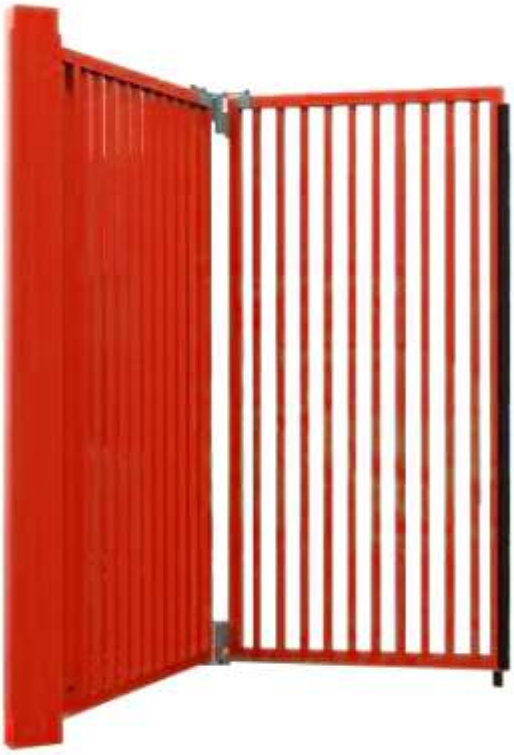
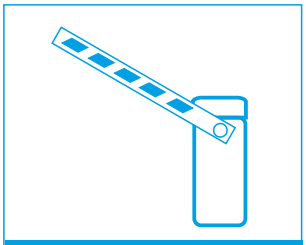
FF9500 Bi-Folding Speed Gate

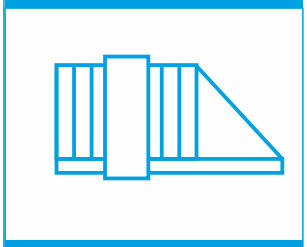
Rev:8.2

Installation, Operation & Maintenance Manual

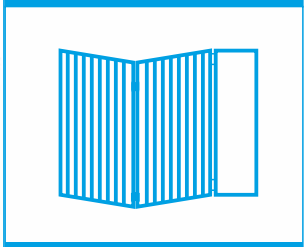




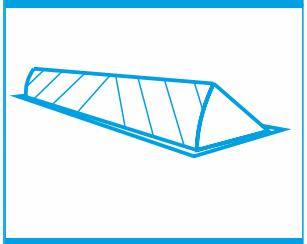
Manual Barriers



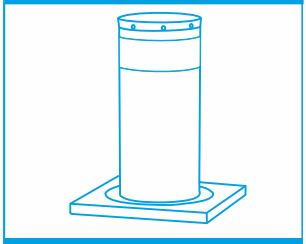
Auto Sliding barriers



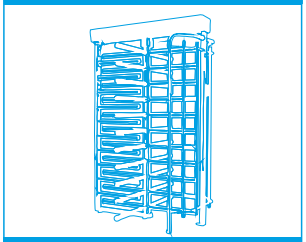
Auto Bi-Fold barriers



Auto Rising Kerbs



Auto Rising Bollards



Turnstiles

Bi-Folding Speed Gate

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Bi-Folding Speed Gate

Introduction and Warnings

This equipment is part of a large range of traffic flow products. They are designed to be easy to install, as all settings and internal wiring have been completed in our factory. Any of the instructions in this manual should only be carried out by a qualified service engineer or a competent person.

The Gates are ready to bolt down, connect to a single phase power supply and have any pre-cut loops wired into them (Please note that loop detectors are sold separately). The steps must be completed before the power is turned on to prevent accidents.

The following information is a guide only, and whilst we have made every effort to be accurate and correct there may be printing errors which we cannot be held responsible for.

With a correct installation you can expect to enjoy many years of reliable service from this product, we do however recommend that the product has a bi-annual service carried out by a qualified engineer. Please contact our service department to obtain a quote. As we manufacture the products we are best suited to care for your equipment.

Thank you for your custom and welcome to the exciting world of Total Traffic Flow Solutions.

Important Safety Notice

Automatic Gates are designed to Control the flow of vehicular traffic only. It can be dangerous to allow the passage of pedestrians and any other self-powered animal or device to utilise this method of access without appropriate warnings and or signage.
It may be necessary for the end user of this product to provide an alternative, safe method of access to cater for the previously mentioned categories.
The end user should fit all necessary signage and warning notices to either side of the gate, which should be visible and clear from all directions of approach.
The product that was shipped to you was designed with a control program to protect all categories from harm or affect this however is only a fail safe and should not be modified or tampered with by any unauthorised person not sanctioned by the manufacturer.

Please sign and date below to say that you have read and understood this notice before ANY installation work:

/ /20

Information on using this manual

- Read all information thoroughly
- Pay attention to all safety advice
- Be aware of the symbols (shown above right and above left) as they have different meanings. One is an information symbol, the other a warning.
- There are many artists impressions of the product in this manual you should refer to the images as a guide only. **Professional CAD** drawings should be used as a reference drawing and nothing else. As before every effort has been made to be 100% accurate in this manual but we cannot make any guarantees.
- As we constantly innovate our products we may change the quoted spec and any other details that have been documented in this manual so you should always refer to the supplier to see if the manual that was shipped with your product is the latest edition.
- As with all electrical installations you should use a qualified electrician and obey all of the latest laws and regulations.
- Be sure to fill out and complete **ALL** paperwork where instructed as this manual is the equipments log book and maintenance manual.

The "Warnings" leaflet and "Instruction booklet" supplied with this product should be read carefully as they provide important information about safety, installation, use and maintenance.
Scrap packing materials (plastic, cardboard, polystyrene etc) according to the provisions set out by current standards. Keep nylon or polystyrene bags out of children's reach.
Keep the instructions together with the technical brochure for future reference.
This product was exclusively designed and manufactured for the use specified in the present documentation. Any other use not specified in this documentation could damage the product and be dangerous.
The Company declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documentation.
Do not install the product in explosive atmosphere.
The construction components of this product must comply with the following European Directives: 89/336/CEE, 73/23/EEC, 98/37/EEC and subsequent amendments. As for all non-EEC countries, the abovementioned standards as well as the current national standards should be respected in order to achieve a good safety level.

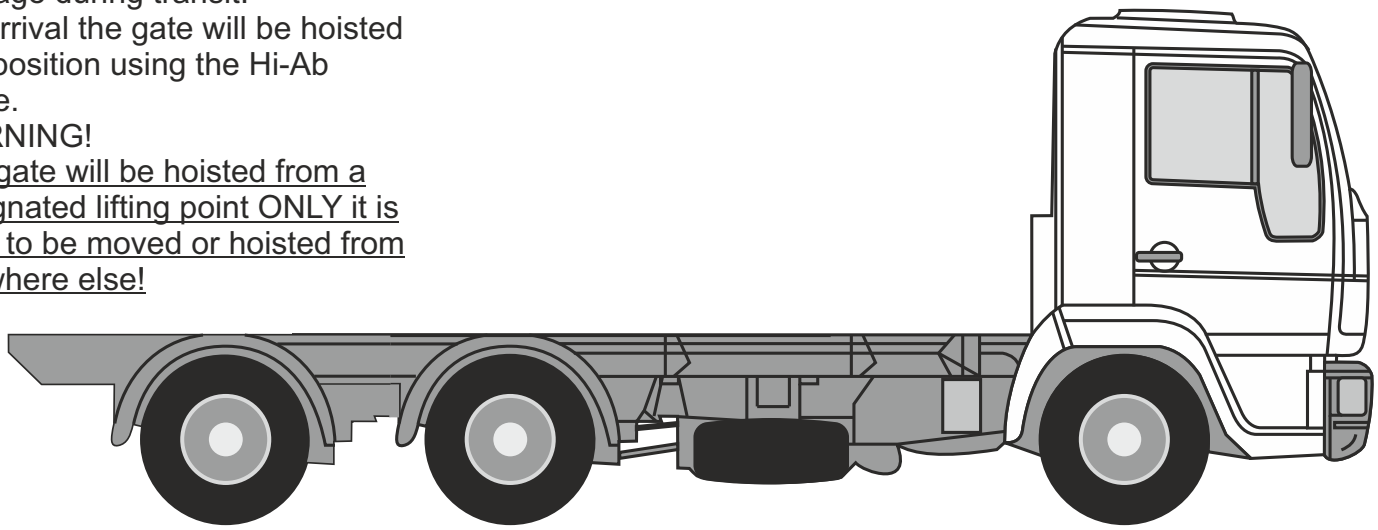
The Company declines all responsibility for any consequences resulting from failure to observe Good Technical Practice when constructing closing structures (door, gates etc.), as well as from any deformation which might occur during use.
The installation must comply with the provisions set out by the following European Directives: 89/336/CEE, 73/23/EEC, 98/37/EEC and subsequent amendments.
Disconnect the electrical power supply before carrying out any work on the installation. Also disconnect any buffer batteries, if fitted.
Fit an omnipolar or magnetothermal switch on the mains power supply, having a contact opening distance equal to or greater than 3mm.
Check that a differential switch with a 0.03A threshold is fitted just before the power supply mains.
Check that earthing is carried out correctly: connect all metal parts for closure (doors, gates etc.) and all system components provided with an earth terminal.
Fit all the safety devices (photocells, electric edges etc.) which are needed to protect the area from any danger caused by squashing, conveying and shearing, according to and in compliance with the applicable directives and technical standards.

Bi-Folding Speed Gate

Delivery, Transport & Movement

This article describes how your equipment will be delivered to you, specifications on the transportation used and advice including health & safety on movement of the equipment.

The gate will travel folded and on its side on the back of the lorry bed. It will be packed with timber or a softer variant to prevent damage during transit.
On arrival the gate will be hoisted into position using the Hi-Ab crane.
WARNING!
<u>The gate will be hoisted from a designated lifting point ONLY it is NOT to be moved or hoisted from anywhere else!</u>



The manufacturer will use a qualified transport company to deliver the product conforming to the necessary regulations as detailed below:

- All drivers are qualified
- All drivers are tested once yearly
- All drivers carry risk assessments and method statements (available on request)
- They are controlled under law to conform as there are no trade regulation standards to comply with

HSC
Health & Safety Commission

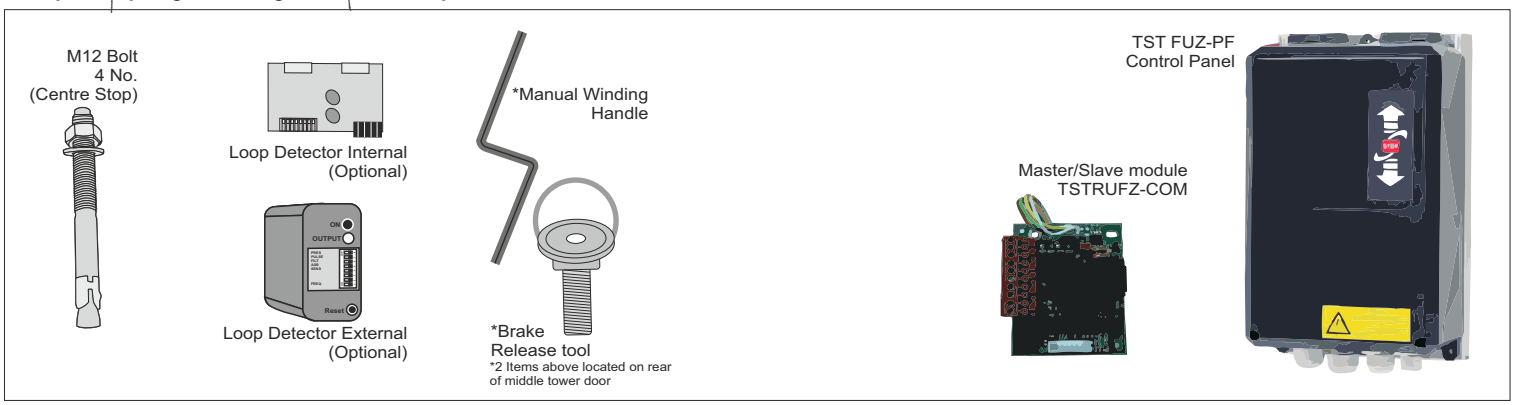
Health and safety Considerations:
Moving Goods Safely (MGS) is a national project involving both the Health and Safety Executive (HSE) and Local Authorities (LA) working in partnership. The project aims to reduce injuries and ill-health arising from the movement of goods from supplier through haulier to the recipient and end user including any home deliveries. The project will focus upon the delivery and collection of goods and the hazards this generates. It covers the main areas that cause the majority of injuries and ill-health to workers, including:

- Workplace transport;
- Slips & trips, and;
- Musculoskeletal disorders (MSD).

The movement of goods presents us, as health and safety regulators, with the challenge of dealing with a huge variety of issues. The commercial organisations involved within the movement of goods are diverse including haulier, third party logistics providers, pallet networks, retailers etc, with some very large companies, thousands of small businesses and the self-employed. The movement of goods is more than just trucks on the road with a large proportion of accidents happening at the delivery/collection sites that are often not directly under the control of the company making the delivery or collection. Communication and cooperation problems can arise due to the many organizations involved in the movement of the goods, and this can also lead to difficulties in effectively managing health and safety.
(Source H&S Executive UK 2008)

Bi-Folding Speed Gate

Component Identification



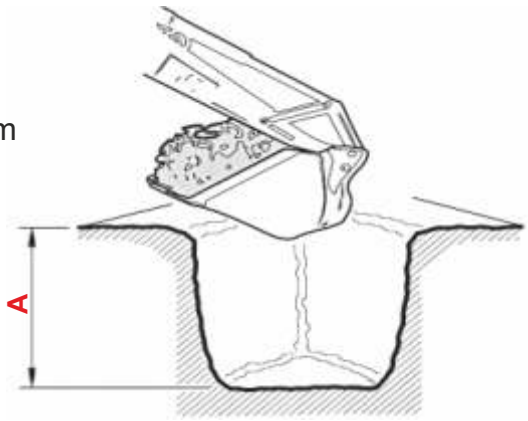
The numbers in the text document below relate to the drawings below.

1. You need to prepare the ground to accept the bi-fold tower. The drawings are a brief guide and for dimensions you should **ONLY** consult issued CAD drawings. Be sure to CAT scan any area before excavation!
2. The gate to will be installed in 2 steps if it is “cast-in”, If you have opted for a “bolt-down” installation then you would create the same plinth and if level install the towers on this. After the correct hole is dug according to CAD drawings issued you will then move to step 3 for the first pour of (C40) grade concrete.
3. As per picture if in an area with a high water table you need to ensure you have adequate drainage. “D” shows the first pour of concrete (mentioned above) this should be 700mm deep. When this has cured you drill and chem fix 4 20mm threaded bars into the surface to line up with the fixing holes in the gate tower base plate, (these have a nut above and below the tower base plate for adjustment/alignment purposes).
4. The gate leaf & tower will be closeed (base plate first) onto the threaded bar. here it will secured and levelled up in all direction ensuring that the tower sits up out of the hole to the correct (level) height. This is a very important step as when the other gate is fitted. It will need to line up with the first fitted leaf. Please note that this is very important as there is only a MINIMAL adjustment once the gates receive the second pour of concrete.
Now move on to step 5

3h 45 mins

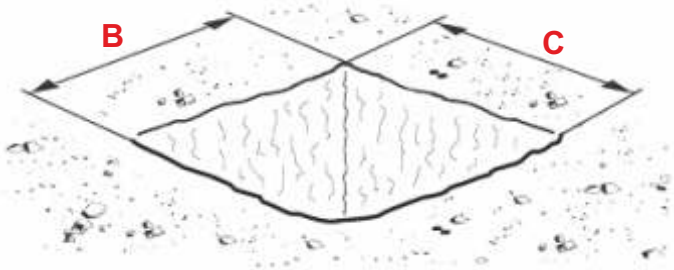
1.

A=1400mm



2.

B=1300mm
C=1300mm



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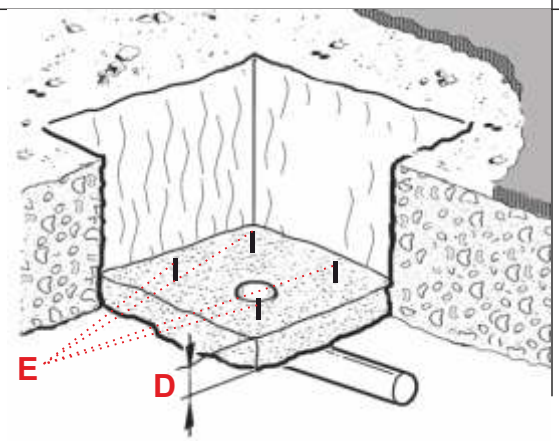
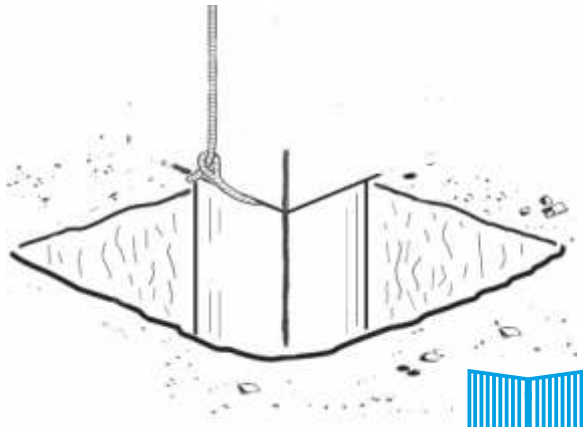
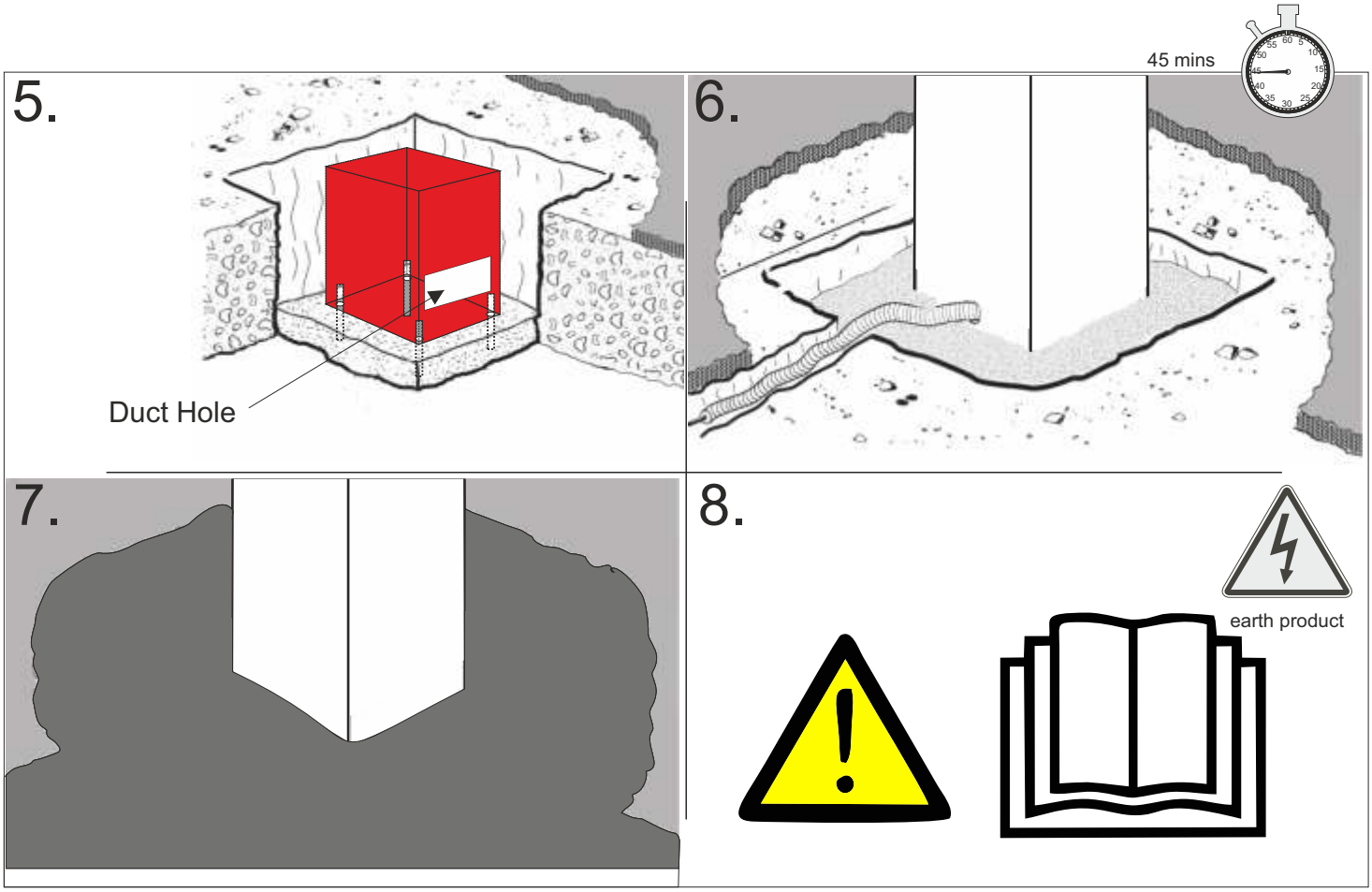


4.



Bi-Folding Speed Gate

Component Identification



5. Assuming that the gate has now been closeed onto the threaded bar and has been levelled accordingly the duct can be pushed through the hole in the gate tower.
6. Once the duct has been fed through the duct hole the second pour can be made. The picture shown displays the pour nearly complete. You must allow for ducting to link one tower to the other as you have to have a communication cable to allow the Master/Slave function. Also it goes without saying that the supply power must also be fed through into the tower.
7. This picture simply shows the tower installed with a finished surface. At this point the finished layer has zero structural benefit so it can be any finish of your choosing.
8. Now you can connect the communication cable for the Master/Slave function and photo-cells etc, also the panels supply voltage. All this is detailed in the rest of this manual. Please note that the product must be earthed. We recommend that the supply voltage comes from a 14 amp breaker MCB, not RCD and is not a tempoarary supply (such as a generator) as the panel monitors the supply and will treat this as “dirty power”

Notes

Bi-Folding Speed Gate

Manual Release Guide

Please use the following instructions to operate the Gate manually, the following is assuming you have powered down the unit and opened the cabinet door:

As stated at the beginning of this manual we recommend a bi-annual service, but at a bare minimum, it is imperative that you get a service done once every 12 months. This is not a sales tactic in disguise, there is a very serious health and safety issue/risk associated with not complying to this. Also in order for your Gate to keep complying with the appropriate legislation.

- Before carrying out any maintenance to the installation, disconnect the mains power supply.
- Make sure you have disconnected/Isolated the power before attempting any work.
- A Maintenance Contract should be sought from a specialist company after a maximum of 5000 manoeuvres or 1year from the install date.
- Occasionally clean the photocell optical components and make sure they are free from dirt, water, rain, soil etc.. Batteries in photo cells may need to be changed every 6 months or sooner dependant on use. Gate will not work properly without photo cell function.
- Have a qualified technician (installer) check the correct setting of the electric clutch.
- If the power supply cable is damaged, it must be replaced by the manufacturer or its technical assistance service, or else by a suitably qualified person, in order to prevent any risk.
- When any operational malfunction is found, and not resolved, disconnect the mains power supply and request the assistance of a qualified technician (installer). When automation is out of order, activate the manual release to allow the opening and closing operations to be carried out manually.
- Gearbox drive unit is “sealed” for life and requires no further lubrication.

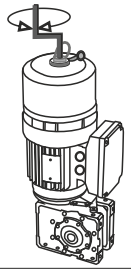
Bi-Folding Speed Gate

First Operation Manouvres

1.Before attempting the steps outlined below please obey common sense and make sure that you have closed the passage the Gate will inhibit provided a diversion and informed site inc pedestrians.
2.Follow the manual release guide in this manual and make sure the Gate moves un-hindered by inserting the winding handle and turning to make the Gate open and then close.
3.If the above step is ok then proceed to close the Gate using the manual method and then power on using the isolator switch as shown (if fitted).
4.Now read the steps below to move the gate automatically.

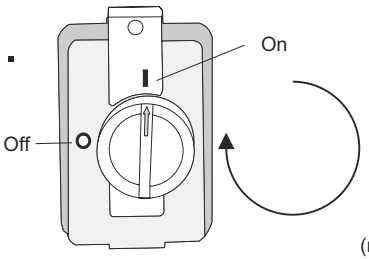
1.

2.



When the Key is inserted fully into the centre hole turn clockwise to open and anti-clockwise to close. After this you must remove the manual release handle.

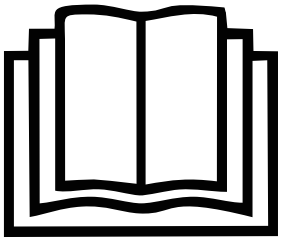
3.



If an isolator is fitted turn the knob clockwise to power on the Gate.

(not fitted as standard optional)

4.

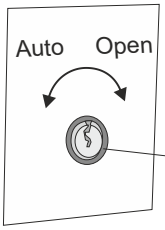


There are many options to operate the Gate and is dependant upon which type of access control you have connected. However there is a standard way to operate the Gate by using the key switch (if fitted) and the arrows on the front of the panel Instructions are assisted by pictures below.

1. Picture shown below is the key switch & emergency stop button unit (if fitted) which is located on the outside of the Gate cabinet, also shown below is the key switch keys.
2. To move the Gate using the arrow keys on the panel first make sure the screen says “-E.O-” (end position open) or “-E.C-”(end position closed) if it does not follow the troubleshooting guide on page 9 when the screen does say “-E.O-” or “-E.C-” follow below.
3. To make the Gate move to “open” press the up arrow.
4. To make the Gate move to “close” press the down arrow.

Please note that the step 4 manoeuvre will not work if there is something in the way of photo-cells a presence on the loops (if fitted).

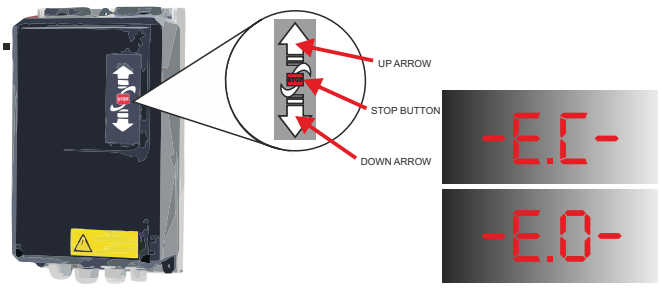
1.



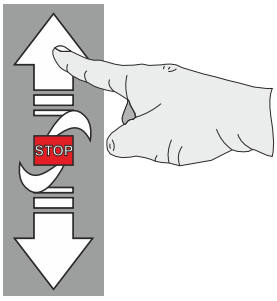
This key switch is mounted on the side of the Gate

Key switch keys

2.

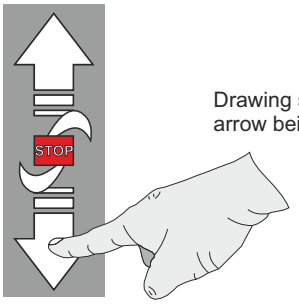


3.



Drawing showing the “UP” arrow being pressed

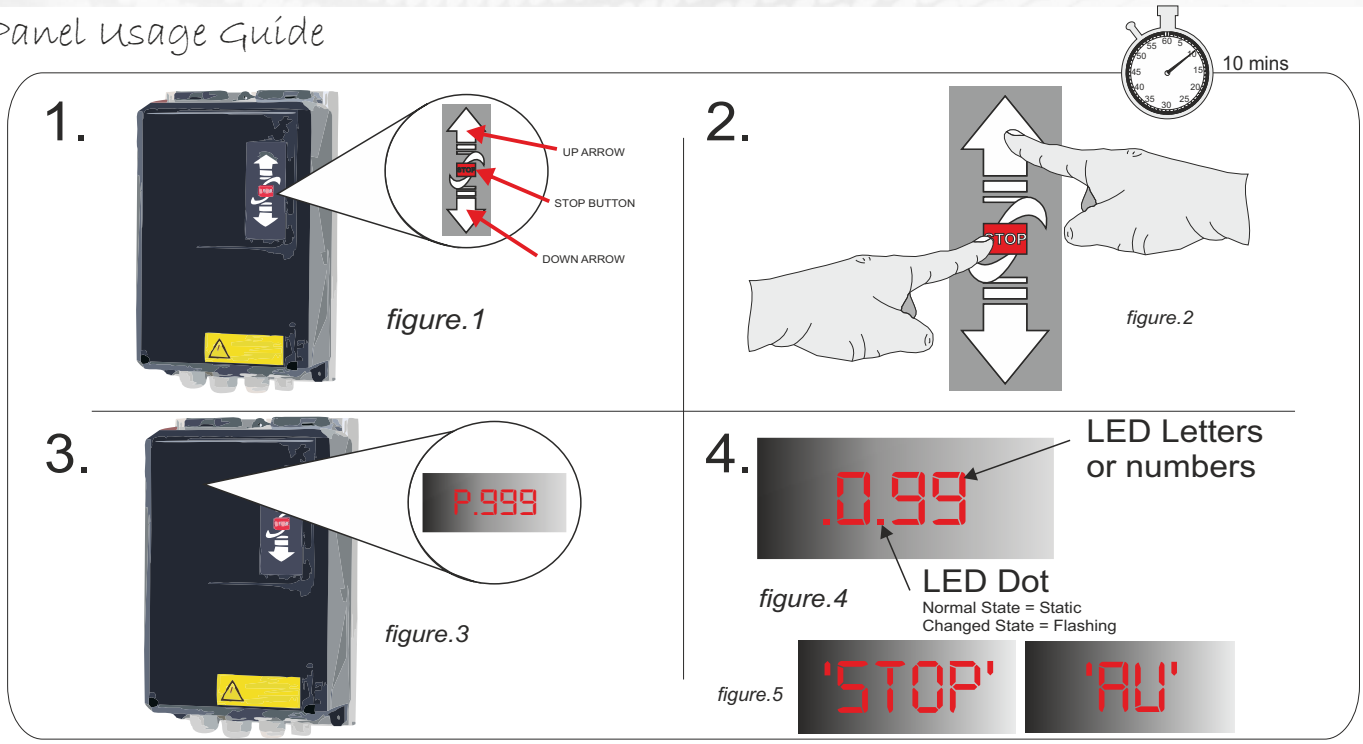
4.



Drawing showing the “DOWN” arrow being pressed

Bi-Folding Speed Gate

Panel Usage Guide



1. 1. On the front of the panel locate the function buttons (figure.1)
2. 2. Press and hold the up arrow and stop button together for 3 seconds (figure.2).
3. The LCD display and change to P.XXX (xxx will be a parameter number last used) you are now in programming mode and can follow the next line of instructions. When finished and to exit programming mode press and hold the stop button for 5 seconds.
4. To enter a parameter scroll using the arrow keys until the LCD display show the number you require (figure.3) using the command buttons (figure.2). when the display shows the parameter number required in the first column of the table below, press the STOP button for one second. You are now in that selected parameter, should you wish to leave this parameter or discard any changes simply press the STOP button again for 1 second ONLY!!. To make any adjustments in the selected parameter simply use the arrow keys (figure.2) up or down, when the appropriate value is selected you should press and hold the STOP button until the flashing dots between the value cease to flash (see figure.4). The value you selected has now been saved to memory. To exit the menu press and hold the "stop" key for seven seconds until the LCD display shows "STOP" or "AU" (figure.5) Below is a short list of commonly used parameters:

Parameter Number:	Default State:	Set to Value:	Parameter Description	Effect of this change:
P.999	1	3	Password level to see **ALL** parameters	Allows all parameters to be seen
P.205	8	0	Tells panel Limits or encoder connected	8=encoder 0=mechanical limits
P.980	0	1~4	This parameter defines the method of operation of the barrier.	1=dead man mode 2= input to open 3= input to close 4= auto open/close (engineers test mode)
P.991	0101	4 options :-	This parameter tells the panel what it is connected to. This is needed as the panel is used on all of our products	0101= Barrier master 0100=barrier slave 0300= Bi-Folding Gate 0200= Sliding Gate
P.460	0	1	You can connect safety edges to the panel, here you can turn it on or off.	0= no safety edges connected 1= safety edge connected
P.010	0	Up to 1000	This parameter is where you set the "no passage" timer so if the barrier is opened and no one drives through it will close automatically after this time	0=Timer is de-activated 0-1000=time in seconds
P.50A	0	1613	This says that you have connected a secondary safety edge.	1=Secondary safety edge connected
P.660	22	22 or 23	Defines the operation of loop 1	22= Free Exit/Entry 23= Safety
P.670	22	22 or 23	Defines the operation of loop 2	22= Free Exit/Entry 23= Safety
P.990	0	1	Resets the panel to its factory default	1 = erases all stored parameters
P.310	50	10~50	Increase or decrease the open speed	Speed up or slow down opening
P.350	50	10~50	Increase or decrease the close speed	Speed up or slow down close

Bi-Folding Speed Gate

Troubleshooting Guide

Message	Short description:	Cause of message
F.020	Run time exceeded (during opening, closing or deadman)	• current motor run time has exceeded set maximum run time (P.410 (Opening), P.415 (Closing), P.419 (Deadman move)), door may be sticking or is blocked • Door is blocked • If using mechanical limit switches, one may not have tripped
F.030	Lag error (position change of the door is less than expected)	• gate or motor is blocked • insufficient power for providing necessary torque • too little speed • mechanical limit switch was not left or is defective • Incremental or absolute encoder shaft is slipping • wrong positioning system selected (P.205) • one motor phase is missing • the brake does not release • Settings of the failure detecting time are not correct (P.430 or P.450)
F.031	Detected rotational direction deviates from expected	• When using incremental encoders: Channel A and B reversed • Motor rotation direction reversed compared with calibration setting ? teach in the limits again (P.210 = 5) • Too much „pancaking“ when starting, brake releases too soon, or too little torque, adjust boost (P.140 or P.145) as necessary.
F.211	External E-Stop 1 tripped	• E-Stop chain was interrupted starting at Input 1
F.212	External E-Stop 2 tripped	• E-Stop chain was interrupted starting at Input 2
F.320	Obstacle during opening	• During opening an obstacle has recognized
F.325	Obstacle during closing	• During closing an obstacle has recognized
F.360	Short circuit detected on edge input	• Short circuit detected on edges with normally closed contact
F.400	Controller hardware reset detected	• Excessive noise on supply voltage • Internal watchdog tripped • RAM error
F.410	Over-current (motor current or DC-bus)	• Wrong motor data set (P.100 – P.103) • Non-adjusted voltage increase / boost set (P.140 or P.145) • Motor not properly dimensioned for door • Door sticks
F.425	Overvoltage line supply	• The supply voltage for the controller is to high
F.510	Motor / DC-bus overcurrent Limit 2	• Wrong motor data set (P.100 – P.103) • Non-adjusted voltage increase / boost set (P.140 or P.145) • Motor not properly dimensioned for door • Door sticks
F.520	Overvoltage in DC-bus Limit 2	• Brake chopper interference / defective / missing • Feed voltage much to high • Motor feeds back too much energy in generator mode, door motion energy cannot be sufficiently brought down.
F.521	Overvoltage in DC-bus	• Input voltage supply too low, usually at load • Load too great / final stage or brake chopper fault
F.525	Overvoltage at the line supply input	• The line supply for the Controller is to high • The line supply fluctuates very extremly
F.530	Heatsink temperature outside of working range Limit 1	• Excessive load on final stages or brake chopper • Ambient temperature too low for controller operation • Clock frequency of final stage too high (Parameter P.160)
F.535	Housing temperature high	• The temperature inside the controller housing is to high
F.700	Impossible combination of Limits	• Both limit switches are active at the same time
F.930	External watchdog incorrect	• Defective hardware has been damaged by water or electric

Please note:Gate moves only in “dead-man” mode if you have any of the messages marked above (with this symbol:*) shown on the display

Bi-Folding Speed Gate

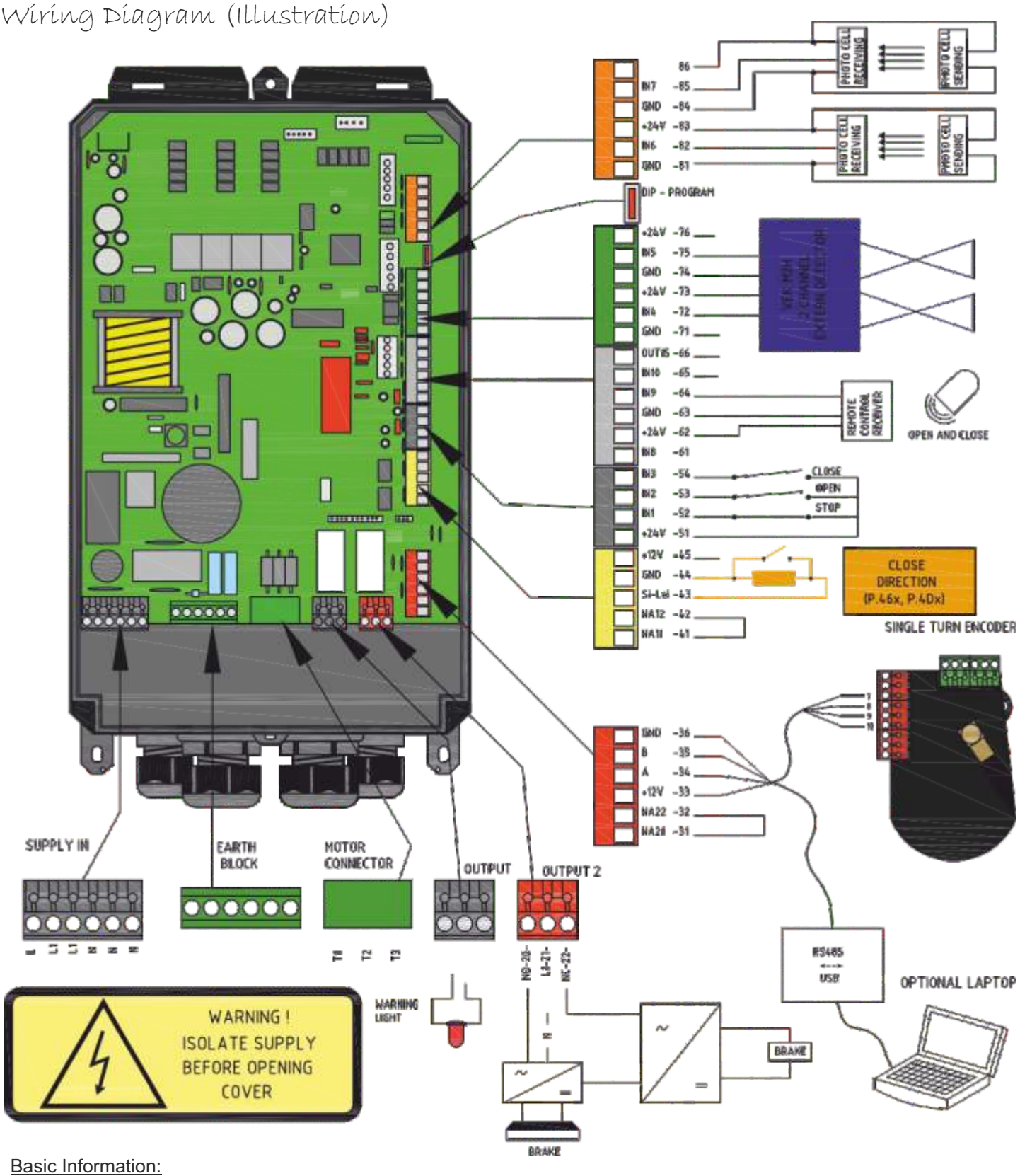
Troubleshooting Guide

Message	Short description:	Cause of message
I.080	Service counter will run off	
I.100	Speed in open position to high	
I.150	Speed in close position to high	
I.160	Permanent open command still active	
I.161	Priority not active	
I.170	Forced opening active	
I.180	Wait for foil key command	
I.199	Door counter wrong	
I.200	New reference position taken over	
I.201	Reference position new initialized	
I.205	Synchronisation done	
I.210	Limit switch not plausible	
I.211	Limit switch not plausible	
I.200	Reference corrected	
I.205	Reference position encoder	
I.310	Open command to door 2	
I.320	Obstacle during opening	
I.325	Obstacle during closing	
I.360	Disturbed N.C. safety edge	
I.363	Disturbed N.O. safety edge	
I.510	Correction drive finished	
I.515	Active correction drive	
I.520	Pre set speed for open or close drive not reached	
I.555	Measuring rotation factor not ready	
E.000	"Open on Keypad pressed"	• Stuck button or cable not connected correctly
E.050	"Stop on Keypad pressed "	• Stuck button or cable not connected correctly
E.090	"Close on Keypad pressed "	• Stuck button or cable not connected correctly
E.101	"Input 1 active"	• Permanent Stop Signal
E.102	"Input 2 active "	• Permanent Open Signal
E.103	"Input 3 active "	• Permanent Close Signal
E.104	"Input 4 active "	• Lower “close” limit has made
E.105	"Input 5 active "	• Upper “open” limit has made
E.106	"Input 6 active "	• Photo-Cell or other safety device active
E.107	"Input 7 active "	• Photo-Cell or other safety device active
E.108	"Input 8 active "	• This input has been activated by connected device
E.211	"E-Stop Ext"	• Barrier door safety switch open*
E.360	"Safety Edge Tripped"	• Faulty safety edge or edge is being pressed*
E.501	"Loop Ch1"	• Presence on safety loop “Channel 1”*
E.502	"Loop Ch2"	• Presence on auto loop “Channel 2”*

Please note:Gate moves only in “dead-man” mode if you have any of the messages marked above (with this symbol:*) shown on the display

Bi-Folding Speed Gate

Wiring Diagram (Illustration)



Basic Information:
All inputs are on the right hand side of the board as you look at it. ANY of these are easily configured, for example any contact can be changed by a parameter from Normally Open to Normally Closed etc.
The board has 12/24/240 Volts available to power external devices.
The board has 3 outputs which are also easy to configure and as well can switch 12/24/240 Volts. The panel is designed to be used with on-board “plug in” loop detectors.
Unused/Spare Contacts:
Terminals 61/62 (Input 8)

Bi-Folding Speed Gate

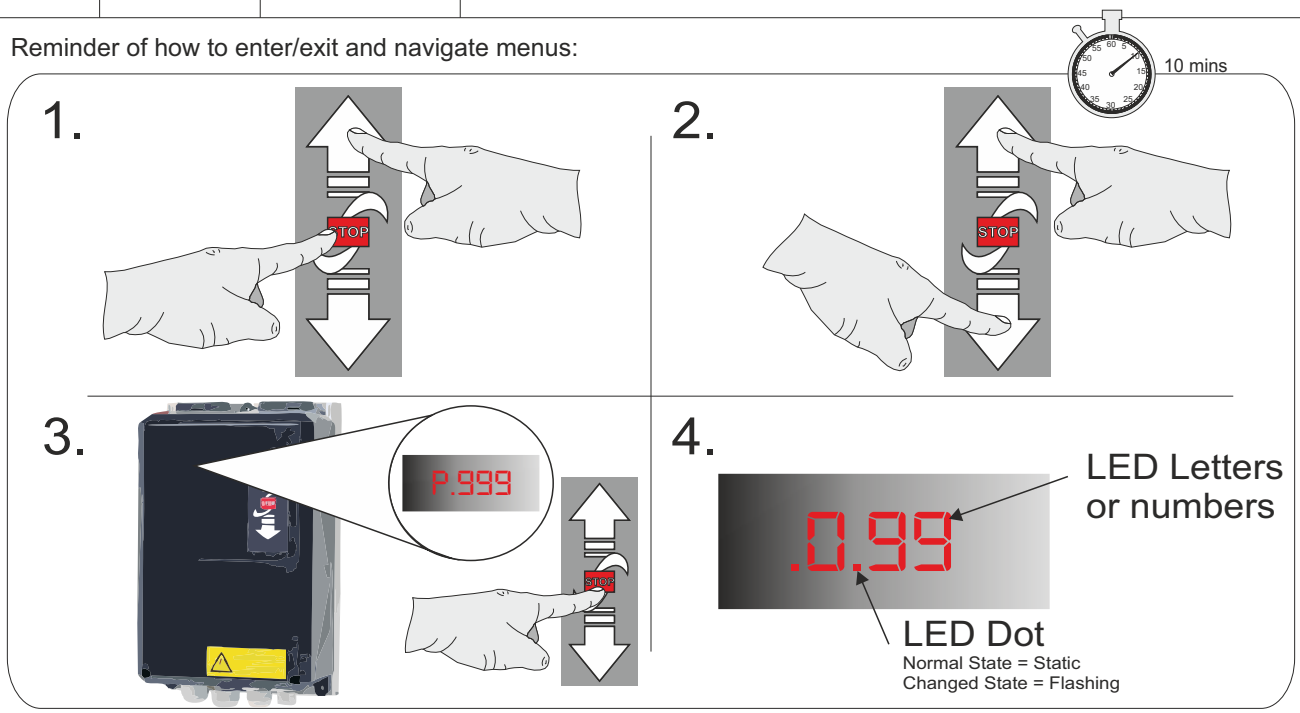
Every input/output is highly configurable, and can be changed from its default/state use. The below is a guide to what they can be changed to and the effect of this change. The logic behind this is as follows:
On the wiring diagram each terminal has an input number this is noted as “IN6" for example. To change this or other values the table below quotes P.5x0 the “x” needs to be replaced with the input/output you wish to configure. So as an example if we wanted to change input “6" (terminals 82&83) we would replace the “x” with “6" making it “P.560". Also note that the number following “P.” (in our example “5") denotes we are dealing with and “input” if instead we wanted to deal with an “output” we would replace the “5" with a “7". The below is a brief summary of common changes but there are MANY more options than listed here, for a full list please contact the supplying company.

Inputs			
Parameter	**Unit Range**	**Function**	**Description/Value of Parameter**
P.5x0	0 18	Input Functions	With this parameter the functionality for parameter x is set.
Notes Area...			0: Input deactivated 1: OPEN command 2: Single channel / pull switch 3: Permanent open command 4: Stop command 5: Safety B 6: Jog mode / Automatic switch 7: Close command 8: Door locking in end position 9: Cross traffic input 10: Deactivation input 11: Limit switch input 14: Safety A 15: Simulation of foil key pad 16: Safety C 17: Door drive to intermediate stop / partial open 18: External detector
P.5x2	0 1	Contact Type	Specifies the contact type of the switch which is connected to the input. 0: N.O., Normally open 1: N.C., Normally closed
P.5x4	0 7	Hold-open time / Priority	This parameter specifies if and which hold-open time / forced closing time runs after activating the input.
Notes Area...			0: Without auto close time 1: With auto close time (P.010 or P.011) 2: With minimum auto close time (P.015) 3: No auto close time until a CLOSE command is given. 4: Auto close time as used before with the last open command. 5: The auto close time is stopped after activating in end position door OPEN and will go on after deactivation. By reversing during closing the min. auto close time is running. 6: With Priority 1 (highest Priority: like PULSE OPEN) 7: With Priority 2 (second highest Priority: like pull switch)
Outputs			
P.7x0	0 27	Switching Condition of output relay	The selected output relay is energized under the following conditions:
Notes Area...			0: If End position Door OPEN was reliably detected 1: If End position Door OPEN was not reliably detected 2: If End position Door CLOSE was reliably detected 3: If End position Door CLOSE was not detected 4: If there is no fault condition or emergency stop, controller in Automatic mode 5: Courtyard light function, during every OPEN and CLOSE move with 10 turn-off delay after opening. 6: Command forwarding This setting involves additional setting under P.7xF. 7: During each OPEN and CLOSE move 8: During each OPEN and CLOSE move and during active clearing time. 9: Forward external door release (e.g., airlock operation) 10: Forward external door locking (e.g., airlock operation) 11: Magnet voltage during closing and in end position close

Bi-Folding Speed Gate

Inputs			
Parameter	**Unit Range**	**Function**	**Description/Value of Parameter**
P.7x0	0 27	Switching Condition of output relay	With this parameter the functionality for parameter x is set.
Notes Area...			12: Traffic light function This setting involves additional settings under Parameter P.7x6 to P.7xd. 14: Position forwarding This setting involves additional settings under P.7x5. 15: Output warning message from maintenance counter 16: Airlock OPEN, forwards OPEN command to second airlock door 17: Test of draw in safety device. Relay is active in Endposition Close and is used e.g. to switch of the photo eye of the draw in safety in order to test it. If this Function is used, you must use the N.O.(normally open) contact of the relay, because the relay is switched on if the Test-Mode doesen`t work. 25: Test at the End-Position Door Open Relay works at the End- Position Door Open If this Function is used, you must use the N.O.(normally open) contact of the relay, because the relay is switched on if the Test-Mode doesen`t work. 27: If the case temperature falls under the value adjusted with Parameter P.428
P.7x1	0 ..... 1000,0 {Seconds}	Switching behaviour of relay	This parameter is used to set the switching behavior of the relay after activation. 0: Relay flashes at 1Hz 1-999: Turn-on duration of the relay in seconds 1000: Relay continuously turned on
P.7x2	0 ..... 999,9 {Seconds}	Turn-on delay	The relay is turned on after a time delay specified in this parameter.
P.7x3	0 ..... 999,9 {Seconds}	Turn-off delay	The relay is turned off after a time delay specified in this parameter.
P.7x4	0 1	Contact type	0: Normally Open 1: Normally Closed

Reminder of how to enter/exit and navigate menus:

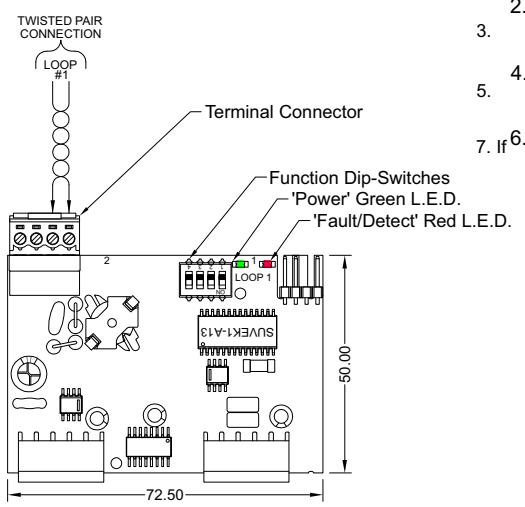


1. Enter menu by pressing “stop” and “up” together 3. Press “stop” key to view parameter currently shown on display	2. Use “up” and “down” arrows to scroll through parameters 4. LED dot flashes when changes are un-saved - press and hold stop to save changes you have made

Bi-Folding Speed Gate

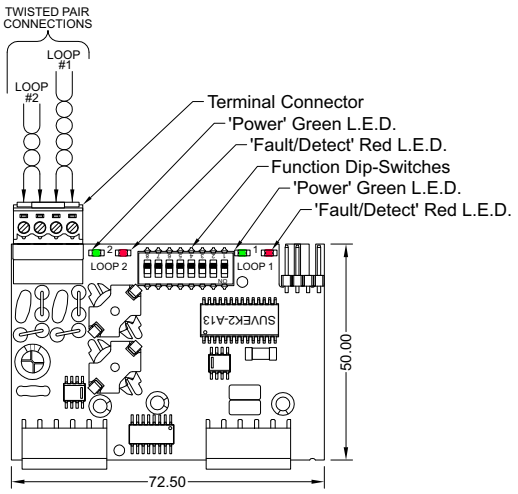
1 CHANNEL LOOP DETECTOR LAYOUT

Stock Code: TST-SUVEK1



2 CHANNEL LOOP DETECTOR LAYOUT

Stock Code: TST-SUVEK2



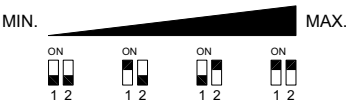
OPERATING INSTRUCTIONS

1. Turn OFF power to the control panel.
2. Plug the loop detector module into the pins provided on the motherboard of the control panel.
3. Adjust the function Dip-Switches on the loop detector card as required. Please refer to Dip-Switch Function Settings.
4. Turn ON power to the control panel.
5. The green `Power` L.E.D. will flash continuously until the loop is tuned. Once tuned, the green `Power` L.E.D. will illuminate constantly.
6. If a loop is faulty/not connected properly the red `Fault/Detect` L.E.D. will illuminate constantly.
7. If a loop is covered the red `Fault/Detect` L.E.D. and the green `Power` L.E.D. will illuminate together.

DIP-SWITCH FUNCTION SETTINGS

Loop 1:

DIP-Switches 1 & 2:- Sensitivity (4 Steps)



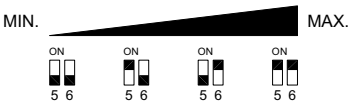
DIP-Switch 3:- Holding Time (5 mins - Infinity)

Note:- Loop will recalibrate after 5 minutes constant detection

DIP-Switch 4:- Frequency (High/Low)

Loop 2:

DIP-Switches 5 & 6:- Sensitivity (4 Steps)



DIP-Switch 7:- Holding Time (5 mins - Infinity)

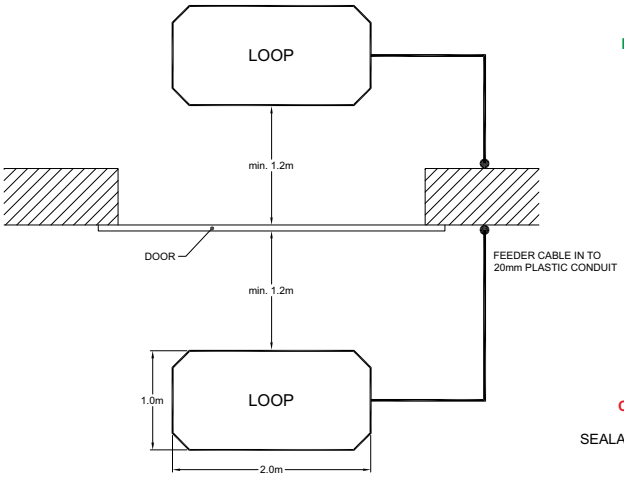
Note:- Loop will recalibrate after 5 minutes constant detection

DIP-Switch 8:- Frequency (High/Low)

L.E.D. INDICATIONS

Green Fast Flashing:-	Detector is Tuning
Green ON Constantly:-	Detector is Ready
Green & Red ON Constantly:-	Loop has Detected
Red ON Constantly:-	Loop is Defective

TYPICAL EXAMPLE OF LOOP INSTALLATION



INSTALLING A LOOP

LOOP CABLE: Rubberised insulated wire of 0.75-1.50 sq.mm (awg 20 - awg 16), preferably multi-stranded.

LOOP SIZE: ***Note:-*** High bed vehicles require larger loops.

No. OF TURNS IN LOOP:

LOOP CIRCUMFERENCE	NUMBER OF TURNS
2 - 4m	6
4 - 7m	5
7 - 12m	4
12 - 25m	3

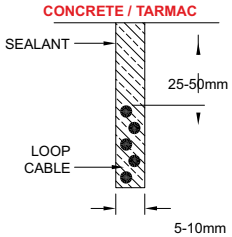
LOOP SLOT: Recommended depth to top of loop cable 25-50mm. (Maximum depth 65mm)
Loop slot **MUST** be sealed after cable has been installed and tested.
Use a flexible, weather proof sealant (i.e. Hot bitumen, Rubberised bitumen sealant).
CAUTION! Never use cement / concrete, etc...

FEEDER CABLE: The feeder cable **MUST** be twisted a minimum 10 times per meter & can be up to 250m long.

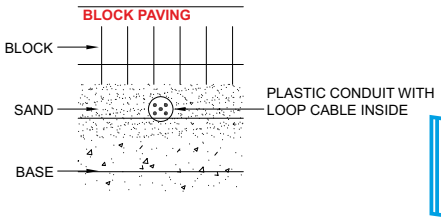
LOOP PLACEMENT: The loop must be placed at least 5m away from high tension cables and at least 1m away from low tension cables. If the loop is placed in an area with reinforcing iron (typically a concrete floor), the loop must be placed at least 50mm above the reinforcement.

TWO or MORE LOOPS: If the detector is used for detecting high vehicles (lorries etc.) use only one loop for each detector, otherwise it is possible to connect two loops to a single detector. Series coupling the loops will give the largest sensitivity, parallel coupling gives the fastest reaction.

CONCRETE / TARMAC



BLOCK PAVING



Bi-Folding Speed Gate

Troubleshooting Guide

ELECTRICAL ERRORS	CAUSE	CORRECTION
Blank screen on Panel but power to other devices in the control panel	Door switch circuit not making	Press door switch in and check Panel screen
	Panel has developed an electrical fault or had a power spike or blown on board fuses	Change fuses or panel MAKE SURE that the panel is run through a MCB 14 amp breaker
Gate does not run (stays open)	Check panel is showing no F Codes or E codes	Power down then back up press and hold “stop” key to reset
	Loop detector is faulting or sensing presence	Clear obstacle or reset the detector
	Check panel settings have not been altered	Set P.990=1 then P.991=0101
	Gate staying up in open position	Access control giving a constant pulse shorten this
	Photo cell batteries (if fitted)	Check that the fitted batteries still have power to them. They should only be replaced with special 3.6V Lithium-ion batteries made for purpose. These can be provided by your supplier
	Photo cells dirty (if fitted)	Clean photo cells make sure they are debris free
Mains on but no power	Isolator fuse	Check and meter fuse in isolator
Gate not going up	Access control may be faulty	Remove and check Gate function via the Panel buttons
Gate Staying up	Car has driven off before clearing the loop panel is configured without “no passage” timer.	Complete cycle by going through the ground loop
“E.211” displaying on screen	Gate door is open	Close door or check switch for faults
Gate staying open and not closing	If photo-cells fitted then batteries may have expired	Check and if needed replace batteries
	Faulty loop detector	Check & set or replace faulty unit
	Gate does not have loops fitted or these have been removed	Call the technical department for assistance the program/wiring needs to change
	Key switch left in open position	Put the switch back into the “Auto” position
	Permanent supply/signal to the open terminals	Check wiring to terminal blocks remove any access control try again
	Gate programmed for safety only or Gate is on a timer	Contact your supplier for a program modifacation chip

Bi-Folding Speed Gate

Troubleshooting Guide (Mechanical)

MECHANICAL ERRORS	CAUSE	CORRECTION
Gate arm keeps going up and down	Limit switch fault	check and reset limit switches
Gate creaking when moving	Check turn buckle	Oil or grease turn buckle
Gate motor not running	Loss of voltage	Check motor supply test 3 phases
Gate not opening or closeing	Drive shaft connections	Re-connect any drive shaft connections
Gate not opening or opening half way	Gearbox	Gears stripped due to overlading replace
Gate opens slowly and closes too fast	Lack of balance counter weight compensation	Fit counter weights
Gate not running at all	Door has been left open or switch not pushed in	Close the door and issues a signal to open or close
Gate opens and will not close	Key switch is left in open position	Turn key switch to auto
	Loop fault or loop detecting	Check if green light is on detector if so remove object that it is detecting or replace loop

Notes

Bi-Folding Speed Gate

Troubleshooting Guide (Mechanical)

Please note these are things that you should look out for with the equipment that has been installed on your/your customers site. This is in no way a health and safety guide just a few key areas for you to be aware of and possibly make future changes to.

Plan view (from above)
Sketch system layout, detailing and numbering potential hazard areas for the client.

Potential Hazard Areas - see diagram:

1.....

2.....

3.....

4.....

5.....

Additional Comments / Descriptions concerning safety on this site

.....

.....

.....

.....

.....Signed:.....

Bi-Folding Speed Gate

Installation/Commissioning Check List

System Operation - The user FULLY understands	YES	NO
How to operate the system with all control devices	☐	☐
How to isolate the power to the automation system	☐	☐
How to manually release the system in event of power failure	☐	☐
The safety rules and issues associated with your system	☐	☐
Safety devices on the system have been verified and checked	☐	☐
Safety devices and features suit the site/application for which it was designed	☐	☐
How to open the door on the equipment	☐	☐
Check the following items	**YES**	**NO**
Door keys have been handed over	☐	☐
Key switch keys have been handed over	☐	☐
All equipment and site has been left in a clean and safe state	☐	☐
Any warning signage has been fitted by Engineer/Client to make people aware	☐	☐
Any times and special programming instructions undertaken	☐	☐
Product works the way site need it to this includes “no passage time out” etc	☐	☐
System has had the completed conformity certificate	☐	☐
All items on the delivery note have been handed over to client/site - this should be signed for on the separate sheet which is titled “Delivery Note” (green/ or yellow paper) if parts missing call supplier	☐	☐
The engineer has expressed the importance of regularly maintaining the equipment	☐	☐
POWER ISOLATION - The power isolator for your automation system is located at:		

The following denotes that the above has been completed to a satisfactory standard. The engineer has explained the system of operation to you and any devices that you have had fitted. If this is agreed and has been displayed please sign in the indicated fields below. All information will be passed on correctly to other system users. The users of the system will use this system correctly and safely.

Engineers Name: ..... Engineers Signature: .....

Clients Name: ..... Clients Signature: .....

Bi-Folding Speed Gate

Service Log

This Manual **must** be completed in accordance with the guidelines below, **at any point** service/repair work is carried out on the product. This is to achieve two things;
1. To keep a history of the product for yourself and your supplier/manufacturer.
2. To keep an accurate log of any historical or recent modifications, and/or problems, to help an engineer in the event of any future work required on the product.

Date	Reason for visit/Action taken	Engineers Signature
/ /20		
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Bi-Folding Speed Gate

Commissioning Certificate

We certify that the system covered by this certificate has been commissioned satisfactorily.

Contract Reference		Completion	
Contract Title		Engineers Installing	
Installation Commenced	/ /20	Commissioning	
Works Description			
Part/Whole Certificate			
Handover Date			

Part 3.The system(s) designed and installed in accordance with the following documents:		
Document Ref:	Revision	Description
PF9500A O&M	5.0	System guides and drawings as defined within O&M Manuals

Part 4.The following test procedures refer:
Check Lists (pages 15 & 16) /Commissioning Certificate

Part 5. Existing Installation Items not covered under warranty/ This certificate:

Part 6. Certificate Signing off Section			
Installers Name		Signature	
On Behalf of		Date of Signing	
Address		Position	
		Parts Handed Over	Qty:
Client Name		Signature	
On Behalf of		Date of Signing	
Address		Position	
		Parts Handed over	Qty:

Bi-Folding Speed Gate

Electronics Certificate

TÜV NORD

EG-Baumusterprüfbescheinigung

EC type-examination certificate

Registrier-Nr.
Registration No.

44 205 10 384294

Zeichen des Auftraggebers *Customer's reference*	Auftragsdatum *Date of order*	Aktenzeichen *File reference*	Prüfbericht Nr. *Test report no.*
	29.06.2010	8000384294	10 205 384294-001

Name und Anschrift des Auftraggebers / *Customer's name and address*

FEIG ELECTRONIC GmbH
Lange Straße 4
35781 Weilburg – Waldhausen

Erfüllt mit dem u. g. Produkt die Anforderungen des Anhangs I der Maschinenrichtlinie 2006/42/EG als eine Grundlage für die EG -Konformitätserklärung.
The product described below meets the requirements of annex I of the directive 2006/42/EC as a basis for the EC - declaration of conformity.

Geprüft nach / *Tested in accordance with*

	Maschinenrichtlinie 2006/42/EG *Machinery Directive 2006/42/EC*
EN 12453:2000	**Abschnitt 5.2** / *Chapter 5.2*
EN ISO 13849-1:2008	**Anforderungen an Performance Level d** *Requirements according to Performance Level d*
EN 62061:2005	**Anforderungen an SIL1** *Requirements according to SIL1*
EN 60335-1:2002 +A1:2004 A11:2004 +A2:2006 +A12:2006	
EN 60335-2-103:2004	

Beschreibung des Produktes (Details siehe Anlage 1) / *Description of product (Details see Annex 1)*

Sicherheitsbauteilart / *Type description safety component*

Torantriebssteuerung / *Door control unit*

Typenbezeichnung / *Type Description*

Type / *type* **TST FUZ**

Bemerkung / *Remark*

Bitte beachten Sie auch die umseitigen Hinweise
Please also pay attention to the information stated overleaf

TÜV NORD CERT GmbH
Zertifizierungsstelle / *Certification body*
Maschinen / *Machinery*
Benannte Stelle 0044 / *Notified Body 0044*

Gültig bis / *Valid to*: **24.09.2015**

Ralf Laborenz

Hannover, 24.09.2010

Langemarckstr. 20 • 45141 Essen • Fon +49 (0)201 825 5120 • Fax +49 (0)201 825 3209 • Email: machinery@tuev-nord.de

Bi-Folding Speed Gate

Certificate of Conformity

The machinery which this declaration refers to, is in accordance with the conditions of the following directives;

Machinery Directive 2006/42/EC.
Low Voltage Directive 2006/42/EC.
Electromagnetic Compatibility Directive 2006/42/EC.

And is in conformity with the following standards & other specifications;

EN292-1 1991 Machinery basis terminology & methodology.
EN292-2 machinery technical principles & specification.
EN6100-6-3 Electromagnetic compatibility – Immunity generic standard residential, commercial and Heavy Industry.

Made in the UK
Company Representative from manufacturer:

Name: Anthony Green
Position: Managing Director
PF Ltd
Unit One, Kingsbury Link
Trinity Road, Tamworth
Staffs, B78 2EX
Date of Declaration: 01/04/2010

Person Authorised to compile file:

Name: Damian Speer
PF Ltd
Position: Service & Technical Team

Company Installing who is established in the community
Complete below:
Name:

Equipment Serial Number and date of manufacturer of this equipment is affixed net on a white CE sticker

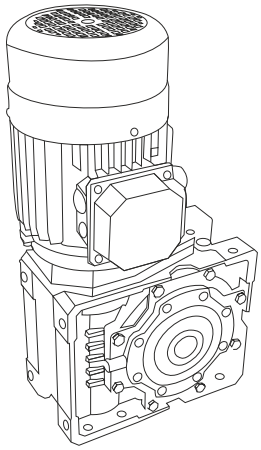
Bi-Folding Speed Gate

Electric Motor:

400v 50hz 3 phase Braked Motor
4 pole
IP54
B14 C face mounted
Frame size 80
Output power: 0.75kW
Current @ 400v: 2.2A
Rated speed: 1400rpm
Power factor(cos): 0.67
Ts/Tn: 2.5
Is/in: 4.3
DC Brake In (mA): 150
Zo (starts/hour): 15000
Moment of inertia (Jx 10-4 Kgm2): 17.19
Max brake torque (Nm): 18
Net weight 15kg

Geared Motor Spec:

Type: Worm & Wheel
Overall speed: 200 rpm
Max rated torque: 320nm
Actual torque: 32nm
Gearbox efficiency: 90%
Output size: 30mm
Mounting position: V5
Angular Backlash: 20' +/- 5' / 0.00582 +/- 0.00145
Lubricated with: Shell Tivela S320
0.48 litres



PF9500 A

Specification: CE Approved BS/EN 12453
Dimensions: 250mm x 225mm extruded Aluminium beam Infill – 30mm diameter x 6mm Wall thickness
Power Requirement: 230v, Single Phase, 50Hz, 10 Amps
Drive Motor: 0.75KW's - 1.1KW's, 3 Phase
Maximum Span: 10 Metres Drive-Through (14 Metres overall)
Maximum Height: 2.4 Metres (maximum width 10.0 metres)
3.0 Metres (maximum width 6.0 metres)
Duty Cycle: 100%
Operation Time: 4 Seconds per metre (Variable)
Finish: Polyester Powder Coated
Operation: Direct-driven 3 phase motor via Inverter and Programmable Logic Controller
Access Controls: Push-button, card readers, tokens, intercoms, keypads and remote fobs.

CE EUROPEAN MARK CERTIFYING CONFORMITY TO THE ESSENTIAL REQUIREMENTS OF THE STANDARDS 2006/42/EC

Proudly Made in the UK

Made using recycled paper

GB 2003/108/CE Directive for waste electrical and electronic Equipments

DISPOSE OF PROPERLY

ENVIRONMENT - NOXIOUS MATERIALS