



# Hoist Controller for Direct Voltage Hoist

## Instruction Manual

Models:

# AHD12-WDV-3H16F

version 1.1 since 17 December 2021

### **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.

# 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, also not 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

AHD-WDV-3H16F was designed to control up to 8 or 12 (depending on the model) electrically compatible direct voltage hoists, either separately or simultaneously – controlled via switches located on the front panel or cable remote/pendant. Optionally, you can link GO/STOP button by a link connector.

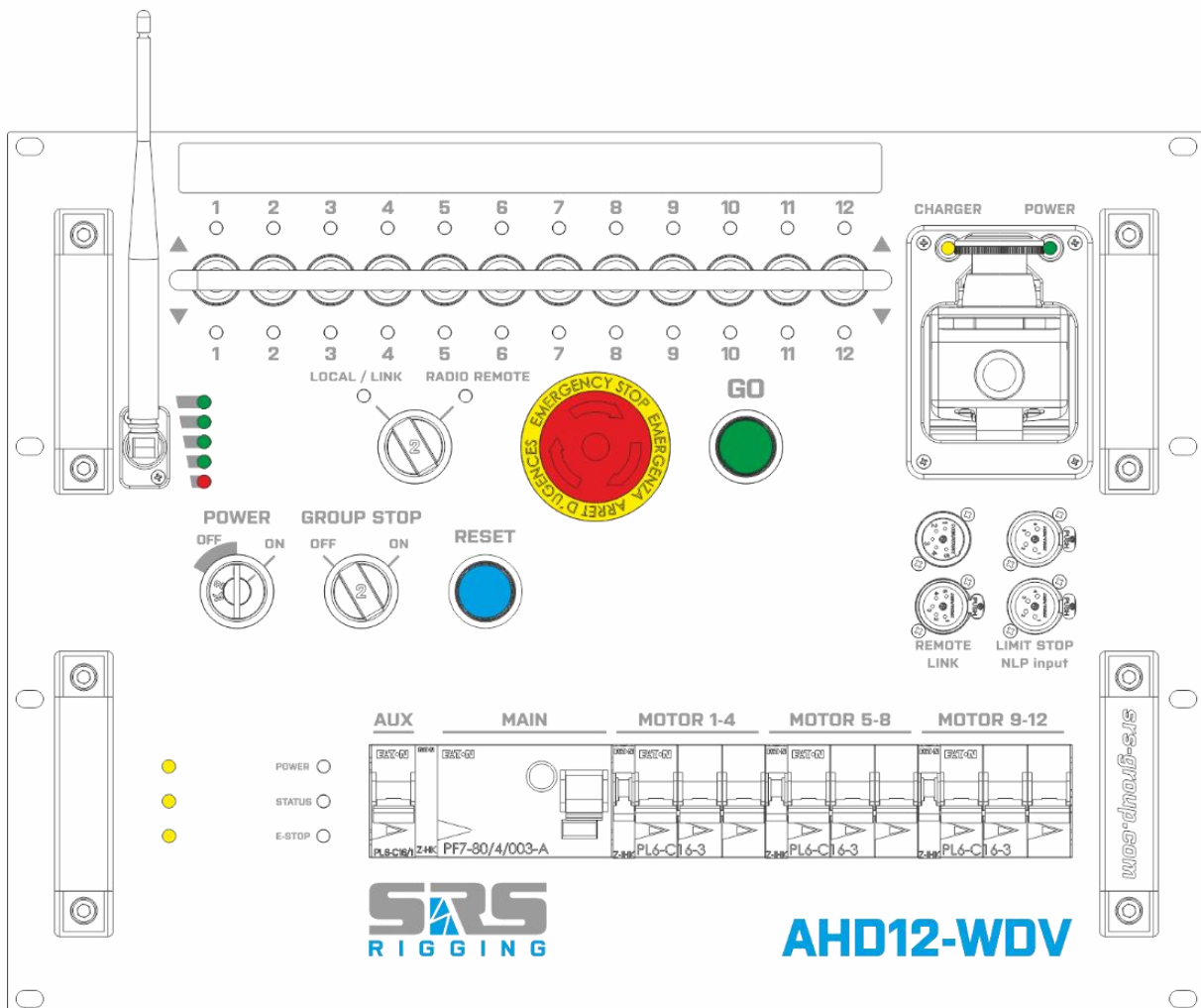
Each device is equipped with unique APA /Automatic Phase Align/ module that guarantees that on any alignment of input phases the motors will move in the correct direction. If any line wire is disconnected, the hoist controller stops to ensure safe operation. Unit is also equipped with AVM /Automatic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

Unit will not work when:

- One phase is missing
- Under-voltage is present on lines
- Over-voltage is present 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 to the Certification of conformity attached to this manual.

## AHD12-WDV-3H16F front panel



### HOIST protection:

AHD12-WDV-3H16F: Each four hoists are protected by single C10/3p MCB

### POWER switch positions:

- OFF: Power OFF
- 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 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 button needs to be pressed to reset the system.

## GO:

This pushbutton switch turns the selected channels of Hoist Control system ON, when the unit is active. Once the GO button has been pressed, the energizing of the hoists is ON.

## 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 the 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.

**Due to 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](mailto: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

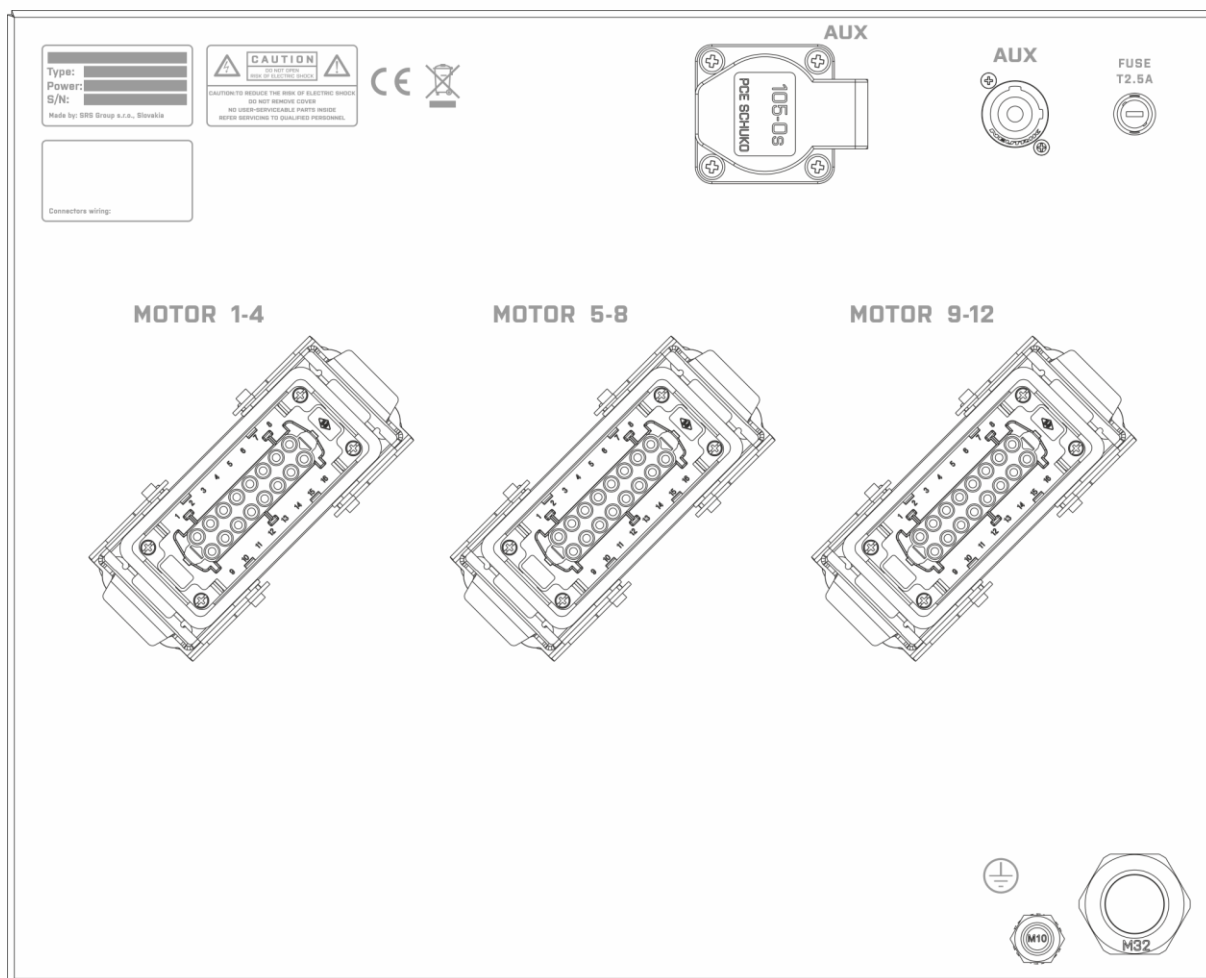
## STATUS LED indication:

- 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-WDV-3SX19F rear panel



### **MAINS:**

AHD12-WDV-3H16F Mains input CEE32/5p on 1.5m cable, cable is not displayed on preview.

### **OUTPUTS:**

Socapex19 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 AC3FCB panel mount. AUX is protected by C16/1p breaker on the front panel.

# Operation

The Motor/hoists connected with the AHD-WDV-H16F 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 power plug to the AC400V +20% power supply – turn the key to ON position. When the main is OK 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.
- 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 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.

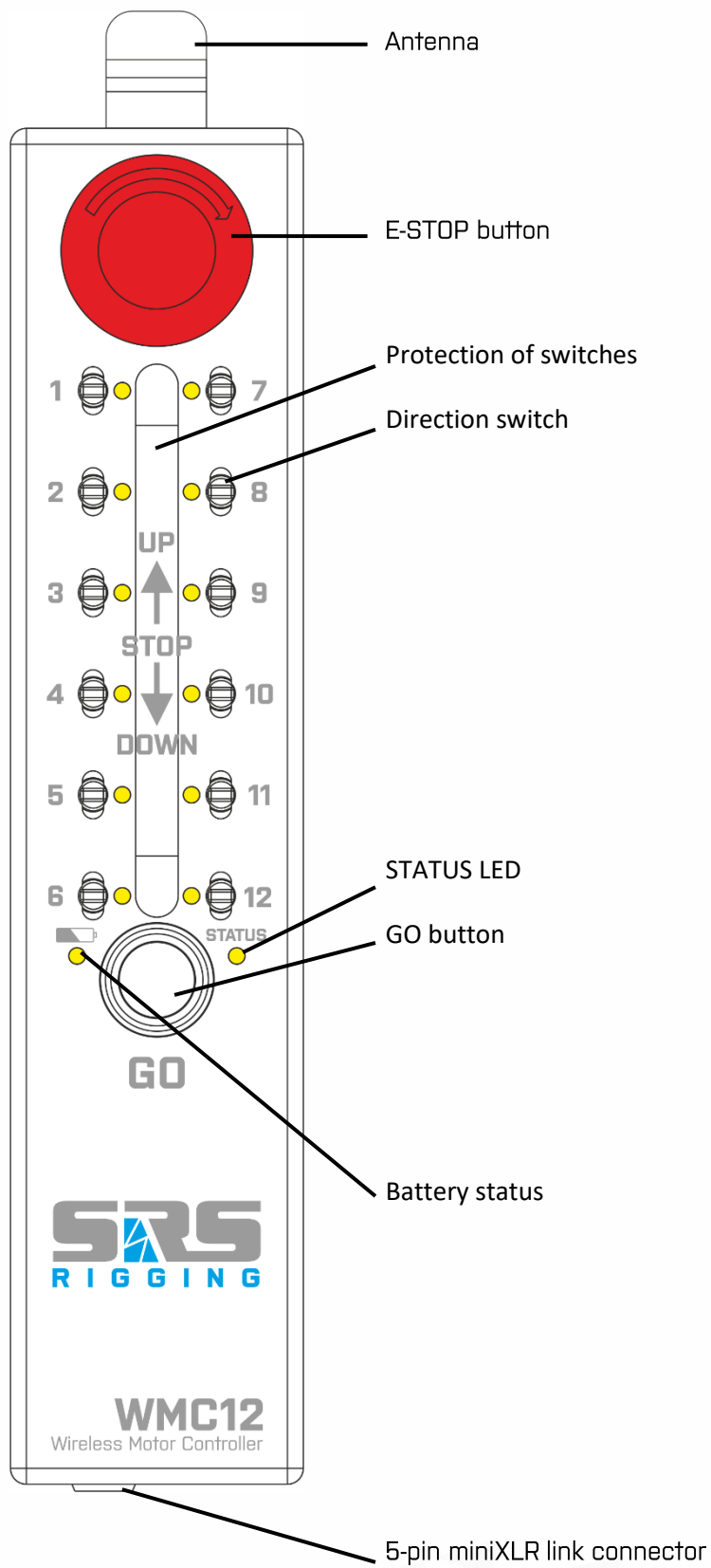
Move lever on front panel or remote corresponding to each motor, to the position required:

- 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:

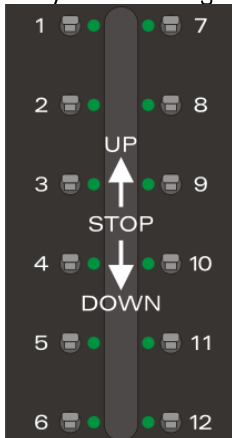
- Set the UP/DOWN toggle switch for that motor to the desired direction. The associated LED should light Green for UP, or Red for DOWN direction
- Hold the GO button and hoist are moving to the desired height until you hold the button. On final position release GO button

## Wireless remote:



## Direction switches:

They allow changing the direction of the movement for each motor/hoist separately:



## BATTERY STATUS LED:



Battery status LED indicator.

- Green :100-90%
- Orange :90-10%
- Red :10%
- Red + beep :5%

## REMOTE STATUS LED:



Status LED indicator of the WMC remote unit.

- Green : Power ON
- Green blinking : Power ON – SLEEP - move the direction switch or press GO button to resume from sleep. The unit goes into this status after 3 minutes of inactivity.
- Orange : Indicates the direction switch activity.
- Red : GO button is pressed – remote is sending commands to the base unit.

## Remote battery saving:

- When not in use, turn OFF the remote controller by a press of the STOP button to save the battery.

## Linking of WMC wireless remotes:

Maximum of two WMC wireless remotes can be linked together to achieve group operation of STOP and GO buttons. To link WMC wireless remotes, 5-pin miniXLR cable with special wire connection is needed. You can purchase the cable directly from the manufacturer. Never use cable in ratio 1:1 – the remotes can be destroyed.

When WMC wireless remotes are linked, the GO and STOP buttons are linked – so the press of any STOP and GO button will cause an action on both linked devices.



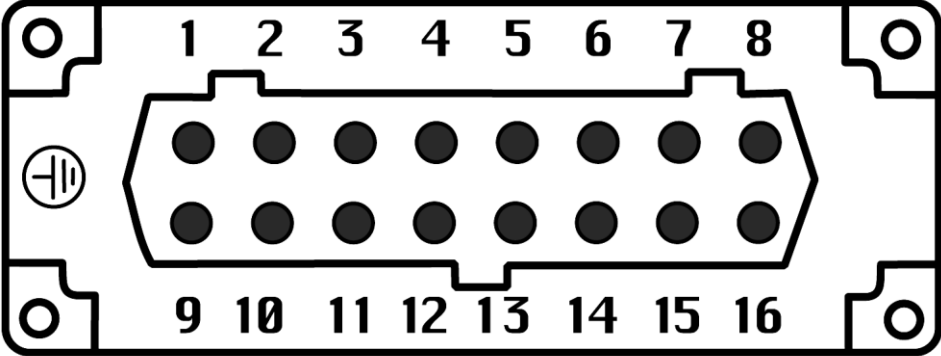
## Operation:

Set the UP/DOWN toggle switch for each motor to the desired direction. The associated LED will light green for UP and red for DOWN direction.

Hold the GO button to activate the hoists' movement until it reaches the desired height and release.

# Hoist controller outputs

## 944113 Harting 16 pin, SRS standard wiring

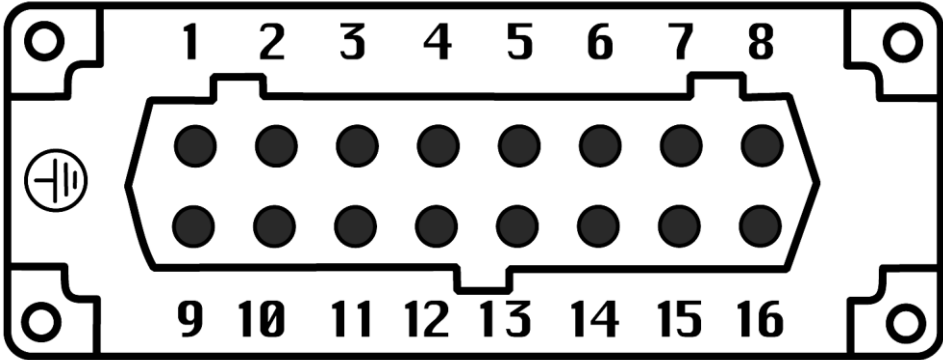


Motor 1-4	
Pin	Wire
1	L1 Motor 1
2	L2 Motor 1
3	L3 Motor 1
4	L1 Motor 2
5	L2 Motor 2
6	L3 Motor 2
7	L1 Motor 3
8	L2 Motor 3
9	L3 Motor 3
10	L1 Motor 4
11	L2 Motor 4
12	L3 Motor 4
13	GND
14	GND
15	GND
16	GND
GND	GND

Motor 5-8	
Pin	Wire
1	L1 Motor 5
2	L2 Motor 5
3	L3 Motor 5
4	L1 Motor 6
5	L2 Motor 6
6	L3 Motor 6
7	L1 Motor 7
8	L2 Motor 7
9	L3 Motor 7
10	L1 Motor 8
11	L2 Motor 8
12	L3 Motor 8
13	GND
14	GND
15	GND
16	GND
GND	GND

Motor 9-12	
Pin	Wire
1	L1 Motor 9
2	L2 Motor 9
3	L3 Motor 9
4	L1 Motor 10
5	L2 Motor 10
6	L3 Motor 10
7	L1 Motor 11
8	L2 Motor 11
9	L3 Motor 11
10	L1 Motor 12
11	L2 Motor 12
12	L3 Motor 12
13	GND
14	GND
15	GND
16	GND
GND	GND

# 944062 Harting 16 pin, PROLYTE wiring



Motor 1-4	
Pin	Wire
1	L1 Motor 1
2	L2 Motor 1
3	L3 Motor 1
4	GND
5	L1 Motor 2
6	L2 Motor 2
7	L3 Motor 2
8	GND
9	L1 Motor 3
10	L2 Motor 3
11	L3 Motor 3
12	GND
13	L1 Motor 4
14	L2 Motor 4
15	L3 Motor 4
16	GND

Motor 5-8	
Pin	Wire
1	L1 Motor 5
2	L2 Motor 5
3	L3 Motor 5
4	GND
5	L1 Motor 6
6	L2 Motor 6
7	L3 Motor 6
8	GND
9	L1 Motor 7
10	L2 Motor 7
11	L3 Motor 7
12	GND
13	L1 Motor 8
14	L2 Motor 8
15	L3 Motor 8
16	GND

Motor 9-12	
Pin	Wire
1	L1 Motor 9
2	L2 Motor 9
3	L3 Motor 9
4	GND
5	L1 Motor 10
6	L2 Motor 10
7	L3 Motor 10
8	GND
9	L1 Motor 11
10	L2 Motor 11
11	L3 Motor 11
12	GND
13	L1 Motor 12
14	L2 Motor 12
15	L3 Motor 12
16	GND

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



## LIMIT STOP connector

### Neutrik NC4-FAH

Pin	Function	note
1	<b>DC24-36V</b>	Connected to 3
2	<b>Active 1</b>	Active line 1
3	<b>DC24-36V</b>	Connected to 1
4	<b>Active2</b>	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](mailto: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

## 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

AHD-DV-SX19 hoist controller comes with a 2-year manufacturer's warranty. For extended warranty conditions, please contact the manufacturer at [sales@srs-group.com](mailto: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.

# 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-WDV-3H16F**  
Type: **945060**  
**Year of construction: 2019**

*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, 12.2.2021

**SRS**  
G R O U P  
SRS Group s.r.o.  
Rybníčná 36/D  
821 07 Bratislava  
Slovak Republic  
SK2022726629  
IČO: 44520433  
DIČ: 2022726629

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

Email: [sales@srs-group.com](mailto:sales@srs-group.com) | [www.srs-group.com](http://www.srs-group.com)

