# Hoist Controller for Low Voltage Hoist

## Instruction Manual

Models:

## AHD12-LV-SCT

version 1.1 since 3 February 2020

**ATTENTION!**

This instruction manual contains important information about the installation and the use of the equipment. Please read and follow these instructions carefully.

Always ensure that the power to the equipment is disconnected before opening the equipment or commencing any maintenance work.

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# Safety information

## *IMPORTANT INSTRUCTIONS*

All safety and operating instructions should be read before the equipment is installed or operated.

## *IMPORTANT SAFETY INFORMATION*

The following general safety precautions have to be observed during all phases of operation, service, and the repair of this equipment. Failure to comply with these precautions or with specific warnings in this manual violates safety standards of design, manufacture, and the intended use of this equipment.

## *Do not operate in an explosive atmosphere!*

Do not operate this equipment in the presence of flammable gases or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

## *Water, moisture, heat and humidity*

Do not operate this equipment near water or in areas with wet floors or in high humidity atmosphere where condensation forms on the equipment. It should never be placed near or over a heat register or other source of heated air and it should not be installed or operated without proper ventilation.

# Functions and Control

AHD12-LV-SCT was designed to control up to 12 electrically compatible low voltage controlled hoists, either separately or simultaneously – controlled via switches located on front panel or cable remote/pendant. Optionally you can link GO/STOP button by link connector.

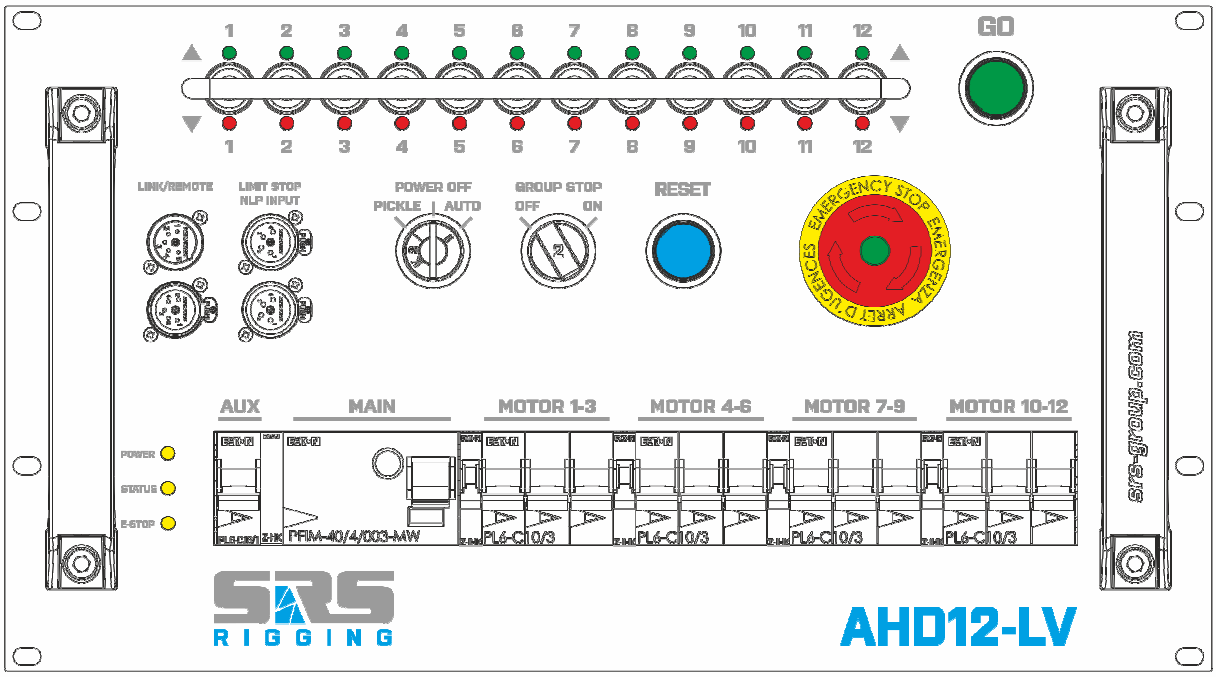
The device is equipped with unique APA (Automatic Phase Align) module, which guarantees that the motors are still moving in the same direction on any align of input phases. If any line wire is disconnected, the hoist controller stops to ensure safe operation. Another feature of GMC-DV is the AVM (Automatic Voltage Metering) module. This module checks main voltage for AC 400V +-20%, star configuration and protects the hoists in case of problem with main voltage. Unit will not go into the safe function if:

- one phase is missing
- there is under voltage on lines
- there is overvoltage on lines

All electrical components carry their own individual cSA/UL, CE and comply with European Directives. The components are housed in robust steel 19" rack casing with powder coating. Complete unit complies with the CE according the Certification of conformity.

# AHD12-LV-SCT

## AHD12-LV-SCT front panel




## HOIST protection:

AHD12-LV-SCT: Each two hoists are protected by single C10/3p MCB

## RESET:

RESET button for SIL3 E-STOP relay reset.

## POWER switch positions:

- OFF: Power OFF
- PICKLE: Power to the hoist is enabled permanently
- AUTO: Power and Control signal to the hoist are enabled ONLY when GO command is received

## GROUP STOP switch positions:

- OFF: Trip of any breaker or mains GFI will not cause E-STOP.
- ON: Trip of any breaker or mains GFI will cause E-STOP of unit. This E-STOP is transferred also to the linked devices.

## E-STOP:

E-STOP is a red color mushroom. Once the E-STOP button has been pressed, it locks the unit into active position and must be rotated clockwise and released before disengaging. After engaging the E-stop button, the RESET procedure needs to be pressed when auto-reset is disabled or unit is used in standalone mode. When AUTO reset is enabled, the MASTER controller or remote sends the RESET command remotely.

## GO:

This green pushbutton turns the selected channels of Hoist Control system ON when is active. Once the GO button has been depressed, the power and control signals of the hoists is turned OFF.

## DIRECTION SWITCHES:

They allow changing the direction of movement for each motor/hoist separately or in groups. LED close to the switch indicates the movement direction.

They are also used for the IDENTIFY command. After identify command has been received, the LEDs on UP/DOWN directions are blinking to identify controller in network.

## LIMIT STOP input:

LIMIT STOP connectors for external E-STOP from NLP device or another stop source. Short circuit on pair 1+2 or 3+4 will stop controller. Please follow RESET procedure to resolve limit STOP.

## REMOTE/LINK:

Link input for linking of AHD units. For linking, you will need a 5-pin DMX data cable. Only first three pins 1,2,3 are used on cable.

## POWER LED indication:

- OFF: Power OFF
- GREEN: Power OK
- YELLOW: Power OK, PICKLE mode enabled
- RED: Power failure, please check mains

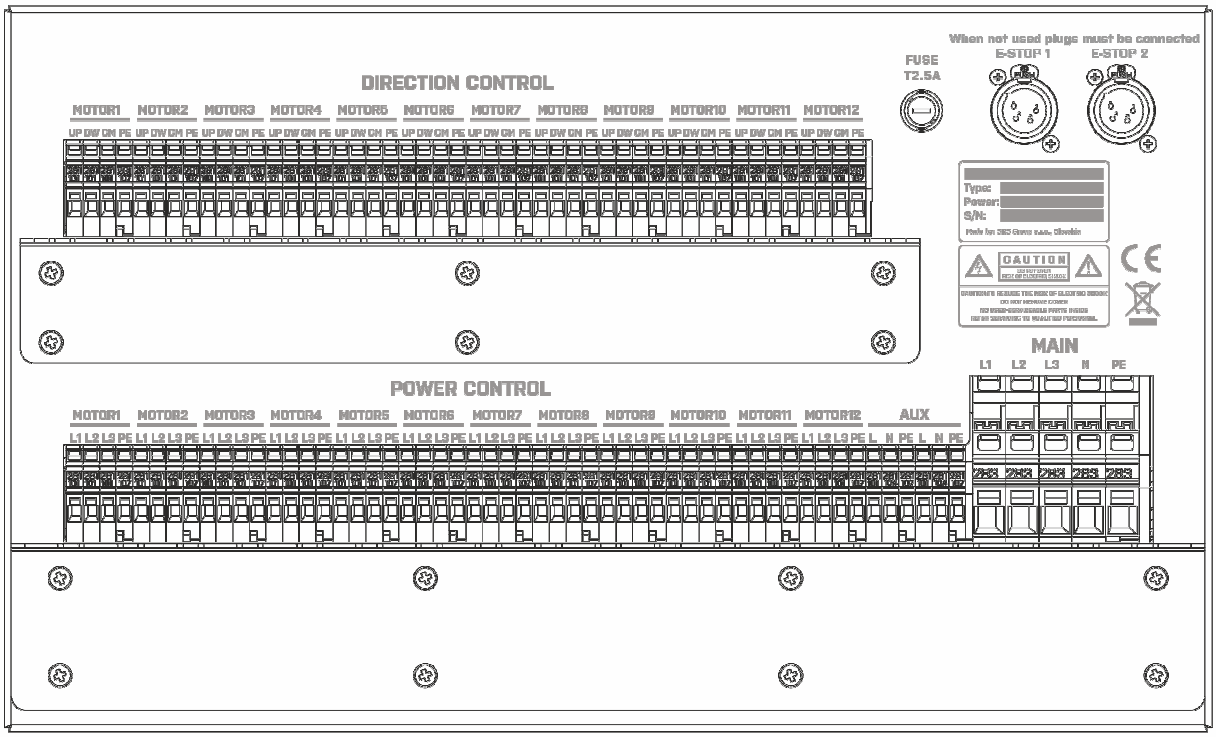
## STATUS LED indication:

- GREEN: READY to work in auto mode
- RED: GO is activated
- YELLOW: Direction switch is changing status

## E-STOP LED indication:

- GREEN: Unit after reset, READY TO WORK
- YELLOW: Unit is waiting for RESET or linked unit is waiting for RESET
- RED steady: GROUP STOP or remote GROUP STOP is activated
- RED blinking: E-STOP from another linked device is activated
- RED double blink: LOCAL E-STOP is activated /mushroom pressed/

## AHD12-LV-SCT CEE rear panel




## MAINS:

Mains input on screw terminal.

## OUTPUTS:

Screw terminal for power control and AUX.

## MOTOR1:

CEE16/4p output connected in parallel to the power of MOTOR1, usually used in PICKLE mode to rewind the chain of the chain hoist.

## FUSE:

Fuse used for mains transformer T2.5A.

## AUX:

AUX output for additional AC230 powered devices. CEE16/3P and NAC3FPX panel mount. AUX is protected by C16/1p breaker wired behind MAIN GFI.

# Operation

The Motor/hoists connected with the AHD12-LV-SCT controller, can be activated individually or simultaneously using the GO switch located on the front panel or CABLE remote. Units can be optionally linked together to create bigger systems. Maximum of 16 units per link is allowed. This offer control up to 192 channels in per-channel mode or group mode.

## How to start to use system

- Connect the CEE63/5p plug to the AC400V +-20% power supply – turn the key to ON position. When the main is OK, the power LED is lit in green, otherwise the LED is in RED. In that case, please check phase voltages, frequency and presence of all phases.

- Connect the plugs for the electric hoists to the output sockets.

- Check that the E-STOP mushroom is not engaged on device or any other linked device in system.

## How to RESET system

- Turn ON the unit via KEY to AUTO or PICKLE position
- RESET button with blue backlight should be ON, if not contact us.
- Make cycle so press and release E-STOP
- Press the BLUE reset button. After press, it'll be turned off.
- GO button should start to blink which indicates that controller is ready for work.

Move lever on front panel or emote corresponding to each motor, to the position required:

  - UP - Lever in upper position
  - STAY – Lever in middle position
  - DOWN - Lever in lower position

- Pushing the GO button will activate the motors to move simultaneously
- Releasing the GO button will stop the movement of the motors simultaneously.
- When is device not used is highly recommended to turn it OFF by key located on front panel.

## To Move a Single/Several hoist:

- Set the UP/DOWN toggle switch for that motor to the desired direction. The associated LED should light Green for UP, or Red for DOWN direction

- Hold the GO button and hoist are moving to the desired height until you hold the button. On final position release GO button

# Remote/link connector

**Neutrik NC5-MAH/FAH**

Connectors are used for a link operation of the unit or for an additional digital remote connection. Up to 30 units can be linked. They are then controlled via one GO and E-STOP button in the local operation mode.

| Pin | Function | note |
|---|---|---|
| 1 | **Data CMN** | *Data Common* |
| 2 | **Data -** | *Data Minus* |
| 3 | **Data+** | *Data Plus* |
| 4 | **DC1** | *Power supply for CMC DC12-36V* |
| 5 | **DC2** | *Power supply for CMC DC12-36V* |

# LIMIT STOP connector

**Neutrik NC4-FAH**

| Pin | Function | note |
|---|---|---|
| 1 | **DC24-36V** | Connected to 3 |
| 2 | **Active 1** | Active line 1 |
| 3 | **DC24-36V** | Connected to 1 |
| 4 | **Active2** | Active line 2 |

Both safety lines are separate and NO /normally open/. If you need an NC contact, we can set it up via USB programming tool. Contact us at sales@srs-group.com.

For loadcell STOP activation, make short circuit of at least single pair of contacts. For reset of the loadcell STOP function, please follow the RESET procedure.

# Technical data

## Mains connection:

- Mains input AC400V +-20% 50/60Hz
- Mains Plug: CEE32A/5p or CEE63A/5p according to model

## Protections and Safety:

- Short circuit protection for group of three hoist by automatic circuit breakers C10
- Mains leakage current protection 80A 30mA
- APA – Automatic Phase Align
- AVM – Automatic voltage metering
- ADR – Automatic digital reset
- Double mechanical blocking contactors
- Double - Recessed E-STOP with SIL3 certification

## Metal Housing:

- Compact 6U size
- 3mm Steel front panel
- 400mm Deep metal body
- 1.5mm Steel housing with gray powder coating

# Warranty

AHD12-LV-SCT hoist controller comes with a 2-year manufacturer's warranty. For extended warranty conditions, please contact the manufacturer at sales@srs-group.com.

The warranty covers the original factory installed components of the controller and their correct functioning.

The warranty voids if:

- any part or replacement components is installed or modified without authorization from the manufacturer and/or the internal circuit is tampered or modified, and/or the controller is operated outside normal use conditions
- electrical power supply does not conform or there is a connection error or mechanical damage of the controller, including overload and improper use.

The manufacturer always helps you to repair your unit.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