

# Neets Control – EcHo

EcHo EU P/N: 310-0150  
EcHo DK P/N: 310-0250  
EcHo US P/N: 310-0450

## Quick Guide



# Neets

## What is in the box?

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

<b>EcHo, DK</b> 1 x Neets Control - EcHo 1 x 12V wall plug PSU 1 x Wall plate Terminal connectors 1 x Front cover 1 x Paper cover Quick guide	<b>EcHo, EU</b> 1 x Neets Control - EcHo 1 x 12V wall plug PSU 1 x Wall plate Terminal connectors 1 x Front cover 1 x Paper cover Metal plate 2 x screws for metal plate Quick guide	<b>EcHo, US</b> 1 x Neets Control - EcHo 1 x 12V wall plug PSU 1 x Wall plate Terminal connectors 1 x Front cover 1 x Paper cover 2 x #6-32 screws for mounting in standard US one-gang electrical wall box or mounting bracket ("mud ring") 2 x white headed #6-32 screws for wall plate fixation Quick guide
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## Important Safety Instructions

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

Find the complete user manual on [www.neets.dk](http://www.neets.dk) before installation

## Description

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

EcHo is a perfect choice for the classroom, meeting or conference room and is easy to install. EcHo can control devices through IR or RS232. EcHo is available in polar white and anthracite.

The drawings in the manual of Neets Control - EcHo is based on the DK, US and EU versions.

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

## 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 8 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
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### Product number

310-0150	EcHo EU, white
310-0250	EcHo DK, white
310-0450	EcHo US, white

### Compliance

IEC/EN	61000-6-1
IEC/EN	61000-6-2
FCC	Part 15, Class A
CE	

### 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

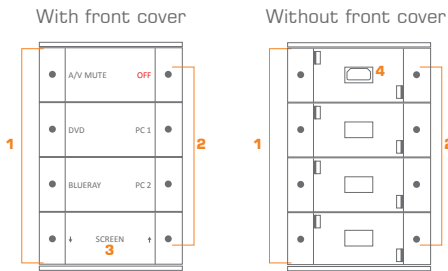
### General

Width, EU	55 mm
Height, EU	55 mm
Depth, EU	17 mm
Width, DK	45 mm
Height, DK	72 mm
Depth, DK	17 mm
Width, US	45 mm
Height, US	105 mm
Depth, US	24 mm
Weight, EU/DK/US	90 g
Shipping weight	0,3 kg
Shipping dimension: (W/D/H)	EU, DK 155x85x55 mm
Shipping dimension: (W/D/H)	US 150x170x55 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

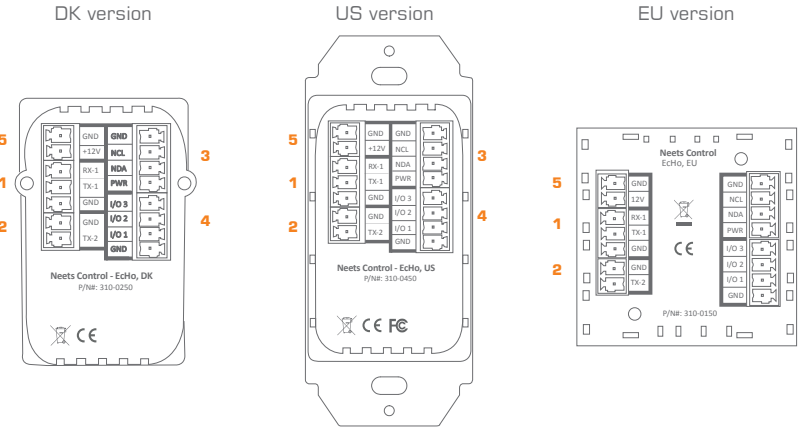
Buttons, indicators and connectors are available on the front and rear panels. These are shown below:

### Front:



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

### 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

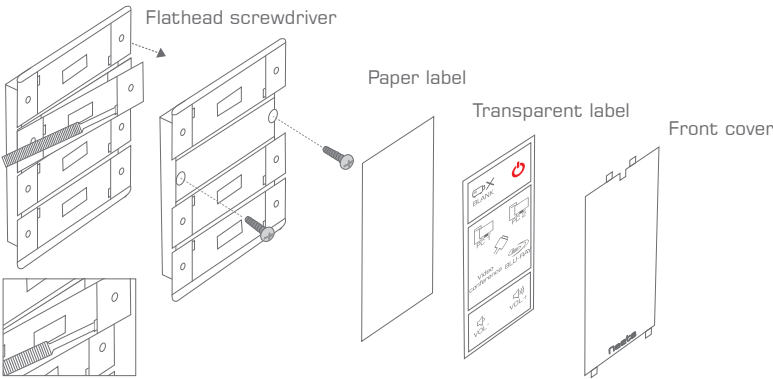
## Installation

The EcHo can be installed in standard electrical back boxes or by using mounting brackets. Each model (DK, US, EU) fits in typical boxes matching specific installation requirements for the country of sale.

- Prepare the installation site by installing the needed back box or brackets. Pull the needed cables through the back box or bracket.
- Mount the supplied connectors to the cables as needed and connect to the control system.
- Mount the control system in the back box or on the bracket:

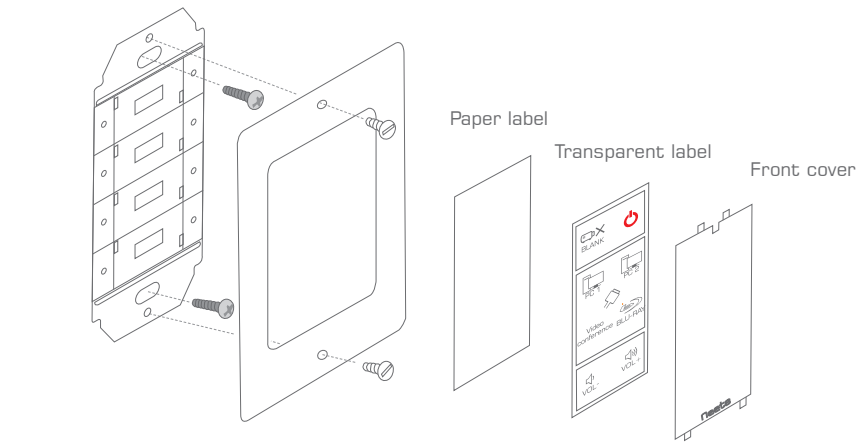
### DK version

- Insert a flathead screwdriver gently and pry out the front cover. Remove the front cover and the paper label behind it.
- Insert a flathead screwdriver into the button. Gently push and pry out the button.
- Insert the control system in a frame matching the back box used.
- Insert screws (not supplied) matching the back box into the two holes. Secure the control system to the back box without overtightening the screws.
- Remount the paper label, insert a printed transparent label showing the button functions, and mount the front cover. Note that the front cover mounts in only one direction.



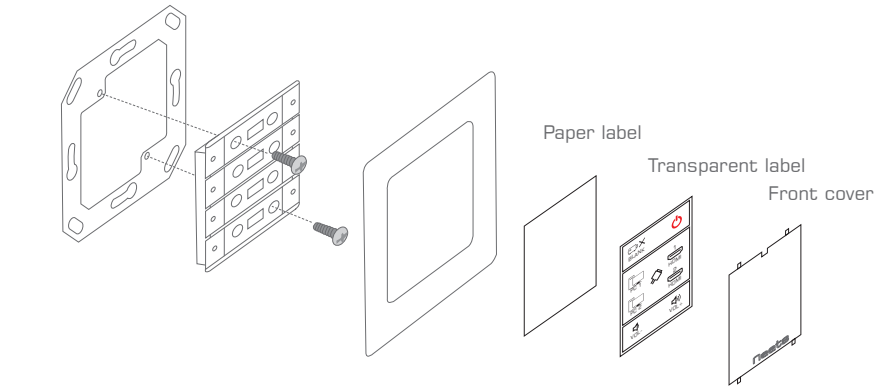
### US version

- Insert screws matching the back box into the two mounting holes. Secure the control system to the back box or bracket without overtightening the screws.
- Mount the frame on the control system with the supplied screws.
- Insert a flathead screwdriver gently and pry out the front cover. Remove the front cover and the paper label behind it.
- Remount the paper label, insert a printed transparent label showing the button functions, and mount the front cover. Note that the front cover mounts in only one direction.



#### EU version

- Insert a flathead screwdriver gently and pry out the front cover. Remove the front cover and the paper label behind it.
- Insert the control system in a frame matching the back box used.
- Insert screws matching the back box or bracket into the two holes. Secure the control system to the back box or bracket without overtightening the screws.
- Remount the paper label, insert a printed transparent label showing the button functions, and mount the front cover. Note that the front cover mounts in only one direction.

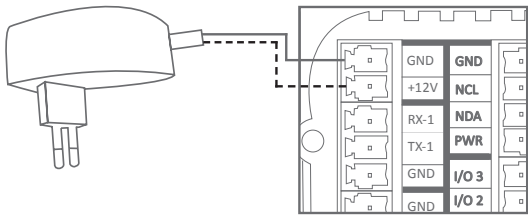


4. Connect and apply power to the control system.
5. Configure the control system using the Neets Project Designer.

## Connections and Controls

#### Power input port

Connect the EcHo to the supplied universal mains AC power adaptor. Using the supplied 2 pole screw block terminal connect white/black wire to 12V and black wire to GND.

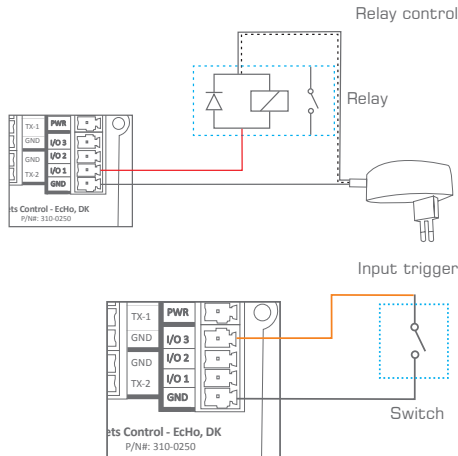


#### I/O ports

EcHo has three I/O (Inputs/Outputs) available that can be configured as either output or input. The ports are not potential free; you may need external relays to prevent ground loops depending on your application.

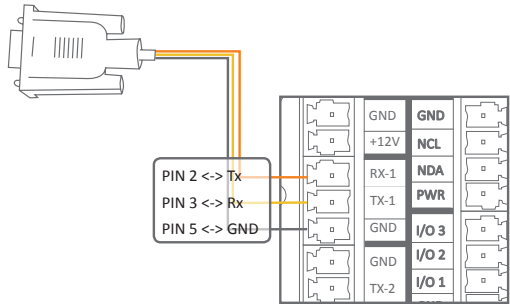
When used as outputs, the I/O ports are active low. When activated, the I/O ports are tied to GND through a FET transistor, called open drain/collector function.

When used as inputs the inputs are default HIGH and must be connected to ground in order to change state to LOW.



#### RS-232 port

The RS-232 port is used for one- or two-way communication. A two way port is used for devices where reply commands is used. Connect the EcHo as shown here.



#### RS-232/IR port

The RS-232/IR port is used for either 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.

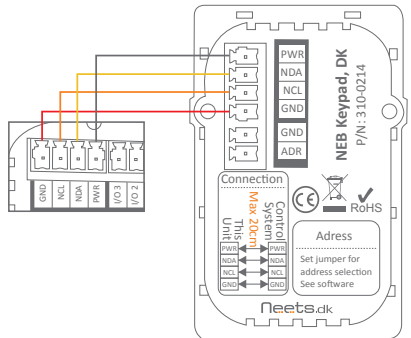
Connect the port as shown below.

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 (striped wire) and GND, as shown above.	When used as dual IR port: Connect the IR 1 emitter to TX-2 (striped wire) and black wire on IR 1 emitter to IR 2 emitter (striped wire), and black wire from IR 2 emitter to GND, as shown above. Use Neets IR-Emitter.

#### NEB port

The EcHo has a built-in NEB (Neets Extension Bus) which can be used to add 2 NEB devices.

Connect your NEB devices as shown to this port with a cable not exceeding 20 cm of length. Use NEB extenders if distances above 20 cm between the units is needed. See the Neets website for details on the NEB Extender.

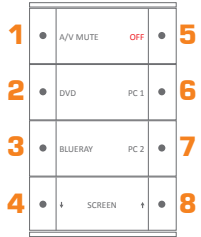


#### Buttons

The eight front panel buttons are accessed by the end user to control the AV system in which EcHo 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.

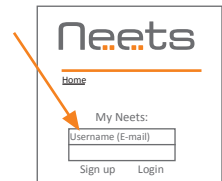


#### Configuration through USB port

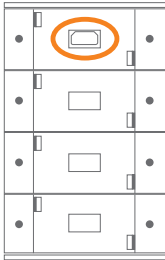
The USB port is used exclusively for configuring the EcHo from the Neets Project Designer software. It can't be used to control any external devices. You can find the Neets Project Designer software on [www.neets.dk](http://www.neets.dk) - you have to sign up to get access to the software.

The front panel USB port is located beneath the front cover 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. 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 is type "mini USB B 5P". (It is available on the web as a USB A to Mini USB B 5P).



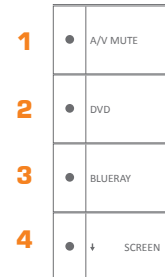
Neets website - sign up



## Troubleshooting

#### Error indication using LEDs

If there is a fault in either the configuration or the EcHo 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.	○ Check that the NEB units used in the project are connected. ○ Check that the NEB units used in the project are configured correctly. ○ 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.	○ Try to upload the project again. ○ 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.	○ Turn off the power to the control system for 20 sec before turning the power on again.
1 ○ Off 2 ○ Off 3 ✖ Flashing 4 ○ Off	Error in serial number.	○ 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	○ 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"