard widespread support

- • Unix-derivated OS tailor made increase the security feeling of the system

- • New motherboard faster and more power allow to reduce the reaction time, compared with PVPRO

boss – Graphic Customization

Custom maps made by c.web (new name of site.web), the global Carel editor for creating web interfaces, allow to customer to simplify the user experience of boss

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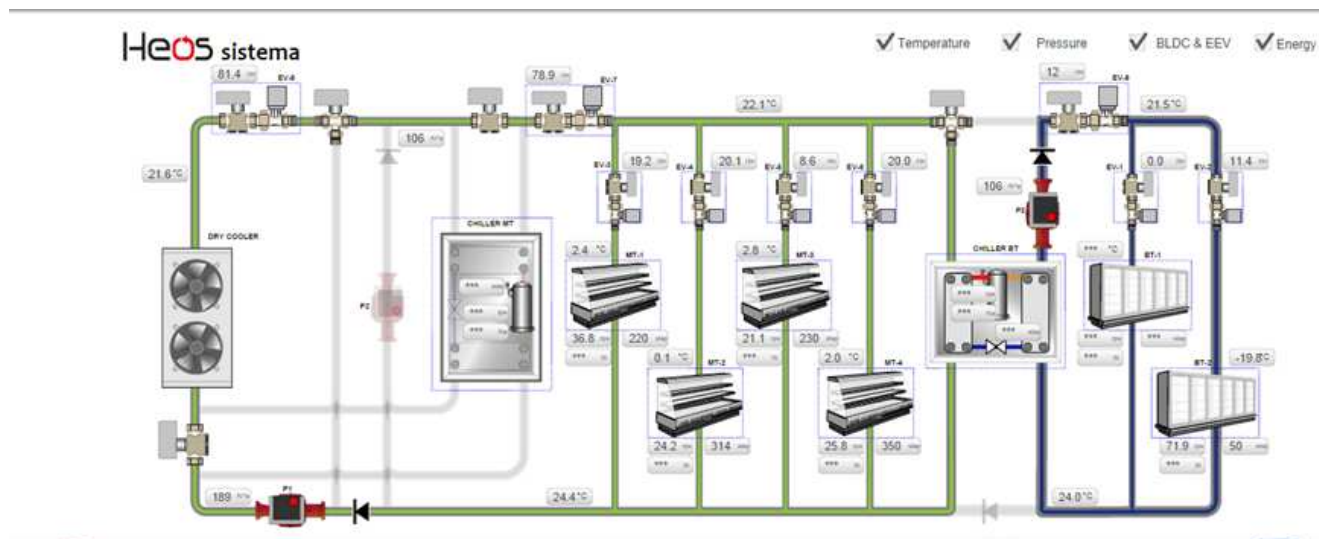
boss – main differences Vs PVPRO2

Fanless	2 Fans inside
Steel case with aluminum radiator (no air flow required)	Aluminum + plexiglass
External power adapter	Integrated power adapter
VGA + Display Port	VGA + DVI (DP)
Integrated Wi-Fi hot spot	Modem
Touch version not available	Touch version
Linux + full web management + mobile support	Windows + VNC
LAYOUT EDITOR not available (replaced by c.web)	LAYOUT EDITOR available
1 digital input	2 digital inputs
SD (Secure Digital)	CF (Compact Flash)

boss – Extra features 1/5

- **<u>Energy:</u>** Table, pie chart, apple chart for analyzing the energy consumption / cost / CO_2 by week, by month or by year

- **<u>KPI management :</u>** For analyzing the performance of the cabinets and identify which ones work outside the optimum conditions so they need check for adjusting the running<u>.</u>

boss – Extra features 2/5

- **Floating Suction:** For adjusting in real time the rack set-point according to the calculation of the duty cycle and the cool request of the cabinets connected to it.
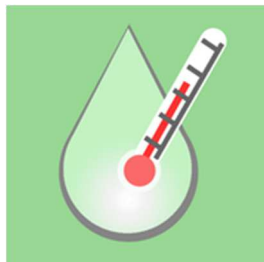
- **Dew Point Broadcast:** For sharing temperature and humidity read by a serial probe to all the MPXPRO in order to let them calculate the dew point and switch on or off its anti-sweater heater.

boss – Extra features 3/5

- **<u>Safe Restore</u>:** For managing the restart of the rack, after a fault, in a safe and optimized mode, giving proper status commands to all the refrigeration utilities connected to it.

- **<u>Parameters control</u>**: For monitoring and having an alert in case of parameters as set-point change (or other important parameters decided by user) in the controllers.

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boss – Extra Features 4/5

- **Logical variables/devices:** For creating new "virtual" variables and/or devices generated starting from physical variables of the existing network devices
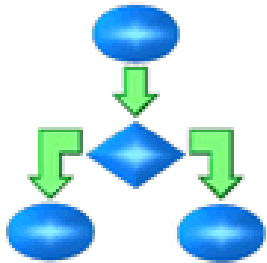
- **Algorithm PRO:** For creating SW logic inside boss using Java language.

boss – Extra features 5/5

- **HVAC Smart start:** For optimizing the HVAC units start/stop.

- **Geolighting:** For managing the turning on/off of the outside lights based on latitude and longitude position of the plant

- **HVAC Night purge**: For optimizing the night free-cooling of the HVAC units.

boss – User Interaction 1/2

LAN   **Wifi**   **Local**

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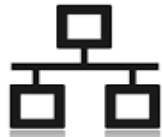
boss – User Interaction 2/2

No need of mouse and keyboard

Without connecting monitor, keyboard and mouse, customer can do the whole commissioning of the plant using a browser (<u>httpS protocol</u>) from a mobile device (as a tablet), direct connected to its hotspot

Full web manage ment

With the new web "console" the remote assistance on the OS can be done just using a browser (VNC, teamviewer,… are not required anymore)

Secure VPN access

Integrated VPN (virtual private network) server that allows CST or authorized technicians to manage boss through internet in secure way

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How to connect to boss
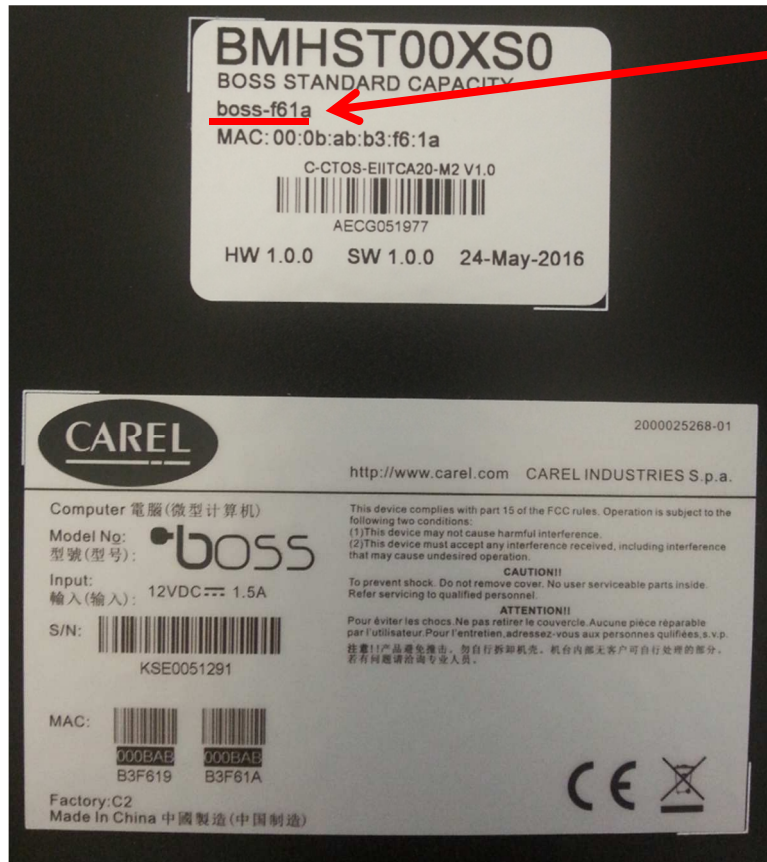
boss name

Label on the back of boss

1 Connect the ethernet cable (point to point or via switch or LAN infrastructure). Wait few seconds, then open the browser on https://boss-f61a

2 Connect through the Wi-Fi network "boss-f61" then open the browser on https://boss-f61a

3 Connect a mouse, keyboard and a monitor to boss

In any case you can connect to the boss using the IP address https://w.x.y.z

Web console
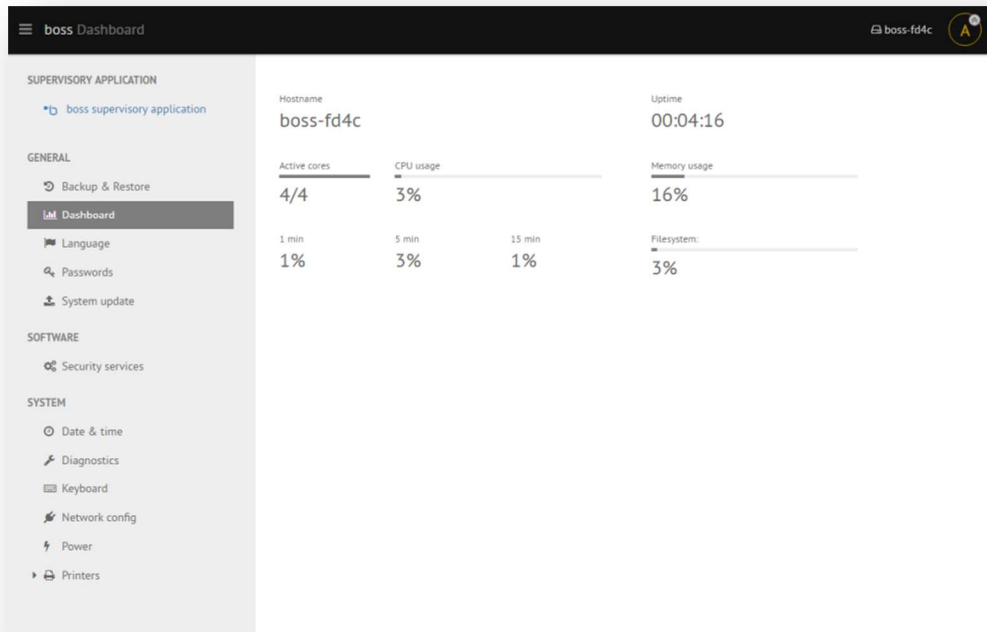
Full web management
- **Resources usage monitoring**
- **Switch ON and OFF**
- **Wi-Fi and network configuration**
- **Scheduled and manual backup and restore**
- **Firewall and VPN access**
- **Date, time and timezone setting**
- **Printers configuration**
- **Diagnostic logs**
- **Keyboard configuration**
- **Users password setting**

Features
- **Mobile compliant user interface**
- **Dedicated lightweight web server on 8443 port**

How to access to web console
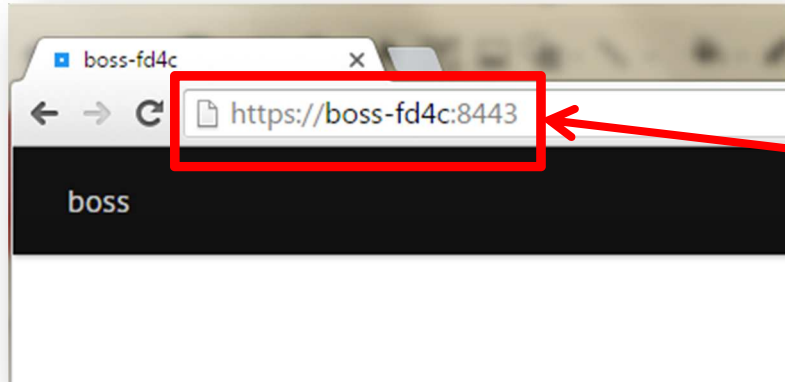
1

Write the address https://boss-xxxx:8443 on your browser

2
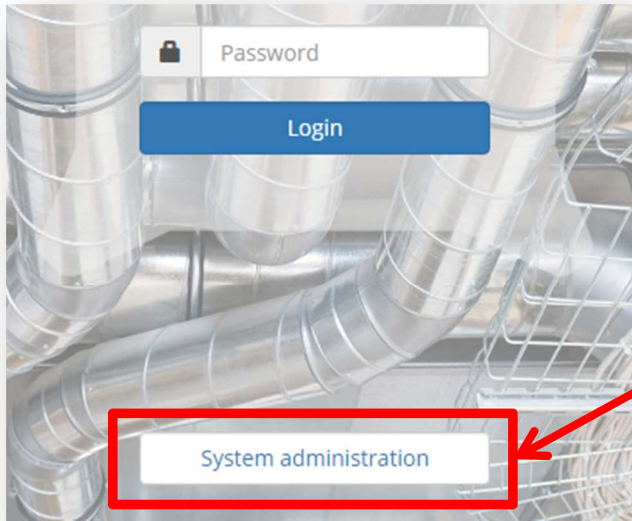
Connect to https://boss-xxxx and use System administration link on the login page

boss – Login page
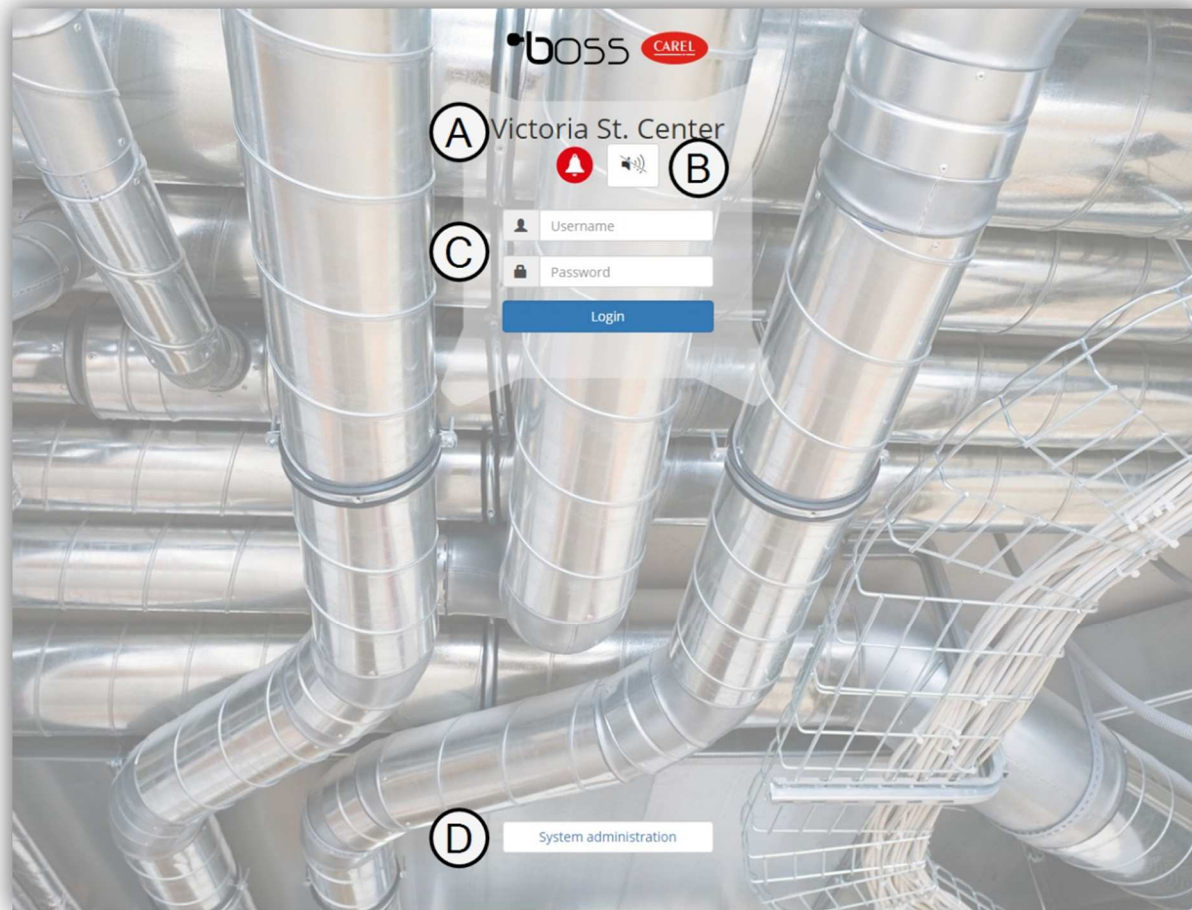
Area	Description
A	Site identification
B	Alarms or Guardian notifications warning and snooze button
C	Login information
D	Access to system administration functions

boss – Layout
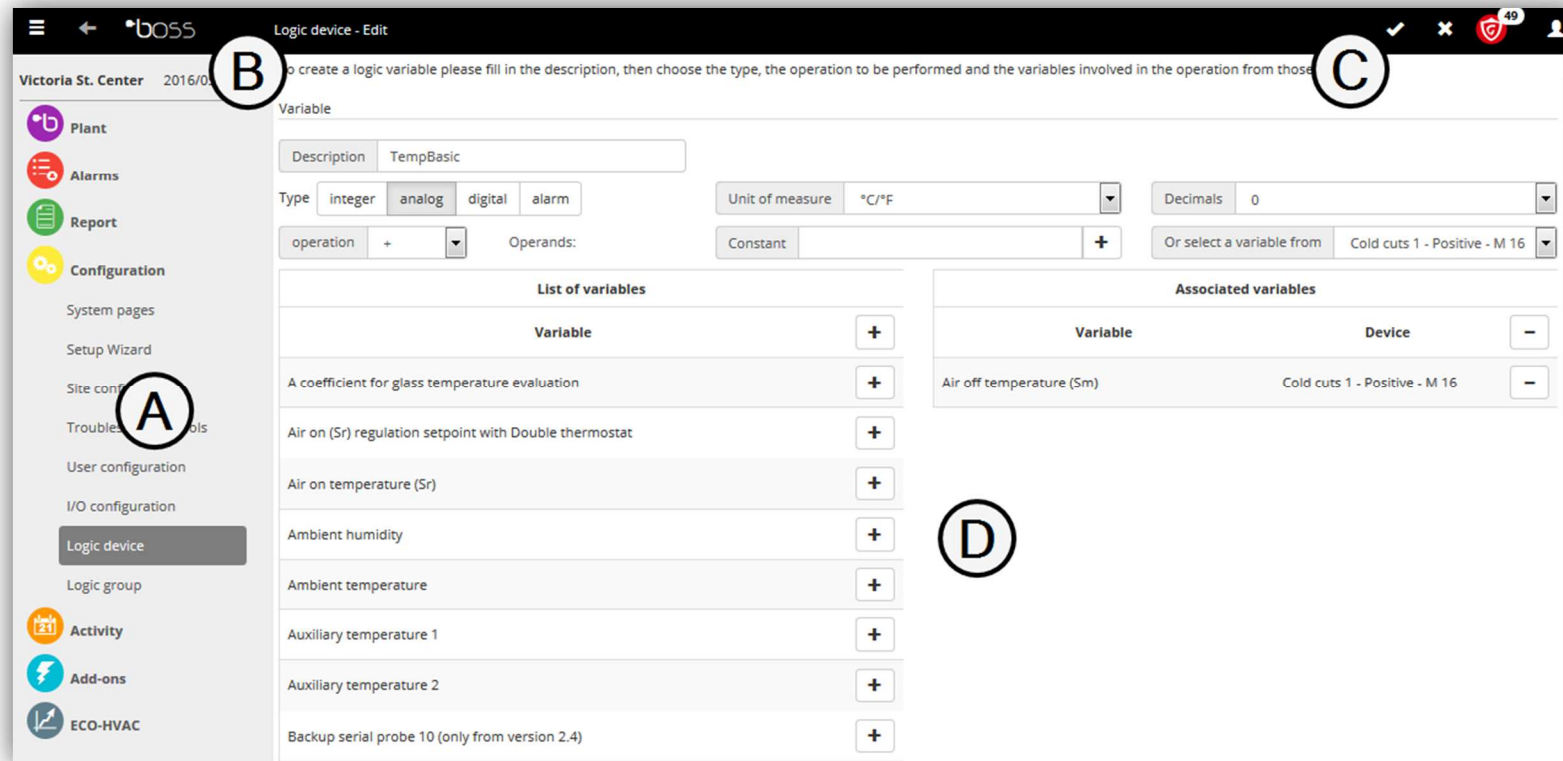
Area	Description	Area	Description
A	Responsive side navigation, showing all available menus	**B**	Buttons to show/hide menus and go back to the previous page. Customized home page link and navigation path.
C	Command bar including buttons specific for the active page, alarm notification and user's functions	**D**	Active page

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boss – Device list page

Quick search (textual)   **Status filter**   **Sort by name/address**

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boss – Responsive page

Navigation tabs

Filter and sort buttons

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boss – Device detail page

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boss – Parameter Page

Quick search (textual)

Detailed description

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boss – Trend page

Full mobile compliance

New legend

New digital variables rappresentation

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boss – plugin page

💡 **New layout**

User can export the plugin configuration, modify it and import into boss for extending the plugin features with custom models
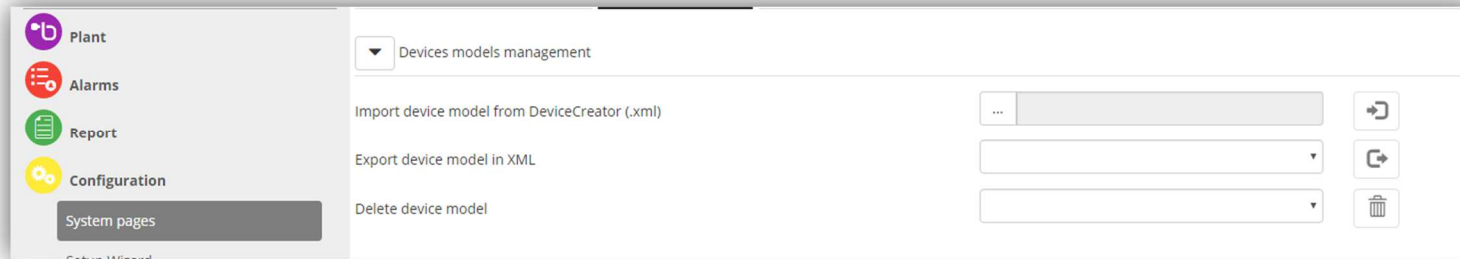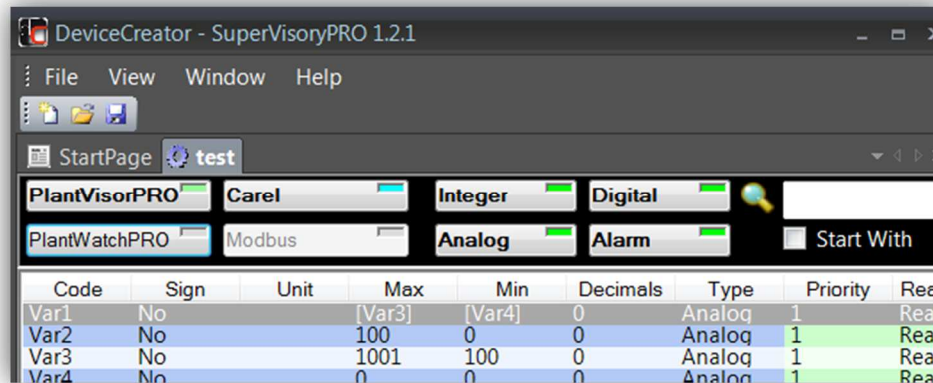
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boss – Calendar page

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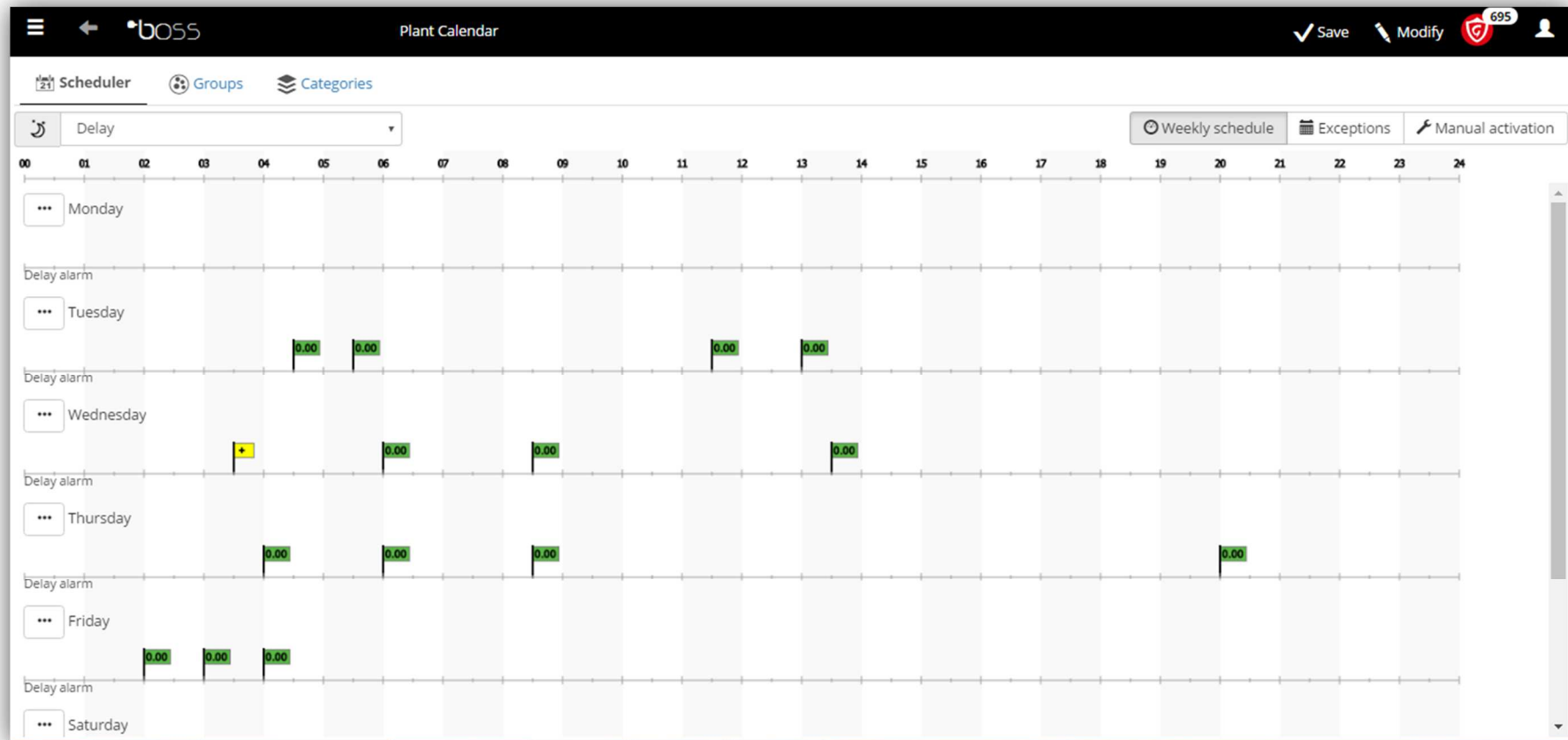
boss – New device models management

User can export both standard and custom models

User can modify the exported models or create a new one (with device creator) and import it into boss

⚠️ **Note: The standard device models are not overwritable**

THANKS FOR YOUR ATTENTION