AH

User Guide

DynamicSpeaker

Motorized loudspeakers for integration in desks

Technology Serving Design

Danish craftmanship
Mediterranean soul

AH
ARTHUR HOLM

TABLE OF CONTENTS

WELCOME

Thank you for purchasing an ARTHUR HOLM product.

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

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, 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 customization, specially created to enhance communication and collaboration in reception, conference and meeting areas.

The art of customization

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, 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 on 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 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

Plugs

- Do not dismantle any part of the device power connector.
- Disconnect the power plug from the AC outlet when the device 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 on an elevated, flat surface.
- Install the equipment in a ventilated area.
- Avoid exposing the equipment to:
  - Rain or water
  - Kids
  - 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.
- The disconnect plug must be in an accessible location.
- 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 that 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

Our new motorized loudspeaker for desk and furniture integration brings flexibility and impressive audio quality with enhanced speech intelligibility to the meeting room or other rooms where quality audio is needed in a magical movement. The compact, omnidirectional 360 degrees active speaker has a twin 36W Class-D integrated amplifiers and a two-way coaxial transducer that brings the audio to the dedicated area with its acoustic diffuser through its integrated DSP technology, the system can be controlled using the AHnet and its wireless AHlink App for control and set-up. The Arthur Holm dynamicSpeaker is designed to be hidden when not in use, with a smooth, magical and elegant movement done without disturbing the audience.

Highlights

- Natural sound direction
- Speech intelligibility
- High gain before feedback
- Limited audio pollution
- 360 degrees loudspeaker
- 4" 2-Way coaxial speaker, bass reflex
- 2 x 36W class-D bi-amplifier integrated
- Acoustic omnidirectional diffuser
- DSP integrated Balanced line input
- RS-422 controllable
- Near-field audio reproduction
- Speech intelligibility enhancement
- Remotely controllable
- Wooden speaker enclosure

# SYSTEM DESCRIPTION

Available Models

| MODEL	DESCRIPTION
AHDSR42W	Motorized loudspeaker for furniture integration. 4" coaxial loudspeaker. Class-D 2way bi-amplified. RMS power 2 x 36.5W. 360° dispersion. Balanced analogue audio input. Adjustable gain through AHnet (RS422 Protocol). Mute function through AHnet (RS422 Protocol). Cover plate made of stainless steel. USB Port for software updates. XLR-4 input. Capacitive touch sensor on cover plate for up and down control.
AHDSR42W UI (Underneath Installation)	Motorized loudspeaker for furniture integration. 4" coaxial loudspeaker. Class-D 2 way bi-amplified. RMS power 2 x 36.5W. 360° dispersion. Balanced analogue audio input. Adjustable gain through AHnet (RS422 Protocol). Mute function through AHnet (RS422 Protocol). USB Port for software updates. XLR-4 input. Prepared for underneath installation, to be veneered.

Options

AHDSR42W
CPSK   Painted

MOUNTING INSTRUCTIONS

1. Assemble the 2 mounting brackets
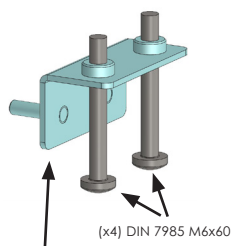
2. With the DynamicSpeaker inserted into the table, attach the brackets in each side
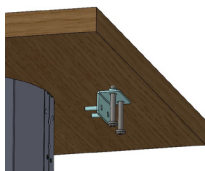
3. Tighten the four M6x60 screws until they touch the table and AHDTB is fixed

(x4) DIN 7985 M6x60

(x2) Brackets 0925F0032

DIFFUSER MOUNTING GUIDE

1. After unpacking the equipment and removing the safety screw for transport, install the equipment and connect to the power.

2. Then press the button to turn the DynamicSpeaker to open position.

3. Put together the diffusor matching the 4 magnets with the 4 top anchor screws. It will detect a "click" when the diffusor is in the correct position.

Diffuser

Magnet

Safety screw

Button

(4x) Top screws
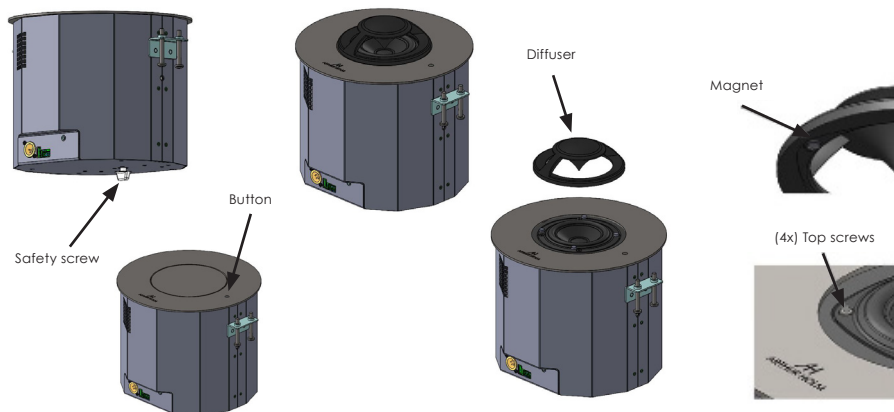
MOUNTING GUIDE AHDSR42W UI

Pattern Hole

Pattern hole dimensions for milling are specified in the corresponding drawing. The milling of the furniture has to be done from below.

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 authorized representative without the supplier's written permission. Such modifications shall be deemed to terminate any further guarantee obligations.

MOUNTING GUIDE AHDSR42W UI

The DynamicSpeaker is available in a special version that is prepared to be mounted from below the table, with a veneer finishing on the lid of the device to match the table. This special version is supplied without stainless steel cover plate and buttons.
Included in this version are all necessary brackets.
It is controlled by means of AHnetT or AHlink.
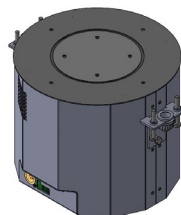
Veneer

To veneer the lid of the DynamicSpeaker the dimensions are specified in the document Pattern Hole.
Different materials can be used to veneer the unit. Maximum thickness of the veneer: 8mm [0,315"]. Maximum weight: specified in the Pattern Hole document (veneer thickness + glue ‹

Max. 8 [0.315]
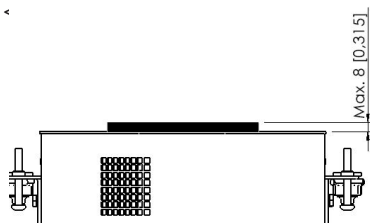
Fixation

Veneer can be glued or taped to the lid.
When veneering the device, the pressure applied must not exceed 1.5 Kg evenly distributed on the lid surface.

- Use glue or tape depending on the mechanical properties of the materials to be joined (lid and veneer). The lid is made in painted steel.
- Surface energy, dilation, temperature and humidity are factors must be considered to choose the best option.
- Double-sided tapes 3M VHB family are recommended (check the compatibility between the materials to tape / glue).
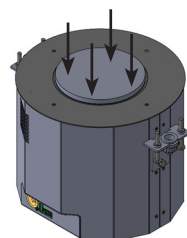
MOUNTING GUIDE AHDSR42W UI

Veneer Centring and Fixation

Centering Jig

Security Nylon
Screw

Glue / Double
side tape
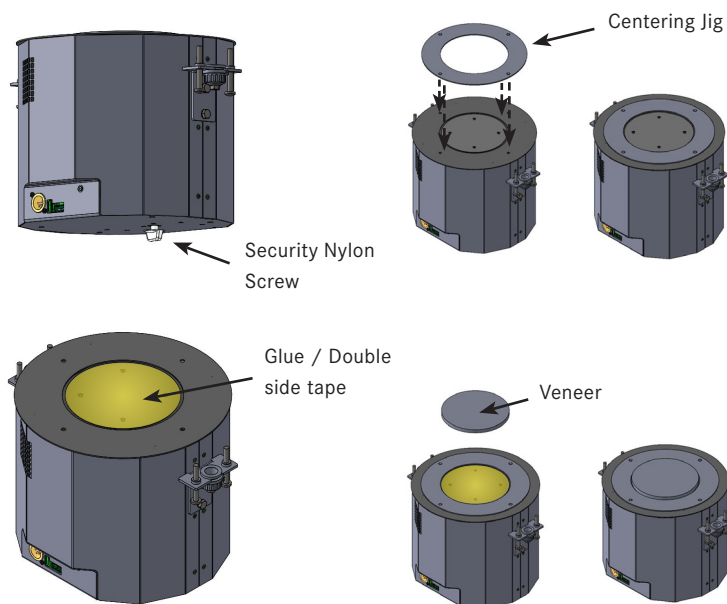
Veneer

IMPORTANT: Don't remove the Security Nylon Screw until finishing the installation into the table.

Use the jig to center the veneer and glue or tape, place the jig as shown on the illustration above.

Add glue or tape in the center of the jig, the glue or tape cannot be touching the jig, placed the veneer in the center of the jig, when the veneer is fixed remove the jig.

Look at page 11 "fixation" for further glue or tape instructions.

MOUNTING GUIDE AHDSR42W UI

Mounting table brackets

View from below the table:

Front Side

Front Side
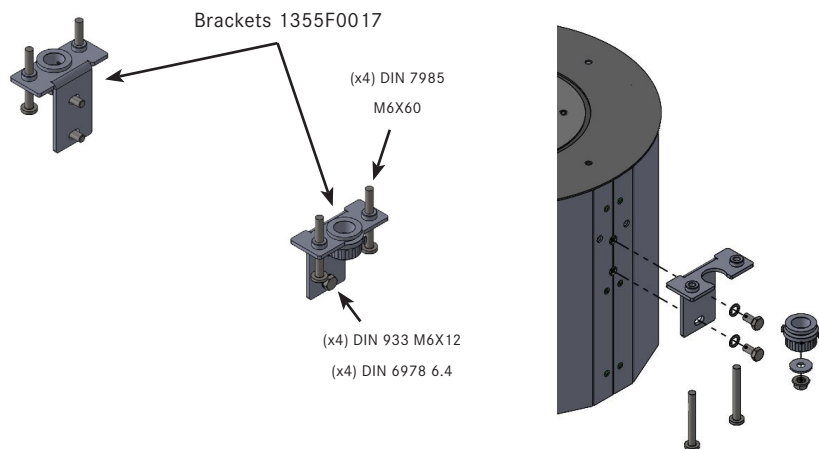
Tablet Brackets

View from below the table
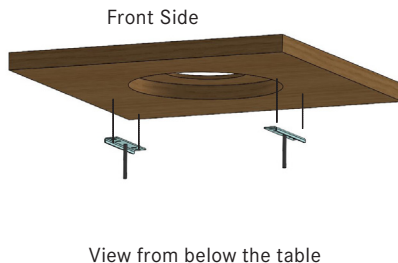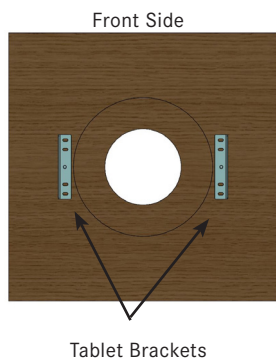
Mount the table brackets below the table using the holes indicated on the pattern hole drawing.

The screws (x4) depend on the table material; the weight of the unit is up to 10 kg.

Mounting the DynamicSpeaker brackets

Brackets 1355F0017

(x4) DIN 7985
M6X60
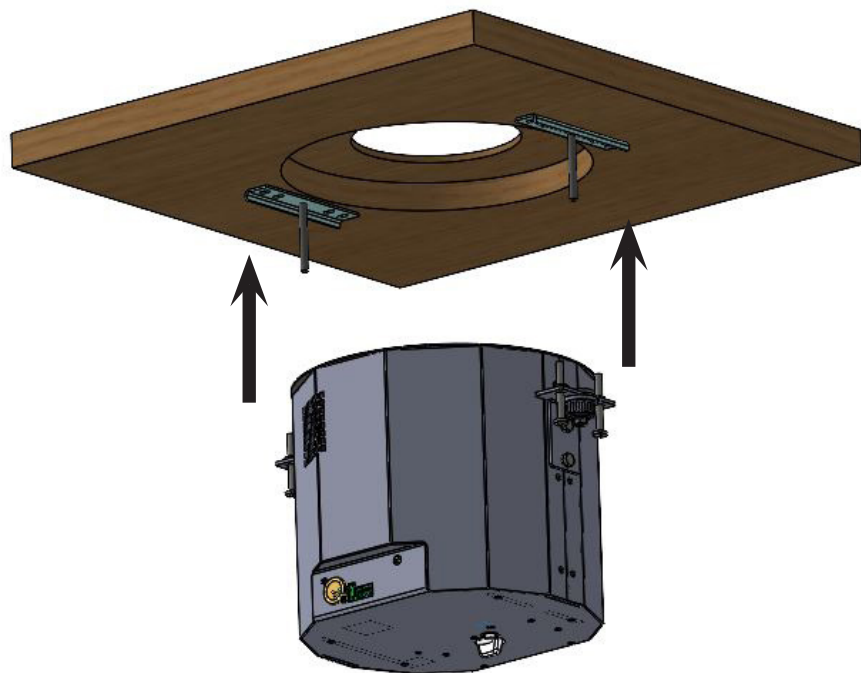
(x4) DIN 933 M6X12

(x4) DIN 6978 6.4

Mount the unit brackets on their corresponding sides by screwing the screws (2+2 M6x12) into the lateral threads.

Mount the vertical adjustment screws (2+2 M6x60) on to the unit bracket so that the tip of the screw is flushed with the upper side of the unit bracket.

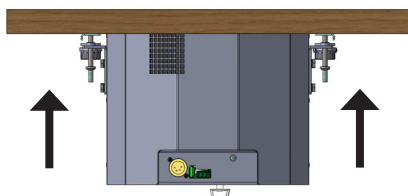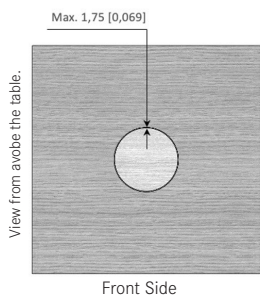## MOUNTING GUIDE AHDSR42W UI

Hanging the unit

Push the unit towards the table until the unit is flush. Then you can adjust it by turning the nuts and leaving it centered on the table.
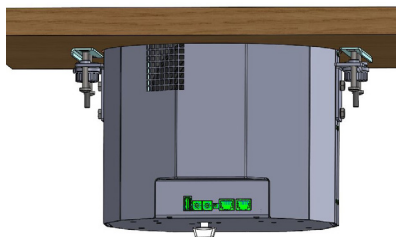
MOUNTING GUIDE AHDSR42W UI

Centring the unit

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

Max. 1,75 [0,069]

View from avobe the table.

Front Side

The dimension between the rear edge of the lid and the table must not be less than 1,75mm [0,069]. Otherwise, the lid will come into contact with the table opening and be damaged.
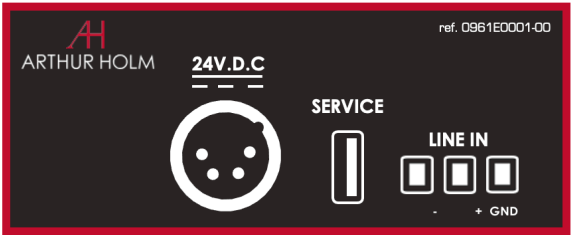
The table brackets and the brackets attached to the speaker have a slotted hole that enables you to move the unit in the XY coordinates to center it on the table.
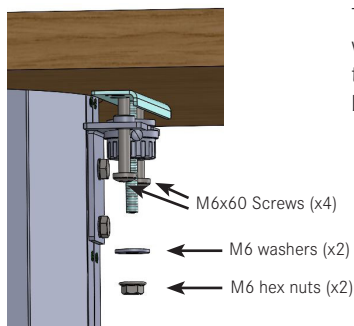
To block the unit in place, put the M6 hex nut with the washer and tighten them. After that, turn and lock the 4 M6x60 screws against the brackets.

M6x60 Screws (x4)

M6 washers (x2)

M6 hex nuts (x2)

POWER AND CONTROL

——— **24V D.C.:** Power supply input connector.

Service: USB to be used only for service.

Line in: Audio input.
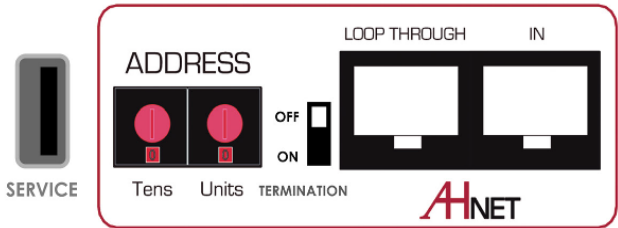
Termination: Activate (ON) the termination. Only on the last unit of the RS422 bus.

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

Service: USB to be used only for service.

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

CONTROLS AND AUDIO FEATURES

Remote control

1. Touch button to open and close the unit
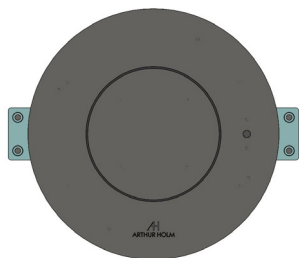
Audio features

- 4" coaxial loudspeaker
- Class-D 2 way bi-amplified
- RMS power 2 x 36.5 W
- 360° dispersion
- Balanced analogue audio input. Level line +4dB
- Internal DSP
- Frequency response : 70Hz – 20KHz (-10dB)

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 device by addressable RS422 bus.
You can connect up to 30 units on the same RS422 bus.
You can use an AH Interface Ethernet, 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.

AHNET PROTOCOL

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

Commands

COMMAND	DESCRIPTION	RESPONSE
FA XX 01 01 00	OPEN	FB XX 01 01 00
FA XX 01 00 00	CLOSE	FB XX 01 00 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 09 01 00	MUTE	
FA XX 09 01 01	UNMUTE	
FA XX 14 00 00	INQUIRY CONTROL BYTE	FB XX 14 CB1 CB2

XX   Number of the device address. Up to 30 devices for each RS422 BUS

CB1   Response in 8 bites of the device status

CB2   Response in 8 bites of the device status

AHNET PROTOCOL

CB1

BITE	7	6	5	4	3	2	1	0
CLOSED							1	0
OPENED							0	1
PROTECT	1							
NO PROTECT	0							
BUT_EN						0		
BUT_DIS						1		

To send an order to all the devices, you must use the address: F7 Hex. (Byte1)

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

AHLINK

AHlink is used to control and set-up the unit.

Activate the AHlink function by pressing the open/close button on the cover plate for 3 seconds.

Using a mobile phone, download the "AHlink" app from the App Store (IOS system) or Google Play (Android system). This App is free.
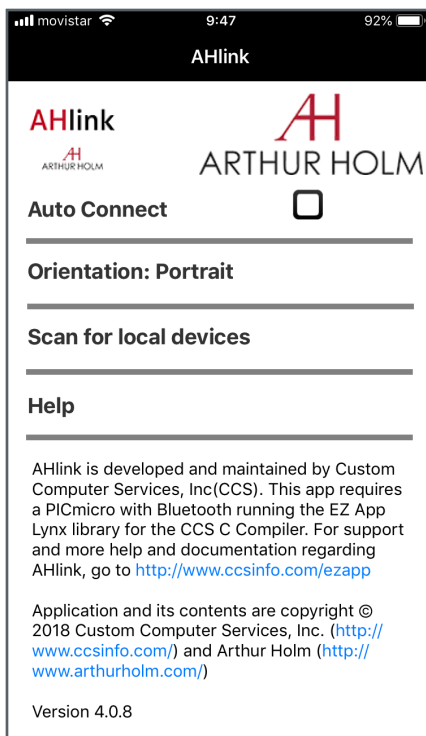
AHLINK

Select the "Scan for local devices" option and your AH device will appear on screen. The name of the device is "AH" + 4 character Bluetooth MAC address.
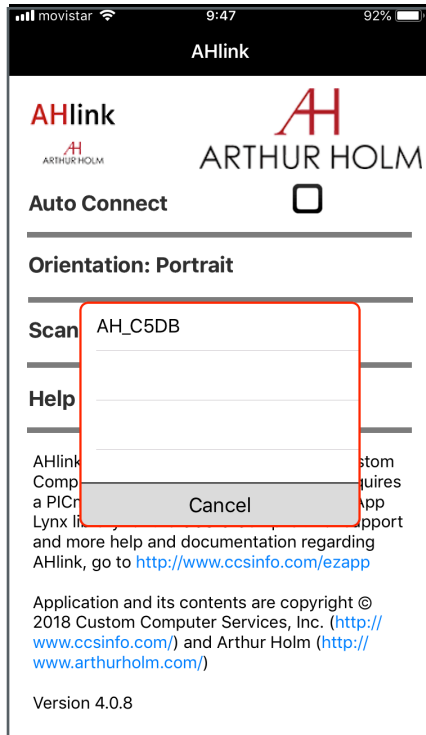
AHLINK

SERIAL
Serial number of the unit
VER
Firmware version

MOV
Control to open/close mechanical functions
AUDIO: Mute audio control
AHnetRCX: Last AHnet command received

SENSOR STATUS: Sensor status information
- S1, S2: Not used
- S3: Open/Close sensor
switch. The sensor is Off while pressing the Open/Close button on the cover plate
- S4: Mechanical close sensor. The sensor is On when the device is closed

AHNET ADDRESS: AH address settings
POSITION: Current position on the mechanics
PSW CONFIGURATION: Only for Technical Service

MASTER CONFIGURATION

Configuring a MASTER unit, allows you to control, using the AHlink application, all the units installed in the same room. When the unit is configured as MASTER, the AHlink signal is always active, and you can control all the signals installed. First, do you need to link the units using RJ45 cables connected to the AHnet ports. The cable, connected to the MASTER unit, has to be crossover in order for the MASTER unit to be able to send the AHnet commands to the rest of the units. Refer to the next figure to connect all the units to be controlled by the MASTER unit.
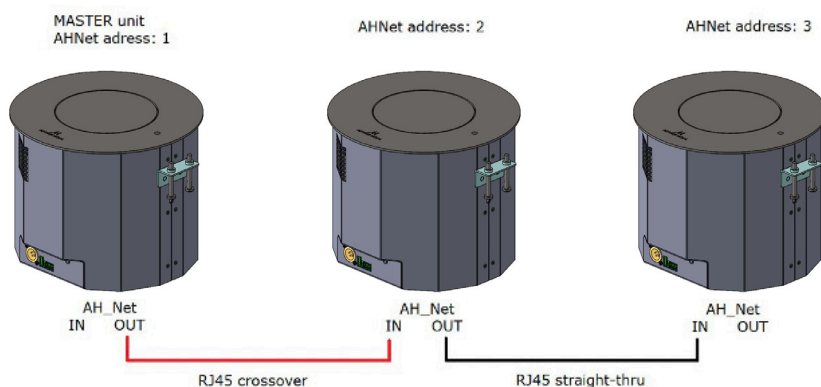
RJ45 crossover and straight-thru information
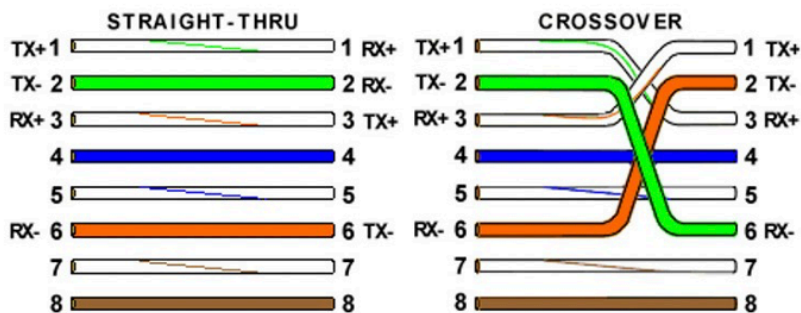
MASTER CONFIGURATION

Use the AHLink application to connect to the MASTER unit and control all the units connected to the MASTER as shown in the previous figure.

OPEN/CLOSE: Controls the open and close mechanical functions in all units connected to the MASTER

AUDIO ON/OFF: Controls the audio mute function in all units connected to the MASTER

-/+/SAVE: Controls the volume level in all units connected to the MASTER. By pressing the SAVE button, the level will be saved in memory

Sound level: Shows the actual gain level

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, that could otherwise arise from inappropriate waste handling. Please contact your local authority for further details about 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. 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

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

3. 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.

4. This warranty does not cover the labour costs of handling, diagnose, removal, replacement, reinstall and/or program any product.

5. This warranty does not apply if the fault has been caused by misuse, improper handling, electrical or mechanical abuse, abnormal operation conditions, non-authorised modifications, and inadequate transportion or as a result of atmospheric phenomenons.

WARRANTY TERMS AND CONDITIONS

6. The warranty is not valid if people other than authorised Service Centre have handled the product and if the product has been manipulated or warranty seals are removed or manipulated.

7. The beneficiary of the warranty will have to return the product with the original packaging to warranty there are no damages during transportation.

8. The warranty is not valid if the beneficiary of the warranty does not include a 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:
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ARTHUR HOLM

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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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