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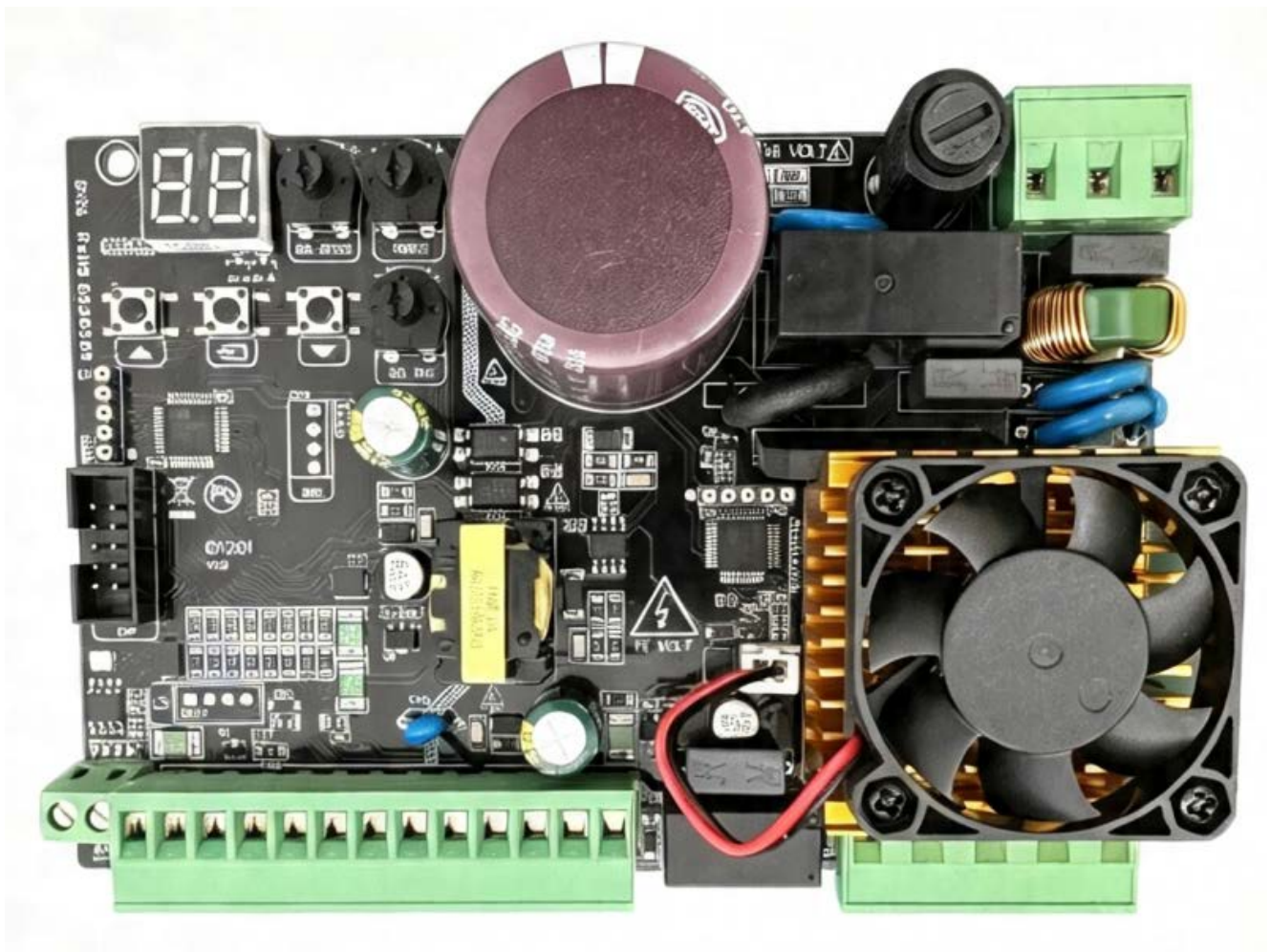
Inverter Control unit for Sliding gate

PCBID-1201

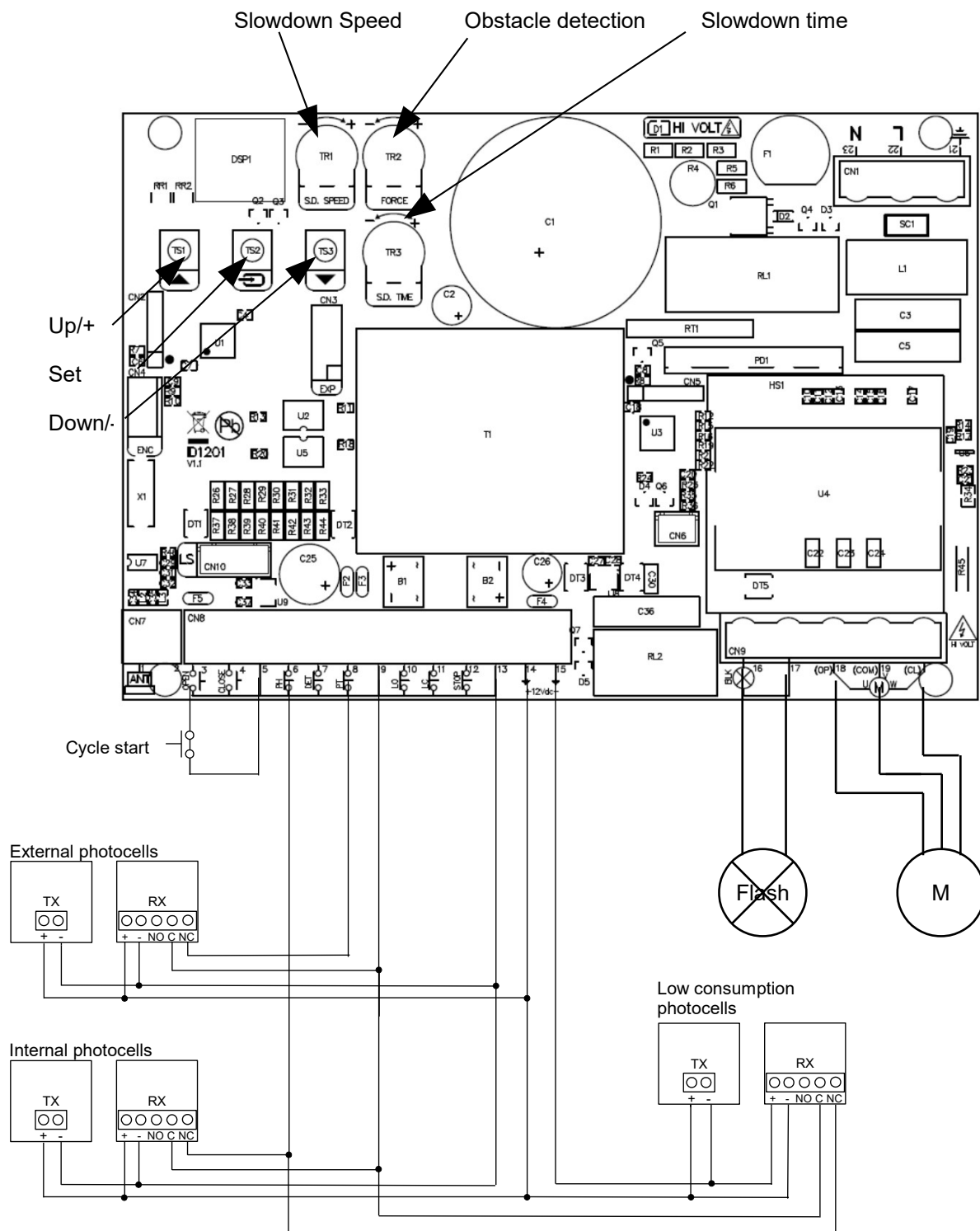


Instructions Manual

Rev. 2.0



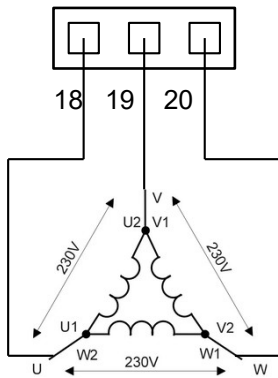
Main functions



Terminal List

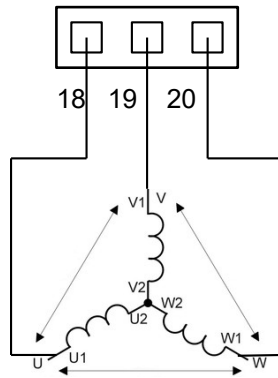
- 1:Shield antenna
- 2:Antenna core
- 3:Open/Start (NO, see menu OL)
- 4:Close/Pedestrian (NO, see menu OL)
- 5:Common
- 6:Photocell input (NO/NC, see advanced menu PC)
- 7:Detect input (NO)
- 8:Protection / Photostop input (NO/NC, see advanced menu Pt)
- 9:Common
- 10:Limit switch Open input (NO/NC, see advanced menu L5)
- 11:Limit switch Close input (NO/NC, see advanced menu L5)
- 12:Stop input (NO/NC, see advanced menu 5P)
- 13:Common
- 14-15: Power supply output 12Vdc - 250mA
- 16-17:Blinker with or without flashing logic (see advanced menu BL)
- 18:Motor output – U 3phase / Open line single phase (see dip switch 3/1P)
- 20:Motor output – V 3phase / Common single phase (see dip switch 3/1P)
- 21:Motor output – W 3phase / Close line in single phase (see dip switch 3/1P)
- 22:Power supply Line input 240Vac
- 23:Power supply Neutral input 240Vac

Motor wiring



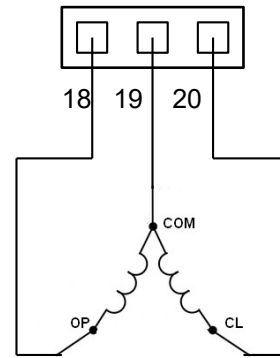
3 phase 380Vac
Motor wiring
Delta connection
(Power supply board 230Vac)

Ph menu = 3P



3 phase 230Vac
Motor wiring
Star connection

Ph menu = 3P



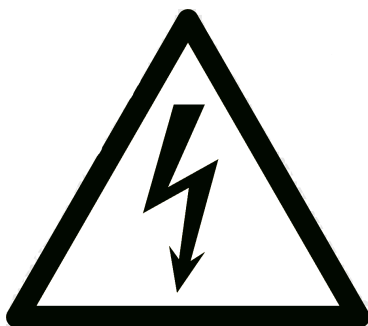
Single phase 230Vac
Motor wiring
(without starting
capacitor)

Ph menu = 1P

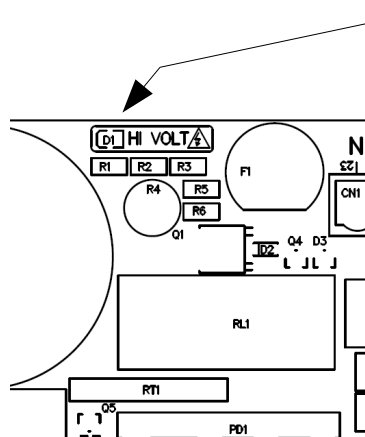
Technical characteristics

Power supply	230Vac +/- 10% - 50-60Hz
Max out power supply 12Vdc (14, 15)	250mA
Max Motor power	1,2kW
Frequency range	20-120Hz
Max power blinker, courtesy light/traffic light output	200W
Temperature range	-10 +80°C

Warnings



Danger, electric shock



Attention: High voltage is retained long time after the mains supply had been removed. Always wait at least a minute after removing mains power before to handle the board. Always verify that capacitors charge led is off before to handle the board. Always use protection devices to handle the boards, to avoid electric shocks.

Warnings

Important: Read carefully this manual before the installation. This manual is integral part of your product, keep it for reference.

Warnings: First of all verify that this product is suitable for the installation. Read carefully technical characteristic before the installation.

Installation of this control unit must be properly done by qualified installers, following rules and regulations of installation country.

It's mandatory do periodic maintenance each 6 month. Maintenance or repairing must be done by qualified Technicians. Turn power off before maintenance or repairing.

This device is intended for gate automation, any other applications is strongly advised.

Not respecting of rules may cause serious damage to peoples, animals, things. Manufacturer discharges all responsibility for missed respect of rules.

Don't let this control unit unattended or where children can reach

Preliminary checking: Before to install this control unit, verify that all the connected devices respect the technical characteristics mentioned in the table which follows. Verify that a working and suitable life switch is installed upline the installation. Verify that cables composing the installation, are suitable for it.

Attention: This electronic board has the ability to let the automation electric motor work at faster speed than the rated one. Be sure the automation system has reliability, weight and it's solid to support speed increase. Never set a speed which make the gate dangerous. Always verify in your area there aren't rules concerning the max speed of the automation system.

Input status

When the control unit is in standby, you can read input status on display:

-- : No inputs active.

P_E : Protection input active.

P_C : Photocells input active.

S_E : Start input active.

□P : Open input active.

F_C : Limit switch close.

S_P : Stop input active.

P_S : Photostop input active.

d_E : Detect input active (quick close).

P_d : Pedestrian input active.

c_L : close input active.

F_□ : Limit switch open.

Attention:

During pause, the display show the seconds countdown to closing.

If Mass mode is selected (see advanced menu), display show the number of entrance allowed.

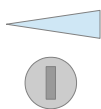
Trimmers

TR1 SD SPEED - Regulates the slowing down speed.

TR2 FORCE - Regualtes the obstacle detection sensibility from 0% to 100%.

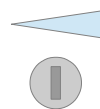
TR3 SD Time - Regualtes the slowing down lasting from 0 to 10 seconds (about)

Slower Faster



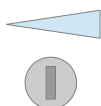
TR1 SD SPEED
Slowingdown speed

Easier to stop Harder to stop



TR2 FORCE
Obstacle detection

0 seconds 10 seconds



TR3 SD TIME
Slowingdown lasting

Special features:



Self programming

This board in most cases doesn't need any working time programming to work. If the working time hadn't been programmed, at each first complete opening (from closing limit switch to opening l.s.) after a power reset the board calculates itself a value for the current gate, and sets the slowing down starting from next closing. This self learned setting can be deleted by resetting the board or by programming the working time.

Quick programming

To program quickly the working times, keep pushed *up* till you read **LE** on the display (3 seconds). If the gate/barrier isn't fully closed, it will close till the limit switch, then it will open to the Opening limit switch, and finally it closes once.

Attention: if you aren't sure about gate/barrier direction, set it in fully closed position before to start programming, the board will assume the engaged limit switch as closing side, and will manage motor direction automatically (see “**CD**” menu in advanced menu)

Quick radio codes learn:

Push shortly *down* button to learn a start/open remote code (C1 is shown on the display), then transmit.

Push shortly *down* button twice to learn a pedestrian/close remote code (C2 is shown on the display), then transmit.

Push shortly *down* button 3 times to learn a courtesy light on remote code (C3 is shown on the display), then transmit.

Auto Learning transmitters:

It's possible to learn transmitters quickly without using the base menu. To insert a new transmitter transmit 3 times with the new remote, making at least 1 second pause between each transmission. Then transmit 3 times with a transmitter already in memory and then once with the new. When programming is done, the stop led on the keyboard flash once.

Attention: This function must be enabled, refer to “advanced menu **AR**”.

Mass entering mode

In this mode, if you push 5 times Open command (example), the control unit counts 5 cars passing through the detect sensor, then it closes the barrier. This mode must be enabled in advanced menu (**PN**). This mode can be enabled just when automatic closing is disabled.



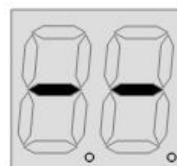
Board Programming

Main menu

Push Enter button shortly, on the display will appear **oL**. With up/down it's possible to select all items in this menu.

To exit this menu select **EH** or push *up* and *down* together.

After 20 seconds without actions, control unit exits itself from this menu.



Push
shortly
Enter

Display	Function	Choiches	Description	Default
oL	Operative logic	St At cd oc oA EH	Step By Step. Step by step with automatic closing. Condominium mode. Open / Close mode (Start and Pedestrian inputs become Open and Close inputs). Open / Close mode with automatic closing (Start and Pedestrian inputs become Open and Close inputs). Exit.	St
Lc	Learning/ removing transmitters	c1 c2 c3 rA EH	Learn Start / Open command (according to oL menu). Learn Pedestrian / Close command (according to oL menu). Learn Courtesy light (see advanced menu LH). Removing all the remotes, must confirm with "45" Exit.	-
Lt	Learn working time		Attention: if you aren't sure about gate/barrier direction, set it in fully closed position before to start programming, the board will assume the engaged limit switch as closing side, and will manage motor direction automatically (see " cd " menu in advanced menu). To stop Learning procedure, switch Stop input. Select Lt in the base menu and push <i>enter</i> , after select the learning mode with <i>up/down</i> . The gate/barrier closes till the closing limit switch, than it opens to the Opening limit switch, and finally it closes once.	-
SP	Automatic closing pause time	0-99	Set the automatic closing pause time in seconds.	10
Fr	Fast Speed Frequency	3-12	Set the frequency for the fast speed (x10 Hz)	05
Ph	Motor's number of phases	1P 3P	Single phase motor. Three phase motor.	1P
dA	Deadman mode	oP cl EH	Open motor. Close motor. Exit.	-
EH	Exit	-	Esce dal menu principale.	-

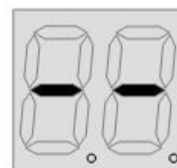
Board programming

Advanced menu

To enter advanced menu hold down enter button 4 seconds, till on display it appear $\overline{E} \overline{N}$. With up/down it's possible to select all items in this menu.

To exit this menu select $\overline{E} \overline{H}$ or push *up* and *down* together.

After 20 seconds without actions, control unit exits itself from this menu.



Push
Enter
4 seconds



Display	Function	Choiches	Description	Default
$\overline{E} \overline{N}$	Time menu	$\overline{E} \overline{I}$ $\overline{E} \overline{P}$ $\overline{E} \overline{C}$ $\overline{E} \overline{A}$ $\overline{E} \overline{D}$ $\overline{E} \overline{H}$	Working time (in seconds). Pedestrian time. Courtesy light time (in tens of seconds). Acceleration Time (in tenths of seconds). Deceleration Time (in tenths of seconds). Exit. Attention: For the motors times you can set time longer than 2 digits. When the value is over 100 the decimal dot point of 2 nd digit will be on. Example: 15. = 115. When the value is over 200 both the the decimal dots are on. Example: 1.2. = 212.	180 08 12 15 10
$\overline{G} \overline{D}$	Gate direction	$\overline{r} \overline{h}$ $\overline{L} \overline{F}$	Right direction Left direction Attention: if you aren't sure about the direction of the gate, set the gate fully closed before to start the working time learning(See working time programming)	$\overline{r} \overline{h}$
$\overline{P} \overline{C}$	Photocell mode	$\overline{n} \overline{C}$ $\overline{n} \overline{O}$	Normally Close. Normally Open. Attention: Rules of several countries forbid to use safety systems with N.O. Output. Please be sure of safety regulations of your country before to modify this parameter.	$\overline{n} \overline{C}$
$\overline{P} \overline{E}$	Photostop and Protection (PT) mode	$\overline{n} \overline{C}$ $\overline{n} \overline{O}$	Normally Close. Normally Open. Attention: Rules of several countries forbid to use safety systems with N.O. Output. Please be sure of safety regulations of your country before to modify this parameter.	$\overline{n} \overline{C}$
$\overline{S} \overline{P}$	Stop mode	$\overline{n} \overline{C}$ $\overline{n} \overline{O}$	Normally Open. Normally Close. Attention: Rules of several countries forbid to use safety systems with N.O. Output. Please be sure of safety regulations of your country before to modify this parameter.	$\overline{n} \overline{C}$
$\overline{L} \overline{S}$	Limit switches mode	$\overline{n} \overline{C}$ $\overline{n} \overline{O}$	Normally Close. Normally Open.	$\overline{n} \overline{C}$
$\overline{S} \overline{S}$	Soft start	$\overline{y} \overline{S}$ $\overline{n} \overline{E}$	Soft enabled. Soft disabled.	$\overline{y} \overline{S}$

Advanced menu (Continue)

Display	Function	Choiches	Description	Default
bL	Blinker mode	45 nE	Blinker light with flashing output. Blinker light with fix on output.	45
Lh	Light mode	cF oG Gf EH	Light output as courtesy light. Light output as open gate light. Light output as traffic light. Exit	cF
d2	Reset to factory defaults	45 nE EH	Selecting 45 the factory default are restored. Attention: This function doesn't delete radio codes.	-
Ar	Automatic remotes learning	45 nE	Automatic remotes learning enabled. Automatic remotes learning disabled.	nE
rN	Radio mode	Ib 4b	Each radio button is learned separate. The installed can choose ho to learn a code: (c 1 Start/Open, c 2 Pedestrian/close). Learning a button of a remote, let all the other 3 buttons being learn automatically.	Ib
cN	Cycles counter	-	Shows cycle counter in 3 group of 2 digits. Example: 123.456 is shown as: 12 - 34 - 56	-
NN	Mass mode	45 nE	Enables the Mass entering mode Disables Mass mode	nE
br	Barrier mode	45 nE	Enables Barrier mode. Sliding gate mode.	nE
r5	Safety speed	1- 10	After a power failiture, during working time learning and in dN mode, the motor works at this speed.	04
od	Obstacle Detection adjustement	1- 10	This parameter is used to tune the obstacle detection in case the trimmer isn't enough.	03
AP	Tuya APP	0-2	This menu changes the APP Tuya interface, showing or hiding some menu for residential or condominium use. To use the Tuya APP optional module SD1 is needed.	1
EH	Exit	-	Exits advanced menu.	-