INSTALLATION

Fastlane[®] Intelligate & Passgate Systems

Setting new standards in entrance control

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Introduction	. 4
Installation Overview	. 4
Safety Precautions	. 4
Packing List	. 5
Application of Product	
Important Customer Information	. 5
Safety Features	
Fire Precautions	
Product Performance	
Product Description	. 7
Fastlane Passgate	
Fastlane Intelligate Single Gate	. 8
Fastlane Intelligate Double Gate	
Installation	
Installation Planning	
Pedestal Positioning	
Template	
Pedestal Fixings	
Cable Routing	. 9
Earth Cables	
Power Cables	
System Interconnect Cables	10
Access Control Cables	10
Mechanical Installation	11
Panel Removal	11
Pedestal Installation	11
Electrical Installation	12
Overview	12
Power Supply (ZFLPSUSINGLE)	
Commissioning	19
Precautions	
Fuses	19
Re-Assembly	
Power Supply	
Passgate Transmit/Receive Motor Controller Card	20
Functional Testing	21
Warranty	
Technical Support	
Important Notice	

Introduction

The aim of this manual is to provide sufficient information for suitably qualified personnel to install and commission one or more of Integrated Design's Fastlane Passgate and Intelligate Systems.

The Intelligate is an enhanced version of the Passgate. All units are referred to as Passgates within this manual, unless it is referring to a function that is only found on the Intelligate.

Installation Overview

- a) Decide the Pedestal final positions. Use the Template System to help with the spacing and correct alignment.
- b) At each Pedestal mark the fixing centres and cable containment position(s). Remove the templates for drilling and installation of the cable containment.
- c) Secure all 4 studs to the floor with the Templates in position. Ensure at least 50mm (2") of thread is protruding above the floor level.
- d) Run the required cables i.e. Low Voltage Power, Card Reader and Access Control.
- e) Remove the Side Panels; please see the 'Mechanical Installation' section.
- f) Install each Pedestal. Secure using all 4 studs; be careful not to distort the baseplate by over tightening. Ensure no cables have become trapped or are pinched during installation.
- g) Install the wall mounted Power Supply Unit. A 3A fused spur is required to connect the PSU to the mains supply services. Do not power up at this stage.
- h) Terminate the cables at the Pedestal, e.g. 24Vdc power and access control cables.
- i) Configure settings as required, e.g. Panel Positions, Passgate DIP-Switches.
- j) Commission the Passgate; please see the 'Commissioning' section.
- k) Make final adjustments; please see the 'Commissioning' section.
- Fit the glass panels before performing the Final Testing. Again, please see the 'Commissioning' section.

Safety Precautions

Manual Handling

Each Pedestal is packed in a carton that uses foam inserts to support the top and the bottom of the enclosure. In the unlikely event that damage is suspected, take digital pictures of the damage on the cartons and product.

At least two persons are required for fitting the glass panel; the glass weight can be 15kg. Each Pedestal weighs approx 20kg.

Packing List

Each Passgate Pedestal is delivered in individual boxes, along with an extra box of parts.

Manuals/Documents

Passgate Installation Manual (this document) Glass Sticker Manual

Installation Equipment

Metal Drilling Template

Cables

CAT5 Cable 5m (1 per Intelligate)

Tools

Allen Key 2.5mm x1 Allen Key 4mm x1

Spare Fixings

M4 Plain Washers M4x12 F to M Standoff M4x12 Bayonet Cap Screws

Glass Panel Extras

Frosted Stickers

Glass Panel Bracket (Supplied Fitted)

Bracket Pins Brackets Screws Bracket Pads Bracket Screw Covers (plastic)

Miscellaneous

Lane Power Supply (1 per lane)

Application of Product

The Fastlane Passgates provide a physical barrier to control access for disabled access and goods trolleys which would otherwise not be able to gain access via a turnstile system.

The glass panels will resist unauthorised entry, but can be forced open. This event is detected and reported to the Access Control system using a volt-free alarm contacts.

Important Customer Information

Before installing or operating this product it is important to read the entire manual, particularly with regard to safety, general warnings and recommendations. Non adherence may invalidate your warranty.

IMPORTANT: When connecting power cables ensure that the correct polarity has been observed.

CAUTION: Fastlane units employ sensitive electronic devices, please observe electrostatic discharge precautions when handling and for the storage of circuit boards. As a precautionary measure provide an earth connection to each pedestal chassis.

Safety Features

The Fastlane Passgate uses toughened safety glass, in the unlikely event that a glass panel is broken; the glass is reduced to small particle sizes as required by BS 6206.

Fire Precautions

The Passgate may be integrated to open a panel in response to a fire panel relay output, in addition, a green break-glass unit is recommended to isolate the 24Vdc power in case emergence egress is required and the fire integration fails to operate.

Turnstile Low voltage power is to be disabled by integration of a relay that is activated by the Fire Panel. As an additional safety measure, a Break Glass Unit is recommended to remove power from the turnstile in the event of emergency. Removing the power will unlock the arms, leaving them free to rotate in either direction.

Product Performance

The Passgate products are used as part of an Access Control System to control the ingress and egress of persons. The glass barrier is a physical deterrent to unauthorised ingress or egress; however unauthorised access is possible by forcing entry/exit. Therefore, these products are always to be used alongside Reception Staff or Security Personnel.

In the event of a power fail, the Passgate will not operate, a UPS will be required if operation is necessary for such a situation.

The Intelligate will detect tailgaters, following authorized users. Detection performance is limited by the width of the lane; if the lane is wide enough for 'side-by-side' tailgating. Tailgate detection is based on an optical detection system. As such, it does have performance limitations. Please ask your distributor for more information.

Product Description

Fastlane Passgate systems are available in a number of configurations. A Passgate consists of a physical glass barrier; an Intelligate also include optical detection beams for anti-tailgating functionality.

Fastlane Passgate

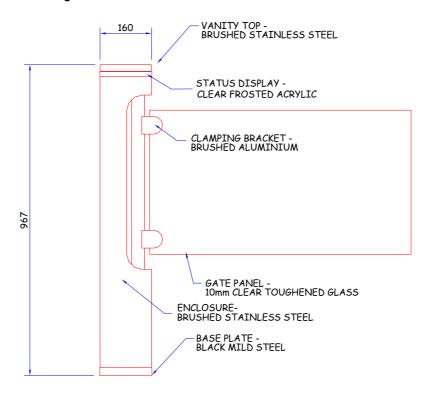
The Fastlane Passgate comprises of a glass panel that is intended to provide visitor, goods and disabled access as part of a turnstile Access Control System.

The glass panel may be opened 90° in either direction in response to a momentary-closing contact. The gate will remain open for a period of time (between 1 to 20 seconds as configured). Alternatively the opening and closing control of the gate may be provided in response to a control switch, usually situated at a reception desk.

The product provides a visual indication of the direction of passage through the Passgate when the gate is opened. This consists of a series of lights held behind the clear frosted status display ring (see figure 1).

In the event of the gate being forced, a visual and audible alarm will alert staff members, and an alarm output signals to the Access Control System. After the gate has been forced open, it will automatically return to the closed position. The Fastlane Passgate single glass panel may be installed for gaps of up to 1m wide.

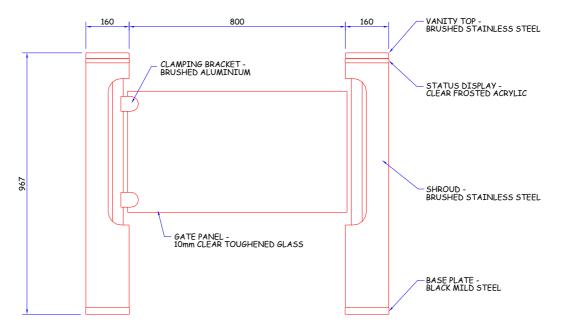
Figure 1 - Fastlane Passgate



Fastlane Intelligate Single Gate

The Fastlane IntelliGate Single Gate model provides an increased level of security with the use of Infrared beams which monitor the Passgate gap. Using data collection from these beams enabled the Intelligate to close directly after the authorised people have passed through, and also to help deter tailgaters.

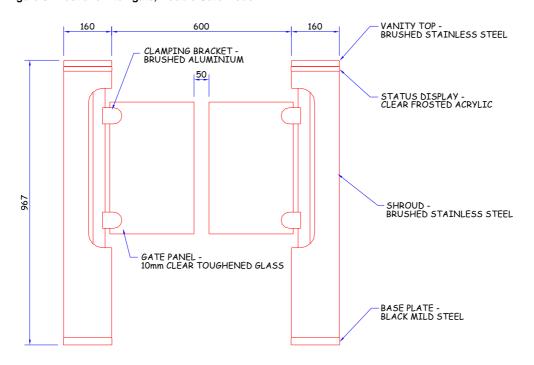
Figure 2 - Fastlane Intelligate, Single Gate Model



Fastlane Intelligate Double Gate

The Fastlane Intelligate Double Gate model provides a high performance Passgate with tailgate detection as above. The two smaller-width glass panels can be operated at faster speeds similar to the Fastlane Glassgate product.

Figure 3 - Fastlane Intelligate, Double Gate Model



Installation

Installation Planning

Pedestal Positioning

The Pedestal position needs to consider the position that the glass panel will operate between, typically if an Access Control System is employed to provide authorisation, posts (with a reader) will be placed at the two glass open position/s.

For the Intelligate product, the pedestals must be in alignment for the Transmit Optical beam to be received by the Receive Pedestal.

A minimum gap of 100mm (4") between the rear panel and a structure eg wall, reception desk is required to facilitate access for panel removal and access to the Motor Driver PCB assembly.

Template

A drilling template is supplied with the product to enable the cable access and M10 fixing locations to be accurately drilled, the glass panel centre position is provided on the template to assist with pedestal alignment.

Pedestal Fixings

The fixing type and depth will be determined by the floor composition. To secure the pedestals use M10 ($^3/_8$ ") studs in all 4 positions provided. The studs should have no more than 50mm (2") of thread protruding above the floor level, this will allow for 25mm stud length above the baseplate.

Cable Routing

The wire connections required between pedestals, the location of the power supply, access control system and reception desk are typically concealed beneath the floor. This would involve the installation of cable containment. Before you start, first consider the wiring requirements. See figures 6 and 7.

Earth Cables

On the baseplate is an earthing point (green sticker and blue crimp) this must be used to prevent ESD (Electrostatic Discharge) damage to the boards inside the pedestals. Provide an earth connection from each pedestal to ground. Use a green / yellow sleeved cable with a minimum conductor cross sectional area of 1.5 mm² / 16AWG. Ideally the earth connection should be as short as possible. Alternatively the earth cable may be terminated at the 24Vdc Power Supply.

Power Cables

Fastlane Passgate operates at a low voltage. Under no circumstance should hazardous high voltages be present at the Pedestals as it will invalidate the safety design rules adopted.

Each Motor Driver Card requires a supply connection from the 24Vdc output at the Power Supply. A 2-core cable with 1.5mm² (16AWG) conductors is required for cable lengths of up to 15m (50ft). <u>Consult Technical Support if longer cable distances are unavoidable.</u>

System Interconnect Cables

The Fastlane Intelligate comprises of two pedestals which are connected together using a CAT5 cable. The Fastlane Passgate is a standalone product and does not have a system interconnect cable.

The CAT5 connects the Transmit Motor Driver 10493 PCB to the Receive Motor Driver 10491 PCB using a straight through connected CAT5 cable.

Access Control Cables

The Access Control is terminated at the 10491 Motor Driver PCB. The Intelligate has a similar Transmit Motor Driver PCB that provides a Fire Panel Integration feature using AUX3 input.

It is recommended to use screened twisted pair cable with a minimum conductor cross sectional area of 0.35mm^2 / 22 AWG. (Subject to any recommendation given by the manufacturer of your access control system)

If a Remote Control Unit is to be installed as part of the system, use a 10-core cable with a minimum conductor cross sectional area of 0.35mm² / 22 AWG. See 'Remote Control Unit' section.

Also consider connections to your access control equipment. This usually entails routing cables for the card readers.

Mechanical Installation

Panel Removal

First remove the rear panel. This is done by unscrewing the Vanity Lid anti-clockwise; this will expose a PCB cover plate. Remove the four fixings that secure the panels. Remove the PCB Cover Plate and frosted acrylic status display ring.

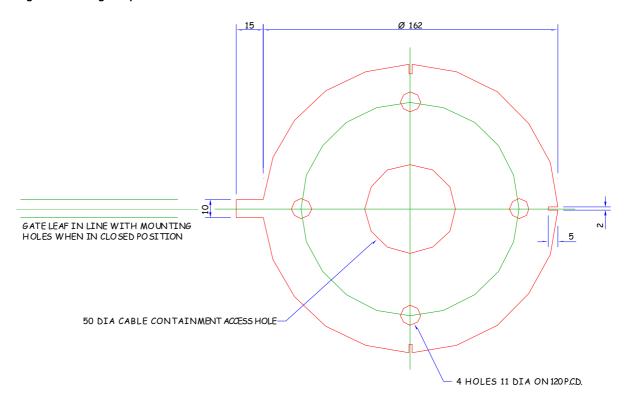
The Rear Panel may be removed with an upwards movement, the panel is retained by side slots, the upward movement releases the bottom and centre panel lugs from the slots.

The Front Panel may be removed with an upwards movement, the panel is located on pegs on the baseplate.

Pedestal Installation

Each pedestal is secured to the floor using four M10 fixings (3/8") located around the circumference of the baseplate. A drilling template is provided for the drilling the fixings and cable aperture positions, the central aperture is for the cable containment.

Figure 4 - Drilling Template



The recommended method of fixing the Pedestal is shown in Figure 5; the studs should be less than 50mm (2") above the floor level.

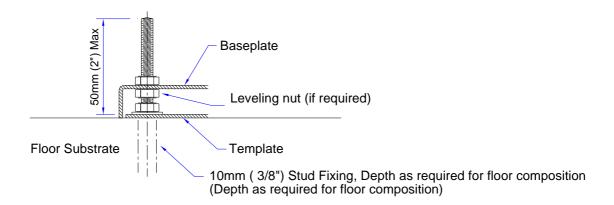
The M10 Studs need to be perpendicular to be able to align correctly with the baseplate; therefore drilling accuracy is required, only minor adjustments may be made using a rubber mallet.

Care is required not to over tighten the nut securing the baseplate to avoid deforming the baseplate.

The pedestal requires lifting over the M10 studs. Please observe good practice for manual handling and lift from the chassis, taking care not to damage the PCB assemblies.

Rest the pedestal on its studding and feed the cables up through the cable aperture in the baseplate. Now lower the Passgate Pedestal over the fixings and secure (using 2 nuts per fixing, the top one will act as a lock nut).

Figure 5 - Baseplate Fixing



Electrical Installation

Overview

The Fastlane Passgate requires a 24Vdc power supply and an authorisation signal for entry and exit requests, the Passgate provides an alarm signal in response to the glass panel being forced. Figure 6 shows a block diagram for the electrical installation.

The Fastlane Intelligate requires a 24Vdc power supply, a CAT5 cable between the Transmit Unit and the Receive Unit and an authorisation signal for entry and exit requests. The Intelligate provides an alarm in response to unauthorised entry/exit, tailgating and glass panel forced. Figure 7 shows a block diagram for the electrical installation.

Table 1 - Power & Access Control Signals (Receive PCB 10491)

Legend	Function	Specification
PWR	24Vdc Supply Input	24Vdc Supply Input, 2A maximum
<ip< td=""><td>Request to Enter Input</td><td>N.O. contact pair, closing for 1 second</td></ip<>	Request to Enter Input	N.O. contact pair, closing for 1 second
IP>	Request to Exit Input	N.O. contact pair, closing for 1 second
AUX1	Visitor Entry Input	Visitor Group Entry Request, Normally Open contacts, momentary closing
AUX2	Visitor Exit Input	Visitor Group Exit Request, Normally Open contacts, momentary closing
ALR C	Alarm Common	Relay Common Output to be used with either of the below outputs
ALR NC	Alarm Normally Closed	Relay output, Normally Closed, Opens on Alarm
ALR NO	Alarm Normally Open	Relay output, Normally Open, Closes on Alarm

The signals are terminated at the Motor Driver PCB 10493; figure 7 shows the connections to the board along the bottom edge of the board. Connections are provided by orange screw terminal connectors. The motor and lock solenoid devices will be factory wired, the passgate requires power and access control signals in order to operate.

Figure 5 - Passgate System Cable Routing

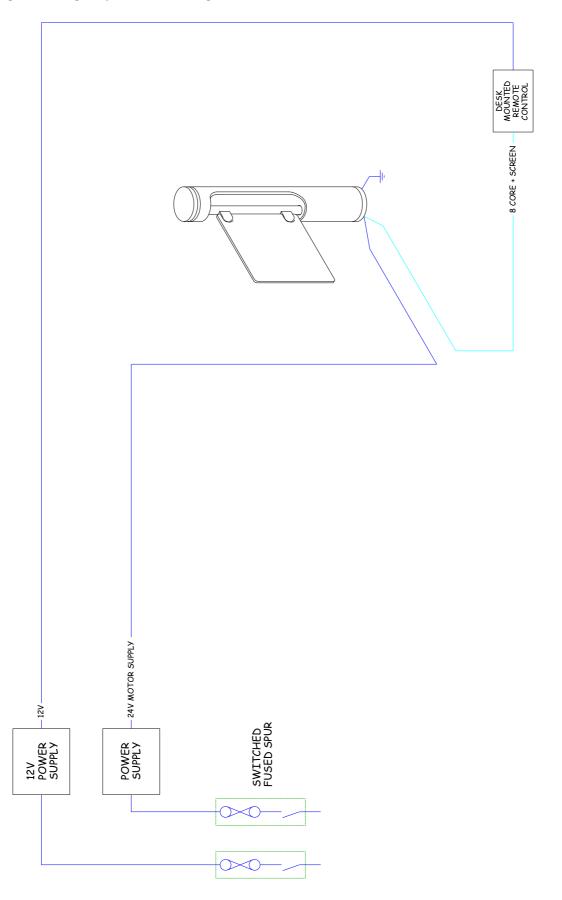
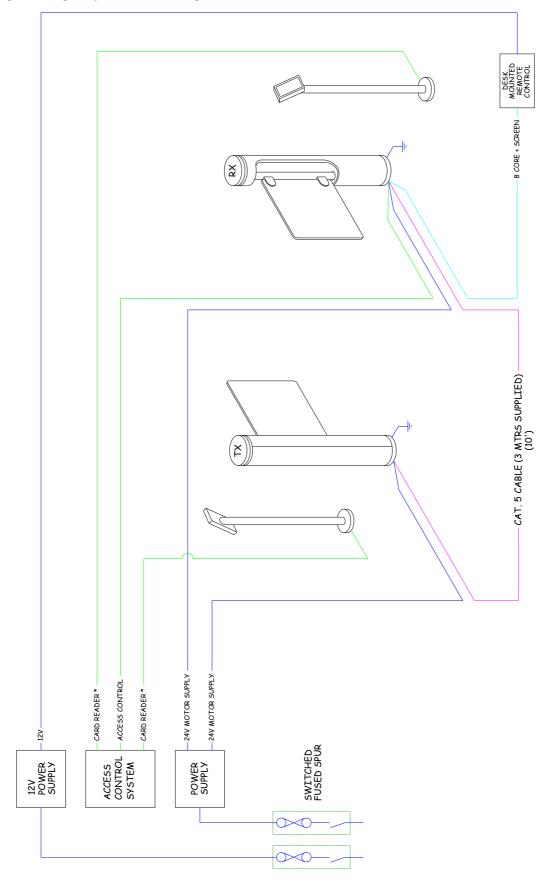


Fig. 6 - Intelligate System Cable Routing



Power Supply (ZFLPSUSINGLE)

The Passgate is operated from a 24Vdc switch-mode Power Supply. This is provided in a metal, wall mounted enclosure that has provision for a DIN rail mounted relay. The relay is to provide a means of isolating the 24Vdc according to the Fire Panel relay output (optional).

The Mains Supply is terminated to a fused terminal block for the Live, Neutral and Earth connections. All wires must be properly secured in terminal blocks. The Mains supply services are to be provided from a 3A fused spur and must be installed only by qualified personnel.

It is recommended this cable has a minimum conductor cross sectional area of 1.5mm²/16AWG this is to reduce voltage drop.

The 24Vdc Power Supply is shown in Figure 8. Each power module must be used to power each pedestal. Power must not be shared between pedestals.

IMPORTANT

The Motor Driver PCBs both have a jumper that enables 24Vdc power via the CAT5 cable, this is for the Intelligate Single Gate product only, where the 24Vdc supply connection to the 10491 Receive Motor Board is able to provide 24Vdc for the Transmit Motor Board 10493. In all other cases the jumper is not to be fitted and 24Vdc is required to both Motor Driver boards as indicated.

This unit contains unprotected conductors carrying high voltages. Improper usage or handling may result in electric shock or burns.

All output lines must be correctly rated and connected with the correct polarity.



Figure 8 - Power Supply (ZFLPSUSINGLE)

Request to Enter / Request to Exit

The Request to enter/exit is terminated at the Passgate/Receive Intelligate Pedestal Motor Driver PCB 10491. See Figure 9.

A momentary connection between the terminals <IP 'Request to Enter' or IP> 'Request to Exit' is required to allow access for one person.

If no one proceeds through the Passgate lane after access has been granted Passgate will timeout and return to normal operation after a time period set at VR5 on the Processor 10492 PCB. This time period is adjustable from 1-seconds (fully anti-clockwise) to 20-seconds (fully clockwise).

Timed Entry / Timed Exit (AUX1 / AUX2)

The Timed Entry/Timed Exit cabling is terminated at the Passgate/Receive Intelligate Pedestal Motor Driver PCB 10491. See Figure 9.

A momentary connection at the AUX1 or AUX2 terminals will assert timed access.

During timed access, Fastlane will wait for a person to use the lane or will time out and return to normal operation. The time out period is set at VR5 on the Processor 10492 PCB (see figure 11). This time period is adjustable from 1-second (fully anti-clockwise) to 20-seconds (fully clockwise).

If a person uses the lane within the time out period the timer resets but with only 3-seconds before time out. If a second person uses the lane within the 3-seconds the timer will reset again with another 3-seconds until time out. The timer will continue to reset until Fastlane is allowed to time out. This feature is typically used to allow visitors access and would be controlled via the Remote Control Unit (Optional Accessory).

Permanently connecting the AUX1 or the AUX2 terminals will allow permanent free access in the direction of the AUX terminals used.

Alarm Output

The 'ALR' terminals are volt-free Normally Closed (N.C.) and Normally Open (N.O.) relay contacts that open when unauthorised access has been detected, the contacts return to their normal state when the alarm stops (after the Alarm Time Period)

Fire Integration

Fire Integration is provided on the Passgate using a relay contact pair across the AUX1 or AUX2 inputs. A continuous connection will open the glass panel in the direction required as selected using either AUX1 or AUX2.

In addition, a local green breakglass unit is recommended to isolate the 24Vdc power from the Passgate Pedestals.

The Intelligate provides a dedicated opto-isolated input AUX3 input on the Intelligate Transmit Motor Driver 10493 PCB, see Figure 10. This input is to be operated by a 12Vdc signal the logical sense may be changed using a DIP switch, e.g. 0V opens gate or 12Vdc opens gate.

Figure 9 - PCB 10491 Receive PCB Assembly

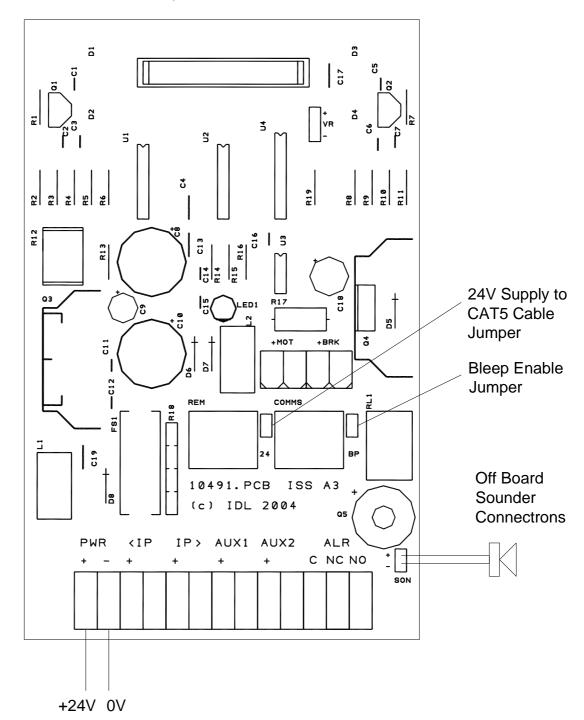
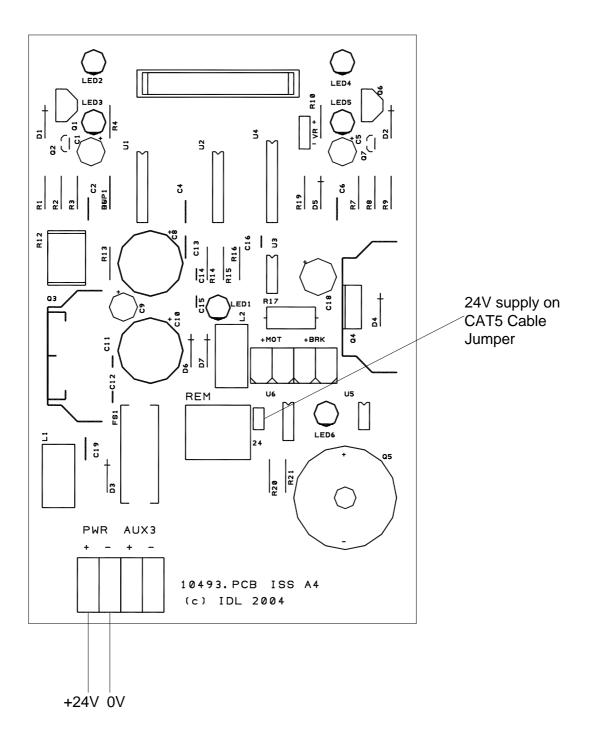


Figure 10 – 10493 PCB Transmit Motor Driver



DIP-Switch	Function	ON	OFF
1	Sounder Enabled	Enabled	Disabled
2	Not Used	-	-
3	Direction of Opening for AUX3 Input	Entry Direction	Exit Direction
4	AUX3 Input sense	N/C Input	N/O Input

Commissioning

This section provides a commissioning procedure as outlined below.

Step	Commissioning Activity	Actions
1	Go to Power Supply	Record mains supply voltage
	Check 24Vdc Output voltage, with no load	Record 24Vdc regulated voltage
2	Go to Passgate, do not connect power cable	Identify cables after checking polarity and voltage
	Check the 24Vdc PSU voltage	
	Check the 24Vdc PSU polarity	
3	Connect the 24Vdc to the Motor Driver Board	Record 24Vdc supply voltage on load
	Check the loaded supply voltage.	
4	Test Passgate functionality.	Test lane for <ip 1s="" pulse<="" td=""></ip>
		Test lane for IP> 1s pulse
		Test Gate Tamper/forced Alarm
		Test Obstruction/Unauthorised access Alarm (if
		Intelligate)
		Test Visitor Ingress AUX1
		Test Visitor Egress AUX2
5	Test Access Control Integration	Test Card In and Card out functionality if Integrated
		Test Remote Control Console if Integrated
6	Test Fire Integration	Ensure Power is isolated upon a Fire Panel Alarm
7	Fit Enclosure Panels	
8	10492 Processor PCB Set-up	Set VR1, Anti-clockwise Panel Position
		Set VR2, Panel Centre Position
		Set VR3, Clockwise Panel Position
		Note: for new positions of the above the gates must
		be triggered for it to be updated.
		Set VR4, Panel Speed
		Note: panels that are wider must be set to a slower
		speed setting
		Set VR5, Dwell Time
		Set VR6, Motor Torque setting

Precautions

Passgates operates at a low voltage. Under no circumstance should any hazardous high voltages be present at the Passgate Pedestals.

The majority of faults arise from the reversed polarity of the 24Vdc input cabling, as a precaution remove the 24Vdc input connections at the Passgate Motor Controller Cards before applying power for the first time.

Fuses

Unit	Fuse Type
Passgate Motor Controller Card RX	5x20mm 2A fast blow
Passgate Motor Controller Card TX	5x20mm 2A fast blow
Power Supply ZFLPSUSINGLE	5x20mm 3.15A fast blow

Re-Assembly

Slide the front cover on by tilting the top towards you and placing the base onto the pedestal base. Then tilt the cover towards the unit ensuring the locating lugs on the case meet with the holes in the pedestal base. Before fitting the rear cover ensure that the front case sits flat on the top flange of the pedestal.

To fit the rear cover, as the rear cover is retained by side slots it should be offered up to the front cover in a raised state then slid down to lock in place. Ensure that the rear cover sits flat on the top flange of the pedestal.

Fit the acrylic status display and PCB cover plate making sure the access holes in the plate line up with the PCB. Secure the cover plate with the four M4 countersunk screws, now you can screw on the vanity lid in a clockwise direction.

To fit the gate panel undo the four countersunk screws on the clamping brackets and remove this side of the bracket. Offer the glass up and fit one bracket (do this up finger tight) now fit the other bracket and tighten all four countersunk screws.

Power Supply

Before switching on the ZFLPSUSINGLE for the first time disconnect the output connections. Ensure that the mains supply cable is terminated correctly and that a 3 amp mains fuse is fitted at your isolator switch. Switch on the mains supply and observe the operation of the ON LED1 (LED is green if power up is successful).

Check the output voltage at the 24Vdc terminals = 24Vdc +/- 2Vdc.

Passgate Transmit/Receive Motor Controller Card

Initially do not operate with the Glass Panels fitted.

Disconnect the 24Vdc at the PWR terminals at the Motor Controller Card.

Return to the ZFLPSUSINGLE and connect your 24Vdc cable only. Return back to the Motor Controller Card and check the voltage and polarity of your 24Vdc cable.

Connect your 24Vdc cable to the PWR terminals at the bottom left hand corner of the Motor Controller Card. During power up a beep will be heard from the Single-tone Sounder and the Lane Status Display should illuminate with blue and amber lights at each end.

Functional Testing

Perform these tests to check the functionality; The DIP-Switch setting on the Motor Driver PCBs and Processor PCBs will need to be configured, see figures 10 and 11 for appropriate settings.

a) Unauthorised Access Attempt

Attempt to gain access through the Passgate without requesting access. An intermittent beep from the Single-tone Sounder should be heard, and the Lane Status Display should display red flashing lights moving towards you.

Step backwards out of Passgate and the above intermittent beep and flashing lights should cease.

b) Unauthorised Access

Gain access through the Passgate without requesting access. The Single-tone Sounder and Lane Status Display should operate as for an unauthorised access attempt, if you continue through the lane the Multi-tone Sounder should be heard and the Lane Status Display should flash red lights for the time period set at VR5. Note that the Single-tone Sounder should be heard for approximately 3 seconds.

When an unauthorised access has been detected, relay ALR should open momentarily.

c) Obstruction

Walk into the entrance of the lane and wait. Initially Passgate should respond in the same manner to unauthorised access attempt, but after approximately 10 seconds the Single-tone Sounder should emit a single tone to indicate an obstruction has been detected. This single tone will continue to sound until the obstruction has been cleared. During this time the Lane Status display will flash red lights towards the obstruction.

d) Authorised Access

At a Passgate request access. The Single-tone Sounder should beep once to inform you that your access request has been granted. The Lane Status Display should flash green lights in the direction you requested access.

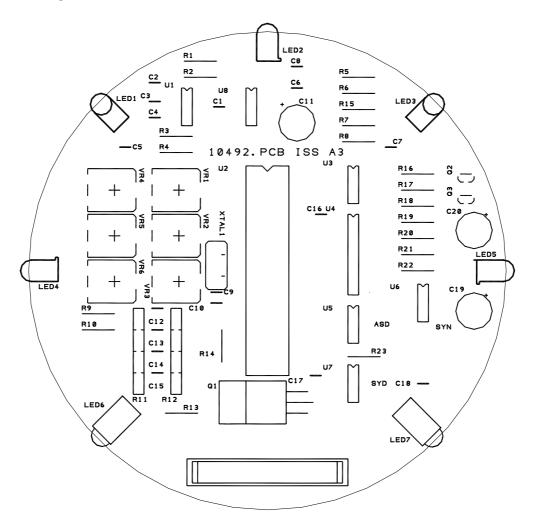
The Glass Panels will operate in the direction requested, set VR1, VR2 and VR3 to set the glass open and closed positions.

Set the panel speed using VR4. Note that wide glass panels must be configured to operate slowly whereas the 0.5m panel may be operated at the higher speeds.

VR6 set the motor current which in turn sets the motor torque.

Once you have passed through Passgate the Lane Status should return to its normal state.

Figure 11 - Passgate Processor 10492 PCB



Passgate/Receive Intelligate DIP-Switch Settings

DIP-Switch	Function	ON	OFF
1	Optical Beams	Enabled	Disabled
2	Remote Pedestal	Present	Not Present
3	Test	On	Off
4	Blue LED	On	Off

Transmit Intelligate DIP-Switch Settings

DIP-Switch	Function	ON	OFF
1	Opposite Direction of Panel	Enabled	Disabled
2	Panel Forced	Present	Not Present
3	Panels operate in one Direction	One way	Normal
4	Blue LED	On	Off

Warranty

Integrated Design Ltd. (The Company) warrants that products manufactured by it are of merchantable quality, free of any rightful claim of infringement or the like. When used in the manner intended, will be free of defects in materials or workmanship for a period of twelve (12) months from the date of sale as shown by a sales invoice or warranty registration card on file with the Company. The terms of warranty are as per Integrated Design Ltd. Conditions of Sale and will not apply to any product, which has been modified, or improperly used or repaired after leaving the Company's control. Any implied warranty of fitness for particular purposes, whether express or implied, is hereby expressly excluded. These warranty terms may not be modified except in writing approved and issued by an authorised officer of the Company.

Technical Support

We welcome inquiries and comments regarding all of our products. We trust you will find them easy to install and reliable in operation. Should you experience any application-related difficulties however, in the first instance please contact your supplier.

Further support is available via our technical support fax line, the number of which is:

Fax: UK 01784 240647

International 44 1784 24647

Web: www.idl.co.uk

A technical support form may be downloaded from the IDL web site, please use this form to provide a description of the reported fault and the corrective action diagnostics information already attempted.

If a sub-assembly is to be returned for warranty or non-warranty test and repair, please use the Return to Manufacturer Authorisation system (RMA). Information about this is available on the web site.

Important Notice

Although every effort has been made to make this manual as accurate as possible, IDL does NOT accept any liability for errors or omissions. The data contained in this manual supersedes any other information published on the Product. We further reserve the right to amend or improve the equipment and/or manual without notice.