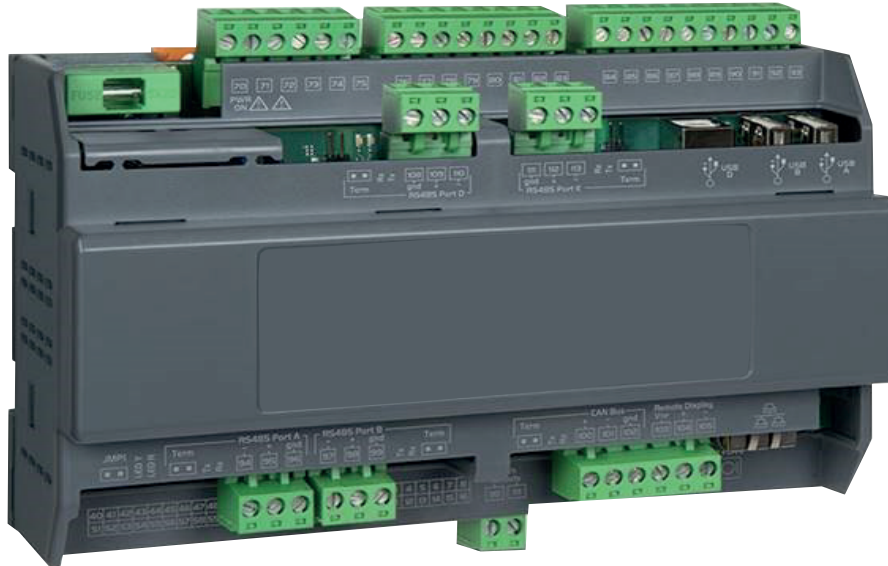


Controller manual

EN

13-06-2024



Controller IPG315D with touch display



BlueBox 
by Swegon

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1 INTRODUCTION

1.1 General

Some information on the use of this manual.

1.1.1 Purpose of the manual

The purpose of this manual is to provide all necessary information for installing and programming the controller that manages the units listed on the cover and it is complementary to the manual describing the software functions.

This manual is the “SERVICE” version, that is, it is intended only for after-sales service technicians and Factory technicians. Information regarding installation of the units and relevant tests and checks for the first starting is not given in this manual. It is taken for granted that the unit has been installed correctly, the tests and checks prior to start-up have been carried out and that routine maintenance is carried out, according to the information given in the “Installation, operation and maintenance” manual for the units.

We thank in advance all those who will wish to let us know of any errors, omissions, sections requiring further explanation or operations that have not been included.

1.1.2 IPG315D controller functions

The software application for the electronic microprocessor controller of the iPro IPG315D series was designed to manage refrigerant units and heat pumps.

Through appropriate configuration, this gives the possibility of managing a wide range of units with relevant specific functionalities.

By management of refrigerant units we mean safe control of operation of their component parts, during their various operating stages.

There are various sizes of modules in the iPro electronic microprocessor controller family. Through flexibility of the software, this allows their use to be optimized by using those that have the necessary number of inputs and outputs for each application.

The IPG315D board is connected to the various modules and communicates with them through a high speed, highly reliable field bus.

The user interface of the controller consists in a high resolution touch screen display.

1.1.3 Recommendations for digital security

This unit is designed for connection to an Ethernet network.

Unit networking must be implemented by technicians who can take the appropriate security measures required to prevent system violations.

In particular:

- We recommend that access to the unit controller be restricted to the network inside the organization. System exposure to the Internet is strongly not recommended.
- If remote access is required, the connection must be encrypted via SSL/TLS or VPN and through a firewall configuration within the internal IT environment.
- The authorization to use a remote access must only be granted to equipment that the organization has supplied and approved, as specified in the previous item.

1.2 Digital Services

The information below is referred to the units controlled by advanced controllers, set up for connection to Swegon cloud services.

1.2.4 Product data sheet Digital Services

1.2.4.1 Connectivity

The product is equipped with functionality that, when enabled, will connect to the Swegon INSIDE Cloud when given access to the internet. Such connection is made either through the building's local internet access point or by using a supplied modem. When connecting through the building's internet access point, the local firewall must be configured to allow traffic according to the firewall settings.

The functionality is by default disabled and can be enabled in the product. By enabling this functionality the customer agrees to the general terms and conditions for Digital Service, DS-23.

The customer can disable the connection to the Swegon INSIDE Cloud in the product user interface at any time.

1.2.4.2 Which data is sent

Through the connection to Swegon INSIDE Cloud, the product will exchange data to Swegon INSIDE Cloud about certain actions and parameter settings of the product. Each data point has different thresholds for when to send data to Swegon, therefore the data sent depends on the data point type and configuration. The data is sent in intervals, at which point the data is aggregated together with other data from that interval.

1.2.4.3 Who has access to the data

The data sent to Swegon INSIDE Cloud is used by Swegon for purposes of performance, functionality and development of the product.

Consequently, Swegon has the right to use the data sent from all products connected to Swegon INSIDE Cloud.

The data is used in accordance with Swegon's DS-23 general terms and conditions, and our sales agreement with the customer.

1.2.4.4 Requirements

To connect a product to Swegon INSIDE Cloud, a secure internet connection via the property's internal network or via Swegon's external modem is required.

In addition to a secure internet connection, a valid certificate for each individual product is also required to approve them to share data with INSIDE Cloud.

Some products will come with a valid certificate out of the factory, while other products need to be equipped with a certificate to authorize the product to share data.

To find out if the product is INSIDE Ready (i.e. ready to share data) or not visit INSIDE Ready | www.swegon.com.

1.2.4.5 Safety

The Swegon INSIDE product is connected to azure IoT Hub.

The connection uses MQTT and is secured using TLS and client certificates (MTLS). DigiCert is used as registration authority and key management.

DigiCert is used as registration authority and key management.

The Swegon cloud platform uses Azure SaaS offerings for hosting of applications and APIs.

Digital services communicate with Swegon Cloud using standard technologies such as Rest APIs and message Queues.

Users and authorization is handled by an internal identity provider.

1.2.4.6 Firewall settings for Swegon Cloud

Swegon cloud solution is using Microsoft Azure services and certificates from DigiCert to secure the connection.

If the firewall in front of the products is allowing outbound traffic to internet it will work.

If the firewall is set up to control outbound traffic the following ports and destinations must be allowed.

If only filtering on ports, 443 and 8883 are used.

Domain (including sub domain)	Port	Protocol	Notes
*.azure-devices-provisioning.net (dps-Swegon-Cloud-common-we.azure-devices-provisioning.net global.azure-devices-provisioning.net)	443 8883	https mqtt	Azure Device Provisioning Service
*.azure-devices.net (iot-SwegonCloud-prod-we.azure-devices.net)	443 8883	https mqtt	Azure IoT Hub
*.blob.core.windows.net (stswciotfilestorageprod.blob.core.windows.net)	443	https	Azure storage
clientauth.one.digicert.com	443	https	DigiCert Enrolment over Secure Transport (EST) for certificate enrolment and reenrolment



Additional instructions on how to make the connection to **"Swegon INSIDE Cloud"** are available in the controller manual.

2 SYSTEM HARDWARE

This chapter describes the basic parts making up the system and any accessories as concerns the operation of this software.

Refer to the wiring diagram of the unit for the various connections.

2.1 IPG315D board

The IPG315D controller with SSR is the main hardware component of the system and manages the unit through its inputs and outputs.

The difference between them consists in “V2” having two USB ports and two RS485 serial ports. In the current configuration, however, the ports are not used for any machine function and the two boards are perfectly interchangeable.

A picture of the controller, the layout of the inputs and outputs and relevant description are shown below.



Fig. 1 IPG315D

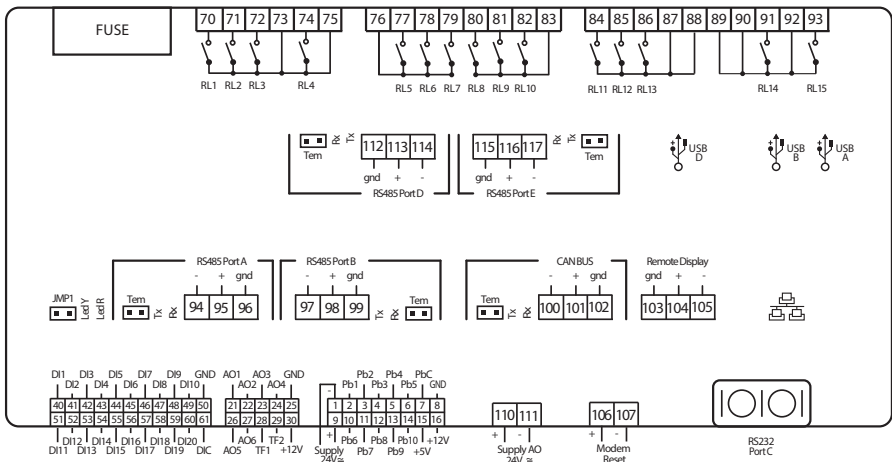


Fig. 2 IPG315D inputs and outputs

PIN	DESCRIPTION
1,9	("GND" 24Vac or "-24Vdc) Controller power supply
2-6,10-14	Multifunction analogue inputs
7	Common for passive analogue inputs
8	Reference GND (-) for analogue inputs in voltage or current
15	(+5Vdc) Power supply for analogue inputs
16	(+12Vdc) Power supply for analogue inputs
21,22,23,24,26,27	Analogue outputs 0-10V
25	Common GND (-) for analogue outputs
28,29	Not managed in the application
30	(+12V) Power supply to analogue outputs
40-49,51-60	Digital inputs
50	GND(-) for digital inputs in voltage 24Vac/dc
61	Common for digital inputs (potential-free contacts)
70,71,72,74	NO digital outputs
73,75	Common for digital outputs 70,71,72,74
76	Common for digital outputs 77,78,79
77,78,79	NO digital outputs
80,81,82	NO digital outputs
83	Common for digital outputs 80,81,82
84,85,86,91,93	SSR Solid state relay outputs
87,88	Common for solid state outputs 84-85-86
89,90,92	Common for solid state outputs 91-93
94,95,96	(-),(+),(insulated gnd) Master serial port RS485 - "port A"
97,98,99	(-),(+),(insulated gnd) Slave serial port RS485 - "port B"
100,101,102	(+),(-),(insulated gnd) CAN Bus Serial
103,104,105	(Vnr),(+),(-) Connection for VISOGRAPH remote terminal
110	(+24V) Power supply to analogue outputs
111	(-GND) Power supply to analogue outputs
112,113,114	(insulated gnd),(+),(-) Slave serial port RS485 - "port D"
115,116,117	(insulated gnd),(+),(-) Slave serial port RS485 - "port E"

2.2 RS485 serial port and Ethernet

2.2.1 RS485 serial connection

Controller IPG315 "V2" is provided with 5 RS485 serial ports.



Serial port "B", which corresponds to the terminals in boards 97, 98, and 99, has been provided for connection to a BMS or to a management system.

The use of the other ports is reserved.



Terminal "99", marked with "gnd", should be used only if you are certain it is not earthed.

The serial communication works even without its connection.



Connection of the "gnd" terminal to earth will damage the controller with consequent shutting down of the unit.

2.2.2 Ethernet connection

RJ45 connectors and a 8 twisted wire cable must be used for the connection.

The connectors can be of either plastic or metal material.



Fig. 3 Plastic connector, RJ45

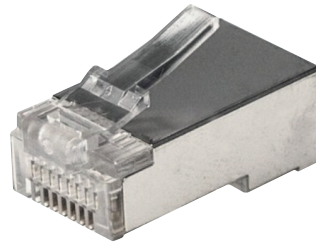


Fig. 4 Metal connector, RJ45

The cables can be either "FTP" (with aluminium shielding) or "UTP" type (without shielding). Cable type **Cat.5e** is a suitable choice.



The shielding must not be linked to the connector if metal RJ45 connectors and a shielded cable are used. Connecting the shielding to the metal connector may damage the controller irreparably.

2.3 IPX315D board

The IPX315D board with SSR is an expansion module of the main controller.
A picture of the board, the layout of the inputs and outputs and relevant description are shown below.

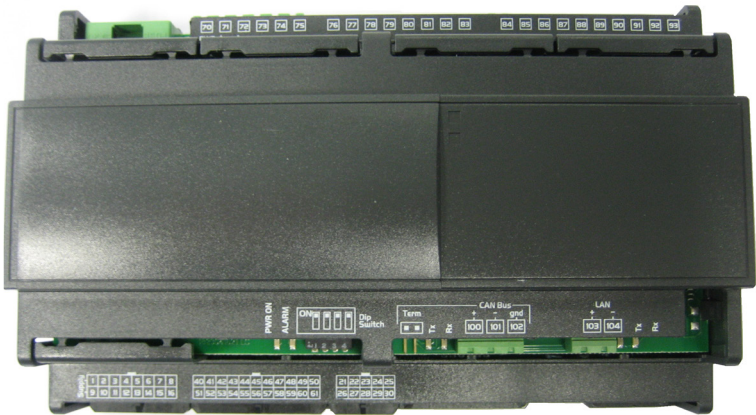


Fig. 5 IPX315D_SSR

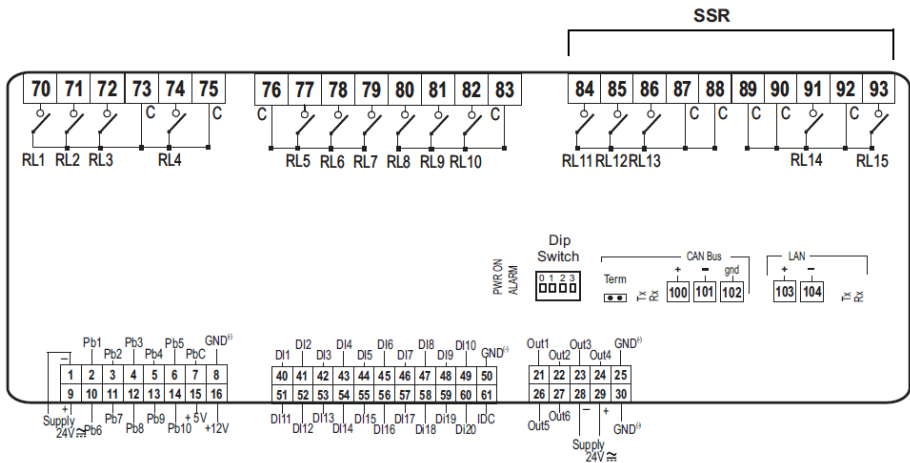


Fig. 6 IPX315D_SSR inputs and outputs

PIN	DESCRIPTION
1,9	("GND" 24Vac or "-24Vdc) Controller power supply
2-6,10-14	Multifunction analogue inputs
7	Common for passive analogue inputs
8	Reference GND (-) for analogue inputs in voltage or current
15	(+5Vdc) Power supply for analogue inputs
16	(+12Vdc) Power supply for analogue inputs
21,22,23,24,26,27	Analogue outputs 0-10V
25	Common GND (-) for analogue outputs
28,29	Not managed in the application
30	(+12V) Power supply to analogue outputs
40-49,51-60	Digital inputs
50	GND(-) for digital inputs in voltage 24Vac/dc
61	Common for digital inputs (potential-free contacts)
70,71,72,74	NO digital outputs
73,75	Common for digital outputs 70,71,72,74
76	Common for digital outputs 77,78,79
77,78,79	NO digital outputs
80,81,82	NO digital outputs
83	Common for digital outputs 80,81,82
84,85,86,91,93	SSR Solid state relay outputs
87,88	Common for solid state outputs 84-85-86
89,90,92	Common for solid state outputs 91-93
100,101,102	(+),(-),(insulated gnd) CAN Bus Serial
103,104	(+),(-) LAN

2.4 IPX306D board

The IPX306D board is an expansion module of the main controller.
A picture of the board, the layout of the inputs and outputs and relevant description are shown below.



Fig. 7 IPX306D

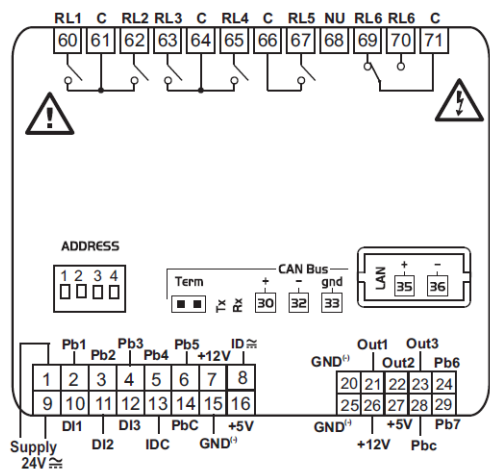


Fig. 8 IPX306D inputs and outputs

PIN	DESCRIPTION
1,9	("GND" 24Vac or "-24Vdc) Controller power supply
2-6	Multifunction analogue inputs
7	(+12V) Additional power supply
8	GND(-) for digital inputs in voltage 24Vac/dc
10-12	Digital inputs
13	Common for digital inputs (potential-free contacts)
14	Common for passive analogue inputs
15	GND (-) Additional power supply and reference for analogue inputs
16	(+5V) Additional power supply
20	GND (-) Additional power supply 5Vdc and 12Vdc for analogue outputs
21,22,23	Analogue outputs 0-10V
24,29	Multifunction analogue inputs
25	GND (-) Additional power supply 5Vdc and 12Vdc for analogue outputs
26	(+12V) Additional power supply
27	(+5V) Additional power supply
28	Common for passive analogue inputs
30,32,33	(+),(-),(gnd) CAN Bus Serial
35,36	(+),(-) LAN
60,62	NO digital outputs
61	Common for digital outputs 60,62
63,65	NO digital outputs
64	Common for digital outputs 63,65
66	Common for digital outputs 67
67	NO digital output
68	Not used
69	NC digital output
70	NO digital output
71	Common for digital outputs 69,70

2.5 XEV20D board

The XEV20D board is a driver for electronic expansion valve management.
A picture of the driver, the layout of the inputs and outputs and relevant description are shown below.



Fig. 9 XEV20D

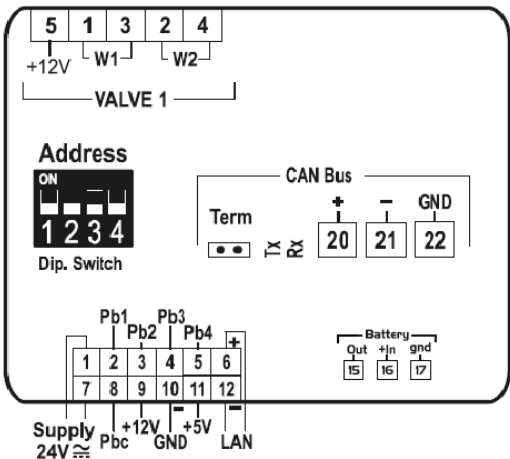


Fig. 10 XEV20D inputs and outputs

PIN	DESCRIPTION
1,7	("GND" 24Vac or "-24Vdc) Controller power supply
2,3	Configurable analogue inputs NTC/PTC/Pt1000
4,5	Configurable analogue inputs 4..20mA/0..5V/Pt1000
6,12	(+),(-) LAN
8	Common for analogue inputs NTC/PTC/Pt1000
9	(+12V) Power supply to analogue inputs
10	GND(-) analogue inputs
11	(+5V) Power supply to analogue inputs
15	(+out)
16,17	(+In,gnd) XEC Supercap connection
20,21,22	(+),(-),(gnd) CAN Bus Serial
Electronic expansion valve connection	
1,2	W1 connection
3,4	W2 connection
5	(+12V) common power supply

In the XEV20D board, there are LEDs near the words "PWR ON", "ALARM", "tx, rx" and "C1, Open, Close". Their meaning is given below.

LED	Status	Meaning
PWR ON	On	The driver is powered correctly
ALARM	On	An alarm is present
tx/rx	Flashing	The serial communication is active
tx/rx	On	There is no serial communication
C1 Open	Flashing	Valve opening
C1 Open	On	Valve fully open
C1 Close	Flashing	Valve closing
C1 Close	On	Valve fully closed

2.6 IEV24D board

The IEV24D board is a driver used to control the electronic expansion valve.

A picture of the driver, the layout of the inputs and outputs and relevant description are shown below.



Fig. 11 IEV24D

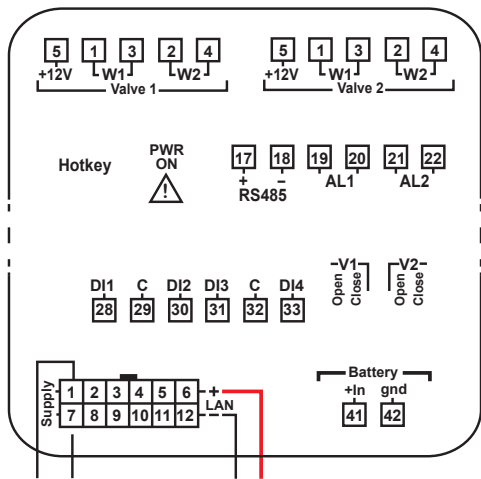


Fig. 12 IEV24D inputs and outputs

Multipin connector

PIN	DESCRIPTION
1	Controller power supply (24Vac or "+" 24Vdc)
2	Analogue input 1 (NTC, PTC, PT100)
3	Analogue input 2 (NTC, PTC, PT100)
4	Analogue input 3 (NTC, PTC, PT100)
5	Analogue input 4 (NTC, PTC, PT100)
6	LAN connection (terminal "+")
7	Controller power supply (24Vac or "-" 24Vdc)
8	Common connectors for analogue inputs
9	Voltage output, +12Vdc (to power current probes)
10	GND (ground for ratiometric transducers)
11	Voltage output, +5Vdc (to power ratiometric transducers)
12	LAN connection (terminal "-")

Digital input connector

PIN	DESCRIPTION
28	Digital input 1
29	Common connector for digital inputs
30	Digital input 2
31	Digital input 3
32	Common connector for digital inputs
33	Digital input 4

RS485 connector and relays

PIN	DESCRIPTION
17	RS485 connection (terminal "+")
18	RS485 connection (terminal "-")
19	Common connector for relay 1
20	Relay 1
21	Common connector for relay 2
22	Relay 2

Supercap connector

PIN	DESCRIPTION
41	XEC EVO Supercap input
42	GRD for XEC EVO Supercap input

2.6.3 Valve connection

Driver IEV24D is programmed via serial port RS485 using the controller connector.

File "413D3D.well" must have been uploaded into the controller.

Driver replacement requires that the valves are always disconnected when the device is powered for programming purposes.

A couple of minutes must elapse to complete the programming process, after which power can be cut off - a feedback signal is not featured to warn about completion of the operation.

After programming is completed, the valve connectors can be plugged in and the system can be powered.



The valve(s) must not be connected or disconnected if the driver is powered: this may cause the driver to break.

Valve connectors

The number of drivers varies according to the need to control either 1 or 2 valves.

Either 1 or 2 connectors are provided that are identified with the same numbers.

PIN	DESCRIPTION
5	Voltage output +12Vdc
1	First winding connection
2	First winding connection
3	Second winding connection
4	Second winding connection

2.7 XEC Supercap module

The supercap module makes it possible for the driver to close the electronic expansion valve in case of sudden failure of power supply to the unit.

A picture of the controller, the layout of the inputs and outputs and relevant description are shown below.



Fig. 13 XEC supercap module

PIN	DESCRIPTION
1,2	("24V ac/dc", "GND") Power supply
3,4	("gnd", "+12Vcc") Output

2.8 pGD Touch-Screen Display

The pGD Touch-Screen display (graphic LCD display [4.3"]) is the interface through which the controller is managed. Two displays can be connected to one single controller. This application is designed to connect a display on board of the unit via a serial port and a remote display via Ethernet.

2.8.1 Local display

The local display is connected to the controller via an AWG24 cable with terminals.

If the display needs replacing, the connections in the wiring diagram of the unit must be checked.

2.8.2 Remote display

The remote display is supplied with a 230Vac/24Vdc power unit and it is connected to the controller via an Ethernet cable with "RJ45" connectors.

The power supply unit must be installed near the remote display.

Use the orange terminal to power the remote display.

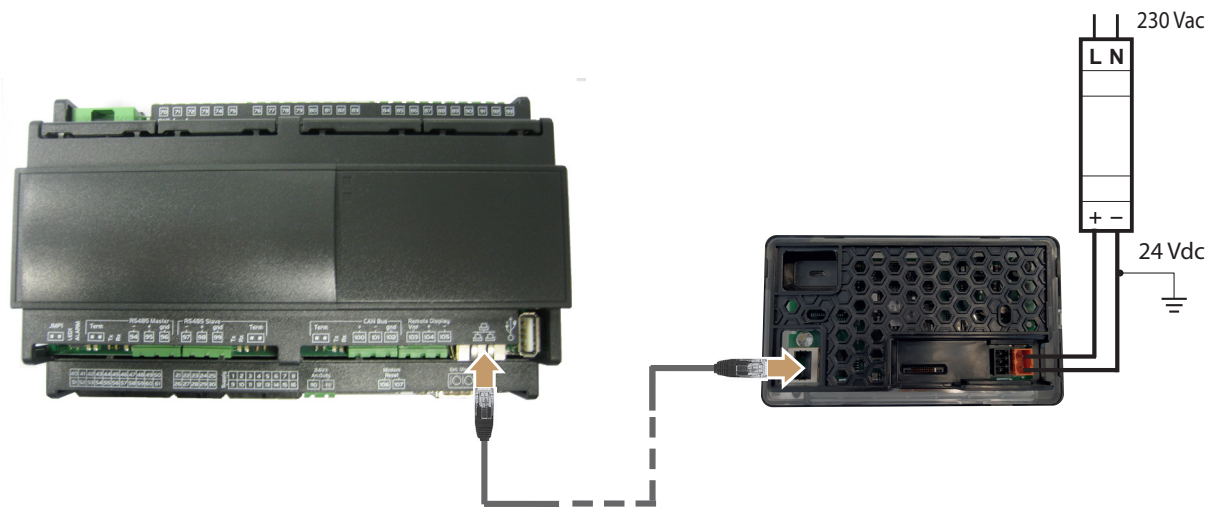


Fig. 14 Remote display connection

3 ADDRESSING OF COMPONENTS

The components making up the system that controls the units are networked together.

Each component must have a different address in a network.

The system components have hardware addressing through dip-switches or software using the user interface.

Which address must be given to the various components and how to do so is explained below.

3.1 Hardware addressing

Hardware addressing is assigned through the 4 dip-switches featured in the I/O expansion boards and the XEV20D drivers.



Fig. 15 Dip-switches

The dip-switches are ON in the up position. The address is given in binary mode with the ON position of the dip-switches.

Address	dip-switches			
	1	2	3	4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF

Address "0", which is obtained with the four dip-switches in the OFF position, is not used.

The addresses shown in the table must be assigned to the various expansion boards and to the drivers connected to the Can-Bus network of the IPX315D controller.

address	Boards
1	XEV20D circuit 1 driver board
2	XEV20D circuit 2 driver board
3	XEV20D circuit 3 driver board
4	XEV20D circuit 4 driver board
5	I/O IPX315D expansion board
6	I/O IPX306D expansion board

The addressing of the IEV24D drivers requires closing of the digital inputs.

Address 1 is assigned by closing digital input 1 (short-circuiting terminals 28 and 29).

Address 2 is assigned by closing digital input 2 (short-circuiting terminals 29 and 30).

The drivers connected to serial port "D" RS485 in the controller must be assigned to the addresses listed in the table.

address	Boards
1	IEV24D board in circuit 1
2	IEV24D board in circuit 2



The address must be set before powering the boards.

3.2 IP addressing

The web server integrated in the controller is accessed through the Ethernet port.

To access the controller in this way, it is necessary to know its IP address.

Even for programming with USB pen drive, it is necessary to know the IP address of the controller.

The factory-set IP address is 10.2.3.20

3.2.1 IP address change with computer

To connect the unit to a network, its IP address must be changed.

To do this, you must connect point-to-point with a computer.

The procedure to follow is:

- change the IP address of your computer to address 10.2.3.19
- make sure the network screen is 255.255.255.0
- open a web browser of your PC (FireFox, IE, etc.)
- in the address bar, type 10.2.3.20/panel
- login
- enter Username = service
- enter Password = servicebb
- Press **“Network”**.

Now you can access the screen to give the controller a new IP address and the network characteristics.

ETH 0	
MAC Address	00:0A:F6:82:56:B8
Mode	Static
IP Address	10.2.13.190
Subnet Mask	255.255.255.0
Network Address	10.2.13.1
Gateway Address	10.2.13.1
DSN 1	10.0.0.50
DSN 2	1.1.1.2
SAVE RESTORE DEFAULT	

Fig. 16 Screen for changing the IP address

3.2.2 Search for the IP address

If you do not know the IP address of the controller, you can access the configuration screen to force a default address. With no power to the controller, insert a jumper in the terminals marked with "JMP1" as shown in the figure.

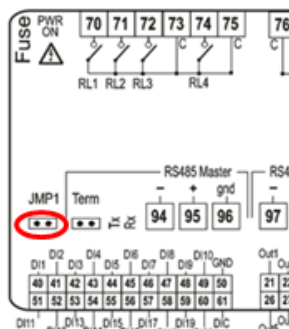


Fig. 17 Position of terminal JMP1

After inserting the jumper, power up the controller (wait about 90 seconds for it to start) and proceed as follows:

- change the IP address of your computer to address 192.168.0.249
- make sure the network screen is 255.255.255.0
- open a web browser of your PC (FireFox, IE, etc.)
- in the address bar, type 192.168.0.250/panel
- login
- enter Username = service
- enter Password = servicebb
- Press **"Network"**.

Now you can correctly read the IP address of the controller and give it a new address if you need to.

ETH 0	
MAC Address	
00:0A:F6:82:56:B8	
Mode	
Static	
IP Address	
10.2.13.190	
Subnet Mask	
255.255.255.0	
Network Address	
10.2.13.1	
Gateway Address	
10.2.13.1	
DSN 1	
10.0.0.50	
DSN 2	
1.1.1.2	
SAVE	RESTORE DEFAULT

Fig. 18 Screen for changing the IP address

Now logout, switch off the controller and remove the jumper.

4 GRAPHICS ON THE DISPLAY

During development of the application, particular attention was given to intuitive use of the user interface. That is why large use has been made of symbols and icons.

4.1 Graphic conventions

The touch-screen display is designed to browse the interface.

Provision has been made for some intuitive icon buttons that are tapped to easily browse the featured screens and menus.

Other user-friendly symbols are used to locate parts and active functions.

Below is a list of the icons used as buttons and the symbols featured in the various screens of the interface.

4.1.1 Icons

Icons are used as physical buttons in the touch-screen display to browse the menus and screens. The featured icons include:



The “**Commands Menu**” icon placed on the top right-hand side of the screen gives access to a drop-down menu featuring the icons of the other menus.



The “**On-Off**” icon in the bottom left-hand side of the screen gives access to the window where the unit is started/stopped.



This icon is featured in the top part of the display during the defrost cycle.



If the function “Domestic hot water” is featured, the icon “**DHW**” on the bottom right-hand side shows the operating status. A tap on the icon gives access to the screen where the setpoint is changed.



If the function “Management of mixed heating/cooling installations” is featured, the icon “**2 zones**” on the left-hand side shows the operating status of the existing zones. A tap on the icon gives access to the function-specific screen: the arrow on the right is used to enable/disable the function and to edit the setpoint. The unit must be in operation in order for the user to be able to edit the setpoint.



If the function “Thermoregulation with tank-mounted probe” is featured, the icon **Tank** is enabled on the left. The colour of the icon gives an indication of whether the unit status is “OFF” or if the unit is operating in either heating or cooling mode.

A tap on the icon “**Tank**” gives access to the screen where the setpoint is edited.



If the “SmartLink”, “SmartLink+” or “SmartLink DX” function is enabled, the icon “**SmartLink**” is provided at the centre of the main screen next to the value measured by the reference sensor.

When the drop-down menu on the left-hand side is opened, icons appear that give access to the other menus.

The drop-down menu features the following icons.



The icon “**LH arrow**” in this position is clicked to close the menu. When in the other screens, it is clicked to go back to the previous screen or to the main screen.



The icon “**Info**” gives access to the information screens.



The icon **“User Menu”** gives access to the screen where the following icons are always featured: “Alarms History”, “Video display”, “Network”, “File Management”, and “Refrigerant circuit”. The icons “Flowzer”, “DHW” and “2 Zones” are featured depending on which functions the controller controls.



The icon **“Change of operating mode”** is clicked to switch operation in units featuring cycle reversal via the keyboard.



The icon **“Night Shift System”** gives access to the screen where it is possible to enable and to programme the time bands of the second set of ventilation parameters in order to reduce noise in the night hours.



The icon **“Time bands”** gives access to the screen where it is possible to enable and to programme the time bands according to which the unit must be switched on/off and the energy saving setpoint.



The icon **“Languages”** gives access to the screen where it is possible to set a new language.



The icon **“Access”** gives access to the screen used to log in to the menu branches that are protected by a password.

4.1.2 “User Menu” icons

A tap on the icon **“User Menu”** gives access to the screen where the following icons are present:



The icon **“Alarms History”** and the text “Alarms History” give access to the screen where the start and end times of alarm activation in the unit are recorded.



The icon **“Video display”** and the text “Video display” give access to the “Video display menu” where the icons “Back-lighting”, “Led”, “Font” and “Network” are featured for video display management.



The icon **“Network”** and the text “Network” give access to the screen where information is given about the “IP” address, the “Modbus” address and the “Baud-rate” of the controller.



The icon **“File management”** and the text “File management” give access to the screen where it is possible to unload the Logs to a USB pen drive. These functions can be used after plugging the USB pen drive into the controller.



The icon **“Refrigerant circuit”** and the text “Refrigerant circuit” give access to the loop of screens where it is possible to view the operating parameters of the unit.



The icon **“Flowzer”** and the text “Flowzer” give access to the loop of screens where it is possible to view the operating parameters of the relevant function.



If the function “Management of mixed heating/cooling installations” is featured, the icon **“2 zones”** on the left-hand side shows the operating status of the existing zones. A tap on the icon gives access to the function-specific screen: the arrow on the right is used to enable/disable the function and to edit the setpoint.

The unit must be in operation in order for the user to be able to edit the setpoint.



The **“Swegon INSIDE”** icon and the wording “Swegon INSIDE” give access to the screen of the related function.

4.1.3 “Video Display” Menu icons

The “**User Menu**” features the “**Video display**” icon which is used to access the screen where the following icons are present:



The icon “**Back-lighting**” and the text “Back-lighting” give access to the screen where it is possible to edit the time during which the display is lit when in use. This screen also shows the number of hours during which the back-lighting has been active.



The icon “**Led**” and the text “Led” give access to the screen where it is possible to disable operation of the side LED in the display. Normally, the display is supplied with the side LED enabled.



The icon “**Network**” and the text “Network” give access to the screen where it is possible to view the parameters for video display connection to the Internet.



The icon “**Network**” is only featured if the video display is supplied with an Ethernet port.

4.1.4 “Maintenance” Menu icons

The icon “**Access**” in the drop-down menu on the side of the screen gives access to password-protected menus.

Access to the protected “Maintenance” branch requires entry of the password **200**.

The Maintenance Menu features the icons below.



The icon “**Setpoint**” and the text “Setpoint” give access to the screen where it is possible to set up the parameters of the unit setpoint. The setpoint according to which the unit is operating can be changed from the main screen also.



The icon “**I/O**” and the text “I/O” give access to the screens where it is possible to view the status of the inputs and outputs.



The icon “**Compressors**” and the text “Compressors” give access to the screen where it is possible to enable and disable operation of the compressors, as well as to view and reset, where needed, the number of hours of operation and the number of start-ups.



The icon “**Alarms History**” and the text “Alarms History” give access to the screen where the start and end times of alarm activation in the unit are recorded.



The icon “**Refrigerant circuit**” and the text “Refrigerant circuit” give access to the loop of screens where it is possible to view the operating parameters of the unit.



The icon in this screen and the text “Parameters” give access the “Parameters” menu. The “Parameters” menu includes the screens giving access to parameters, which are sorted in homogeneous groups depending on their function.



The icon “**Pumps**” and the text “Pumps” give access to the screen where it is possible to enable and disable operation of the pumps, as well as to view and reset the number of hours of operation.



The icon “**DHW**” and the text “Domestic hot water” give access to the screens where it is possible to enable/disable and edit the setpoint, and to override the anti Legionella cycle.



The icon “**SM GR**” and the text “Smart Grid ready” give access to the screen where the function management parameters are set up.



This icon and the text “Unit hour meter” give access to the screen where the number of unit hours of operation is reset.

4.1.5 “Service Menu” icons

The icon “**Access**” in the drop-down menu on the side of the screen gives access to password-protected menus.

A password is required to access the screens making up the “Service” menu. The password is available on the SAP portal, in connection with the unit serial number.

The “Service” menu features the icons below.



The icon “**Setpoint**” and the text “Setpoint” give access to the screen where it is possible to set up the parameters of the unit setpoint. The setpoint according to which the unit is operating can be changed from the main screen also.



The icon “**I/O**” and the text “I/O” give access to the screens where it is possible to view the status of the inputs and outputs.



The icon “**Compressors**” and the text “Compressors” give access to the screen where it is possible to enable and disable operation of the compressors, as well as to view and reset, where needed, the number of hours of operation and the number of start-ups.



The icon “**Alarms History**” and the text “Alarms History” give access to the screen where the start and end times of alarm activation in the unit are recorded.



The icon in this screen and the text “Control panel” give access to the “Control panel” menu.



The icon “**Refrigerant circuit**” and the text “Refrigerant circuit” give access to the loop of screens where it is possible to view the operating parameters of the unit.

The next screen contains the icons below.



The icon in this screen and the text “Parameters” give access the “Parameters” menu. The “Parameters” menu includes the screens giving access to parameters, which are sorted in homogeneous groups depending on their function.



The icon “**Pumps**” and the text “Pumps” give access to the screen where it is possible to enable and disable operation of the pumps, as well as to view and reset the number of hours of operation.



The icon “**Flowzer**” and the text “Flowzer” give access to the loop of screens where it is possible to view the parameters of the relevant function. The arrow on the right gives access to the parameters associated with the entered access level.



The icon “**Flame**” and the text “Auxiliary heating” give access to the screens where it is possible to enable/disable and edit the 0-10V setpoint according to the control setpoints of the function.



The icon “**SM GR**” and the text “Smart Grid ready” give access to the screen where the function management parameters are set up.



This icon and the text "Unit hour meter" give access to the screen where the number of unit hours of operation is reset.

4.1.6 "Control Panel Menu" icons

The "Control Panel" screen contains the icons below.



This icon and the text "Parameter file management" give access to the screen where the following control buttons are featured: "Update parameters from control", "Save current configuration", and "Upload default parameters".

4.1.6.1 Update control parameters



When updating the controller, if it is already installed on a unit, disconnect the 230V auxiliary circuit.

This function makes operational the parameters of the "actual.conf" file stored in the controller.



This operation must always be carried out whenever the software is updated: it consists in the downloading of the files to the controller with a USB pen drive, as instructed in the chapters titled "Software deployment" and "Software upgrade".

The function gets started by merely pressing the control button and is normally completed in a few seconds.



When the update is finished, turn the power to the controller off and then on again.

4.1.6.2 Save current configuration

The "Save current configuration" control creates a file with extension "conf" in the memory of the controller; the parameters with which the unit is configured are present in this file.

This file can be requested from the manufacture to check the correct setting of the parameters in the unit.

The function gets started by merely pressing the control button and is normally completed in a few seconds.

The saved file can be downloaded to a USB pen drive using the "Copy current configuration to USB" function featured in the "Log file management" menu.

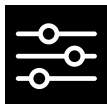
4.1.6.3 Upload default parameters

The "Upload default parameters" control automatically restores the original setting of the factory parameters in the controller.

This operation may become necessary if, after making changes to the software parameters, the parameters fail to meet the operating requirements and not all the initial values can be restored manually.

The function gets started by merely pressing the control button and is normally completed in a few seconds.

The saved file can be downloaded to a USB pen drive through the "Copy current configuration to USB" function.



This icon and the text "Log file management" give access to the screen where the following control buttons are featured: "Copy ALARMLOG to USB", "Copy ACCESSLOG to USB", "Copy TIMELOG to USB", "Copy current configuration to USB", "Copy alarm configuration to USB", and "Copy all LOG files to USB".



These control buttons are only enabled if a pen drive is inserted in the USB port.

If the message "Warning: USB not ready" appears after inserting the pen drive in the USB port, check that the USB pen drive is formatted and in good working order.

4.1.6.4 Log File Management

Some measured or calculated values are saved in the memory of the controller during operation. These values are saved every 15 seconds.

In addition to recording at intervals, the alarms and accesses are recorded automatically and the setting of the parameters present in the unit is recorded manually.

The controller saves these data in files that can be copied to a USB pen drive.

When copying, the controller creates the folder structure shown in the figure in the USB pen drive.

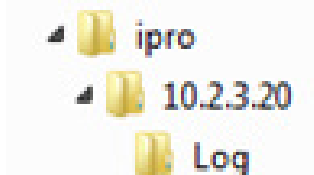


Fig. 19 Structure created in the USB pen drive

The files are copied to the "Log" folder



If considered useful, the manufacturer can ask for some or all of the Log files to be sent.



To upload log files to USB, the unit must be OFF!

When the control starts, a copy progress bar appears in the screen.

Depending on the amount of data, the copying operation can take from a few seconds to a few minutes.

At the end of data copying, a message appears confirming that the operation has been completed successfully.



Before continuing with this operation, make sure the USB pen drive has sufficient free space, "at least 30 Mb".

Free the memory in the pen drive or replace it with one that has more free space available.



If the problem persists, replace the USB pen drive.

4.1.6.5 Copy ALARMLOG to USB

In the USB pen drive, this control creates the "alarmlog.txt" file containing the operating parameters of the previous 5 minutes for each alarm.

4.1.6.6 Copy ACCESSLOG to USB

In the USB pen drive, this control creates the "accesslog.txt" file that contains a record of the time of access to the parameters of the service menu from the display or via WEB and the edited values.

4.1.6.7 Copy TIMELOG to USB

In the USB pen drive, this control creates a "timelog_dd_a.txt" file for each day of controller operation where the operating values, with 15 seconds as acquisition frequency, are recorded.

4.1.6.8 Copy current configuration to USB

This command creates the file "Sb10000xxxx_settings.txt" in the USB pen drive. The file contains the current setpoints of the controller operating parameters.

The file needs to be renamed "actual.conf" in order for it to be reused.

To upload the file "actual.conf" into the controller, it must be copied onto an empty "USB" pen drive in the "ipro/10.2.3.20/conf" directory.



When a file needs to be imported back into the main controller after a software upgrade or for any other reason, the file must be renamed "actual.conf".

4.1.6.9 Copy alarm configuration to USB

This command creates a copy of the “alarm.conf” stored in the controller on the USB pen drive. The file “alarm.conf” helps manage the alarms on the two digital outputs or treat the alarm as merely a warning message.

The file “alarm.conf” can be changed using a text editor. Instructions to edit the file are given in the first line of the file.

If you wish to update the file “alarm.conf” on the controller, you should reference the section “iPRO update”.

4.1.6.10 Copy all LOG files to USB

This command copies all the log files mentioned above at the same time.



This icon and the text “System information” give access to the screen where it is possible to set the IP address of the board, the Modbus address, the communication speed, i.e. the Baud-rate, and the BACnet address.

4.1.6.11 System information

In this screen, the IP address, the serial address, the communication speed, and the "device number" if the BACnet protocol is present, are shown and can be changed.

The numbers making up the IP address can be changed individually using the virtual keypad on the display.



To activate the changes, the controller must be restarted.

5 SOFTWARE MANAGEMENT

It is essential for those who service units provided with this controller to be able to program it or correctly update its software. These operations can make the system unserviceable if they are not carried out correctly. All useful information for proceeding correctly is given in the next chapters.

5.1 Installing the software

The system includes the iPRO controller and the pGDX display.

Both must be programmed to operate and this requires uploading of some files.

The descriptions below illustrate both the programming of new components and their upgrading.

The easiest way to upload the programming files is through the USB port of the controller and the micro USB port of the display using formatted USB pen drives.

iproLight requires that the USB pen drive be exFAT formatted; pGDX requires the pen drive to be FAT32 formatted.



This operation requires that the operator has a pen drive with two connections or a USB pen drive and a USB/micro USB adapter.



If a controller already installed on the machine has to be programmed, disconnect the 230 V auxiliary circuit. Close the 230 V auxiliary circuit again only after complete programming of the controller and the display.



Use USB port “A” (RH port) to programme the IPG315D boards.



Fig. 20 Special IPG315D board

5.1.1 iPRO programming

Programming of the controller is carried out easily and securely using a USB pen drive.



Plug out the “Ethernet” connection, if fitted, before starting board programming.



Use a USB pen drive that has a LED. This will enable you to follow the progress of the controller programming and be certain that it has finished when the LED remains on and steady.



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Prepare the USB pen drive as follows:

- Create the "ipro" folder in root;
- create the "10.2.3.20" folder in the "ipro" folder;
- The compressed file “www.zip” must be inserted in the “10.2.3.20” folder;
- create the folders “app” and “conf” in the “10.2.3.20” folder;
- the "isadix" file must be inserted in the "app" folder;
- The configuration files must be added to the “conf” folder. The configuration files depend on the features the controller is designed to control.



The compressed file “www.zip” inserted in the “10.2.3.20” folder must not be unzipped.

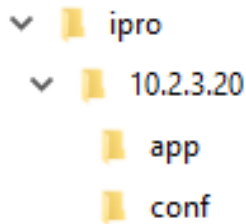


Fig. 21 Folder structure of the USB pen drive



The USB pen drive can be plugged into and unplugged from the controller without turning off the power.

Once the USB pen drive has been prepared as described above, programming will start automatically when it is plugged into the controller.

The LED on the USB pen drive will flash during transfer of the data.

The entire operation takes a few minutes.



Do not remove the USB pen drive from the controller until the programming has been completed.



Completion of the programming procedure is confirmed when the software version you wish to install appears on the screen saver page.



In some cases, the controller is automatically restarted 60 seconds after programming to finalise the configuration. A restart countdown appears in the screen saver page and the red LED of the controller will flash rapidly.



The USB pen drive can be removed after completing the programming process.

5.2 Updating the software

Conditions may occur that require updating of the software of the controller, the display or both. Updating of the software is carried out easily and securely using a USB pen drive.



USB pen drives must be “exFAT” formatted for the controller and “FAT32” formatted for the display.



Use USB port “A” (RH port) to programme the IPG315D boards in version “V2”.



Fig. 22 IPG315D board in version “V2”

Updating of the software is divided into two operations:

- insertion of new files in the controller;
- updating of the parameters.



As for programming, if the controller is already installed on a unit, the 230 V auxiliary circuit must be disconnected when updating.

Close the 230 V auxiliary circuit again only after complete updating of the controller and the display.

5.2.1 Updating the iPRO

As for programming, to update the iPRO controller, the folder structure, as shown in the image, must be created in a USB pen drive.

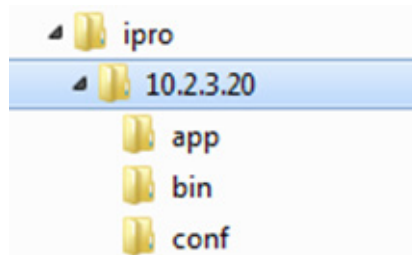


Fig. 23 Folder structure in the USB pen drive



Use a USB pen drive that has a LED. This will enable you to follow the progress of the controller programming and be certain that it has finished when the LED remains on and steady.



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Not all the files mentioned in the controller programming chapter are necessary for updating. To simplify the operation, the manufacturer provides only the necessary files and therefore some folders may remain empty.

For new “iPRO” and “Visograph” controller versions

Prepare the USB pen drive as follows:

- Create the "ipro" folder in root;
- create the folder with the IP address of the controller in the "ipro" folder. If it has not been changed, this is "10.2.3.20" by default;
- create the 3 folders called "app", "bin" and "conf", in the folder with the IP address of the controller;
- the "isadix" file, if present, must be inserted in the "app" folder;
- The file with "defaultML.bin" extension must be inserted in the "bin" folder for display management.
- files with extension ".conf" must be inserted in the "conf" folder;
- the www.zip file containing the web pages is located in folder 10.2.3.20.

For old “iPRO” and “Visograph” controller versions

Prepare the USB pen drive as follows:

- Create the "ipro" folder in root;
- create the folder with the IP address of the controller in the "ipro" folder. If it has not been changed, this is "10.2.3.20" by default;
- create the 3 folders called "app", "bin" and "conf", in the folder with the IP address of the controller;
- the "isadix" file, if present, must be inserted in the "app" folder;
- any files with extension ".bin" must be inserted in the "bin" folder;
- files with extension ".conf" must be inserted in the "conf" folder;
- the www.zip file containing the web pages is located in folder 10.2.3.20.



The USB pen drive can be plugged into and unplugged from the controller without turning off the power.

Once the USB pen drive has been prepared as described above, updating of the controller will start automatically when it is plugged in.

The LED on the USB pen drive will flash during transfer of the data.

The entire operation takes a few minutes.



Do not remove the USB pen drive from the controller until the update has been completed.



In some cases, the controller is automatically restarted 60 seconds after programming to finalise the configuration. A restart countdown appears in the screen saver page and the red LED of the controller will flash rapidly.



If the update requires installation of a new software version, check that the revision index appearing on the screen saver matches the number in the files to confirm successful completion of the operation.

If the update is required to enable a function, successful completion of the operation needs to be confirmed by checking that the new parameters are set up.

5.2.2 Pen drive preparation for display programming

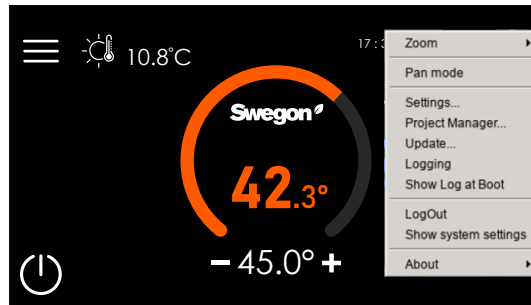
The zipped folder “UpdatePackage.zip” is needed for display programming.

5.2.3 Display programming procedure

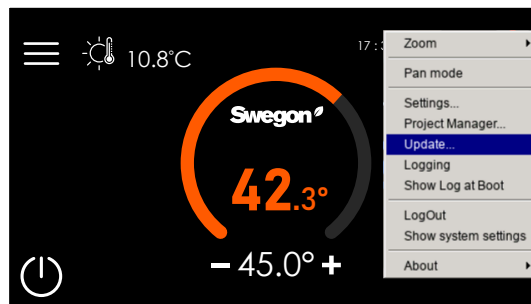
The port of the pGDX display is micro USB type.

The procedure for display programming consists in the steps below.

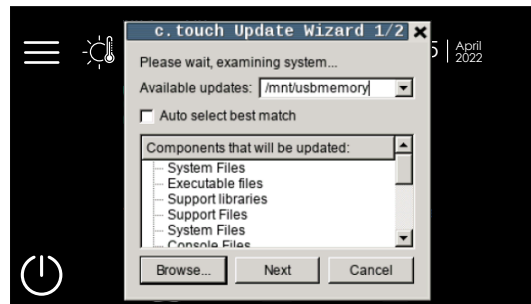
- Fit the USB pen drive in the display port.
- After initialization, the display shows the home page.
- Press the right-hand area on the screen for 5 seconds until the display menu pops up.



- Click “Update” to call up the programming menu.



- Click “Next” to start downloading the programming file (the download takes a couple of minutes).



- The display is restarted automatically after the programming files have been downloaded.



Power to the display must be cut out and then restored and the programming procedure must be started again from the beginning in cases when a no-exit menu or an incorrect menu is selected by error in one of the various steps of the procedure.

5.2.4 Programming completion procedure

At the end of the programming procedure, after all or some of the illustrated steps have been performed, as required in each specific case, the controller must be de-energised and then energised again.

5.3 Editing the IP addresses of the controller and the user interface

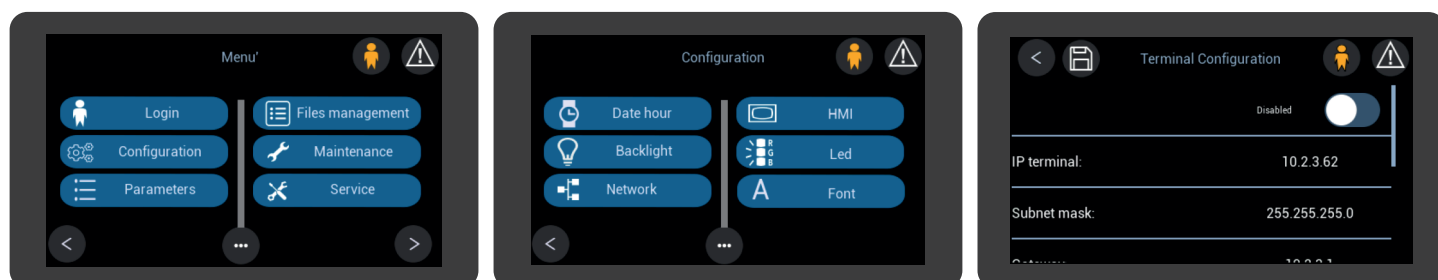
The controller and the user interface are networked and they have an identifying IP address. The IP addresses are set up at the factory for correct communication.

If the unit needs to be connected to the Internet after installation, the IP references of the controller and the user interface need to be changed.

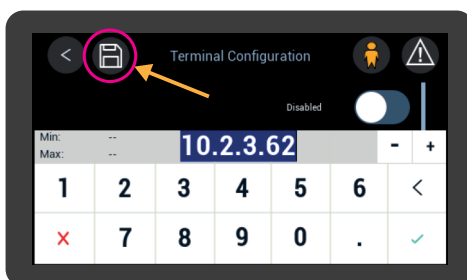
These operations can be carried out easily thanks to the user interface and after access is gained with a “Service” profile.

5.3.1 Editing the network references of the user interface

When in the main menu, select “Configuration” and “Video display” to access the edit screen.



A virtual keypad pops up in the edit screen after selecting the parameter that requires editing.

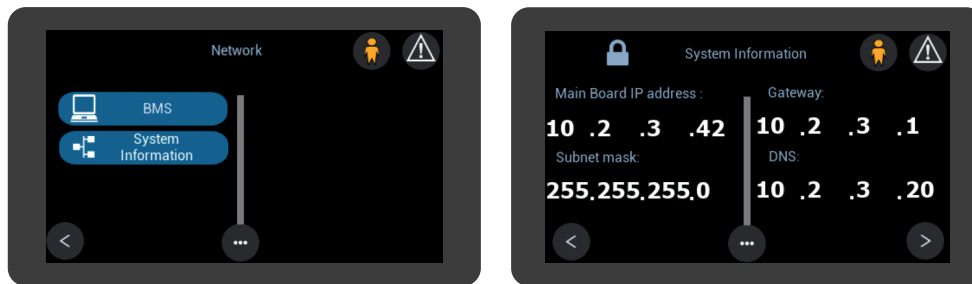


Edit the parameter and then tick it to confirm it: make all the necessary changes and then save them by clicking the Save icon on the top left-hand side of the screen.

5.3.2 Editing the network references of the controller

When in the main menu, select “Configuration”, “Network” and “System Information” to access the edit screen.





Unlock the padlock and select the values to be edited: the virtual keypad pops up.



Edit the parameter and then tick it to confirm it: make all the necessary changes and then save them by clicking the Save icon on the bottom right-hand side of the screen.

5.3.3 Re-addressing the user interface

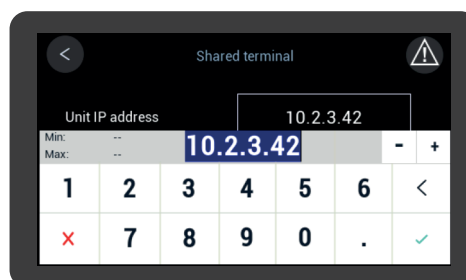
The address of the controller with which the interface is communicating must be entered in the interface.

When the IP address of the controller is edited, its address must also be edited in the user interface.

To access the edit screen, select the network icon in the main screen.



A virtual keypad pops up when the IP address is selected.



Edit the parameter and then tick it to confirm it.

5.4 Editing the IP addresses of the controller and the user interface

The unit can be Ethernet networked. In the network, the controller is identified by its IP address.

The need may arise to change the IP address of the controller and of the user interface connected to the controller via Ethernet.

These are easy operations if you use the user interface.

A “Service” profile must be used to log in if you wish to change the IP address of the controller.

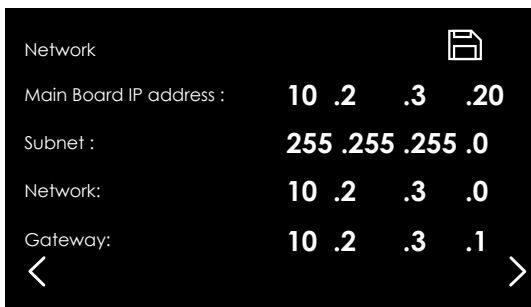
On the other hand, no access to password-protected menus is required to change the IP address of the user interface connected via Ethernet.

5.4.1 Editing the network references of the controller

The IP address, the serial address, the communication speed, and the “device number”, where a BACnet protocol is fitted, are edited on a series of screens, access to which is gained by logging in to the “Service” branch with the required password and by then selecting “Control panel” followed by “System information”.

The values in the fields provided on the screens can be edited using the virtual keypad of the display.

The featured screens are shown below.



In this screen, the IP address, the serial address, the communication speed, and the "device number" if the BACnet protocol is present, are shown and can be changed.

The numbers making up the IP address can be changed individually using the virtual keypad on the display.

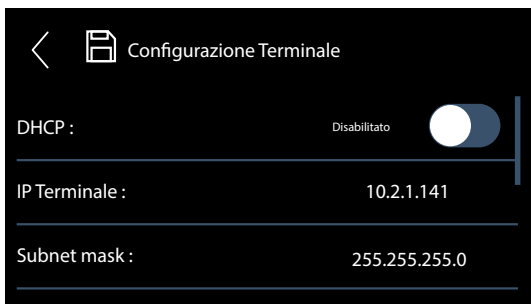


To activate the changes, the controller must be restarted.

5.4.2 Re-addressing the user interface

The terminals for the user interface connected to the Ethernet port must be addressed.

Once in the user menu, select “Video display” followed by “Network” to access the screen where the network values of the video display are edited.



This screen is also used to select the “DHCP” setting, the IP address of the video display, and the “Subnet mask”.

After changing the values, click the floppy disk icon to save any entered data.

5.5 Saving the log on a USB pen drive

When needed, it is important to be aware of how the unit has been operating.

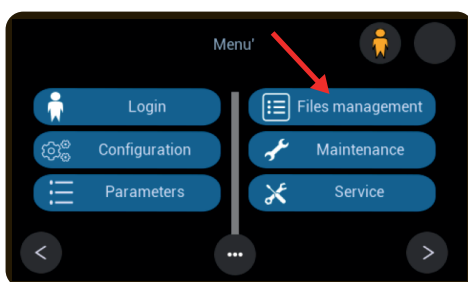
The controller records all information concerning unit operation in logs which can be downloaded onto a USB pen drive. A formatted USB pen drive “FAT32” is required.

First, fit the pen drive into the Host Master USB port (ref. 25 in board descriptions): this symbol  appears on the bottom right-hand side of the display.

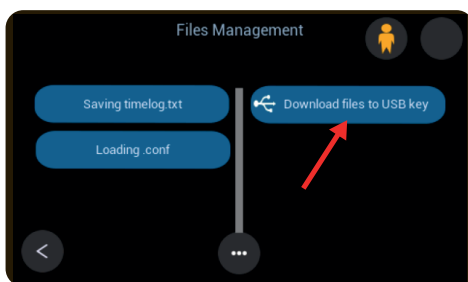


The USB pen drive must not be taken out while the saving process is in progress.

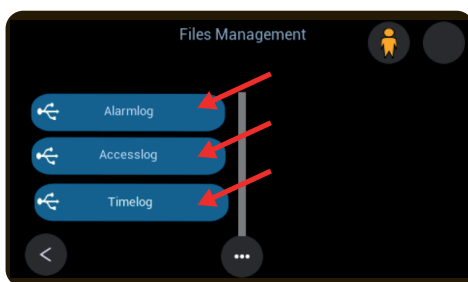
Access with “Service” level credentials is required to download the log.



Select the menu “Manage file”.



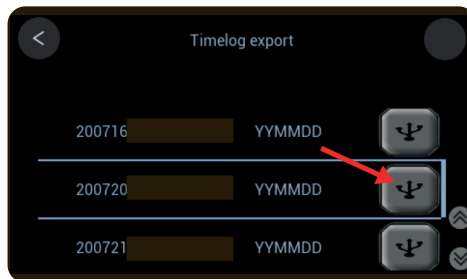
This menu is selected to download the log files onto a USB pen drive.



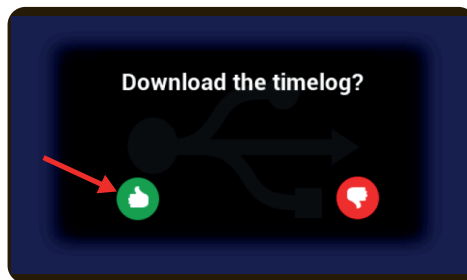
Three log types are available:

- **Alarm log** – in which alarms are recorded;
- **Acceslog** – in which all edited parameters and all credential-based accesses are recorded;
- **Timelog** – in which the operating variables set in the “timelog.txt” file are recorded.

The first two logs are saved by simply clicking the relevant selection on the display. Selection of “Timelog” gives access to the corresponding menu.



Select the day whose corresponding logs need to be saved.



Confirm to start the save process.

While the save process is ongoing, the message “In progress” is displayed.

The save time is relatively short for the first two log types. On the other hand, saving of the “Timelog” requires a few minutes. As soon as the save process is completed, the message “Executed successfully!” will flash for a few seconds.

5.6 File Actual.conf

Units are tested and shipped from the factory with the operating parameters set by default.

The factory parameters may require adjustments at the time of commissioning or during unit operation in order to be adapted to the operating requirements of the installation.

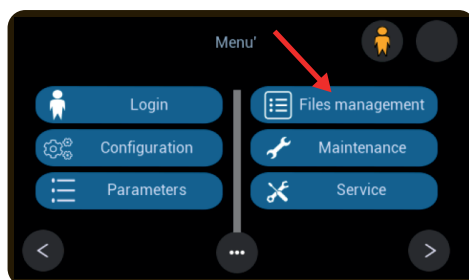
The controller is designed to save any new parameters in the “actual.conf” file.

Management of “.conf” files requires access with “Service” credentials.

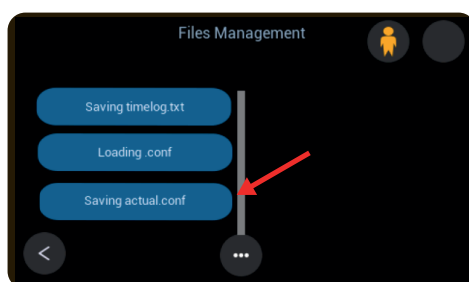
5.6.1 Saving edited parameters

Whenever they are edited, it is important that the new operating parameters are saved in the “actual.conf” file.

Select “Files management” in the main menu.



Select “Saving actual.conf” to save the new set of parameters.



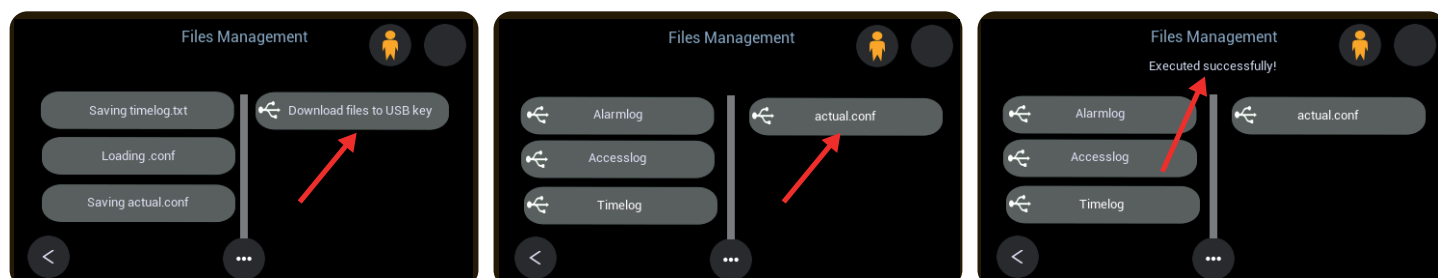
By doing so, the operating parameters that are currently set up in the controller are saved into the “actual.conf” file.

If you wish to restore any parameter saved after a software upgrade, please keep a copy of the “actual.conf” on an external medium, i.e “personal computer/USB pen drive”.

5.6.2 Saving the “actual.conf” file onto a USB pen drive

An empty USB pen drive is required to copy the “actual.conf” file that is saved in the controller.

Fit the pen drive into the USB port of the controller and then go to the main menu and select “Files management”, “Download files to USB key” and “actual.conf”.



Wait until a message appears to confirm that the file has been exported.

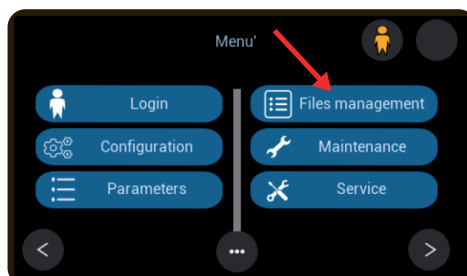
5.6.3 Restoring operating parameters

If you have saved the operating parameters of the unit, they can be restored at any time and, what is more important, they can be set up quickly when the controller software is upgraded.

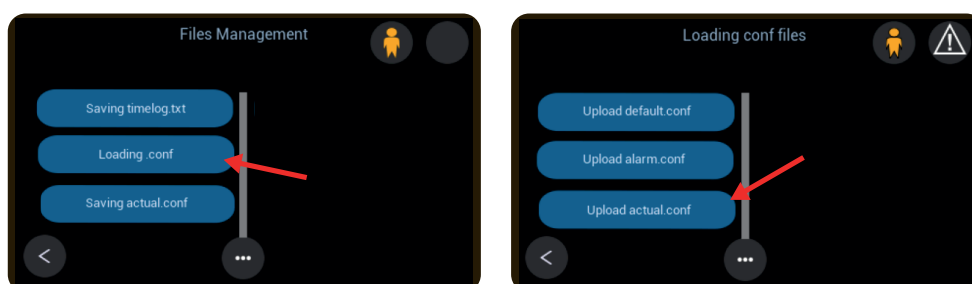
Restoring the “actual.conf” file in the controller

If the operating parameters have been edited and you wish to go back to the initial setting, you can restore the original parameters saved in the controller.

Select “Files management” in the main menu.



Select “Loading.conf” followed by “Upload actual.conf”.



This operation helps restore in the controller the parameter values stored in the “actual.conf” file.



The successful completion of the update must be done with the verification of the presence of the new parameters.

Restoring the “actual.conf” file, including software upgrade



To use the “actual.conf” file saved, a check must be made for its compatibility with the new version of the software.

If the “actual.conf” file saved is compatible with the new software version in the controller, the saved parameters can be simply restored by copying the file into the “USERFILE” folder and using it to overwrite the existing file.

When the software is upgraded, the parameter values saved are restored automatically.

The instructions provided in the previous section “Controller programming” must be followed to upgrade the software.

6 THE SCREENS

6.1 User Interface

The display is the interface between the unit and the user. The display is the tool used for interaction with the unit and for access to parameters.

Information regarding installation of the units and relevant tests and checks for the first starting is not given in this manual.

Navigate through the various menus to access the screens where you can carry out the necessary operations for operation of the unit, edit the operating parameters and download the records.



The images and the values shown in the screens are for illustrative purposes only.

They can vary according to the configurations and functions featured in the controller.

6.1.1 Home page

The display switches off after it has been inactive for a while. The time during which the display is ON is set up in the video display management page(s) of the user menu.

When the display is touched, access is gained to the main screen. The “LH arrow” is pressed to go back to the main screen.

The main screen is the starting point for navigating through the various branches of the application.

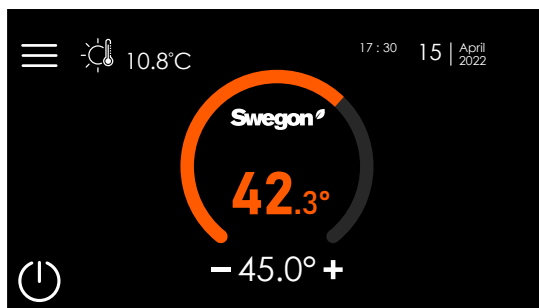


Fig. 24 Home page

The “On-Off” icon is featured on the bottom left-hand side of the screen and it is pressed to start/stop the unit.

The “Controls Menu” icon is featured on the top left-hand side of the main screen. The “Controls Menu” icon is sided by the symbol of the outside air temperature, which shows the detected value.

The date and time are displayed on the top right-hand side. Refer the “Changing the time and date” chapter for the procedure to edit the date and the time.

The central part of the screen shows base information on the operating status of the unit.



The colour of the dial shows the operating status.

Grey indicates that the unit is off; orange indicates operation in heating mode; and cyan indicates operation in cooling mode.

The value inside the box is the reference water temperature value.

The bottom part of the screen shows the operating setpoint. Refer to the “Changing the setpoint” chapter to edit the setpoint value.

The right-hand side of the screen indicates the enabled functions. Symbols are provided to indicate the various functions. The symbols of the functions are as follows.



The “**Alarm**” symbol indicates that at least one alarm is active: the figure aside the symbol indicates the number of active alarms.



The “**Night Shift System**” symbol indicates that the “Night Shift System” function is active. Refer to the section titled “Night Shift System” for further information on how to manage this function.



The “**Energy saving**” symbol indicates that the “Energy Saving” function is active. Refer to the section titled “Time bands” for further information on how to manage this function.



The “**Set OFF Time**” symbol indicates that the “Set OFF Time” function is active. Refer to the section titled “Time bands” for further information on how to manage this function.



The “**DHW**” symbol indicates that the function “**ACS**” for the production of domestic hot water is enabled. If the symbol is crossed out, the function is disabled. If the symbol is red, the function is alarmed.

6.1.2 Screen tree

The user interface gives access to any and all information on the operating parameters of the unit. The software manual describes the access procedure to the desired information and to the parameter pages where the various functions can be set up.

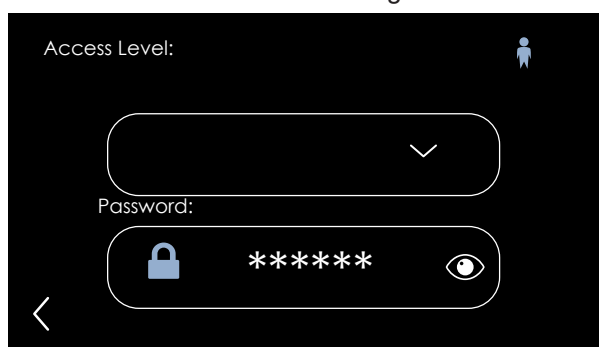
Menus are also provided, which the user can browse, to find additional information to that given in the main screen. For easier browsing, the screen tree is given below.

- Side Menu
 - Info
 - Close side menu
 - summer/winter
 - User Menu
 - Alarm History
 - Video display
 - Back-lighting
 - LED
 - Font
 - Network
 - Network
 - File Management
 - Time bands
 - Night Shift System
 - Languages
 - Protected Menus
 - Setpoint
 - I/O
 - Compressors
 - Alarm History

Access to the protected menus requires entry of the relevant password.

6.1.3 Access to protected menus

The “Access” icon gives access to the screen where the user can log in to access the password-protected menus.



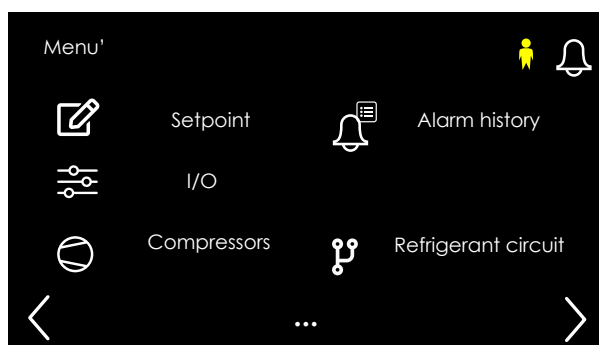
In the top area, the user has to select the profile for which he has credentials to access the protected menus.

The bottom area is used to enter the password.

A click on the asterisks enables the virtual keypad used for password entry.

The password needs to be confirmed by clicking the green tick symbol located on the right-hand side of the keypad.

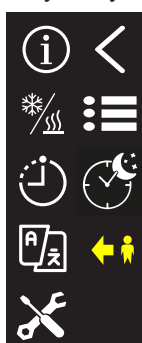
Tap on the “RH arrow” icon to confirm the request for access. Entry of the correct password gives access to the protected menu screen.



Once in the protected menus, you can browse them for an unlimited period of time.

When you exit password-protected menus, you can enter them again without having to log in for the following thirty minutes.

When you log in, the symbol “logout” appears in the “Command menu”: this symbol is used to override exit from the protected menus, which would in any case occur automatically thirty minutes after access.



6.1.4 Access to the Parameters menu

The icon "Parameters" is featured in the screen loop of password-protected menus.

The icon "Parameters" gives access to the screens with the unit operating parameters that are split into homogeneous groups.

The following groups are present:

- "ST : Thermoregulation", in which the parameters of group "ST" are stored;
- "CF : Configuration", in which the parameters of group "CF" are located;
- "SP : Machine set-up", in which the parameters of group "SP" are located;
- "SD: Dynamic Setpoint", in which the parameters of group "SD" are stored;
- "ES : ES and automatic ON/OFF", in which the parameters of group "ES" are located;
- "AH: Auxiliary heating", in which the parameters of group "AH" are located;
- "CO : Compressor", in which the parameters of group "CO" are located;
- "SL : Stepless control", in which the parameters of group "SL" are located;
- "PA : Water pump", in which the parameters of group "PA" are located;
- "PD: Pump Down", in which the parameters of group "PD" are stored;
- "UN: Unloading", in which the parameters of group "UN" are stored;
- "FA : Ventilation", in which the parameters of group "FA" are located;
- "AR: Anti-freeze Heaters", in which the parameters of group "AR" are stored;
- "DF: Defrost", in which the parameters of group "DF" are stored;
- "RC: Heat Recovery", in which the parameters of group "RC" are stored;
- "FC : Free-cooling function", in which the parameters of group "FC" are located;
- "SDH: Desuperheater", in which the parameters of group "SDH" are stored;
- "US : Auxiliary outputs", in which the parameters of group "US" are located;
- "SUB: Subcooling", in which the parameters of group "SUB" are stored;
- "PAL : Alarm parameters", in which the parameters of group "PAL" are located;
- "ET: Electronic Valve", in which the parameters of group "ET" are stored;
- "RA : Limits of analogue inputs", in which the parameters of group "RA" are located;
- "CA : Calibration of analogue inputs", in which the parameters of group "CA" are located;
- "MS : Multilogic", in which the parameters of group "MS" are located;
- "MS_FC : Multi Free", in which the parameters of group "MS_FC" are located;
- "ENV : Envelope", in which the parameters of group "ENV" are stored;
- "ACS = Hot Sanitary Water" in which the parameters of the "ACS" unit are stored;
- "FMG: Flowzer", in which the parameters of group "FMG" are stored;
- "SML: SmartLink+", in which the parameters of group "SML" are stored;
- "PID: PID parameters", in which the parameters of group "PID" are stored;

6.2 Base setup parameters

The base setup parameters can be entered either on the main screen or in easy-to-reach menus.

6.2.1 Switching the unit on and off

The user can switch the unit either on or off from the display or via an external signal, as well as from the time bands and serially.

6.2.1.1 Switch the unit on and off from the display.

Use the “On/Off” icon on the main screen to go to the screen where the buttons to start and stop the unit are featured.

The top area of the screen shows the status of the unit: the “On/Off” icon is provided in the central area.

A tap on the icon changes the status of the unit from “on” to “off” and vice versa.

When the unit switches status, the On/Off icon goes from green (unit ON, in operation) to white (unit OFF).

6.2.1.2 Switch the unit on and off from external OK signal

In order to switch the unit on and off from external OK signal, make sure the feature is active.

To switch the unit on, close the external OK signal. To switch it off, open it.

The external OK signal should be connected to terminals "1" and "2" present in the terminal board.



The external OK signal must be a potential-free contact.

6.2.2 Change of set points

The setpoint is displayed in the bottom part of the main screen.

The icon “-” and “+” on the sides of the setpoint are used to adjust the setpoint.

If the setpoint needs to be edited, a click on the setpoint value causes the keypad to get enabled.

Set the new value and apply the green tick to confirm.

6.2.3 Change language

The “User Menu” icon enables a drop-down menu where all the function icons are featured.

A click on the “Languages” icon gives access to the screen where a list of the available languages is given.

A click on the language name or its flag causes switching to a new language.

6.2.4 Change date and time



The unit must be Off to edit the date and the time.

When the unit is off, a click on the area where the time and the date are displayed on the main screen gives access to the edit screen.

Select the write icon in the bottom right-hand side to access the edit screen.

The keypad appears when the values of the time and the date are tapped individually. Use the keypad to set up the value you wish to edit and then tap the green save icon on the bottom right-hand side of the keypad to confirm.

After all the necessary changes have been made, tap the green icon on the bottom right-hand side of the screen to update the values.

The controller gets restarted as soon as the updated value is confirmed by pressing the green “OK” icon.



Controller restarting takes a couple of minutes.

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