



Hoist Controller for Low Voltage Hoist

Instruction Manual

Models:

AHD12-LV-3H16

AHD12-LV-3H16-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.

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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, 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-3H16 is designed to control up to 12 electrically compatible hoists controlled by low voltage, either separately or simultaneously – controlled via switches located on the front panel or cable remote/pendant. Optionally GO/STOP button can be linked by a link connector.

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

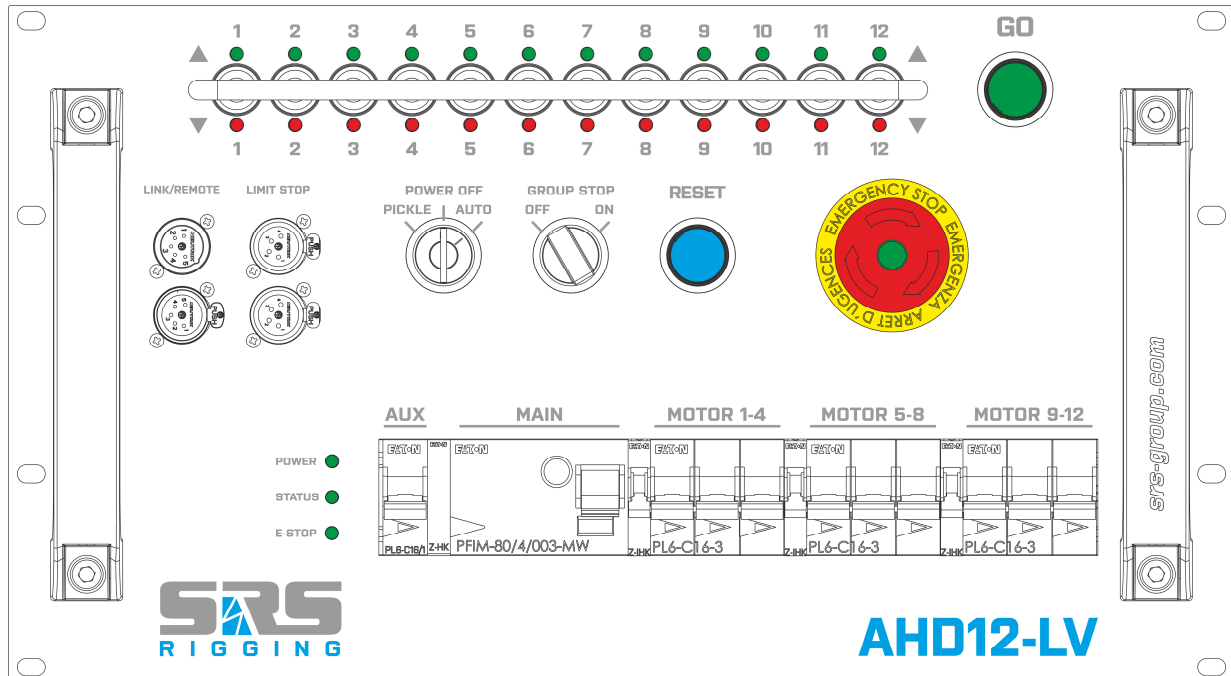
Unit will not work when:

- One phase is missing
- There is under-voltage on mains
- There is over-voltage on mains

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

AHD12-LV-3H16

AHD12-LV-3H16 front panel



HOIST protection:

AHD12-LV-3H16: Every four hoists are protected by a single C16/3p 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 the unit.
This E-STOP is transferred also to all linked devices.

RESET:

RESET button for SIL3 E-STOP relay reset.

E-STOP:

E-STOP is a red color mushroom. Once the E-STOP button is pressed, the unit is locked into an active position and must be rotated clockwise and released before disengaging. After engaging the E-STOP button, the RESET procedure must be completed.

GO:

This green pushbutton turns the selected channels of Hoist Control system ON when 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 direction of movement.

LIMIT STOP input:

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

REMOTE/LINK:

Link input is used for linking of AHD units. To link the units, standard 5-pin DMX data cable is needed. Only first three pins /1,2,3/ are used on the cable.

Due to different software platform and encoding, the AHD units are not compatible with GMC or 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

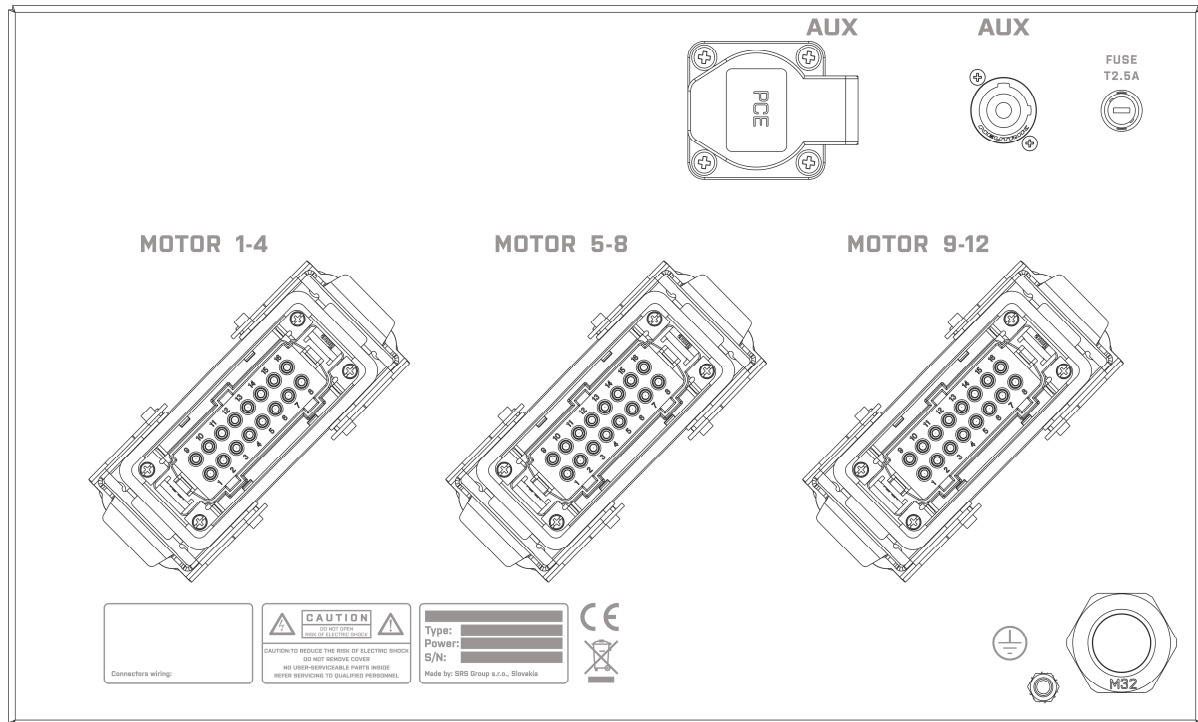
STATUS LED indication:

- 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/

AHD12-LV-3H16 CEE back panel



MAINS:

Mains input CEE32/5p or CEE63/5p on 1.5m cable, cable is not displayed in the preview

OUTPUTS:

Harting 16 female hoist controller outputs. Check wiring diagram for more details

FUSE:

Fuse used for mains transformer T2.5A.

AUX:

AUX output for additional AC230 powered devices. German Schuko socket and NAC3FCB panel mount. AUX is protected by C16/1p breaker on the front panel.

Operation

The Motor/hoists connected to the AHD12-LV-3H16 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.

How to start to use system

- Connect the CEE32/5p or CEE63/5p plug to the AC400V +20% power supply – turn the key to the ON position. When the main is OK, power LED will light green, otherwise the LED is 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 the device or any other linked device in system.

How to RESET system

- Turn ON the unit using a KEY to AUTO or PICKLE position
- RESET button with blue backlight should be ON, if not, please contact us.
- Make cycle to press and release the E-STOP
- Press the BLUE reset button. After the press, the light will go out.
- GO button should start to blink. This indicates that the controller is ready for work.

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

- 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, it is highly recommended to turn it OFF using the key located on the front panel.

To Move a Single/Several hoists:

- Set the UP/DOWN toggle switch for the desired motor to the desired direction. The associated LED will light green for UP or red for DOWN direction.
- Hold the GO button until the hoists come to the desired height, then release.

Hoist controller outputs

944132 Harting 16 female output

Harting16 pin	Signal
1	UP M1
2	COM M1
3	DOWN M1
4	UP M2
5	COM M2
6	DOWN M2
7	L1 M1-M4
8	L2 M1-M4
9	UP M3
10	COM M3
11	DOWN M3
12	UP M4
13	COM M4
14	DOWN M4
15	L3 M1-M4
16	NC/ NOT USED
Body	EARTH

Remote/link connector

Neutrik NC5-MAH/FAH

Connectors are used for a link operation of units or for an additional digital remote. Using this connector, several units can be linked for synchronized operation and control using one GO and E-STOP button.

Neutrik NC5-MAH/FAH

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



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 work independently as NO /normally open/ inputs. If an NC is required, please contact us at sales@srs-group.com since we can set it up using a USB programming tool.

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

Technical data

Mains connection:

- Mains input AC400V +-20% 50/60Hz
- Mains Plug:
 - AHD12-LV-3H16 CEE32A/5p
 - AHD12-LV-3H16-HL CEE63A/5p

Protections and Safety:

- Short circuit protection for group of four hoist by automatic circuit breakers C16
- 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

AHD12-LV-3H16 hoist controller is covered by a 2-year manufacturer's warranty. For extended warranty conditions, please contact the manufacturer at sales@srs-group.com.

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

The warranty voids if any part or replacement component 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 of normal using conditions – electrical power supply is not conform or there is connection error or mechanical damage of controller, including overload and improper use.

The manufacturer always helps with the repair of each unit.



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: Rybníčná 36/D
821 07 Bratislava
Slovakia

Declares that the product

Name of product: **AHD12-LV-3H16**
Type: **945019**
Year of construction: 2017

Name of product: **AHD12-LV-3H16-HL**
Type: **945029**
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

Bratislava, 29.3.2018


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