



DAB DConnect Box 2 Interface Device Instruction Manual

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WATER • TECHNOLOGY
INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE
DCONNECT BOX2
Interface Device



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TECHNICAL CHARACTERISTICS

Power supply	100/240 VAC 50/60Hz
Built-in feeder	Schuko, UK, AUS, USA (nema5 e nema6), South Africa and Argentina
Degree of Protection	IP20
Internet connections	• Wi-Fi: Support 802.11 b/g/n, WPA-PSK/WPA2-PSK encryptions. Frequency 2.4 GHz
Assembly	wall-mounted with special fixing slots
Maximum number of devices	The maximum number of pumps that can be controlled via the DConnect Box2 is up to 4 (depending on pump type).
I/O external connections	<ul style="list-style-type: none"> • 1 non-optoisolated voltage-controlled input • 1 relay output (24V 5A resistive load)

KEY

The following symbols have been used in the discussion:



Situation of general danger. Failure to respect the instructions that follow may cause harm to persons and property.



Notes and General Information.

WARNINGS



- Read this documentation carefully before installation and always refer to the manuals of each product to be connected via the DConnect Box2.
- Installation and operation must comply with the local safety regulations in force in the country in which the product is installed.
Everything must be done in a workmanlike manner.
- Failure to respect the safety regulations not only causes risk to personal safety and damage to the equipment, but invalidates every right to assistance under guarantee.

3.1 Skilled personnel



- It is advisable that installation be carried out by competent, skilled personnel in possession of the technical qualifications required by the specific legislation in force.
- The term skilled personnel means persons whose training, experience and instruction, as well as their knowledge of the respective standards and requirements for accident prevention and working conditions, have been approved by the person in charge of plant safety, authorizing them to perform all the necessary activities, during which they are able to recognize and avoid all dangers. (IEC 60730).

3.2 Safety



- Use is allowed only if the electric system is in possession of safety precautions in accordance with the regulations in force in the country where the product is installed. Check that the DConnect Box2 has not been damaged.
- It is indispensable to check that all the leads and accessory cables are correctly inserted in the relevant extractable terminals or dedicated doors.

Failure to observe the warnings may create situations of risk for persons or property and will void the product guarantee.

3.3 Responsibility

The Manufacturer does not vouch for correct operation of the electropumps or accessories, or answer for any damage that they may cause if they have been tampered with, modified and/or run outside the recommended work range or in contrast with other indications given in this manual. The Manufacturer declines all responsibility for possible errors in this instructions manual, if due to misprints or errors in copying. The Manufacturer reserves the right to make any modifications to products that it may consider necessary or useful, without affecting their essential characteristics.

INTRODUCTION

The DConnect Box2 is the interface device for remote control via APP of compatible DAB products. The DConnect Box2 is mainly designed for Residential Building Service (RBS) systems, consisting of up to 4 pumps.

SYSTEM REQUIREMENTS

5.1 APP requirements: Smartphone

- Android ≥ 6 (API level 23).
- IOS ≥ 12
- Internet access

5.2 PC requirements

- WEB browser that supports JavaScript (e.g. Microsoft Edge, Firefox, Google Chrome, Safari).
- Internet access.



Microsoft© has announced that Internet Explorer 10 will only be supported until January 2020. For this reason the webAPP does not support Internet Explorer.

5.3 Network requirements

- Active and permanent direct Internet connection on site.
- Modem/Router WiFi.

- Good quality WiFi signal and power in the area where the DConnect Box2 is installed.

NOTE 1: If the WiFi signal is deteriorated, we suggest using a Wifi Extender.

NOTE 2: The use of DHCP is recommended, although a Static IP can be set.

5.4 Firmware Updates

Before starting to use the DConnect Box2, make sure that the product is updated to the latest SW version available.

Updates ensure you of a better use of the services offered by the product.

To get the most out of the product, also check out the online manual and watch the demonstration videos. All the necessary information is available at dabpumps.com or on: Internetofpumps.com

5.5 DAB Product requirements

The DAB products to be controlled by the DConnect service (where possible) must be updated to the latest firmware version available.

CONTENT OF THE PACK

- DCONNECT BOX2.
- Power supply cable.
- Electric connectors for Modbus connections, I/O.
- Quick Guide.

NOTE: the DConnect Box2 is sold separately or included with the purchase of the E.sybox Diver as part of the product. It replaces the COM Box supplied with the DTron3.

PANORAMIC VIEW OF THE PRODUCT



DCONNECT BOX2

Figure 1: Top view of the DConnect Box2

7.1 Buttons





There is a button on the DConnect Box2. Its use is explained directly in the configuration wizard in the DConnect DAB APP.

General:

- when the button is pressed, all the lit LEDs turn off;
- when pressed for 5 seconds, the blue LEDs flash. Releasing the button will activate the Wi-Fi hotspot and the original LED status will return;

- when pressed for 20 seconds, only the red LED of the PLC will flash (see below), until the button is released: at this moment a RESET of all the WiFi networks associated with the DConnect Box2 is performed.

7.2 Warning LEDs

Symbol	LED name	Description
	Wireless	If lit with a fixed light, it indicates that the DConnect Box2 is communicating with the DAB devices connected via Wireless (e.g. E.sylene). If blinking, it indicates that it is being paired with the DAB devices connected via Wireless (e.g. E.sylene). If off, it indicates that there is no pairing with the DAB devices connected via Wireless (e.g. E.sylene).
	WiFi	If lit, it indicates that the DConnect Box2 is connected via WiFi to an Access Point. If blinking, it indicates that the DConnect Box2 is in Access Point mode, for example in the initial configuration phase after having held down the button for at least 5 sec. If off, it indicates that it is not connected to any Access Point or that the WiFi is disabled.
	Service Centre (Cloud)	If lit, the DConnect Box2 is correctly connected to the DAB Service Centre (Cloud). If off, the DConnect Box2 is unable to reach the DAB Service Centre (Cloud). Check that there is regular Internet access.
	PLC	If lit, it indicates that PLC communication is active (e.g. E.sybox Diver or DTRON3) If blinking, it indicates that the DConnect Box2 is being paired via PLC

There are additional Status LEDs of the connected products as shown in DCONNECT BOX2 Figure 1: in the immediate vicinity of the specific ports to which DAB products are connected and also near the I/O port, there is a status LED that may be:

1. LIT:

- GREEN: status OK
- RED: Communication error

2. BLINKING:

- GREEN: Communications in progress.

7.3 – Commissioning

7.3.1 Connection via WLAN (Wi-Fi)

1. Connect the DConnect Box2 to the power socket with the cable supplied. During starting, the Service Centre connection led blinks.
2. The DConnect Box2 is ready for use after about 90 seconds.
3. Download the DConnect DAB App from Google PlayStore or App Store.
4. Follow the instructions provided in the DConnect DAB App.



Note: The local Wi-Fi network “DConnect Box2-xxxxx” generated during configuration by the DConnect Box2 does not have an Internet connection. Your device may therefore be disconnected by accident. If this happens, we advise deactivating the respective option on your device (smartphone / tablet).

7.3.2 Advice for ideal installation

- If you want to establish a Wi-Fi connection between the DConnect Box2 and your WiFi router, position the device in such a way that it can receive an excellent Wi-Fi signal near its installation; otherwise you can install WiFi repeaters to strengthen the signal arriving from the Access Point, positioning them ideally in the centre between the DConnect Box2 and the nearest Access Point.
- Be sure to respect a sufficient distance from potential sources of interference such as microwaves or electrical devices with large metal structures.

APP DOWNLOAD AND INSTALLATION

- Download the DConnect DAB App from Google PlayStore for Android devices or from the AppStore for an Apple device.
- Once it has been downloaded, a DConnect icon will appear on your device.
- For optimum operation of the APP, accept the conditions of use and all the required permits to interact with the device.
- To ensure the successful registration and installation of the DConnect Box2, it is necessary to read carefully and follow all the instructions given in the DConnect DAB App.



Figure 2: APP DCONNECT icon

REGISTRATION WITH THE DAB SERVICE CENTRE

1. If you do not already have a DAB Service Centre account, please register by clicking on “Register”. A valid and accessible email address is required.
2. Enter all required data marked with an asterisk.
3. Please agree to the privacy policy and fill in the required data.
4. Confirm your registration by clicking on “REGISTER”.

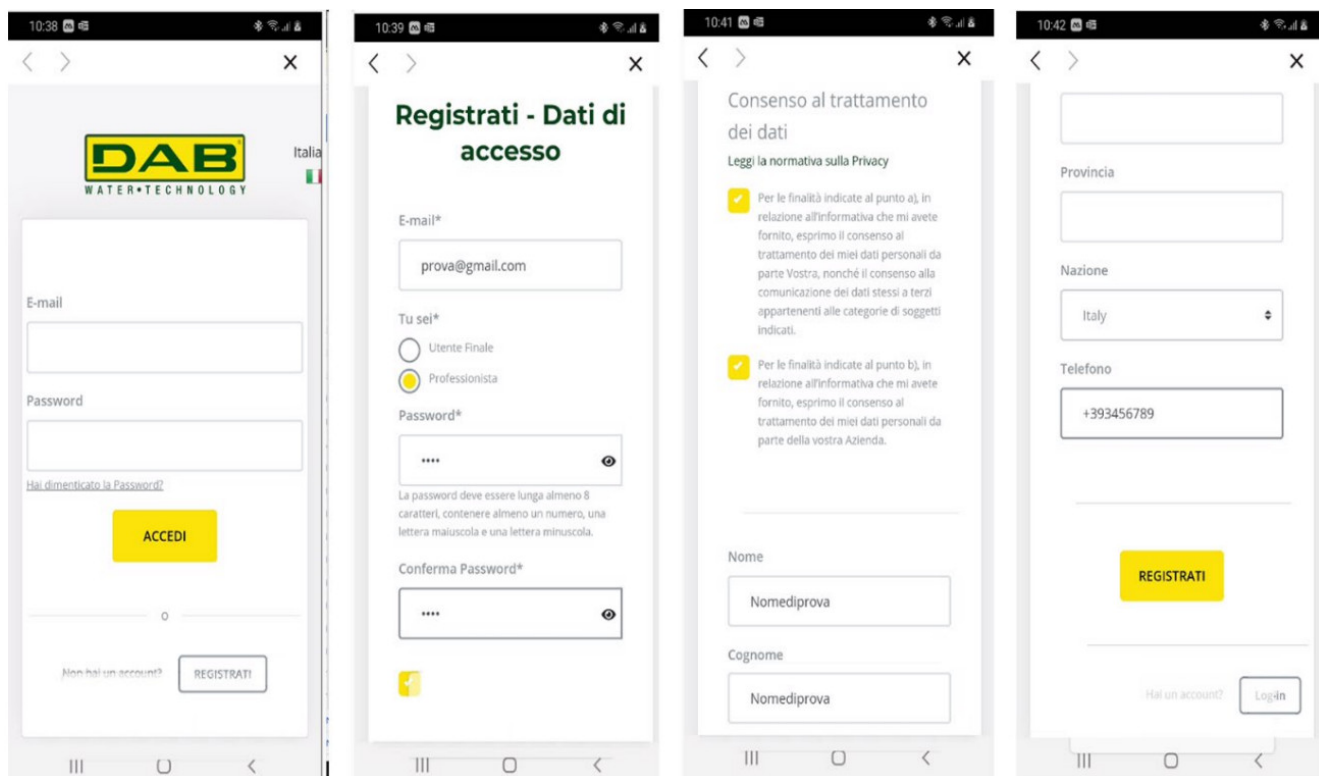


Figure 3: Registration with the DAB Service Centre

USE OF THE DCONNECT DAB APP

Before starting the APP, make sure that:

- You have properly connected the DConnect Box2 and all the devices to be managed (see the relevant section).
- You have a very good WiFi signal reception.
- You have Internet access when using the DConnect service (cloud).
- You have installed the DConnect APP on your smartphone/tablet and are registered at the service centre.

The DConnect DAB App allows you to configure the DConnect Box2 to connect it to the DAB Service Centre and to control your installations remotely.

CONFIGURATION

11.1 Local control (POINT-TO-POINT)

The DConnect Box2 offers the possibility to control the pump in point-to-point mode: your smartphone can be used as the pump display. The point-to-point connection requires the operator to be in the immediate vicinity of the DConnect Box2.

NOTE: For systems such as E.sybox Diver, the DConnect Box2 becomes indispensable for the configuration and control of the pump, which, being submerged, does not offer a display.

Click on the TAB of the APP as shown in the following figure to configure the local control. With this function it is possible to act on the pump using the DConnect Box2. This is, in fact, transformed into a WiFi HotSpot (network name DConnectBox2-xxxxx where xxxxx are the last digits of the serial). The user, through his smartphone, will have to connect to the HotSpot and it will be possible to act on the pumps connected to the DConnect Box2. Read carefully and follow the procedure provided by the APP itself to complete the configuration.

In local control it is impossible to access the functionality of the DConnect Cloud service because there is no connection to the DAB Service Centre.



Figure 4: Dconnect APP

11.2 – Remote control

The first step of the procedure is local control of the device. Follow the instructions given in the previous paragraph “LOCAL CONTROL (POINT-TO-POINT)”.

Then, select the button in figure 5 and figure 6 to choose the WiFi network to which the DConnect Box2 will be connected.

On the phone, select the network “dconnectbox2-xxxx” again via phone settings – WiFi.

Once the WiFi network is configured, you need to enable the DAB DConnect Service Centre using the button in figure 7.

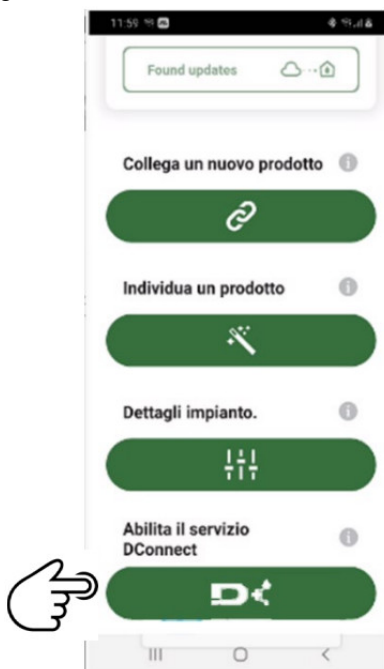


Figure 5



Figure 6

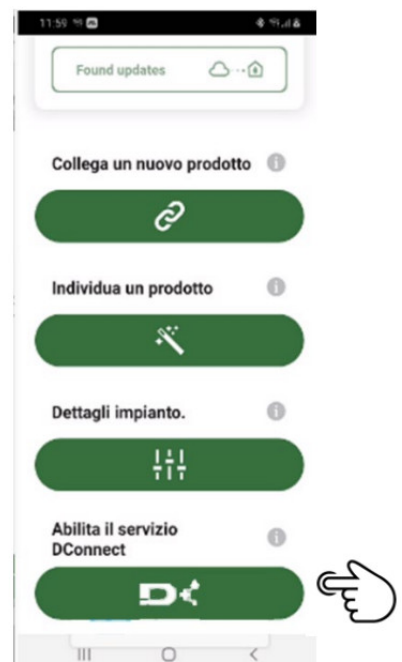


Figure 7

UPDATING THE DCONNECT BOX2

Before connecting a new product to the DConnect Box2, check whether there are any new updates available.

It is important and recommended to keep your DConnect Box2 always up to date.
Updates are downloaded from the Internet (check your tariff plan).
To allow the update just click and confirm "Update Now".
The update of the DConnect Box2 will take 3-4 min.
Connect the pumps and update them if necessary (see the appropriate section in this manual).

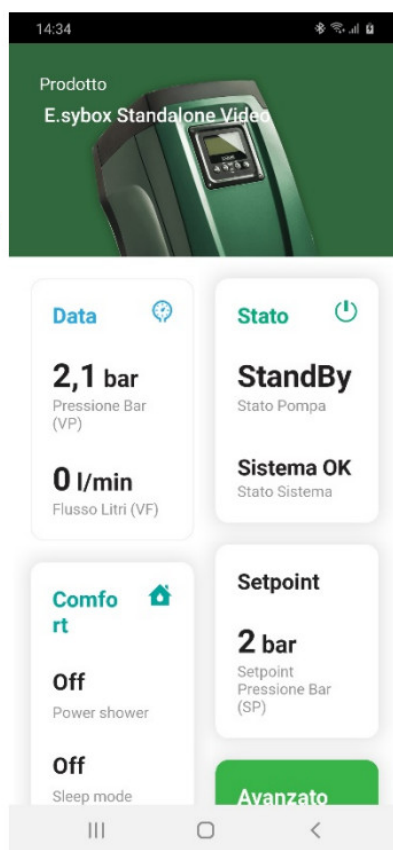
REMOTE MONITORING AND CONTROL OF A COMPONENT

13.1 APP control monitoring.

Via the APP, to monitor the operating status of an installation component already configured:

1. Click on the desired installation.
2. Click on the desired component.
3. Check the relevant parameters.

Figure 8



13.2 Changing parameters via APP.

To change a parameter in remote mode, proceed as follows:

1. Click on the desired installation.
2. Click on the desired component.
3. Select the relevant parameter and change the value.

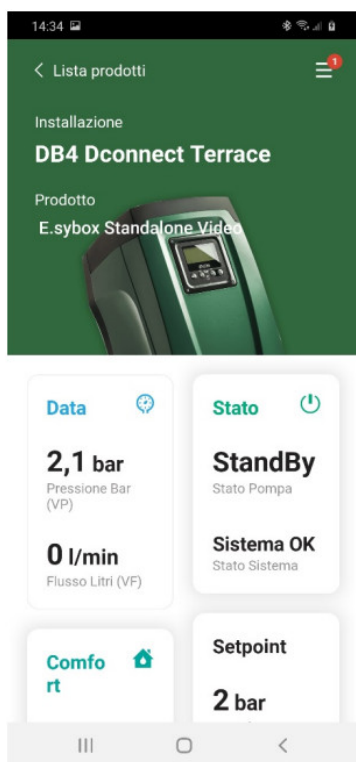


Figure 9

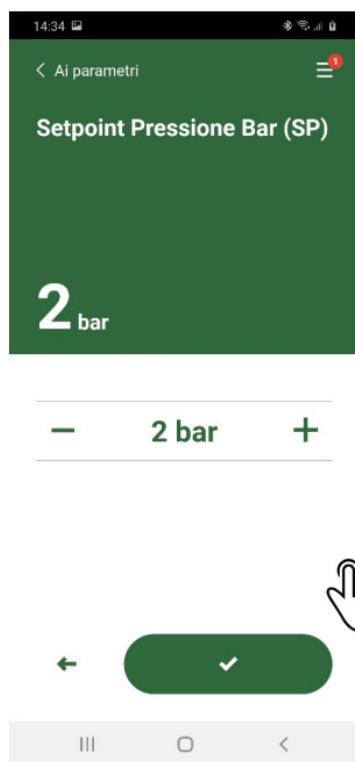


Figure 10

13.3 Monitoring from Web APP

Via the WebAPP, to monitor the operating status of an installation component already entered:

1. Click on the desired Installation.
2. Click on the desired component.
3. Click on the STATUS menu bar to view the main parameters of the component.



NOME : E.SYBOX
DESCRIZIONE PRODOTTO : e.sybox 40/80
SERIALE : XXXXX-XXXXX-XXXXX-XXXXX-XXXXXXX

Tempo trascorso dall'ultimo dato ricevuto minore di 3m



Figure 11: WebAPP – Monitoring

13.4 Changing parameters via Web APP.

To change a parameter in remote mode, proceed as follows:

1. Click on the Configuration menu bar.



NOME : E.SYBOX
DESCRIZIONE PRODOTTO : e.sybox 40/80
SERIALE : XXXXX-XXXXX-XXXXX-XXXXX-XXXXXX

Tempo trascorso dall'ultimo dato ricevuto **minore di 3m**

Figure 12: WebAPP - Control

Stato

Stato Gruppo

Setpoint

SETPOINT PRESSIONE BAR (SP) 2 bar

PRESSIONE DI RIPARTENZA (RP) 0.3 bar

- Click on the parameter to be edited and change its value by clicking:
 - + to increase the value,
 - to decrease the value.
- Click Enter to confirm the change and send the command.

Setpoint Regolazione

Valore attuale : 2 m Min : 1 m Max : 200 m

– 2 +

INVIA

Figure 13: WebAPP – Parameter adjustment

13.5 Graphs

It is possible to view the behaviour of the parameters of each product previously added to an installation:

- Click on the Options menu:
- Click on: Grafico
- For each Component of the installation, select the parameters that you want to view:

D.Connect Office DEMO

Mostra grafici

Evoplus_Small_Ver_2.10 - Evoplus Small DB4 R&D Demo RIGHT

Slave Minimo ritardo Reply	Indirizzo Modbus	Modbus Baud Rate	Modbus Bit Stop
Modbus Bit Parità	Tipo di Abilitazione	Identify	Errore Stato Sistema
Corrente Assorbita	Giri Al Minuto	Potenza Istantanea	Ore funzionamento Pompa
Portata	Flusso Stimato	Setpoint Regolazione	Heatsink Temperature
Temperatura Scheda	Temperatura Liquido	Liquid Temperature 2	Tensione di Alimentazione

Figure 14: WebAPP – Graphs

- Click on Show Graphs Mostra grafici

The updated graphs of the desired parameters will appear. You can change the time scale by clicking on the drop-down time menu and choosing the most suitable value.

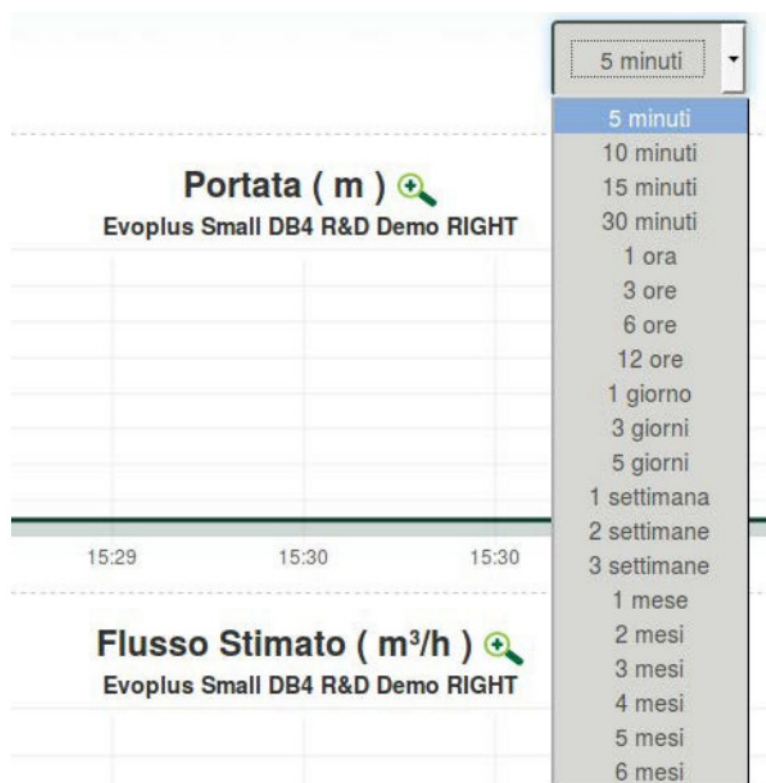


Figure 15: WebAPP – choice of the time window for graphs

By clicking on the arrows on the right or left of the graph, it is possible to move to the time before or after the point selected.

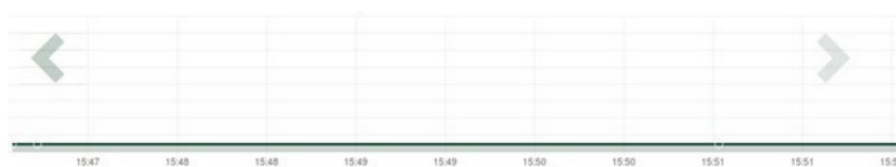


Figure 16: WebAPP – Time Window for graphs

In this way it is also possible to indicate the exact time at which you want to analyse the behaviour of the component.

Click on the date/time field and select from the menu the day and the desired time range.

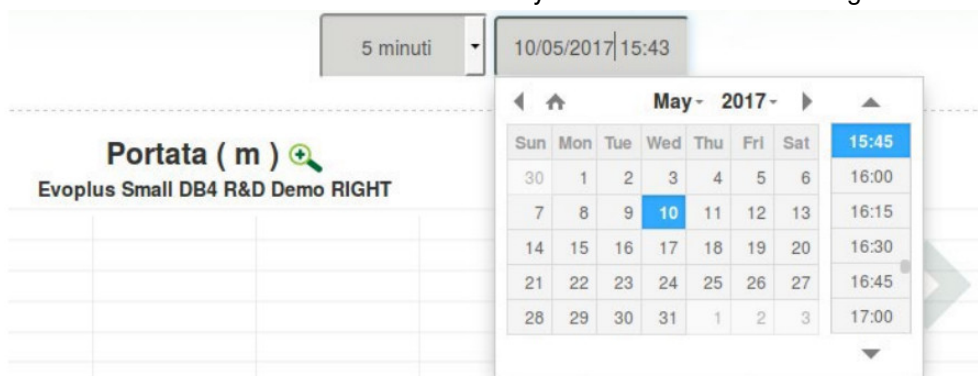




Figure 17: WebAPP – Choice of date and time for graph display

13.6 Report

An installation report can be produced in PDF format (not editable)

1. Click on the Options menu: 
2. Click on:  Report
3. Open or Save the file in the destination folder.

13.7 Time inspection

It is possible to view the history of the system at a given time (date and time).



1. Click on the Options menu: 
2. Click on:  **Ispezione Temporale**
3. Select Date and time. If necessary, use the time bar to scroll through the selected time interval.



Figure 18: WebAPP – Time inspection

CONNECTION AND CONFIGURATION OF DAB PRODUCTS

14.1 Connection of DCONNECT BOX2 with an E.SYBOX

Initial Requirements:

- Make sure that the product has a software version (Sw) 5.X or higher (see page VE of the pump menu); if it is lower, e.g. "4.X", a manual update is necessary.
- DConnect Box2 already updated and powered, see section Updating the DConnect BOX 2 of this manual.
- Manual of the product to be connected.

NOTE: If you want to connect multiple e.sybox pumps to the DConnect Box2, be sure to first create the group among the pumps (see pump manual) and then pair any of them with the DConnect Box 2 as explained below. The connection between the e.sybox and the DConnect Box2 does not require any cable.

The APP provides the guided procedure for pairing the pump with the DConnect Box2. Carefully read and follow the instructions given by the APP.

14.1.1 e.sybox Update (Sw 4.X versions)

This Update is required to allow e.sybox units with older software to be regularly recognised by the DConnect Box2.

This is a special software update, therefore we recommend that you perform the steps indicated individually on each pump, keeping the other pumps in any group switched off during the update operation.

For the first FW update with the DConnect Box2 you have to follow the wizard in the APP.

Follow the instructions when pairing the product.



Figure 19: Start of e.syline update procedure

14.2 Connection of DCONNECT BOX2 with an E.SYBOX MINI3

Initial Requirements:

- Make sure that the product has a software version (Sw) 2.X or higher (see page VE of the pump menu); if it is lower, e.g. "1.X", a manual update is necessary, see section "Example e.sybox mini3 Update (Sw 1.X or previous versions)" of this manual.
- DConnect Box2 already updated and powered, see section Updating the DConnect BOX 2 of this manual.
- Manual of the product to be connected.

The connection between the e.sybox Mini3 and the DConnect Box2 does not require any cable.

The APP provides the guided procedure for pairing the pump with the DConnect Box2. Carefully read and follow the instructions given by the APP.

14.2.1 e.sybox Mini3 Update (Sw 1.X versions)

This Update is required to allow e.sybox units with older software to be regularly recognised by the DConnect Box2.

This is a special software update, therefore we recommend that you perform the steps indicated individually on each pump, keeping the other pumps in any group switched off during the update operation.

For the first FW update with the DConnect Box2 you have to follow the wizard in the APP.

Follow the instructions when pairing the product. (See Figura 14)

14.3 Connection of DCONNECT BOX2 with an E.BOX



Before starting work, disconnect the power from the supply line and use only the recommended cables and accessories.

Initial Requirements:

- Appropriate USB cable available as a product accessory.
- Make sure that the product is prepared for DConnect and the appropriate symbol is shown on the box.
- You must have installed the DConnect APP on your smartphone/tablet and be registered at the service centre.
- Manual of the product to be connected.

The connection between the EBOX and the DConnect Box2 requires the use of the appropriate cable available as an accessory.

1. Insert one end into the connector on the front panel of the E.Box.
2. Attach the appropriate cable gland to the body of the E.Box.
3. Insert the remaining connector in the USB port available on the DConnect Box2.
4. Power the products.
5. Start the DConnect DAB APP and proceed to configure the product.

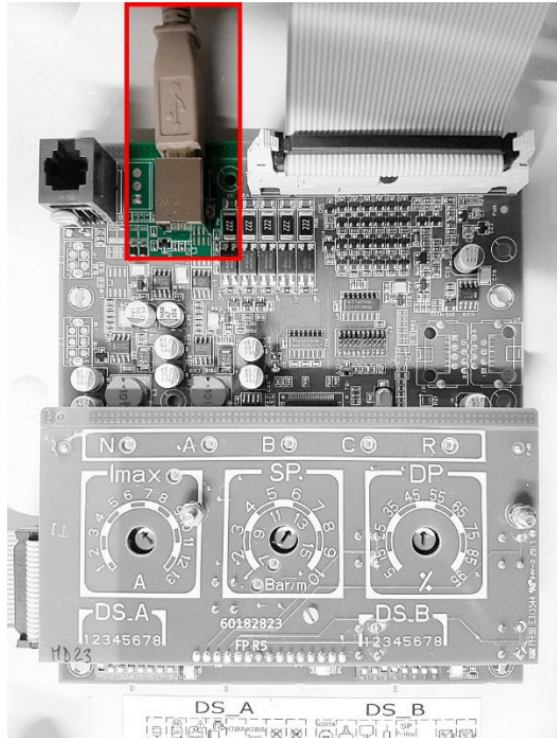


Figure 20: Connection of E.BOX with DCONNECT BOX/BOX2



14.4 Connection of DCONNECT BOX2 with an E.SYBOX DIVER OR DTRON3

Communication between DConnectBox2 and E.sybox DIVER or DTRON3 takes place via PLC (Power Line Communication) technology: data are exchanged via the power supply line of the devices themselves. Refer to the pump manual.

DISCRETE INPUTS/OUTPUTS

15.1 DCONNECT BOX2 I/O

Input: I1

Output: O1



Figure 21: DCONNECT BOX2 INPUT / OUTPUT

I/O contact characteristics (IN1)	
Minimum switch-on voltage [V]	2
Maximum switch-off voltage [V]	0.5
Maximum admissible voltage [V]	10
Current absorbed at 12V [mA]	0.5
Cable Section Accepted	0.205-3.31 [mm²] 24-12 [AWG]

I/O contact characteristics (OUT1)	
Contact	N.O.
Max. bearable voltage	24 V
Max. bearable current	5 A
Cable Section Accepted	0.205-3.31 [mm²] 24-12 [AWG]

LICENCES

DAB DConnect (Free Open Source Software) Statement:

This product contains open source software developed by third parties, including software subject to GNU General Public licences.

All the necessary information and the licences for that software are available at:

<http://dconnect.dabpumps.com/GPL>

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Documents / Resources

	<p>DAB DConnect Box 2 Interface Device [pdf] Instruction Manual DConnect Box 2 Interface Device, DConnect Box 2, Interface Device</p>
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References

-  [Dab Pumps](#)
-  [Complete solutions for remote control | DAB D.Connect](#)
-  [Dab Pumps](#)