



Grifco *ELITE or EB1 Expansion Kit Installation Manual

Rev: 509020



* Elite Kit pictured

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Introduction

Congratulations on your purchase of the Grifco expansion kit. The Elite kit is typically aimed at satisfying the requirements of car parks, while the simple EB1 expansion kit will allow a vast range of functionality for many other door automation applications.

Some features include:

- Simple “plug-in” AUTO & AUTO/MANUAL modes (with ELITE kit)
- Auto close with user settable delay (0 to 300 seconds)
- Variable obstruction behaviour settings
- Trigger input with variable door action sequences
- Connection to industry standard 6 pin radio receiver cards
- Independent variable radio card response actions
- 4 status relays to allow connection to external devices
- Emergency Services open and close inputs
- Hard wire dedicated AUTO & MANUAL modes



Elite kit shown fitted to Maestro Operator



EB1 kit shown complete

Identifying your ELITE or EB kit

Included with your ELITE upgrade kit is:

- 1 x *Expansion Board pre-fitted with terminal blocks, jumper, cradle and ribbon cable
- 1 x *High Lid to accommodate added height in main control enclosure
- 1 x Auto/Manual Keyed Controller (optional)
- 1 x Hand Transmitter & Receiver Card (optional)
- 1 x PB009 Photo Beam & Reflector (optional)
- 1 x *Accessory Pack (including 2 x three way terminal blocks and 2 x jumpers)

*EB1 – Basic Expansion Kit inclusions as per picture (right)

Installation

Installing Expansion Board

To install the expansion board onto the main circuit board (MCB) of the Maestro:

- Turn off power to the Maestro operator
- Remove the clear lid covering the MCB
- Fit the MRC (Radio receiver) if required (refer to the GT4 & MRC manual included)
- Insert the cradle into the 4 locating slots surrounding the MCB cradle (low in the black enclosure base)
- Fit the ribbon cable into the socket labelled “EXPANSION” on the MCB
- Proceed to connect any external equipment or interfaces as required (following page)
- Fit high lid, and discard low profile lid

Note: The elite expansion board requires either a photo electric beam or safety-edge bumper strip to be connected to the MCB, along with the corresponding jumper settings. Refer to the Maestro Standard Operator Manual for details on door behaviour settings.

Connections *(typical for Elite kit)*

Controller (Not included with EB1)

The standard Elite kit features an AUTO/MAN Keyed Controller that is designed to simply plug into the RJ45 cable/socket in place of the standard controller. Refer to page 5 of the Maestro “Standard Operator” Manual for more details on plugging and mounting.

Note: If you specifically require a stand alone MANUAL mode, you need to hard wire an AUTO/MAN key switch directly to the Expansion Board (refer page 5-K3).

Obstruction Detection Devices *(Photo Beams & Safety Bump Strips etc)*

The Expansion Board requires that at least one obstruction detection device is connected to the MCB to operate correctly. Refer to the Maestro “Standard Operator” Manual on page 10 for more information. You will find an additional 6 position terminal block and 2 x jumpers are included with the Elite Kit for interface and setup of the Standard Maestro Operator.

Door Activation Inputs *(Key Switches, Card Readers, Push Buttons etc)*

One of the most common inputs for a car park door operator is that which activates the door to open. This is generally connected to external / internal key switches, card readers, push button and the like to allow users to activate the door. If remote control is the only source of activation, these inputs will not be required. For connection detail refer to page 5-J1.

Settings *(typical for Elite kit)*

Typical Car Park Application

For typical car park installations, all DIP switches and jumpers are to be OFF (ref below for definition)

In Auto the door is generally operated by a push button, card reader or remote control etc to activate the door in an opening sequence. The door will then automatically close after a user settable time. The obstruction detection input will command the door to open to the fully open position and resume closing after the obstruction has cleared. The Auto Close timer will not be restarted unless another “open” input is received.

The Auto close timer is a dial type pot located in the corner of the Expansion Board where the DIP switches are also found (refer page 5-J11). By default it is set up at a range of 5 – 30 seconds (clockwise to increase). Range can be increased to 5 minutes by fitting Jumper 1 (refer page 5-J6)

For many alternate settings on the Expansion Board refer to page 6.

Operation

Assuming a typical installation, where all of the previous information has been carefully followed, the unit is now ready to be powered up. Before switching on power ensure the AUTO/MAN Controller is set to OFF and that no person is in the path of the door.

Once the unit has been powered up a series of LEDS will display a boot up sequence. Afterwards the lights will indicate the status of the expansion board (refer page 7 for Status LEDS).

AUTO or AUTO/MAN Key Selected Modes

The AUTO/MAN Keyed Controller has these two distinct modes that will behave as follows:

AUTO/MAN – combined

IMPORTANT NOTE: This will be the behaviour if using a simple EB1 kit with existing UP/STOP/DOWN Controller

This mode will allow use of the UP, STOP, DOWN and SET buttons on the Controller. You would use this mode for setting of limits and performing any routine maintenance on the door. It must be noted that the MANUAL use of the push buttons will temporarily disable any AUTO inputs such as transmitters and card readers for a period of 30 SECONDS. After this time the door will resume normal AUTO functions.

For details relating to manual operation, including limit setting, refer to the “Maestro Standard Operator Manual”. Note: In the default (factory set) mode, Auto Close will occur immediately after setting upper limit.

AUTO - only

AUTO only is selected when the door is in normal operations, where the user does not want to allow use of the UP and DOWN buttons on the Controller. The only button to function on the Controller will be STOP. The STOP but will halt the Maestro Operator for approximately 30 seconds, then resume its normal functions after that.

Note: Auto functions will resume 30 seconds after the key switch has been turned from OFF to AUTO or AUTO/MAN. This delay also exists after pressing STOP.

CAUTION – EXTREME CARE SHOULD BE TAKEN BY SERVICE PERSONELL. MOTOR CAN START WITHOUT WARNING IN AUTO & AUTO/MAN KEY SWITCHED MODES.

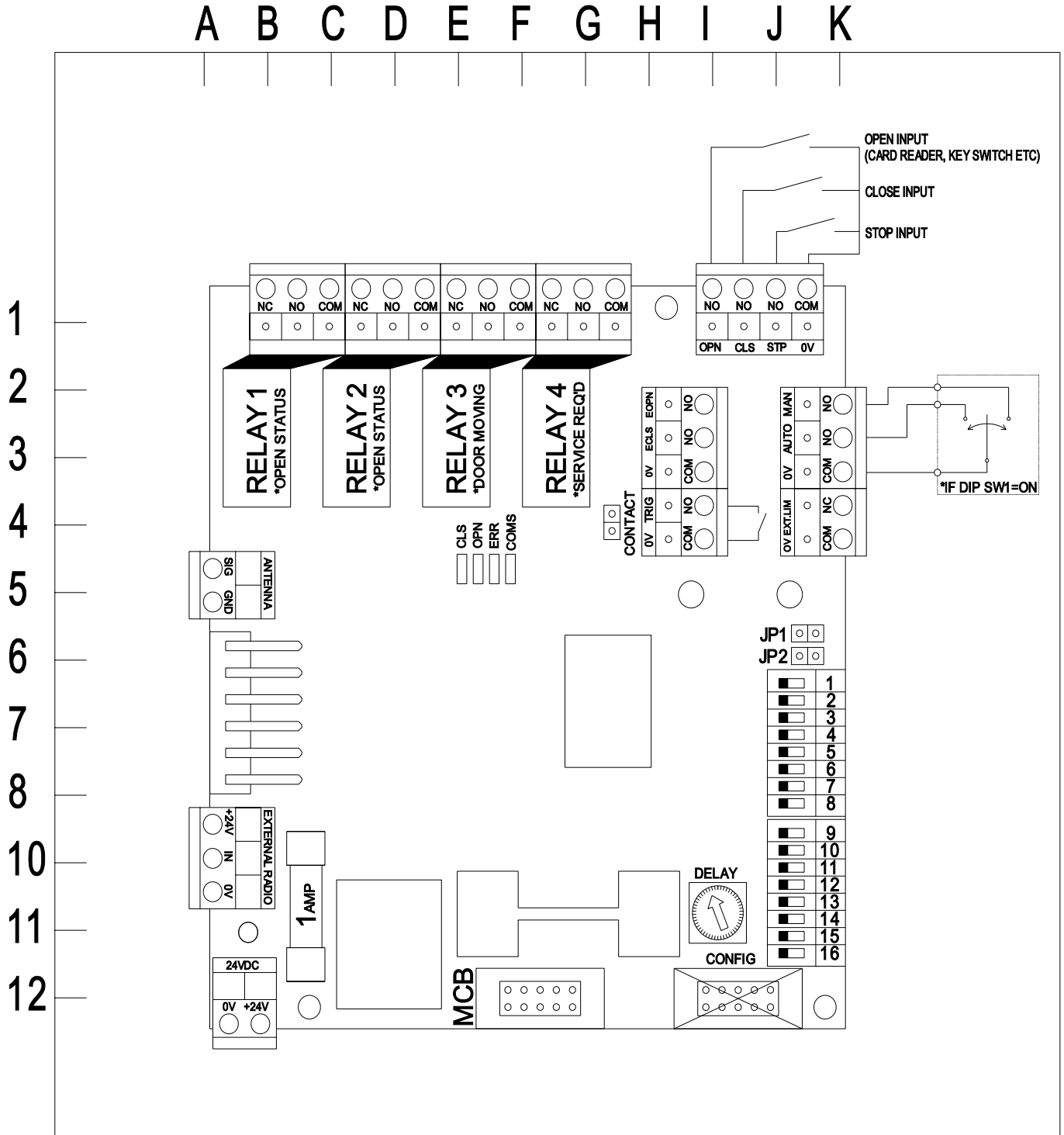
CAUTION - THE ONLY WAY TO ENSURE THE MAESTRO OPERATOR WILL NOT START WITHOUT WARNING IS BY KEY SELECTING “OFF” OR SWITCHING OFF MAINS POWER.

DANGER!

MAINS POWER SHOULD ALWAYS BE SWITCHED OFF BEFORE CARRYING OUT SERVICING TO ANY PART OF THE MAESTRO OPERATOR OR CONTROL SYSTEM.

Layout

The diagram below show the various inputs, outputs and components found on the Expansion Board. Throughout this manual, alpha-numeric references may be made to certain areas. Simply follow the grid locations to see the area being referred to.



Please read and understand instructions before attempting installation

DIP switch settings

Setting the expansion boards behaviour is done by adjusting 16 dipswitches located on it (refer page 5-K8). To adjust the expansion boards settings follow the table below.

EB setting	Dipswitches		Setting
<u>EB mode source</u>	<u>SW1</u>		
Factory Set>	OFF		AUTO with MCB Over-ride
	ON		Use MANUAL-OFF-AUTO Switch
<u>Auto Close Disable</u>	<u>SW2</u>		
Factory Set>	OFF		Auto Close ENABLED
	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
	OFF	ON	Stop and retract while obstruction remains
	ON	OFF	Stop with 2 second retract only
	ON	ON	Stop
<u>Door Close Retry</u>	<u>SW5</u>		
Factory Set>	OFF		Door will close after obstruct behaviour concludes
	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		Vehicle Close DISABLED
	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	Open only, stop and open when closing
	OFF	ON	Reverse direction during opening and closing
	ON	OFF	Stop 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 and open when closing
	OFF	ON	Reverse direction during opening and closing
	ON	OFF	Stop 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	OFF	ON	Door will open to third limit
	ON	OFF	Door will go to open limit and remain while input remains held
	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)

Connections *(advanced)*

External Trigger Input

An external trigger can be installed to give more control over the Maestro. Once installed the trigger can be used to open/close the door, go straight to third limit if set, hold open or delay close. By default the trigger is 24VDC input, however by fitting the “contact” jumper next to the terminals (Page 5-H4) you will switch to “voltage free” input.

The behaviour of the trigger is set via the on board dipswitches. 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, solenoids to be activated in various ways. Relays 1 and 2 are set to activate when door is OPEN and CLOSED respectively. Relays 3 and 4 can be configured via dipswitches (refer page 6).

Each relay has a common, normally open, and normally closed connection

6 Pin Receivers / Antenna

Located on the expansion board is a 6 pinned header to suit industry standard 6 pin receiver cards (page 5-A7). Other style radio cards can be plugged in directly via the 3 position EXTERN RADIO terminals (page 5-A10).

An ANTENNA can be wired to the adjacent terminals (page 5-A5)

Emergency Input Controls

These inputs are used in case of an emergency. They will open or close the door in all operating modes except OFF, overriding all other inputs. If an obstruction is detected during an emergency close, the operator will attempt to re-close after the obstruction is removed, regardless of the ‘Door Close Retry’ settings. The connection points for the emergency inputs can be found on page 5-I3.

Extended Limit Input

When using 3 limit positions (Ref. Maestro Standard Operator Manual), you can connect a dedicated input switch to the EXT.LIMIT terminals (page 5-K4). 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).

Status LEDs *(refer page 5-E5)*

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 PLAT or BLAT jumpers on MCB
		5 flash	= EB ignored by MCB	Check MCB for errors

WARRANTY / GUARANTEE

Charles H. Griffith & Co Pty Ltd herein referred to as "The Company"

- (a) The Company shall guarantee the goods for a period of two years from the date of invoice against any defects in construction or operation arising solely from faulty design, materials or workmanship subject to the following clauses.
- (b) The Company shall at its option, repair, modify or replace defective parts or units at its own expense and within a reasonable time but the Company shall not unless otherwise agreed in writing be liable for costs associated with removal, replacement, transport or travelling expenses incurred by the Purchaser in obtaining the goods and returning them to the Company.
- (c) The Company does not guarantee the goods where:-
 - (i) the defect rises from materials supplied by the Purchaser or a design requested by the purchaser; or
 - (ii) the defect arises from ordinary wear and tear, neglect or misuse by the Purchaser, accident, lack of care, insufficient maintenance, incorrect installation or improper use of the goods; or
 - (iii) the defect arises from force majeure; or
 - (iv) the Purchaser has in any way modified or repaired the goods without the Company's prior written consent; or
 - (v) the Purchaser has not complied with any written or oral instructions concerning the operation and maintenance of the goods; or
 - (vi) the Purchaser is in default in the observance or performance of any other provisions of the contract; or
 - (vii) The Grifco electric motors are used in conjunction with controls other than those assembled and supplied by the Company.
- (d) Where warranty is approved for goods in a used condition, such goods will be repaired or replaced and returned to the purchaser as the Company sees fit. Refunds or credits will only be considered for goods not used and in new, undamaged condition.
- (e) The Company's liability under this guarantee will be strictly limited to repairing or replacing a defective product at the Company's premises, as it may elect.
- (f) The provision of sub-clauses (a) and (b) are stipulated for the benefit of the Purchaser only and are not intended for the benefit of any third party.
- (g) Save for sub-clauses (a) and (b) the Company does not give any warranty or guarantee or make representations whatever in respect of the goods or the fitness of the goods or any part thereof or any particular purposes (whether or not that purpose is known to the Company).

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