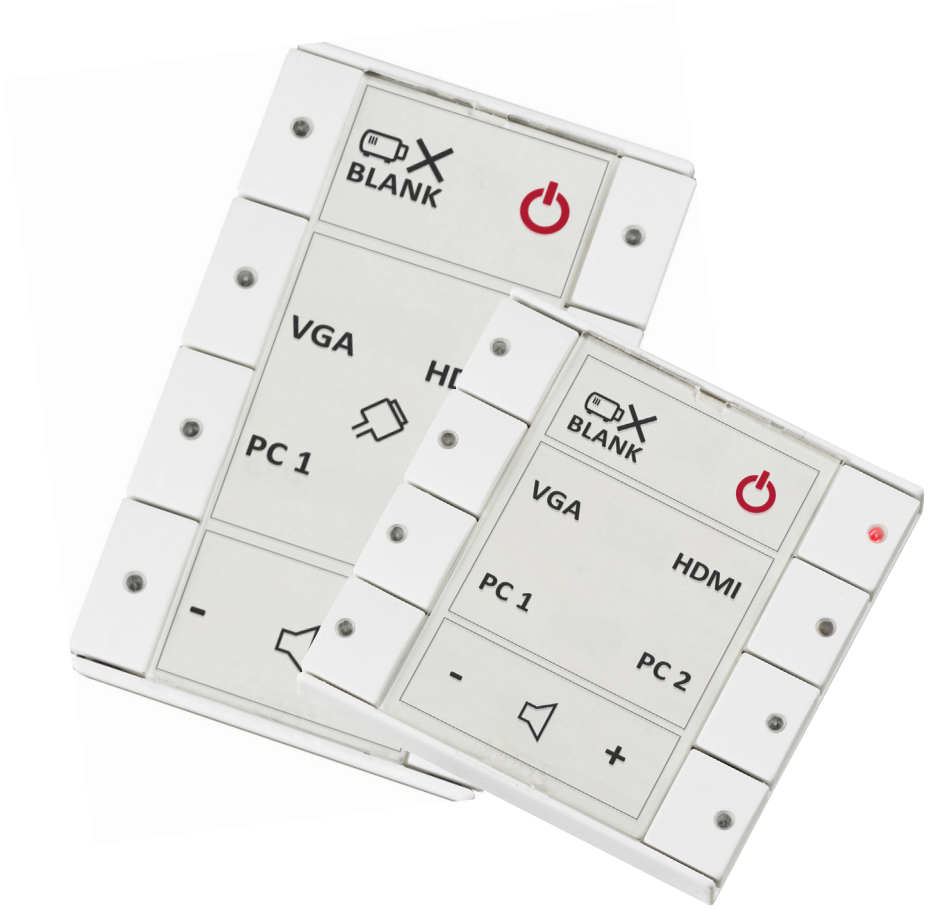
Neets Control – EcHo Plus

EcHo Plus EU P/N: 310-0152
EcHo Plus DK P/N: 310-0252

User Manual



Neets

Foreword

The purpose of this document is to describe how to install and configure the Neets Control – EcHo Plus, hereafter the EcHo Plus.

CHANGES - Neets reserve the right to change the specification and functions of this product without any notice. Check www.neets.dk for the latest updated version ogf this manual.

Questions, AFTER reading this manual, can be addressed to your local distributor or:

Neets A/S
Denmark

by E-Mail: Support@Neets.dk

or you may use our contact form at www.neets.dk

Revision list

This document (no: 310-0152-001-009) has the following revision changes:

Author: Date	Description	Pages	Rev
MH: 16-03-2015	First release.	All	1.00

What is in the box?

When you open the box it will contain the following items:

1 x Neets Control - EcHo Plus
1 x Power supply
1 x Front panel glass
1 x Paper cover
1 x Connectors for mounting

Important Safety Instructions

Caution:

Read these instructions:Read and understand all safety and operating instructions before using the equipment.

Keep these Instructions:The safety instructions should be kept for future reference. Heed all Warnings: Follow all warnings and instructions marked on the equipment or in the user information. Avoid Attachments: Do not use tools or attachments that are not recommended, because they may be hazardous

Warning!:

- This equipment should be operated only from the included power supply.
- To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).
- Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.
- Do not defeat the safety purpose of a polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards. Contact your local Neets reseller or distributor.
- If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.
- Do not use this equipment near water.
- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids.
- Unplug the product before cleaning. Clean only with a dry cloth and not cleaning fluid or aerosols. Such products could enter the unit and cause damage, fire, or electric shock. Some substances may also mar the finish of the product.

FCC Class A Notice:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.
The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.
FCC regulations state that any unauthorized changes or modifications to this equipment, not expressly approved by the manufacturer, could void the user's authority to operate this equipment.

The lightning bolt triangle is used to alert the user to the presence of uninsulated "dangerous voltages" within the unit's chassis that may be of sufficient magnitude to constitute a risk of electric shock to humans.

The exclamation point triangle is used to alert the user to presence of important operating and service instructions in the literature accompanying the product.

Neets

Contents

Description

EcHo Plus is a compact yet surprisingly intelligent AV control system. It is remarkably simple to use, thanks to an intuitive graphical interface with a minimum number of buttons.

With EcHo Plus anyone can start up a presentation without complicated procedures.
Simply press ONE button and you are ready to begin!

EcHo Plus is a perfect choice for the classroom, meeting or conference room and is easy to install. EcHo Plus can control devices through IR, RS232 or even LAN.

EcHo Plus is available in polar white and anthracite.

Function description	
RS-232 (Tx+Rx)	1
RS-232 (Tx) or IR (controls up to 2 IR devices)	1
LAN device control	2
I/O	3
Buttons	8
NEB Bus	1 (2 NEB)
USB port for programming	1
PIR sensor input	Yes
Light on/off	Yes
Room darkening	Yes
Screen up/down	Yes
Volume control	Yes
Device feedback	Yes

Neets

Specifications

Power input

Input voltage	12 VDC
Power Usage	1 W
Connector	2 pin screw block

Power adaptor (included)

Input voltage	100 VAC – 240 VAC
Line frequency	50 Hz – 60 Hz
Max power usage	Max 25 W

RS-232 port

Ports	1 x bi-directional
Baud rate	1200 – 115200 bit/sec
Data bits	7, 8
Parity	Even, Odd, None
Stop bits	1, 2
Connector	3 pin screw block

RS-232 or IR port

Ports	1 x uni-directional
Baud rate	1200 – 115200 bit/sec
Data bits	7, 8
Parity	Even, Odd, None
Stop bits	1, 2
IR frequency	400 Hz to 500 KHz
Connector	2 pin screw block

IR learn

IR Learn frequency	1 KHz to 150 KHz

Product number

310-0152	EcHo Plus EU
310-0252	EcHo Plus DK

Approvals

IEC/EN	61000-6-1
IEC/EN	61000-6-2

Input / Output

Ports	3 x I/O
Input trigger low	< 1VDC
Input trigger high	> 4VDC
Output type	Open drain
Isolated output	No
Max voltage load	24 VDC
Max current	0.5 A
Connector	4 pin screw block

Network (LAN)

Speed	10 / 100 Mbit
Duplex modes	Half or Full
DHCP	Default off
Default IP	192.168.254.252
Default gateway	192.168.1.1
Default subnet mask	255.255.255.0

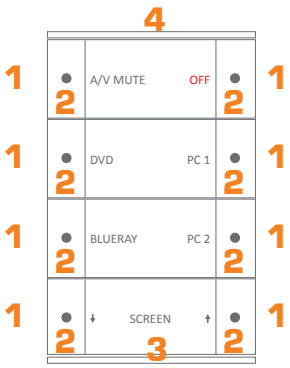
General

Width, EU	55 mm
Height, EU	55 mm
Depth, EU	17 mm
Width, DK	45 mm
Height, DK	72 mm
Depth, DK	17 mm
Weight,EU/DK	90 g
Shipping weight	kg
Shipping dimension (W/D/H)	mm / mm / mm
Storage temperature	-20 °C to 50 °C
Storage moisture	Non-condensing
Operation temperature	0 °C to 30 °C
Operation moisture	Non-condensing

Quick guide to the EcHo Plus

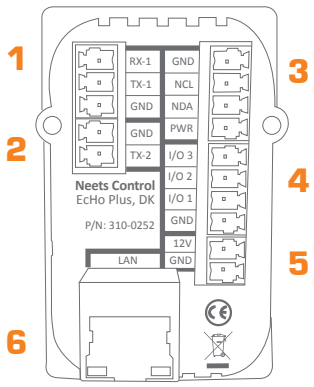
Buttons, indicators and connectors are available on the front and rear panels. These are shown below:

Front:



Number:	Description
1	Push buttons for controlling the AV setup
2	Red LED lights for indication of AV setup status
3	Front panel glass with label for button description
4	Mini USB for programming (behind front glass)

Rear:



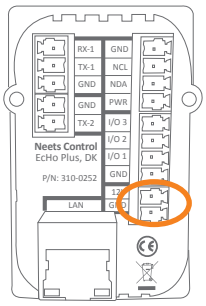
Number:	Description
1	RS-232 port, Bi-directional
2	RS-232 or IR port, Uni-directional
3	NEB bus port
4	Input/Output connector
5	12 VDC power input
6	RJ-45 Network (LAN) connector

Connections and Controls

Power input port

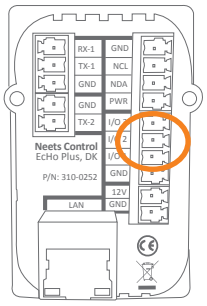
Connect the EcHo Plus to the supplied AC power adaptor using the supplied 2 pole screw block terminal. White/black wire connects to 12V, black wire connects to GND.

The EcHo Plus adaptor incorporates a universal mains input which accepts AC line input from 100 V to 240 V.



I/O ports

EcHo Plus has three I/O (Inputs/Outputs) available that can be configured as either output or input. They can be used for a PIR (movement) sensor, keyboard lock, relays or other compatible uses. The ports are not potential free; you may need external relays to prevent ground loops depending on your application.



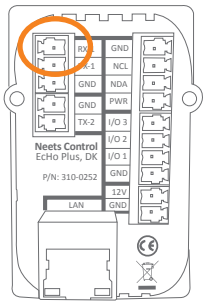
When used as outputs, the I/O ports are active low. When activated, the I/O ports are tied to GND through a FET transistor (also called open drain/collector function). Each I/O can draw up to 24VDC/500mA.

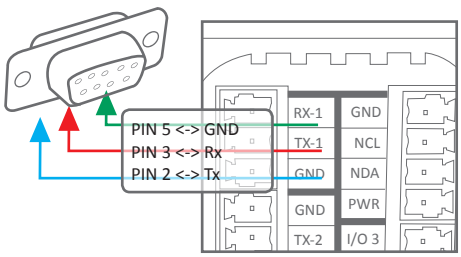
When used as inputs, the applied voltage must be below 1 VDC to be accepted as LOW, and above 4 VDC (but below 24 VDC) to be accepted as HIGH. The inputs are default HIGH and must be connected to ground in order to change state.

RS-232 port

The RS-232 port (TX-1, RX-1) is used for one- or two-way communication. A two way port is used for devices on which you want to use reply (e.g. your projector).

To connect the EcHo Plus you must wire the RS-232 cable as shown here. This is a female 9 pin SUB-D connector that will fit into a standard computer RS-232 port, or any USB to RS-232 converter.

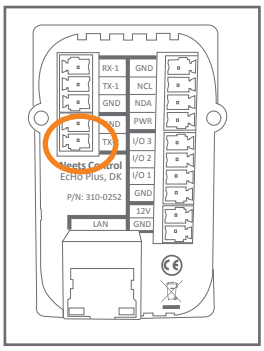




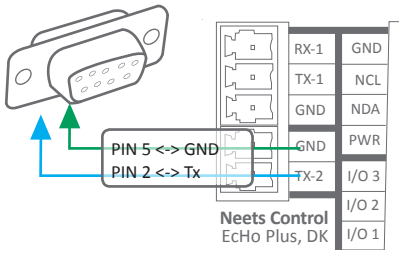
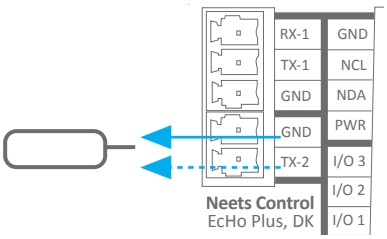
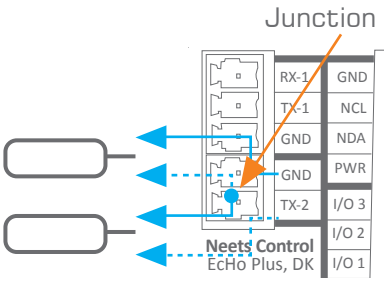
RS-232/IR port

The RS-232/IR port (TX-2) is used for one-way RS232 or IR communication depending on the setup made in Neets Project Designer.

Be aware that the port can't be used as RS232 and IR port at the same time.



Connect the port as shown below.

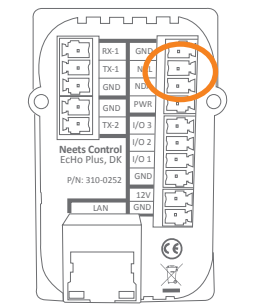
		
When used as RS-232 transmit port: Connect the device to TX-1 and GND, as shown above.	When used as single IR port: Connect the IR emitter to TX-2 (white striped wire) and GND, as shown above.	When used as dual IR port: Connect the IR 1 emitter to TX-2 (white striped wire) and black wire on IR 1 emitter to IR 2 emitter (white striped wire), and black wire from IR 2 emitter to GND, as shown above.

NEB port

The EcHo Plus has a built-in NEB (Neets Extension Bus). This port is used to add up to 2 NEB devices (e.g. two Keypads, two Level Controls and one Expander).

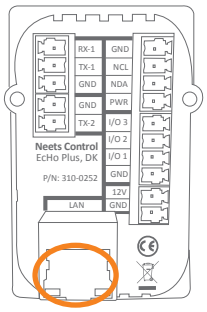
Connect your NEB devices to this port with a cable not exceeding 20 cm of length. PWR to PWR, NCL to NCL, NDA to NDA and GND to GND.

If additional cable length is needed in your application, please use the NEB extender to allow placement of the devices up to 40 meters from the EcHo Plus. See the Neets website for details on the NEB Extender.



LAN port

The network connector integrates the system into a local area network. Please connect the EcHo Plus to your LAN if using any of the LAN features of the product.



Two LEDs on the connector indicate the following:

Color:	Off	On	Blink
Yellow	No Link	Link	Activity
Green	10Mbit	100Mbit	

Factory default IP setting of the EcHo Plus is:

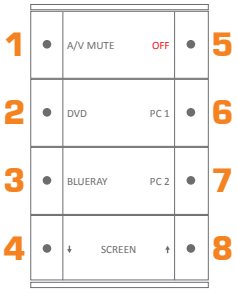
IP address:	192.168.254.253
Subnet:	255.255.255.0
10/100Mbit:	Auto
DHCP:	Disabled

Buttons

The eight front panel buttons are accessed by the end user to control the AV system in which EcHo Plus functions as the controller. The buttons are numbered as shown to the right.

Each button has a tactile click feedback to ensure proper activation. Also, each button has an embedded red LED light to indicate current status of the AV system.

Button function and LED indication are set up using the Neets Project Designer software.



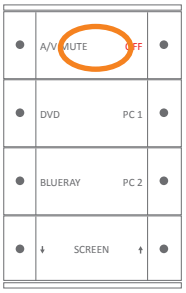
USB port

The USB port is used exclusively for configuring the EcHo Plus from the Neets Project Designer software. It can't be used to control any external devices.

The front panel USB port is located beneath the front glass and label.

The host USB port can power the control system while configuring, so the included AC power adaptor is not needed when configuring the EcHo Plus. However, connecting the AC power adaptor and USB port at the same time is allowed, for example when changing configuration on an already installed unit.

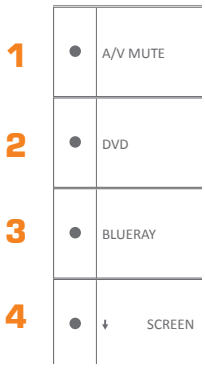
The USB connector for connecting to the EcHo Plus is type "mini USB B 5P". (It is available on the web as a USB A to Mini USB B 5P).



Troubleshooting

Error indication using LEDs

If there is a fault in either the configuration or the EcHo Plus unit, this will be indicated on the front button LED indicators. Button LEDs 1-4 are used to indicate the error; the LED indicators are numbered as shown.



The flashing error descriptions and patterns are described below:

LED shows	Description	Solution
1 Off 2 Off 3 Off 4 Flashing	No connection to one or more NEB units.	o Check that the NEB units used in the project are connected. o Check that the NEB units used in the project are configured correctly. o After doing one of the above, remove the power to the control system for 20 sec before reconnecting the power again.
1 Flashing 2 Flashing 3 Flashing 4 Off	No project found on the control system or unable to start the project	o Try to upload the project again. o Alternatively, there can be a problem in the project you have uploaded. In this case, try uploading an empty project and see if this works.
1 Flashing 2 Flashing 3 Off 4 Off	Unexpected Error	o Turn off the power to the control system for 20 sec before turning the power on again.

LED shows	Description	Solution
1 Off 2 Flashing 3 Flashing 4 Off	No contact to Neets network unit.	o Check to confirm the SN used in the Project Designer matches the one for the Neets unit on your network. o Check LAN connection to the Neets network unit.
1 Off 2 Flashing 3 Flashing 4 Flashing	Firmware upgrade Neets network unit	o One or more of the Neets network units used in the current project needs a firmware upgrade before it will work with this project.
1 Off 2 Off 3 Flashing 4 Off	Error in serial number	o You need to return the unit to Neets or your local dealer for replacement/repair.
1 Flashing 2 Off 3 Off 4 Flashing	Resuming factory default settings	o When pressing Switch 1 and 4 during power on, the system will delete the current settings and resume factory default. This method is only intended to be used if the control system locks up and enters “Unexpected Error”