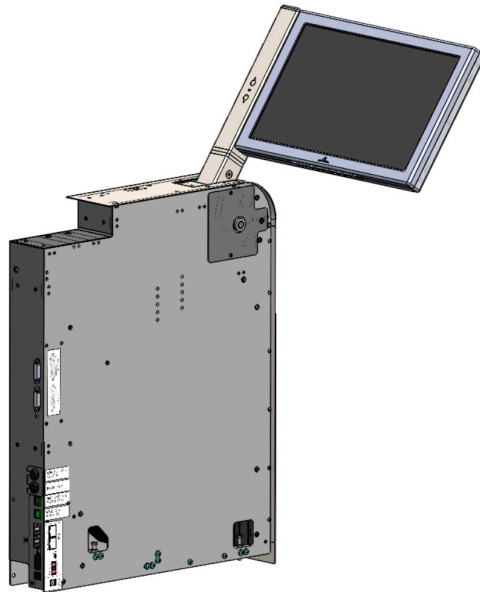




# User Guide



## DynamicChairDisplay

HDCP compliant aluminium motorised monitor for armrest integration

Technology Serving Design

Danish craftsmanship  
Mediterranean soul

  
ARTHUR HOLM

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## **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

hholm@albiral.com

## **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 materials with design flexibility and customisation, 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 personalised 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 un-insulated voltages inside some of the components, of sufficient magnitude to expose people to 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 that the equipment has some potential entrapment hazard parts.



This symbol indicates D.C. current.

## SAFETY INSTRUCTIONS

### 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 extensions 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 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 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.

## SYSTEM DESCRIPTION

### General

DynamicChairDisplay is a retractable motorised monitor to be integrated in chair armrests. The monitor is only visible when it is in use and it is safely stored in the armrest when not needed.

This elegant aluminium screen possess an automatic vertical extraction movement plus an additional manual rotation towards the user followed by a motorised tilt adjustment. The monitor housing is made of milled aluminium with anodised finish. Its mechanism is robust and silent and the whole solution is integrated in a compact block, being very simple to install.

### Highlights

- Adapts to multiple armrests
- Motorised adjustable angle
- Maintenance free
- Energy saving design
- Safety system
- Serial control & Remote diagnostic
- Wireless connectivity for setup and control

### Box Contents

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

- Monitor
- Mounting tools
- Power cord
- Power supply 100-240Vac, 50-60Hz. Output 12V
- User Manual

# SYSTEM DESCRIPTION

## Available Models

MODEL	DESCRIPTION
AH15DCDHD	HDCP compliant 15,6" Full HD motorised monitor for armrest integration. DVI-I and DVI-D inputs Interactive Setup Display allowing the control setup and diagnose of the monitors. The monitor provides RS-422 I/O allowing the remote control of movements, speeds, safety settings, brightness, contrast and backlight. The monitors are equipped with AH-AMMC: an auto mechanical movement calibration system.

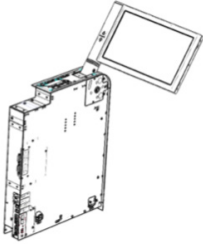
## Options

<b>AH15DCDHD</b>
<b>TS15HD</b> Projected capacitive multitouch screen
<b>CCUSBPowerDCD (Min.10 units)</b> USB power
<b>EMS (Min.10 units)</b> Synchronised mic



## INSTALLATION INSTRUCTIONS

This guide shows how to make the assembly within an armrest.

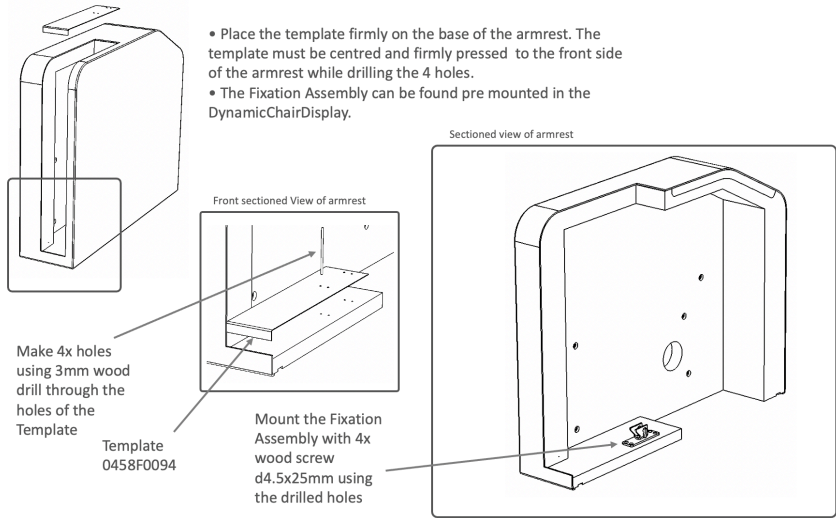


### Attention

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 of electrical and mechanical components can cause danger and should be avoided by all mean. Not complying with these directions will result in a loss of the Arthur Holm warranty. Albiral Display Solution 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 without the supplier's written permission. Such modifications shall be deemed to terminate any further guarantee obligations.

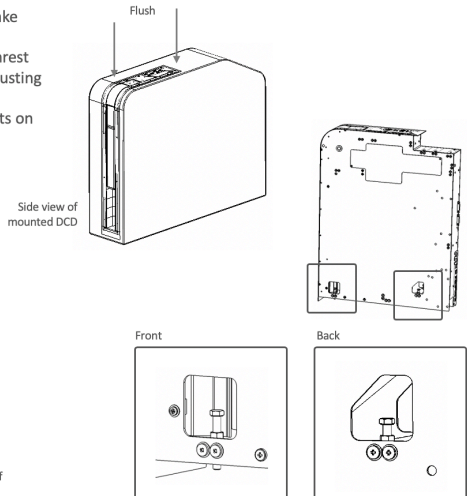
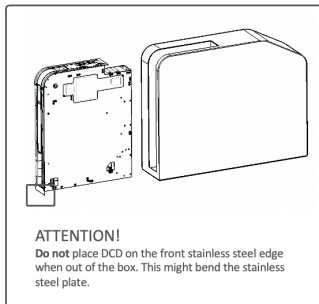
# INSTALLATION INSTRUCTIONS

## Start up: Mount Fixation Assembly



## Start up: Adjust for Horizontal Alignment

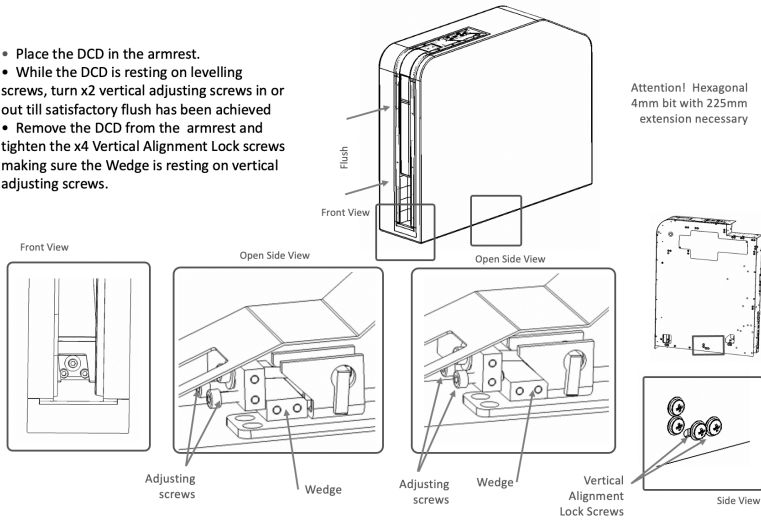
- Place the DynamicChairDisplay in the armrest and make sure that it is flush with the top surface of the armrest.
- If alignment is needed, remove the DCD from the armrest and adjust it up or down using the x4 hexagonal by adjusting the levelling screws situated in the corners.
- When the alignment is correct, tighten the x4 lock nuts on the levelling screws.



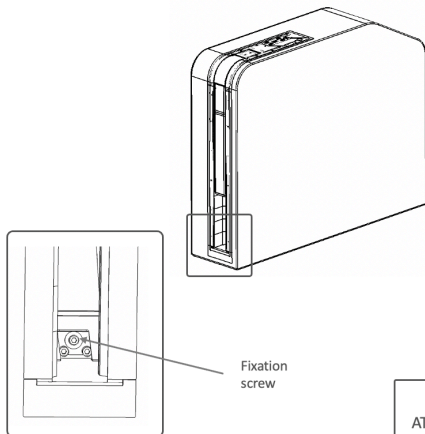
# INSTALLATION INSTRUCTIONS

## Start up: Adjust for Vertical Alignment

- Place the DCD in the armrest.
- While the DCD is resting on levelling screws, turn x2 vertical adjusting screws in or out till satisfactory flush has been achieved
- Remove the DCD from the armrest and tighten the x4 Vertical Alignment Lock screws making sure the Wedge is resting on vertical adjusting screws.



## Mounting and Removing DCD in Armrests



### Mounting DynamicChairDisplay

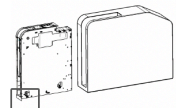
- Place the DCD in the armrest and tighten the Fixation Screw. The DCD will now position itself like adjusted in earlier steps.

### Removal of DynamicChairDisplay

- Loosen Fixation Screw.
- Remove DCD.

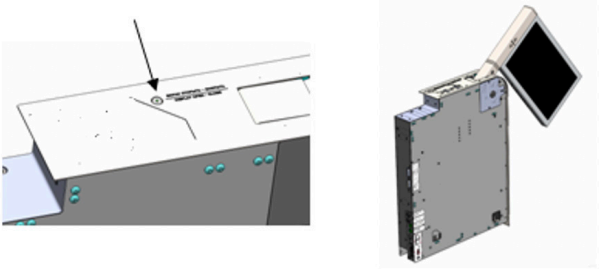
### ATTENTION!

Do not rest DCD on the front stainless steel edge when out of the box or armrest. This might bend the stainless steel plate.

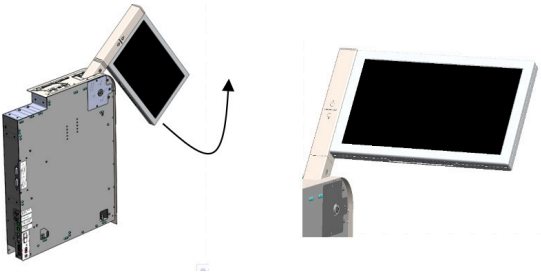


# USER DESCRIPTION

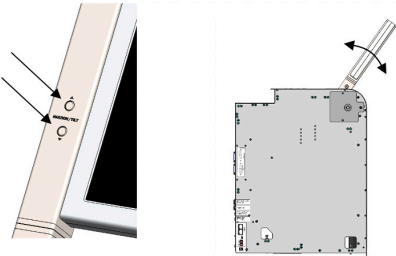
The arm is extracted automatically when the OPEN/CLOSE button is pressed. During the opening, the movement can be interrupted by pressing the button again.



The monitor can now be rotated manually. When it is placed at your desired position the buttons will become active and the LED in the OPEN/CLOSE button switches to red.

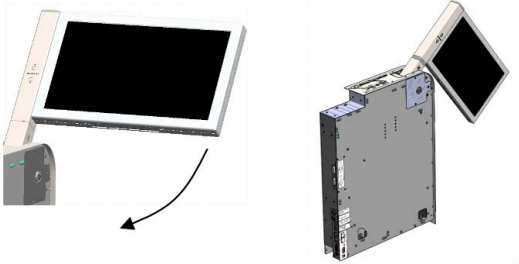


With the two tilt buttons, the monitor can now be used to fine adjust the viewing angle within the defined range.

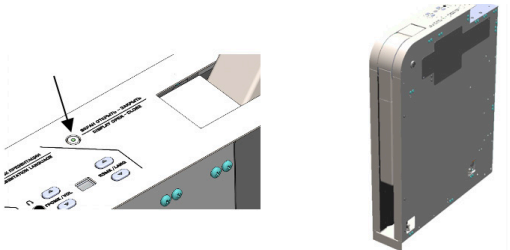


# USER DESCRIPTION

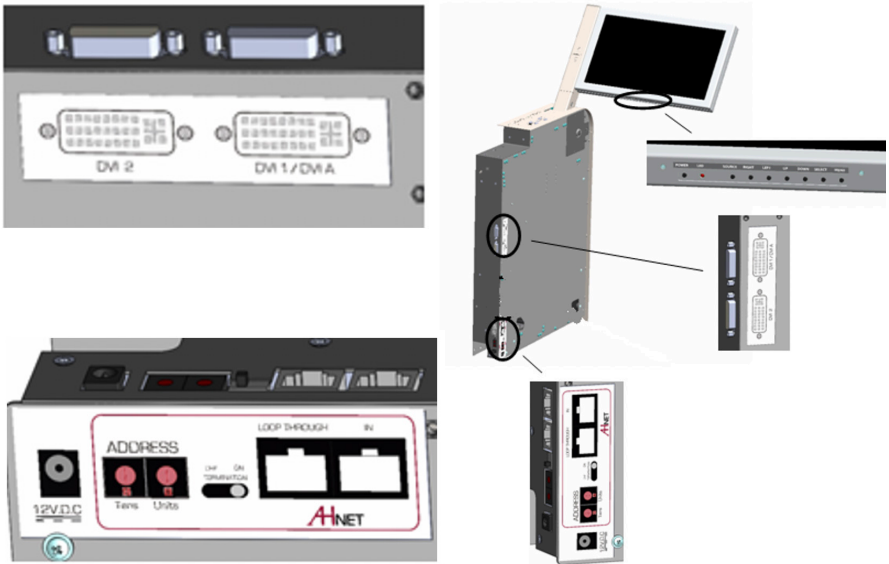
Place the monitor pointing down to retract it. Otherwise the drive system is locked. Green light in the LED of the OPEN/CLOSE button signals that the monitor is oriented correctly.



When the monitor is oriented correctly, the LED in the OPEN button will be green. Now the OPEN/CLOSE button can be pressed to retract the monitor. During the movement, this can be interrupted by pressing the OPEN/CLOSE button.



## INPUT CONNECTORS



**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.

**12V D.C.:** Power supply input connector.

**Address:** AHNet address for the addressable AHNet command protocol. Address 00 is reserved for service.

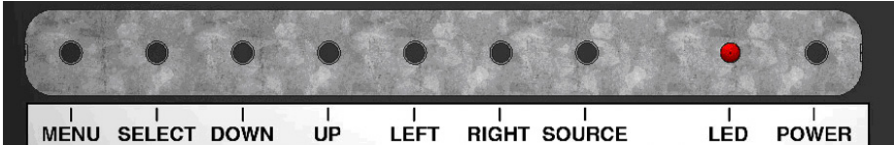
**Termination:** Activate (ON) the termination. Only on the last unit of the RS422 bus.

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

# CONTROLS

## OSD monitor control

The OSD buttons, to control or configure the monitor, are located below the screen:



MENU	Activates the OSD menu on screen. Exits the OSD menu when is active
SEL	Selects the OSD menu function
DOWN	Moves the cursor down in the OSD menu
UP	Moves the cursor up in the OSD menu
LEFT	Moves the cursor left in the OSD menu
RIGHT	Moves the cursor right in the OSD menu
SOURCE	Signal input selection
LED	Indicates operation status
POWER	Monitor power on/off

## 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 of the function.

Press the MENU button to access to the main menu.

### Picture

Picture Mode: Adjusts the mode of the image

- Dynamic
- Standard
- Mild
- User: Contrast - Brightness - Colour - Sharpness - Tint

Colour Temperature: Adjusts the colour of the image

- Cool
- Medium
- Warm
- Use: Red - Green - Blue

Aspect Ratio: Adjusts the image aspect on screen

- 4:3
- 16:9
- Just scan



## OSD MENU

Noise Reduction: Adjusts the image noise filter

- Off
- Low
- Medium
- High
- Default

Screen: (Only for analogue signals)

- Auto Adjust
- Horizontal Position
- Vertical Position
- Size
- Phase

Backlight: Adjusts the backlight screen's level

Colour Range: Adjusts the colour range

- 0 - 255
- 16 - 235

## OSD MENU

### Option

Language: OSD language selection

Restore Factory Default: Adjusts the parameters to the initial factory parameters

Blending: OSD window transparency

- Low
- Medium
- High
- Off

OSD Duration: Adjusts the time that the OSD menu window remains on the screen

Software Update (USB): Port to use for firmware's upgrade.

Mirror:

0. Image with no flip
1. Vertical flip
2. Horizontal flip
3. Rotate

# 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/1 640 ft.

# AHnet PROTOCOL

## AHnet protocol

Uses 5 bytes communication:

<b>BYTE 0</b>	START BYTE
<b>BYTE 1</b>	ADDRESS BYTE
<b>BYTE 2</b>	COMMAND BYTE
<b>BYTE 3</b>	VALUE 1
<b>BYTE 4</b>	VALUE 2

## Commands

COMMAND	DESCRIPTION	RESPONSE
FA XX 01 01 00	GO UP	FB XX 01 01 00
FA XX 01 00 00	GO DOWN	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 bites of the monitor status

CB2     Response in 8 bites of the monitor status

# AHnet PROTOCOL

## CB1

BITE	7	6	5	4	3	2	1	0
CLOSED			1	1	0	1		
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

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 respond

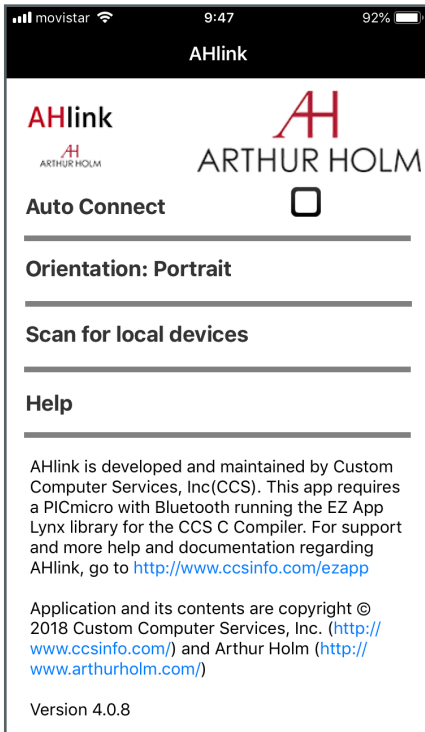
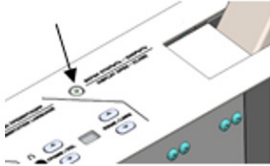
# VIDEO SIGNALS

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
1680x1050@60Hz	64.742	59.946	Progressive
1600x1200@60Hz	75.000	60.00	Progressive
1920x1080@60Hz	66.647	59.98	Progressive

# AHlink

AHlink is used to control and set up the unit

By default, the AHlink wireless signal is deactivated. To activate it, please press and hold the Open / Close button 5 seconds.

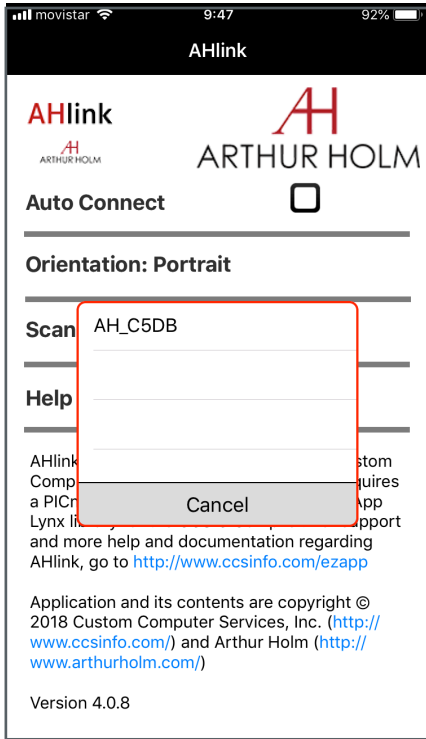


The wireless AHlink signal automatically deactivates when there is no device connected during more than 2 minutes. When the AHlink deactivates, you will hear a long Beep sound.

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 on to select *Auto Connect* and select *Portrait* on *Orientation*. To connect it, select *Scan for local devices*.

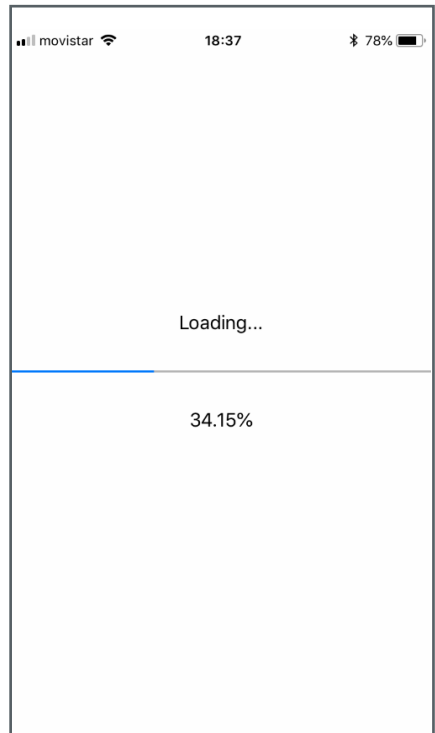
# AHlink



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

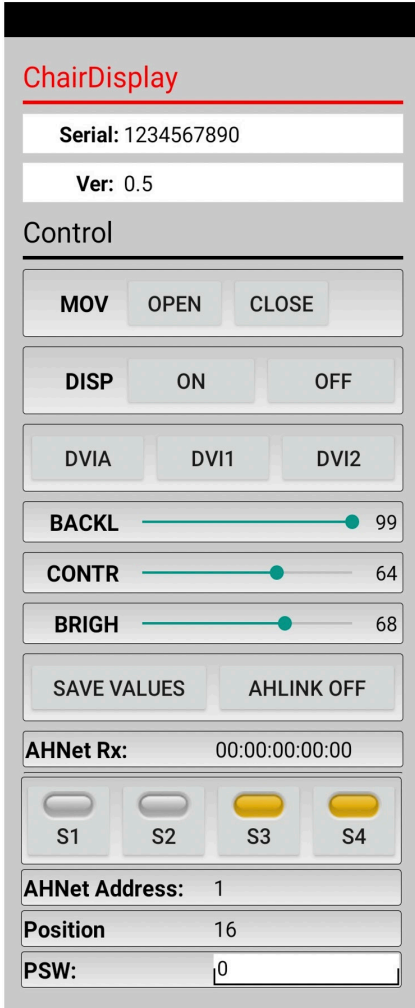
The AHlink name always begins with the characters "AH" followed by the four last MAC AHlink address. You must select the AH device.

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





# AHlink



**ChairDisplay**

**Serial:** 1234567890

**Ver:** 0.5

**Control**

**MOV** OPEN CLOSE

**DISP** ON OFF

DVIA DVI1 DVI2

**BACKL** 99

**CONTR** 64

**BRIGH** 68

SAVE VALUES AHLINK OFF

**AHNet Rx:** 00:00:00:00:00

S1 S2 S3 S4

**AHNet Address:** 1

**Position** 16

**PSW:** 0

SERIAL

Serial number of the unit

VER

Firmware version

MOV

Controls the Up and Down 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: Memorises the backlight, contrast and brightness values

AHLINK OFF: Turns off the AHlink signal

COMMAND: Information of the last AHnet command received from RS422 port

SENSORS:

S1 Screen close position

S2 Screen open position

S3 Screen rotate position

S4 Finger plate protection sensor

AHNET ADDRESS: Configuration of the AHnet address of the unit password

POSITION: Screen position

PASSWORD: Access to the factory's settings

## INFORMATION ON DISPOSAL FOR USERS OF WASTE ELECTRICAL & 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 two (2) years from the date of purchase, subject to the conditions below.

1. LCD panel, inverter, controller, electrical, electronic boards, engine, mechanical parts, accessories and power supply are warranted against manufacturing defects and workmanship for a period of two (2) years from the date of purchase.

2. LCD panels that present more than 3 defective pixels (15-19") and more than 4 defective pixels (20-24") will be replaced under warranty.

3. Labour costs: Albiral Display Solutions covers the labour costs to replace any defective parts during the validity of this warranty.

4. Transport costs:

I) 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 pays for transport and insurance cost, Albiral Display Solutions will not be responsible for the damages caused by transport if the customer does not inform in writing immediately when receiving the goods.

II) After 90 days of the purchase date, the beneficiary of the warranty will pay both freight and insurance costs.

Albiral Display Solutions will not be responsible for the damages caused by transport, when the customer pays this.

5. This warranty does not cover the labour costs of handling, diagnose, remove, replace, reinstall and/or program any product, force majeure causes such as vandalism or stealing.

## WARRANTY TERMS AND CONDITIONS

6. 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 transport or as a result of atmospheric phenomena.

7. The warranty is not valid if persons other than authorized Service Centre have handled the product and if the product has been manipulated or warranty seals are removed or manipulated.

8. The beneficiary of the warranty will have to send the devices with the original packaging to warranty there are no damages during the transport.

9. The warranty is not valid if the beneficiary of the warranty does not include RMA form and 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

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**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
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