Controller for Low Voltage Hoist

Instruction Manual

Models:

GMCx-LV-CEE, GMCx-LV-SCT, GMCx-LV-SX, GMCx-LV-H16

version 2.01 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.

GMCXX-LV-9U_en_manual_M223

1. 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.

2. Functions and Control

The GMC Motor Controller has been designed to control from 1 to 12 electrically compatible motors, either separately or simultaneously – all controlled using switches located on the front panel or cable remote/pendant. Optionally, you can link GO/STOP button by 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 the Certification of conformity attached to this manual.

3. Operation

The motors/hoists connected with the GMCseries 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.

3.1 How to start

- Connect the CEE32/5p plug to the AC400V +-20% power supply – turn the key to ON position. When the main power is OK, the power LED will light green, otherwise the unit is OFF. Check phase voltages, frequency and contact the manufacturer if help is needed.

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

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

Move lever on the front panel or WMC 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 the device is not being used, it is highly recommended to turn it OFF by the key located on the front panel.

3.2 To move a single/several hoist(s):

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

3.3 STOP:

This latching pushbutton switch turns the Hoist Control system off. Once the STOP button has been pressed, it locks the unit to OFF position and must be rotated clockwise and released before disengaging.

3.4 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. The backlight of GO button in local mode on the Base unit is ON only when one or more direction switches are in active position /UP or DOWN/.

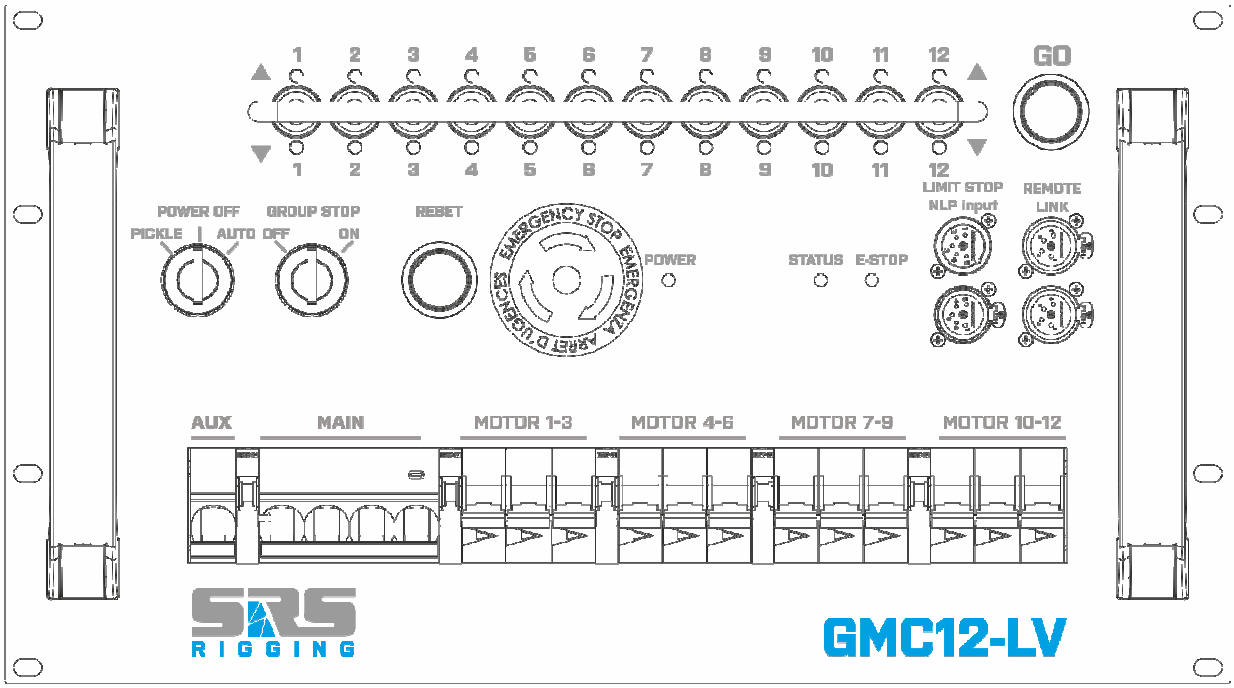
3.5 Link of Base LV units:

Up to 30 units can be linked via link connector that is located on the front panel.
For linking, you will need a 5-pin DMX data cable.

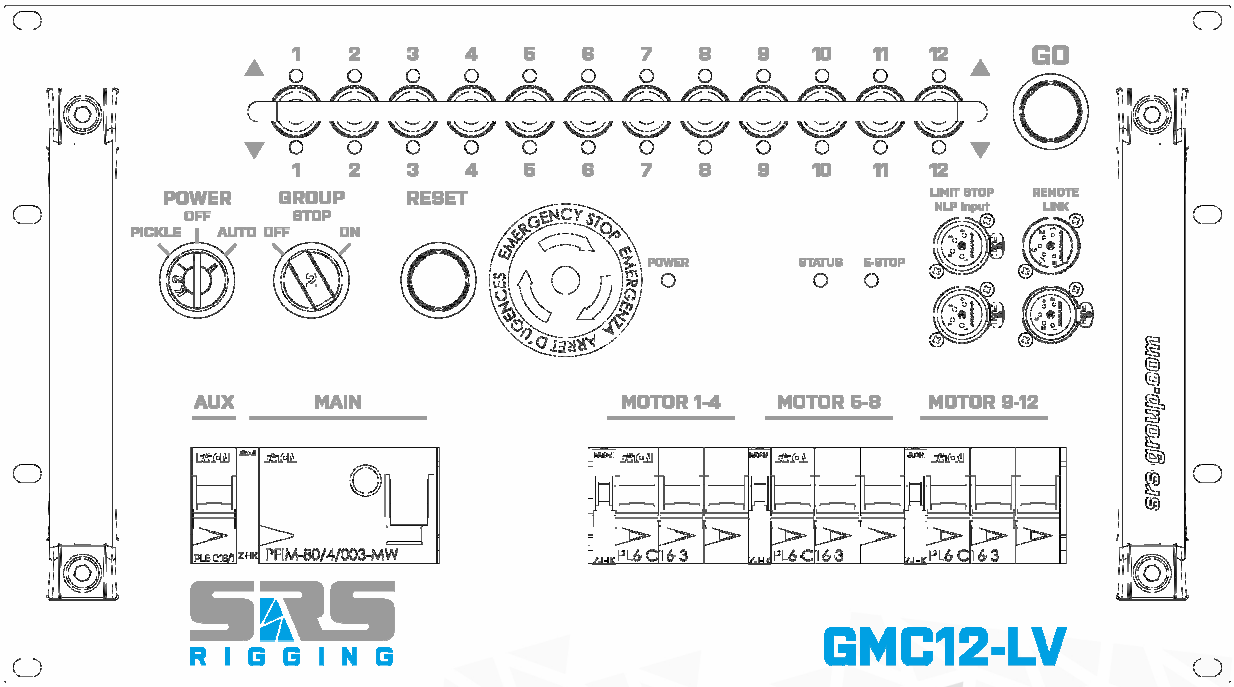
Due to safety requirements, the linking works only in LOCAL / LINK MODE of the controller.

4. GMC-LV series Base unit

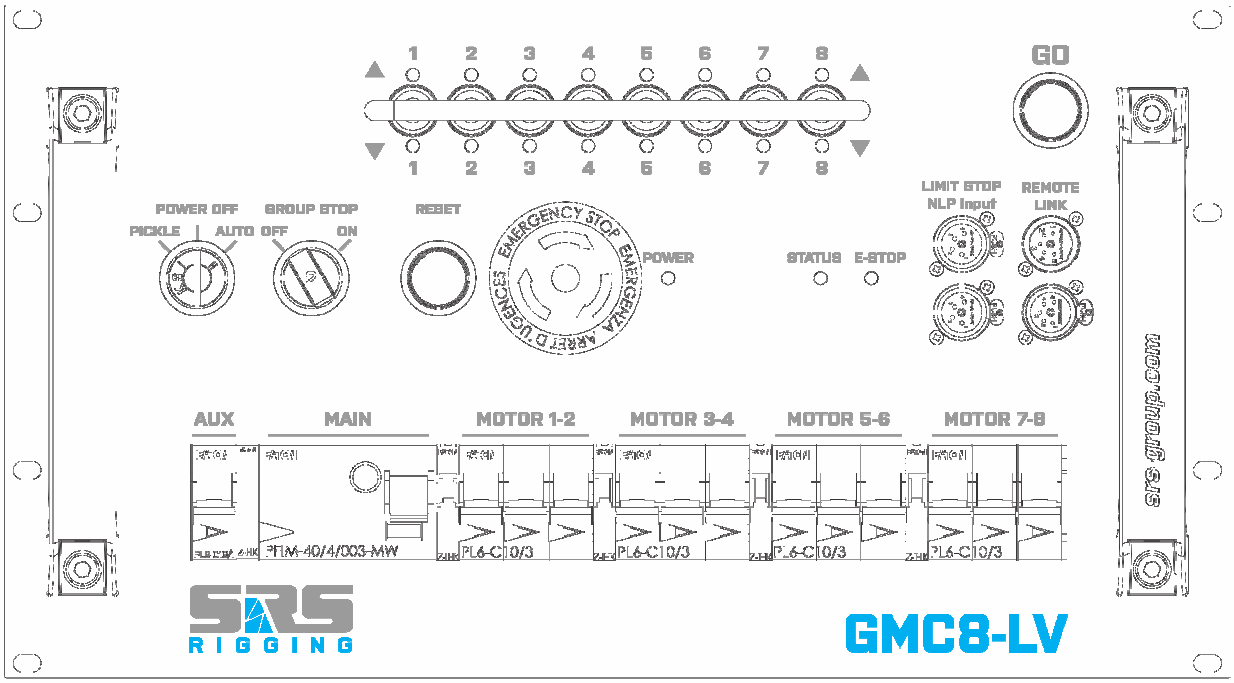
4.1 GMC12-LV-4XX series front panel



4.2 GMC12-LV-3XX series front panel



4.3 GMC8-LV series front panel



4.4 Power key switch positions:

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

4.5 GROUP STOP key 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

4.6 RESET:

RESET button works for the SIL3 E-STOP relay reset. RESET needs be pressed every time after the unit is turned ON, the E-STOP mushroom has been pressed or when the GROUP STOP has been activated.

4.7 EMERGENCY 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.

4.8 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.

4.9 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.

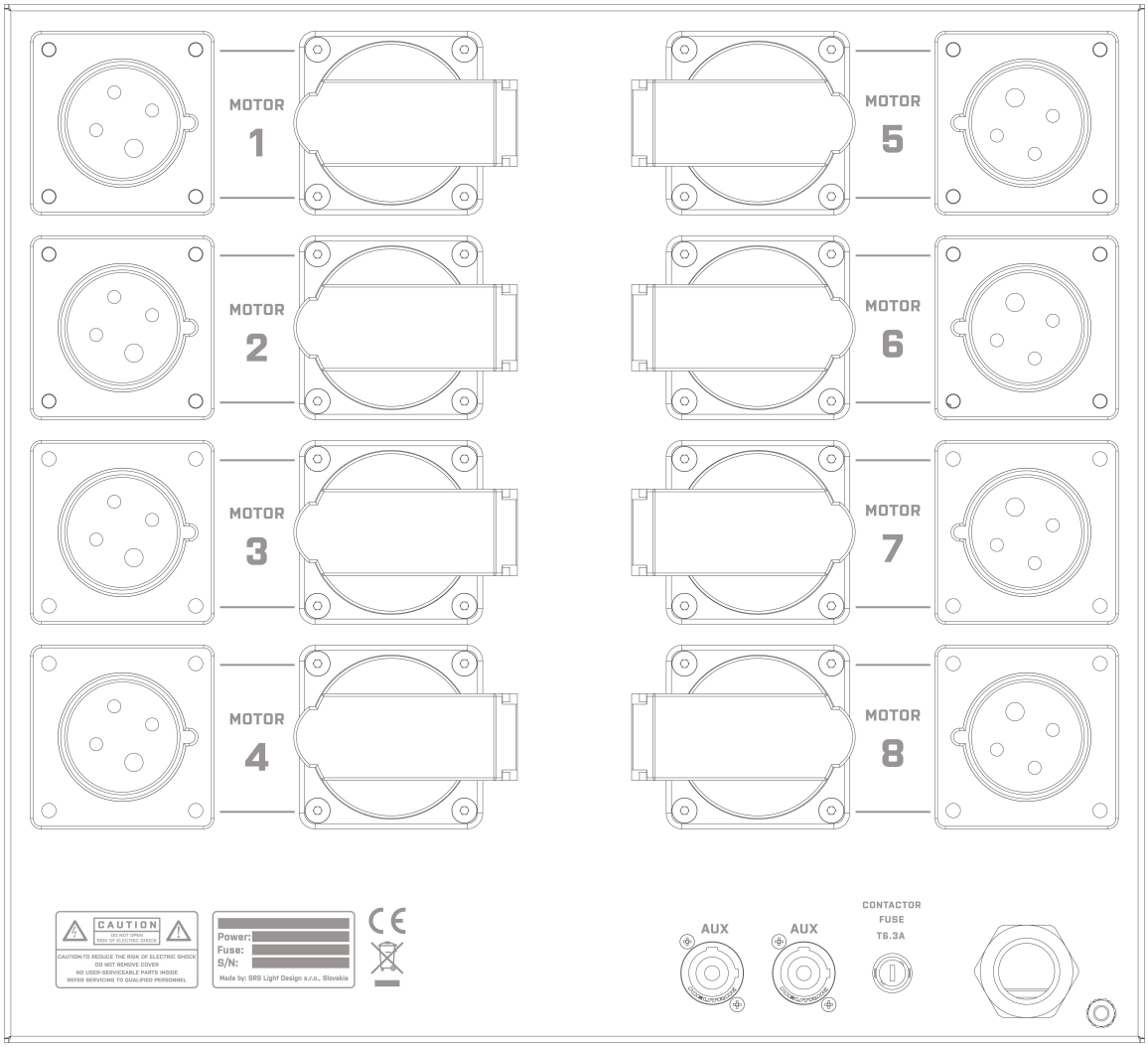
4.10 Limit STOP input:

LIMIT STOP connectors for external E-STOP from NLP device or another stop source.

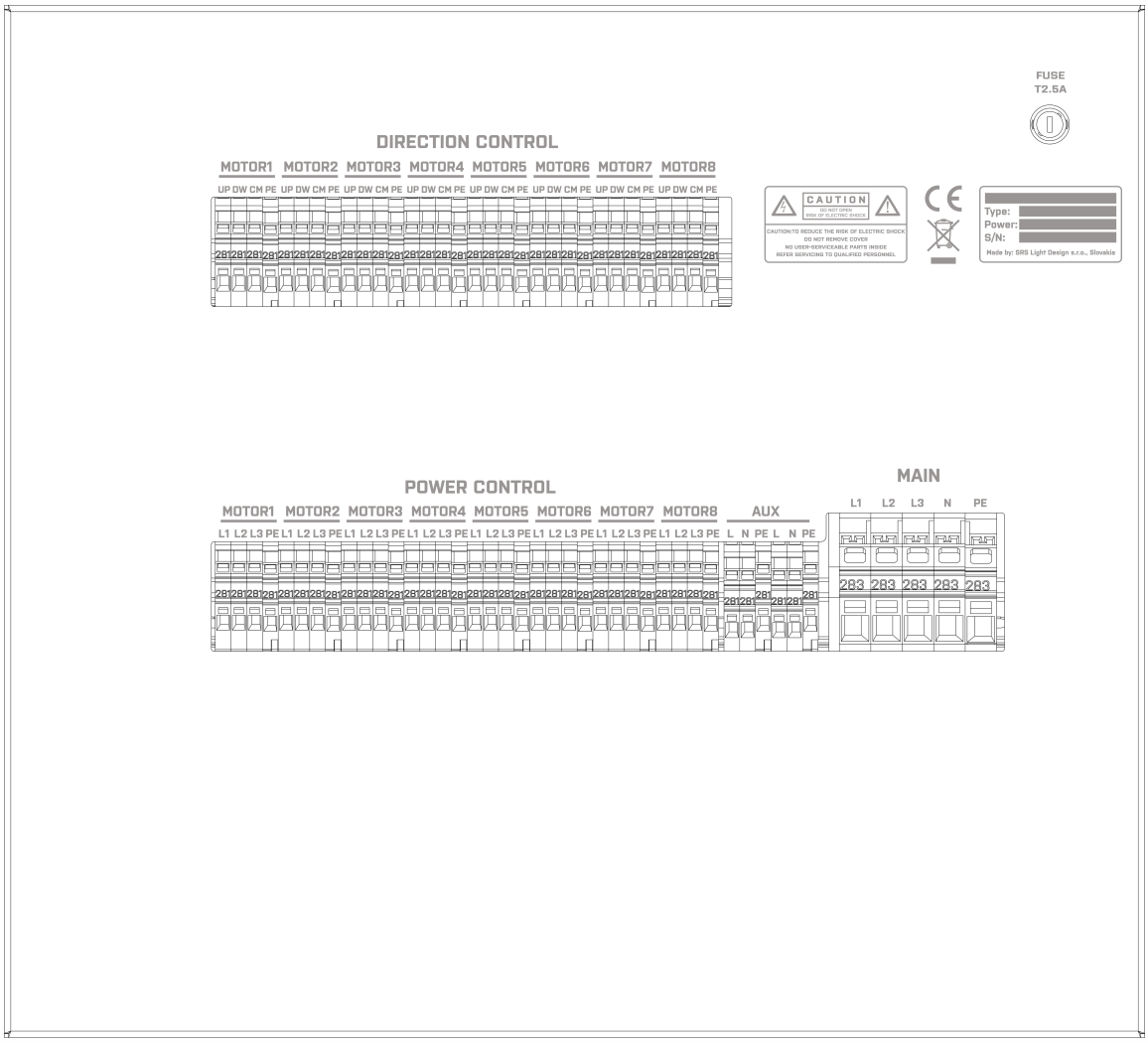
4.11 Link input:

Link input for linking of GMC units.

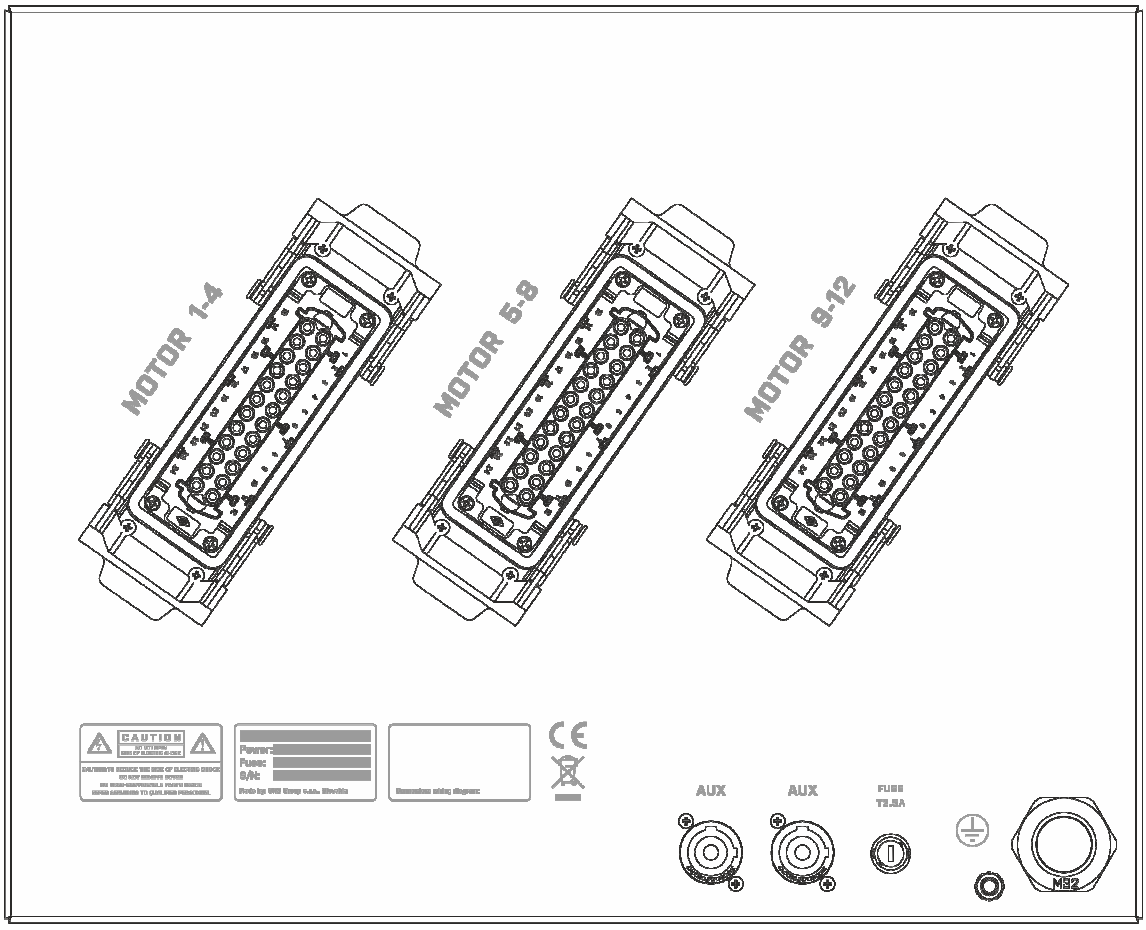
4.12 GMCseries CEE rear panel



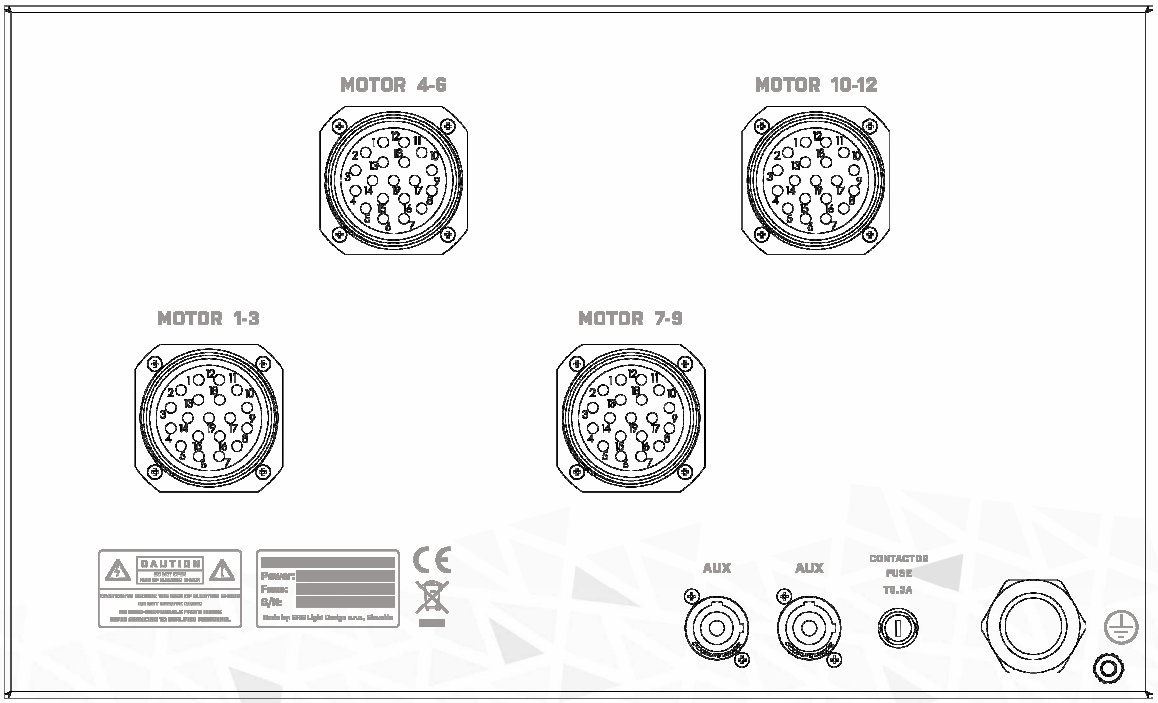
4.13 GMCseries SCT rear panel



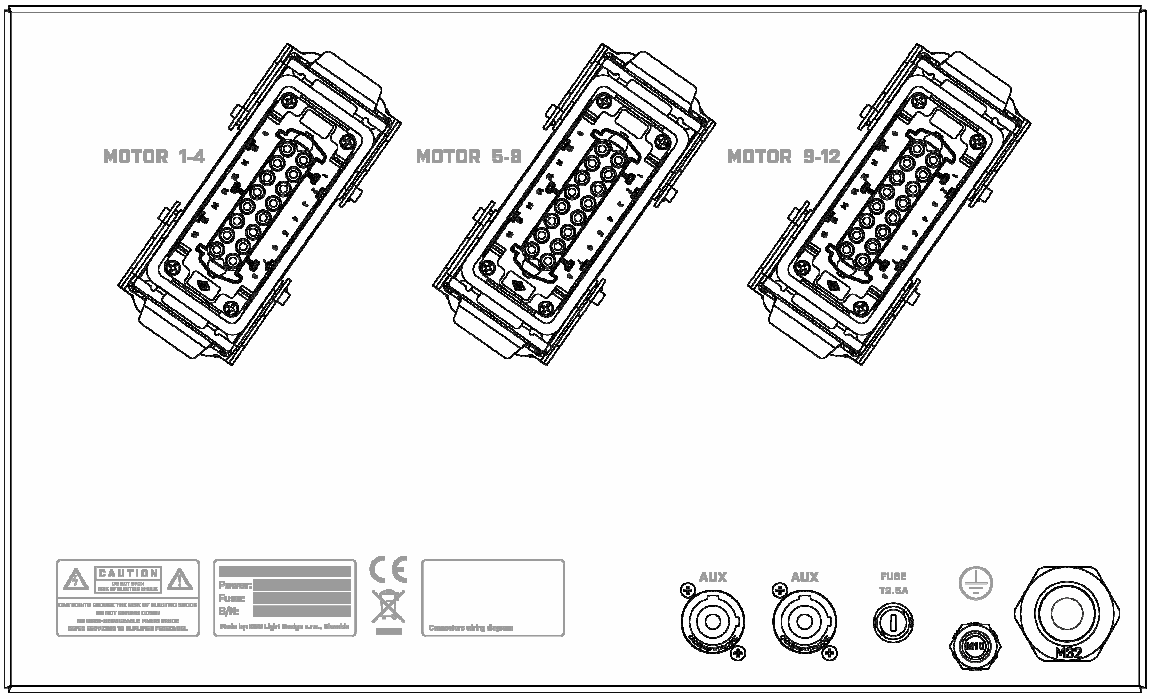
4.14 GMCseries 3H24 rear panel



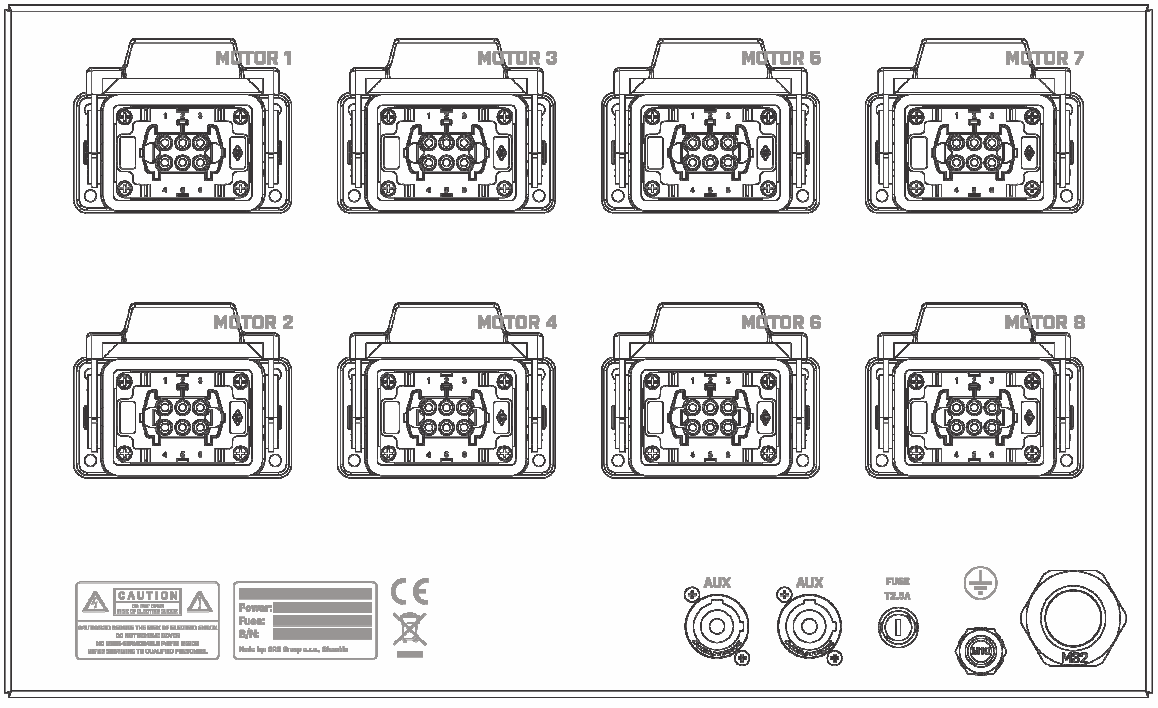
4.15 GMCseries 4SX19 rear panel



4.16 GMCseries 3H16 rear panel



4.17 GMCseries 8H6 rear panel



4.18 MAINS:

Mains input on screw terminal or 1.5m long cable.

4.19 AUX output:

AUX output for additional AC230 powered devices. Protected by C16/1p breaker on the front panel.

5. Output connector wiring

5.3 5.1 Harting6 LV hoist connector

Pin	Function	Note/signal
1	**Live L1**	brown
2	**Live L2**	black
3	**Live L3**	gray
4	**Control COMMON**	
5	**Control UP**	
6	**Control DOWN**	
Earth/body	**Earth**	Yellow/Green

5.4 5.1 Female CEE16/4p Red

Pin	Function	note
L1	**Live X**	
L2	**Live Y**	
L3	**Live Z**	
PE	**Earth**	

5.5 5.3 Male CEE16/4p Yellow – CM Lodestar/Stagemaker

Pin	Function	note
L1	**Common**	
L2	**UP**	
L3	**Down**	
PE	**Earth**	

5.6 5.4 Male CEE16/4p Yellow – Outboard/Trabes *optional

Pin	Function	note
L1	**UP**	
L2	**Down**	
L3	**Common**	
PE	**Earth**	

5.7 Other connectors

The unit can be equipped with other connectors as well. Please check sticker on the rear panel for wiring diagram.

5.8 Remote/link connector

Neutrik NC5-MAH/FAH

Connectors are used for a link operation of LV unit or for an additional digital remote CMC-xx-DIGI 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*

5.9 Loadcell E-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/.
Load-cell E-STOP activation contacts must be in NC /normally closed/ state for E-STOP activation.

To reset the load-cell E-STOP function, please cycle the E-STOP mushroom on the device.

6. Technical data

- Mains input AC400V +-20% 50/60Hz

6.1 Protection and Safety:

- Short-circuit protection of group of hoists by automatic circuit breakers C20A
- APA – Automatic Phase Align
- AVM – Automatic Voltage Metering
- Double mechanical blocking contactors
- Double - Recessed Emergency STOP with SIL3 certification

6.2 Hoist protection:

- GMC12-LV-xxx-63: Each three hoists are protected by single C16/3p MCB IN: CEE63/5p
- GMC12-LV: Each three hoists are protected by single C10/3p MCB iN: CEE32/5p

- GMC12-LV-3xx-63: Each four hoists are protected by single C16/3p MCB iN: CEE63/5p
- GMC12-LV-3xx: Each four hoists are protected by single C10/3p MCB iN: CEE32/5p

- GMC8-LV-xxx-63: Each two hoists are protected by single C16/3p MCB iN: CEE63/5p
- GMC8-LV: Each two hoists are protected by single C10/3p MCB iN: CEE32/5p

6.3 Housing:

- Body: 1.5mm steel housing with gray powder coating
- Front panel: 3mm steel housing with gray powder coating

7. Warranty

GMCseries 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.

8. Declaration of conformity

DECLARATION OF CONFORMITY
According to guide lines 89/336 EEC and 92/31 EEC, 90/337 CEE Annex II A:

Name of producer: SRS Group, s. r. o.

Address of producer: Rybničná 36/D, 831 07 Bratislava, Slovak Republic
www.srs-group.com/ sales@srs-group.com, +421244681417

Declares that the product

Name of product: GMCseries low voltage hoist controller

Types:

GMC4-LV-CEE, GMC8-LV-CEE, GMC12-LV-CEE + variants
GMC4-LV-SCT, GMC8-LV-SCT, GMC12-LV-SCT+ variants
GMC4-LV-SX, GMC8-LV-SX, GMC12-LV-SX+ variants
GMC4-LV-H6, GMC8-LV-H6, GMC12-LV-H6+ variants
GMC4-LV-H16, GMC8-LV-H16, GMC12-LV-H16+ variants

Corresponds with following harmonized standards:

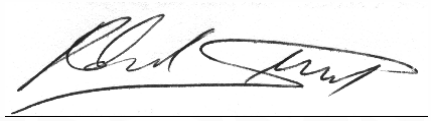
Safety: EN 60065
EN 60950
EN 60204-1
EN 13850
EN 12100-2

EMC: EN55103-1, resp. EN55103-2

And

Is in compliance with following requirements:

Machinery directive: 2006/42/EC
Low Voltage directive: 2006/95/EC



Bratislava, 04 April 2015 Robert Sloboda

Document: GMCXX-LV-9U_en_manual_M223 | Version 2.01 | Actual as of: 3 February 2020

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