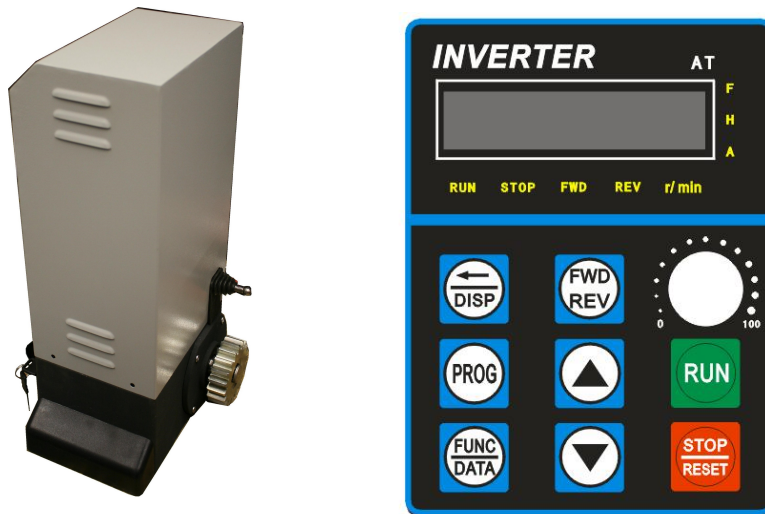# I750 Inverter
Gate Motor Controller V2.6.2

INSTRUCTION MANUAL

1. General Descriptions and features

1.1 General descriptions
It is recommended reading and understanding this manual before start to install the controller. Some features and idea are new, so take some time to read through the manual to get better understanding of the board. That will save your time during installation and get the best benefit from the control board.

Electricity and power motors associated accessories could be fatal or at least cause seriously injury. Digiway suggested some safety device to be used so as to prevent personnel from being injured by motorized device being controlled. *All main voltage wiring must be installed by a licensed electrician.*

1.2 General features
The I750 inverter is a 0.75KW inverter and gate controller built in one, which can control three phase motor only required on 240V AC power supply. Controller has a variety of settings. Typical applications include Swing gates, Sliding Gates, Roller door etc. Features include the following:
- Power supply 240V.
- Limit switch inputs, N/O or N/C selectable by DIP switch.
- Selectable timers for auto close.
- Safety control inputs.
- Replace nearly all three-phase motor controller, perfect for repairs

2. Description of standard operations

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2.1 View of I750
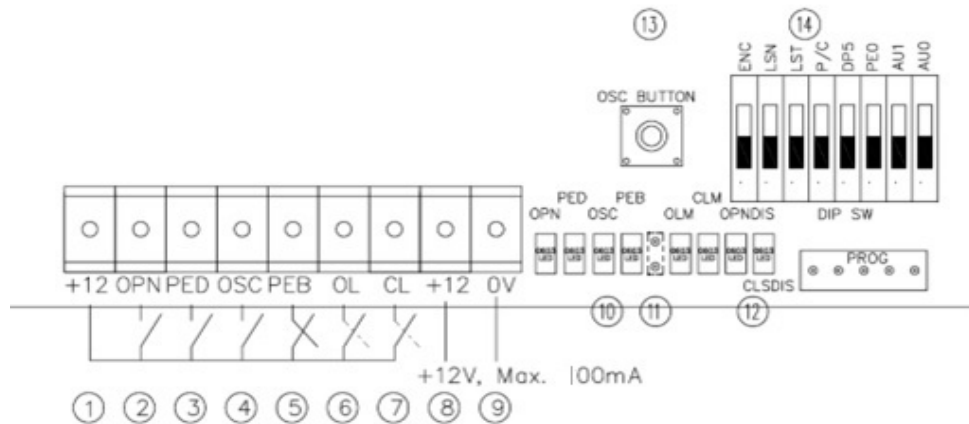
1. +12V, COM
2. OPN -- N/O input, full open gate
3. PED – as F-code input
4. OSC -- N/O open/stop/close push button
5. PEB -- N/C photo electrical beams
6. OLM -- N/O, N/C opened limit switch input
7. CLM -- N/O, N/C closed limit switch input
8. 12V DC – common for control signals, positive trig
9. 0V power supply
10. Input display LED
11. PE beams By-pass Jumper
12. Gate Status Display LED
13. OSC test Button
14. DIP SW function selection

2.2 Control inputs

2.2.1 Open (OPN) input
The OPN input is active when OPN terminal short to the +12V. The OPN input will start to open the gate. When gate opened, if OPN is keep activating, the gate will stay open. This is mostly controlled by access control system.

2.2.2 F-code Input
For this version pedestrian input as F-code input, that is speed sensor input

2.2.3 OSC (open/stop/close) input
OSC input is used for manual operation. Push to open the gate, push again stop gate, another push closes the gate.

2.2.4 Photoelectric safety beam (PE) input (N/C type)
If the P.E input is activated while gate is closing, the controller will stop the gate or reopen the gate depending on the DIP setting. If the gate in the opened position and P.E beam is activated, the gate will stay in opened.

2.4 Model Select Switch (6)
2.4.1 DIP1 Reserved for late use

2.4.2 DIP2 =LSN Limit switch No. NO=one limit, OFF=two limit
2.4.3 DIP3 =LST Limit switch type, ON=N/O, OFF= N/C

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2.4.4 Reserved for late use
2.4.5 Reserved for late use
2.4.6 PE0 (DIP4)   ON= PE close   OFF= NO PE close
DIP4 is on, enable PE trig close, after PE trig and clear 2 seconds after, gate auto close
DIP4 is off, disable PE trig close
2.4.5 AU1 -- DIP 7, AU0 – DIP8   --- auto close selection

DIP7, DIP8===OFF, OFF – No auto close
DIP7, DIP8===OFF, ON – auto close time 30 seconds
DIP7, DIP8===ON, OFF – auto close time 60 seconds
DIP7, DIP8===ON, ON – auto close time 90 seconds

3. Frequency/speed setting

3.1 How to set/change the parameters

1) Push Prog.
2) Push up arrow or down arrow button to the location Pxxx you wanted
3) Push FUNC/DATA display the setting in Pxxx, up or down arrow button can change it.
4) Push FUNC/DATA button again to save it and automatic to next location. Push Prog gain back to normal display.

Inverter speed setting

Mem. Position	Description	Application Setting	Range	Note
P006	Max. Frequency	60Hz	0-400Hz	
P010	Frequency source	1=Pot or 0=keypad		
P011	Command source	2=Terminals		
P026	Open High Speed	50Hz	0---65Hz	
P034	Ramp up Speed, Hz/s	15hz	1-1000Hz	
P042	Ramp down Speed Hz/s	25Hz	1-1000Hz	
P078	Main overload current	5A		
P027	Open Low Speed	20Hz (25hz for 4P)	10---30Hz	
P035	1st ramp up speed Hz/s	25Hz	1-1000Hz	
P043	1st ramp down speed Hz/s	25Hz	1-1000Hz	
P079	1st overload current	5A		
P028	Close High Speed	35HZ (45Hz for 4P)	10---30Hz	
P036	2nd ramp up speed Hz/s	15Hz	1-1000Hz	
P044	2nd ramp down speed Hz/s	25Hz		
P080	2nd overload current	5A		
P029	Close Low Speed	20 (25hz for 4P)	10---30Hz	
P037	3rd ramp up speed Hz/s	15Hz	1-1000Hz	
P045	3rd ramp down speed Hz/s	25Hz	1-1000Hz	
P081	3rd overload current	5A		
P050	Multi-Input-1	13	Speed 1	P027
P051	Multi-Input-2	14	Speed 2	P028
P052	Multi-Input-3	15	Speed 3	P029
P053	Multi-Input-4	7	Spare	
P054	Multi-Input-5	5	Forward	
P055	Multi-Input-6	6	Reverse	

Note: Close low speed(P029)and open low speed(P027) must be the same

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3.2 Running speed/frequency description

3.2.1 Open high speed. Adjusted by pot on the panel or keypad depending on the setting (F026).
This is open high speed, and the overload current setting at P078, set it to right value according to the motor. Max. is 6A.

3.2.2 Open low speed. Adjusted by location P027.
This is the low speed when gate approach to opened position. The overload current setting at P079, set it to right value according to the motor. Max. is 6A.

3.2.3 Close High Speed. Adjusted by location P028.
This is close high speed and the overload current setting at P080, set it to right value according to the motor. Max. is 6A.

3.2.4 Close Low Speed. Adjusted by location P029.
This is open first low speed and the overload current setting at P081, set it to right value according to the motor. Max. is 6A.

4. How to Program Motor (Step by Step)

4.1 Install motor, connect power. F-code input is any two of three inverter outputs (T1, T2, T3), already connected. Choose limit switch type by DIP switch. Connect limit switch (for repairs, if it is new motor, these are all done).

4.2 Release the motor clutch and moved gate to middle position, engage motor. Power on, check limit switch is right. Push limit spring to closed or opened side, the limit switch display LED status should be changed.

4.3 Push and release TEST (or called OSC) Button, gate motor should run, if gate is closing, look CLSLED should be flash and OPNLED off. If not, please switch power off, and swap any two of three inverter outputs (T1, T2, T3) to change motor directions.

4.4 Power on again, Push TEST button, if gate runs in close direction, push limit switch by screw drive in closed direction, gate should stop. If the limit switch is proxy switch, need use screws drive touch the proxy switch head, gate should stop)

4.5 Programming. Push and hold TEST (or called OSC) button for about 5 seconds until CLSLED and OPNLED are both solid on. Now---- Release TEST button, gate will run at low speed and in close direction first, when gate reach closed position/hit closed limit switch and then automatically open. When gate reach opened position/hit opened limit switch. All setting is finished. Gate is operational.

5. Factory Default Setting

To get factory default setting, turn Power off, push and hold OSC button, power up, release OSC button. Now controller got factory setting.

Motor will only be run low speeds after get factory default setting.

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6. Important Note and troubleshooting guide

6.1 If the gate controlled by access control and access control equipment is far away from gate, you need add on isolation relay. Access control signal control relay and relay output connect to controller input terminals. Being long distance, if directly connect access control cable to gate controller terminals can cause interference.

6.2 Motor only runs low speed.
A) Motor/controller not programmed still have factory defaulting.
B) F-code is faulty. The F-code input LED is not flash.

6.2 Gate not close
A) Beam beams faulty or block. Check PEB input LEDs. PE beams input is N/C. Normally LED should be on, if PE beams is blocked or PE beams faulty, LED is off.

7. Manual Release

In case of malfunction or loss power. Gate motor can be put into manual mode and can open gate.

P380 Gate Motor   *Manual Release*   *Open Cover*   *Insert key*

Now Gate can move freely

Turn clockwise   *Pull lever out*   *Close lever secure gate*   *close cover*