

INSTRUCTION MANUAL

P750 Sliding Gate Motor
P550 Sliding Gate Motor

Version –V5.0A





80 Indian Drive, Keysborough, Victoria 3173, Australia
Telephone: +61 3 9763 3079
Email: info@compeng.com.au
Web: www.compeng.com.au

EMC Compliance Test Report

This test report is not to be reproduced except in full, without written approval from Compliance Engineering Pty Ltd.

1. INTRODUCTION

RF emission measurements were performed on the Sliding Gate Controller (Model: P750E) in accordance with the requirements of AS/NZS 61000.6.3: 2012.

2. RESULTS SUMMARY

Radiated RF emission measurements:	Complied
Mains terminal disturbance voltage measurements:	Complied

3. TEST SAMPLE

The equipment under test (EUT) is described as follows:

Sliding Gate Controller
Model: P750E



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.

Contains

1. General description -----	3
2. Specifications -----	3
3. Control Board Layout -----	4
4. DIP switch functions-----	5
5. Control Board Set up -----	5
5.1 STD (Standard) Set up-----	5
Gate length set up-----	5
Auto close timer set up-----	5
Lock pulse time set up-----	5
5.2 SPE (special) Set up -----	6
PE trig close time set up-----	6
5.3 Factory default setting-----	7
6. Inverter setting-----	8
7. Limit switch option/Open PEB/Safety Switch-----	8
8. Schematic drawing-----	9
9. Manual release-----	10
10. Trouble shooting guide-----	11
11. Condition of sales-----	12



P550C Chain Drive

GENERAL LAYOUT

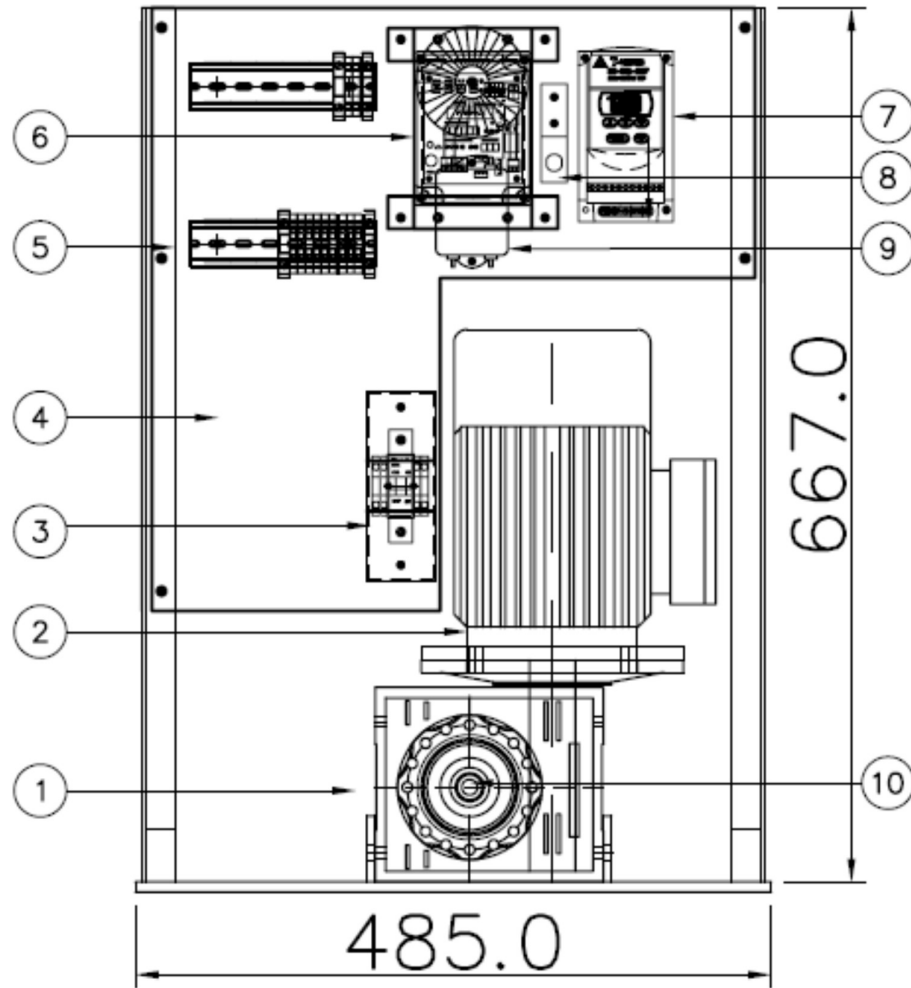


Fig -1

- | | |
|-------------------------|-------------------|
| 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 P550-4 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, photoelectric 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

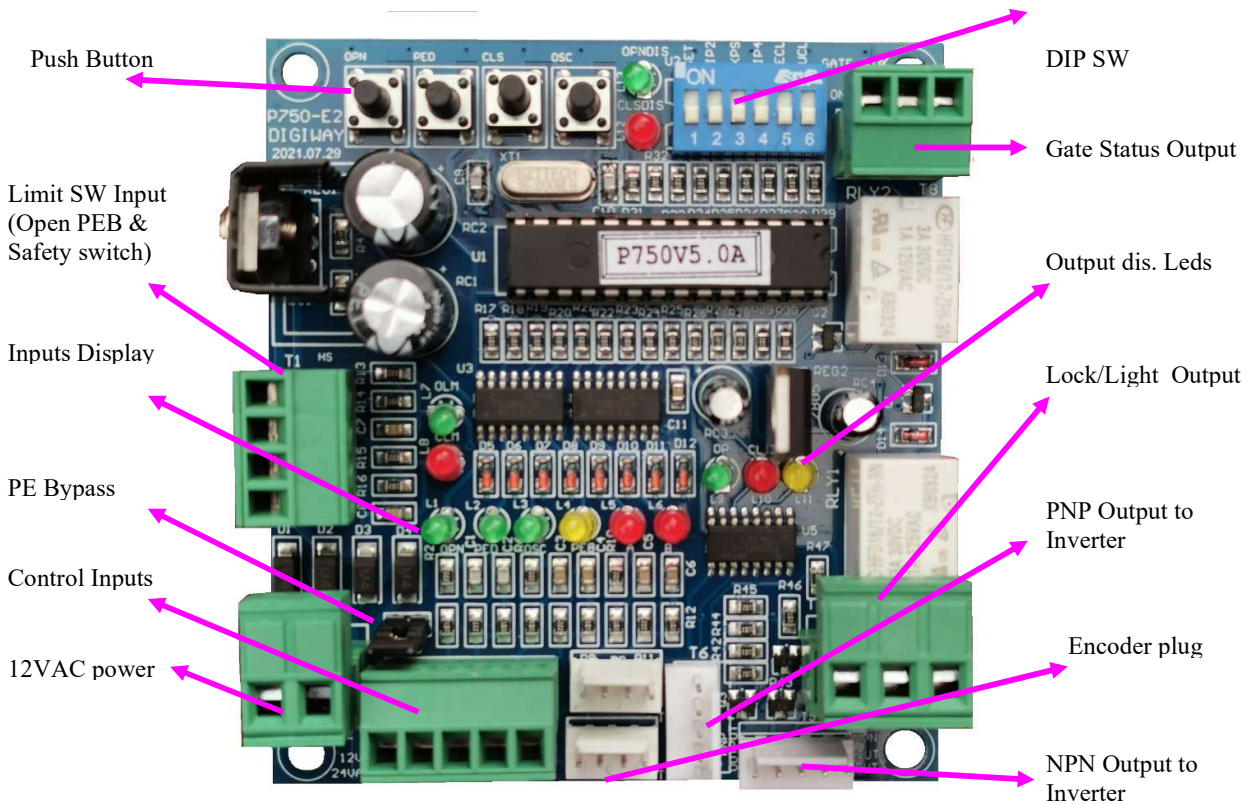


Fig-2

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 closes 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 is 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 SWITCH FUNCTION

SET/RUN (DIP1) ON=SET, OFF=RUN
Dip1 ON selects setting mode. For E-code control and timers

DIP2 and DIP4 ON=F-code OFF=E-code
DIP2 off, DIP4 off --- called "MOD1" ---E-code control with closed limit switch as option
DIP2 off, DIP4 on --- called "MOD2" ---E-code with one N/O limit switch
DIP2 on, DIP4 off --- called "MOD3" ---F-code control with two N/C limit switch
DIP2 on, DIP4 on --- called "MOD4" ---F-code control with one N/O limit switch

NOTE: DIP2DIP4 SETTING MUST SUIT APPLICATION TYPE. THERE IS ONE AND ONLY ONE IS RIGHT

LOCK Output (DIP3) ON= PULSE 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.

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 triggered and clear the gate will auto close after gate opened.

Motor Set Up

Auto CLS (DIP6) ON=AUTO CLS OFF=NO AUTO CLS
 DIP6 ON selects Auto close mode. In this mode, the gate will auto close after standard auto closed time. If DIP6 OFF, no this function.

5. Motor Set up

Push Buttons functions

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

5.1 MOD1: -- E-code setting: DIP2 off and DIP4 off

MOD1 -- E-code means the encoder is set up at top of the motor and output signal is A and B with 90-degree phase delay each other. Four cores cable with plug directly plug into control board. Two plugs on control board T4 for right hand side and T5 for left hand side.

MOD0 do not need any limit switch, but with options -- *Open limit switch input as manual release protection input and close limit switch is closed limit switch input*

In this mode, gate how to stop: In closing cycle, control will check closed point (encode count) or closed limit switch if fit, whichever happen first, then stop gate. In opening cycle, controller will check opened point (encode count) only.

Set travel limits – (Gate travel distance setup – “learn” how long the gate)

Method A

- 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 another 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, about 50-100mm before opened stopper, 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). For more details, see Step by step gate set instruction.

Method B --- *heavy duty functional mechanical gate opened stopper and closed stopper must be installed*

- 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 OPN, PED, OSC led OFF and PEB led ON. Set DIP6 on.

Controller Working Mode

- d) Turn power on, push CLS button, gate should close. If gate opens, turn power off, change motor direction by swapping any two of three phases output of inverter.
- e) Power on again. push CLS button, gate should close. If gate runs only short distance (about 2 seconds) and stop. Turn power off, change encode plug to another connector and try again.
- f) Power on again, push and hold CLS button for about 5 seconds until both OPENLED (green) and CLSLED (Red) is solid on, release CLS button, gate will start closing at low speed.
- g) Gate hit closed post/closed stopper and stop, short delay, then start opening at low speed.
- i) While in this opening cycle, if push and release PED button, that current position will be saved as pedestrian open position.
- j) When gate hit opened post/opened stopper and stop, all setting is finished
- k) Test gate by push buttons on board, if gate position is not right, then redo it again from step f.

5.2 MOD2: -- E-code with one limit switch: DIP2 off and DIP4 on

MOD2 – E-code with one N/O limit (either mechanical or proxy switch). OLM---Open Limit Switch input as manual release spanner protection input –OPTION. Normally do not need it. CLM --- Close Limit Switch MUST need, one limit switch work as closed and opened limit

In this mode, gate how to stop: encoder only determine the slow down point. Gate is only stopped by limit switch, or max. motor running time--- which is motor low speed running time, plus 5 seconds extra. For example, if gate open take 30 seconds in learning cycle/low speed, then max running time is 35 seconds.

Proxy switch can be mounting horizontal (like normal limit switch) or vertical.

Either in closed or opened positions, as long as moved gate without turn power off and Proxy switch/limit switch status/state/situation has been changed, next operation will be in low speed and automatically back to normally after two operations.

Set travel limits – (Gate travel distance setup – “learn” how long the gate)

Method B (automatic set up only). Refer MOD1---method B

5.3 MOD3: -- F-Code with two N/C limit switch: DIP2 on and DIP4 off

Mode-3 Two limit switch required N/C, proxy switch or mechanical limit switch. F-code is the little circuit connection to inverter output and check frequency information and send to controller.

OLM---Open Limit Switch input. CLM --- Close Limit Switch input.

In this F-code mode, gate how to stop? F-code only determine the slow down point. Gate is only stopped by limit switch, or max. motor running time--- which is motor low speed running time in learning cycle, plus 5 seconds extra. For example, if gate open take 30 seconds in learning cycle/low speed, then max running time is 35 seconds.

Either in closed or opened positions, as long as moved gate and limit switch status changed, next operation will be in low speed and automatically back to normally after two operations.

Set travel limits – (Gate travel distance setup – “learn” how long the gate)

- a) Mounting motor
- b) Moving gate in middle position. Power up, touch limit by screw drive in open and close direction, open limit LED and close LED will off respectively.
- c) Set up limit stopper potions. When stopper touch limit and travel another 30 to 50mm, gate should hit mechanical stopper.
- d) Push Open button, gate should open. If gate close, then swap any inverter output.

- e) Make sure F-code is connected.
- f) Power on again, push and hold CLS button for about 5 seconds until both OPENLED (green) and CLSLED (Red) is solid on, release CLS button, gate will start closing at low speed.
- g. Gate hit closed limit and stop, short delay, then start opening at low speed.
- h) While in this opening cycle, if push and release PED button, that current position will be saved as pedestrian open position.
- i) When gate hit opened limit and stop, all setting is finished
- j) Test gate by push buttons on board, if gate position is not right, then redo it again from step f.

5.3 MOD4: -- F-Code with one N/O limit switch: DIP2 on and DIP4 on

Mode-4 Only one limit switch required N/O, proxy switch or mechanical limit switch.

OLM---Open Limit Switch input as manual release protection input---option. CLM --- Close Limit Switch Input N/O.

In this F-code mode, gate how to stop? F-code only determine the slow down point. Gate is controlled by limit switch, or max. motor running time--- which is motor low speed running time in learning cycle, plus 5 seconds extra. For example, if gate open take 30 seconds in learning cycle/low speed, then max running time is 35 seconds.

Either in closed or opened positions, as long as moved gate and limit switch status changed, next operation will be in low speed and automatically back to normally after two operations.

- a) Mounting motor
- b) Moving gate in middle position. Power up, touch limit or proxy switch by screw drive, close LED will on. Open limit is used as manual release protection input---option.
- c) Set up limit stopper potions. When Limit switch stopper touch limit and travel another 30 to 50mm, gate should hit mechanical stopper --- HEAVY DUTY MEHCNICAL STOPPER MSUT BE INSTALLED.

CLOSED LIMIT SET UP.

Push gate against gate closed stopper and move limit stopper from limit switch active position towards to gate closing direction for 30-50mm, which is the closed limit switch stopper position. Use tek screw fix the limit stopper on gate bottom rail.

OPENED LIMIT SET UP.

Push gate against gate opened stopper and move limit stopper from limit switch active position towards to gate opening direction for 30-50mm, which is the opened limit switch stopper position. Use tek screw fix the limit stopper on gate bottom rail.

- d) Push Open button, gate should open. If gate close, then swap any inverter output.
- e) Make sure F-code is connected.
- f) Push and hold CLS button for about 5 seconds until the OPNLED and CLSLED both solid on, then release CLS button. gate will start closing at low speed.
- g). Gate hit closed limit and stop, short delay, then start opening at low speed.
- h) While in this opening cycle, if push and release PED button, that current position will be saved as pedestrian open position.
- i) When gate hit opened limit and stop, all setting is finished
- j) Test gate by push buttons on board, if gate position is not right, then redo it again from step f.

Timer Setting

5.4 Timers setting

a) 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.

b) 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.

5.5 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.

a) Reserved

Push and hold OPN reserved for late use.

b) Reserved

Push and hold PED reserved for late use.

c) 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.

d) Reserved

Push and hold OSC reserved for late use.

5.6 Factory default setting

Timer	F/Setting	Step	Setting Method	Range
Full Open Length	15M	0.7mm	STD& OPN Button	No limitation
PED Open Length	5M	0.7mm	STD& OPN+PED Button	No limitation
Auto Close Time	30 sec.	0.1sec.	STD& PED Button	0-6550sec.
Lock Pulse Time	0.8 sec.	0.1sec.	STD& OSC Button	0-25sec.
Motor Stop Time	1.0 sec.	0.1sec.	SPE& OPN Button	0-25sec.
Sync Delay Time	Reserved	0.1sec.	SPE& PED Button	0-25sec.
PE Auto close Time	2.0 sec	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, for different working mode will be different. If in Mode-1, 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. If in Mode-2,3,4

6. Inverter settings

Different inverter and setting are different. P750V5.0 can control nearly all model inverter. 12V or 24V accessories power supply. PNP or NPN output. Here is some samples.

- a) TECO FM 50 inverter. 12V, PNP output, now it is no longer available.

Function	F	Function Description	Setting	Unit	Note
Acceleration time	F001	Acceleration time	4.0	Sec.	
Deceleration time	F002	Deceleration time	2.0	Sec.	
Freq. Upper limit	F006	Max. Frequency	60	Hz	
Freq. Lower limit	F007	Min. Frequency	0	Hz	
SP1 Frequency	F008	Gate Close High Speed	35	Hz	
Start/Stop/Control	F010	Terminals	1		
Multifunction Input	F020	Reset Terminal Function	6		
SP2 Frequency	F026	Gate Open Low Speed	15	Hz	
SP3 Frequency	F027	Gate Close Low Speed	15	Hz	

- b) TECO L510s inverter. 24V, PNP output.

Location	Function Discriptions	Setting	Setting
	Gate Open High Speed	Pot	Keypad
00-03	Alt Run Source	1	1
00-05	Main Freq Source	1	0
00-06	Alt Freq. Source Select	0	1
00-07	Mina & Alt Com	1	0
00-12	Max. Frequency	60 Hz	60 Hz
00-14	Acceleration time	3.5-4.0 sec	3.5-4.0 sec
00-15	Deceleration time	2.0 sec	2.0 sec
02-00	Motor rated current	3.5A -- P750	2.4A -- P550
02-01	Motor protect Current	6.8A -- P750	4.8A -- P550
05-01	Gate Open High Speed	50	50
05-02	Gate Close High Speed	35	20
05-03	Gate Open Low Speed	15	15
05-04	Gate Close Low Speed	15	15
08-17	Over Current Protection level	10	10
08-18	Over current protection time	3.0	3.0
08-19	Motor overload protection level	1	1

- c) Basically, any other brand inverter will be working as well

- a) Set open, close and low speed input (choose the frequency)
- b) Set open high speed and open low speed (choose the frequency)
- c) Close high speed and close low speed
- d) Please note: open low speed and close low speed must be the same.
- e) Ramp up and ramp down time
- f) Over load protection time

7. Chain Drive System

Chain drive system is basically standard motor set on the chain drive base.

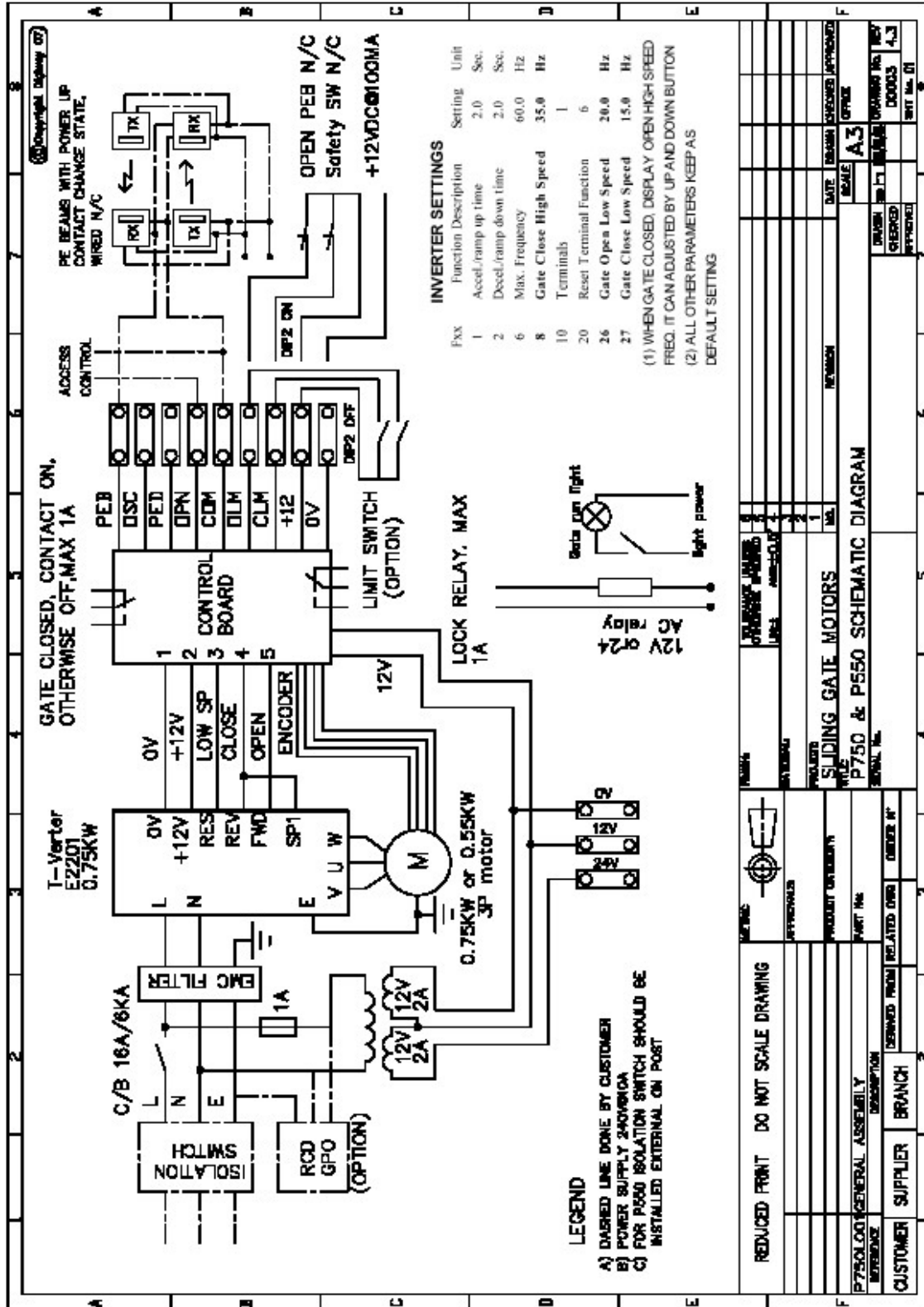


How to mounting chain drive motor

- a) Set the motor height. The chain base is adjustable. Chain slave/idle sprocket bottom line is about 10 to 20mm above the bottom line of gate bottom rail.
- b) Every 1M need one chain supporter.

SCHEMATIC DIAGRAM

8. Schematic diagram



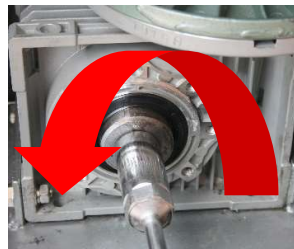
MANUAL RELEASE

9. Manual release

A: What to do during a power failure:

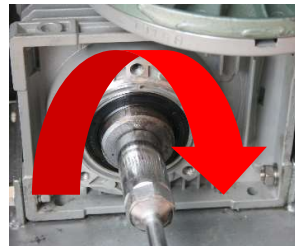
The gate can be manually pushed open and close if there is no power. To do this, you need to release the release bolt.

- (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 bolt 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	Counter measure
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 Status LEDs flash	1) No encoder input 2) mechanical jammed	1) Aux. power supply fuse 2) power off and disengage the motor and push and pull the gate manually
Gate opened or closed position not right	1) mechanical release bolts not tight 2) Rack jump over drive pinion	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.