Q50 – Controller Board

Technical Specifications

Power Line: 110 VAC.
Maximum power drain: ½ HP AC motors.
Motor Running Time: Programmable.
Automatic Closing Delay: Selectable among: 10, 15 y 30 seconds.
De-Acceleration & Soft Start Functions: Selectable.
Torque Control (Par): Valid after the 1.5 seconds of running. At starting time with no soft start, the driving is at full power.
Opto-coupled inputs.
Courtesy Light: Dry Contact, maximum load 500W; after full closing changes state and remains on for 30 seconds.
Electric lock outlet: Active during 1.5 seconds after opening order.
Easy Unlock Function: Programmable.
Semaphore Outlet: Dry contact NO/NC.

Installation Test:

After any electrical connection or programming you may do these basic tests:

1) Leave the door half open, when you give a TX order the door must open otherwise you have to invert the direction motor cables (check if end stops have to be changed too).

2) Above the terminal block, looking the board with these downward, at the left hand there are 4 LEDs, from left to right they shows: Order, IR Detector; Open and End Stop limits.
To check the proper alignment of end stop detectors, you have to free the door, and move it until the end stop, checking which LEDs light up. If they are inverted you have to change the Close Limit cables for the Open Limit ones.

Very Important Notes:

After any status or programming change, you have to disconnect the board from the power and reconnect it, to reset and reload the new values.

There are two main programming steps to do:

1) Load in memory the remote controllers.

2) Program the running time, the de-acceleration option, and run limits operation. If you skip one of these steps you may expect a malfunction.

Program the Remote Controllers Transmitters.

A - Press the T1 Tact Switch; LED PR1 will light, confirming the programming status.

B - Then, on the remote control, press the control button to be recorded, the LED flashes confirming it was recorded.

C - You can add more TX repeating the step 2 up to memory limit of 60 buttons.

D - If you do not want to add further remote controls, you must press again T1 to finish programming.

NOTE: For total erase of TX Memory: Hold down the T1 button until it turns off the Led PR1.

Running Time Programming

Note1: To program, set the par preset to maximum, WE DO recommend installing the End Stops.

Note2: In all the following cases we recommend to leave the Gate half open in order to start the programming. That's because the motor will always tend to close the gate.

There are 2 main ways of programing. Each way with a variant, so there are a total of 4 types of programming this board controller.

1) Doors without End Stops Installed and without Deceleration (Dip Switch #1 & #5=ON).

a. - Hold the T2 Tact Switch for more than 6 seconds until PR1 LED turns on.
b. - Release T2, the gate will start to close.
c. – When the door reaches full close position, activate Order input to set the virtual close limit, and the motor will stop.
d. - Immediately the door will start to open, counting the running time. When the full open position is reach, you have to give a new order to set it. Now the door closes by itself, finishing the programming routine.

2) Doors without End Stops Installed and with Deceleration (Dip Switch #1 = ON; Dip Switch #4 & #5 =OFF).

a. - Hold the T2 Tact Switch for more than 6 seconds until lights PR1.
b. - Release T2, the gate will start to close.
c. – When the door reaches full close position, activate Order input to set the virtual close limit, and the motor will stop.

d - Immediately the door will start to open, counting the running time. As the deceleration has 2 steps, 4" to 6" before the full open position, activate Order input, and after a couple of seconds give a second activate Order input to set the following deceleration points.
When the door reaches the Full Open Position, give the final order. The door will close by itself completing the programming cycle.

3) Doors with End Stops Installed and without Deceleration (Dip Switch #5=ON; Dip Switch #4= OFF). The Dip Switch 1 set the Run Limit type (no/nc).

a. - Hold the T2 Tact Switch for more than 6 seconds until lights PR1.
b. - Release T2, the gate will start to close.
c. – When the door reaches the close end stop, it will stop
d. - Immediately the door will start to open, while counting the running time. When the open limit is reached the door will close by itself finishing the programming routine.

4) Doors with End Stop installed and with Deceleration (Dip Switch #4 & #5 =OFF). The Dip Switch 1 set the Run Limit type (no/nc).

a. - Hold the T2 Tact Switch for more than 6 seconds until lights PR1.
b. - Release T2 and the gate will start to close.
c. - When the door reaches the close limit the motor will stop.
d. - Immediately the door will start to open, counting the running time. As the deceleration has 2 steps, 4" to 6" before the full open position, activate Order input, and after a couple of seconds give a second activate Order input to set the following deceleration points.
When the door reaches the Full Open Position, give the final order. The door will close by itself completing the programming cycle.

Switch diagram and uses:

DIP #	FUNCTION	ON	OFF
1	End Stop Type	NO	NC
2	Enables TX during Automatic Closing	Not Enabled	Enabled
3	Electric Lock	Not Enabled	Enabled
4	When using end stops. Ref to manual.		
5	De-Acceleration	Not Enabled	Enabled
6	Soft Start	Not Enabled	Enabled
7 & 8	No Automatic Closing	SW7 & SW 8	
	Automatic Closing 10 Sec. Delay	SW8	SW7
	Automatic Closing 15 Sec. Delay	SW7	SW8
	Automatic Closing 30 Sec. Delay		SW7 & SW8

Infrared sensor connections.

To use the photocell, remove jumper 8.

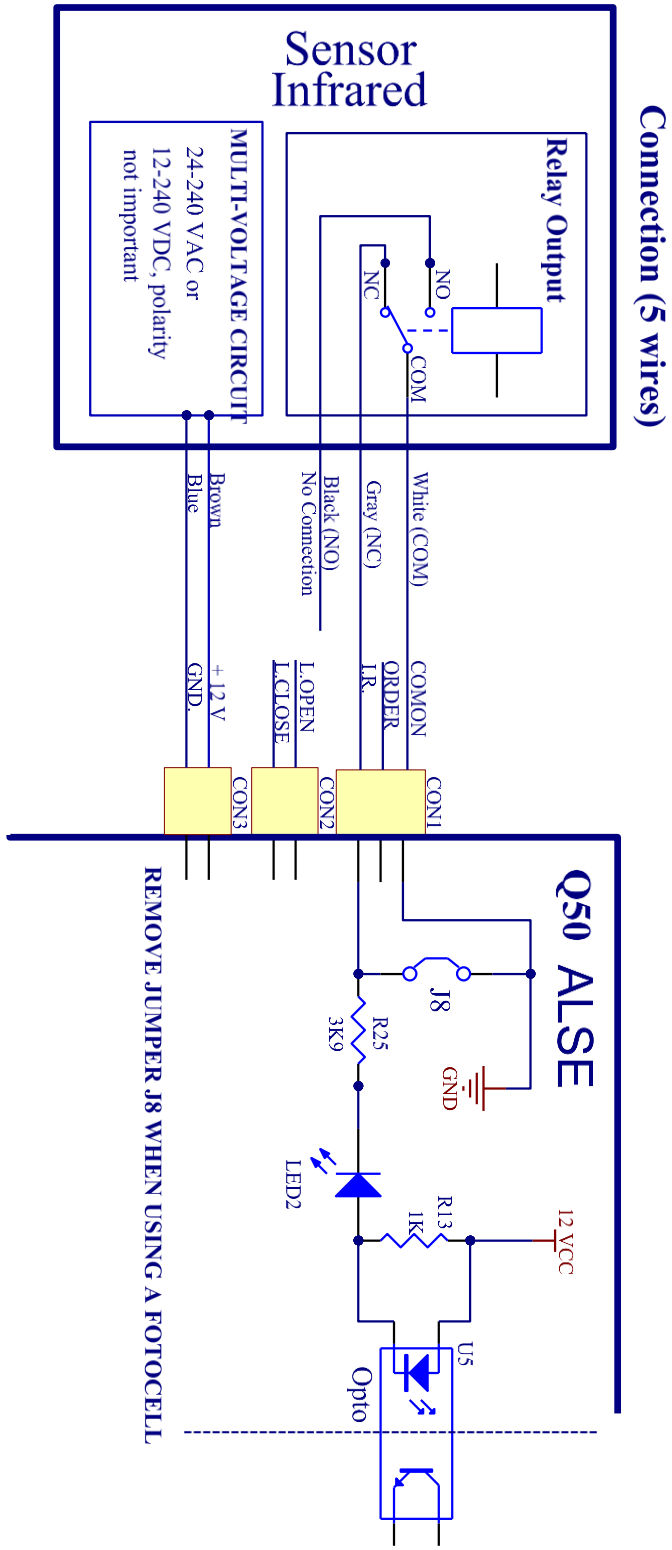

FIG Nº 1: Photocell Electric Diagram

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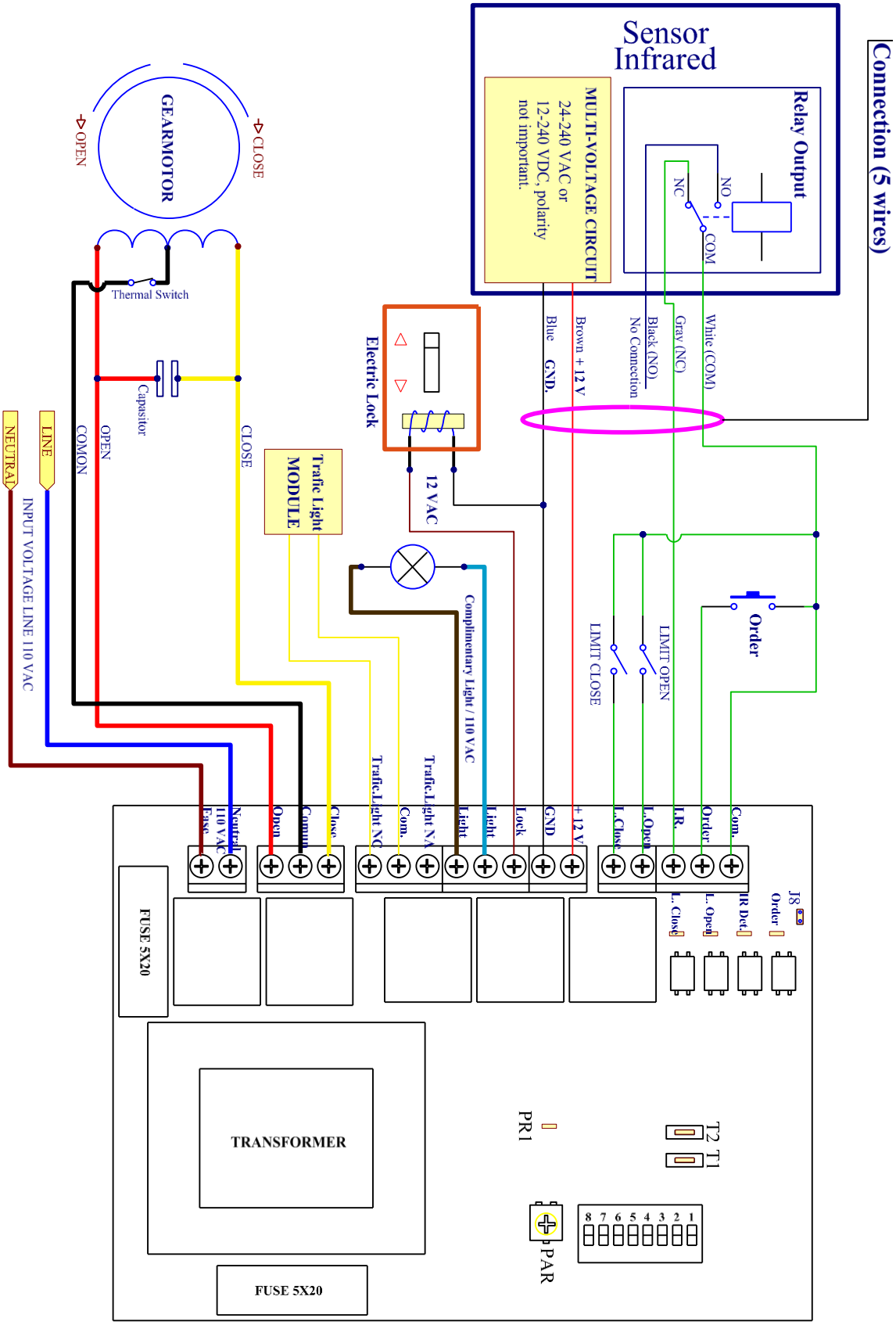

FIG Nº 2: Complete Electric Diagram