Hoist Controller for Low Voltage Hoist

Instruction Manual

Models:

AHD4-LV-CEE-HL

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.

945003 AHD4-LV-CEE-HL_M309

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 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, also not in high humidity atmosphere where condensation forms on the equipment. It should never be placed near or over heat register or other source of heated air and it should not be installed or operated without proper ventilation.

Functions and Control

AHD4-LV-CEE-HLhas been designed to control from 1 to 4 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.

Each device is equipped with unique APA module / Automatic Phase Align / which guarantees that on any align of input phases the motors are still moving in the same direction. If any line wire will be disconnected the hoist controller stops and ensure safe operation. Unit is also equipped with AVM module / Automatic voltage metering /. This module checks main voltage for AC400V +-20%, star configuration and if there is any problem with main voltage you're notified and unit will not run any hoist.

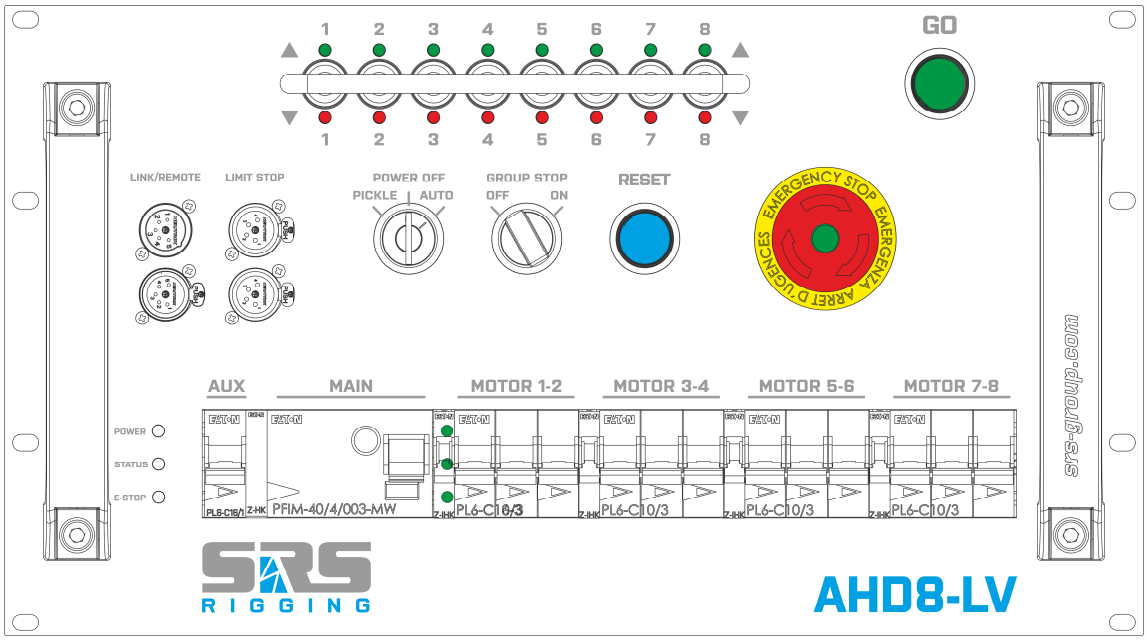
Unit will not work when:

- One phase is missing
- Under voltage on mains
- Overvoltage on mains

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 attached to this manual.

AHD4-LV-CEE-HL

AHD4-LV-CEE-HLfront panel



HOIST protection:

AHD4-LV-CEE-HL: Each two hoists are protected by single C10/3p MCB

POWER switch positions:

- OFF: Power off
- PICKLE: Power to the hoist is enabled permanently
- AUTO: Power to the hoist is enabled ONLY when GO command is received

GROUP STOP switch positions:

- OFF: Trip of any breaker or mains GFI breaker 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.

RESET:

RESET button for SIL3 E-STOP relay reset.

E-STOP:

E-Stop is red color mushroom. Once the E-STOP button has been pressed, it locks into the active position and must be rotated clockwise and released before disengaging. After engaging the E-stop button the RESET procedure need to follow.

GO:

This green pushbutton turns the selected channels of Hoist Control system ON when is active. Once the GO button has been depressed, the energizing 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.

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 link of the units you'll need standard 5pin DMX data cable. Only first three pins 1,2,3 are used on cable.

Due different software platform and encoding the AHD units are not compatible with GMC, GMD units. For more details contact us at sales@srs-group.com

POWER LED indication:

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

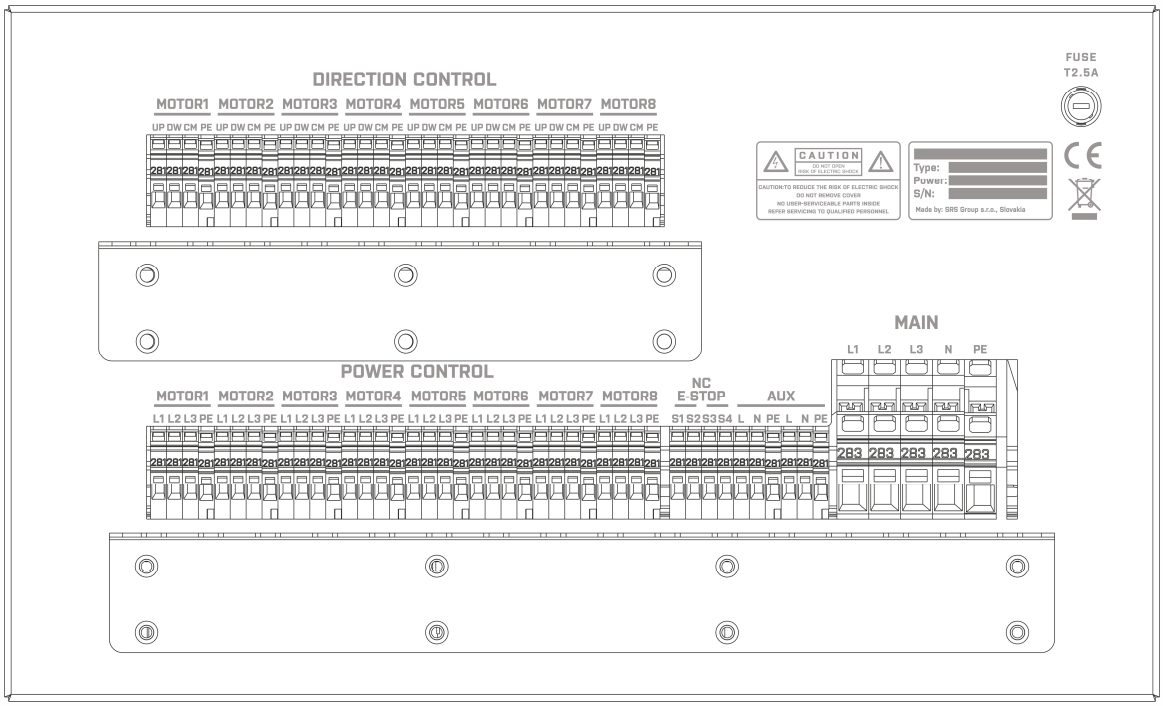
STATUS LED indication:

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

E-STOP LED indication:

- YELLOW: Unit is waiting for RESET or linked unit is waiting for RESET
- GREEN: Unit after reset, READY TO WORK
- 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/

AHD4-LV-CEE-HL rear panel



MAINS:

Mains input CEE63/5p on 1.5m cable, cable is not displayed on preview

OUTPUTS:

Socapex19 female hoist controller outputs. Check wiring diagram for more details

NC E-STOP:

Two independed wires for the SIL3 E-STOP. For correct operation, S1+S2 must be connected together and isolated from S3+S4 that are also connected together. All external E-STOP wires must be connected in series with NC contacts.

FUSE:

Fuse used for mains transformer T2.5A.

AUX:

AUX output for additional AC230 powered devices. German Schuko socket and AC3FCB panel mount. AUX is protected by C16/1p breaker on front panel.

Operation

The Motor/hoists connected with the AHD4-LV-CEE-HL 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. In linked mode the controllers will have setup they address via USB tool. Consult with sales@srs-group.com the details about it.

How to start to use system

- Connect the MAINS terminals to the AC400V +-20% power supply – turn the key to ON position.
- Connect the plugs for the electric hoists to the output spring terminals
- Check that the E-STOP mushroom is not engaged on device or any other linked device in system.
- When the main is OK and key is in AUTO position, there will be power LED lit in green, otherwise the LED is set RED. In that case please check phase voltages, frequency and presence of all phases.

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 units or for an additional digital remote.
Via this connector several units can be linked for synchronized operation and controlled via one GO and E-STOP button.

Neutrik NC5-MAH/FAH

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 working independently as NO /normally open/ inputs. If you need a NC contact these we can setup 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 screw terminals: up to 35mm2
- Output scrww terminals: up to 4mm2

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
- 1.5mm Steel housing with gray powder coating

Warranty

AHD8-LV-SCT hoist controller is sold with 2-year manufacturer's warranty. To have extended warranty conditions please contact manufacturer at sales@srs-group.com

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

Warranty void 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 is not conforming or there is connection error or mechanical damage of controller, including overload, improper use.

DECLARATION OF CONFORMITY

According to the specification of Machinery Directive 2006/42/CE, Annex II A:

Name of producer:	SRS Group s.r.o.
Address of producer:	Rybničná 36/D 821 07 Bratislava Slovakia

Declares that the product

Name of product:	**AHD4-LV-CEE-HL**
Type:	**945003**
Year of construction:	**2017**

Corresponds with the following harmonized standards:

Safety:	EN 60065 EN 60950 EN 60204-1 EN 13850 EN 12100-2
EMC:	EN55103-1, resp. EN55103-2

And is in compliance with following requirements:

Machinery directive:	2006/42/CE
Low Voltage directive:	2014/35/CE
Electromagnetic compatibility directive:	2014/30/CE

SRS GROUP
SRS Group s.r.o.
Rybničná 36/D
831 07 Bratislava
Slovak Republic
SK2022726629
IČO: 44520433
DIČ: 2022726629

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SRS Group s.r.o.

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SRS Group s.r.o.
Rybnicna 38/B | 831 07 Bratislava | Slovakia
Phone: +421 2 32 661 800 | Fax: +421 2 4468 1419
Email: sales@srs-group.com | www.srs-group.com