

10. PREDISPOSITIONS

Prepare the insulated cable ducts for motors and accessories wires (not supplied). Prepare the power plant to the location where you intend to attach the control unit (not necessary in the case of self-powered SOLAR PANEL powered openers) Warning: the power of the high-voltage current must be managed exclusively by a specialized technician. Do not manage yourself the power supply connection 230 / 110V: Danger of Death!

Caution: it is recommended to prepare a disconnection device to be used in case of emergency. Warning: the control unit and activation commands must be installed in a not accessible place and at a height from the ground, not allowing the use by unauthorized persons or children.

11. CONTROL BOX INSTALLATION

Fix the bottom of the control unit to the wall or pillar using appropriate screws and plugs (not supplied).

It is advisable to seal any holes to prevent water infiltration, moisture, dust and insects.

It is recommended to provide appropriate compression sleeves (not supplied)

Small control box KONTROL” Small” see pic.39

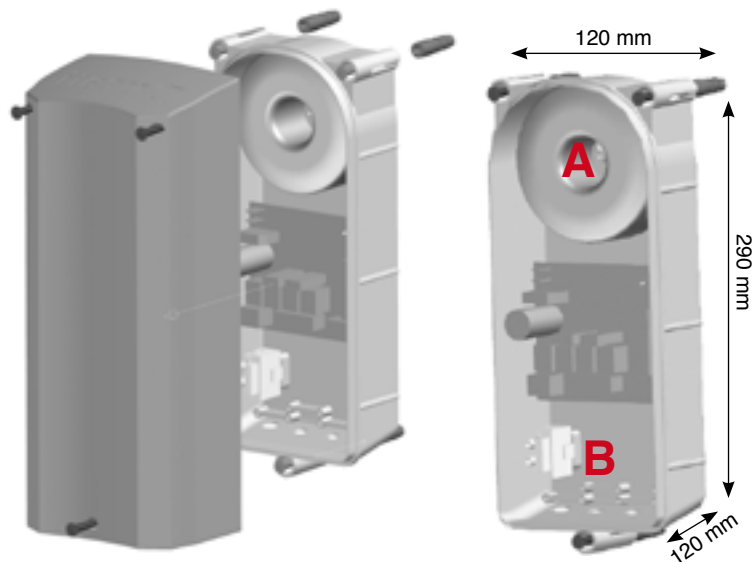
Large control box KONTROL”Large” see pic.40

The control Kontrol”Large” is equipped with a inner protective cover underneath which are inserted the electronic board and the toroidal transformer.

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DUCATI Kontrol “small”

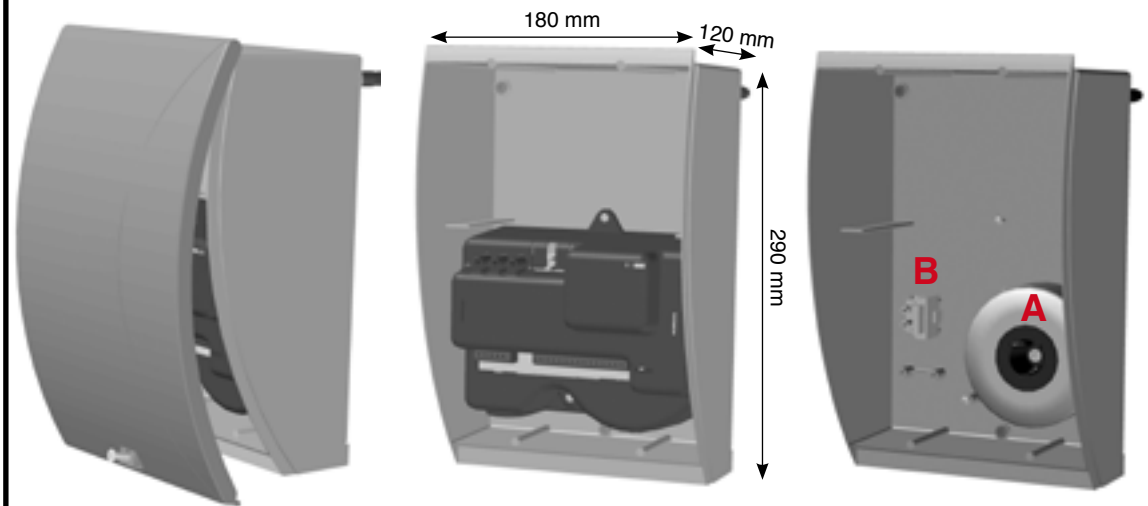
Control Box



40

DUCATI Kontrol “large”

Control Box



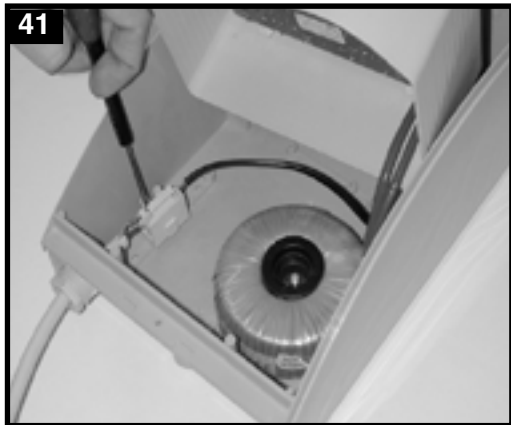
DUCATI Main AC power supply wiring

12. MAIN POWER SUPPLY 230V / 110 V

The main power supply high voltage 230V (110V on request) connection must be performed only by a licensed electrician! Warning: danger of death.
The power cable is connected to the terminal block / fuse protection upstream of the toroidal transformer (pic.41)
The transformer is already connected to the PCB. Check for proper connection.
Connect cables from the transformer to the circuit board.

The toroidal transformer has 3 output cables,
Black =0 + Yellow= 12V to be used for 12V electronic boards and motors
Black =0 + Red= 24V to be used for 24V electronic boards and motors

Solar panel powered openers do not require any high voltage connection .Nevertheless, they are always provided with a toroidal transformer and in case of emergency or to recharge the battery the main voltage 230V (110V on demand)can be connected to the terminal block / fuse protection upstream of the toroidal transformer (pic.41)

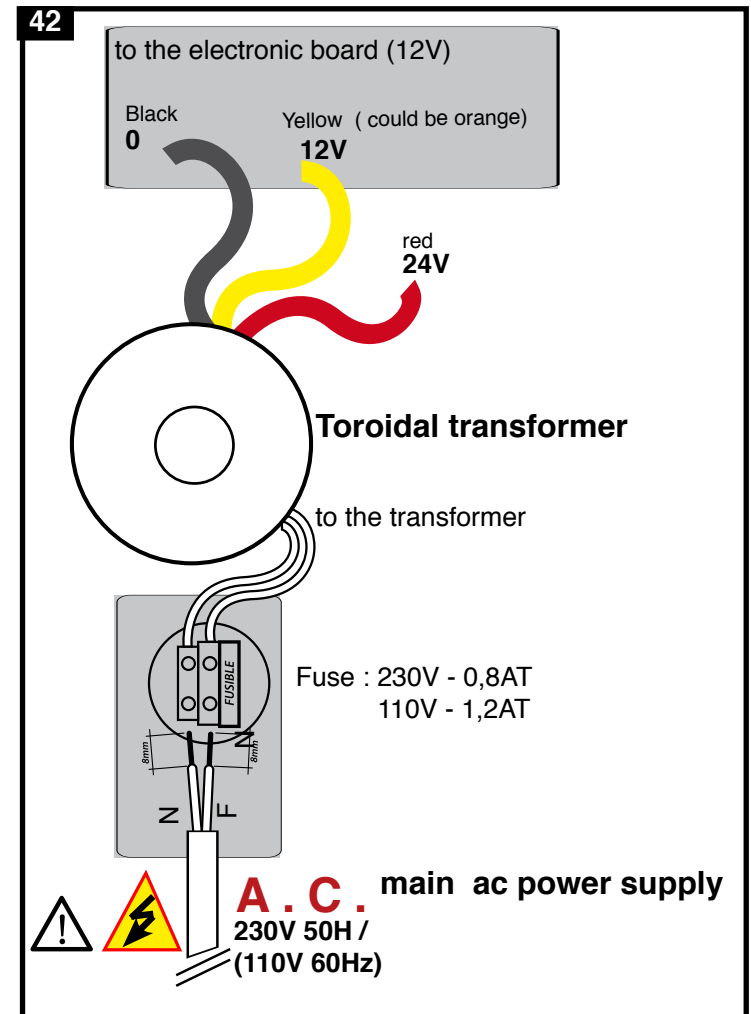


WARNING! To prevent damage during shipment, the transformer could be provided not pre-installed in the control panel. it is supplied with a fixing cone and screw to fix it to the bottom of the the control box.

See pic. 39/ 40: Place the transformer in it's correct position (A) and fix it to the bottom of the control box unit using using the special cone support and crew it.

Fix the power supply 230V / 110V connectors terminals with protection fuse in the position (B) of the bottom of the control bozx unit (see pic. 39-40).

Connect cables from the transformer to the circuit board. Remember:
The transformer has 3 ouput cables, but for 12V motors only balck and yellow cable must be connected. while red cable (24V must be used in stead of yellow cable only for 24V motor versions)
Black =0 + Yellow (could be orange)= 12V to be used for 12V motors
Black =0 + Red= 24V to be used for 24V motors





VIDEO -MANUAL



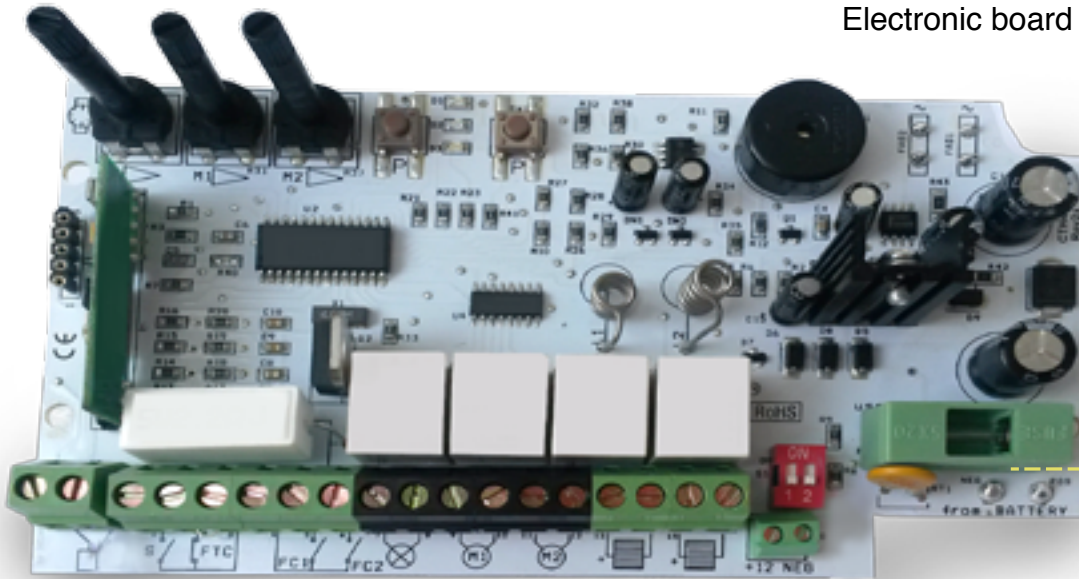
product page [www](http://www.ducatihomeautomation.com)



**GO GREEN!
ENERGY SAVING
DEVICE**

only **0,007A** stand-by power consumption

■ **CTH44**
Electronic board

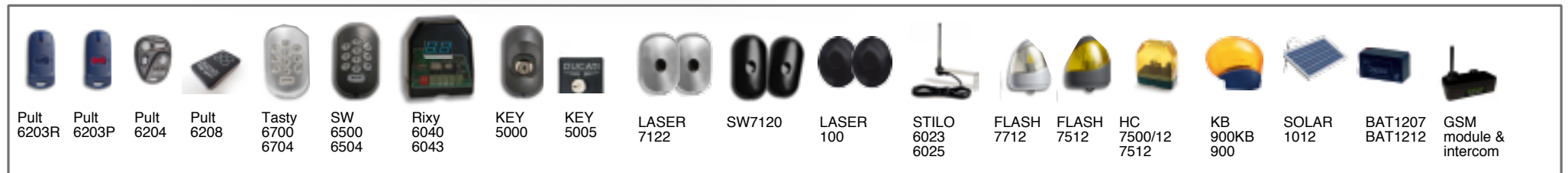


■ **KONTROL 7857**

Complete control unit: large control box with inner battery* storage compartment, CTH44 board and toroidal transformer



■ **Compatible accessories**



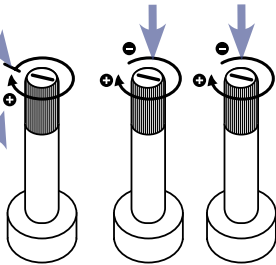


VIDEO -MANUAL

turn fully anti-clockwise to set "step-by-step" working mode = push to open / push to close

Turn clockwise to increase motor power

turn clockwise to set automatic closure working mode and set pause time up to 100 sec.



Time Power M1 Power M2

memorize / delate remote controls for full opening

P1

push to check the battery charge status (green= ok / yellow= need to recharge / red= out of power)

P2

Toroidal transformer 105W -0-12V output wiring to connectors backside of CTH44 without polarity to be respected.

Protection Fuse 0,8 AT (1,2AT)



Main AC power supply by 230V(110V)

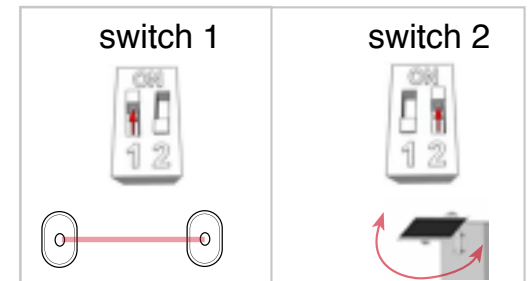
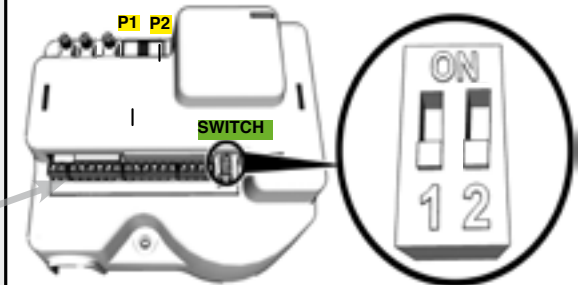
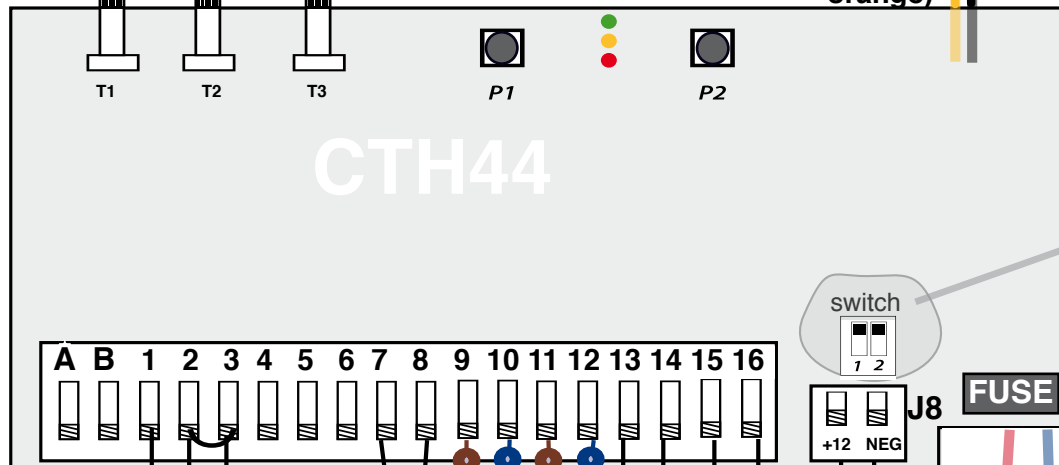
CTH44 can be powered also by AC main power supply, but requires always a back-up battery to be kept connected. AC will recharge the battery and keep it charged.

12V = (yellow/orange) 0 = (black)

Photocells bridge

Warning: If you do not connect any photocell (infrared safety sensor) keep the contact closed with the supplied electric bridge placed on connectors 2 & 3 (NC= Normally closed contact).

If the contact gets open and no photocells are wired the gate opener will open but not close.



switch 1 in ON position only while you need the photocell correct alignment warning signal. After finishing reposition the switch downwards.

switch 2 in ON position only while adjusting the solar panel position. After finishing reposition the switch downwards.

12V battery min. 7A

Warning: respect cable polarity to avoid damages on the CTH44 board when wiring the battery.

Blue cable = - negative / red cable= + positive

Warning

M1 = Motor installed on the wing that opens first

M2 = Motor installed on the wing that opens as second

WARNING :

If you want to add infrared safety sensor to a solar powered gate opener it is recommended to use reduced consumption photocells only (optionals). suggested models are DUCATI's SW7120 /LASER 7120 oder LASER 100 or LASER 200

⚠ WARNING ! All settings have to be made with gate in closed position

⚠ WARNING ! Before use, make sure the battery must be charged.

HOW TO CHARGE THE BATTERY:

A) Use a 12V battery charger with charge control* not supplied (you can purchase optional battery charger MPBAT).

B) Charge the battery directly by the CTH44 by 23V main AC power supply (through the supplied toroidal transformer) To do this: wire the 12V battery to the CTH44 by respecting polarity: red cable = + positive; blue cable = - negative
Connect a min.0.75 mm² cable with plug to the connectors placed before the transformer. Connect a cable with an electrical plug to the electrical terminals downstream of the transformer. Remove the protection cover of the control unit to identify the AC power connection terminals fixed on the bottom of the control unit (see page 34). Connect to an electrical outlet. Charge for about 16 h. As the battery is charged disconnect AC power supply.

⚠ Warning: after having connected a fully charged battery it is mandatory to make the board check the battery charge status by pushing **P2**.

Push P2 button to check the battery charge status. Make sure the green LED switches on to confirm the fully charged state of the battery. Refraining from this check may result in the non-functioning of the board which remains in a low charge battery alarm status.

CTH44 Wiring instructions

A Antenne cable

B Antenne ground

1/3 START NO (normally open) contact for full opening cycle

2 FTC safety infrared photocells NC (normally closed) contact

3 Common/ ground (for both Start and Photocells)

7/8 Blinking light 12V 10W max.

9 M1 motor (actuator) brown cable

10 M1 motor (actuator) blue cable

11 M2 motor (actuator) brown cable

12 M2 motor (actuator) blue cable

13 + 12V dc positive power input from solar panel

14 - 12V dc negative power input from solar panel

15 + 12V dc positive power input from 2° solar panel (optional not mandatory)

16 - 12V dc negative power input from 2° solar panel (optional not mandatory)

J8: + 12 dc positive power output for photocells/ services

NEG - 12V dc negative power output for photocells/v

Protection fuse 10AF

BLUE-RED cables to be connected to the battery poles. Warning: respect polarity!

BLUE= negative - / RED = positive+



Warning:

M1 = Motor installed on the wing that opens first

M2 = Motor installed on the wing that opens as second



Use on single wing gate: wire the motor as M1



Warning: use on gates opening towards outside (push-to-open)

You must reverse motor cable polarity (reverse blue-brown cable for M1 and same for M2)



VIDEO -MANUAL

PHOTOCELLS - FTC Contact how it works:

photocells are optional safety devices that are active only in the closing cycle of the gate. Interrupting the infrared beam during the closing maneuver will result in reverse and immediate reopening of the gate. **Warning:** If you do not connect any photocell (infrared safety sensor) keep the **FTC** photocell infrared contact closed by the supplied electric bridge placed on connectors **2 & 3 (NC= Normally closed contact)**.

If the contact gets open and no photocells are wired the gate opener will open but not close.

CTH 42 Push buttons and functions

P1 FULL CYCLE REMOTE CONTROL LEARNING push button to store or cancel

the radio transmitters (FOB) codes on

the electronic board. This button is used to memorize a remote control button used to command full opening cycles.

P2 BATTERY CHECK by pushing P2 you check the battery charge status.

Green LED on = Battery OK, Yellow LED on = need to recharge,

Red LED on= EMERGENCY STATE the board will not work correctly

Trimmer 1 (TIME) = potentiometer to set the “step by step” or automatic closure

Trimmer 2 (POWER M1) = actuator M1 power /obstacle detection sensitivity adjustment

Trimmer 3 (POWER M2) = actuator M2 power /obstacle detection sensitivity adjustment

LED-light warnings:

green LED on after pushing P2 = battery is fully charged

yellow LED on after pushing P2 = battery needs to be recharged

red LED on after pushing P2 = emergency state. battery out of power

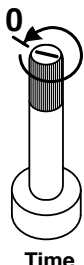
red LED on after pushing P1 = entered in remote control learning mode

WIRED COMMANDS:

START: by wiring a bistable NO switch you can command the full opening cycle by a wired command (key switch/ intercom button, or any additional additional button) both wings will open and both wings will close.



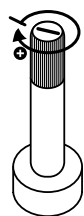
WORKING MODE



Time

“STEP-BY-STEP” working mode = with this setting a command will open the gate and a second command will command the closing of the gate. The gate will open and stop by reaching the mechanical end stop. During opening it is not possible to stop or reverse the gate. No commands are accepted until the gate is stationary open. The gate remains open until a new command will produce the closing of the gate. The command can be given by remote control or wired command (key-switch, or any other N.O. contact bistable switch)

To set this working mode turn potentiometer “TIME” fully anti-clockwise (position = 0)



Time

“AUTOMATI CLOSURE” working mode = With this setting a command will open the gate. The gate will open and stop by reaching the mechanical end stop. The gate remains open in the pause (pause time can be set up to max.100 seconds) after the pause time has expired the gate will automatically close. During opening and during pause time it is not possible to stop or reverse the gate. No commands are accepted during pause time.

To set this working mode turn potentiometer “TIME” clockwise, the more you turn in clockwise sense, the more you increase the pause time before gate will automatically close. max. pause time is 100 seconds.

MOTOR POWER ADJUSTMENT

By increasing motor power you reduce the obstacle detection sensitivity:

Motor M1: turn potentiometer **“POWER M1”** clockwise to increase the power

Motor M2: turn potentiometer **“POWER M2”** clockwise to increase the power

TIME SHIFT

(delay time in opening and closing between the 2 wings)

The delay time between wing 1 (M1) and wing 2 (M2) is automatic.

At the opening M1 starts to open first, and M2 follows M1 after about 3 sec.

Vice versa when closing.

In case M2 is installed on a wing opening with a greater opening angle than M1's gate wing, it may be needed to increase the standard time shift between the wings. Time shift adjustment is available upon request, but as it requires a software adjustment it can be overtaken only by the manufacturer. Contact the manufacturer for more informations.

REMOTE CONTROLS (FOB)

Warning: control board model CTH44 can storage up to 10 ducati rolling coded remote controls buttons. In case you need to use more than 10 remote controls, you can purchase an extra (optional) Ducati radio receiver (RIXY6040 or RIXY 6043). Warning: only original ducati rolling coded remote controls are compatible.

A-1) How to memorize a remote control button in the control board memory to command a FULL OPENING CYCLE (on 2 wings gate both wings will open and both wings will close/ on 1 wing gate the gate will fully open)



Warning: Gate must be closed and idle (check the RED LED is switched off).

- 1) on the main electronic board press push button **P1**
 - the red LED will switch on (to confirm you entered the learning mode)
- 2) release **P1**
- 3) Press the remote control button you want to use to operate your gate. Hold the remote control button pressed for at least 3-4 seconds
 - once the main electronic board has stored the remote control the main control's board red LED will blink shortly to confirm remote control button has been stored. Wait for the main board's red LED to switch off.
- 4) You can now use the stored remote control's button to command your gate manoeuver. (Same remote control's button will operate both opening and closing of your gate). Repeat this operation for all desired remote controls.

A-2) How to memorize a remote control button in the control board memory to command a PEDESTRIAN OPENING CYCLE

- 1) Press **P1**, and Keeping **P1** pressed, press also **P2**,
 - the red LED will switch on (to confirm you entered the learning mode)
- 2) release both **P1** and **P2**.
- 3) Press the remote control button you want to use to operate your gate for pedestrian opening and hold it pressed few seconds.
- 4) On the board the red LED blinks to confirm it has been stored.

B) How to erase all remote controls from the memory of your control board

If the electronic board's memory is full or if a remote control is lost, it is possible to erase the stored remotes controls from the memory of the electronic board (attention this process leads to a total loss of memory).

Thereafter, the remote controls must be re-stored on the board.

Warning: Gate must be closed and idle.

- 1) on the main electronic board press push button **P1** and hold it pushed for about 30 seconds until the red LED blinks to confirm all memory has been delated
- 2) release **P1**

Memorize again the remaining remotes you want to use by following instructions as in point A) here above. Repeat the procedure for each remote control

HOW TO CHECK THE BATTERY CHARGE STATE

When the battery is discharged, the system goes into a SAFETY PROTECTION SAFETY MODE and will not work until the battery is fully charged and the control gives a positive result. It is necessary to repeat the check every time after the battery has been charged, so that the board registers the new data and reset all functionality

- 1) Disconnect the solar panel cables
- 2) Push P2 button to check the battery charge status. You will have a visual and acoustic response:

Red LED lights on with beep = battery discharged: the voltage is lower than 11.2V

Yellow LED lights on = battery partially discharged: the voltage is between 12.2 -12.9V

Green LED lights on = battery fully charged: the voltage is greater than 12.9V.

Once done, re-connect the solar panel.

WARNING:

In case the battery, despite being correctly recharged, is never sufficiently charged, it may be exhausted. in this case replace it with a new battery

DEEP SWITCH



SWITCH 1 = ON position: activates the acoustic-visual help for the correct infrared sensor alignment

green LED + quick acoustic buzzer = the photocells are aligned correctly.

red LED / intermittent acoustic buzzer= the photocells are misaligned

When finished, turn the switch to the lower position!



SWITCH 2 = ON position: activates the acoustic-visual help for the correct solar panel alignment

green LED + = SOLAR panel aligned correctly.

yellow or red LED / intermittent acoustic buzzer= SOLAR panel is misaligned

When finished, turn the switch to the lower position!

Caution: For this procedure, the battery must be disconnected and the test carried out only with the connected solar module.

After completion, reconnect the battery.

Power supply by battery and solar panel

Use a fully charged 12V min.7A battery

Use the 2 wires welded to the backside of the control board CTH44 to connect the battery to the board.



Warning: make sure to respect the correct polarity:

Blue (or black) cable to the negative pole of the battery;

Red cable to the positive pole of the battery .

Connect a solar panel 12V min.10W to the board CTH44 by means of bipolar (outdoor use min. 0,5mmq cable) with the utmost attention to the polarity of the terminals:

connector n° 13 + solar panel positive

connector n° 14 - solar panel negative

The solar module should be directed towards the south (see also notes installation and positioning) and in a well-lit place. Avoid shadow zones, which reduce the load capacity considerably.

It is recommended to install the solar panel not over 10 meters from the electronic board to prevent unnecessary electrical losses.

The following table shows an estimated calculation of the autonomy in non-ideal weather conditions (winter cloudy weather) by use of a 10W solar panel and 7A battery.

The autonomy increases in case of use of to larger capacity battery (ex. 12V 12A) and larger solar module (ex. 12V 20W). Instead of using a larger solar module, on CTH44 it is possible to add a second solar panel to increase the charge capacity.

connector n° 15 + 2° solar panel positive

connector n° 16 - 2° solar panel negative

WARNING: by increasing the watt of the solar module, the battery capacity must also be increased.

For example: if using 20W 12V solar panel requires a 12V min 12V battery.

NOTE: you can also wire main ac power supply through a switch. The AC power supply can be switched on to recharge the battery in case of needs, DO not power the board by both solar panel and AC power supply at same time.



TABLE-	GATE	Stand-by consumption (A)	daily consumption	Consumption for a complete cycle (open+ close), (A)	Suumption of total n° of daily cycles (open+close)	total daily consumption (A)	average charge of a 10W 12V solar panel (A /hour) in non ideal weather	hypotesis of lixght exposure (hours/per day)	Total recharge capacity (A)	balance between consumption and recharge
CTH44	1 wing	0,007	0,16	0,012	60	0,88	0,3*	5	1,5	+ 0,62
	2 wings			0,024	50	1,36				+ 0,14