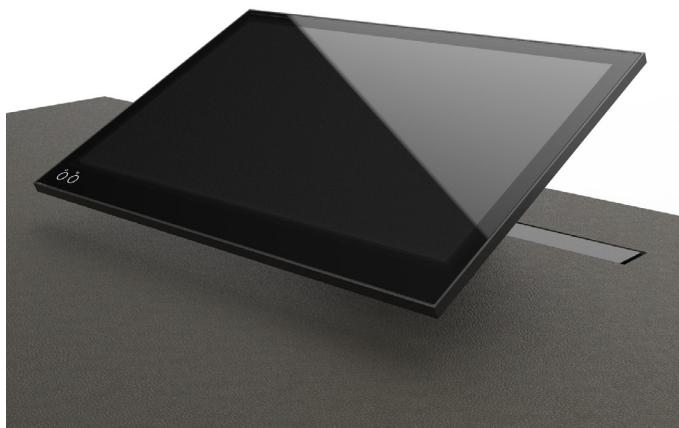




# User Guide



## DB3

HDCP compliant retractable monitors for furniture integration

Technology Serving Design

Danish craftsmanship  
Mediterranean soul

  
ARTHUR HOLM

## TABLE OF CONTENTS

WELCOME	3
ABOUT US	4
EC REGULATIONS AND SECURITY	5
SAFETY INSTRUCTIONS	6
BOX CONTENTS	7
SYSTEM DESCRIPTION	8
PACKING INSTRUCTIONS	10
INSTALLATION INSTRUCTIONS	12
MONITOR CONTROLS	19
OSD MENU	23
ISD MENU	25
CONNECTIONS	31
CONTROL PROTOCOL	32
VIDEO SIGNALS	36
CONTROL AND SETUP	37
INFORMATION ON DISPOSAL	40
WARRANTY TERMS AND CONDITIONS	41

## **WELCOME**

Thank you very much for purchasing an Arthur Holm product.

Please read these installation and operating instructions carefully and keep them in a safe place for future consultations.

We remain at your entire disposal if you have any suggestions.

**Henrik Holm**

General Manager

## ABOUT US

### **The Company**

Arthur Holm has its origins in the Danish furniture designer Jorgen Alex Jensen, who was active during the sixties and the seventies. His design inspiration and his concept of ergonomics have been continued by his family, who is the design force behind Arthur Holm product range. The result of combining Scandinavian design tradition with Mediterranean creativity, flexibility and emotion is a wide product range built on more than 25 years of craftsmanship.

Arthur Holm offers a professional product range where tomorrow's technology is shaped into valued solutions with design flexibility and customiZation, specially created to enhance communication in reception, collaboration, conference and meeting areas.

### **The art of customisation**

Arthur Holm offers a range of ingenious products whose designs are based on quality materials and the latest technology. Products which endow meeting and conference rooms with silent, ergonomic, innovative and aesthetic solutions that integrate into the furniture, hang from the walls as works of art or are used as interactive points of information.

### **The world of Arthur Holm**

Arthur Holm offers a selection of unique, elegant, versatile, flexible and ergonomic products that are being used in meeting and conference rooms, reception areas, huddle rooms, control rooms, auditoriums and public zones of leading companies throughout the world.

The numbers speak for themselves! We currently own 33 product patents, have presence in over 45 countries with products and solutions in more than 25,000 installations.

It will be our pleasure to work with you, designing your unique and personalized environment. Our broadcast electronic engineers will provide the latest technology, while our design team will offer you the most exclusive appearance.

Our team puts its heart, passion and pride in all our designs.

## REGULATIONS AND SECURITY



**ATTENTION:** Do not disassemble or modify the device in any way. This symbol warns of the presence of dangerous uninsulated voltages inside some of the components, of sufficient magnitude to expose people to the risk of electronic shock.



This symbol draws attention to important use and maintenance instructions in the manual that accompanies the unit.



This symbol indicates that the equipment conforms to the norms established by the European Community.



This symbol indicates D.C. current.

## SAFETY INSTRUCTIONS

### General Safety Guidelines

- Read all the safety and operating instructions before operating the device.
- Follow all instructions for safe operation and use of the product.
- Keep the safety and operating instructions for future reference.

### Plugs

- Do not dismantle any part of the monitor power connector.
- Disconnect the power plug from the AC outlet when the monitor is not going to be used for an indefinite period of time.

### Power and extension cords

- Use the appropriate power cord with the correct plug type.
- Do not overload wall outlets or power cords.
- Make sure the total ampere passed through an extension cord does not exceed the maximum allowed by the cable used.
- Do not place anything on the power cord.
- Do not locate this product where a person may walk or trip over the cord.

## SAFETY INSTRUCTIONS



Wiring connected to hazardous voltage requires installation by qualified personnel or the use of ready-made flexible cables.



For your security, your equipment must be connected to an electrical outlet with grounding connection protection.

Since the plug is used to disconnect the device, the operating electrical outlet must be in an easily accessible place.

### Environment

- Install the equipment on an elevated, flat surface.
- Install the equipment in a ventilated area.
- Avoid exposing the equipment to:
  - Rain or water
  - Excessive heat, cold or humidity
  - Area exposed to direct sunlight
  - Dirty areas
  - Equipment generating strong magnetic fields
- Avoid placing open containers of liquid, near the equipment.
- Keep a minimum distance of 30 mm around the unit in order to have good ventilation.
- Never place above the device any sources of flames such as lighted candles, etc.
- If you are using the device in extreme weather conditions and/or tropical climates, the equipment should be installed in a room which ensures a reasonable level of temperature and humidity.
- To prevent damage, the equipment must be firmly anchored to the surface, as shown on the installation instructions.

## BOX CONTENTS

Before installing your retractable monitor, please check the contents of the shipping box, it must contain the following items:

- Monitor
- Mounting brackets
- Power cord
- Remote control (1 per 5 monitors)
- Power supply 100-240V<sub>AC</sub> 50-60Hz | Output 12V<sub>DC</sub>
- Quick Start Guide

**Important note:** This device can only work with the power supply included in the shipping box. This power supply can not be replaced by any other rather than the original one or a similar one supplied by Arthur Holm.



### Caution!

Remove transport lock before operation!


Never operate this monitor in horizontal position!

## Connections

Before connecting the power:

1. Install the unit in a table or desk, in vertical position.
2. Remove the foam protecting piece before connecting the monitor.

Power connection:

1. Plug the power cable from the power supply to an AC socket of 100-240 V<sub>AC</sub>, 50-60Hz.
2. Plug the 12V D.C.  cable into the socket on the unit.

## SYSTEM DESCRIPTION

Professional 21.5” motorized monitor with a minimal impact on the table’s design when retracted and an astonishing impact on the table when ejected.

The automated hatch has a black anodized aluminum finish. The unique design of the automated hatch allows it to be matched to the table surface by adding the same material as the tabletop on top of it, providing a streamlined finish to the furniture.

The user can adjust the screen position for comfort and visibility, with full view of the other participants around the table. The screen inclines smoothly towards the user, who can stop the movement and lock the position at the desired angle, from 90 to 20°. A memory function will allow to store and recall the desired position.

The elegance of the design is timeless, and the movements are harmonious and silent. The materials selected for crafting this innovative, retractable monitor are sustainable, comprising aluminum and glass. The 21.5” LCD professional display panel ensures a long lifespan. The in-house designed electronics prioritize energy efficiency, while the AHlink app AH22DB3 facilitates a comfortable and intuitive adjustment during integration and throughout the monitor’s lifespan.

The retractable monitor is equipped with 2 x DVI HDCP compliant inputs and an Interactive Setup Display for setup, control and diagnose.

The monitor provides RS422/485 loop through (I/O) allowing the remote control of the input selection, movements, speeds,

safety settings, brightness, contrast and backlight adjustments.

It can also be adjusted and controlled via the wireless application: AHlink. The AHlink app is available for Android and iOS and gives access to the setup menu and information about the monitor, such as serial number and firmware version, without access to the monitor in the table.

The Auto Mechanical Movement Calibration will automatically adjust the speed and the safety protection parameters.

The use of the ERT-30 and the ERT-60 enables an automatic individual address configuration of all the monitors in a table.

### Highlights

Innovation, usability, aesthetics, discretion, durability, and sustainability were all considered in the design of this retractable aluminum monitor. The design of the DB3 follows the style of its predecessor, the DB2. The design and concept of the DB3 have been considered crucial aspects. These include the ability to adjust the screen’s position on the table to limit its height, addressing ergonomic comfort needs and ensuring visibility for people seated around a meeting table.

Furthermore, the screen smoothly inclines towards the user, allowing them to stop the movement and memorize the position at the desired angle. The movement is harmonious and silent, maintaining the beauty of the DB2 with its simple, elegant, and timeless style. True to the company’s values, sustainable



## SYSTEM DESCRIPTION

materials such as aluminum and glass were used to create this innovative retractable monitor. The 21.5" LCD industrial display panel comes with a long life, and the in-house designed electronics are energy-efficient. The AHlink app offers comfortable and intuitive adjustment during integration and throughout the life of this impressive monitor.

The monitor provides 2 DVI HDCP compliant inputs, and the movements can be locally controlled by capacitive touch buttons integrated on the screen's front glass, by RS-422, or via the wireless app: AHlink. The monitor emerges vertically from the table's surface and can slide down up to 20 degrees of inclination on top of the desk. The automated hatch is specially designed for veneering and table top matching, providing a streamlined finish for the meeting table; the automated hatch is also available in black anodized aluminum making the monitor ready to install directly from the shipping box.

And options of touch screen and DynamicShare are available.

DB3 is a motorized retractable monitor that has a minimal impact on the table's design. The automated hatch has been specially designed for veneering, ensuring a streamlined finish for the furniture. Users can adjust the screen position from 90 to 20 degrees on the desk. The monitor rises vertically and inclines smoothly toward the users, allowing them to stop the movement at any point and save the desired position.

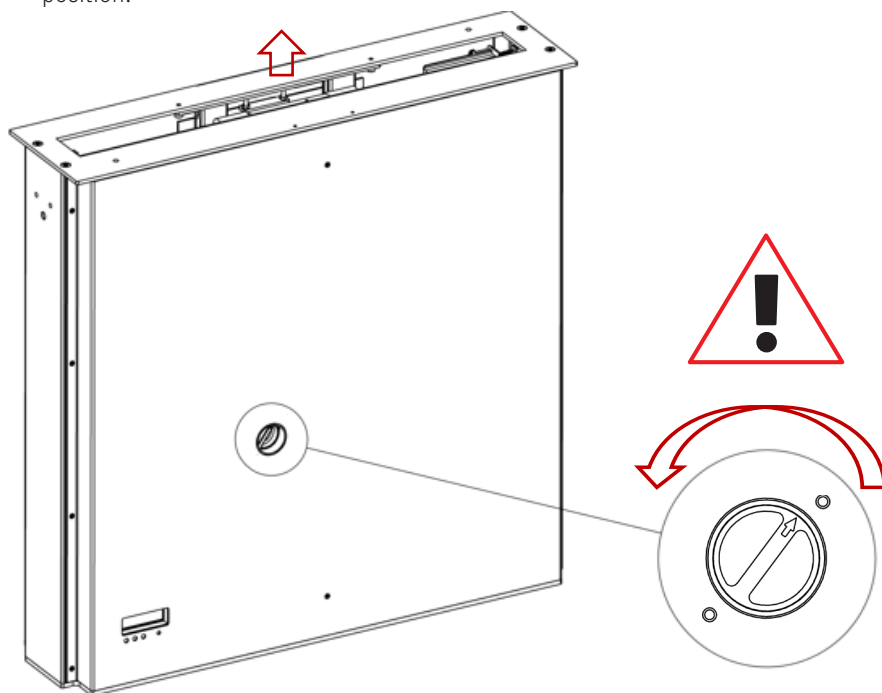
- Vertical motorized monitor with an inclination of 20-90°
- Adjustable tilt angle with memory
- Slim 10 mm. edge and total thickness of 20mm
- Automated hatch in black aluminum or ready for veneer
- Milled black anodized aluminum housing
- Dual-side anti-reflective 2 mm. black-edged glass
- Energy-saving design, low-consumption video controller
- HDCP compliant DVI inputs
- RS422/RS485 I/O
- ISD: Interactive Setup Display for adjustments and setup
- AHlink: Wireless connectivity for setup, adjustments, and control
- AH-AMMC: Auto Mechanical Movement Calibration

## PACKING INSTUCTIONS

### Unpacking

The unit comes in the *Transport Lock* position. In this position, the lid is open, and there is a foam protection inside the monitor housing, protecting the glass and monitor from damages that might occur during transport.

1. Remove the internal screen protection foam before connecting the power supply.
2. Turn the *Packing Lock* wheel to the left until the *Operation* position is reached (a click sound will be heard). ⚠
3. Plug the power supply and the lid will completely close to the *Normal Operation* position.

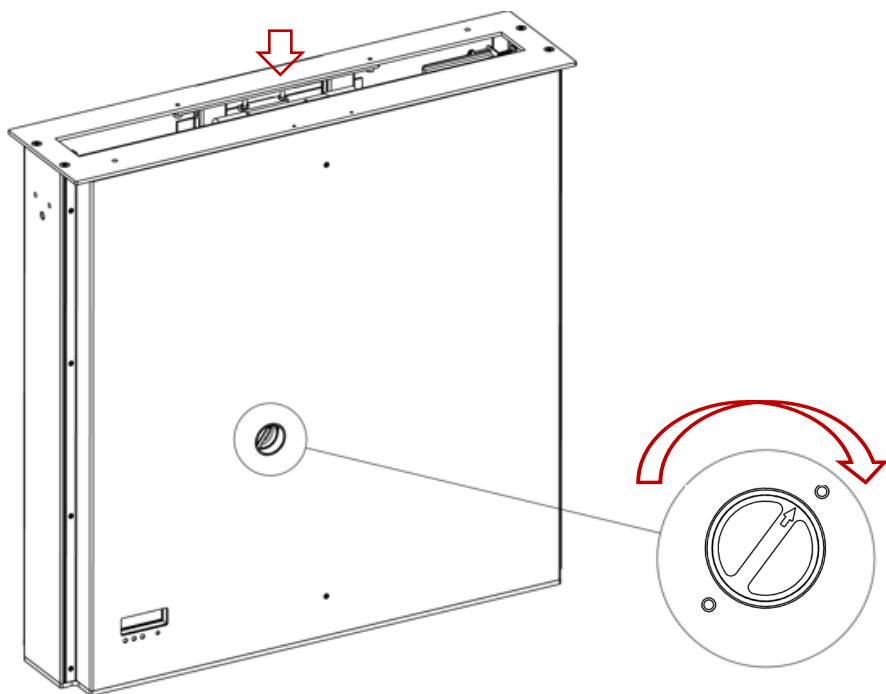


### Packing

1. With the monitor completely closed, press the *DOWN* button near to the little LCD located below the unit, until you find the *TRANSPORT LOCK* function. Then press the *OK* key. The screen will lower to a locked position and the lid will open.
2. Unplug the power supply and place the supplied protective foam to protect the screen furniture for transport. Insert the foam between the white pulley and the monitor.

## PACKING INSTUCTIONS

3. Turn the Packing Lock wheel to the right until the Locked position is reached (a click sound will be heard).



## INSTALLATION INSTRUCTIONS

The DB3 monitor is designed to be mounted from below the table.

### Pattern Hole

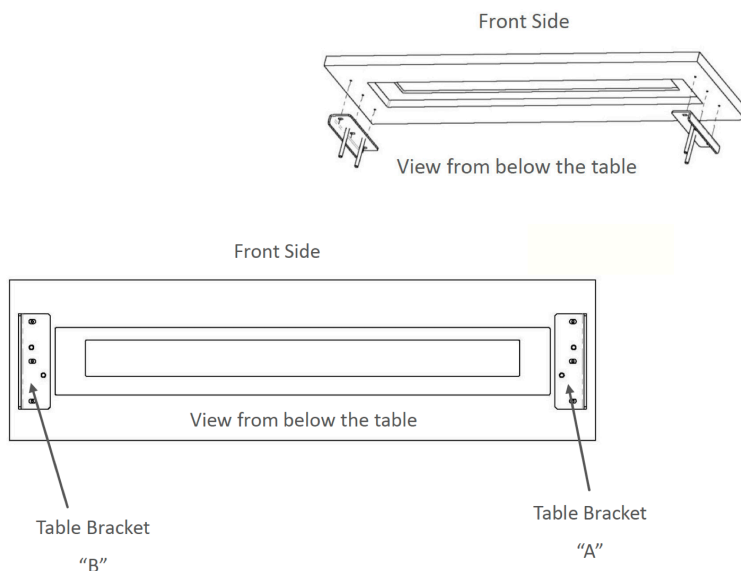
Pattern hole dimensions for milling are specified in the corresponding drawing. The milling of the furniture has to be done before installing the monitor.

### Attention

Manipulation of the product should be avoided, no stress should be applied to the product except from the instructions given in this document. Cutting, drilling, soldering, adding electrical and mechanical components can cause danger and should be avoided by all means. Not complying with these directions will result in a loss of the Arthur Holm warranty. Albiral Display Solutions S.L. shall not be held liable for any loss or injury incurred as a result of modifications made to goods by anyone other than the supplier or the supplier's authorised representative with the supplier's written permission. Such modifications shall be deemed to terminate any further guarantee obligations.

### Mounting table brackets

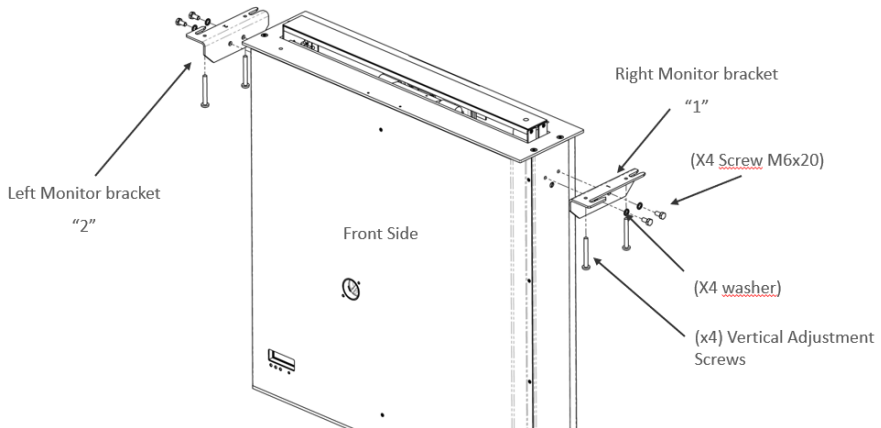
Included with each unit there are all necessary brackets.



## INSTALLATION INSTRUCTIONS

Mount the table brackets below the surface using the holes indicated in the corresponding Pattern Hole drawing. The six screws for the brackets are not supplied. The weight of the monitor is up to 25Kg / 55.16 Lbs.

PAY ATTENTION THAT THE BRACKETS ARE MOUNTED IN THEIR CORRESPONDING SIDE.

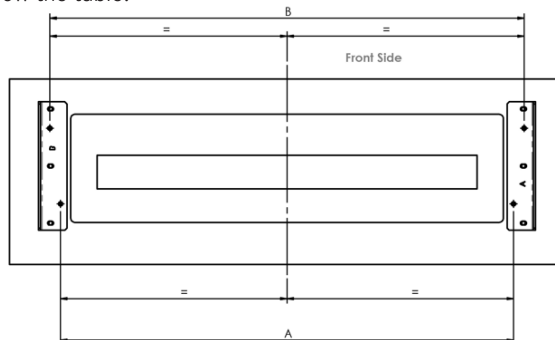


Mount the monitor brackets in their corresponding side using the supplied screws.

Mount the vertical adjustment screws (2 on each side) on the monitor bracket so that the tip of the screw is flush with the upper side of the monitor bracket.

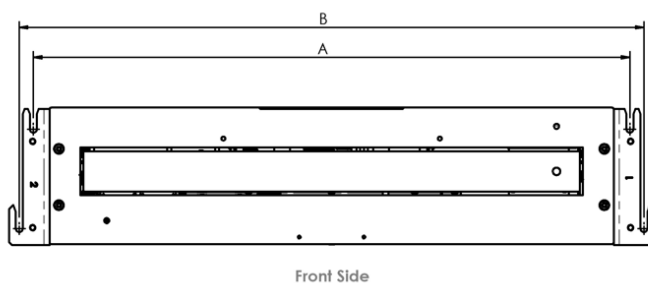
### Checking Assembly

View from below the table:



## INSTALLATION INSTRUCTIONS

View from above the monitor with the side brackets attached correctly:

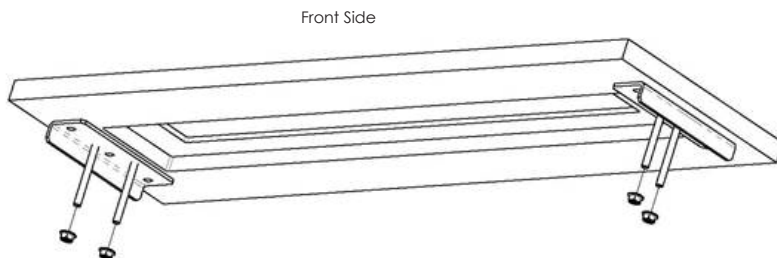


Dimensions A and B in table brackets and in monitor brackets must be the same ( $\pm 1$  mm).

If adjustment is necessary, loosen Table bracket screws (3 on each side), keeping always symmetry regarding the monitor hole in the table. Subsequently, tighten the table bracket screws.

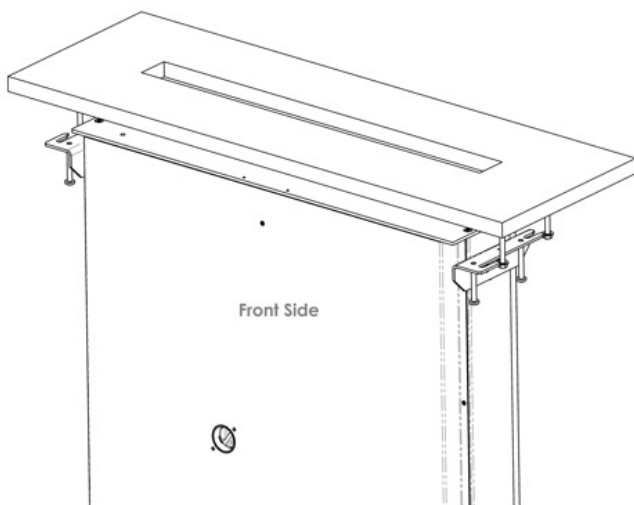
### Hanging the monitor

Mount the two nuts on both table brackets as indicated in the drawing.



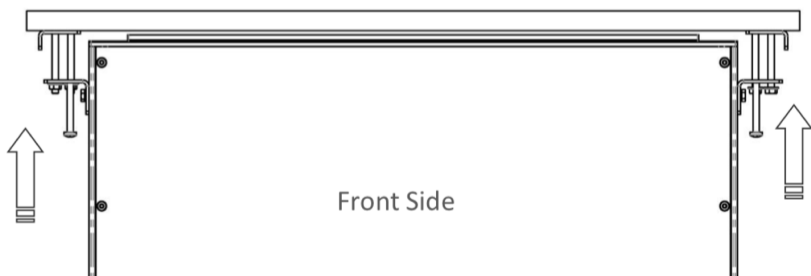
## INSTALLATION INSTRUCTIONS

Hang the monitor with the brackets above the nuts.



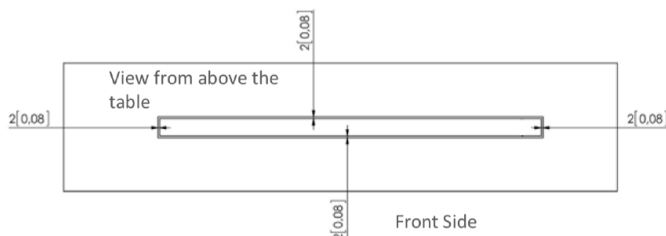
### Centering the monitor

Tighten each nut gradually until the monitor surface is level with the table surface.



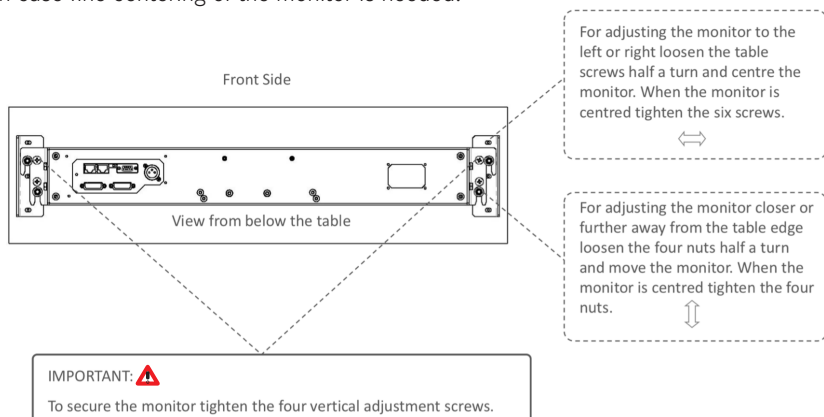
## INSTALLATION INSTRUCTIONS

The air gap around the monitor has to be 2mm [0,08]. Otherwise, the monitor could come in contact with the table while opening and be damaged.



### Fine Centering of the monitor

In case fine centering of the monitor is needed:



### Veneer Guide (Option)

The DB3V option is prepared to be mounted from below the table ,with a veneer finishing on the top of the monitor to match the table. The veneers are not supplied. The veneer option is available upon request.

There are two veneers, one for the hatch to match the table when the monitor is closed and other for the monitor base to match the table once the monitor is opened. The veneers dimensions are specified in the corresponding Pattern Hole drawing.

The veneer material cannot be conductor.

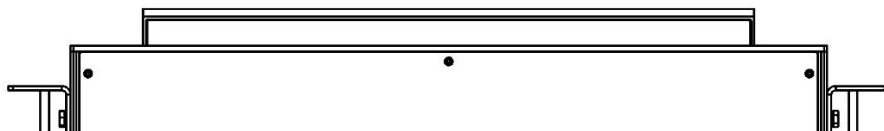
The maximum veneer thickness cannot exceed 4mm [0,15].



## INSTALLATION INSTRUCTIONS

### Hatch Veneer Installation

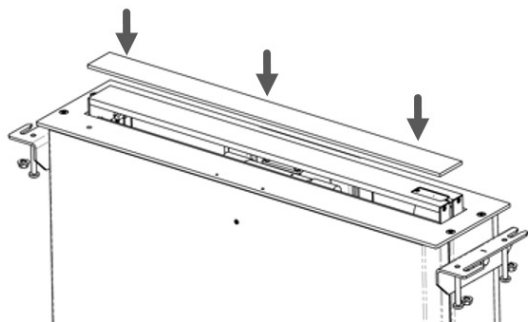
1. Check if the Veneer fits perfectly with the monitor before gluing.



2. Clean the surface of the metal hatch and the bottom surface of the Veneer.
3. Glue the Veneer. Double-sided tape or glue can be used (depending on the materials that are going to be jointed). Double side tape or glue used can't be thicker than 0,2 - 0,25mm [0.008 - 0.01]



The double-sided tape or glue cannot touch the capacitive sensor.



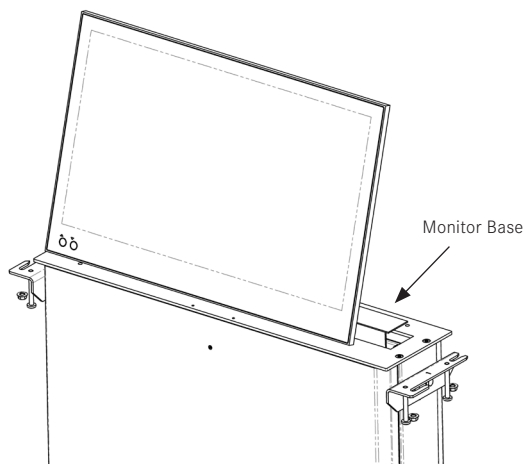
The pressure applied must not exceed 1 Kg evenly distributed on monitor surface.

**Note:** The hatch will lower some cm/in when pressure is applied.

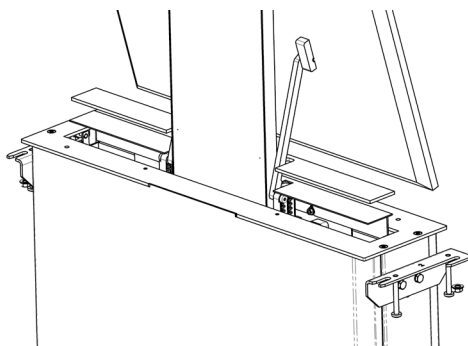
### Monitor Base Veneer Installation

1. Plug in the power supply and open the monitor. If it is not installed, make sure to secure it firmly to avoid knocking it over.
2. In order to get access to the cover tray, tilt slightly the monitor by using the screen buttons.

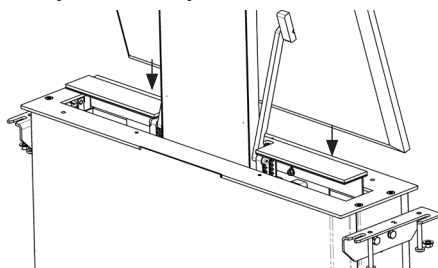
## INSTALLATION INSTRUCTIONS



3. Check if the Veneer fits perfectly with the monitor base.



4. Glue the Veneer. Double-sided tape or glue can be used (depending on the materials that are going to be joined). The double-side tape or glue used can't be thicker than 0,2 - 0,25mm [0.008 - 0.01]



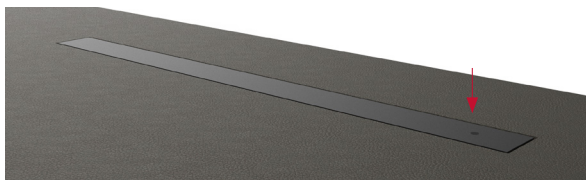
The pressure applied must not exceed 1 Kg evenly distributed on the monitor surface.

## MONITOR CONTROLS

There are two different options available to control the opening of the monitor: the standard option and the veneer option.

### Standard Option

On the right side of the hatch, there is a capacitive button to activate the opening of the monitor. Press it with your finger to activate the device opening.



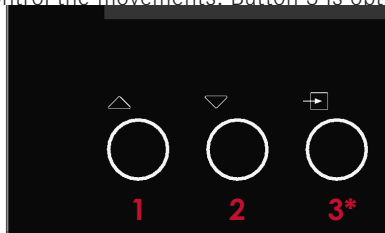
### Veneer Option

On the right side of the hatch, there is a capacitive sensor to activate the opening of the monitor. Slide your hand over the area shown in the following picture to activate the device opening.



By activating the opening of the screen, the hatch will descend a few centimeters and then open, leaving space for the screen to exit from the inside of the table. Once the screen reaches the top, it will tilt towards the user up to the memorized degree of inclination.

In the working position of the screen, the user accesses the buttons located on the screen glass itself, to control the movements. Button 3 is optional.



## MONITOR CONTROLS

### Modification of the angle of the screen to 90°

Press and hold button 1 to modify the angle of inclination of the screen, moving the screen towards 90°. The movement stops when the screen reaches 90°, or if the button is released. Button 1 lights up blue while being pressed.

### Closing the screen

Briefly press button 1 to retract the screen inside the table. The monitor first adjusts the angle to 90°, and then lowers the screen into the table.

### Modification of the angle of the screen to its maximum aperture

Press and hold button 2 to modify the angle of inclination of the screen towards its maximum opening. The movement stops when the screen reaches its maximum opening, or when button 2 is released. Button 2 lights up blue while being pressed.

### Moving the screen to the memorized position

Briefly press button number 2 to return the screen to the memorized angle. If the screen is already at the memorized angle, the screen will not move.

### Memorization of the opened screen position

Go to the desired screen tilt angle, using buttons 1 and 2. When the screen is at the desired inclination, press and hold both 1 and 2 buttons simultaneously until several beep sounds will indicate the tilt angle has been memorized. The next time the screen is opened, it will move to the memorized position.

### Input Source Selection (Option)

The Input Source Selection is an option. If you don't have this option on your device, the button 3 symbol will not be engraved on the glass.

Briefly press button number 3 to switch between the different signal inputs. The color of the button varies depending on the selected input:

Blue: DVI-1  
Red: DVI-2  
Green: DVI-A

## MONITOR CONTROLS

### Activate AHlink

Press and hold button number 3 for a couple of seconds to activate the AHlink module. Several beeps will be heard when the AHlink has been activated. Then the AHlink app can be used on a smartphone to control and manage the unit.

**Note:** Button 3 might not be engraved on the glass, but to activate the AHlink you will have to press that zone of the screen as if the button was there.



\*Button3 is also used in the automatic address configuration of the AHnet, using an ERT: Activate the AHnet address automatic configuration function on the ERT. The monitors connected to the ERT will emit an acoustic sound, indicating that they have received the instruction. Press button number 3 to accept or configure the AHnet address value sent by the ERT. For more information, consult the ERT user manual.

### Image Monitor IR Sensor

The IR sensor is located on the main display support.

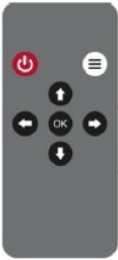


# MONITOR CONTROLS

## Remote Control

The remote control is used to change the different settings of the video controller displayed through the OSD (On Screen Display).

POWER	Switch ON/OFF the monitor
MENU	Activates OSD menu on screen
UP	Control up on the OSD menu
DOWN	Control down on the OSD menu
LEFT	Control left on the OSD menu
RIGHT	Control right on the OSD menu
OK	Selects the function on the OSD menu
	When the OSD menu is not active, selects the input source



## OSD MENU

### Accessing the menu system

- With the OSD off, push the MENU button to activate the main OSD menu.
- Press the UP and DOWN buttons to move from one function to another. Please refer to the following sections below to view a complete list of all the functions available for the monitor.
- Press the OK button to confirm.
- When a function is selected, press the LEFT and RIGHT buttons in order to change the parameter or the function.

Press the MENU button to access the main menu.

### Picture

#### Image mode adjustments

- Backlight
- Brightness
- Contrast
- Sharpness

### Display

#### Image rotation adjustments

- Disp. Rotate

### Color

#### Image color adjustments

- Gamma
- Temperature
- Color Effect
- PCM
- Hue
- Saturation

## OSD MENU

### Advance

Aspect ratio adjustments

- Aspect Ratio
- Over Scan
- Over Drive

### Input

Input signal selection

### Other

Reset and OSD adjustments

- Reset
- Menu Time
- OSD H Position
- OSD V Position
- Language
- Transparency
- Rotate

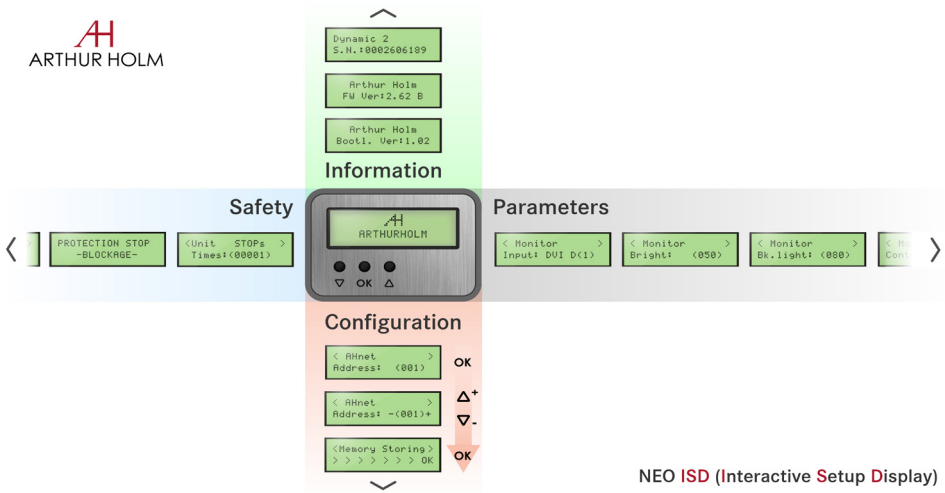
### Information

- Signal input selected
- Signal input information
- Firmware version



# ISD MENU

The Interactive Setup Display is an LCD screen located on the front side of the monitor casing hat allows the setup and provides useful diagnose and historical data of the device.



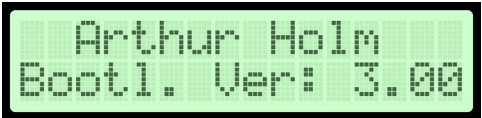
## WELCOME DISPLAY & DATA :

### 1) Bootloader Version

The display will show a Bootloader Version message (example: Boot1).

Ver:

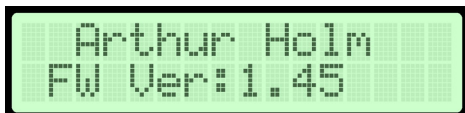
1.01). Bootloader is a program that allows the system to be able to update itself. The ISD has a Bootloader and is therefore capable of updating to new versions in order to constantly improve the user experience.



## ISD MENU

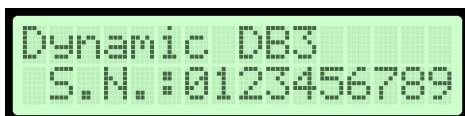
### 2) Firmware

Data that refers to the firmware version (FW) of the equipment (example: FW Ver = 1.32). If you wish to update the FW version, please contact us.



### 3) Serial Number

Serial number of the device (example: serial number of the device = 02658748). The serial number is stored inside each device.



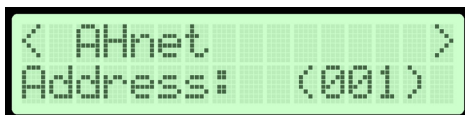
The serial number can also be obtained via AHnet and AHlink.

- OSD MENU -

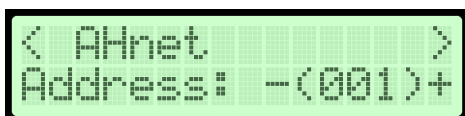
### AHnet (GENERAL PROTOCOL)

#### CONTROLS

The ISD will show the AHnet address, which will be accompanied by an acoustic signal "BEEP" (example: Address: (001)). Once the signal has been heard, the "UP & DOWN" buttons will allow the user to scroll through all the variety of menus that the device contains. To enter into any specific menu, simply press the "OK" button.



How to modify the values within each menu? The values can be selected through the "UP & DOWN" buttons. To save the selected value, press the "OK" button or wait 3 seconds for it to be automatically saved.



## ISD MENU

The connection through RS422 allows the control of up to 30 devices per line. The last device (and only the last one) needs to have the termination activated.

### MENUS GENERAL INFORMATION

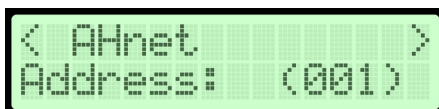
#### 1) AHnet - Address

The address must be set from 1 to 60.

### MENUS GENERAL INFORMATION

#### 1) AHnet - Address

The address must be set from 1 to 60.



< AHnet >  
Address: (001)

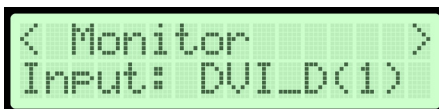
#### 2) VIDEO INPUT SELECTION

The device provides the following inputs:

DVI1 = DVI-I (DVI-A and DVI1-D)

DVI2= DVI-D (DVI-2D)


This menu allows the selection of 1 of these 3 inputs.



< Monitor >  
Input: DVI\_D(1)

#### 3) MONITOR BRIGHTNESS

Brightness level (0 – 100).



< Monitor >  
Bright: (050)

#### 4) MONITOR CONTRAST

Contrast level (0 – 100).

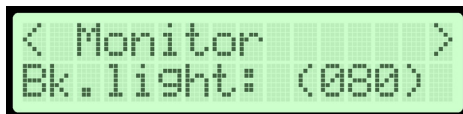


< Monitor >  
Bk.light: (080)

## ISD MENU

### 5) MONITOR BACKLIGHT

Backlight level (0 – 100).



< Monitor >  
Bk.light: (080)

### 6) POSITION

It is a diagnostic option that informs you about the position of the device.



< Monitor >  
Position: (048)

### 7) SENSORS INFORMATION

It is a diagnostic option that informs you about the internal state of the sensors.



S1|2|3|4|5|6|7|8  
|0|1|1|1|1|1|1|1

### 8) AHnet - INFORMATION

This menu is useful for programming and diagnose.

It provides information about the AHnet command that has been received by the device.

Example: AHnet = 0 (FA) 1 (01) 2 (01) 3 (01) 4 (00)



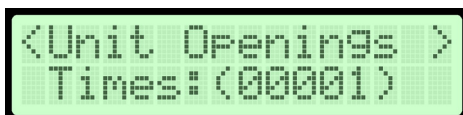
AHnet:0(FA)1(01)  
2(01)3(01)4(00)

## ISD MENU

### 9) UNIT OPENS

It is a diagnostic option that provides historical data.

It is very useful to analyze how the device has been used during its lifecycle, and it provides information about how many movements the device has made.



<Unit Opens >  
Times:(00001)

### 10) UNIT STOPS

It is a diagnostic option that provides historical data. It is very useful to analyze how the device has been used during its lifecycle.

It provides information about the number of times that the device has been protected and made emergency stops.



<Unit STOPS >  
Times:(00003)

### 11) SERIAL NUMBER

Provides the device's serial number.

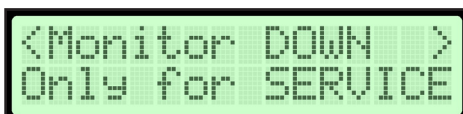


<Serial Number >  
S.N.:0123456789

The serial number can also be obtained via AHnet and AHlink.

### 12) MONITOR DOWN

Only use this function as per manufacturer advice.



<Monitor DOWN >  
Only for SERVICE

## ISD MENU

### 13) AUTO ADJUST

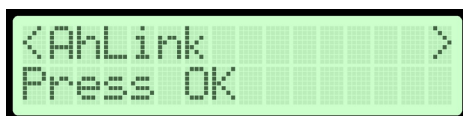
Auto Mechanical Movement Calibration (AH-AMMC).



Protocol activation: the device will make a series of consecutive movements series that must not be interrupted. The system will calibrate the speed and protection thresholds.

### 14) AHlink

Activates AHlink.



## FIRMWARE UPDATE

To update the FW version.

To start the update, connect a PC with the APP AH\_FW (Device Setting Tool) to the device through the USB port.

Proceed with the following steps:

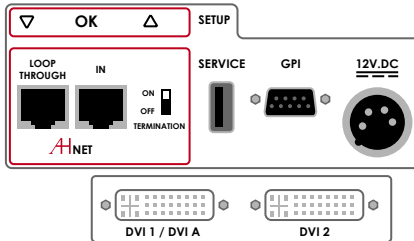
- Unplug the PSU
- Wait for 1 minute
- Press and hold the "OK" button
- Plug in the PSU
- A message will appear on the LCD screen when the connection is ready
- Start updating the AH\_FW

**How are you doing? Easy, right?**

**Now you just have to start enjoying your device 😊**

## CONNECTIONS

### INPUT CONNECTORS



**12V D.C.**  : Power supply input connector. XLR-4 connector.

- 1,2: Ground
- 3,4: 12Vdc

**GPI:** Monitor external contact close control. SubD9 female.

1. GPI1 +
2. GPI1 -
3. GPI2 +
4. GPI2 -
5. GPI3 -
6. GPI3 +
7. N.C.
8. +12Vdc (600mA max.)
9. Ground:
  - Use GPI1 (1:12Vdc, 2: Ground) to open the monitor
  - Use GPI3 (6:12Vdc, 5: Ground) to close the monitor

**Termination:** Activate (ON) the termination. Only on the last unit of the RS422 bus.

**AHnet:** RJ45 CAT6 connector for addressable RS422 control. There is a loop through connector to use as signal RS422 output. Up to 30 monitors can be connected on the same RS422 bus.

**Service:** Used for firmware's upgrade.

**DVI 1 / DVI A:** DVI-I input signal. Connect a DVI (digital) input signal and select DVI 1 on the OSD monitor menu. Use a DVI to VGA adaptor to connect an ARGB (analogue) input signal and select DVI-A on the OSD monitor menu.

**DVI 2:** DVI-D input signal. Connect a DVI (digital) input signal and select DVI 2 on the OSD monitor menu. Use high quality DVI cables with 2m maximum length.

# CONTROL PROTOCOL

## AHnet PROTOCOL

### Communications protocol

COMMUNICATION	RS422
CONNECTION	RJ45
WIRING	CAT-6

### Speed and configuration

BAUD RATE	38400
DATA BITS	8
PARITY	NONE
STOP BITS	1

### Wiring Diagram

- 1. Data TX +
- 2. Data TX -
- 3. Data RX +
- 4. NC
- 5. NC
- 6 .Data RX -
- 7. NC
- 8. NC



RJ-45

### Connection

PINS 1 & 2	The units respond
PINS 3 & 6	The units receive instructions

Protocol to control the monitor by addressable RS422 bus.  
You can connect up to 30 monitors on the same RS422 bus.  
You can use an AH ERT interface, to control the RS422 bus.  
The units should have a set address and the address must start by 1.  
Maximum cable length between ends: 500 m/1640 ft.



# CONTROL PROTOCOL

## AHnet PROTOCOL

The AHnet protocol uses 5 bytes communication:

BYTE 0	START BYTE
BYTE 1	ADDRESS BYTE
BYTE 2	COMMAND BYTE
BYTE 3	VALUE 1
BYTE 4	VALUE 2

### Screen control AHnet Commands

COMMAND	DESCRIPTION	RESPONSE
FA XX 01 01 00	SCREEN CLOSE	FB XX 01 01 00
FA XX 01 00 00	SCREEN OPEN	FB XX 01 00 00
FA XX 02 01 00	SCREEN ON	FB XX 02 01 00
FA XX 02 00 00	SCREEN OFF	FB XX 02 00 00
FA XX 03 01 00	DVI-A SELECTION	FB XX 03 01 00
FA XX 03 00 00	DVI-1 SELECTION	FB XX 03 00 00
FA XX 03 03 00	DVI-2 SELECTION	FB XX 03 03 00
FA XX 04 01 00	BUTTON LOCK	FB XX 04 01 00
FA XX 04 00 00	BUTTON UNLOCK	FB XX 04 00 00
FA XX 14 00 00	INQUIRY CONTROL BYTE	FB XX 14 CB1 CB2

XX        Number of the monitor address. Up to 30 monitors for each RS422 BUS

CB1       Response in 8 bits of the monitor status

CB2       Response in 8 bits of the monitor status

# CONTROL PROTOCOL

## CB1

BITE	7	6	5	4	3	2	1	0
SCREEN CLOSED			1	1	0	1		
SCREEN OPENED			0	1	0	1		
SCREEN ON							1	
SCREEN OFF							0	
DVI-A	0	0						
DVI 1-D	1	1						
DVI 2-D	1	0						
PROTECTION STOP								1
MONITOR OK								0

## CB2

BITE	7	6	5	4	3	2	1	0
BUTTON LOCK								1
BUTTON UNLOCK								0

# CONTROL PROTOCOL

## Picture Settings AHnet Commands

COMMAND	DESCRIPTION	RESPONSE
FA XX 15 00 00	ASK FOR BACKLIGHT LEVEL	FB XX 15 00 ZZ
FA XX 16 00 00	ASK FOR CONTRAST LEVEL	FB XX 16 00 ZZ
FA XX 17 00 00	ASK FOR BRIGHTNESS LEVEL	FB XX 17 00 ZZ

XX                    Number of the monitor address.  
Up to 30 monitors for each RS422 BUS

ZZ                    Level of the function selected (00 – 99 Dec)

COMMAND	DESCRIPTION	RESPONSE
FA XX 15 01 ZZ	SET BACKLIGHT LEVEL	FB XX 15 01 ZZ
FA XX 16 01 ZZ	SET CONTRAST LEVEL	FB XX 16 01 ZZ
FA XX 17 01 ZZ	SET BRIGHTNESS LEVEL	FB XX 17 01 ZZ

XX                    Number of the monitor address.  
Up to 30 monitors for each RS422 BUS

ZZ                    Level of the function selected (00 – 99 Dec)

To send an order to all the monitors, you must use the address:  
249 Dec. (Byte1)  
F9 Hex. (Byte1)

In this case, the units do not send a reply.

# VIDEO SIGNALS

## Accepted Video Signals

RESOLUTION	Horizontal freq (kHz)	Vertical freq (Hz)	Scanning type
800x600@60Hz	37.879	60.317	Progressive
800x600@72Hz	48.077	72.188	Progressive
800x600@75Hz	46.875	75.000	Progressive
1024x768@60Hz	48.363	60.005	Progressive
1024x768@70Hz	56.476	70.070	Progressive
1024x768@75Hz	60.023	75.030	Progressive
1280x720@60Hz	44.772	59.855	Progressive
1360x768@60Hz	47.720	59.799	Progressive
1280x1024@60Hz	63.981	60.020	Progressive
1600x1200@60Hz	75.000	60.000	Progressive
1680x1050@60Hz	64.742	59.946	Progressive
1920x1080@60Hz	67.500	60.000	Progressive

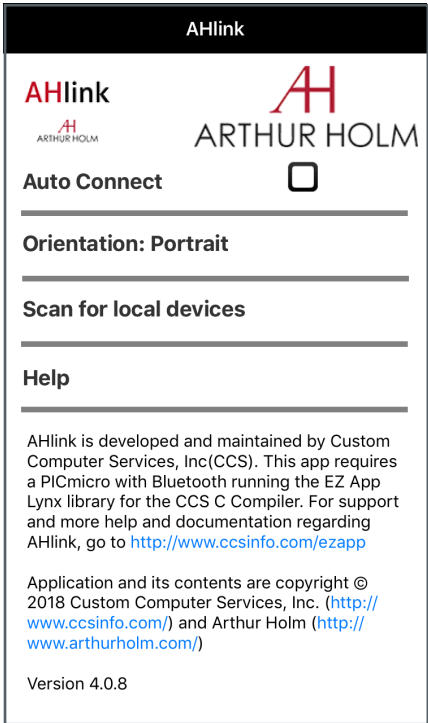
# CONTROL AND SETUP

## AHLink

AHlink is used to control and set up the unit. Some units might not have this feature available.

By default, the AHlink wireless signal is deactivated. Check in the monitor control section how the AHlink can be activated using the monitor controls.

The AHlink signal can also be activated with the LCD (Interactive Setup Display) located on the front side of the monitor casing. To do so: Press the Down key near the LCD (Interactive Setup Display) until the <AHlink> option appears. Press the *OK* button to activate the AHlink signal on the unit. When the AHlink signal is activated, the sound of 5 beeps will indicate that the AHlink signal is active on the unit.

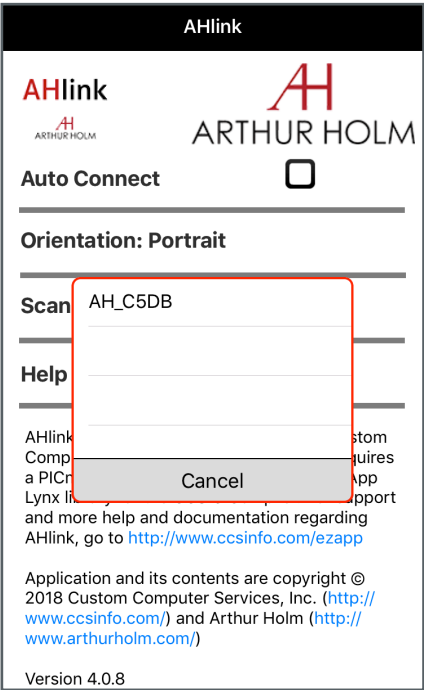


The wireless AHlink signal automatically deactivates when there is no device connected during more than 2 minutes. When the AHlink deactivates, you will hear a long Beep sound.

To control and set up your AH product with AHlink, please download it from the App Store (IOS system) or from Google Play (Android system) and execute it in your handled device.

It is recommended to uncheck *Auto Connect* and select *Portrait* Orientation. To connect it, select *Scan for local devices*.

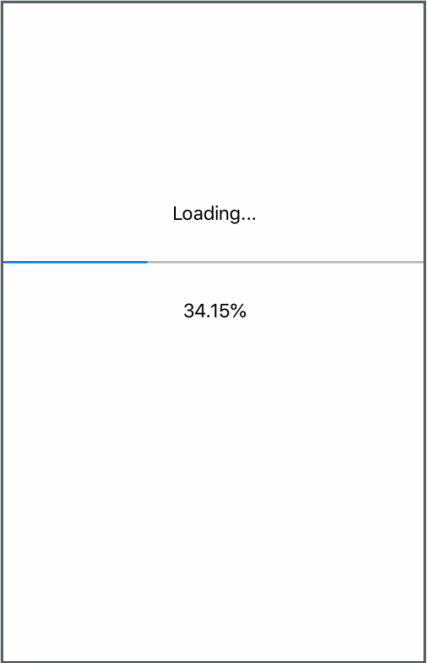
CONTROL AND SETUP



After selecting the AH device, the first page will load on your screen. This page is used for the basic installation setup.

If your AH device does not appear on the screen, the AHlink signal might no longer be active.

The AHlink name always begins with the characters "AH\_" followed by the four last numbers of the serial number of the unit. You must select the corresponding AH device. (ERT interfaces appear as "ERT" followed by the four last digits of the serial number of the unit.)



# CONTROL AND SETUP

13:00

Arthur Holm

connected to AH\_0003

DB3 (577FW202\_8)

Serial: 0000000003

Ver DA: 1.21/LOCK\_0.1/KEY\_3.0

OPEN

CLOSE

DISP

ON

OFF

DVIA

DVI1

DVI2

BACKL

80

CONTR

50

BRIGH

50

SAVE VALUES

S1

S2

S3

S4

S5

S6

S7

AHnet Address

1

Position:

156

PASSWORD:

0

- SERIAL: Serial number of the unit
- VER: Firmware Version
- MOV: Controls the *Open* and *Close* monitor movements
- DISP: Turns the display ON or OFF
- DVIA, DVI1, DVI2: Input source selection
- BACKL: Backlight adjustments
- CONTR: Contrast adjustments
- BRIGHT: Brightness adjustments
- SAVE VALUES: Memories the backlight, contrast and brightness values
- SENSORS: Indicates sensor status.
  - S1 Indicates the screen down position
  - S2 Indicates the screen up position
  - S3 Indicates the 90° tilt screen position
  - S4 Indicates cover opened
  - S5 Indicates cover closed
  - S6 Internal sensor
  - S7 Internal sensor
- AHNET ADDRESS: AH address settings
- POSITION: Screen position value
- PASSWORD: Access to the monitor configuration

## INFORMATION ON DISPOSAL FOR USERS OF ELECTRICAL WASTE & ELECTRONIC EQUIPMENT

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.



For proper treatment, recovery and recycling, please take these products to the designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries, you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

### **For business users in the European Union**

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

### **Information on disposal in countries outside the European Union**

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.



## WARRANTY TERMS AND CONDITIONS

Albiral Display Solutions warrants this product against manufacturing defects and workmanship for a period of five (5) years from the date of purchase, subject to the conditions below.

1. Mechanical parts: The engine and the product's mechanical parts are warranted against manufacturing defects and workmanship for a period of five (5) years from the date of purchase.
2. LCD panel, inverter, controller, electrical, electronic boards, accessories and power supply are warranted against manufacturing defects and workmanship for a period of two (2) years from the date of purchase.
3. LCD panels that present more than 3 defective pixels (15-19") and more than 4 defective pixels (20-24") will be replaced under warranty.
4. Labor costs: Albiral Display Solutions covers the labor costs to replace any defective parts during the validity of this warranty.
5. Transport costs:
  - 5.1. In the case that a manufacturing defect occurs within 90 days after the purchase date, both freight and insurance costs will be paid by Albiral Display Solutions.

Although Albiral Display Solutions S.L. pays for freight and insurance costs, Albiral Displays Solutions will not be responsible for any damages caused by the transportation of the goods if the customer does not inform in writing when receiving the goods.
  - 5.2. After 90 days of the purchase date, the beneficiary of the warranty will pay both freight and insurance costs.

Albiral Display Solutions S.L. will not be responsible for any damages caused by transportation, when this one is paid by the customer.
6. This warranty does not cover the labor costs of handling, diagnose, removal, replacement, reinstall and/or program any product.

## WARRANTY TERMS AND CONDITIONS

7. This warranty does not apply if the fault has been caused by misuse, improper handling, electrical or mechanical abuse, abnormal operation conditions, non-authorized modifications, and inadequate transportation or as a result of atmospheric phenomenons.
8. The warranty is not valid if people other than authorized Service Centre have handled the product and if the product has been manipulated or warranty seals are removed or manipulated.
9. The beneficiary of the warranty will have to return the product with the original packaging to warranty there are no damages during transportation.
10. The warranty is not valid if the beneficiary of the warranty does not include an RMA form and a copy of the purchasing invoice.

Please note that laws vary from country to country, and the same provisions of this warranty may not apply to you.

If you have any doubts concerning the terms of this warranty, please contact:  
business@albiral.com  
+34 938 502 376

Copyright ©

June. 2024. All rights reserved

Albiral Display Solutions SL.

Registered trademarks: Albiral, Arthur Holm

## Patents

MU17180ES00	P27178ITEP
MU17301ES00	P27178RUPC
MU17322ES00	P27178USPC
MU17413ES00	P27284DEEP
MU17445ES00	P27284EPPC
MU17854ES00	P27284ESEP
MU17868DEPC	P27284GBEP
MU17868RUPC	P27284RUPC
P24821DEEP	P27284USPC
P24821ESEP	P27715ESEP
P24821GBEP	P28089DEEP
P24821USPC	P28089ESEP
P27178DEEP	P28089ITEP
P27178EPDV01	P28089USPC
P27178EPPC	P28090EP00
P27178ESEP	P31160ESES
	P31160PCES