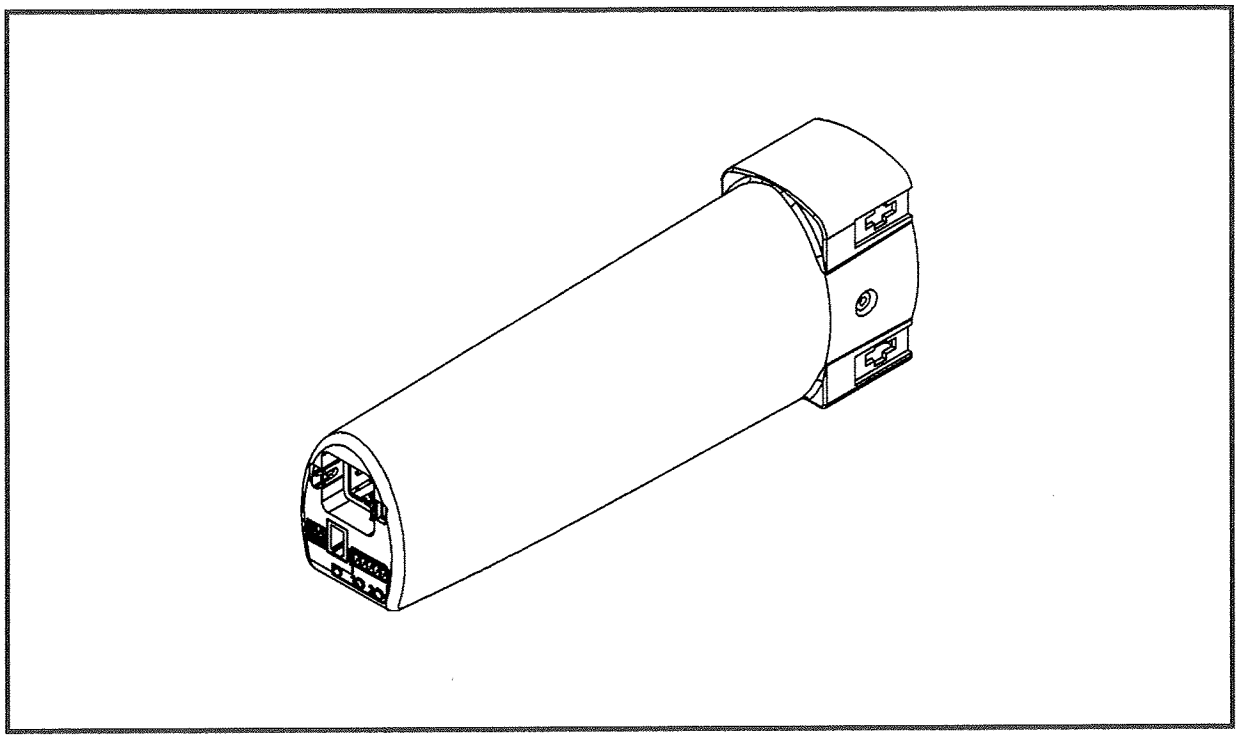
User Manual

September 2006



Motor Silent Gliss 9020, 9022

UK Version
September 2006

Table of Contents

Please read chapters „Intended application“ and „Safety Instructions“ before installing or connecting. Non-observance as well as opening and manipulation of the motor will result in voiding of the Silent Gliss liability and warranty.

1 Introduction and Product Overview

This User Manual describes the setting up and programming of the different motor types, which are used in connection with the Silent Gliss Electrical Curtain Track System SG 5400 and SG 5420
Please refer to the separate fitting instructions and wiring diagrams for the installation of Systems SG 5400 and 5420.

This User Manual applies to following Silent Gliss motor variations:

SG Nr.	ERP Nr.	Long description	Short description on motor
9020	100902000	Motor 90-260V AC	9020.000.00
9022	100902200	Motor 90-260VAC, manual override	9022.000.M

2 Intended Application

- The motors mentioned in Chapter 1 may only be used in combination with the designated Silent Gliss Systems.
- The motor is solely designed for indoor use. Application in wet areas like bathrooms, indoor swimming-pools, saunas etc. is not permitted.
- Please note that Radio Control Systems are not permitted in certain locations such as Hospitals and Airports.
- Please ensure that other equipment is not being controlled by radio equipment using the same frequency.

3 Safety Instructions

- The Motor may be used only in dry rooms.
- The Motor may not be used in explosive areas.
- Only original Silent Gliss parts may be used.
- The installation, inspection and troubleshooting of the drive mechanism may only be performed by qualified specialists. Please consider the country specific regulations in regards of connection of the motors to the mains.
- The proper operation of the motor in combination with the Electric Curtain Track Systems is only guaranteed with professional installation, fixing, as well as sufficient electric power supply.
- Cleaning of the motor may only be performed if the motor is disconnected from the mains voltage.
- The motor must not be used if cables, plugs, or the motor are damaged.
- Please ensure the specification detailed below and in the declaration of conformity (page 18) conform with the necessary regulations in the intended country of use.

4 Technical Specifications

Technical data for motors only. For the technical data for the entire curtain track system refer to the corresponding Assembling- / Fitting Instruction.

	9020 & 9022
Voltage Supply	90 - 260 VAC
Frequency	50 - 6 0 Hz
Current	100V = 1A, 230V = 0.5A
Speed	110 rpm
Noise level	< 45 dBA (30cm)
Dimension	240 x 90 x 60mm
Weight	1kg

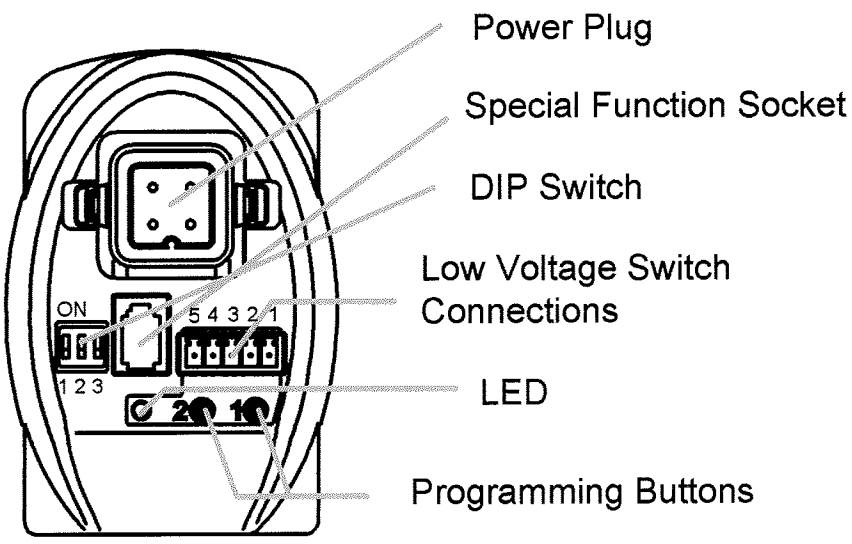
Temperature ranges:	
For operation	0 C to + 60 C
Storage	-20 C to + 70 C
Safety class	IP40

*(depending on regulation of respective country)

5 Connection and Operating Equipment

5.1 Overview

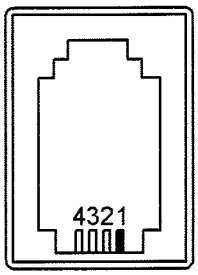
The following main overview of the ports and indicators may be used for both motors. The subsequent chapters deal in detail with the functions, allocations and setting of the ports and indicators.



SG 9020 & 9022

5.2 Special Function Socket

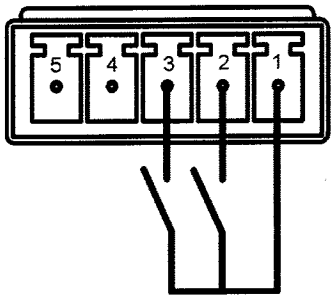
Used in connection with the Manual Override version for the motors SG 9022



Pin	Denotation
1	GND
2	Endstop 1
3	Endstop 2
4	VCC

5.3 Low Voltage Switch Connections

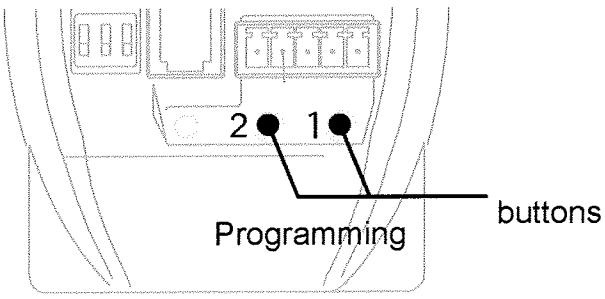
Used for control by low voltage, group control or for the connection of the programming cable.



Pin	Description
1	Common
2	Open - Single
3	Close - Single
4	Open - Group
5	Close - Group

5.4 Programming Buttons

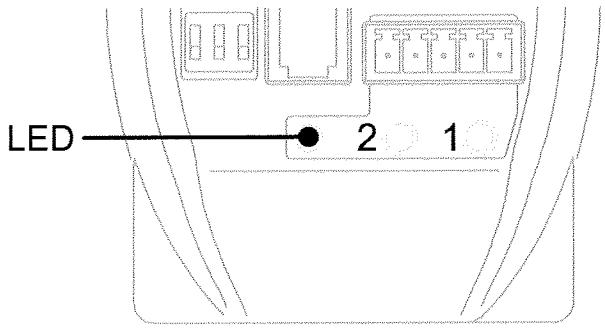
Used for the programming of the endstops as well as for the intermediate positions (scenes).



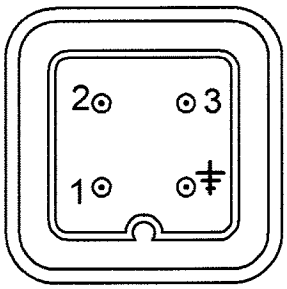
The numbers of the buttons are marked on housing of the motors. The right button is nr. 1, the left nr. 2.

5.5 LED

Flashes or is illuminated in the programming mode.



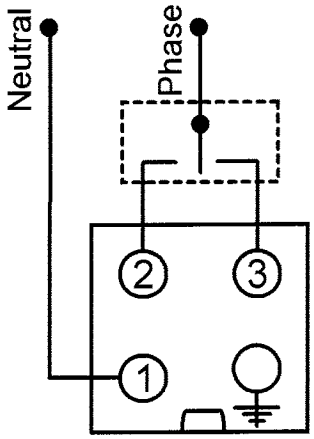
5.6 Mains Connection and Wiring of SG 9020 & 9022 (90 – 260VAC)



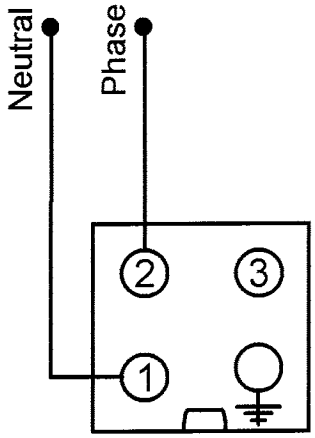
Pin	Denotation
1	Neutral
2	Phase (rotating direction left)
3	Phase (rotating direction right)
4	PE, ⏚

Wiring: Motor SG 9020 can be wired for mains or low voltage switching
Motor SG 9022 is switched by low voltage only
The wiring diagrams are as follows:

Mains Switched (90-260VAC)



Low Voltage switched
(requires permanent mains supply)



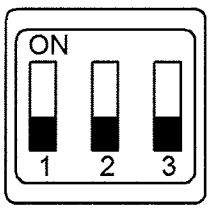
5.7 DIP - Switch Settings of SG 9020 & 9022 (90 - 260VAC)

The DIP Switches are used to set the motor depending on the wiring and the required operation mode. Following table shows the possibilities.

Changes to DIP Switch positions are not recognised if the motor is connected to the power supply at the time.

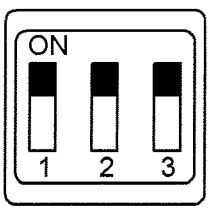
Disconnect the power before changing DIP switch positions, count to 10 and reconnect power.

Example

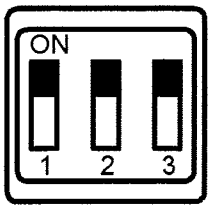


DIP Switch Position
"000"

0=Switch off
1=Switch on



DIP Switch Position
"111"

DIP Switch Position	Operational Mode
	
000 (off-off-off) *	**Controlled by switched mains** Latching switch only
	Controlled by low voltage switching (requires permanent mains supply)
110 (on-on-off) *	Latching Switch: the motor will only run when the signal is present (switch depressed). Standard switching for single switch control. For multiple switch control use "non latching" switch with appropriate DIP switch settings
100 (on-off-off)	Non Latching Switch: the motor will latch immediately it recieves a momentary signal and will continue to the preset end position. To stop the motor while it is running apply a short pulse signal in the opposite direction.
011 (off-on-on)	Latching Switch for manual/electric version: as 110 but with manual facility enabled and limits disabled.
001 (off-off-on)	Non Latching Switch for manual/electric version: as 100 but with manual facility enabled and limits disabled.
010 (off-on-off)	For Vertical Blinds only Not currently used.
101 (on-off-on)	Not currently used
111 (on-on-on)	Not applicable
*	**Use for setting limits via programming buttons**

6 Programming and Operating of Motor SG 9020

6.1 Main Overview

After installation of a motor onto the designated Curtain Track System, the end stops – and if required, the intermediate positions can be programmed. This programming can be carried out in several ways: by means of the programming buttons on the motor, by means of the optional available Programming Cable SG 5651.

6.2 Programming by means of Programming Buttons on Motor or Programming Cable SG 5651

The following table shows the different steps required to program the final stops regardless of mains or low voltage switch type. If the Programming Cable SG 5651 is used to program the end stops, it is required to plug it into the Low Voltage Switch connection before programming.

Step	To do	Signal
1	Check if the DIP switch setting is correct (Setting according to Chapter 5.8). Use either 000 (mains) or 110 (LV) for ease of setting.	
2	Disconnect power supply of the motor for 5 seconds and make sure that the motor will have permanent power supply when reconnected. Typically unplug power lead from motor.	
3	Hold down programming button 1 and simultaneously reconnect power supply.	Acoustic Signal, LED blinks
4	Simultaneously press both buttons (1&2) and hold depressed for > 6 seconds. After 3 seconds motor will sound and the LED will flash. Do not release the buttons. Wait until motor sounds and LED flashes for the second time. Motor is then in programming mode for 3 minutes.	Acoustic Signal and LED blinks after 3 and 6 seconds respectively
5	Use programming button 1 to drive the system to the first end stop position. Then press both buttons simultaneously for 3 seconds. This end position is then stored.	Acoustic Signal and LED blinks 1 x
6	Use programming button 2 to drive the system to the other end stop position. Then press both buttons simultaneously for 3 seconds. This end position is then stored. Allow LED to go out before use.	Acoustic Signal and LED blinks 1 x

6.3 Programming and Accessing of intermediate Positions

Two intermediate positions can be set for the Electric Curtain Track System with low voltage switching. The programming of the intermediate positions doesn't have to be carried out in the programming mode. It can be carried out in operational mode.

Programming with Low Voltage Control: (DIP switches 1=on 2=off 3=off)

Step	To do	Signal
1	Use button 1 to move the system to the required scene position 1 When your reach the required position. Press button 2 twice while still holding down button 1	Acoustic Signal and LED blinks 2 x
2	Use button 2 to move the system to the required scene position 2 When your reach the required position. Press button 1 twice while still holding down button 2. When the switch is pressed twice quickly the system will run to the scene position rather than the end limit position.	Acoustic Signal and LED blinks 2 x

Recalling the intermediate positions: The curtain automatically moves to The programmed position by briefly pressing the direction command used for the intermediate position twice.

6.4 Resetting of Motor to Factory Status

Step	To do	Signal
1	Disconnect power supply of the motor for 5 seconds and make sure that the motor will have permanent power supply when reconnected. Typically unplug power lead from motor.	
2	Reconnect to power supply and simultaneously push programming button 1.	Acoustic Signal, LED blinks
3	Simultaneously press both buttons (1&2) and hold depressed for > 6 seconds. After 3 seconds motor will sound and the light will flash. Do not release the buttons. Wait until motor sounds and light flashes for the second time.	Acoustic Signal and LED blinks after 3 and 6 seconds respectively

Wait for LED to go out before operating. This may take up to 3 minutes.

7 Programming and Operating of SG 9022

These motors and Electric Curtain Track Systems are equipped with a Manual Override function, i.e. the curtain can be moved by hand if the motor is turned off. This function is only applicable with a low voltage switching.. In addition, no intermediate position can be programmed.

The programming occurs through following steps

Step	To do	Signal
1	Check if the DIP switch setting is correct (Setting according to Chapter 5.8).	
2	Disconnect power supply of the motor for 5 seconds and make sure that the motor will have permanent power supply when reconnected. Typically unplug power lead from motor.	
3	Pull the curtain to about the middle position between the two end positions.	
4	Reconnect to power supply and simultaneously push programming button 1 or 2.	Acoustic Signal, LED lights
5	Move the curtain to one end position.	Motor stops automatically
6	Motor is programmed.	

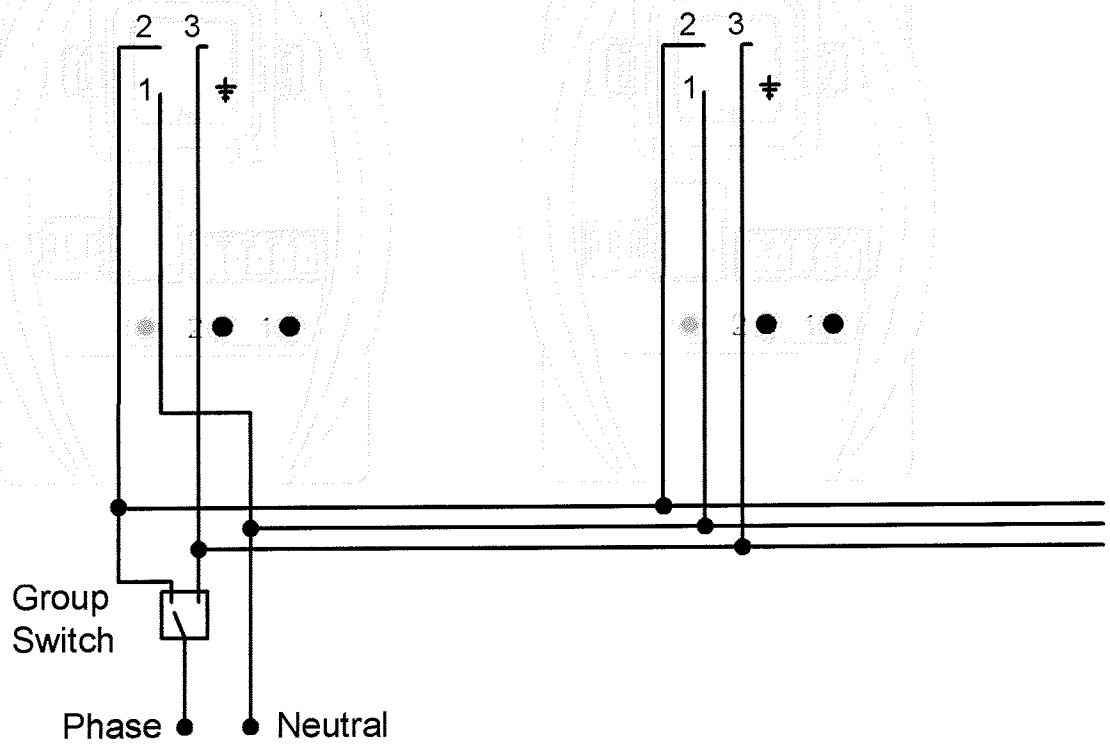
End stop positions are governed by magnets fitted to the track drive belt, not programmed in the motor.
If end stop positions need to be reset this should be done by persons famiiar with the mechanical assembly of the 5420M system.

8 Group Control of Motors

8.1 Group Control via Mains

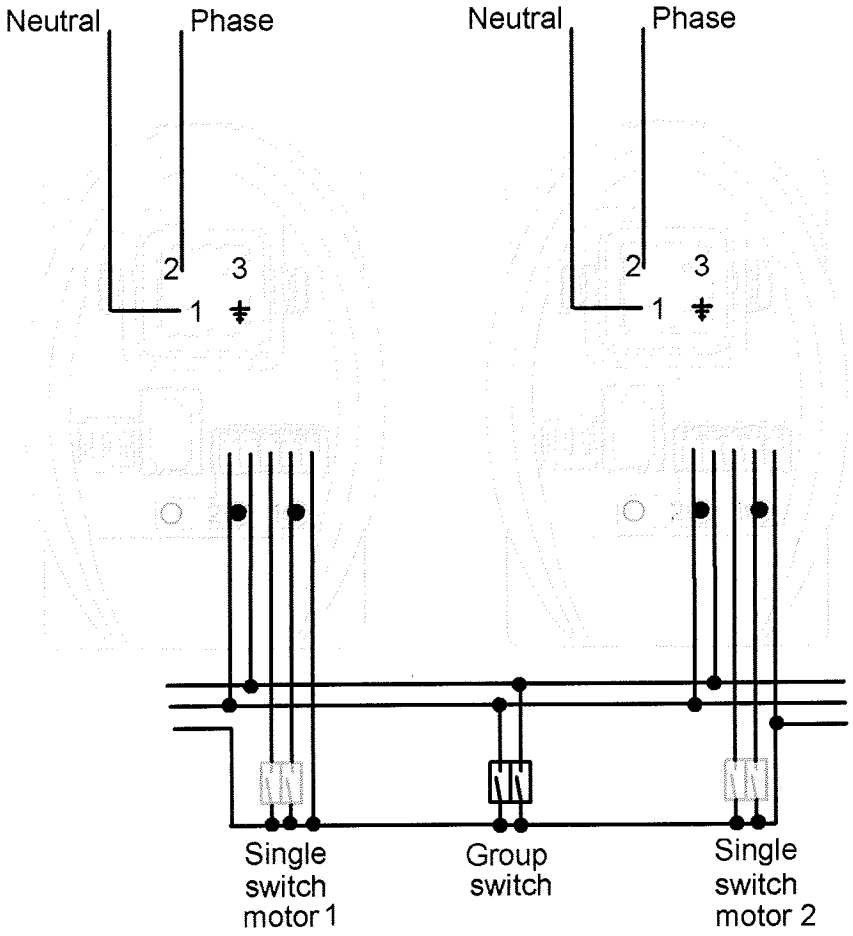
Motors can be connected in parallel when mains switching. 3 motors maximum are recommended. If quantities above 3 motors in parallel are required, a qualified electrician must be consulted to ensure that the supply, wiring and switching is suitable for the electrical load.

For motors to all run in the same direction on command attention must be paid to ensure that the connections to all motors are identical. If a motor is specifically required to operate in the reverse direction on command the connections to pins 2 & 3 should be reversed on that specific motor.



8.2 Group Control via Low Voltage Inputs (max. 15)

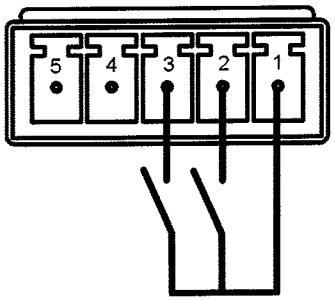
If a motor is required to run in the opposite direction to others wired within the same group connections 4 &5 at the low voltage switch connection should be reversed on that specific motor.



NOTE: No protection relays are required

Low Voltage Switch Connections

Used for control by low voltage, group control or for the connection of the programming cable.



Pin	Description
1	Common
2	Open - Single
3	Close - Single
4	Open - Group
5	Close - Group

9 Troubleshooting

... the motor doesn't move?

- Check if motor is correctly supplied with power according to the wiring diagram and if the DIP switches are in the right position.

... the motor doesn't move after saving the first end stop.

- Disconnect power supply. Start limit setting process again ensuring that button 1 is used first to drive the system to its first limit position.

... the motor turns in the wrong direction with low voltage switching (permanent power supply)

- Exchange cable of Pin 2 with Pin 3 at the low voltage switch terminal connection.

... the motor SG 9020 turns in the wrong direction with mains switched connection?

- Exchange cable of Pin 2 and 3 on mains plug.

... some motors 9020 / 9022 turn in the wrong direction when connected for simultaneous operation using mains switching.

- Check if Pin 2 and Pin 3 on each motor are connected identically.

10 Declaration of Conformity

Micro- Motor AG confirms herewith that this product complies with the relevant harmonised regulations of the 73 / 23 / EEC + 89 / 336 / EEC + 93 / 68 / EEC directives. The declaration of conformity can be ordered at: info@micromotor.ch .