

P750 Sliding Gate Motor
P550 Sliding Gate Motor

Version –V4.3



IMPORTANT SAFETY WARNING

- ⚠ ATTENTION To prevent electrical shock, disconnect from power source before installing or service
- ⚠ ATTENTION Electricity and power motors associated accessories could be fatal or at least cause seriously injury. **All main voltage wiring must be installed by a licensed electrician.**
- ⚠ ATTENTION Additional safety device MUST be fitted such as Photo Electric Beam, Loop Detectors.
- ⚠ ATTENTION Before do the manual release, the mains power switch must be off even there is no power.
- ⚠ ATTENTION Before power on, the manual release MUST engaged
- ⚠ ATTENTION Gate opened stopper and closed gate stopper MUST be installed.

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P550 Sliding Gate Motor



P550-2 Sliding Gate Motor

GENERAL LAYOUT

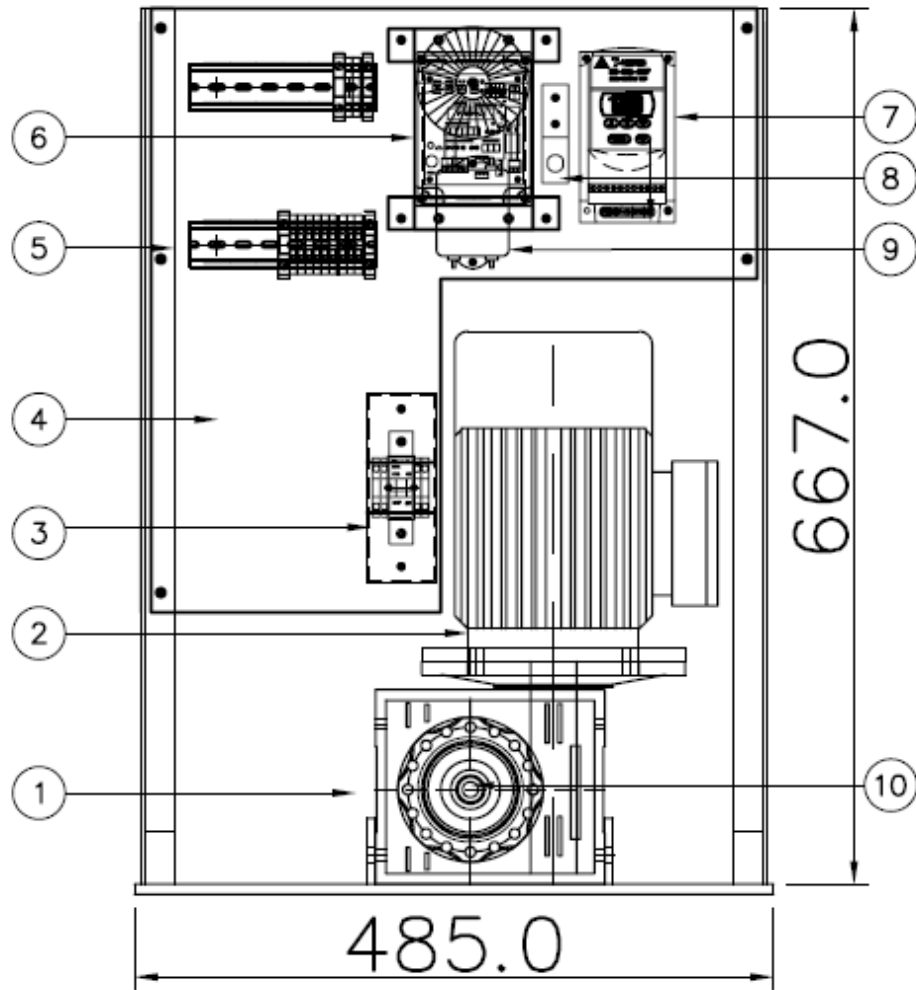


Fig -1

- | | |
|-------------------------|-------------------|
| 1) Manual Release bolts | 2) Motor |
| 3) Circuit breaker | 4) Mounting Plate |
| 5) Terminals | 6) Control board |
| 7) Inverter (VSD) | 8) Fuse |
| 9) EMC filter | 10) Gearbox |

CONTROL INPUT AND BUTTON

1. General Descriptions

The P550, P550-2 and P750 sliding gate motors was designed for heavy duty industry track gate or cantilever gate. Heavy duty three phase industry motor driven by VSD (variable speed drive), gate can run at different speeds. Built in encoder and intelligent controller combination can make the gate running more smoothly. The controller can receive the signals from swipe card, loop detectors, remote control, photo-electric beams and any kind of access control system. Galvanised metal sheet and powder coated high quality cabinet(1.5mm thickness) has remove door (P750) and plenty of room for the access control accessories including din rail mounting. 50VA transformer (12V/24v/2A) can directly drive magnetic lock, warning lights etc.

2. Technical Specifications

Power supply	230/240V AC at 10A
Output voltage	230V AC three phase (via) inverter. Max. 0.75KW
Motor rate	Three phase two poles 0.55KW (P550) or 0.75KW (P750)
Gate type	Track or cantilever
Drive speed	Up to 700mm/sec (with big drive gear)
Max. Gate length	No limitation
Fully programmable	Auto close time, PE trig close time etc.
Accessories power supply	12V@2A or 24@2A, Max. 50VA, protected by 1A fuse

3. Control Board layout

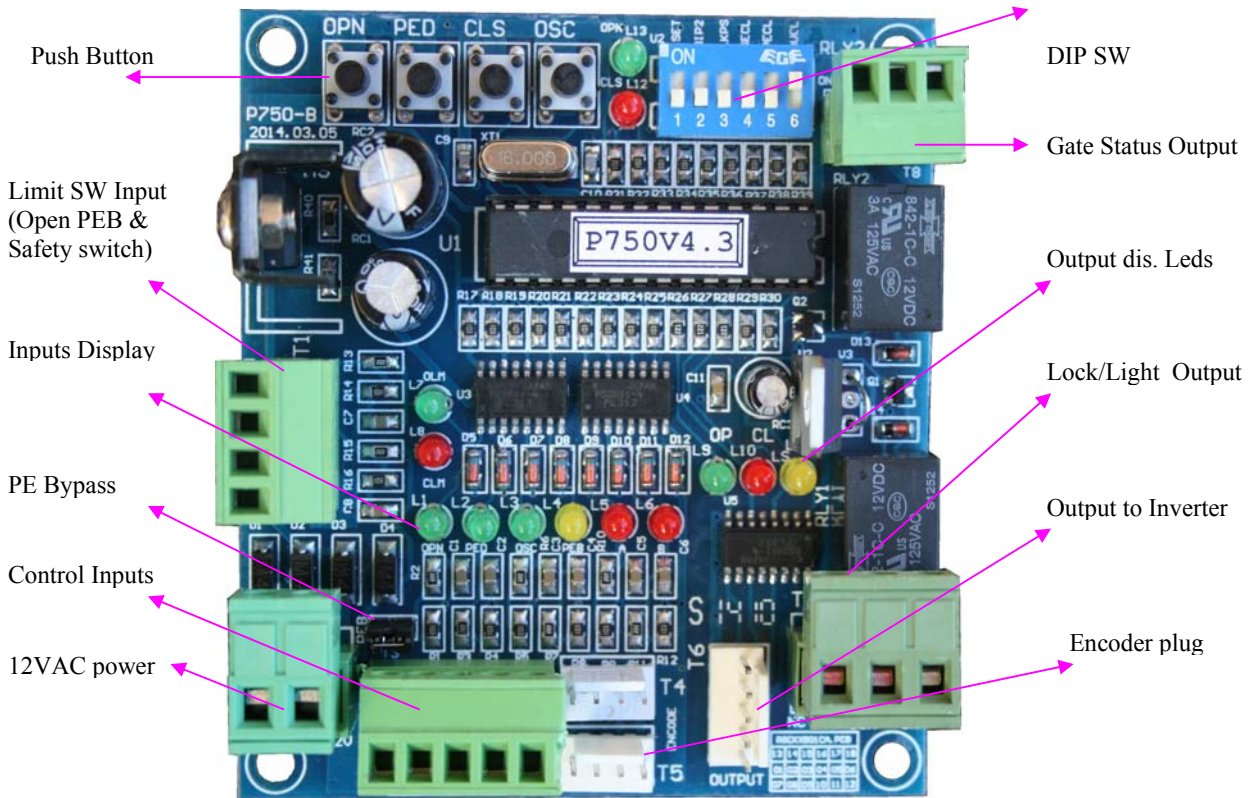


Fig-2

CONTROL INPUT AND BUTTON

Open (OPN) input & OPN push button

The OPN inputs are Push Button OPN and Terminal OPN input. Push OPN button or Activating (connect OPN terminal to the COM (+12V)) the OPN input will start the gate to open. When gate opened, if OPN is still activating, the gate will stay open.

Pedestrian Access (PED) input and Pedestrian (PED) push button

The pedestrian input partly opens gate.

CLS push button

The CLS push button on control board is to close gate.

OSC (open/stop/close) input and OSC push button

OSC input and OSC push button is for manual operation. Push to open the gate, push again stop gate, another push close the gate. When gate stopped by OSC input, auto close mode does not apply.

Photoelectric safety beam (PE) input. N/C type

If the P.E input activated while gate is closing, the gate will stop or reopen depending on the DIP setting. If the gate in the opened position and P.E beam activated, the gate will stay in opened.

Encoder inputs

Encoder in mounted on the motor shaft. There is not service is required. 4 pins socket from encoder directly plug in on the control board. Two plugs on the control board are for right hand or left hand gate.

Drive signals (between control board and inverter)

Plug 1 link inverter and control board. This is five pins plug. Two pins for 12VDC supply from inverter to control board and other three pins is from control board to inverter, open, close and running frequency signals.

Lock output signal

Lock output relay has COM, N/C, N/O outputs. The output can be pulse or presence set by DIP3.

Gate close (status) output signal

When gate in closed position the relay contact is on, this used to send closing signals to alarm system. As long as the gate is not closed, the relay contact will be off and tell the alarm system, the gate is open.

4. DIP SWICTH FUNCTION

SET/RUN (DIP1) ON=SET, OFF=RUN
Dip1 ON selects setting mode.

Spare (DIP2) ON=OPPE OFF=LIMIT
DIP2 ON, OLSW as open PEB (OPPE) input. CLSW as safety switch input
DIP2 OFF, OLSW open limit input N/O, CLSW as close limit input N/O

LOCK Output (DIP3) ON= PLUSE OFF= PRESENCE
DIP3 ON selects lock output is pulse at every start cycle. DIP3 OFF selects lock output is presence.
The lock relay will be on if the gate is in opening and closing cycle. All other situations will be off.

Security close (DIP4) ON=SEC CLS OFF=NO SEC CLS
DIP4 ON selects security close mode. In this mode, while the gate is opening, if the PE beams triggered and clear, the gate stops and begins to close; even it is not fully open. While the gate is closing, if the PE triggered, the gate will stop (not reopen) until the PE beams is clear, then gate continues to close.
DIP4 OFF no this function. DIP4 is prior to DIP5

CONTROL BOARD SETTING

PE trig close (DIP5)

ON=PE CLS

OFF=NO PE CLS

DIP5 ON selects PE beam trig auto close mode. In this mode, if P.E beams trigged and clear the gate will auto close after gate opened.

Auto CLS (DIP6)

ON=AUTO CLS

OFF=NO AUTO CLS

DIP6 ON selects Auto close mode. I this mode, the gate will auto close after standard auto closed time. If DIP6 OFF, no this function.

5. Control Board Set up

Push Buttons functions

Button	Dip1 on---STD Setting	SPE Setting	Dip1 off---Running
OPN	Open Length Set	Sync delay time	Full open
PED	Auto close time set	Motor stop time set	Pedestrian open
CLS	Manual close gate	PE close time set	Close
OSC	Lock pulse time set	Reserved	OSC

5.1 STD(standard) time setting mode

To get into standard setting mode, just set DIP1 to on. Following settings can be set in standard setting model

Gate length set up – (Gate travel distance setup)

- a) Connect 240V AC (if not done) and make sure power is off.
- b) Releases clutch and push gate to middle position, and then engage the clutch.
- c) Make sure no signals connect to OPN, PED, OSC and PEB (use Bypass jumper) terminals. Set DIP6 on.
- d) Turn power on, gate should start close at low speed. If gate opens, turn power off, change motor direction by swapping any two of three phases output of inverter .
- e) Power on again. Gate should start to close. If gate only runs short displace (about 2 seconds time) then turn power off, change encode plug to other connector.
- f) Power on again, gate start close, RED LED is flash and GREEN LED is off. When gate hit the closed stopper, gate will stop.
- g) Set DIP1 on. Push and hold OPN button, gate will start open at low speed. When gate reach opened position. Just simply release the OPN button. Controller will save the current position as fully opened position. *While hold OPN button, push and release PED button will save current gate position as PED opened position.*
- h) Set DIP1 off and push CLS button, gate will start to close. When gate fully closed, gate will be ready to operate. Then try to open and close. If not satisfied with the position, just repeat step (g) to (h).

Gate length set up -- Limit switch set up---Automatic Learning (*Heavy dusty mechanical gate stopper must be installed in opened and closed position*)

Do the same things a),b),c),d),e),f) as above

- g) Set DIP1 on. Push and hold OSC button, Power up, while hold OSC button, turn DIP1 off, then release OSC button. Gate will start close at low speed, after hit receiving post, short delay, and then open at low speed. Gate hit opened stopper, motor automatic stops. Learning is finished.

(When gate is opening, just push and release PED button, controller will save current gate position as PED opened position)

Auto close time set

Set DISP1 On, push and hold on PED for the auto close time setting. Now the red and green LED flash fast alternatively, When reached the required time simply release PED button. Set DIP1 OFF. The gate controller will back to working mode.

CONTROL BOARD SETTING

Lock pulse time set

Push and hold on OSC for the lock pulse time setting. Now the red and green LED flash fast alternatively, and when gate reached the required time, simply release OSC button. Set DIP1 OFF. The gate controller will back to working mode.

5.2 SPE(special) time setting mode

To get into special setting mode, turn power off, set DIP1 on. Push and hold CLS button then turn power on, LED will be on for short time, after LED off simply release CLS button. Gate controller is getting into special time setting mode.

Sync delay time (Motor2 delay time, reserved late use)

After controller get into special time setting mode, Push and hold on OPN for the sync delay time setting. Now the red and green LED flash fast alternatively, when reached required time, simply release OPN button. If no other time need set, simply set DIP1 off, the gate controller will back to working mode.

Motor Stop time

Push and hold on PED for the motor stop time setting. Now the red and green LED flash fast alternatively and when gate reached required time, simply release PED button.

PE trig close time

Push and hold on CLS for the PE trig close time setting. Now the red and green LED flash fast alternatively and when gate reached required time, simply release CLS button.

Reserved

Push and hold OSC reserved late use.

5.3 Factory default setting

Timer	F/Setting	Step	Setting Method	Range
Full Open Length	10M	0.7mm	STD& OPN Button	No limitation
PED Open Length	5M	0.7mm	STD& OPN+PED Button	No limitation
Auto Close Time	30sec.	0.1sec.	STD& PED Button	0-6550sec.
Lock Pulse Time	0.8sec.	0.1sec.	STD& OSC Button	0-25sec.
Motor Stop Time	1.0sec.	0.1sec.	SPE& OPN Button	0-25sec.
Sync Delay Time	Reserved	0.1sec.	SPE& PED Button	0-25sec.
PE Auto close Time	2sec	0.1sec	SPE& CLS Button	0-25sec
Reserved	Reserved	0	SPE& OSC Button	0

To restore factory setting, turn power off and set DIP1 on, push and hold CLS button then power on. While hold CLS button, set DIP1 off, release the CLS button. Now controller restored factory setting from memory.

Attention: First time power up, the motor will run at low speed in close direction (if DIP6 is on) and hit receiving post. Next open command gate will open at low speed until to fully opened. The controller will calculate the gate length and compare it with original gate length. If it is right, the gate will back to normal operation, otherwise, gate will run at low speed.

INVERTER SETTING

6. Inverter settings

When the gate stops, the inverter's display is opening high-speed frequency and flash. This frequency can be changed by up and down arrows on the inverter. The following form is the inverter's standard setting for the automatic gate application. *Not mentioned function keep as factory setting.*

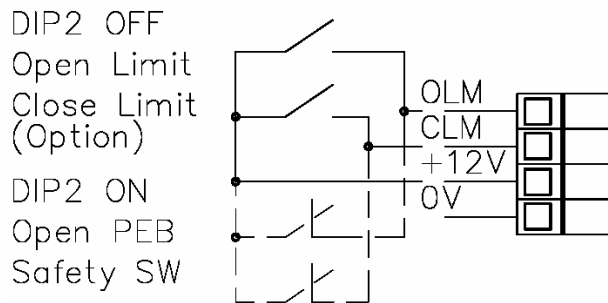
Function	F	Function Description	Setting	Unit	Note
Acceleration time	1	Acceleration time	2.0-2.5	Sec.	
Deceleration time	2	Deceleration time	2.0	Sec.	
Freq. Upper limit	6	Max. Frequency	60	Hz	
Freq. Lower limit	7	Min. Frequency	0	Hz	
SP1 Frequency	8	Gate Close High Speed	35	Hz	
Start/Stop/Control	10	Terminals	1		
Multifunction Input	20	Reset Terminal Function	6		
Multifunction output	21	When inverter runs, relay on	1	Hz	
SP2 Frequency	26	Gate Open Low Speed	20	Hz	
SP3 Frequency	27	Gate Close Low Speed	15	Hz	

7. Limit switch option

From Software version 4.3 add on limit switch input option. If no limit switch connected, the controller works as **previous version**. If add limit switch, the controller will stop gate either hit limit switch or reached pre-set gate length, whichever happen first. It can use one limit switch, either open or close, or two limit switch, both open and close.

With limit switch, the controllers will automatically CLRER the encoder counting errors when every time hit limit switch, while without limit switch (previous version) and the controller ONLY clear the encoder counting error when recycle power.

Here is the limit connection diagram.

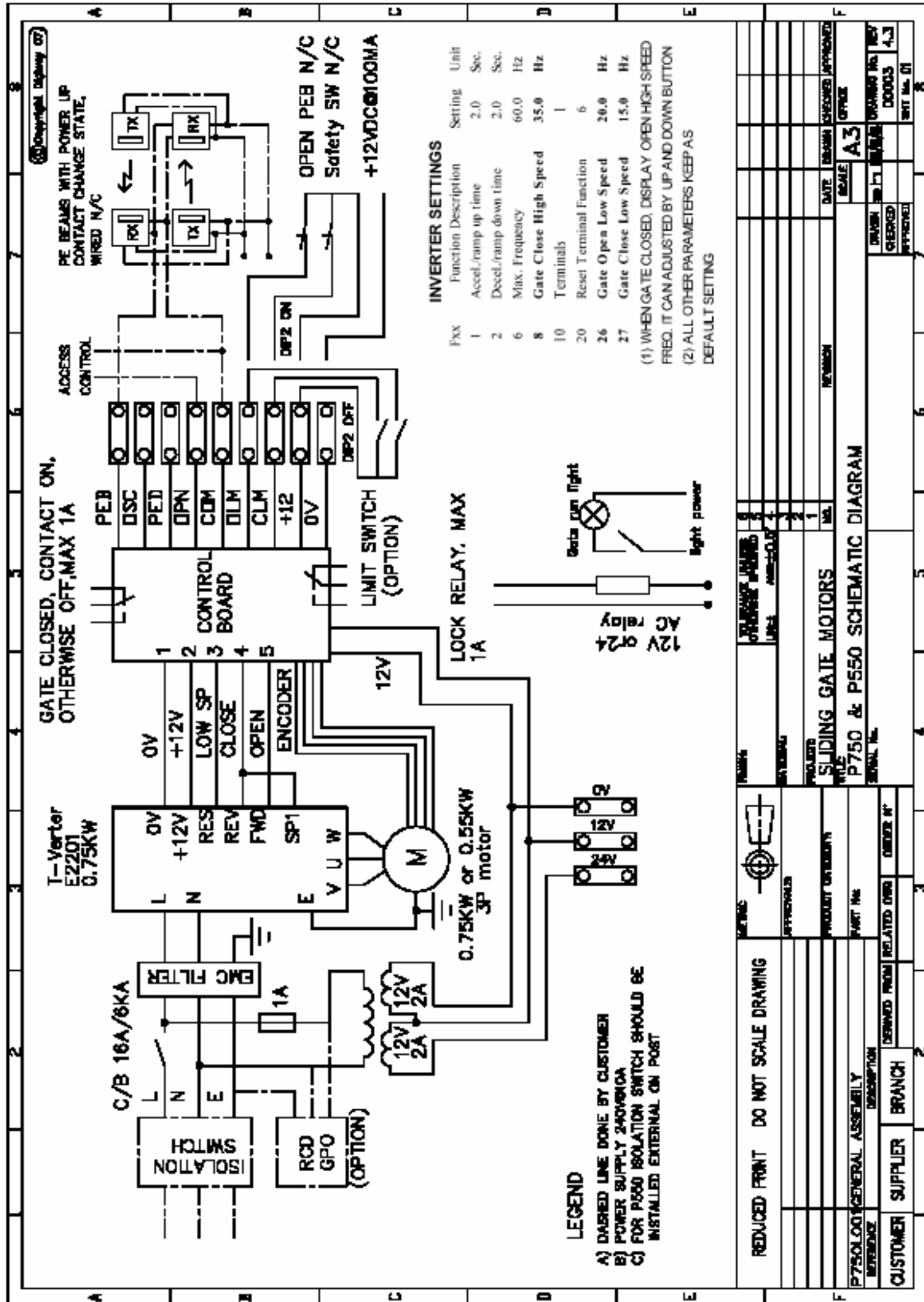


Limit switch can be N/O, it can be magnetic, mechanical switch or proxy (PNP, 3 or 5 wires)

When turn DIP2 ON, Open Limit input OLM as open PEB input N/C. When gate in opening cycle if open PEB is block, gate will stop pen until PEB is clear. Close Limit input CLM as safety switch input N/C. When safety switch is active, gate will not run.

SCHEMATIC DIAGRAM

8. Schematic diagram



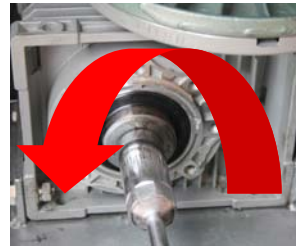
MANUAL RELEASE

9. Manual release

A: What to do during a power failure:

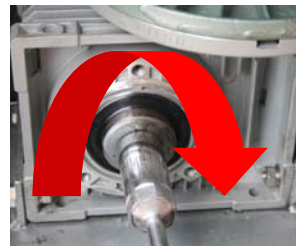
The gate can be manually pushed open and close if there is no power. To do this, you need to release the release bolt.

- (1) Open the front door and turn the switch(circuit breaker) OFF(even though there is no power)
- (2) Fit spanner (provided) onto the manual release bolt nicely.
- (3) Turn the spanner **anti-clockwise** 1 turn. Take the spanner off the manual release bolts. The gate can now be manually opened and closed. **DO NOT TURN THE BOLT MORE THAN ONE TURN, OTHERWISE OIL COME OUT**
- (4) After the gate was pushed to the required position, fit the spanner onto the manual release bolts, clockwise turn and make the bolts tight, otherwise maybe cause oil leaking.



B: What to do if power is reconnected:

- (1) Make sure the switch (circuit breaker) is still OFF.
- (2) Fit the spanner onto the bolt nicely and clockwise turn the manual release bolts and make sure the bolts is tight
- (3) Turn on the switch on, the gate should start to close if no signal input on PEB (safety) and OPN (open) inputs
- (4) When gate hit on receiving post, the controller will recall the all the settings and ready to operate.



TROUBLE SHOOTING GUIDE

10. Trouble Shooting Guide

10.1 Display information on main control board – see Fig-2

(1) Gate status LED

Gate Status(Position) \ LEDs	Status LED-Green (6)	Status LED-Red (7)	
Gate in closed position	Slow Flash	on	
Gate is opening	Fast flash	off	
Gate in opened position	on	Slow flash	
Gate is closing	off	Fast flash	
Gate stop in the middle	Alternatively flash	Alternatively flash	

Gate stop in the middle: which means the gate stop by OSC input and at this position the auto close does not apply. If the gate hit something or mechanical jammed, gate will stop and green and red status LEDs alternatively flash.

(2) Input LEDs

Inputs LEDs\ Input status	Input Active	Input inactive	
Open input –OPN LED	on	off	
Pedestrian input – PED LED	on	off	
Open/Stop/Close – OSC LED	on	off	
Photo Electric Beam- PEB LED	on	off	
Encoder input -A	On or off	On or off	
Encoder input -B	On or off	On or off	

(3) Drive Signal LEDs

Drive Signal LEDs\ Output status	Input Active	Input inactive	Gate Status
Gate opening- Green LED	on	off	Gate opening
Gate closing – Red LED	on	off	Gate Closing
Low speed – Yellow LED	on	off	Low speed

10.2 Trouble Shooting Guide

Malfunction	Possible causes	Countermeasure
Gate not open	1) No power 2) Already in opened position	1) Check the power 2) First time power up, for safety reason, the controller treated current position as opened position.
Gate not close	1) Safety input PEB active 2) OPN input active	1) Check the safety device, N/O contact required. 2) Check access control system
Gate run little bit then stop and	1) No encoder input 2) mechanical jammed	1) Aux. power supply fuse 2) power off and disengage the motor and

Status LEDs flash		push and pull the gate manually
Gate opened or closed position not right	1) mechanical release bolts not tight	1) Power off and tight the bolts and power again. Please follow the manual release procedure.

CONDITION OF SALE

1. Orders

The placement of any orders upon Digiway implies acceptance of these terms and conditions and takes precedence over any other terms and conditions written or oral.

2. Deliveries

(a) Time of delivery will be complied with wherever possible. It is not guaranteed and is subject to extensions to cover delays caused by strikes, vehicle breakdown, traffic delays, weather and any causes beyond Digiway’s control.

(b) The Purchaser shall not be entitled to be compensated for any loss or damage due to any of the causes stated.

(c) Most of the motors are stock items, but temporarily runs out of stock. Restock time can experience of approximately 8-12 weeks from receipt of official written order.

3. Warranty

(a) Digiway has 12 months return base warrants from date of purchase in normal use condition.

(b) Digiway control boards can be up to two years warranty. subject the application conditions.

(c) In lieu of all other warranties expressed or implied. Digiway shall not be liable for any special indirect, incidental or consequent damages of any kind or nature. Equipment manufactured and installed by it to be free from defects in material and workmanship for. Digiway will repair or replace at its option any product or part which it determines to contain defective material and workmanship. Defective parts must be returned to Digiway for repair or replacement. Costs associated with the return of the goods will be the responsibility of the sender. On site repairs will incur travel and labor charges. Liability for replacement parts or repairs carried out by Digiway does not extend the original twelve-month warranty period.

4. Payment

(a) Unless agreed expressly in writing, otherwise the terms of payment shall be made prior to shipment or where agreed on completion of the installation. Methods of payment are by:

- (i) Direct bank transfer with remittance advice supplied from purchaser.
- (ii) Cheque’s need to be received and cleared before shipment.

5. Returns

Returns only accepted within 14 days of invoice. Credits only paid after inspection of goods. All returns subject to 30% re-stocking fee on product. Damaged goods are subject to further charges to the value of the damage.