GUNNEBO

For a safer world®

Hidden Gate 2 BP

Installation Operation and Maintenance Manual

Contents

Section 1

Introduction

General

Please read this manual carefully, it contains information that will assist you with all aspects of installation and maintenance, including unpacking, so that a long and useful machine life can be achieved.

GI makes every effort to ensure that this manual is reviewed whenever significant changes are made to the design. However, our policy of continuous improvement may result in some small differences between the unit supplied and the description in this document.

Enquiries in this respect should, in the first instance, be directed to our Customer Support Department.
Telephone +39 (0) 461 248900, Fax +39 (0) 461 248999.

Electrical Warnings

The electrical power used in this equipment is at a voltage high enough to endanger life. Before carrying out maintenance or repair, you must ensure that the equipment is isolated from the electrical supply and tests made to verify that the isolation is complete.

When the supply cannot be disconnected, functional testing, maintenance and repair of the electrical units is to be undertaken only by persons fully aware of the danger involved and who have taken adequate precautions and training.

Errors

Reports on errors, comments and suggestions concerning this manual are requested and encouraged. They should be submitted to:
Gunnebo Entrance Control SpA, Via Volta 15, 38015 Lavis (TN), Italy
Telephone +39 (0) 461 248900, Fax +39 (0) 461 248999.

Proprietary Notices

All data appearing herein is of a proprietary nature, with exclusive title to it held by Gunnebo Entrance Control SpA. The possession of this Manual and the use of the information is therefore restricted only to those persons duly authorised by Gunnebo Entrance Control.

Do not reproduce, transcribe, store in a retrieval system or translate into any human or computer language, any part of this Manual without prior permission of GEC.

Hardware Changes

No hardware changes may be made without authority from GEC who will be responsible for ensuring that the proposed change is acceptable in all safety aspects. Personnel authorised by GEC may only make hardware changes.

Any maintenance or modification of Emergency Stop and Guarding Circuitry must be followed by safety checks on the whole hardwired Emergency Stop and Guarding Circuitry.
Prior to a hardware change, records must be made of the change, one of which MUST be sent to the Customer Support Department at GEC at Lavis.

Rotating Machinery

Rotating industrial machinery may poses huge amounts of stored energy. On no account must you commence maintenance if you do not fully understand what you are doing and/or have not taken all the safety precautions normally associated with industrial electronic control systems and machines.

Before starting to work on the equipment, please make yourself familiar with all the associated blocks in the system, including control loops, mechanics, drives, transducers and electrics. Please read all the Manuals of the equipment you are unfamiliar with first.

Warnings, Cautions and Notes

Where necessary within the technical manual, Warnings, Cautions and Notes may be given.

Warnings

Are for conditions that might endanger people. The instructions given in Warnings must be followed precisely. They are given to avoid injury or death.

Cautions

Are for conditions that may cause damage to equipment, or may spoil work. The instructions given in Cautions must be followed to avoid spoilt work or damage to equipment.

Notes

Alert the user to pertinent facts and conditions.

Static Sensitive Devices

Some of the PCB's in the equipment covered by this Technical Manual contain Static Sensitive Devices. It is recommended that maintenance and service engineers are fully aware of the Local Industry Regulations and procedures when handling such devices.

Good Practices

Equipment being installed must not be left unattended unless all potential mechanical and electrical hazards have been made safe. A competent person must be left in charge when the equipment is to be left while potentially unsafe.

The following points indicate good practice that will contribute to safety and avoid equipment damage.

i Ensure that all electrical power supplies and batteries are turned OFF and disconnected before working on any of the equipment.

ii Never leave the equipment in a potentially dangerous state.

iii Use only the correct tools for the task in hand.

iv When working on the equipment, remove any personal jewellery that may be conductive, or clothing that may become entangled with mechanical parts.

Equipment Safety Systems

Safety systems and controls, such as interlocks, covers and guards, must not be overridden or bypassed by personnel other than authorised staff who are qualified to carry out prescribed actions within specified Warnings.

Risk Assessment

Risk assessment is graded into categories of safety, rated 1 to 8 (where 8 is the highest risk level). The following activities are covered.

Rating	Activity
1	Cleaning
2	General Installation
3	Servicing
4	Servicing General Maintenance Using Chemical Fixers
5	Commissioning
8	Floor Drilling

Rating 1: Cleaning.

Who is at Risk	Engineers or Site Personnel
Hazard	Misuse of Cleaning Fluids
Current Controls	Compliance with health regulations

Rating 2: General Installation

Who is at Risk	Site Personnel
Hazard	Objects/Tools in Installation area
Current Controls	Trained Installation Engineers

Rating 4: General Maintenance

Who is at Risk	Site Personnel
Hazard	Electric Shock
Current Controls	Isolation of Power/Trained Service Personnel

Using Chemical Fixer

Who is at Risk	Site Personnel within the Vicinity of the Work Area
Hazard	Fume Inhalation
Current Controls	Compliance with health regulations

Rating 5: Commissioning

Who is at Risk	Site Engineer
Hazard	Power Supply/Moving Parts
Current Controls	Isolate Power

Rating 8: Floor Drilling

Who is at Risk	Installation Engineer
Hazard	Flying Debris and Noise
Current Controls	Protective Equipment must be worn

CE - Marking

The GEC HiddenGate is CE marked, developed and manufactured according to the EU's Machinery, Low-Voltage and EMC-Directives.

Important Notice

The HiddenGate is a security product, any children or minors using the HiddenGate must be supervised and accompanied by a responsible adult. Gunnebo Entrance Control does not accept any liability if this rule is not enforced.

Section 2

Product Description

The GM HiddenGate Bi-Parting range is designed for applications of low profile, high flow rate but maintaining a high degree of security.

The passageway is bi-directional. The two directions of transit A and B can be configured in the following three modes.

- Unlock Mode. - All persons are allowed transit.
- Lock Mode. - Transit is forbidden.
- Reader Control Mode. - Transit is only allowed for persons who have been given permission by a badge reader

The operating mode for each direction of transit can be set via the following methods.

a) Using programmable parameters: parameter 40 controls direction A and 41 direction B. (Refer to the annex "Parameter Table" for reference)

b) By remote control.

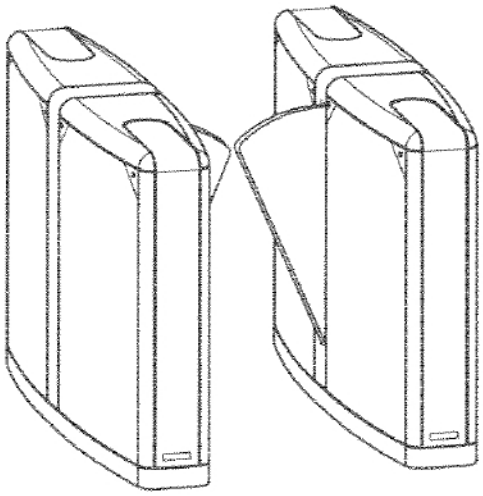
c) By a command sent through the RS485 serial line.

Note - Methods b and c will require optional interface cards COMR1 or RS485 at additional cost

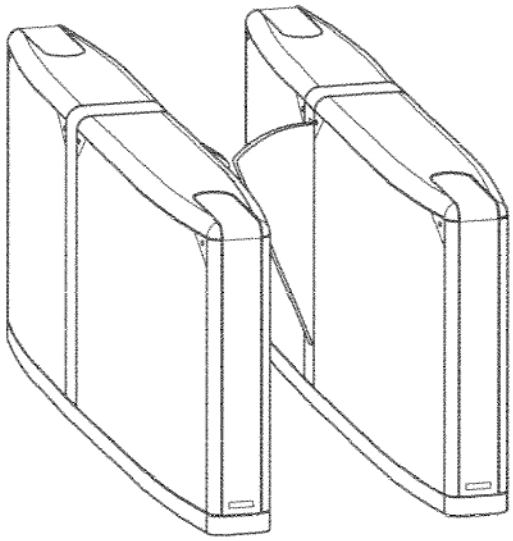
Activation of the remote command or serial line command has priority over the setting made using the programmable parameter.

Typical Units

HiddenGate 2 NC
(Short Cabinet)



HiddenGate 2 NO
(Long cabinet)
(Long cabinet)



Passage Management

The command logic manages all system actions that allows a person to move through the passageway. The logic uses information from photocells to detect the presence and position of persons in the inside area.

In addition it receives authorisation signals from the card readers and at the same time, provides the readers with activation and transit completed signals. It controls and regulates movement of the mechanisms and effects all related acoustic and visual warnings.

Technical Specification

Drive:		Motorised
Material:	Top	Painted Polyurethane - finished metallized grey
	Front	Painted Polyurethane - finished metallized grey
	Wing Housing	Painted Steel finished to match Top and Front.
	Inlay	304 grade grained Stainless Steel
	Wings	19mm transparent acrylic.
	Side Doors	304 grade Stainless Steel and PMMA.
	Plinth	304 grade grained Stainless Steel
Function:		Passage in both directions, electronically controlled. The HiddenGate is available in Normally Open (N/O) or Normally Closed (N/C) mode. In the N/O mode (available only for the long cabinet version) the HiddenGate provides an always-open walkway in the rest position - it will only close at an authorised entry or tailgating attempts. This provides high flow rates and increases the MTBF. In the N/C mode the unit provides a closed walkway which can only be opened on receipt of an authorised signal.

The N/O cabinet can be configured to change to N/C mode via programmable parameter (Pgenerali) or remote switching and the addition of the optional COMR1 interface card.

It is not possible to convert from N/C to N/O.

Mechanism:

Method of Operation:

Power Supply:

Power Consumption:

Logic Voltage:

Power Failure:

Fire Alarm:

Interface:

Operating Temperature:

Transportation and Storage:

Location:

Relative Humidity:

Section 3

Instructions for Use

The information contained in this section should be used as a basis for the instruction of personnel in the correct use of the HiddenGate Range of Barriers.

Using the HiddenGate

- **Normally Closed**

The HiddenGate is unlocked by presenting a personalised identity card or device to the access control reader. (Supplied by others). It can also be unlocked by depressing a casework or remote reception push button, if fitted, or Free Passage configuration. This will activate the mechanism and retract the wings into the casework, rendering the HiddenGate ready for use by walking through the walkway passage in the authorised direction.

Should the user decide not to proceed with the passage, the HiddenGate will remain unlocked for a predetermined time after which it will 'time out' and reset the unit making it available for the next person.

After the passage is complete the mechanism will be reactivated automatically to operate the wings to the closed position.

Always check the status lights mounted on the top of the HiddenGate casework (if fitted) for right of passage, i.e. Red Cross denotes opposite direction has right of passage or Green Arrow denotes right of passage.

Should the HiddenGate be used in the incorrect manner, i.e. used out of passageway sequence the wings will close and an alarm sound. Do not panic, retreat from the walkway, and wait for the alarm to stop and the system to reset automatically. During the alarm stage the status lights will flash, after reset check the status lights for right of passage.

Do not attempt to follow a person through the HiddenGate if you do not have an authorisation. This is known as Tailgating, and will activate the controller to close the gates between the authorised and unauthorised user. The HiddenGate will now go into the alarm and reset phase.

If the HiddenGate and access control system has been configured for multiple authorisation, known as Stacking, the users may proceed in close proximity after the preceding passage occupant. Again, the status lights should be checked for right of passage.

Should the HiddenGate be set up for free passage, there is no need to wait for any authorisation, the passage may be freely used. Again, check the status lights for right of passage, in normal operation the opposite passage will be activated via the access control device requiring authorisation.

- **Normally Open**

In Normally Open situation the HiddenGate will operate identically as for Normally Closed, except for the following.

The wings in normal operation will be fully retracted into the casework. On acceptance of an authorised user the HiddenGate will remain inactive. However, should an unauthorised person attempt to make passage the controller will activate the mechanism to block the walkway by closing the wings. The HiddenGate will then go into the Alarm State.

The Normally Open mode is available only for the long cabinet version.

- **Emergency / Fire Alarm**

The HiddenGate can be configured to fully open the wings when an Emergency / Fire Alarm is given to the controller by the appropriate detection system (by others).

This condition will remain for the duration of the signal being received by the controller.

- **Power Failure**

Should the power fail during operation, or dormant use, the wings will remain in their position at the time of power failure if they are configured in the blocked mode (Refer to Fig 4.5) If they are configured in unlocked mode they can be pushed open or closed manually.

A Battery Back Up option is available at extra cost and this will operate the HiddenGate to complete or commence an operating cycle to the open wings condition.

- **Safety**

The HiddenGate passage is protected via a safety photocell that when a presence is detected the wings will not operate until the presence is removed. In this condition the HiddenGate will automatically go into Alarm condition.

Should an obstacle be detected during the closing of the wings they will back off to the open position. In this condition the HiddenGate will automatically go into Alarm condition.

Important Note

- **DO NOT** walk through the barrier with large bags or briefcases in front, or trailing behind you. Carry in normal manner, next to the body.
- **DO NOT** drag bags over the casework top.
- Activation of the remote command or serial line command has priority over the setting made using the programmable parameter.

Operating Modes

The HiddenGate operation is bi-directional. The two passageway directions A (the master casework is at the right hand of the user) and B can be managed in one of the following modes:

free: the gate enables transit of all passengers in the corresponding direction, the entry and/or exit traffic-lights have the green arrow;
blocked: the gate does not enable transit in corresponding direction, entry and/or exit traffic-lights have the red cross;
controlled: the gate allows transit only to persons authorized by the access control system.

The operating mode of the gate can be set by means of:

- Programmable parameters
- Gate itself (on failure, etc.)
- RS485 serial line or remote command on the COMR1 optional board.

Serial line or remote command have priority over the settings made using the programmable parameter.

The mode change is possible only if the gate is in stand-by condition: the gate shall not be engaged, in alarm or in emergency conditions.

Passage Management

The command logic manages all the system actions, which allow a person to move through the passageway. The logic uses all the information from the photocells to detect the presence and position of persons in the inside area.

In addition, it receives permissive signals from the readers and at the same time, provides the readers with activation and transit completed signals, it controls and regulates movement of the mechanisms and effects all related acoustic and visual warnings.

In the controlled mode the gate waits for reader signal in order to allow transit of the user.
It is possible to allow the user to enter inside the gate and then to validate. Alternatively, the user must validate standing outside the gate. This operation mode could be chosen by the parameter ModoCntr.
In the first case, the user can wait for the permissive signal inside the gate, but the permissive signal shall arrive within a timeout limit. This timeout depends on the value of specific programmable parameters. At the end of the timeout, if the validation has not arrived, an alarm condition is generated: in that case no acoustic signal is emitted but only visible signal in order to hurry up the user to validate or free the gate.

Alarms

The logic system of the passageway detectors recognises situations where persons incorrectly use the passageway or are not authorised to transit and generates an alarm signal when these conditions occur.

An alarm warning involves:

- A buzzer generates an acoustic sound which is repeated approximately at a one second cadence.
- At the same time, the traffic lights and pictograms flash, displaying a Red Cross.
- At the same time the alarm signal output on the COMR1 optional board is activated and de-activated.
- The gate wings are closed.
- On the LCM02 circuit board screen on the master command wing a message appears indicating the specific condition, only if SW2 is depressed once.
- The alarm signal output is activated.
- The readers could be de-activated, depending on the value of the programmable parameter ModoCntr.
- A message is sent via RS485 serial line regarding the type of alarm.

The alarm signal continues until the cause which generated it is removed and it than stops after a short delay. This delay can be regulated with the programmable parameter TResAll.

The various alarm conditions recognised by the passageway logic system can be separately activated or de-activated with the programmable parameter EnAllarmi1. If an alarm is de-activated and a condition occurs which would normally generate it, the system does not react.

Alarms indicating attempted tailgating have a programmable parameter, which regulates their selectivity, that is the ability to intercept a person who follows a person with authorisation for transit.

The lower the value of this parameter the greater the selectivity (0=max selectivity).

The alarm conditions, corresponding selectivity parameters and messages transmitted via serial line are listed over.

Table 3.1 - Alarm Functions

Alarm	Selectivity Parameter	Message via serial Line
Alarm 1	TAll1	Tailgating
Alarm 2	TAll2	Tailgating
Alarm 3	CntAll3	Tailgating
Alarm 4	TAll4	Tailgating
Alarm 5	TAll5	Tailgating
Alarm 6		Incorrect transit
Alarm 7		Incorrect transit
Alarm 8	TODisimpegno	Incorrect transit

Alarm Description

- **Alarm 6: Incorrect Transit**

  Indicates that someone is attempting to go through the passageway while it is effecting transit in the opposite direction (return).

- **Alarm 7: Incorrect Transit**

  When the gate wings are closed and the passageway is in stand-by, the inside area must not be occupied unless the transit mode is in unlock and the reader has given authorisation.

- **Alarm 8: Incorrect Transit**

  It indicates that the passageway has not been freed at the end of transit within the time limit established with the programmable parameter TODisimpegno.

The programmable parameter Select allows the operator to define the required selectivity level without working on the aforementioned single parameters (it gives different sets of default values for the involved parameters).

Alarms enabling with remote control unit type MCU95

When one or plus Hidden Gate are controlled with a remote control unit type MCU95 is necessary to set up the alarms like in the following table:

TYPE OF ALARM	SET UP
Jump Over	OFF
Fraud	ON
Improper Passage	ON
Random	OFF
Top Lid	OFF
---------- -	OFF
----------	OFF
AUX 1	OFF
Positioning	OFF
Antipanic	OFF
Temperature (or Sensors)	OFF
Sensors	ON
Motors	ON
AUX 2	OFF
AUX B	OFF (ON if equipped with battery)

Graphics Description and Timing Charts

These are available if required from Gunnebo Entrance Control Customer Support department Technical engineer.

Programmable Parameters

The system operation is conditioned by the values given to certain parameters stored in the EEPROM on the LCM02 PCB.

When the control logic microprocessor executes the resident program it consults the values of the programmable parameters and sets the timings of certain actions and internal algorithms.

The values of these parameters can be adjusted or reset to a standard configuration by following the procedures given.

Listed in the annex "Parameter Table" are the parameters together with their locations and functional descriptions.

Section 4

Technical Information

Motor Control

The master and slave command logic controls movement of the corresponding mechanisms acting as a drive system for the respective motors.

The drive system for the mechanism motor is based on a feedback system, which controls the position of the motor shaft as well as the power supply,

To drive either the Normally Open or Normally Closed type of system two different configurations of the programmable parameters are necessary. These are set in the factory.

Zero Setting Cycle

When the system is turned on, the mechanisms carry out an opening and closing cycle at reduced speed while the gate wing limits are detected.

The actual course made during operation is determined by two parameters, which represent the offset of the limits detected during the zero-setting cycle.

These parameters are:

- PoffsetAp for the gate wing in the open position.
- PoffsetCh for the gate wing in the closed position.
- Speed during the zero cycle is regulated by the programmable parameter PvelAzz.

Speed and Response

The response of the feedback system is based on two parameters that regulate the speed, with which the system reacts to changes and the gate wing is brought to the desired position. These parameters are Prisposta and PprecObiet, respectively.

The gate wing opening speed can be regulated with the parameter PvelMinAp, which establishes the minimum value and PvelMaxAp the maximum.

The gate wing closing speed is regulated with the parameter PvelMinCh, which establishes the minimum value and PvelMaxCh the maximum.

The precision with which the speed is brought to the desired value can be regulated with the parameter PprecVelo.

Both during opening and closing at the final phase of the movement, the motor must stop the inertia of the gate wing. The start of this braking action is established by the parameter PreleaseAp during opening, and PreleaseCh during closing.

The braking curve is established during opening by the parameter PcurvaAp, and during closing by PcurvaCh.

Accident Prevention Photocell

The passageway is equipped with an accident prevention photocell, which prevents closing of the gate wing when an object obscures it.

If the accident prevention photocell is obscured during closing, the gate wings are blocked. The gate wings begin to move again only after the photocell is disengaged and after a delay. This

The number of photocells that are utilized as safety can be changed by acting on parameter FotoSafety; this allow to increase the safety zone till the desired compromise between security and passenger comfort has been reached (the tailgating detection performance will be decreased).

An additional safety photocell could be used connecting it to the connector Y5, on SGI board slave side.
If not used, it is necessary to have a jumper between pin 1 and 4, connector Y5, on SGI board slave side.

Obstacle Control

The command logic of the motor controls detection of any object that prevents the gate wing from moving.

If an object is detected during closing, the gate wings are opened.

If an object is detected during opening, the gate wings are closed.

The gate wings start moving again only after the obstacle is removed and after a delay. This delay can be regulated with the parameter PAllOSPauseAP for opening phase and PAllOSPauseCh for closing.

The sensitivity which an obstacle is detected is determined by the programmable parameter PcorrOstacoloAp for opening and PcorrOstacoloCh for closing.

Before modifying the parameters, in order to tune the obstacle control, try to get the required functionality by rotating the potentiometer located on the UCM95 Drive Card. The tuning shall be performed in the following way.

- Check that the parameters PcorrOstacoloAp and PcorrOstacoloCh are defined as per the default values (see the annex "Parameter Table");
- Set the gate in mode "mechanism factory testing" (see section 4 of this Manual) and, by rotating the potentiometer on UCM95 board, try to manually hold the panels: right adjustment is when, holding the panel, it easily backs off.

Note 1. During potentiometer adjustment, it can be that the wing backs off without any obstacle stopping it: this is due to a too high sensitivity and must be avoided for the correct use of the gate. It is therefore important, after the potentiometer adjustment, to set the gate to "Mechanism Testing " mode, see Section 4 of this Manual, and to effect the inversion of wings movement during their stroke. If the inversion is performed without any problem or unexpected movements, the tuning procedure can be considered terminated; in any other case it is necessary to adjust the potentiometer to reduce obstacle detection and to repeat all the procedure reported above.

Note 2. Since the obstacle detection depends from all the mechanism downstream the electric motor, it is very sensitive to small changes from one mechanism to another. It can happen that the default values of parameters PcorrOstacoloAp and PcorrOstacoloCh do not allow the obstacle tuning by acting on the potentiometer only. In this case it is necessary to lower the value of the aforementioned parameters, to find the right potentiometer adjustment and to repeat all the procedure in Note 1.

Command Time Out

Each time a gate wing open or close command is generated, the time is counted within which the command must be carried out. If the command is not effected within the time limit, and the cause is not an engaged accident prevention photocell, or detected obstacle, the movement is stopped.

After a pause the movement starts again. However, if the reason causing the command to fail persists for more than 15 seconds, the passageway goes into a fault mode. The time interval can be regulated with the programmable parameter PtimeMov.

Reader Management

• Reader Unlock
In reader command mode, the logic system waits for a badge reader to transmit an unlock signal authorising transit. The signal from the reader can be interpreted in two ways.

1. Unlock on front: the logic system interprets the off-on transition of the unlock signal as a permissive.
2. Unlock on level: the logic system maintains the unlock condition for the entire time the signal arrives from the reader. Operation in one mode or the other is determined by the programmable parameter PReader.

It is possible to allow users to validate inside the gate by selecting appropriate values for parameter ModoCntr for.

Transit authorisation for user on wheelchair

With the short cabinet, wide version, a specific input is available to allow the transit of a passenger on wheelchair. That input works like the reader permission input but, when it is activated, the gate logic configures all time-outs and parameters for that kind of transit managing. For use this type of input is necessary to enable it by the parameters set up.

Authorisation Memory

If the reader authorisation is set on "unlock on front" the logic system memorises the authorisation signals which arrive while the passageway is still effecting transit.

The maximum number of authorisations that can be memorised is determined by the value of the programmable parameter PmaxMemo.

Activation and Count

There are eight outputs for interfacing the passageway to different types of readers - four on the LCM02 circuit board on the master logic and four on the circuit board of the slave logic.

A logic function attributed to each one of these can be set with values on corresponding programmable parameters.

The function of the outputs and a list of the names of their variables is given in Table 4.1

Pushbuttons and Display

The operator can perform changes to the parameters or carry out input tests using a sub system of the LCMO2 PCB consisting of two seven segment displays (T1 and T2) and pushbuttons SW1, SW2, SW3, SW4.

Emergency

If an active emergency is triggered at one of the possible entrances, the passageway goes into emergency mode.

1. The gate opens and remains open.
2. All previous alarm or fault warnings stop.
3. The green arrow signal starts flashing on the traffic lights and pictograms.
4. The readers are de-activated.
5. A message is transmitted via the RS485 serial line indicating a local emergency status.
6. No other operation is carried out.

This operating mode continues as long as the signal is active.

Table 4.1 Output Functions

Variable	Function
FELA	0 Deactivates reader A 1 Activates reader A
FELB	0 Deactivates reader B 1 Activates reader B
Count A	Count pulse of transit in direction A (*)
Count B	Count pulse of transit in direction B (*)
FbusyA	0 Transit not engaged in direction A 1 Transit engaged in direction A
FbusyB	0 Transit not engaged in direction B 1 Transit engaged in direction B

(*) The duration of the count pulse can be regulated with the value of the programmable parameter PulseCont.

Special Functions

The HiddenGate entrance offers the possibility of using special functions, which allow the installation and maintenance personnel to carry out operating tests, configure parameters and observe status and testing messages of the system.

The available functions are listed below:

- V-meter type display of the intensity of current supplied to the motor.
- Alarm or fault message display
- Photocell tests
- Mechanism test
- Modification of programmable parameters
- Base configuration of programmable parameters
- Encoder testing
- Detection of PWM minimum signal
- Testing of gate wing movement mechanisms

To gain access to these functions, use the buttons installed on the LCM02 circuit board on the master command logic plate.

Buttons and Screens

It is possible to carry out different operations such as parameter modifications or testing inputs and outputs

For this purpose a subsystem is used composed of two seven-segment displays with points (T1 and T2) and buttons SW1 (microprocessor reset) and SW2, SW3, SW4 of the LCM02 command logic circuit boards, shown in the figure.

Message and Test Display

When the system is operating, using button SW2 on the LCM02 circuit board of the master plate, the following functions can be activated in sequence.

1. V-meter (No need to depress SW2 for this function)
2. Display of alarm or fault messages
3. Mechanism tests
4. Photocell tests
5. Return to item 1

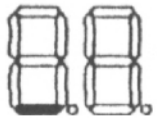
In items 1 and 2, the system manages transit, in the other points this management is suspended.

V-Meter

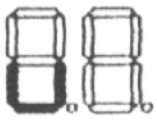
This function makes it possible to obtain a graphic display of the instantaneous current intensity supplied to each motor by the corresponding logic system command.

The T1 displays of the two LCM02 circuit boards are used, the segments of the display are lit based on the intensity of the current.

For example:



low intensity



medium intensity

high intensity

Messages

When the system is operating, the following messages can be read on the interface unit screen:

Go

Indicates that the system is operating correctly, no alarm or fault condition is present.

Otherwise, the active alarm or fault condition can be read on the interface unit screen as listed in following tables:

Table 4.2: Alarm messages

Alarm messages	Short cabinet version	Long cabinet version
Alarm # 1 triggered	A1	AL↔01
Alarm # 2 triggered	A2	AL↔02
Alarm # 3 triggered	A3	AL↔03
Alarm # 4 triggered	A4	AL↔04
Alarm # 5 triggered	A5	AL↔05
Alarm # 6 triggered	A6	AL↔06
Alarm # 7 triggered	A7	AL↔07
Alarm # 8 triggered	A8	

Table 4.3: Photocells fault messages

Fault messages	Short cabinet version	Long cabinet version
Photocell #1 fault	F1	Fo↔01
Photocell #2 fault	F2	Fo↔02
Photocell #3 fault	F3	Fo↔03
Photocell #4 fault	F4	Fo↔04
Photocell #5 fault	F5	Fo↔05
Photocell #6 fault	F6	Fo↔06
Photocell #7 fault	F7	Fo↔07

Photocell #8 fault	F8	Fo↔08
Photocell #9 fault		Fo↔09
Photocell #10 fault		Fo↔ 10
Photocell #11 fault		Fo↔ 11
Photocell #12 fault		Fo↔ 12
Photocell #13 fault		Fo↔ 13
Photocell #14 fault		Fo↔ 14

Table 4.4: Safety photocells fault messages

Fault messages	**Short cabinet version**	**Long cabinet version**
Safety photocell fault	S1	SA↔01
Auxiliary safety photocell fault	S2	SA↔02

Table 4.5: Mechanisms fault messages

Fault messages	**Short cabinet version**	**Long cabinet version**
Master side mechanism fault	E1	En↔01
Slave side mechanism fault	E2	En↔02

Table 4.6: Battery fault messages

Fault messages	**Short cabinet version**	**Long cabinet version**
Battery fault	bA	bA

Mechanism Testing

A test of the mechanisms can be effected by carrying out the operations described below,

Press button SW2 until the symbol below appears on the screen. By pressing button SW3 the open command is given and the two gate wings should open, by pressing button SW4 the close command is given and the two wings should close.

CA

During these tests a code describing the operating status of the two mechanisms is displayed on the screen, the figure on the right is for the Master side mechanism, the figure on the left for the Slave side mechanism.

If both gate wings are open it reads:

00

If both are closed it reads

CC

If they are moving, or in a fault condition it reads.

FF

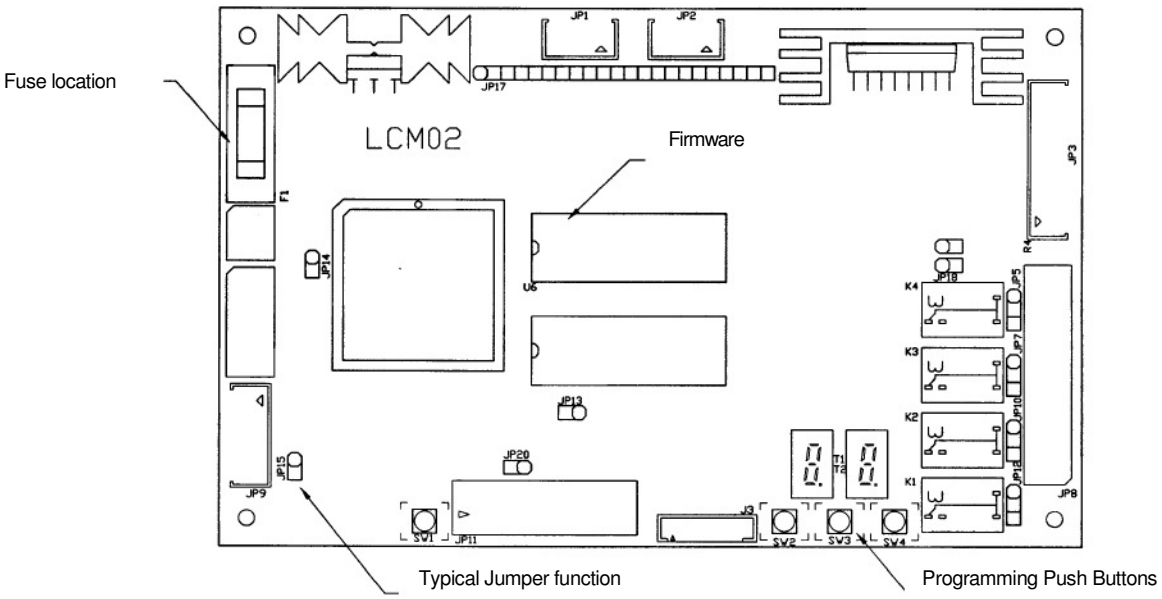
The system can be returned to a normal operating mode by pressing button SW2 until the symbol below appears on the screen.

Go

Changes to the Programmable Parameters

The operator can perform changes to the parameters or carry out input and output tests using a sub system of the LCM02 PCB consisting of two seven segment displays (T1 and T2) and pushbuttons SW1, SW2, SW3 and SW4.

Figure 4.2 Programming Pushbutton and Switch Locations



<u>Qualified</u> personnel only must carry out parameter changes.

It is recommended that before any changes are made the old locations and values are recorded, and when the change is completed the new values are listed for record purposes.

Accessing the Parameter Change Mode

To access the parameter change mode:

1. Press and hold down pushbutton SW2
2. Reset the microprocessor by pressing and releasing SW1
3. Release SW2

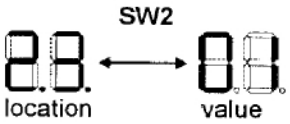
A number will be shown on the Display.

If the number has two decimal points - it is the LOCATION.

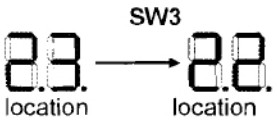
If not - it is the PARAMETER VALUE.

i.e.

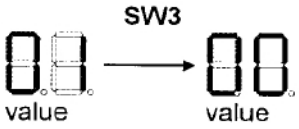
Pressing SW2 will cause the logic to switch between PARAMETER LOCATION and RELATIVE VALUE.



Pressing SW3 when a Location is displayed will move to a lower location.



Pressing SW3 when a Value is displayed will decrease the VALUE.



Pressing SW4 when a Location is displayed will move to the next higher Location.

Pressing SW4 when a Value is displayed will increase the Value.

When all required adjustments have been made - start the program using the RESET pushbutton SW1.

Note: should LCM02 display go blank when pressing SW1, then turn the power off and then back on.

Basic Configuration

It is possible to change ALL the parameters according to a pre-set configuration.

Important Note

THIS CONFIGURATION IS DIFFERENT TO THOSE SET DURING FACTORY TESTING. ANY CHANGES WILL DELETE THE ORIGINAL SETTINGS.

Parameter Default Setting

There are two separated procedures for the initialisation of the parameters: one is for the parameter group regarding the mechanism management and the second for the Passage Detection System (PDS).

Mechanism Default Parameters

Def.	Short cabinet version	Long cabinet version
00	Full Panel mechanism 1800 and 1200	Full Panel mechanism 1800 and 1200
01	-	-
02	Bi-Parting mechanism (Encoder without belt)	Bi-Parting mechanism (Encoder without belt)
03	Bi-Parting mechanism (Encoder with belt)	Bi-Parting mechanism (Encoder with belt)
04	Bi-Parting Wide mechanism (Encoder without belt)	-
05	Full Panel Wide mechanism	-

To select between them follow the procedure:

Push SW2 + SW4 and then press and release Reset: "En" is displayed;
Push SW3 to chose between 00, 01,02,03, 04, 05 set;
Confirm with SW4, wait for "do" is displayed and then give the reset.

If "Er" is displayed, change position at the JP15 jumper of the board and then repeat the procedure.

Passage Detection Default Parameters

Def.	Short cabinet version	Long cabinet version
00	Normally Closed with Battery	Normally Closed with Battery
01	Normally Closed without Battery	Normally Closed without Battery
02	-	Normally Open with Battery
03	-	Normally Open without Battery

To select between them follow the procedure:

Push SW2 + SW3 and then press and release Reset: "Pd" is displayed;
Push SW3 to chose between 00, 01,02,03 set;
Confirm with SW4, wait for "do" is displayed and then give the reset.

Note -

Ensure that if the card readers are used in both directions that parameter 41 is changed to 03.
After altering the parameters and resetting, the unit should be switched off for 5 seconds and then turned back on. The rational for this is that certain parameters only communicate from master to slave when the power is restored.

Wings Movement Tuning

If the mechanism arm is hitting the mechanical stop at the limit of the stroke, it is possible to operate a tuning movement through the following parameters.

Address	Value	Note
0.8.	24 o >	Positioning during opening
0.F.	28 o >	Positioning during closing

Mechanism Factory Testing

This operation is performed during factory testing. It is not necessary to carry out this operation during installation.

1. Press and hold buttons SW3 and SW4.
2. Reset the microprocessor by pressing and than releasing button SW1.
3. Release buttons SW3 and SW4.

The symbol below appears on the screen and a timed and repeated sequence of gate opening and closing starts.

CL

The system can be returned to normal operating mode by pressing reset button SW1.

Photocell Testing

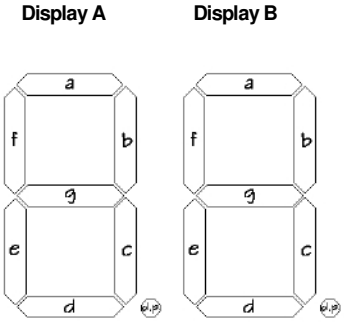
The photocells can be tested by carrying out the operations described below:

Press button SW2 until the symbol shown appears on the screen.

FC

By pressing button SW3 or SW4 the status of the individual photocell will appear on the screen. Each photocell corresponds to an LED as follows.

Fig 4.3 - Normally Open Photocell Testing



Segment	Display A	Display B
a	B8	B1
b	B9	B2
c	B10	B3
d	B11	B4
e	B12	B5
f	B13	B6
g	B14	B7
d.p.	B15 (safety)	

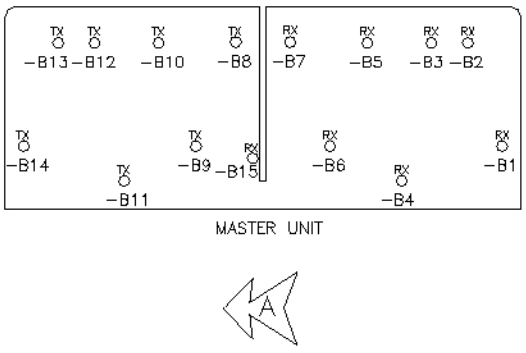
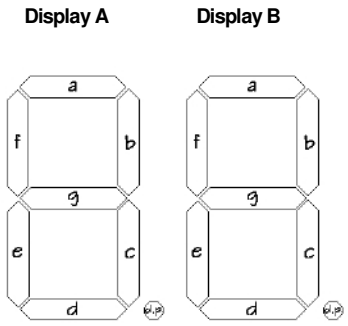
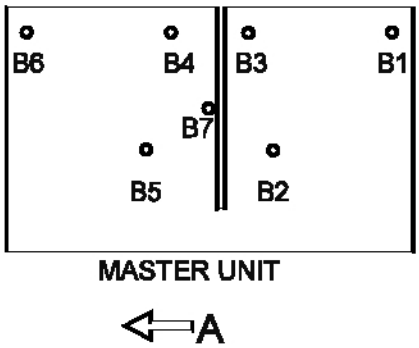


Fig 4.4 - Normally Closed Photocell Testing



Segment	Display A	Display B
a	B7 (safety)	B1
b		B2
c		B3
d		B4
e		B5
f		B6
g		
d.p.		



If a photocell is not obscured its corresponding LED is on.

If a photocell is obscured its corresponding LED goes off.

In normal operating conditions, if there is no object in the inner area of the passageway, all the photocells are aligned and their corresponding LED's are all on.

The system can be returned to a normal operating mode by pressing button SW2 until the following symbol appears on the screen.

Go

Encoder Testing

This operation makes it possible to test the correct operation of the two encoders during the maintenance phase. Two different procedures are required to test the Master side and Slave side encoder.

Master Side Encoder

The LCM02 circuit board on the master command logic plate is used.

1. Press and hold down button SW3.
2. Reset the microprocessor by pressing and then releasing button SW1.
3. Release button SW3.

A hexadecimal code number representing the number of passes read by the encoder appears on the screen.

1. Press button SW2 the open command is given and the Master side wing should open.
2. Press button SW3 the close command is given and the Master side wing should close.

In addition, the number displayed during opening decreases, during closing it increases.

Slave Side Encoder

The LCM02 wing of the Slave command logic wing is used.

Press and hold down button SW2.
Reset the microprocessor by pressing and releasing the button SW1.
Release button SW2.

Then follow the steps described for the master side Encoder testing.

Automatic Testing

The logic system of the Unit effects a cyclical control of the operating status of the motors, photocells and batteries (if installed). If a fault occurs:

- A buzzer generates a signal for an intermittent period.
- At the same time, the traffic lights and pictograms flash displaying a Red Cross.
- At the same time, the alarm signal output on the COMR1 optional circuit board is activated and de-activated.
- On the LCM02 circuit board screen on the Master command plate a message appears indicating the specific condition.
- The fault output is activated.
- The readers are de-activated.
- A message is transmitted via the RS485 serial line regarding the type of fault detected.

If a fault occurs, contact the maintenance personnel for assistance.

The test can be separately activated or de-activated with the programmable parameter PenDiagnos.

Automatic Motor Testing

A fault is detected on the motor whenever one of the following conditions is present:

If for an extended length of time the gate wing is not in the open or closed position corresponding to the command given.

Fault in the motor command logic.

Failure of motor to move, not caused by obscuring of safety photocell or detection of an obstacle on edge of gate wing. If this condition persists for more than fifteen seconds, the logic system shuts off the power to the motor to prevent damaging the circuitry.

Automatic Accident Prevention Photocell Testing

The logic system periodically effects an operational test of the accident prevention photocell. If the passageway is not in use, the first test is carried out approximately twenty seconds after the gate wings are closed at the end of the zero-setting cycle.

Subsequent tests are made at regular three-minute intervals from the last use of the passageway.

The test is carried out as follows:

The photocell transmitter is turned off.
After a fixed amount of time the condition of the photocell is checked.
The transmitter is turned back on.

If at point 2 and/or 4 a condition is detected which is different from that expected, a fault is generated.

The time interval indicated in points 2 and 4 can be regulated with the programmable parameter PtmrTest2.

Automatic Transit Photocell Testing

If a sensor remains engaged for more than a certain time, a "fault alarm" signal is given. When the sensor return to the free status, the signal is stopped. By means of parameter TOFoto (default 10s) it is possible to change the engaging time before alarm. This test is performed on all the sensors, even the safety sensor.

Only in the NC version (short cabinet), the logic system effects another test of the transit control photocells. This test is based on the principle that for each transit the photocells are engaged at least once.
If this does not occur for more than five transits in a row and for the same photocell, a fault is generated. However, if one or more of the photocells fails to operate, the system may not operate properly or alarms may be generated.

Automatic Battery Testing

The logic system periodically effects a test on the battery charge. If the passageway is not in use, the first test is carried out approximately twenty seconds after the gate wings are closed at the end of the zero-setting cycle

Subsequent tests are carried out at regular three-minute intervals from the last use of the passageway.

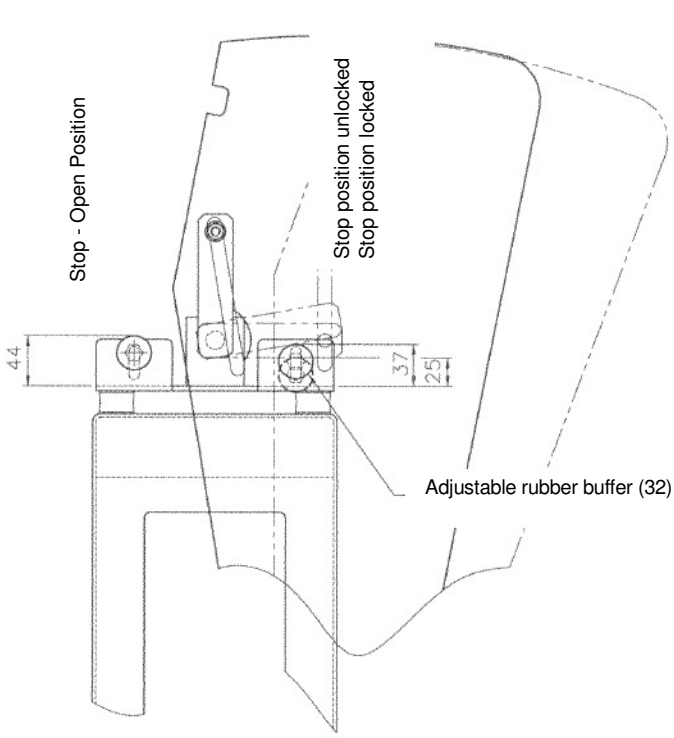
If the voltage at the battery conductors is lower than a certain threshold value, a fault is generated. If the passageway is not equipped with a battery, this test is de-activated.

Note.
This test must be deactivated using relevant parameters if battery has not been fitted.

Mechanical Stop Adjusting

Adjusting of the mechanical stop at the limits of the stroke in order to have the locked or the unlocked configuration in case of power failure

Fig 4.5 Tuning Locked/Unlocked



The different modes in case of power failures are defined by the different position of the mechanical stop: this can force the mechanism arm to be above the centreline of the mechanism (see figure).

Without any different specification, GEC HiddenGate Bi-parting will be configured as unlocked in case of power failure. The adjustable mechanical stop device (32) is put to 37mm. If it is necessary to change the configuration, it is enough to move the rubber buffer (32) to 25mm.

In order to perform such modification, remove the lateral panels and disconnect the main power supply to the unit. Loosen the M8 nut on the back of the mechanical rubber stop, tune it in the required position and tighten the nut. Before connecting the main power supply, test that the modification has been correctly performed by manually pushing the wing into the cabinet starting from the close position. If the test gives positive result, connect the main power supply to the unit and reposition the lateral panel.

Repeat this procedure for each mechanism.

Section 5

Installation

The Hidden Gate has to be installed out of rain and water sprays, since in not protected from dangerous effects of water penetration

Unpacking

On receipt of equipment on site, check all items are complete and undamaged. If for any reason transit damage has occurred, ensure the extent of any damage is recorded and if considered necessary report the incident to GEC.

Retain all major component packaging for re-use in the event that items may need to be returned for servicing during their life.

Tools Required

- Industrial hammer drill
- Concrete drill bit 12mm (or 20mm)
- Socket 17mm AF
- Socket 22mm AF
- Torque wrench

Please read carefully before commencing the installation

Site Preparation

The following illustrations show the site preparation details that are required for the various units.

Concrete to UNI 9858 Type RCK250
The base must be flat and level to +/-5mm over the HiddenGate area.
The base must be laid with under floor conduits with a minimum diameter of 20mm rising in the positions indicated on the particular illustration, to accommodate the cables for power supplies and any remote control devices.

Note - It is recommended that power cables should be routed at the MASTER end.
One conduit should be dedicated to the mains supply cable, which must be three core, earthed rated at 10 amps minimum. When laid there should be at least 1.5 metres of tail.

(See Fig 5.6 for cable routing recommendations)

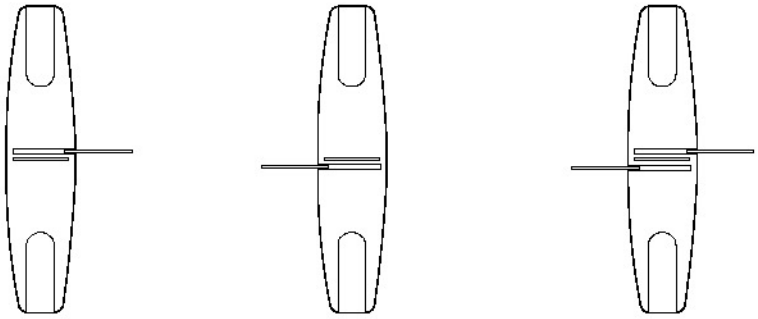
It is recommended that the mains power to the unit passes through a dedicated line, that is not feeding other devices that can be cause of interferences. The power line shall be protected by an automatic circuit breaker.

A second conduit should be provided for any remote control cables that may be required. On units controlled by pushbuttons or footswitches a four core cable having a minimum conductor size of 0.5mm sq. should be laid and a 1.5m tail left. (Screened cables are NOT normally required).

For units that are to be controlled by Card Access or similar it is recommended that GEC Technical Personnel are advised prior to starting the installation routines.

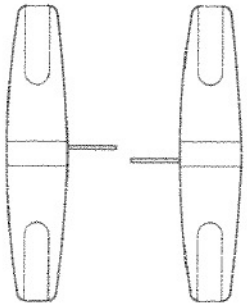
Fig 5.1 HiddenGate General Lane Configuration

Installation Secure Side

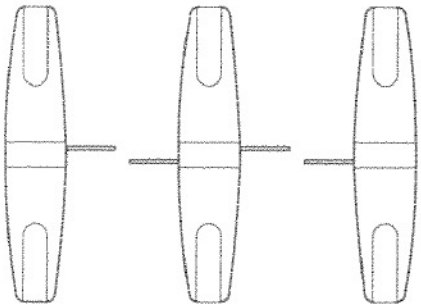


Installation Non Secure Side

Left Cabinet L	**Right Cabinet R**	**Centre Cabinet C**

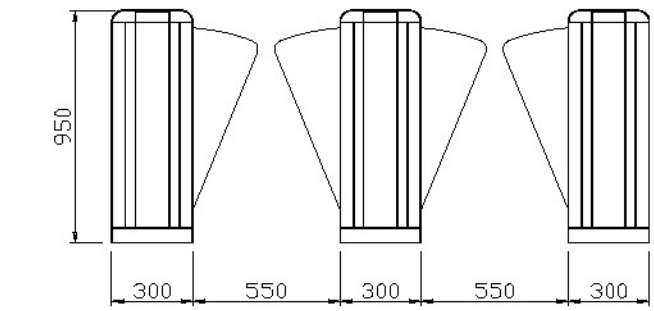


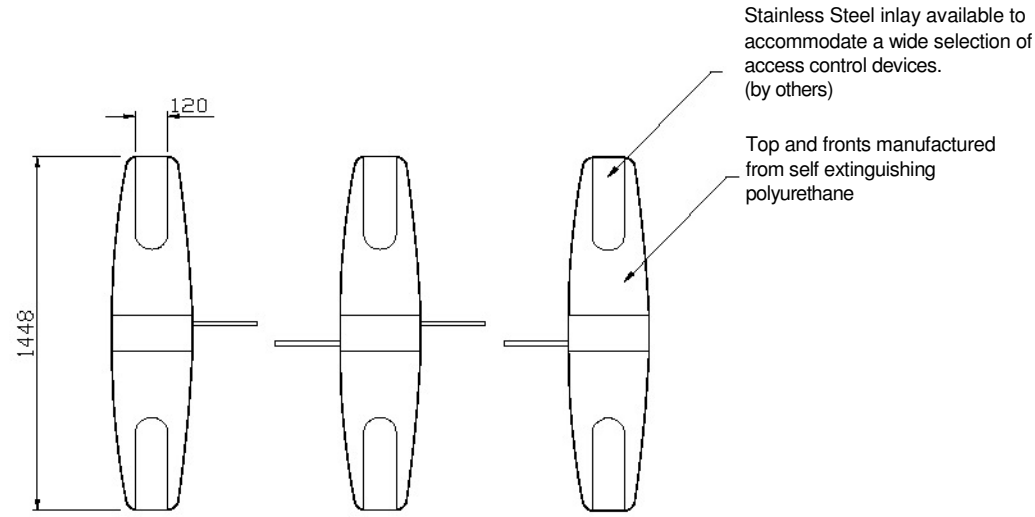
One Lane configuration comprising of 1Nº L and 1N° R cabinets

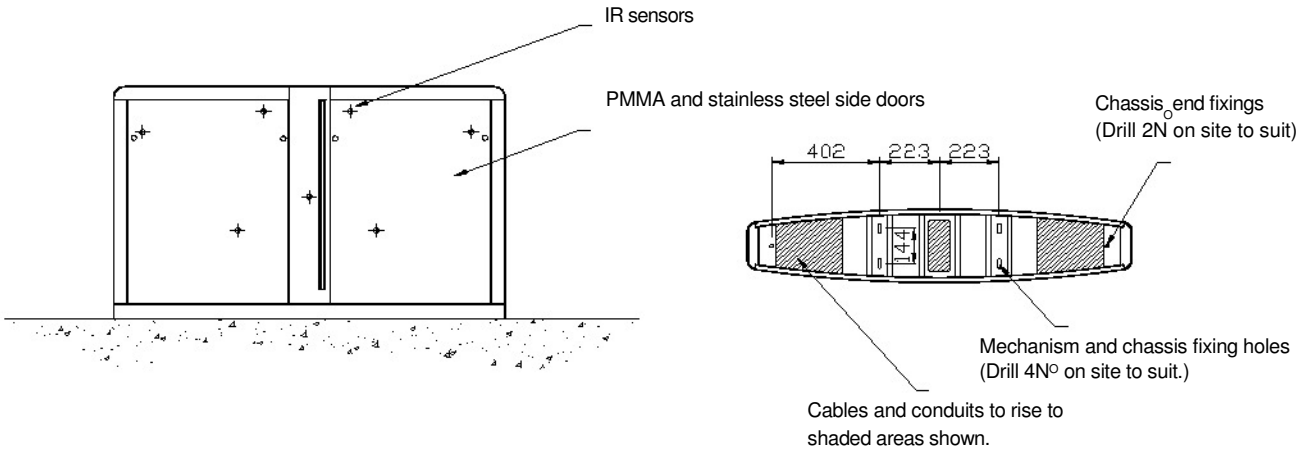


Two Lane configuration comprising of 1Nº L, 1N° C and 1N° R cabinets

Figure 5.2 HiddenGate2 BP NC Short Cabinet
(Panels shown in closed position in Left, Centre and Right configuration)



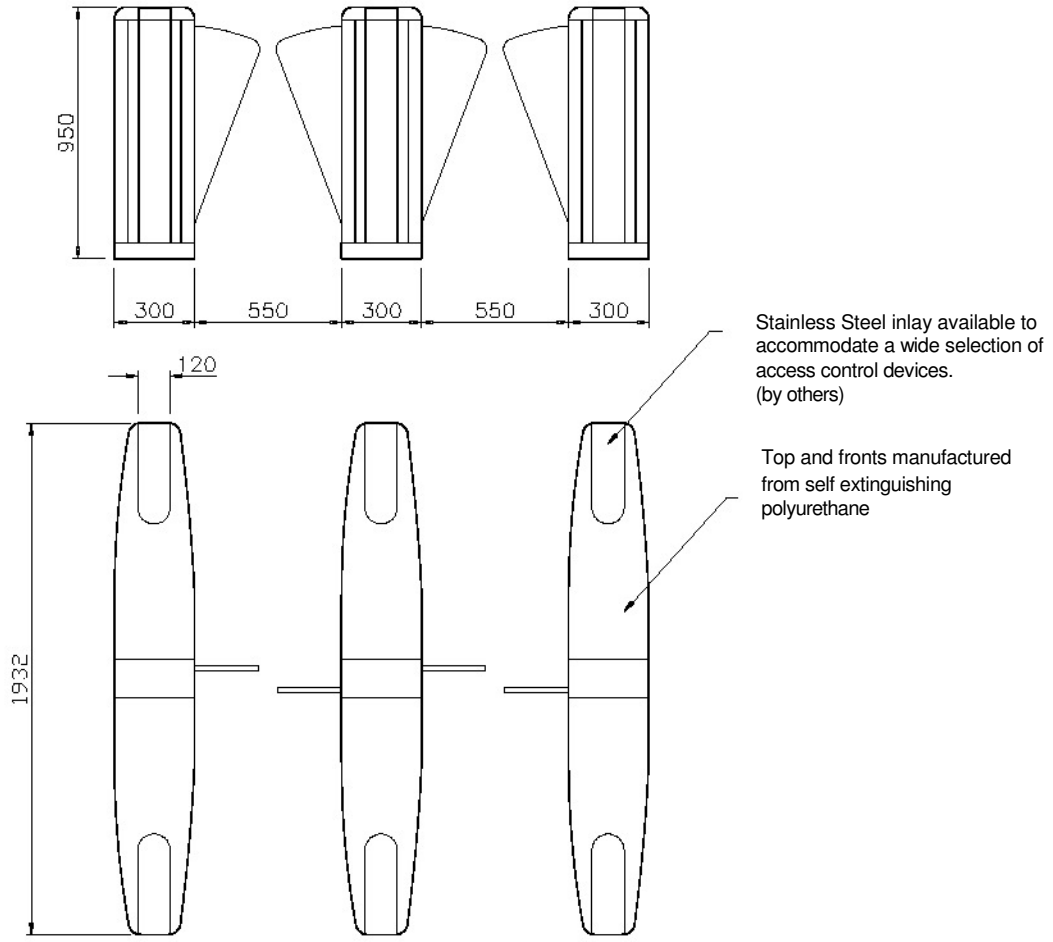


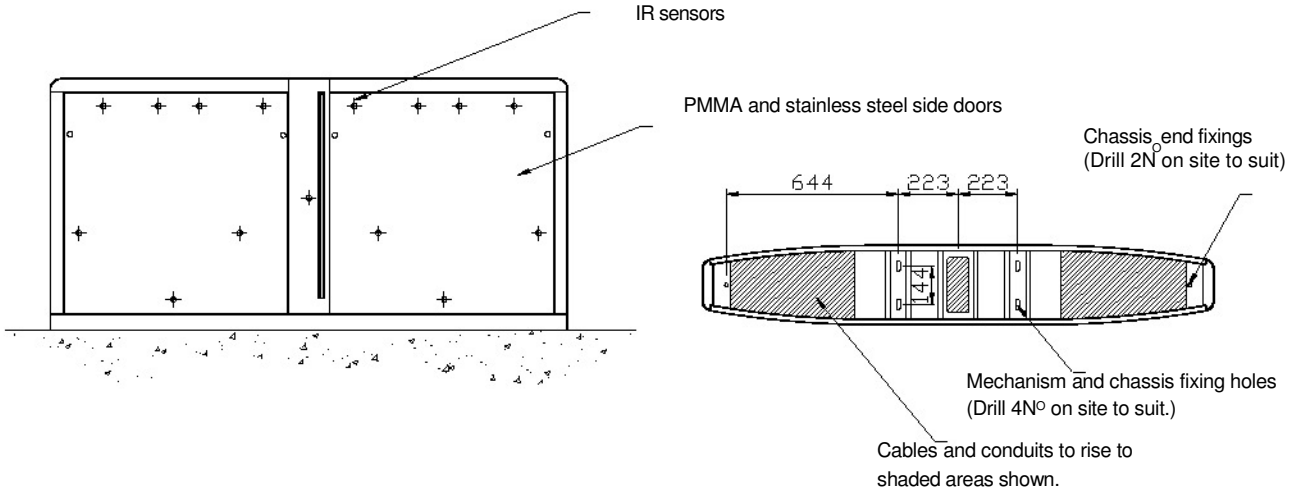


Concrete to UNI 9858, RCK 250type
Base to be flat and level to +/- 5mm over the Hidden Gate footprint area. 1500 x 500 x 150 deep min, per cabinet

IMPORTANT:
Any horizontal pipe or conduit runs below the Hidden Gate must be at least 140mm below FFL.

Figure 5.3 HiddenGate2 BP NC/NO Long Cabinet
(Panels shown in closed position in Left, Centre and Right configuration)

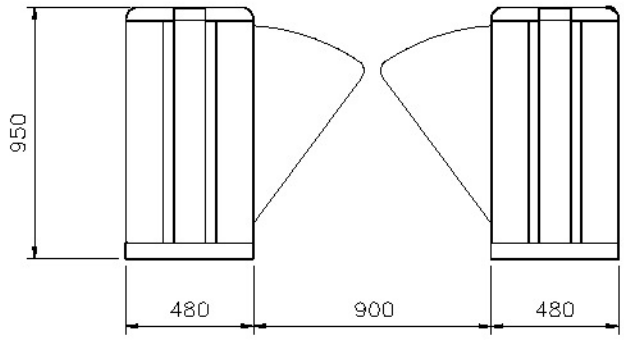


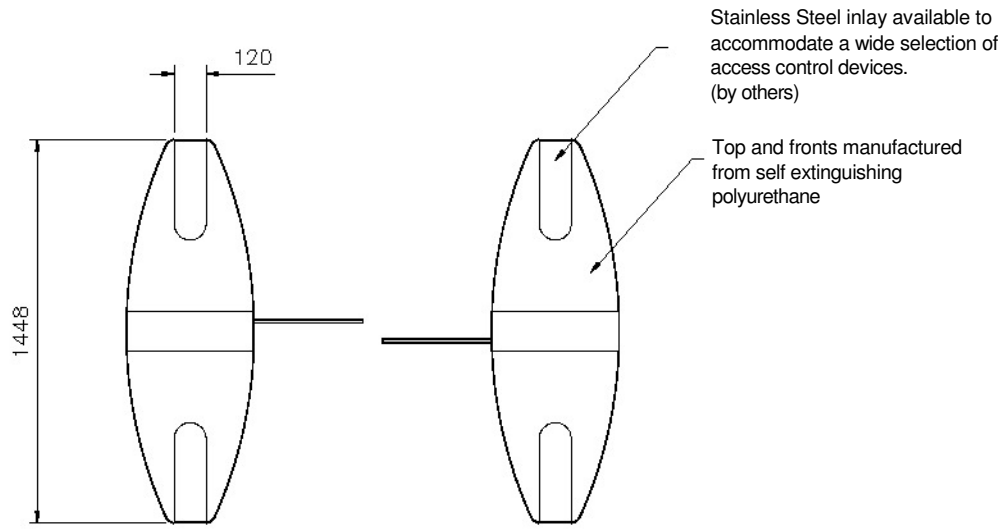


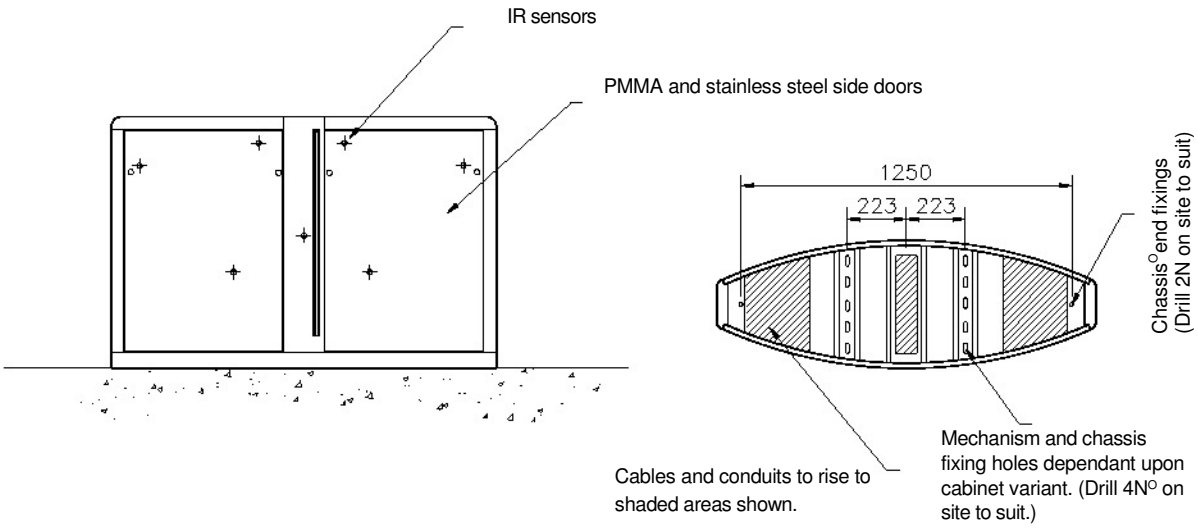
Concrete to UNI 9858, RCK250 type.
Base to be flat and level to +/- 5mm over the Hidden Gate footpint area. 1500 x 500 x 150 deep min, per cabinet

IMPORTANT:
Any horizontal pipe or conduit runs below the Hidden Gate must be at least 140mm below FFL.

Figure 5.4 Hidden Gate2 BP NC Short Cabinet Wide Version
(Panels shown in closed position in Left and Right configuration)



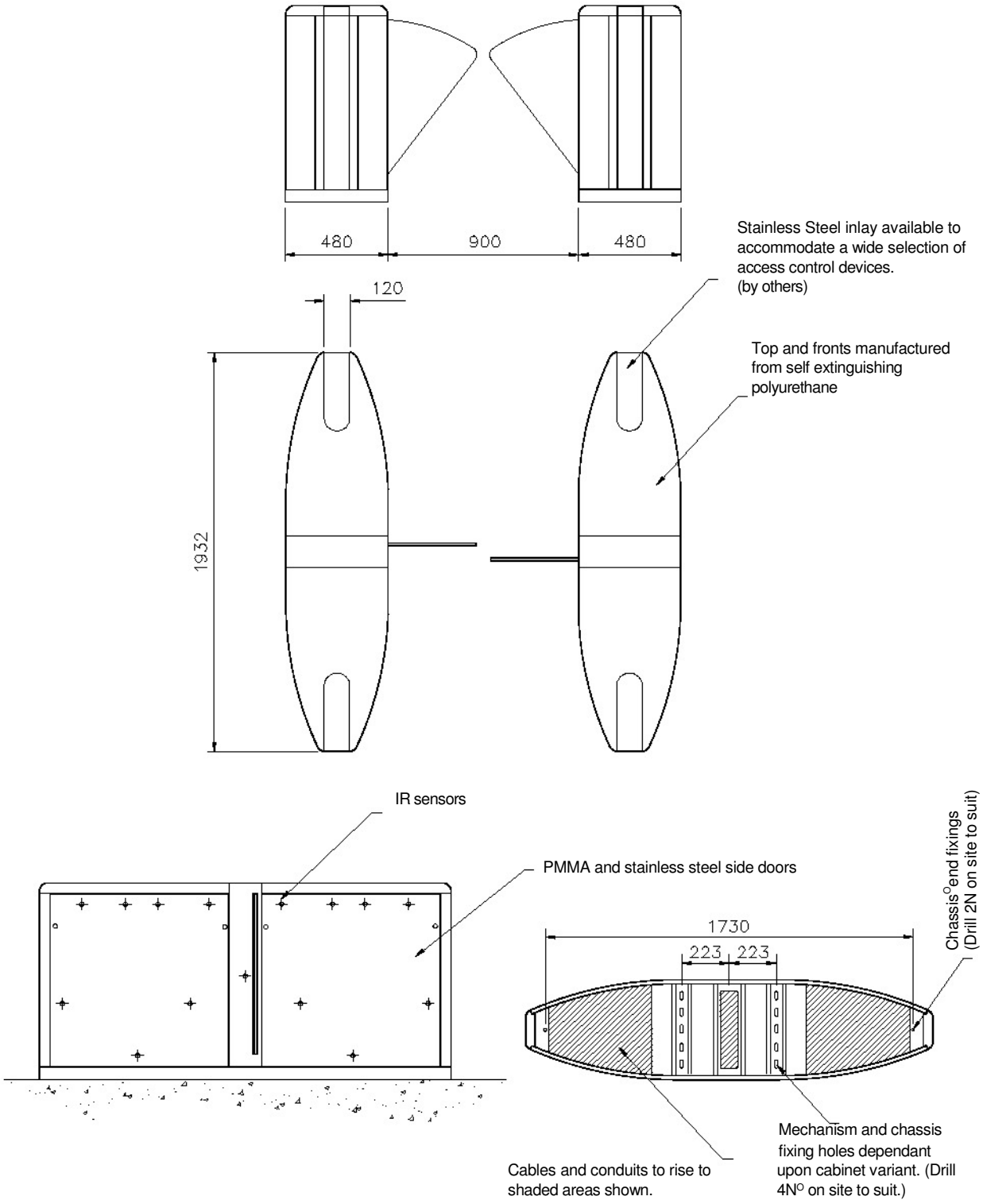




Concrete to UNI 9858, RCK250 type.
Base to be flat and level to +/- 5mm over the Hidden Gate footprint area. 1500 x 500 x 150 deep min. per cabinet

IMPORTANT:
Any horizontal pipe or conduit runs below the Hidden Gate must be at least 140mm below FFL.

Figure 5.5 HiddenGate2 BP NC/NO Long Cabinet Wide Version
(Panels shown in closed position in Left and Right configuration)



Concrete to UNI 9858, RCK250 type. Base to be flat and level to +/- 5mm over the Hidden Gate footprint area.
1500 x 500 x 150 deep min. per cabinet

IMPORTANT:

- Any horizontal pipe or conduit runs below the Hidden Gate must be at

Unit Positioning

The following details should be noted, when planning the location of the HiddenGate unit.

- Allow 50mm to the rear of the HiddenGate to enable removal of the side access panel.

Floor Drilling

The following guidelines are given to ensure that the unit is positioned correctly.

- Mark the floor fixing positions carefully as shown on the appropriate illustration and check the conduit risers are correct.
- If the HiddenGate is to be installed as a multiple installation it is recommended that all fixing and conduit positions are marked and checked prior to drilling.
- Stand the unit over the marked positions and check that the bolt and conduit holes in the base of the unit match the floor markings.
- Check all clearances to adjoining Barriers or Wall.

When satisfied that all is correct move the unit away and drill the floor. Fit the anchor bolts.

Installation Kit

- **First Lane** (FL)

Item	**Quantity**
HiddenGate Cabinets	2
Side Access Panel Lock Keys	2
Anchor Bolts	8 (16 for NO version)

- **Next Lane** (NL)

Item	**Quantity**
HiddenGate Cabinet	1
Side Access Panel Lock Keys	2
Anchor Bolts	4 (8 for NO version)

Setting to Work

Note - The HiddenGate cabinet is generally supplied assembled, and only requires to be anchored to the paving.

The following installation procedures are recommended to install the HiddenGate:

Mark a chalk line on the ground for alignment of the units.
Place the units in the required position.
Make sure the units are perfectly parallel and correctly aligned.

This is of maximum importance for the system to operate properly.

Mark the position of the fixing holes on the floor.
Move the units and drill the anchor fixing holes to the floor.
Re-position the units and anchor them to the floor by means of the anchor fixings.
Make sure that the frame is perfectly level, checking in transverse and longitudinal direction, use shims and all other necessary measures to obtain the required result.

As the wing slides in the opening slot it must be equidistant within the slot.
The wing must be perpendicular to the casework.
In the open position the edge of the wing must be parallel with the casework.

Mechanism coming into contact with any parts of the casework.

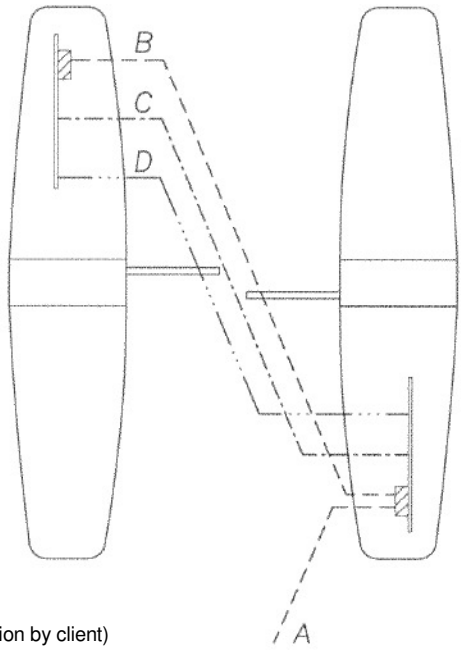
To make the necessary adjustments, loosen the screws that attach the mechanism to the frame and to the upper fixing bracket and adjust the grub screw in the support.
When the ideal position is obtained, tighten all the previously loosened screws.

Electrical Connections

Note - The following routines must be carried out by a qualified electrician.

Fig 5.6 - Basic Electrical Interface Preparation

SLAVE - To be located on secure side of the installation



MASTER - To be located on secure side of the installation

A = 230VAC Incoming Mains (Connection by client)
B = 230VAC Interconnection (Connection by GI)
C = I2C BUS (Connection by GI)
D = BBU option (Connection by GI)

All cables and conduits are to be supplied by client and in situ prior to installation.
Refer to Fig 5.7 to 5.10 for point to point wiring identification and 5.11 to 5.14 for Customer Connections.

Check the incoming mains supply is isolated.
Feed the mains supply cable through the HiddenGate towards the mains connection terminal block, adjacent to the MCB.
Cut back and strip the sleeving from the mains cable.
Slacken terminal block screws, insert appropriate wires and tighten.
Clamp the cable using a cable tie through the base of the MCB mounting block.
Repeat this procedure for the power connection between the Master and the Slave.
Connect the I2C BUS cable between the Master and Slave using supplied terminal connection blocks.

Earth Connection

An efficient earth connection is essential for safe operation of the entrance gate.
Make sure that all metal parts of the gate are grounded.

Battery Power Connection

If the system is to be equipped with a battery, connect the battery power line to the corresponding terminals on the master and slave logic wings.

Connection to RS485 Serial Line

If the system is to be equipped with an RS485 serial line, connect the data transmission line to the corresponding terminals on the master logic wing.

Cable specification - FTP CAT5 cable (four couples twisted and shielded).
This cable must be posed in independent canalizations and the recommended maximal length is 500 mt.

Remote Control Connection

If a remote control system is to be installed, connect the cable to the relevant circuit board in the master logic panel.

Emergency Control Connection

If the emergency control system is to be installed, connect the cable to the relevant circuit board in the master logic panel.

Card Reader Connection

Connect the cable to the relevant circuit board in the master/slave logic panel.

Customer Connections

Refer to Figs 5.11 to 5.14

Note - Contacts that are 0V, either N/O or N/C that are changeable via jumper setting
Voltage 24Vdc, 1A max.

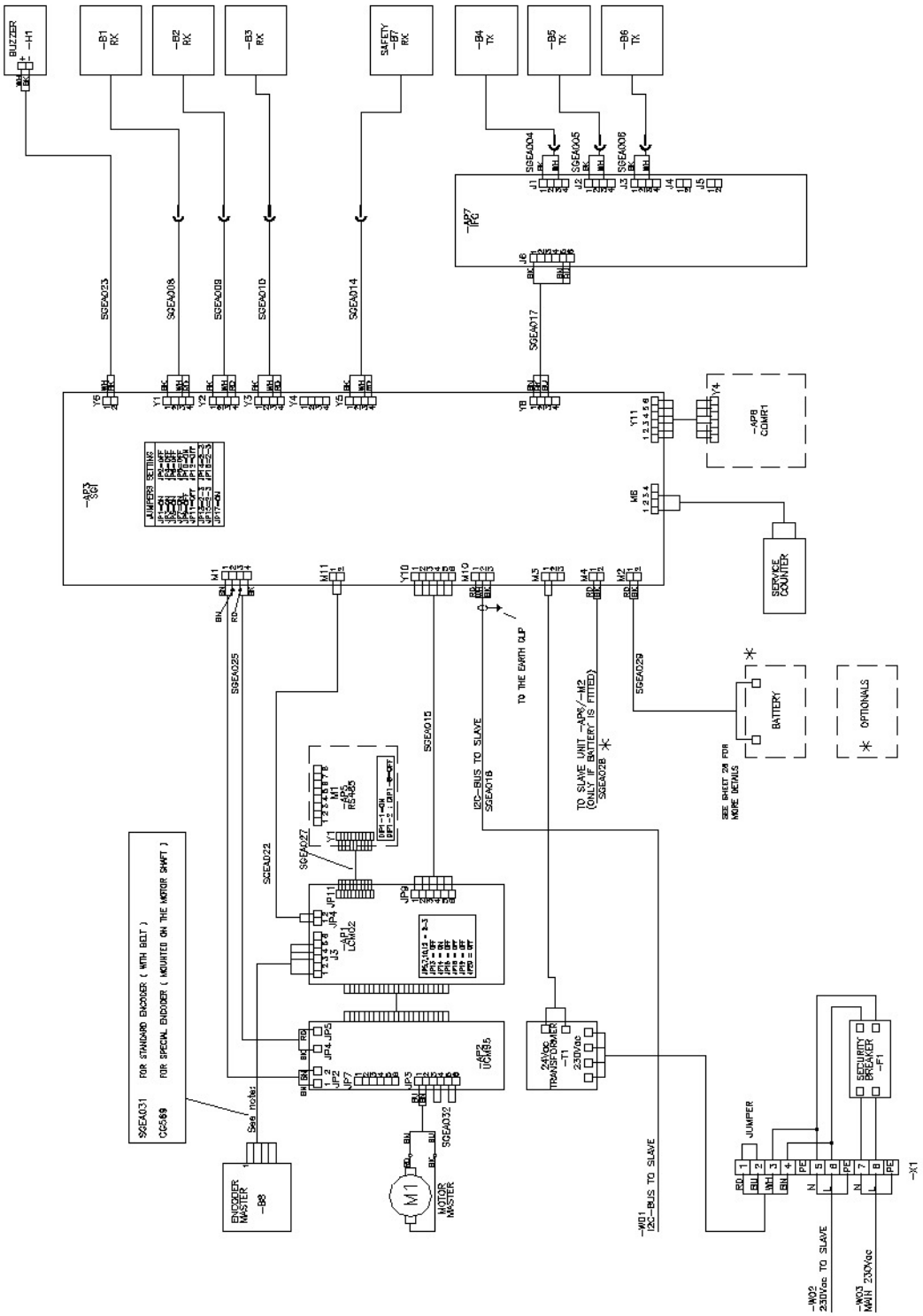


Figure 5.7 - HG NC Master Wiring Schematic

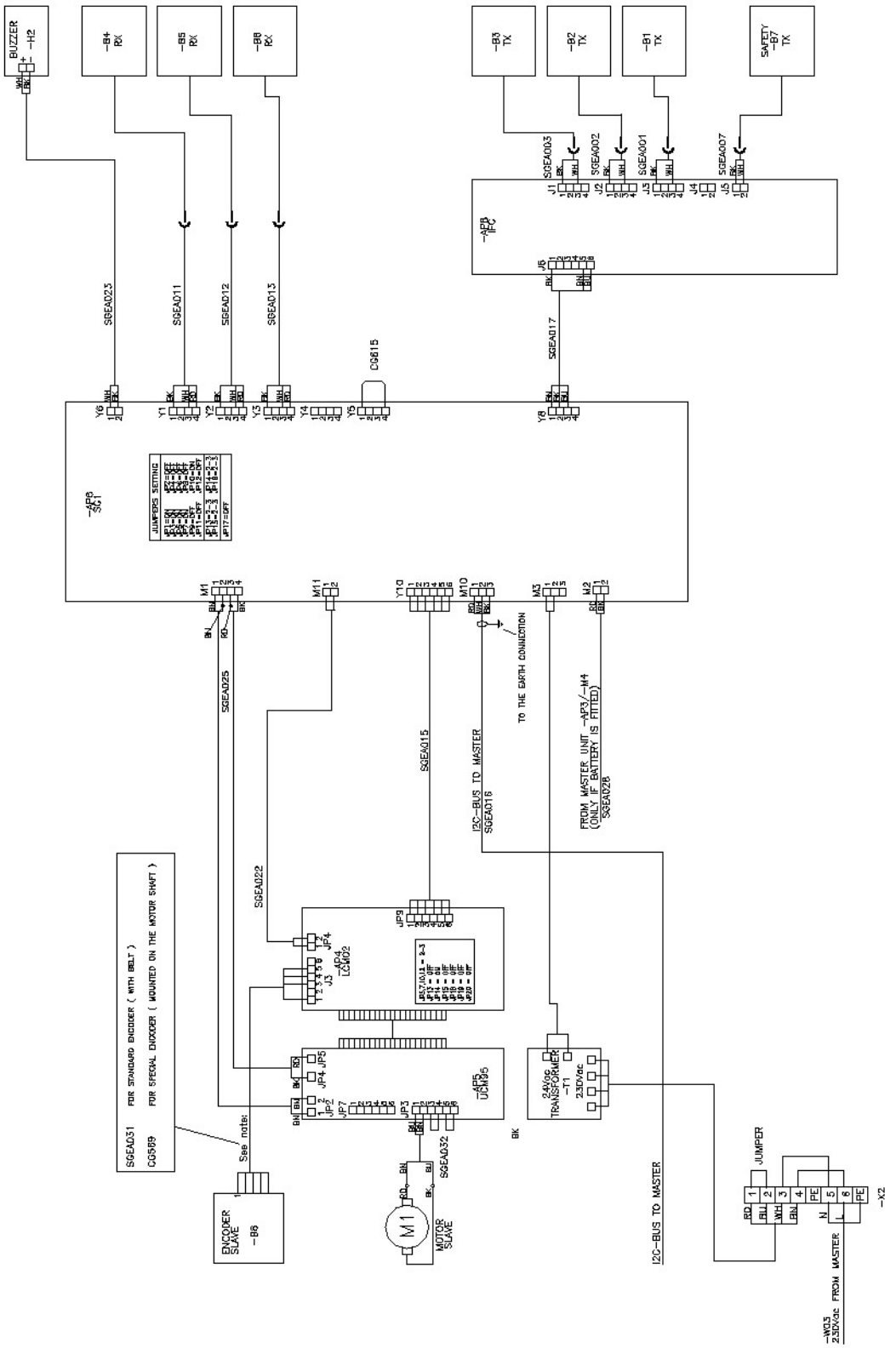
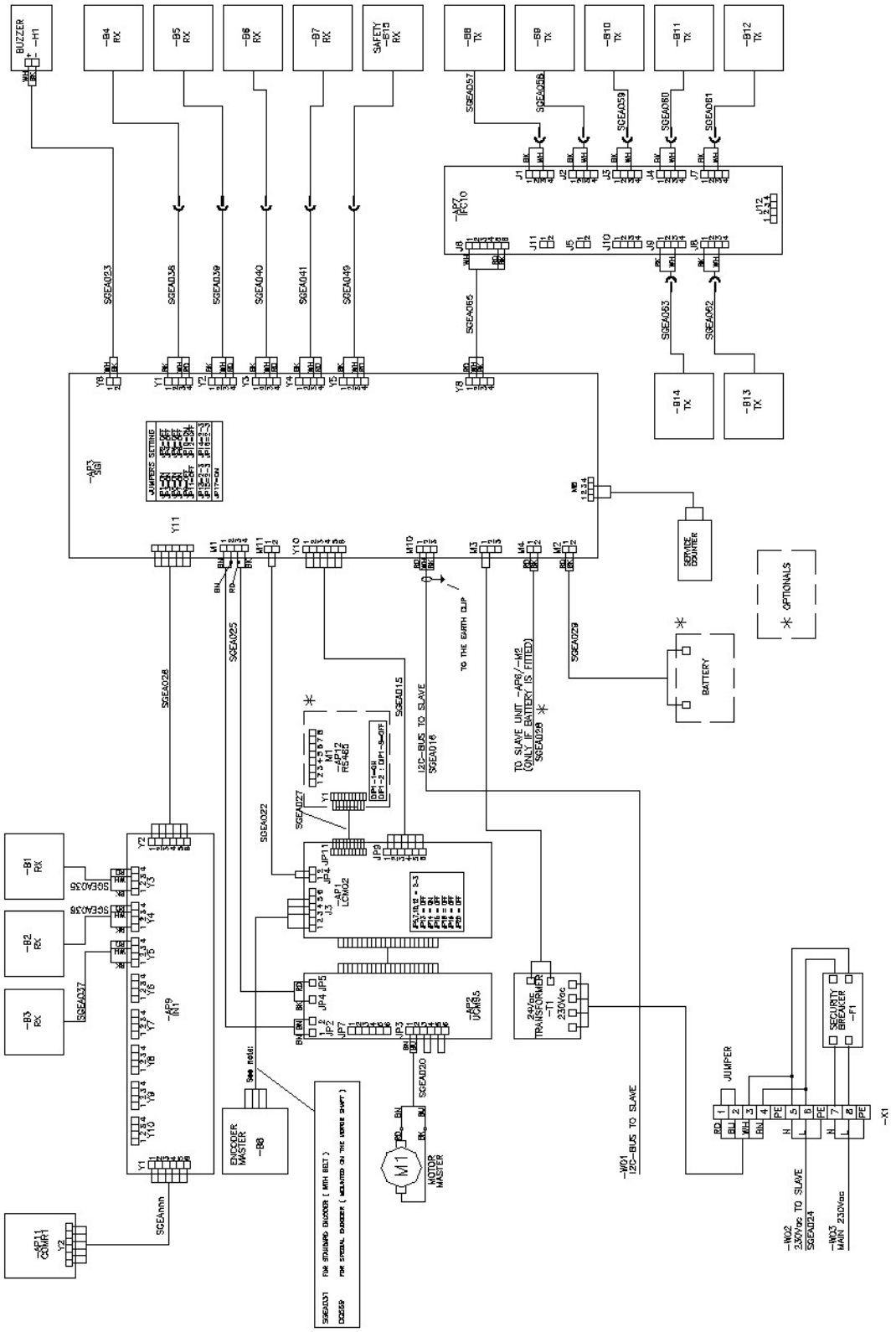


Figure 5.8 - HG NC Slave Wiring Schematic

Figure 5.9 - HG NO Master Wiring Schematic



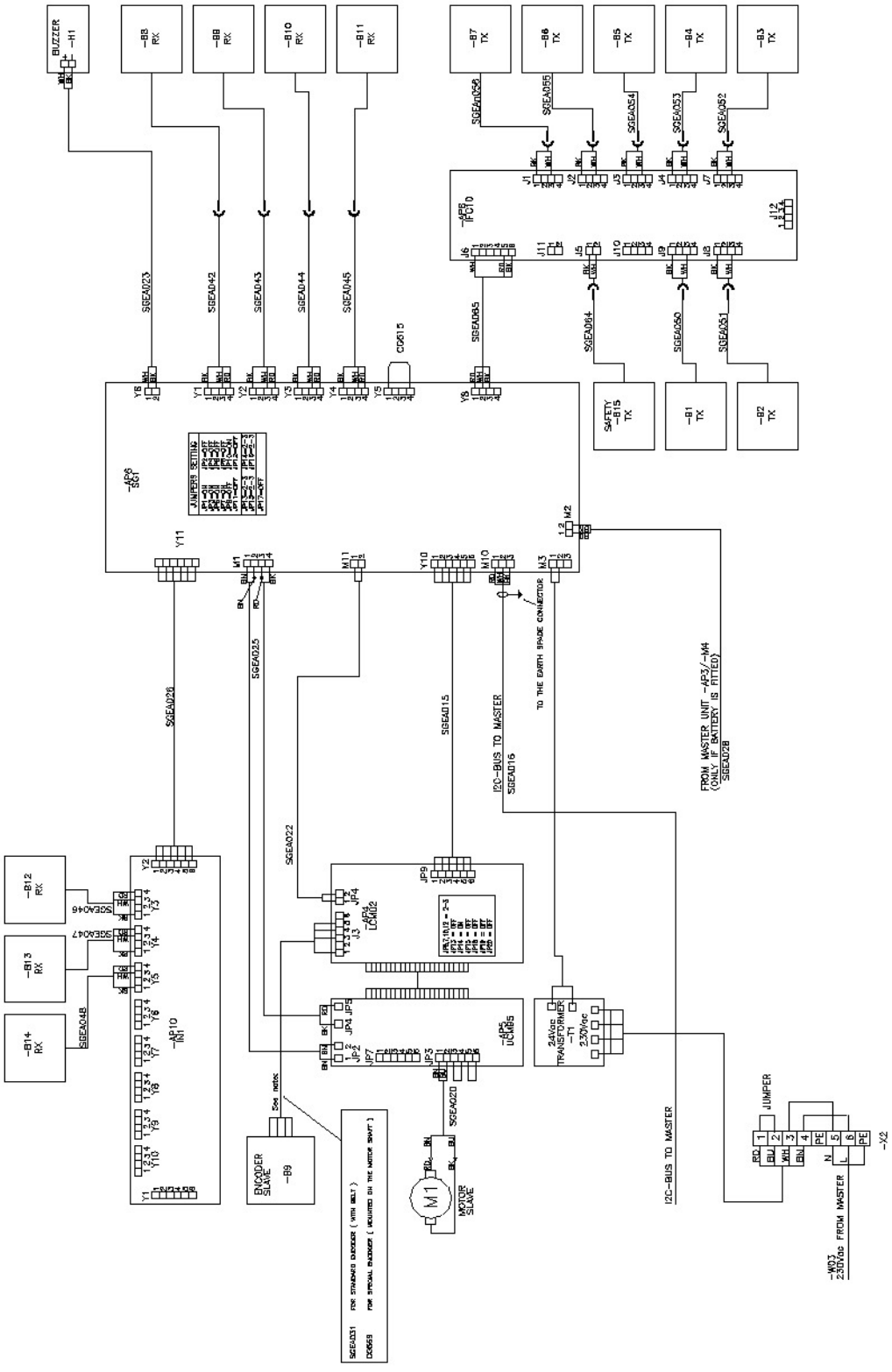
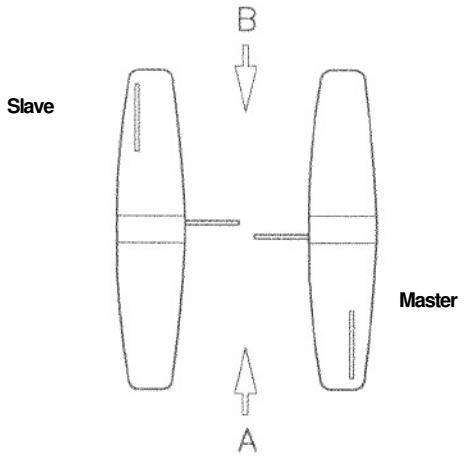
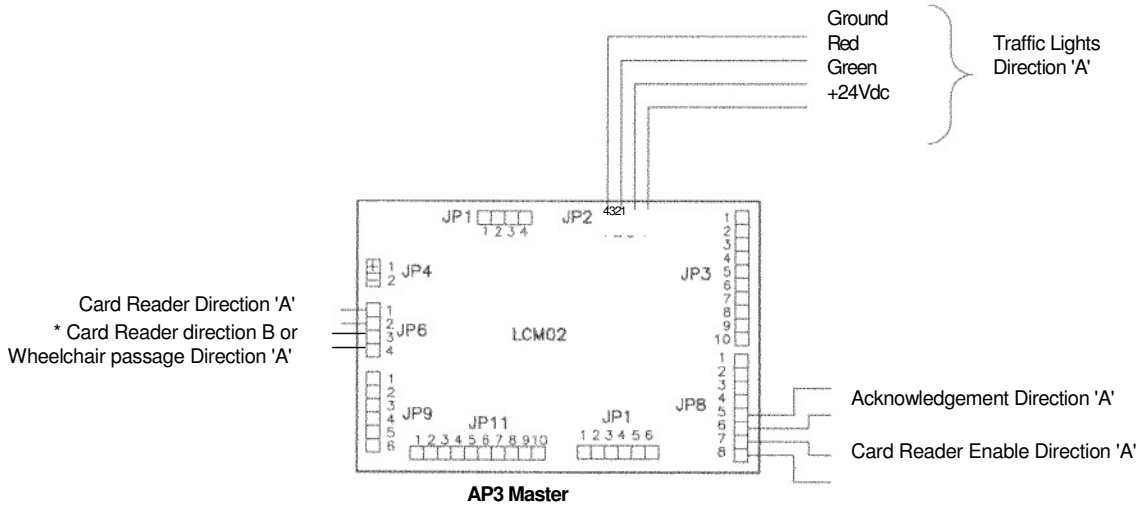


Figure 5.10 - HG NO Slave Wiring Schematic

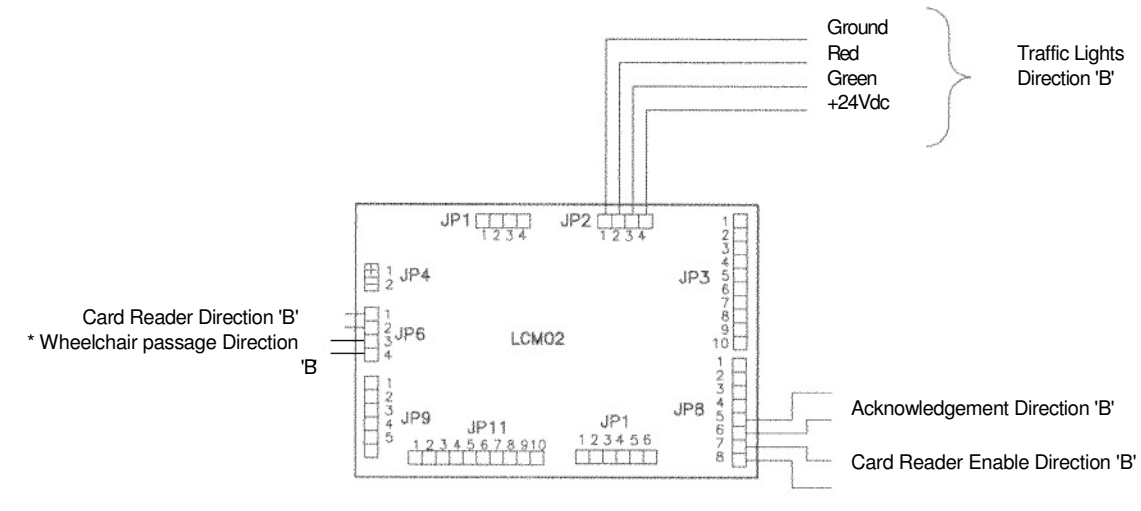
Fig 5.11 Traffic Lights





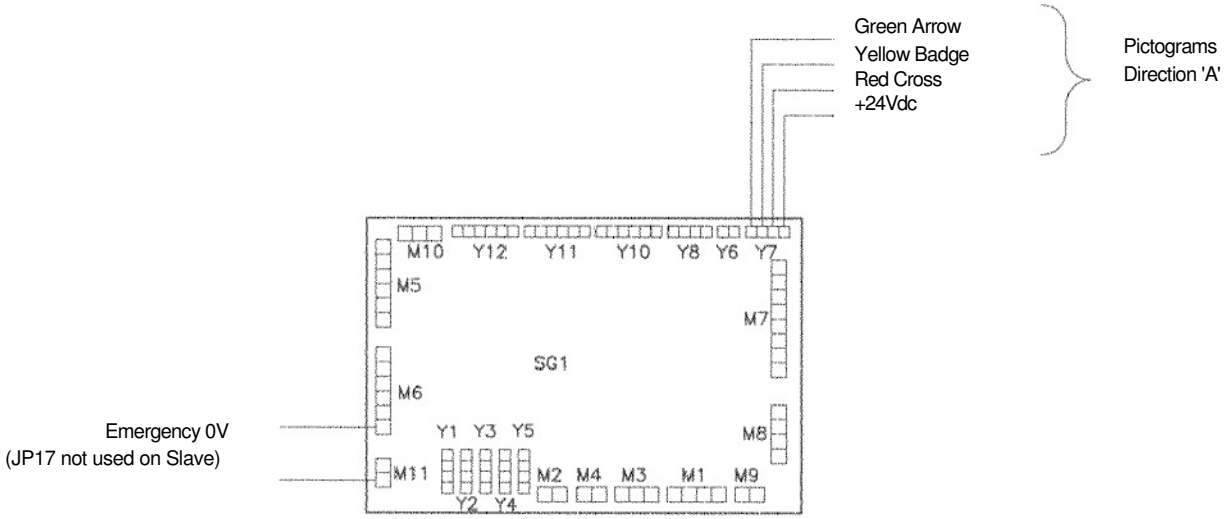
AP3 Master

* DEPENDS THE PARAMETERS SETTING

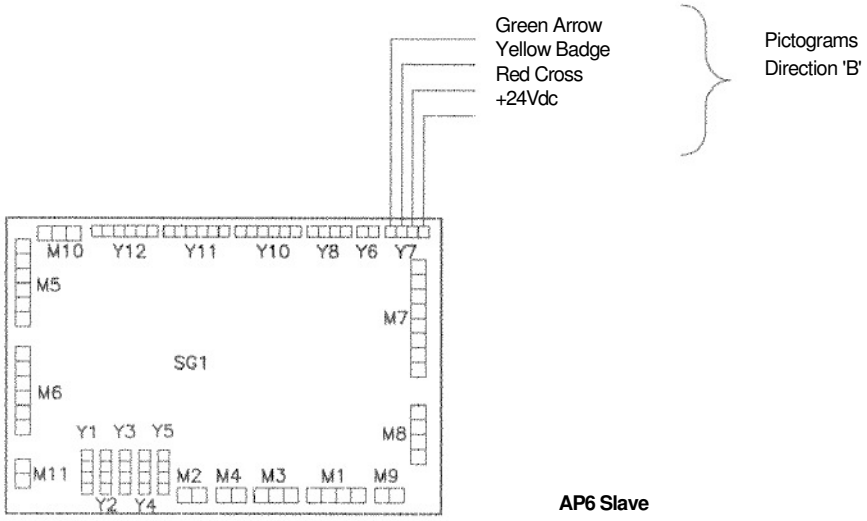


AP6 Slave

Fig 5.12 Emergency and Pictograms



AP3 Master



AP6 Slave

Fig 5.13 RS 485 Interface Connection Detail
(Option)

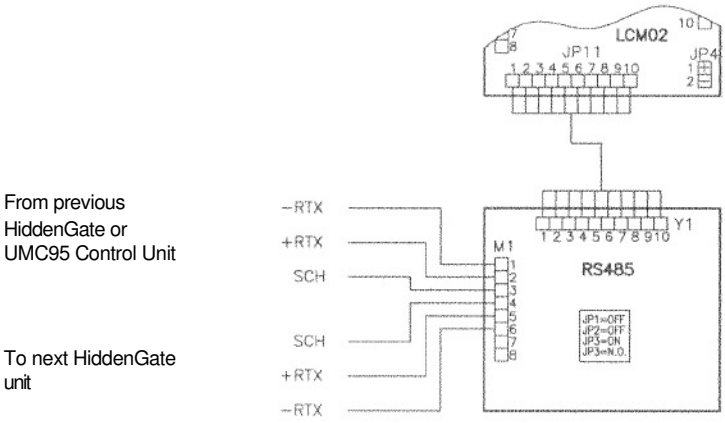
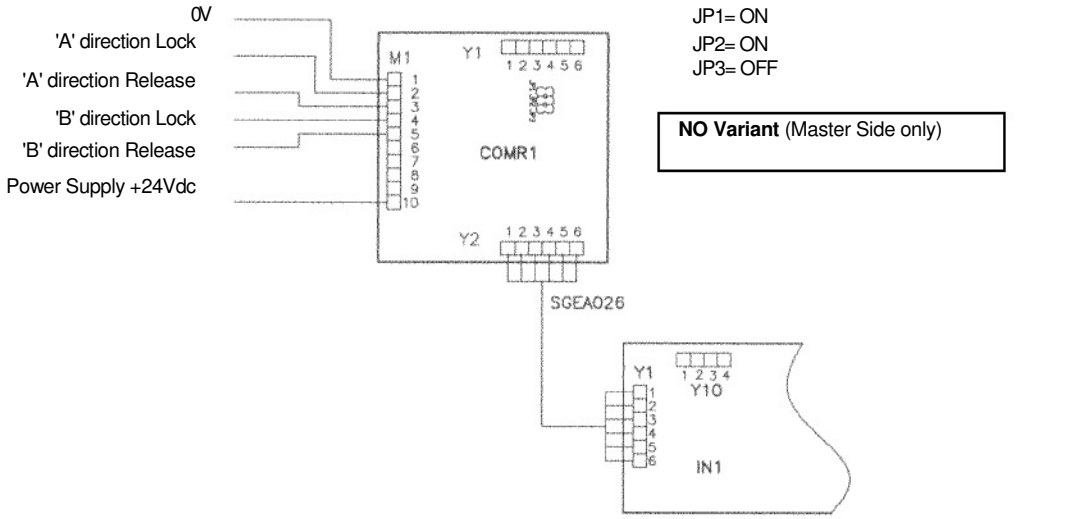
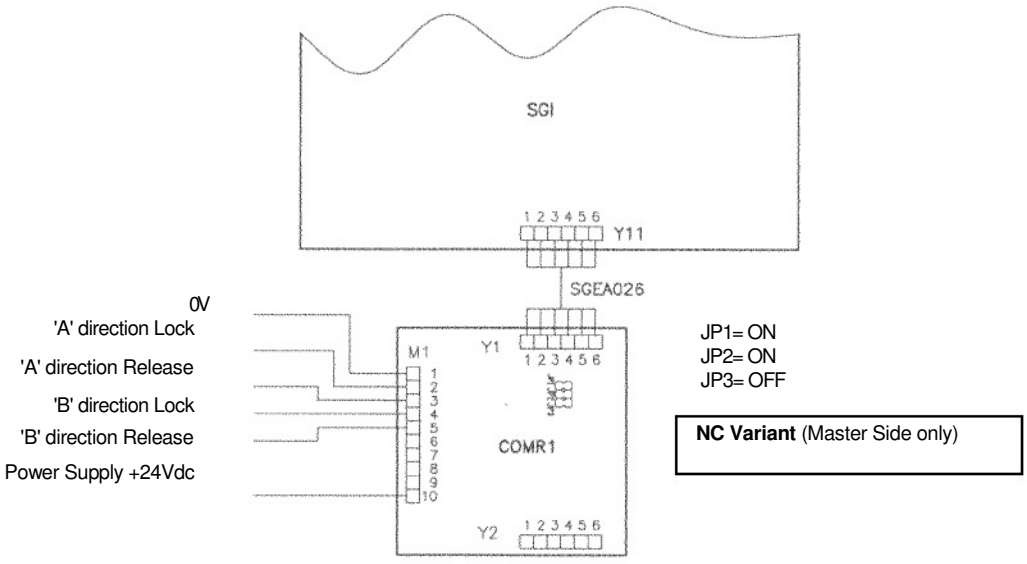


Fig 5.14 COMR1 Interface Connection Detail
(Option)



JP1= ON
JP2= ON
JP3= OFF

NO Variant (Master Side only)



JP1= ON
JP2= ON
JP3= OFF

NC Variant (Master Side only)

Section 6

Maintenance

General Care

Access to the electrical installation is strictly reserved to maintenance technicians authorized by Gunnebo Entrance Control.
All the maintenance procedures must be carried out with the main switch at the "0" position, unless otherwise indicated.
! Even if the main switch is "open" (0 position), the power supply cable and the terminal before the main switch are under voltage (230V ac) !

A main disconnector switch (3mm minimum disconnection distance) must be provided before the Hidden Gate. This switch must be key lockable in order to protect the maintenance engineer during the maintenance.

The HiddenGate should be cleaned and greased at regular intervals, using the following approved materials.

Routine cleaning, all finishes

Cleaning agent:	Soap or mild detergent water.
Action:	Sponge rinse with clean water, wipe dry as necessary.

Stubborn stains and discoloration, all finishes.

Cleaning agent:	Mild cleaning solutions or domestic service cleaners.
Actions:	Rinse well with clean water and wipe dry.

Oil, Grease marks, all finishes

Cleaning agent:	Organic solvents (acetone, alcohol, genclene, trichlorethane).
Action:	Clean after with soap and water, rinse well with clean water and wipe dry.

Rust and other Corrosion products, Stainless finishes

Cleaning agent:	Oxalic acid. The cleaning solution should be applied with a swab and allowed to stand for 15 to 20 minutes before being washed away with water. May continue using a domestic surface cleaner to give final clean.
Action:	Rinse well with clean water (precautions for acid cleaners should be observed).

Minor scratches on painted surfaces

Cleaning agent:	Lightly rub with cutting paste. Rinse area with water and dry. Apply touch-up paint in fine layers.
Action:	Allow 2 weeks to harden. Blend into surrounding paintwork, using fine cutting paste

Deep scratches on painted finishes causing rust

Cleaning agent: Remove rust with a small sharp knife. Apply rust inhibiting paint (red oxide). Fill scratch with fine body filler to just under finished surface. Follow procedure for minor scratches.

Routine Maintenance

General Indications

The mechanism should be inspected and cleaned at regular intervals in order to maintain the components in good working order and to check for signs of wear.

Note: The following indications refer to an installation where the average number of transits per year is equal to one million.

When used in dusty conditions, increase the inspection intervals.

Warning: To avoid the risk of electric shock, always ensure that the electrical power and batteries are disconnected before working on the gate.

- **Lubricants**

For the lubrication of parts subject to wear, use Molycote BR2 Plus grease or an equivalent grease containing graphite or molybdenum sulphide (MoS)

Do not grease moving parts unless specifically indicated in this manual. The use of grease can lead to a build up of dust that can impair operation of the mechanism.

- **Components**

Annual Checks of the batteries (Operations to be carried out with the power supply and BBU connected only for the gates with this optional)

Although the software of the gate logic foresees already a control of the batteries state, Gunnebo Entrance Control **recommends** to check yearly the state of the batteries.
In order to check them manually, you have to execute the following operations:

- Accede at the general switch of the gate taking away the cover of the Master Logic
- Select the normally closed mode if the gate is a Hidden Gate NO
- Be sure that the gate is not in alarm
- Turn off the general switch of the gate
- The gate opens the door and after it turns off automatically
- After few seconds turn on the general switch of the gate and wait for the "reset cycle" of the doors
- Repeat the last 3 points for ten times

Should the doors not open during this tests sequence, it is necessary to change the batteries. Anyway Gunnebo Entrance Control **recommends** to replace the batteries every 3 years.

Annual Checks (Operations to be carried out with the power supply and BBU disconnected)

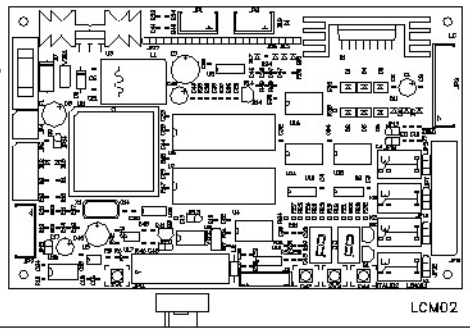
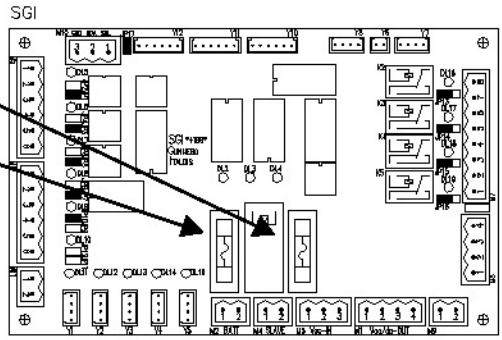
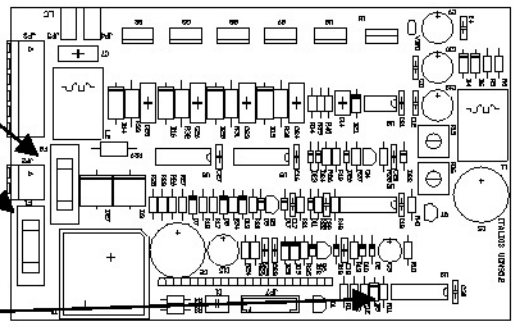
Cables and Connectors (Operations to be carried out with the power supply and battery disconnected)

- Check that the wire connectors are firmly attached.
- Check that the terminals are fully tightened.
- Check that the insulation of the wires is in good condition and that no conductors are

- Check that mechanism fixings, screws.
- Carry out general testing as described previously.

Electrical Circuits

No general maintenance is required apart from replacement fuses in the event of a failure.

BOARD	**LAYOUT**	**FUSE**
LCM02	F1 	F1 = 3,15 F
SGI		F1 =2 F F2 =6,3 F
UCM95		F1 = 4 F F2 = 6,3 F F3 = 1 F

General Component Maintenance

Ensure the assembly is kept clean.

Replacing the LCM02

Note - Before removing the PCB, record the position of the Jumpers and Connectors.
For ease is best to remove both LCM02 and UCM95
When replacing ensure the correct EPROM configuration is refitted.
If the LCM02 on the master side must be replaced, to be sure of maintaining the existing programmable parameter setting, re-use the EEPROM device of the old unit (it is identified as '24C02' chip)

Disconnect the power supplies.
Remove all connectors from the PCB (as well as any connected to the UCM95 Drive Card).
If necessary remove the PCB supports.
Disconnect the flat cable from the UCM95
Connect the Jumpers to the NEW PCB.
Insert the original EPROM from the old unit to the NEW PCB.
If in the master logic, insert the original EEPROM from the old unit to the NEW PCB.
Reconnect the cables and connectors.
Replace the PCB.
Reconnect the power supplies.
Switch ON the Unit and return it to normal operation.

Replacing UCM95

Note - For ease is best to remove both UMC95 and LCM02

Disconnect the power supplies.
Remove all connectors from the PCB.
If necessary remove the PCB supports.
Disconnect the flat cable from the LCM02.
Reconnect the cables and connectors.
Replace the PCB.
Reconnect the power supplies.
Switch ON the Unit and return it to normal operation.
Adjust the board mounted potentiometer, as described at page 18.

Replacing Other Interface Cards

Other Interface Cards may be fitted as specified at time of order.

Follow the same good practice procedures as detailed above.

Note - Before removing the PCB, record the position of the Jumpers and Connectors.
JP 17 is not used on the SGI Slave.

Photocell Replacement

If a photocell must be replaced effect the following operations.

Disconnect the power supply;
Replace the device;
Check all relevant connections;
Restore the power supply;
Effect the photocell test
Re-set to normal functioning.

Encoder Replacement

If an encoder must be replaced, effect the following operations.

Disconnect the power supply;
Replace the device;
Check all relevant connections;
Restore the power supply;
Effect the mechanisms test
Re-set to normal functioning.

Acrylic Wing Replacement

Refer to fig. 7.2. for components identification.

- Access
    - Remove the four lateral panels.
    - Remove the four M6 nuts and the washers that fix the central section to the internal framework.
    - Remove the central section in order to have access to the mechanism.
- Removal
    - Unscrew nyloc nut M8 (62), remove washers (58) and the flanged bearing (35).
    - Unscrew pin's nut M12 (65), remove the flanged bearing.
    - The wing is now free and can be dismounted from the rotation pin and from the actuating shaft.
    - Remove it from the cabinet and place it in a safe position.
    - Unscrew the three nuts (51) and remove components 11 and 12.
- Assembly
    - Repeat in the opposite order all the aforementioned activities
    - **Note** - Do not tighten too much component (62); leave approximately 0,2 mm clearance between the nut and the flanged bearing.
    - Remove the protective layer and clean the wing.

Verification

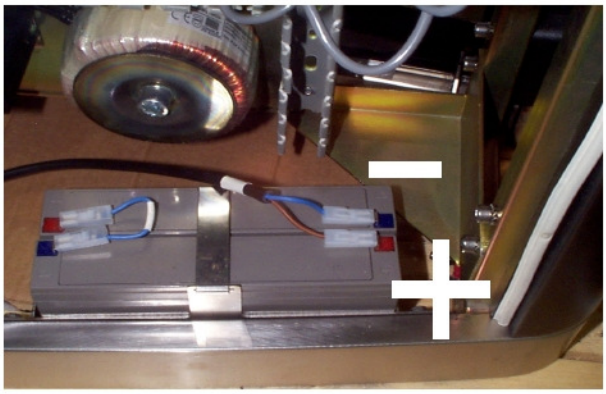
After having replaced each component it is necessary to perform a diagnostic testing. Refer to section 4 of this manual.

Battery Replacement:

This operation must to be undertaken by personnel authorized by Gunnebo Entrance Control S.p.A.

Hidden Gate must be disconnected from the main power supply before batteries replacement. Bought batteries shall be replaced.

- Positioning and connection:
-



- Disposal: batteries must be safely disposed or recycled according to the local Environmental Standards.

- Leaking: replace batteries that are leaking. Before installing the new batteries, remove carefully any leakage from surfaces, it may corrode.

Do Not use rechargeable batteries. They may cause damage or be dangerous to people. Remove batteries from Hidden Gate before Hidden Gate disposal.

Fault Finding

LCMO2 Control Logic in Normal Operation

During normal operation of the mechanism, the control logic displays the status of certain signals. This enables rapid testing of certain system functions.

Table 6.1 - Fault Finding

Symptom	Check	Action
Wings do not drive	Check mains input voltage and 24Vdc supply on logic boards	• Replace transformer
	Fuses on all three logic boards	• Replace as required • Increase back-off sensitivity
	Check function of all the logic boards on each electrical plate, especially UCM95 drive card	• Replace as required
	Card reader inputs	• Remove card reader connections and link across the inputs
Unit alarms	Photocells, perform diagnostic test using master LCM02 to check that all the photocells are working	• Replace faulty photocell(s) if required
	Battery back up	• If fitted the cells may be in need of replacement. If they are not fitted the self test function should be disabled by changing the relevant parameter
Wings do not close after transit	Safety photocell	• Replace if required
	Setting of potentiometer on UCM95 drive card may be too high	• Replace drive card if required
	Encoders, perform diagnostic tests using the LCM02	• Replace if required
Wing(s) to not back off when obstructed	Parameter settings and potentiometer on UCM95 drive card	• Replace drive card if required
Wing(s) do not open and close correctly	Parameter settings and potentiometer on UCM95 drive card	• Replace drive card if required
	Encoders, perform diagnostic tests using the LCM02	• Replace if required
Wing(s) open and close very fast	Encoders, and encoder looms	• Replace if required

Section 7

Spare Parts

Recommended Spare Parts

Quantities listed are per HiddenGate Lane over a 24 month period

Table 7.1 Recommended Spares Holdings

Code	Description	Qty
ESC0217	LCM02 Control card without EPROM	1
ESC0227	UMC95 Drive card	1
ESC0237	SGI card	1
ESE0319	Infra-red sensor - Emitter	1
ESE0318	Infra-red sensor - Receiver	1
71092035	Motor / Gearbox Assembly	1
72033009	Encoder Belt	2
90011006	Encoder	1

Note - Parts listed are common to all Bi-parting HiddenGates

Figure 7.2 - Exploded View Bi-parting Drive Assembly

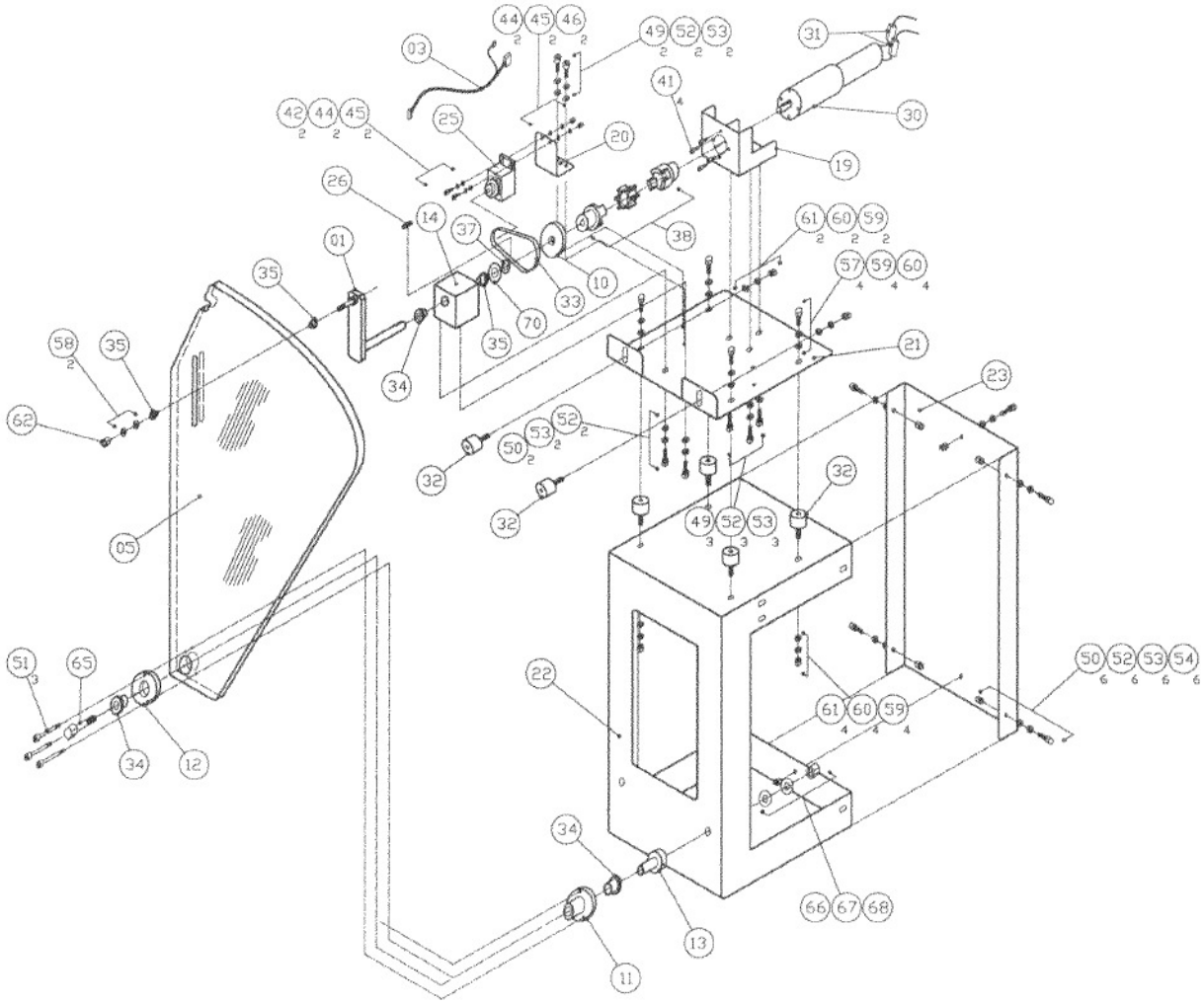


Table 7.3 Bi-parting Mechanism Exploded View Item Identification

Item	Description	Qty
01	Actuating Shaft	1
02		
03	Encoder cable	1
04		
05	Wing	1
06		
07		
08		
09		
10	Encoder Gear - 65T x 2.5	1
11	Wing's bearing support	1
12	Wing's locking ring	1
13	Wing's rotation pin	1
14		
15		
16		
17		
18	Adjustable stop device	2
19	Motor Support	1
20	Encoder Support	1
21	Support	1
22	Frame	1
23	Frame baseplate	1
24		
25	Encoder assembly	1
26		
27		
28		
29		
30	Motor and Reduction Gear Assembly	1
31	Ferrite Ring	2
32	Anti-vibration Support	4
33	Encoder Belt (2.5 x 106)	1
34	Flanged Bearing - Dia 16	4
35	Lubricated Flanged Ring - Dia 8	2

Glossary

EnableAll (high)	This byte contains the information regarding anomalies alarms. Setting the bit to 1 inserts the related alarm.
EnableAll (low)	This byte contains the information about alarms. Setting the bit to 1 activates the related alarm
KxHigh	The high part of the mask that assigns various functions to the relay. These functions go through two filters. One allows the execution of the logic operators OR and AND, the second assigns the relay polarity. In order to configure the relay, the two parameters, KxHigh and KxLow are needed.
KxLow	The low part of the mask. It manages the 8 functions that can be processed by the two filters in KxHigh.
PoffsetAp	Indicates wings are in the open position.
PoffsetCL	Indicates wings are in the closed position.
PvelAzz	Speed during Zero cycle.
Prisposta	Speed of reaction to change of speed setting.
PprecObiet	Gate wing position response.
PvelMinAp	Minimum opening speed of the gate wing.
PvelMaxAp	Maximum opening speed of the gate wing.
PvelMinCh	Minimum closing speed of the gate wing.
PvelMaxCh	Maximum closing speed of the gate wing
PprecVelo	Velocity of the gate wing positioning.
PreleaseCh	Start of braking during closing.
PreleaseAp	Start of braking during opening
PcurvaAp	Braking curve during opening
PcurveCh	Braking curve during closing
PallAllPause	Delay after photocell has been disengaged
PcorrOstacoloAp	Detection sensitivity in opening phase
PcorrOstacoloCh	Detection sensitivity in closing phase
PtimeMov	Time out interval
Pgenerali	Unlocked condition while reader signal is received.
PmaxMemo	The maximum numbers of permissives that can be memorised.
PulseCont	Sets the duration of the count pulse.
TresAll	Delay of alarm signal after it has been removed.
EnAllami	Alarm condition activation or deactivation
Solenoid	An electro-magnetic device
Parameter	Any constant or limiting value

Section 8

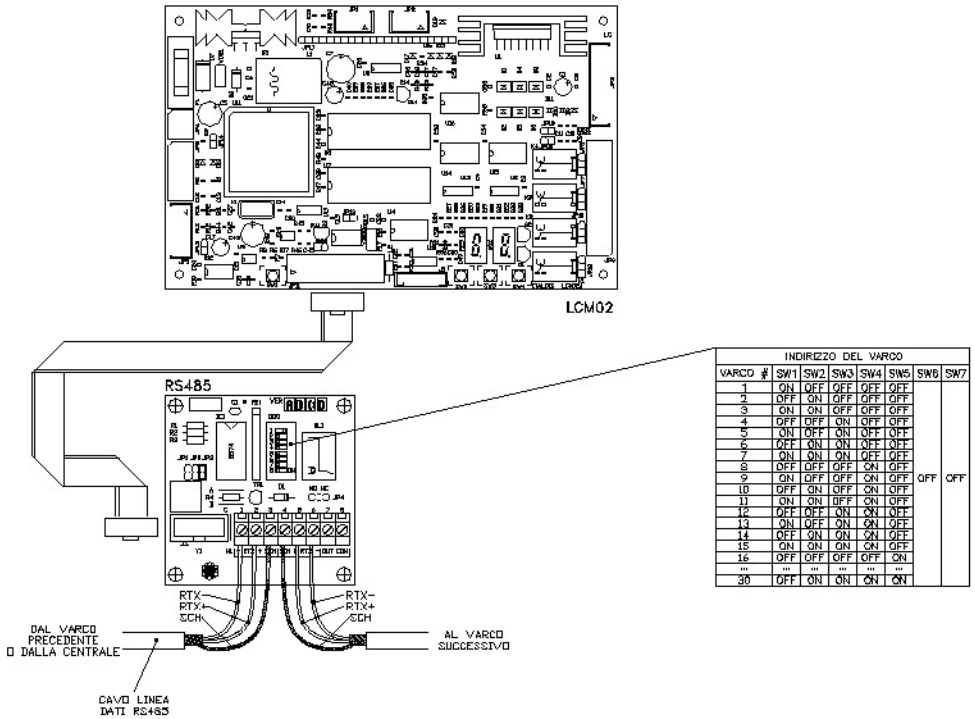
Table Appendices

Table 8.1 Decimal, Hexadecimal and Decimal Conversion Table

Dec	Hex	Binary	Dec	Hex	Binary	Dec	Hex	Binary	Dec	Hex	Binary
0	00	00000000	64	40	01000000	128	80	10000000	192	CO	11000000
1	01	00000001	65	41	01000001	129	81	10000001	193	C1	11000001
2	02	00000010	66	42	01000010	130	82	10000010	194	C2	11000010
3	03	00000011	67	43	01000011	131	83	10000011	195	C3	11000011
4	04	00000100	68	44	01000100	132	84	10000100	196	C4	11000100
5	05	00000101	69	45	01000101	133	85	10000101	197	C5	11000101
6	06	00000110	70	46	01000110	134	86	10000110	198	C6	11000110
7	07	00000111	71	47	01000111	135	87	10000111	199	C7	11000111
8	08	00001000	72	48	01001000	136	88	10001000	200	C8	11001000
9	09	00001001	73	49	01001001	137	89	10001001	201	C9	11001001
10	0A	00001010	74	4A	01001010	138	8A	10001010	202	CA	11001010
11	OB	00001011	75	4B	01001011	139	8B	10001011	203	CB	11001011
12	CC	00001100	76	4C	01001100	140	8C	10001100	204	CC	11001100
13	0D	00001101	77	4D	01001101	141	9D	10001101	205	CD	11001101
14	0E	00001110	78	4E	01001110	142	8E	10001110	206	CE	11001110
15	OF	00001111	79	4F	01001111	143	8F	10001111	207	CF	11001111
16	10	00010000	80	50	01010000	144	90	10010000	208	D0	11010000
17	11	00010001	81	51	01010001	145	91	10010001	209	D1	11010001
18	12	00010010	82	52	01010010	146	92	10010010	210	D2	11010010
19	13	00010011	83	53	01010011	147	92	10010011	211	D3	11010011
20	14	00010100	84	54	01010100	148	94	10010100	212	D4	11010100
21	15	00010101	85	55	01010101	149	95	10010101	213	D5	11010101
22	16	00010110	86	56	01010110	150	96	10010110	214	D6	11010110
23	17	00010111	87	57	01010111	151	97	10010111	215	D7	11010111
24	18	00011000	88	58	01011000	152	98	10011000	216	D8	11011000
25	19	00011001	89	59	01011001	153	99	10011001	217	D9	11011001
26	1A	00011010	90	5A	01011010	154	9A	10011010	218	DA	11011010
27	1B	00011011	91	5B	01011011	155	9B	10011011	219	DB	11011011
28	1C	00011100	92	5C	01011100	156	9C	10011100	220	DC	11011100
29	1D	00011101	93	5D	01011101	157	9D	10011101	221	DD	11011101
30	1E	00011110	94	5E	01011110	158	9E	10011110	222	DE	11011110
31	1F	00011111	95	5F	01011111	159	9F	10011111	223	DF	11011111
32	20	00100000	96	60	01100000	160	A0	10100000	224	EO	11100000
33	21	00100001	97	61	01100001	161	A1	10100001	225	E1	11100001
34	22	00100010	98	62	01100010	162	A2	10100010	226	E2	11100010
35	23	00100011	99	63	01100011	163	A3	10100011	227	E3	11100011
36	24	00100100	100	64	01100100	154	A4	10100100	228	E4	11100100
37	25	00100101	101	65	01100101	165	A5	10100101	229	E5	11100101
38	26	00100110	102	66	01100110	166	A6	10100110	230	E6	11100110
39	27	00100111	103	67	01100111	167	A7	10100111	232	E7	11100111
40	28	00101000	104	68	01101000	168	A8	10101000	232	E8	11101000
41	29	00101001	105	69	01101001	169	A9	10101001	233	E9	11101001
42	2A	00101010	106	6A	01101010	170	AA	10101010	234	EA	11101010
43	2B	00101011	107	6B	01101011	171	AB	10101011	235	EB	11101011
44	2C	00101100	108	6C	01101100	172	AC	10101100	236	EC	11101100
45	2D	00101101	109	6D	01101101	173	AD	10101101	237	ED	11101101
46	2E	00101110	110	6E	01101110	174	AE	10101110	238	EE	11101110
47	2F	00101111	111	6F	01101111	175	AF	10101111	239	EF	11101111
48	30	00110000	112	70	01110000	176	B0	10110000	240	F0	11110000
49	31	00110001	113	71	01110001	177	B1	10110001	241	F1	11110001
50	32	00110010	114	72	01110010	178	B2	10110010	242	F2	11110010
51	33	00110011	115	73	01110011	179	B3	10110011	243	F3	11110011
52	34	00110100	116	74	01110100	180	B4	10110100	244	F4	11110100
53	35	00110101	117	75	01110101	181	B5	10110101	245	F5	11110101
54	36	00110110	118	76	01110110	182	B6	10110110	246	F6	11110110
55	37	00110111	119	77	01110111	183	B7	10110111	247	F7	11110111
56	38	00111000	120	78	01111000	183	B8	10111000	248	F8	11111000
57	39	00111001	121	79	01111001	185	B9	10111001	249	F9	11111001
58	3A	00111010	122	7A	01111010	186	BA	10111010	250	FA	11111010
59	3B	00111011	123	7B	01111011	187	BB	10111011	251	FB	11111011
60	3C	00111100	124	7C	01111100	188	BC	10111100	252	FC	11111100
61	3D	00111101	125	7D	01111101	189	BD	10111101	253	FD	11111101
62	3E	00111110	126	7E	01111110	190	BE	10111110	254	FE	11111110
63	3F	00111111	127	7F	01111111	191	BF	10111111	255	FF	11111111

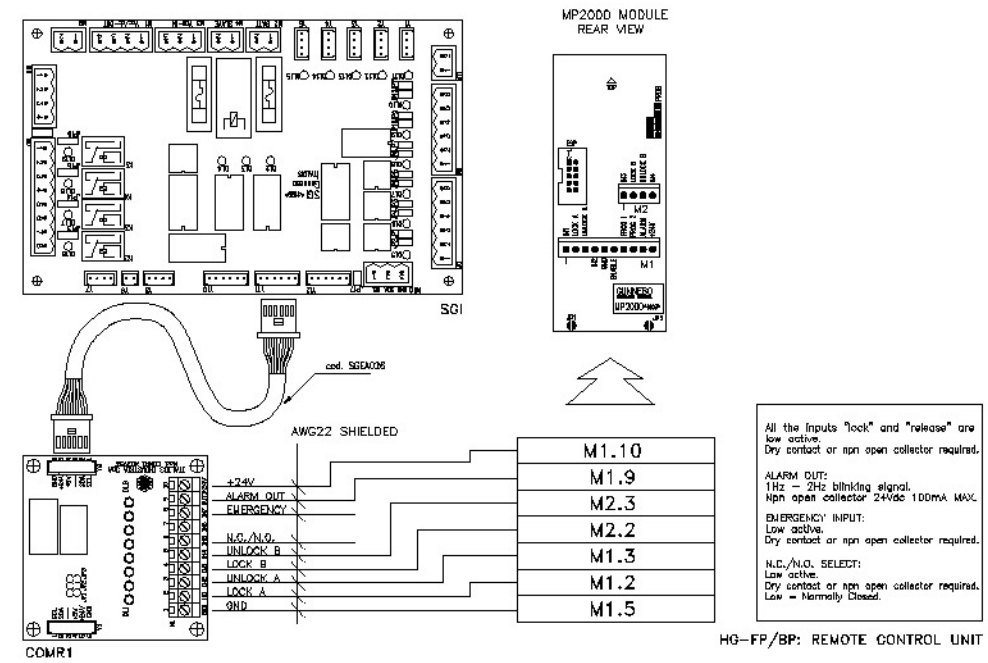
Section 9

Connection Technical Details

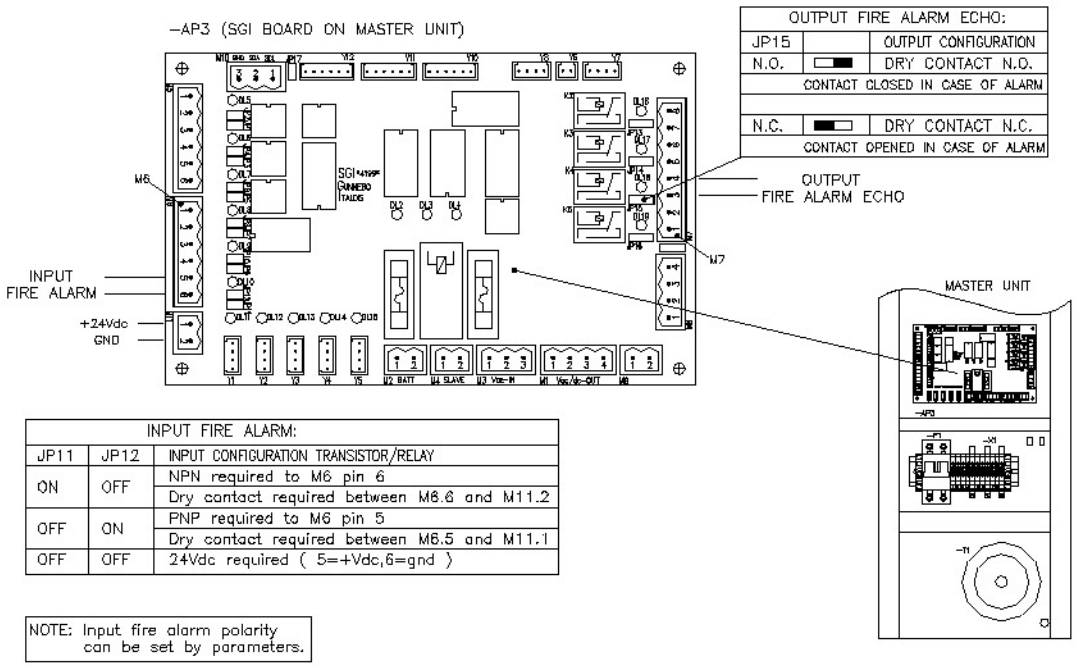


INDIRIZZO DEL VARCO							
VARCO #	SW1	SW2	SW3	SW4	SW5	SW6	SW7
1	ON	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF		
3	ON	ON	OFF	OFF	OFF		
4	OFF	OFF	ON	OFF	OFF		
5	ON	OFF	ON	OFF	OFF		
6	OFF	ON	ON	OFF	OFF		
7	ON	ON	ON	OFF	OFF		
8	OFF	OFF	OFF	ON	OFF		
9	ON	OFF	OFF	ON	OFF		
10	OFF	ON	OFF	ON	OFF		
11	ON	ON	OFF	ON	OFF		
12	OFF	OFF	ON	ON	OFF		
13	ON	OFF	ON	ON	OFF		
14	OFF	ON	ON	ON	OFF		
15	ON	ON	ON	ON	OFF		
16	OFF	OFF	OFF	OFF	ON		
...	...	...	...	...	...		
30	OFF	ON	ON	ON	ON		

RS485 Serial Link.



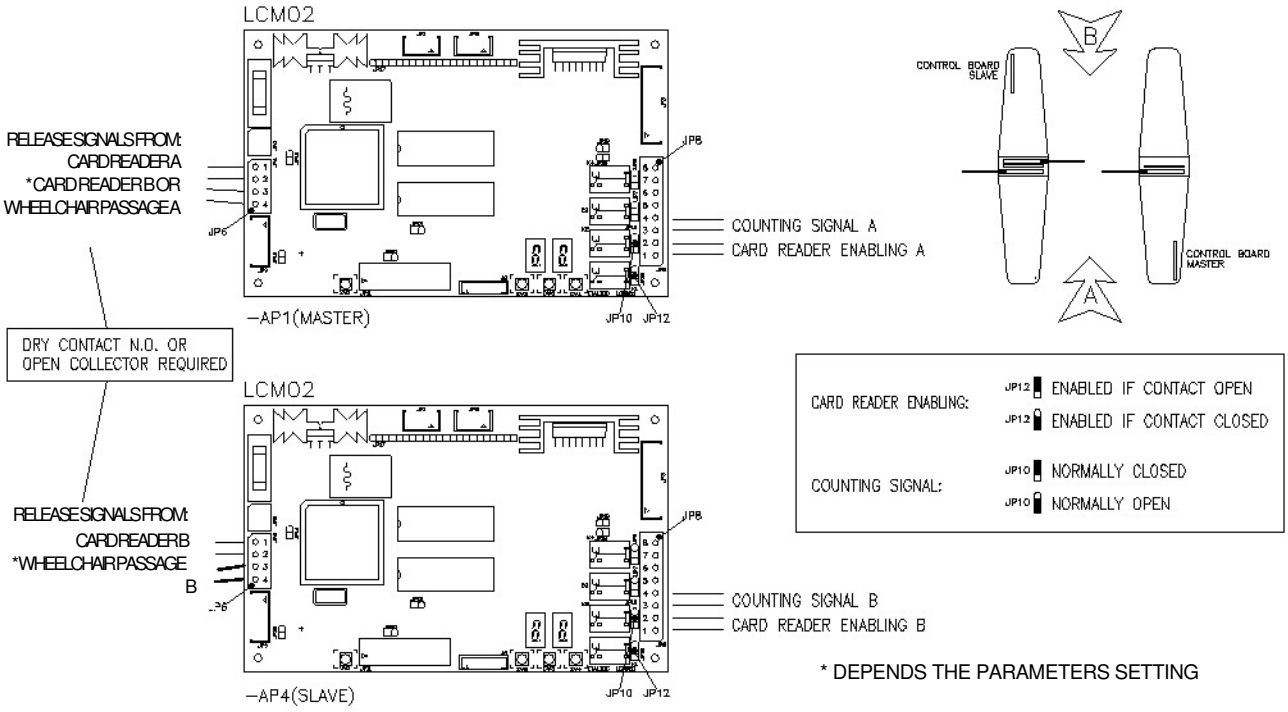
COMR1 / MP2000 Remote Control.



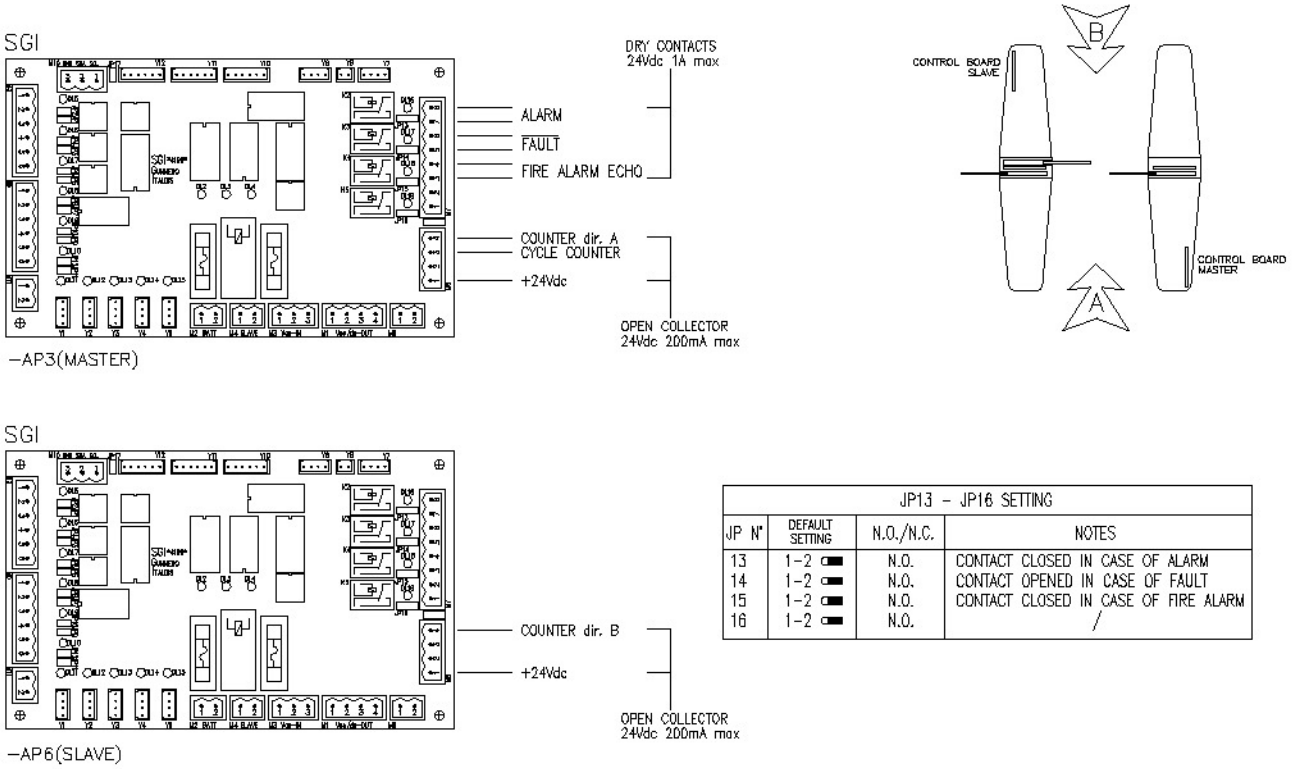
INPUT FIRE ALARM:		
JP11	JP12	INPUT CONFIGURATION TRANSISTOR/RELAY
ON	OFF	NPN required to M6 pin 6
		Dry contact required between M6.6 and M11.2
OFF	ON	PNP required to M6 pin 5
		Dry contact required between M6.5 and M11.1
OFF	OFF	24Vdc required (5=+Vdc,6=gnd)

NOTE: Input fire alarm polarity can be set by parameters.

Fire Alarm & Echo Connections.

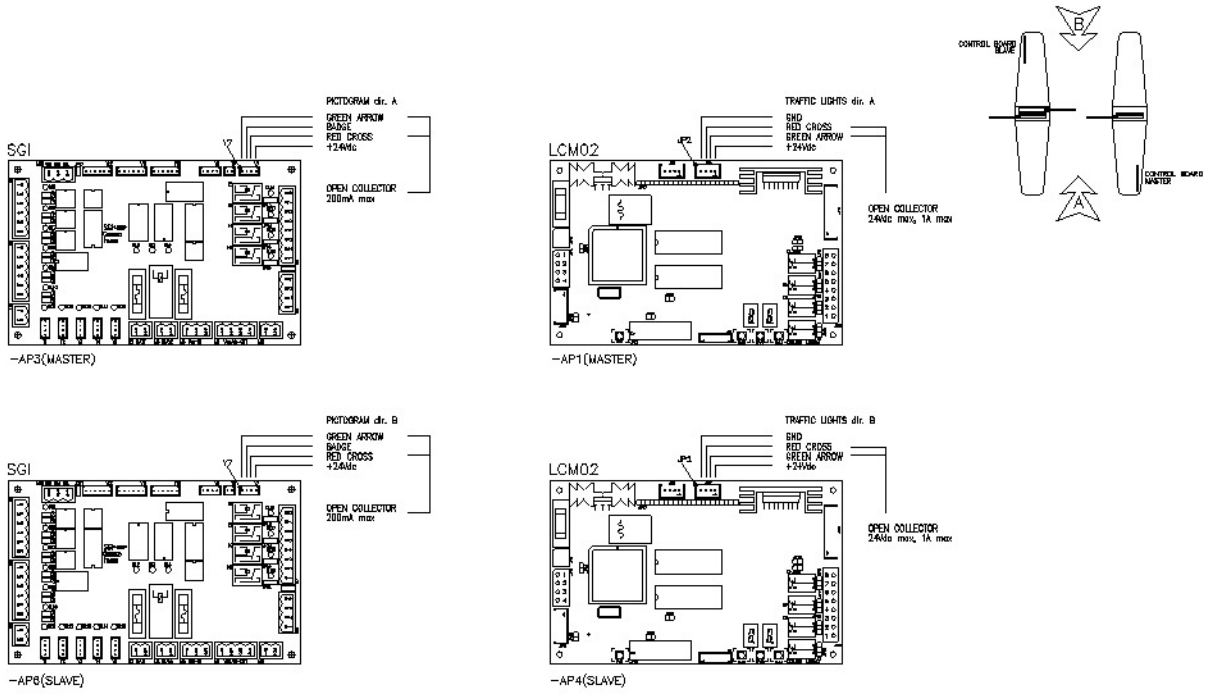


Badge Reader Connection.



JP13 - JP16 SETTING			
JP N°	DEFAULT SETTING	N.O./N.C.	NOTES
13	1-2	N.O.	CONTACT CLOSED IN CASE OF ALARM
14	1-2	N.O.	CONTACT OPENED IN CASE OF FAULT
15	1-2	N.O.	CONTACT CLOSED IN CASE OF FIRE ALARM
16	1-2	N.O.	/

Alarms and Aux Signals.

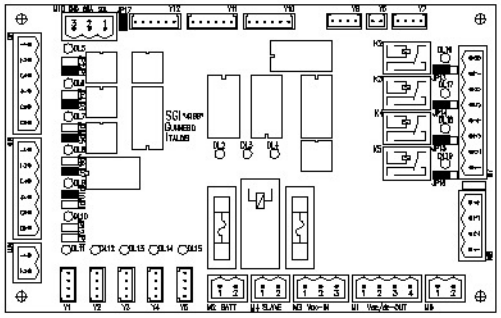


NOTE:
For both pictograms and traffic lights connections, connectors mod. AMP MODU II 4 POS F are needed.
Housing P/N: 280358
Contacts P/N 181270-3

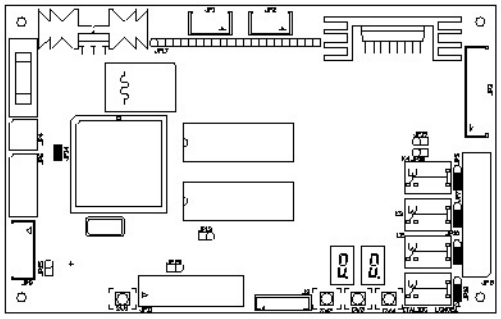
Traffic Lights and Pictograms Connections.

MASTER UNIT

SGI

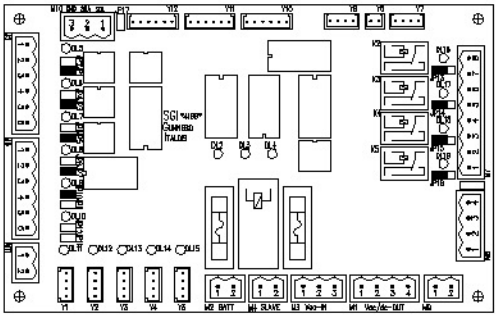


LCM02

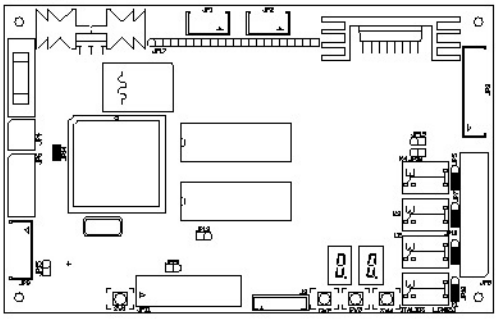


SLAVE UNIT

SGI



LCM02



Factory Jumper Predisposition.

По вопросам приобретения продукции:

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