

EB1 Expansion Board

INSTRUCTION MANUAL



High Lid included with EB1

EB1 Expansion Board

- EB1
- EB1-G

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GRIFCO®

SAFETY INSTRUCTIONS



WARNING: THESE ARE IMPORTANT SAFETY INSTRUCTIONS.
FOLLOW ALL INSTRUCTIONS AS INCORRECT INSTALLATION CAN LEAD TO SEVERE INJURY OR DEATH
SAVE these instructions

This commercial roller door operator controller has been designed and tested to offer safe service provided it is installed, operated, maintained and tested in strict accordance with the instructions and warnings contained in this manual.



WARNING

Mechanical

When you see this Safety Symbol and Signal Words on the following pages, they will alert you to the possibility of serious injury or death if you do not comply with the warnings that accompany them. The hazard may come from something mechanical.

- Keep commercial door balanced. Sticking or binding doors must be repaired. Commercial doors, door springs, pulleys, brackets and their hardware are under extreme tension and can cause serious personal injury. Do not attempt to loosen, move or adjust them. Call for commercial door service.
- Do not wear rings, watches or loose clothing while installing or servicing a commercial door operator.
- To avoid serious personal injury from entanglement, remove all ropes connected to the commercial door before installing the door operator.
- After the installation a final test of the full function of the system and the full function of the safety devices must be done.
- When operating a biased-off switch, make sure that other persons are kept away.
- The operator cannot be used with a driven part incorporating a wicket door (unless the operator cannot be operated with the wicket door open).
- Operator may become hot during operation. Appropriate clearance and/or shielding should be supplied by the installer to ensure any cabling, wiring and/or other items cannot come in contact with the operator. If temperature rise exceeds 50°C all fixed wiring insulation must be protected, for example, by insulating sleeving having an appropriate temperature rating.
- Do not allow children to play with operator wall controls or remote controls. Keep remote controls away from children.
- Permanently fasten all supplied labels adjacent to the wall control as a convenient reference and reminder of safe operating procedures.
- Disengage all existing commercial door locks to avoid damage to commercial door. Install the wall control (or any additional push buttons) in a location where the commercial door is visible during operation. Do not allow children to operate push button(s) or remote transmitter(s). Serious personal injury from a closing commercial door may result from misuse of the operator.
- Activate operator only when the door is in full view, free of obstructions and operator is properly adjusted. No one should enter or leave the building while the door is in motion.
- The actuating member of a biased-off switch is to be located within direct sight of the door but away from moving parts. Unless it is key operated, it is to be installed at a minimum height of 1500mm and not accessible to the public.
- Make sure that people who install, maintain or operate the door follow these instructions. Keep these instructions in a safe place so that you can refer to them quickly when you need to.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- Use the operator for its intended purpose. GLM6 series controls are designed for operating Grifco openers on spring balanced roller shutters, spring balanced roller doors and counterweighted bi-fold and vertical lift doors.
- If the opener is installed at a height less than 2.5 metres from floor level or any other level from which the unit can be accessed (eg mezzanine) the installer is responsible to fit guards to the opener to prevent access to the chain drive.
- Automatic Drive - Keep away from the area of the door as it may operate unexpectedly.
- Ensure that entrapment when operating the door in the open direction is avoided.



WARNING

Electrical

When you see this Safety Symbol and Signal Words on the following pages, they will alert you to the possibility of serious injury or death if you do not comply with the warnings that accompany them. The hazard may come from electric shock.

- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Installation and wiring must be in compliance with your local building and electrical codes. Connect the power supply cord only to properly earthed mains.
- Moisture and water can destroy the electronic components. Make sure under all circumstances that water moisture or storage moisture cannot penetrate the electronics. The same applies for openings and cable entries.
- An electrician must disconnect electric power to the commercial door operator before making repairs or removing covers.

CAUTION

When you see this Signal Word on the following pages, it will alert you to the possibility of damage to your commercial door and/or the commercial door operator if you do not comply with the cautionary statements that accompany it.

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INTRODUCTION

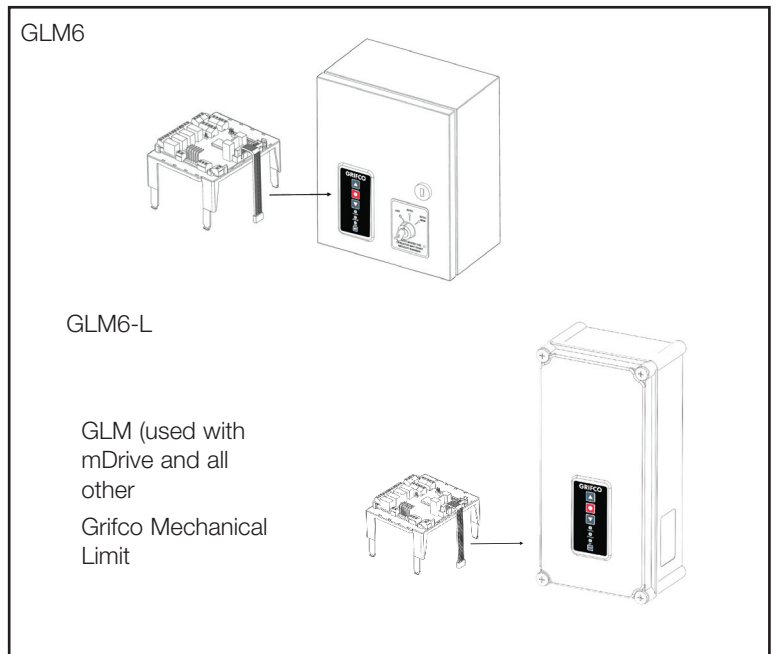
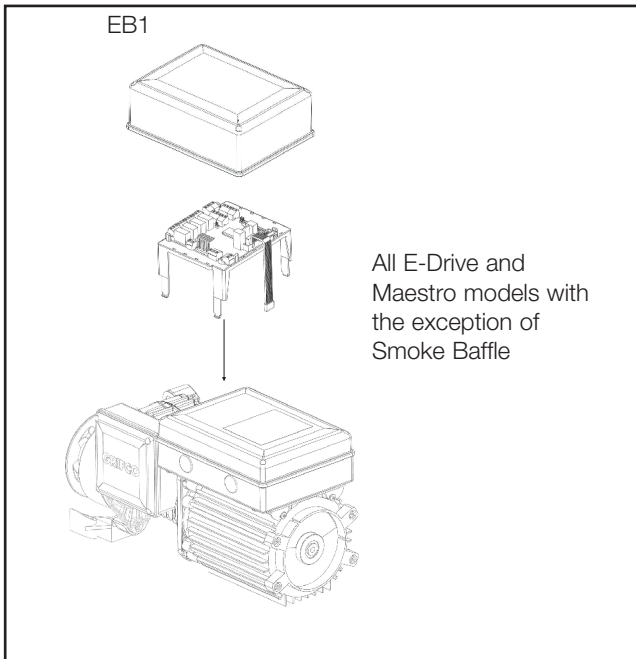
Congratulations on your purchase of the Grifco® EB1 (-G) Expansion Board Upgrade. The EB1 is a state-of-the-art door control expansion module with feature packed electronics to enable upgrading of any E-Drive (using EB1) door opener, or any installation that uses a GLM (using EB1-G) type wall control.

The EB1 Expansion Board provides a range of features, including variable behaviours and 4 x status / output relays.

PLANNING

The EB1 Expansion Board upgrade is designed to work with all eDrive (electronic limit) and all GLM (mechanical limit) main control boards. The EB1 will only work if a suitable Entrapment Protection System is installed to enable latch closing behaviour. Refer to page 9 for more information.

Refer below for examples of compatible product:



Dock Leveller Integration

Connect to a dock levelling device via relays 1 & 2

4 Relays for External Devices

Allow devices such as lights & sounders to behave in certain ways or connection to building management outputs

- Relay 1: Open Status
- Relay 2: Closed Status
- Relay 3: Door Moving Status
- Relay 4: Service Required (with DIP Switch configuration)

Coaxial Antenna Connection

Connection for antenna

External Receiver Cards

Connection for industry standard receiver cards

Auxiliary 24V Power Input

To provide external backup supply for relays

Door Activation Inputs

Wire in key switches, push buttons or card readers for open, stop or close

Extended Limit Option

Wired input to send door to 3rd limit position

DIP Switches

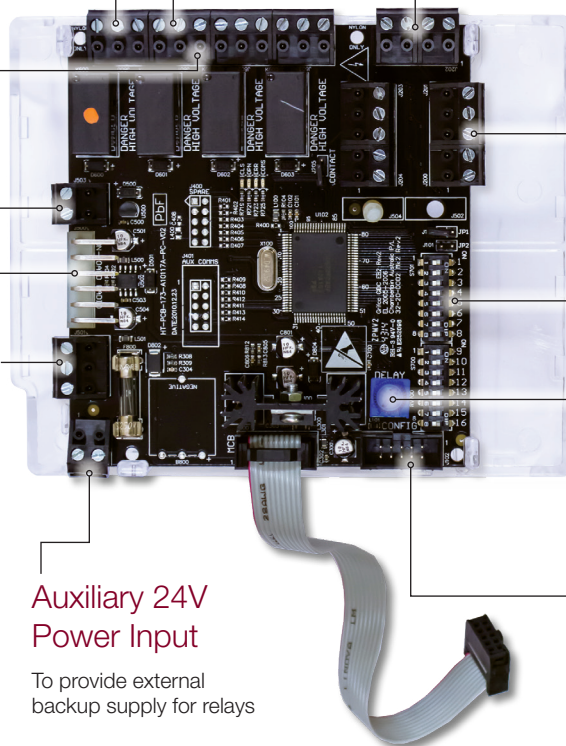
16 dip switches for door configuration behaviour

Auto-Close Fine Adjustment

Infinite adjustment of auto-close time up to 5 mins

Service Connection

Terminal for diagnostics & debugging of software (Grifco only)



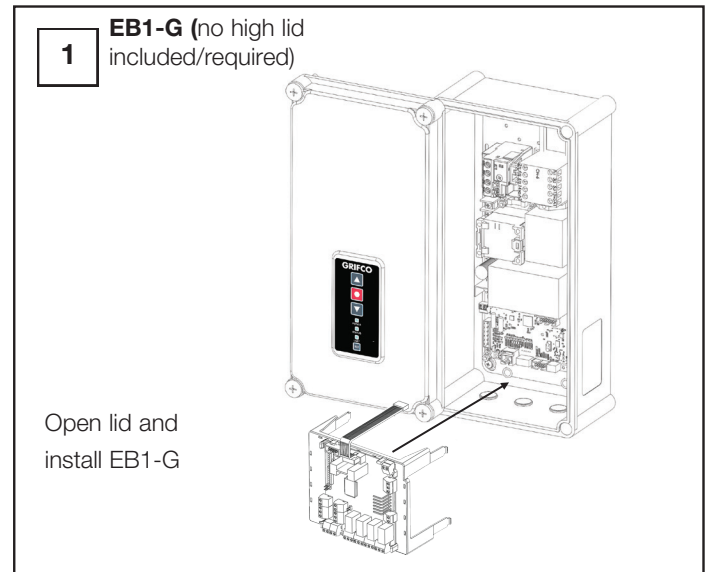
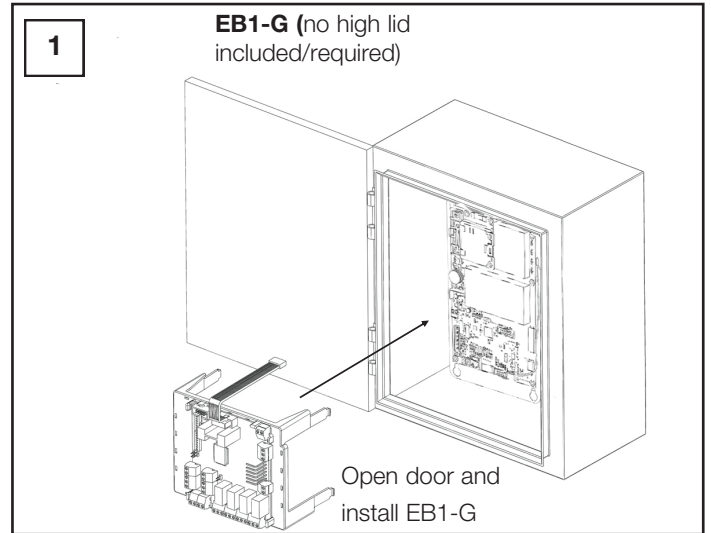
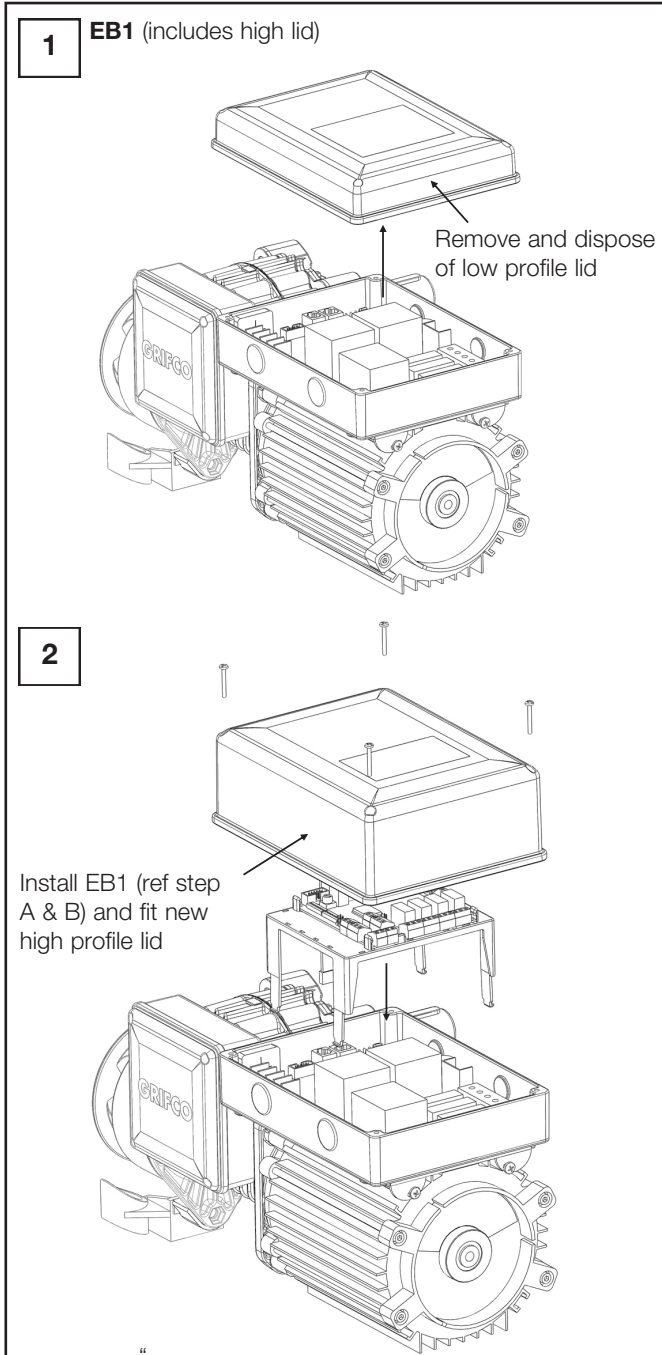
MOUNTING INSTRUCTIONS



WARNING ELECTRICAL

An electrician must disconnect electric power to the commercial door opener and control before removing or opening covers.

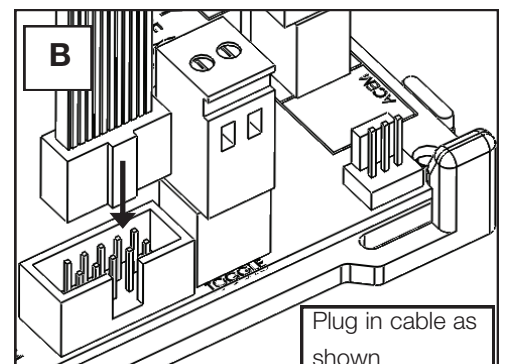
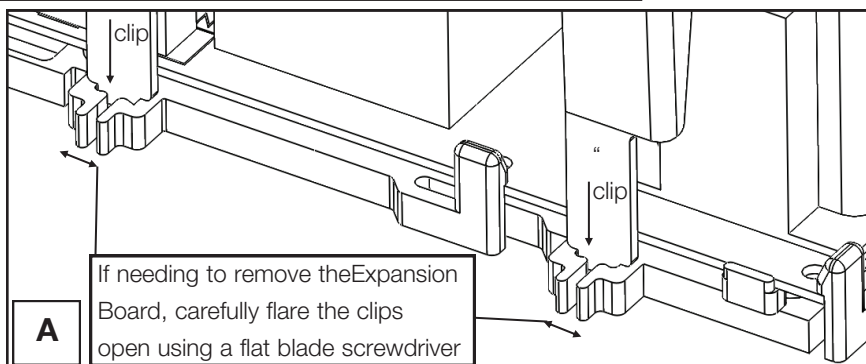
Follow the steps below to mount the relevant Expansion Board as required.



As shown in the relevant steps, the Expansion Board clips into the Main Control Board (MCB) cradle via the 4 x legs (refer Step A).

The ribbon cable is then plugged into the Expansion Socket as marked on the MCB (refer Step B).

After connection, proceed to the next page.



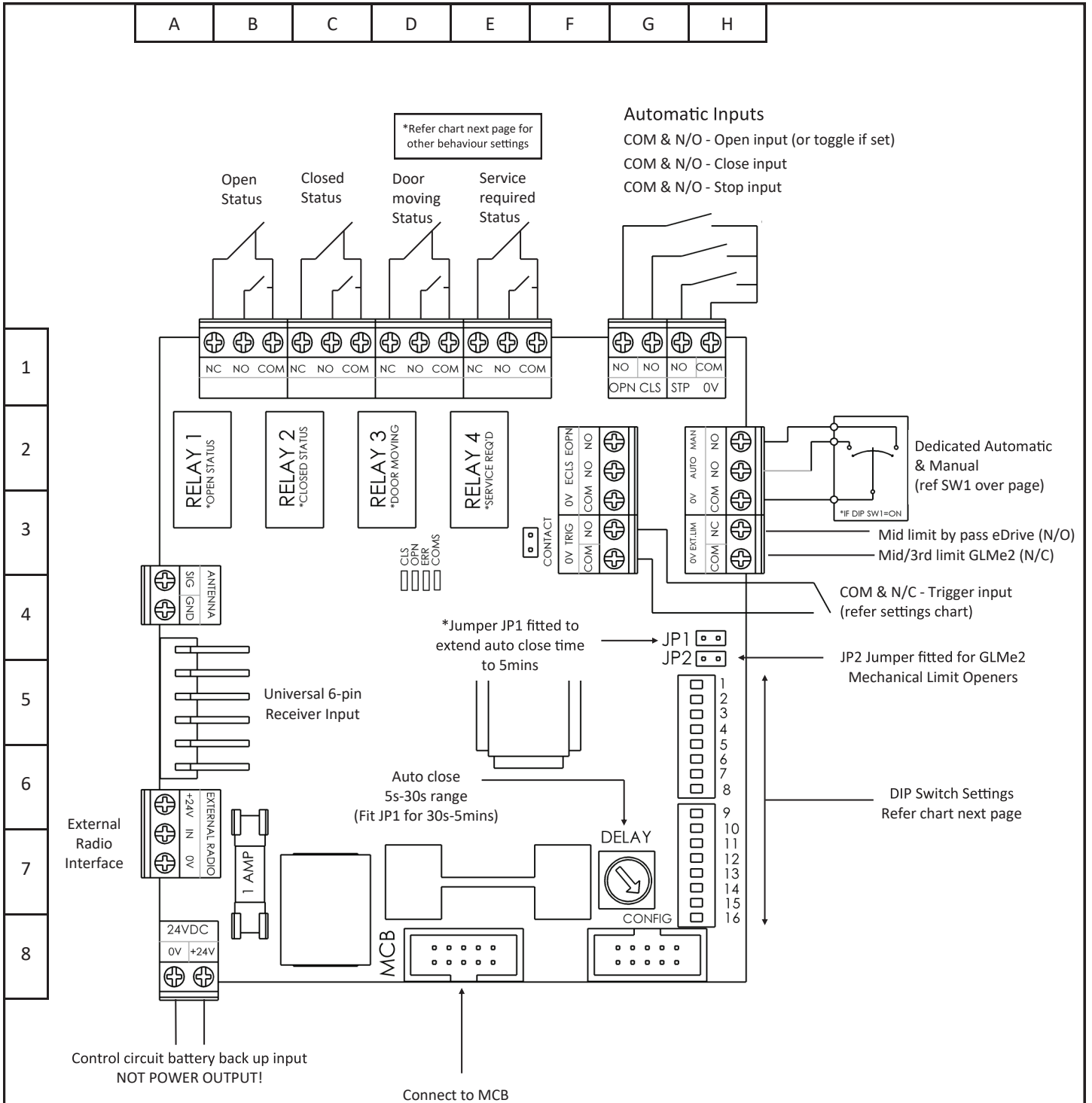
ELECTRICAL CONNECTION



WARNING ELECTRICAL

The EB1(-G) control must:

- be connected in accordance with the wiring rules of the country in which it is installed
- not have control enclosures left open for extended periods (excess dust will void warranty)



The following pages detail the various settings and configurations necessary to set up the EB1 to suit your installation requirements.

CONFIGURATION

The table below provides many variable setting behaviours to suit your door application.

By default, the EB1 is delivered "Factory Set" to operate typical car park applications, as described below.

EB1 Factory Setting Description (Typical car park application)

All wired and wireless user inputs will ONLY open the door. The door will then automatically close after a user settable time.

An obstruction or further user input during closing will command the door to fully open and then automatically close after the set time delay.

EB setting	Dipswitches		Setting
<u>EB mode source</u>	<u>SW1</u>		
Factory Set>	OFF	OFF	AUTO / MAN combined (Controller, Wireless and all wired inputs active)
	ON	ON	Use MANUAL-OFF-AUTO Switch
<u>Auto Close Disable</u>	<u>SW2</u>		
Factory Set>	OFF	OFF	Auto Close ENABLED (Note: Fit JP1 to extend timer range to 5mins. Refer page 5-H4)
	ON	ON	Auto Close DISABLED
<u>Obstruction Behaviour</u>	<u>SW3</u>	<u>SW4</u>	
Factory Set>	OFF	OFF	Stop and retract to last upper limit then Auto Close if enabled*
* If Door Close Retry is enabled (SW 5 off) door will close immediately after obstruction behaviour concludes	OFF	ON	Stop and retract while obstruction remains*
	ON	OFF	Stop with 2 second retract only, then Auto Close if enabled*
	ON	ON	Stop then Auto Close if enabled*
<u>Door Close Retry</u>	<u>SW5</u>		
Factory Set>	OFF	OFF	Door will close after obstruct behaviour concludes
Following a user input to close, the door will not attempt to re-close after an obstruction, if Auto Close is not enabled	ON	ON	Door Close Retry DISABLED, only Auto Close will close the door after obstruction behaviour, and time out concludes
<u>Vehicle Close</u>	<u>SW6</u>		
Factory Set>	OFF	OFF	Vehicle Close DISABLED
	ON	ON	Door will close after obstruction clears, whilst open, opening or closing
<u>Open Button Behaviour</u>	<u>SW7</u>	<u>SW8</u>	
Factory Set>	OFF	OFF	Door will go to open limit and remain (i.e. ignore Auto Close) while input remains held. When released Auto Close will time out and close door
	OFF	ON	Reverse direction during opening and closing
	ON	OFF	Stop then reverse during opening, reverse during closing
	ON	ON	Press to Stop, then again to reverse during opening and closing
<u>Receiver Behaviour</u>	SW9	SW10	
Factory Set>	OFF	OFF	Open only, stop then reverse during closing
Wired Toggle Input on MCB also adopts these behaviours	OFF	ON	Reverse direction during opening and closing
	ON	OFF	Stop then reverse during opening, reverse during closing
	ON	ON	Press to Stop, then again to reverse during opening and closing
<u>*Trigger Input Behaviour</u>	SW11	SW12	
Factory Set>	OFF	OFF	Close
* Trigger is 24VDC input ** When three limits are set open limit becomes mid-limit. Fully open becomes the "upper most" limit.	OFF	ON	Door will open to upper most limit (then Auto Close if enabled)
	ON	OFF	Door will go to open limit** and remain while input remains held (then auto close if enabled)
	ON	ON	Custom Input via Parameters (Default delay close as per timer pot)
<u>Status Relay 3 Function</u>	SW13	SW14	
Factory Set>	OFF	OFF	ON when Door Moving
	OFF	ON	ON when Door Moving, with 1Hz Oscillation
	ON	OFF	ON Door Moving, 1 minute Time Extension
	ON	ON	Custom (Default - on during obstruction, stays on for 2 sec after clear)
<u>Status Relay 4 Function</u>	SW15	SW16	
Factory Set>	OFF	OFF	Relay is on when Service Required
	OFF	ON	Relay flashes every second when service is required
	ON	OFF	Unlock function
	ON	ON	Custom Settings (Default - On if door has not closed for >5mins)

CONNECTION OPTIONS

Door Activation Inputs (Key Switches, Card Readers, Loop Detectors etc)

For typical automated door applications, these wired inputs are generally required to activate the door to open, and in some cases close. For connection detail refer to page 5-G1.

Trigger Input (Emergency inputs, Special application functions etc)

A trigger input can be installed to give more control over the eDrive or GLMe2 control. Once installed the trigger can be used to open/close the door, go straight to third limit if set, hold open or delay close etc. By default the trigger is 24VDC input, however by fitting the “contact” jumper next to the terminals (Page 5-F3) you will switch to “voltage free” input. The behaviour of the trigger is set via the on board dipperswitches. Refer to Trigger Input Behaviour on page 6.

Status Relays

Four status relays located on the Expansion Board allow external devices, such as lights, sirens, locks etc to be activated in various ways. Relays 1 and 2 are set to activate when the door is OPEN and CLOSED respectively. Relays 3 and 4 can be configured via dipperswitches (refer page 6).

6 Pin Receiver / Antenna

Located on the expansion board is a 6 pinned header to suit third party 6 pin receiver cards (page 5-A5). Other hard wired radio cards can be connected directly via the 3 position External Radio terminals (page 5-A7).

An ANTENNA can be wired to the adjacent terminals (page 5-A4).

Extended Limit Input

E-Drive

When using 3 limit positions (Ref. eDrive Manual), you can connect a dedicated input switch to the EXT.LIMIT terminals (page 5-H3). A pulse at these terminals will send door to the upper most limit. This can be convenient where a door is used for both passenger cars and large trucks (e.g. the truck would have a specific key switch to use for full opening of the door). Alternatively, an external receiver module (P/N E8003) can be wired to these terminals to act as a dedicated “fully open” wireless input.

GLM models

If using a third limit on a Grifco mDrive or other mechanical limit opener, this input will act as a N/C mid limit position. To bypass this limit, a Normally Open input will be required across these terminals whereby the input is activated (latched or held) prior to signalling the door to open. The input must remain bridged or held as the door passes the mid limit position. Thereafter the input can be released. Upon a closing activation, or Auto Close event, the door will proceed past the mid limit position and on to the fully closed position.

STATUS TABLE

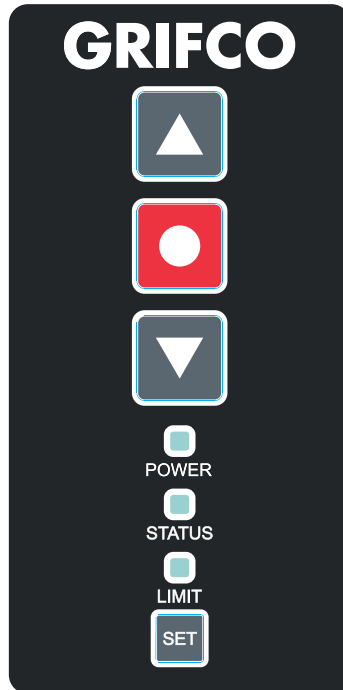
LED Description	Colour	Display		Status	Possible Solution
Close	Red	Solid ON	=	Closed	
		Flashing	=	Closing	
Open	Green	Solid ON	=	Open	
		Flashing	=	Opening	
Error	Yellow	Solid ON	=	EB failed	Power OFF&ON if still error, replace EB
Communications	Orange	Solid ON	=	EB to MCB comms error	Check ribbon connection or replace EB
		1 flash	=	24vdc b/up power detected	Not an error, waiting for mains to resume
		2 flash	=	Incompatible limits	Reset limits
		3 flash	=	No limits Set	Set Limits
		4 flash	=	MCB latch setting error	Check DIP switches are on at MCB
		5 flash	=	EB ignored by MCB	Check MCB for errors

CONTROLLER INTERFACE

The EB1 may be connected through to differing types of Controller interfaces. This page describes the two main Controller types that are typically used, and how they function. For more detailed information about the Controller functionality, refer to the relevant manual provided.

Controller interface (C10A-X) as used on all E-Drive Openers:

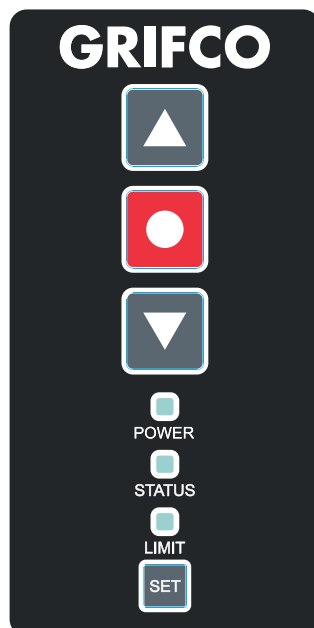
When the EB1 is fitted, the C10A-X will operate in an "AUTO/MAN" mode. Note that many other Controller variants are available that include Key Isolation or, AUTO/OFF modes etc. Call 1800 GRIFCO or your local dealer for more information.



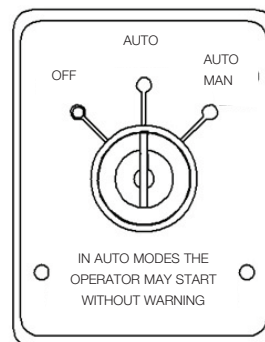
Controller interface as used on GLM6, C21D and C41D:

The key switch modes are detailed below:

- OFF:** The control will not operate from any input source. **WARNING!! THIS IS NOT POWER ISOLATION!!**
- AUTO:** Isolates the Controller panel buttons ONLY to prevent tampering (typical mode for car park environments) All other inputs methods remain active, e.g. wired and wireless access control devices
- AUTO / MAN:** Enables use of the Controller buttons for the purposes of service or where persons may need to operate the door from these push buttons.



Controller



Key Switch

ENTRAPMENT PROTECTION DEVICE CONNECTION

Entrapment Protection Devices (may require terminal blocks P/N TBT2A-5)

Devices such as Infrared (IR) Beams and Safety Bump Edges allow safe automatic or latch closing of the door and must be wired directly into the MCB. Grifco® Entrapment Protection Devices such as the Grifco® Protector System (GPS15 or GPS772*) and Bump Edge are wired into the quick connect inputs located next to the door behaviour dip switches on the MCB (shown below).

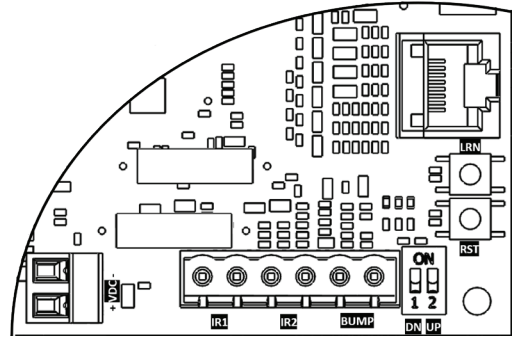
Connection overview:

IR1: Monitored Grifco® Protector System, or NC (normally closed) switching input

IR2: Monitored Grifco® Protector System, or NC (normally closed) switching input

VDC OUT: Accessory power 24Vdc - unregulated (max 150mA)

BUMP: Monitored 8K2 Resistor type Bump Edge input.

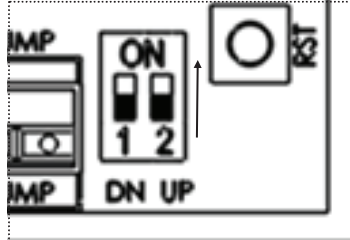
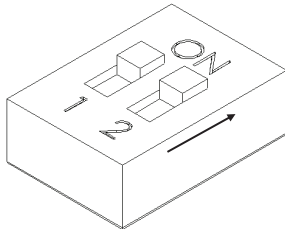


Note: When installing Entrapment Protection Devices ensure that the door is at the open limit position.

Note: All Entrapment Protection Devices need to be activated once after installation to be learned correctly. Normally closed Entrapment Protection Devices and monitored Bump Edges require one simulated obstruction to be learned by the opener. Once learned, latch closing will be allowed when set.

If the status light is flashing 2 or 3 times, there may be a connection problem, or misalignment of an IR beam device.

With connection of the Entrapment Protection System complete, set the door behaviour DIP switch to latch down and up as shown below. This will cause the door to latch both up and down. i.e. a momentary press of the up or down button will cause the door to run automatically to the fully opened or closed position.



Test proper operation of the installed Entrapment Protection System by operating the door in the closing direction and obstruction the device. The door should stop and reverse to the open position.

Erase Entrapment Protection Devices

Press RST button on the MCB for at least 10 seconds until the green light blinks rapidly.

Reactivate Entrapment Protection Devices

Re-install in accordance with the above instruction as required.



WARNING

MECHANICAL Entrapment Protection

The Entrapment Protection System for your installation will be determined by the functional requirements of the door. To ensure the installation meets these requirements refer to AS/NZS 60335-2-103.

When using the Grifco® Protector System as part of the Entrapment Protection System, ensure it is installed to detect a 100mm high obstacle, i.e. approximately 80mm from the floor, and in accordance with installation directions supplied.

Consideration should be given to the detection of vehicles or other similar equipment. To provide adequate Entrapment Protection an additional Grifco® Protector System may be required to be installed in a higher suitable position, for example, approx 600mm from the ground.

NOTE that it is recommended that an additional entrapment protection system should be added at a height appropriate for the functional requirement of the site traffic.

CHAMBERLAIN LIMITED WARRANTY -EB1

Chamberlain Australia Pty Limited / Chamberlain New Zealand Limited (Chamberlain) is committed to manufacturing and supplying high quality goods. As part of this commitment, we seek to provide reliable service and support for our goods and are pleased to provide you, the original purchaser, with this Chamberlain Limited Warranty.

We also provide the following statement as required by the Australian Consumer Law: In Australia, in addition to your rights under this Chamberlain Limited Warranty, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Chamberlain's warranty

Chamberlain warrants to the original purchaser of the Grifco product (Unit) that:

- 1 The EB1 Unit is free from defects in materials and workmanship for a period of 24 months from the date of purchase.
- 2 During the applicable Chamberlain Warranty period, if you are concerned that the Unit may be defective, call our service centre on the toll free number below before removing the Unit and a Chamberlain technician will diagnose the problem. Once the problem has been diagnosed, subject to your rights under the Australian Consumer Law with respect to major failures,

Chamberlain will provide you with:

- 1 parts for "do-it-yourself" repairs; or
- 2 shipping instructions for a factory repair or replacement.

If a factory repair or replacement is required, provided the defective part or Unit is returned to Chamberlain well-packaged and in accordance with Chamberlain's shipping instructions,

Chamberlain will, subject to your rights under the Australian Consumer Law with respect to major failures in relation to the Unit, repair or, at its option where permissible, replace any defective part or Unit and return it to you at no cost; and

Exclusions

If our service centre determines that a warranty claim has been made in respect of a failure or defect arising under or out of any exclusion detailed below such that the claim is not covered under this Chamberlain Limited Warranty, we may, subject to your other rights and remedies as a consumer, charge you a fee to repair, replace and/or return the Unit to you.

This Chamberlain Limited Warranty does not cover any failure of, or defect in, the Unit due to:

- 1 non-compliance with the instructions regarding installation, operation, maintenance and testing of the Unit or of any product with which the Unit is used;
- 2 any attempt by a person other than an authorised installer to change settings, repair, dismantle, reinstall or move the Unit to another location once it has been installed;
- 3 tampering, neglect, abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal commercial use;
- 4 use of the Unit in conjunction with controls which have not been supplied, or pre-approved, by Chamberlain;
- 5 problems with, or relating to, the commercial door or commercial door hardware, including but not limited to the door springs, door rollers, door alignment, hinges, guides, slats and drums; or
- 6 problems caused by electrical faults.

If this Chamberlain Limited Warranty does not apply, you may have rights available to you under the Australian Consumer Law.

Liability – Australia only

Except as set out in the Australian Consumer Law (being Schedule 2 of the Competition and Consumer Act 2010) (as amended, consolidated or replaced):

- 1 all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
- 2 under no circumstances will Chamberlain be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

Liability – New Zealand only

Except as set out in the Fair Trading Act 1986 and the Consumer Guarantees Act 1993 (as amended, consolidated or replaced):

- 1 all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
- 2 under no circumstances will Chamberlain be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

Note

We request that you retain your sales docket or invoice as proof-of-purchase and attach it to this manual to enable you to establish the date of purchase in the unlikely event of a warranty service being required. Chamberlain reserves the right to change the design and specifications of the Unit without prior notification. Some features or accessories of the Unit may not be available in certain markets or areas. Please check with your distributor.

Chamberlain service centre contact details Australia

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