Hoist controller for LV hoist

Instruction Manual

Models:

GMC12-LV-H6, GMC8-LV-H6 GMC4-LV-H6

version 01.01 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-H6_en_manual_M236

1. Safety information

IMPORTANT INSTRUCTIONS!

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

IMPORTANT SAFETY INFORMATIONS

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 warning in this manual violates safety standards of design, manufacture, and 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.

2. Functions and Control

Motor Controller has been designed to control from 1 to 12 electrically compatible motors, either separately or simultaneously – controlled via switches located on front panel or a 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 wit 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 lines
- 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 attached to this manual.

3. Operation

The Motor/hoists connected with the GMCseries controller, can be activated individually or simultaneously using the GO switch located on the front panel or wireless 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 is OK there will be power LED lit in green, otherwise the unit is off. Check phase voltages, frequency and contact manufacturer in case of help.

- Connect the plugs for the electric hoists to the Harting 6 sockets.

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

Move lever on front panel or WMC 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.

3.2 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 until the motor are moved the desired height, then release.

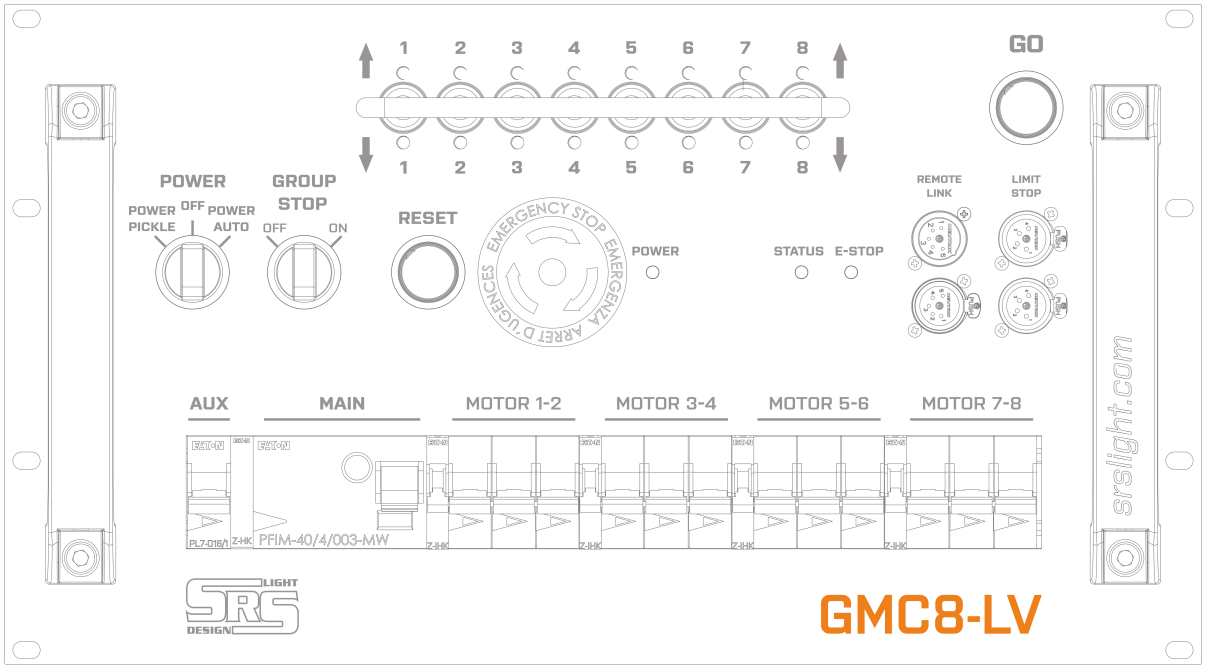
3.3 Link of Base units:

Two or up to 30 units can be linked via link connector located on front panel.
For link you'll need 5pin DMX data cable.

Due safety requirements link works only in LOCAL / LINK MODE of controller

4. GMC8-LV series base unit

4.1 GMCseries front panel



4.2 Hoist protection:

- GMC12: Each three hoist are protected by single C10/3p MCB
- GMC8: Each two hoist are protected by single C10/3p MCB

*C16 or C20 are equipped on request

4.3 Power key switch positions:

- OFF: Power off / Only battery charger is active in this state/
- PICKLE: Power to the hoist is enabled
- AUTO: Power to the hoist is enabled when GO command is received

4.4 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 unit

4.5 RESET:

Reset button for SIL3 e-stop relay reset. Needs be pressed every time when unit has been turned on, E-STOP mushroom has been pressed or when the GROUP stop has been activated.

4.6 EMERGENCY 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 need to be pressed to reset system.

4.7 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.

4.8 DIRECTION SWITCHES:

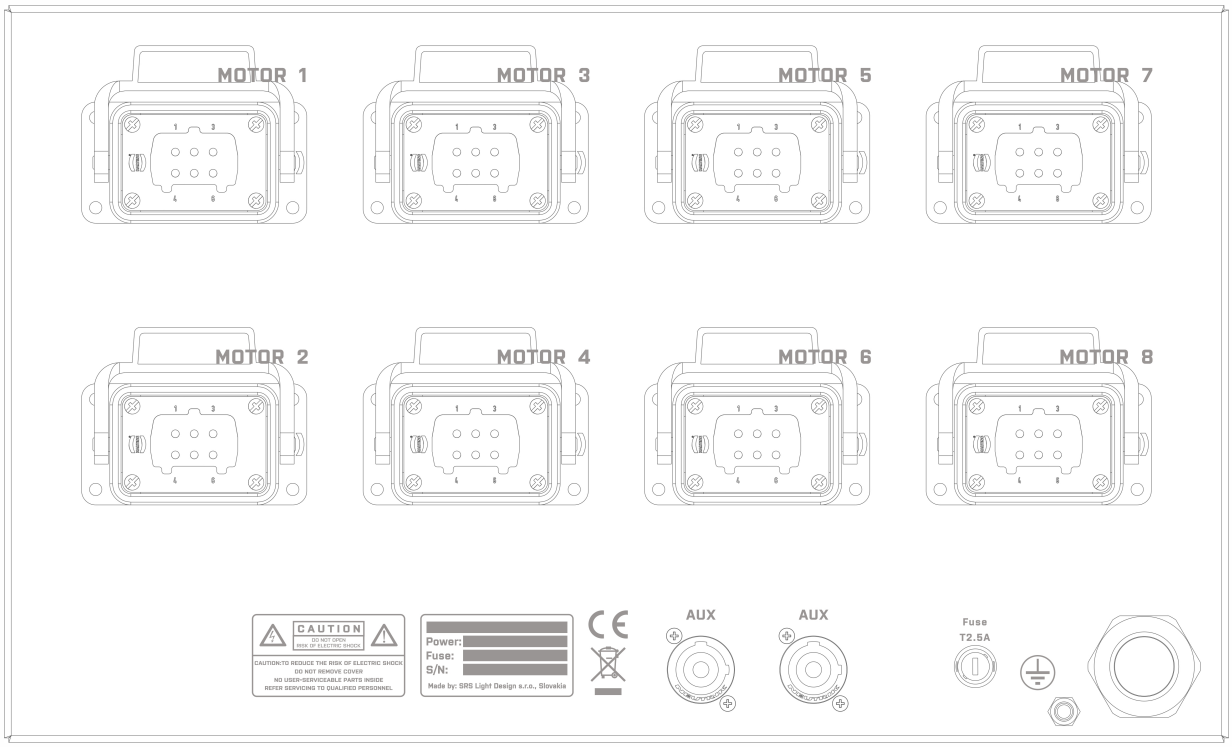
They allow changing the direction of movement fore each motor/hoist separately or in groups. LED close to the switch indicates the movement direction.

4.9 Charger status LED:

Status LED of charger located on WMC front panel is

- Green : Battery is fully charged
- Green blinking : Battery is charged for 90% or greater capacity
- Orange blinking : Not in rapid mode – waiting to be charged
- Red : Battery is in rapid charge mode
- Red blinking : Battery is ultra rapid charge mode
- No LED : Battery is not inserted

4.10 GMCseries back panel



4.11 MAINS:

CEE32A/5p mains input plug on 1.5m cable + also fuse for mains transformer T2.5A.

4.12 AUX output:

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

4.13 Limit STOP:

LIMIT STOP connector for external e-stop from NLP device.

5. Output connectors wiring

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**	
Ears/body	**Earth**	Yellow/Green

5.2 Remote connector *optional

Neutrik NC5-MAH/FAH

Connectors are used for link operation of units. Up to 30 units can be linked and in local operation mode their control is via one GO and E-STOP button

Pin	Function	note
1	**Data CMN**	Data Common
2	**Data -**	Data Minus
3	**Data+**	Data Plus

5.3 Loadcell E-STOP connector *optional

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/. For loadcell E-STOP activation contacts need to go to NO /normally closed/ state for E-STOP activation.

For reset a loadcell e-stop function please cycle the E-STOP mushroom on device.

6. Technical data

- Mains input AC400V +-20% 50/60Hz
- Mains Plug: CEE32A/5p

6.1 Protections and Safety:

- Short circuit protection of group of hoist 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 Metal Housing:

- 1.5mm Steel housing with gray powder coating
- 3mm Steel front panel

6.3 Dimensions /W x D x H/:

MC12-LV-H6: 6U box
MC8-LV-H6: 6U box

7.Guarantee

GMC series hoist controller is sold with 2 year Manufacturer's guarantee. To have extended warranty conditions please contact manufacturer at sales@srs-group.com.

Guarantee 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 conform or there is connection error or mechanical damage of controller, including overload, improper use.

We as manufacturer always help 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, SK- 83106 Bratislava, Slovak Republic
www.srs-group.com/ sales@srs-group.com, +421244681417

Declares that the product

Name of product: GMCseries hoist controller: MC4-LV, MC8-LV, MC12-LV + variants

Types:

MC4-LV-H6, MC8-LV-H6, MC12-LV-H6 + variants : Low voltage hoist/motor controller

Corresponds with following harmonized standards:

Safety:
EN 60065
EN 60950
EN 60204-1
EN 13850
EN 12100-2
AS/NZS 3820

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, 4 May 2016

Robert Sloboda

Document: GMCXX-LV-H6_en_manual_M236 | Version 01.01 | Actual as of: 3 February 2020

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