CTH48 2.0

Electronic board for 12V dc swinging gate openers

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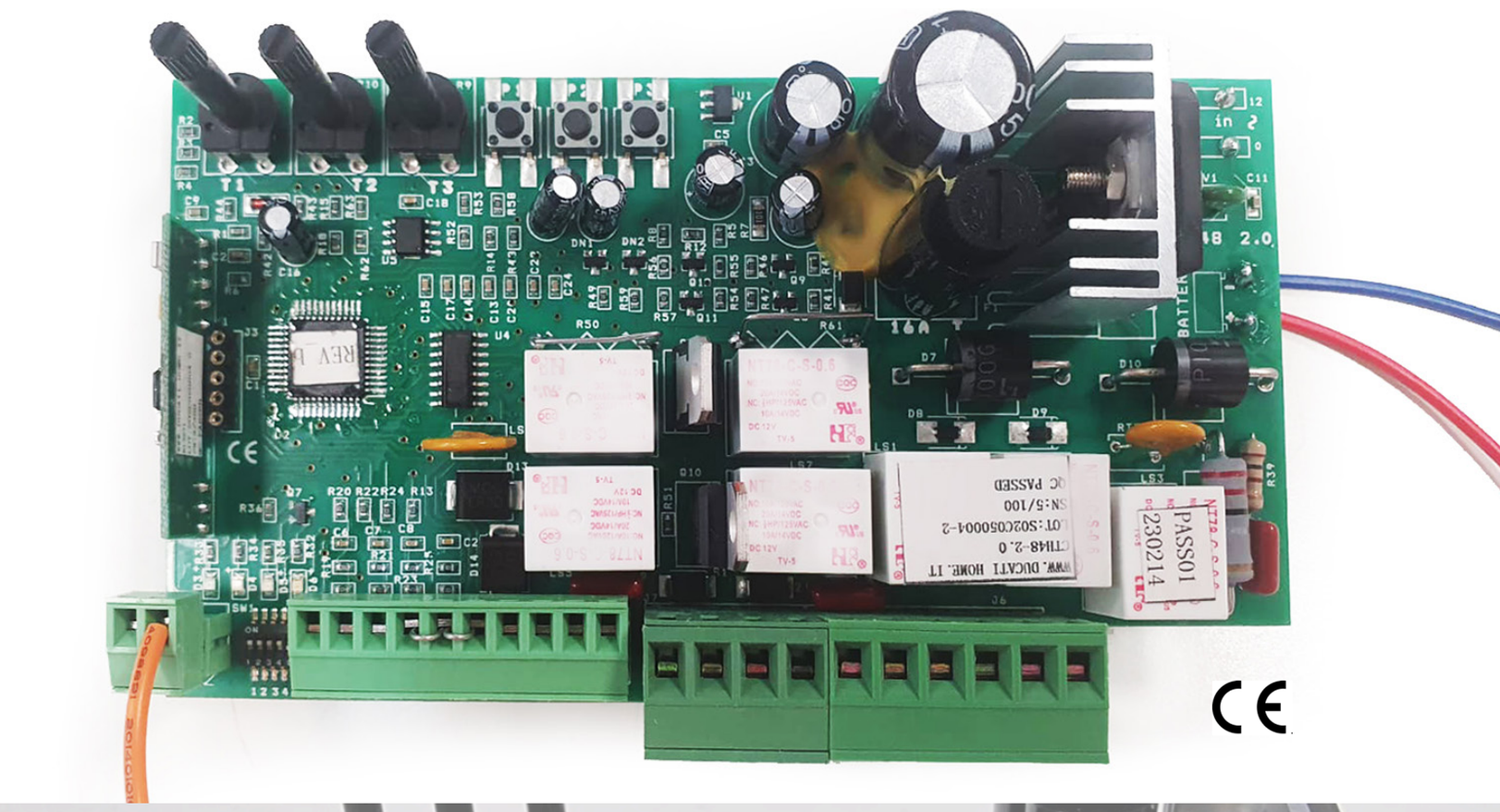
Wiring and settings manual



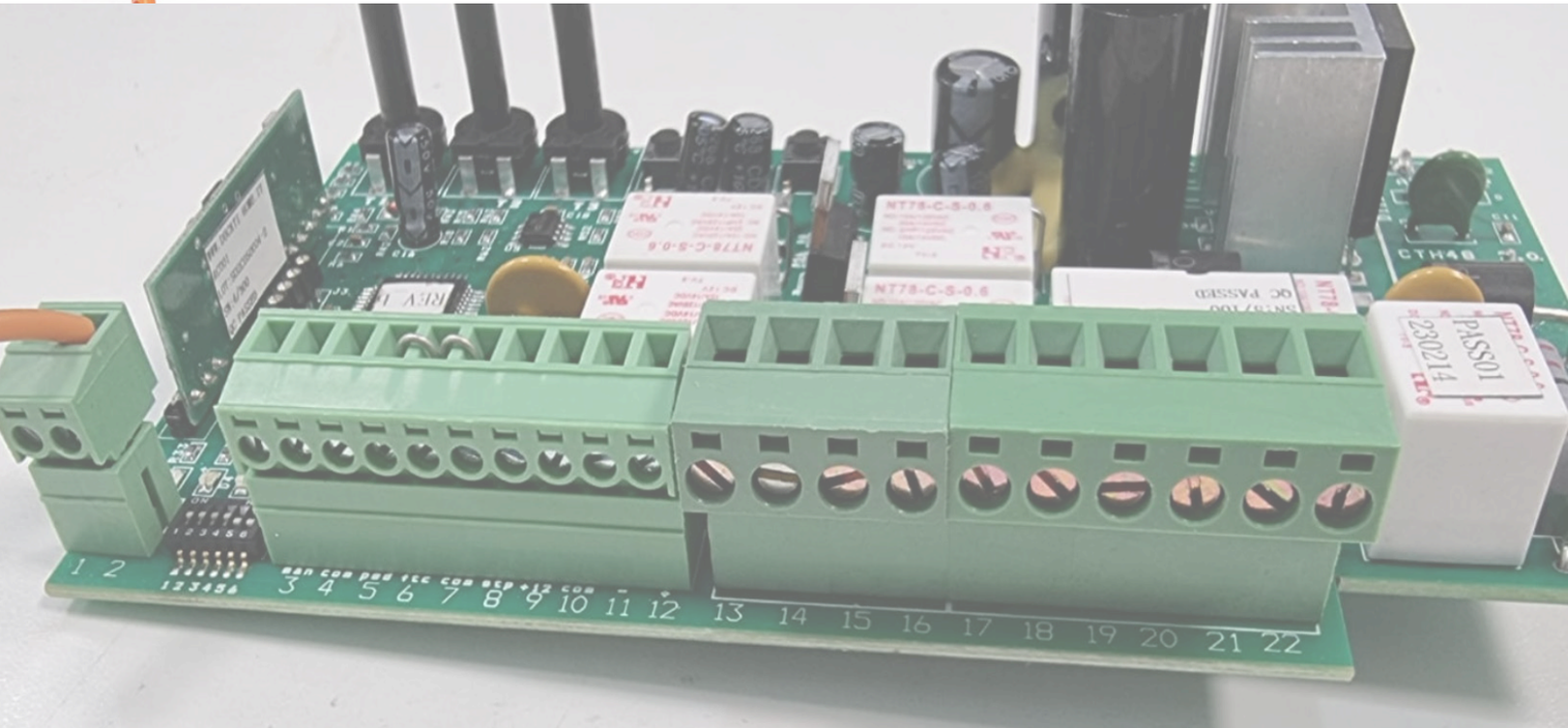


Table of Contents

CTH48 2.0 Feartures:

Super Energy Saving System: only 0,007A stand-by consumption

1) Available in 2 versions: 12V or 24V:

12V can manage 12V dc actuators to operate 1 or 2 leaf swinging gates thrust up to 1200N/120W

24V can manage 24V dc actuators to operate 1 or 2 leaf swinging gates thrust up to 2400N/240W

2) Can work by 3 types of power supply:

mains power supply AC110-230V 50-60HZ

mains AC power supply + BACK up battery in case of power failure

battery and solar panels for 100% autonomous use

3) 3 types od commands availables

Full Opening

Pedestrian opening (adjustable)

Emergency STOP

4) Ducati rolling code radio receiver on-board 2 channels

1 channel to memorize remote control button to operate full maneuver

1 channel to memorize remote control button to operate pedestrial access partial maneuver

5) Working mode

Step-by-step

Automatic closure (adjustable timing)

Semi-automatic closure (adjustable timing)

6) Outputs for:

Blinking light; Courtesy timed lighting or gate status signal; electrick lock

7) Safety:

ARS system: automatic reverse on obstacle detection in compliance with UE EN12453-2017

Emergency beam/ infrared safety sensors/ photocells NC input

8) End Limits:

Automatic pressure detection

9) Soft Stop

high speed (1,5-2cm/sec) with deceleration at the end of the stroke for soft approach of the leaf

10) Motor power adjustment

can increase or decrease motor power and sensitiveness on detecting an obstacle.

11) Gates wings lag time adjustment in closing

adjustable time lag between starting

12) Electric lock function

closing maneuver with extra push to trigger the electric lock even on very long gates

13) Strong wind maneuver

maneuver command in windy situation

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QUICK START GUIDE

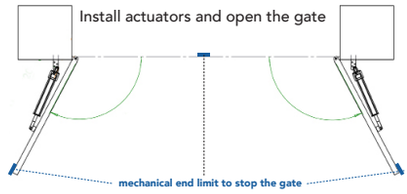
WARNING! BEFORE TO START MAKE SURE THAT:

A- **Actuators must have already been mechanically installedon the gate (see actuator's installation instructions)**

B- **Attention: the gate leaves must stop on a mechanical stop Make sure that the gate structure has mechanical limit stops fixed to the ground to stop the gate leaves both in the open and cloded gate position.**
Alternatively, where provided, make sure that the actuator model in use has a mechanical end limits stop built into the actuator and check that the stop is correctly adjusted to stop each gate leaf in the correct end position.

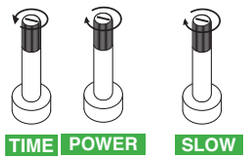
C- **The gate must be in the fully OPEN gate position**

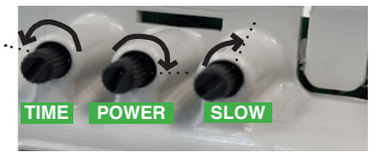
D- **actuators must be locked**



1°) make sure that potentiometers are in following positions:

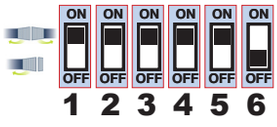
- T1 potentiometer (TIME) is fully turned counterclockwise
- T2 potentiometer (POWER) is fully turned clockwise
- T1 potentiometer (SLOW/SOFT STOP) is turned +30° clockwise

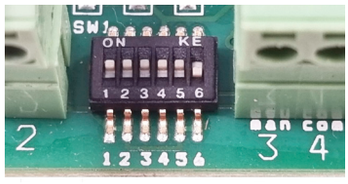




2°) make sure that deep switches are in the following positions:

- switch n° 1 in ON position for 2 wings gate / in OFF position for 1 wing gate
- switch n° 2 in ON position
- switch n° 3 in ON position
- switch n° 4 in ON position
- switch n° 5 in ON position
- switch n° 6 in OFF position



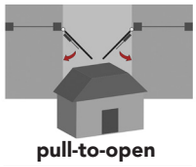


3°) Wire the motor cables to the board respecting cable polatity:

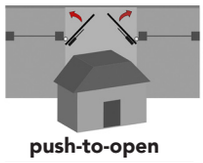
M1= actuator installed on gate leaf that opens first
M2= actuator installed on gate leaf that opens as second

Polarity for gates opening towards inside (pull-to-open)
13= M1 blue cable
15= M1 brown cable
16= M2 blue cable
17= M2 brown cable

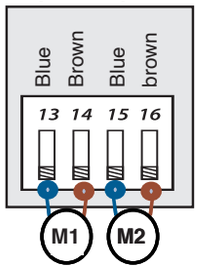
Polarity for gates opening towards outside (push-to-open)
13= M1 brown cable
15= M1 blue cable
16= M2 brown cable
17= M2 blue cable

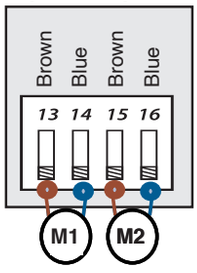


pull-to-open



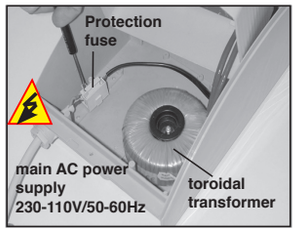
push-to-open





4°-A) FOR Openers powered by mains AC power supply:

4°-A-1) Remove the fuse upstream of the AC 110/230V 5x20 1.2AT transformer from the fuse holder
4°-A-2) Connect the mains AC power supply cables to the AC terminal block
4°-A-3) Insert the previously removed fuse on the fuse holder
4°-A-4) The gate wings will close until the gate is closed



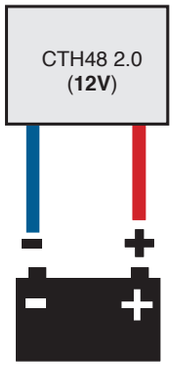
On 12V boards: from transformer to CTh48 2.0 board wire black+ yellow cables
On 24V boards: from transformer to CTh48 2.0 board wire black+red cables

4°-B) For 12V openers powered by battery and solar panel:

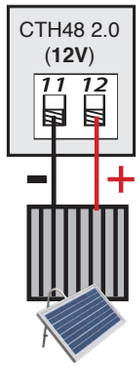
On 12V electronic boards (CTH48 2.0):
4°-B-1) Check the battery voltage and make sure battery is fully charged.
Warning. Use only lead-acid battery 12V min. 7A
4°-B-2) Wire the battery to the board by the 2 wires (blue /red cables that are welded on CTH48 2.0 electronic board).
Warning! Respect battery wiring polarity: red cable= += positive / blue cable= - = negative

4°-B-3) as the board is powered the opener starts closure maneuver until the gate is closed reaching the mechanical end limit.
Now your gate opener is ready to operate!

Push the top left button on your remote control-FOB to command a new maneuver: the gate will open. Note: remote controls that are supplied in a kit are already memorized on the electronic board In case you need to memorize a new remote control follow instructions described further in this manual.
Check that the gate starts by high speed, slow down before reaching the mechanical end limit and stops after the gate leaf has reached the mechanical end limit installe don the ground. Push again on remote control to close the gate before adding any further accessory as solar panel; key switch, blinker or safety photocells and/or edit settings described further in this manual



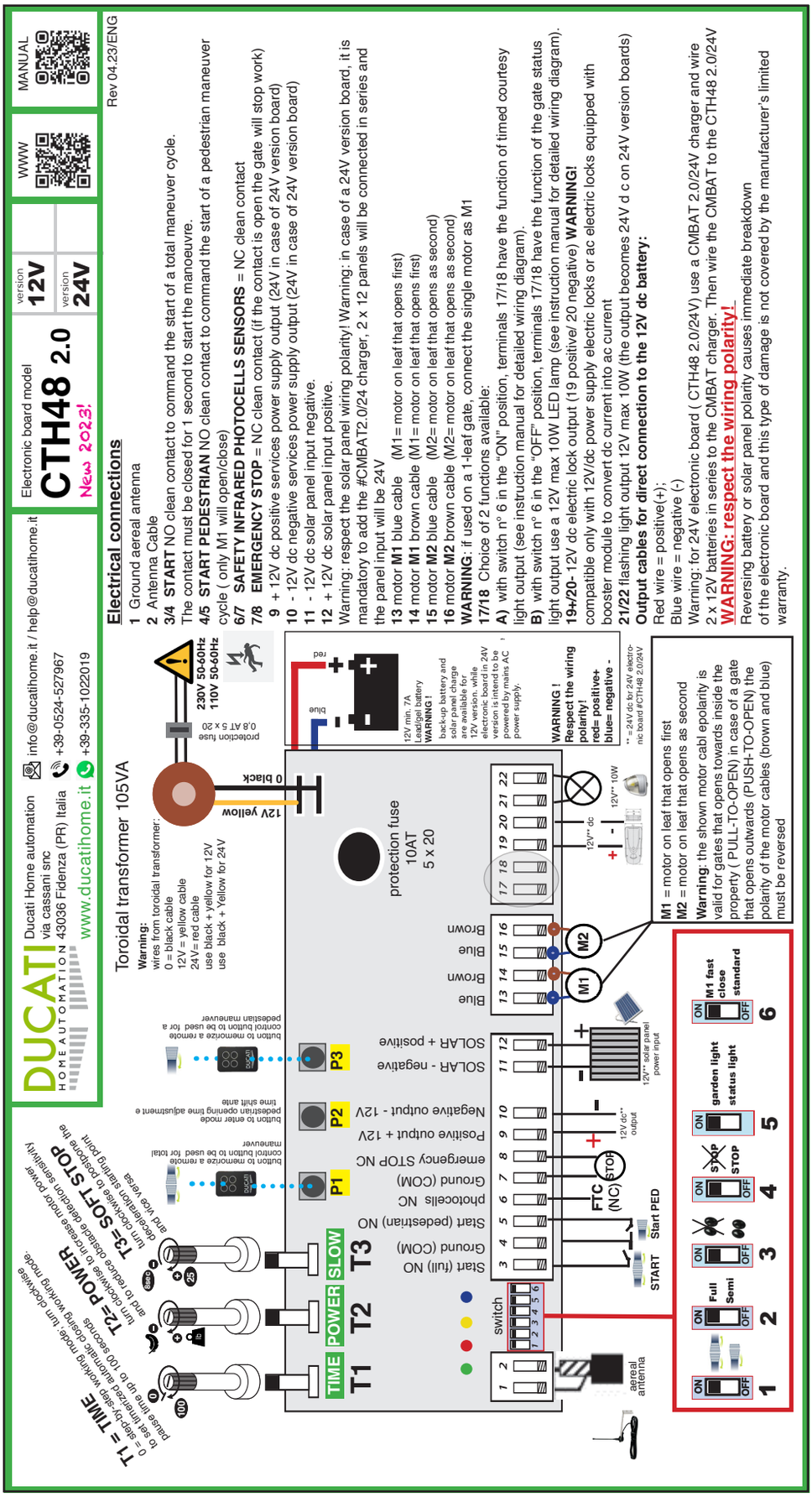
lead acid 12Vdc battery
blue cable =negative -
red cable = positive +



solar panel 12V min10W max 20W solar panel
n°11 =negative -
n°12 = positive +

Label with quick wiring diagram

to cutt-out and apply on the back of your control box unit cover



⚠ Important safety instructions. ⚠

Follow all instructions, as incorrect installation can lead to serious injury.
WARNING: Before proceeding, read and understand the general warnings for the user.

The product must be destined only for the use for which it was expressly designed and any other use is to be considered dangerous. • The manufacturer cannot be held responsible for any damage caused by improper, incorrect or unreasonable use. • The product in question is expressly designed to be assembled on partly completed machinery and/or equipment for the purpose of building a machine governed by the Machinery Directive 2006/42/EC. • The final installation must comply with the Machinery Directive 2006/42/EC and with the European reference standards in force. • The manufacturer declines all responsibility for the use of non-original products; this also implies the forfeiture of the guarantee. • All the operations indicated in this manual must be carried out exclusively by expert and qualified personnel and in full compliance with the regulations in force and on a structure built in a workmanlike manner and perfectly compliant with the regulations in force in the area. The structure on which the product will be installed must have a certificate of safety and compliance with the regulations in force in the area. • The preparation of the cables, the installation, the connection and the testing must be carried out observing the rule of the art, in compliance with the standards and laws in force. • During all installation phases, make sure you operate without voltage. • All the components (e.g. actuators, photocells, sensitive edges, etc.) necessary for the conformity of the final installation in accordance with the Machinery Directive 2006/42/EC and the reference harmonized technical standards Verify that the indicated temperature range is suitable for the place of installation. • Make sure that, in the place foreseen for installation, the product is not wetted by direct jets of water (irrigators, pressure washers, etc.). • Provide an adequate disconnect device in the power supply network and in accordance with the installation rules.
• Adequately delimit the entire site to prevent access by unauthorized persons, especially minors and children. • It is recommended to use suitable protections to avoid possible mechanical dangers due to the presence of people within the range of action of the automation. • Electric cables must pass through suitable pipes, ducts and cable glands in order to guarantee adequate protection against mechanical damage.
• Electric cables must not come into contact with parts that can heat up during use (for example: motor and transformer). • Before proceeding with the installation, check that the guided part is in good mechanical condition, and that it opens and closes correctly. • The product may not be used to automate a guided section including a wicket door, unless the drive can only be activated with the wicket door in the safe position. • Ensure that entrapment between the driven part and surrounding fixed parts by movement of the driven part is prevented. • All fixed controls must be clearly visible after installation, in a position where the driven part is directly visible, yet away from moving parts. In the case of a maintained action command, this must be installed at a minimum height of 1.5 m from the ground and must not be accessible to the public. • If not already present, apply a permanent label describing how to use the manual release mechanism near its operating element. • Make sure that the automation has been properly adjusted and that the safety and protection devices, as well as the manual release, work correctly. • Before delivering to the user, check the conformity of the system with the harmonized standards and with the essential requirements in the Machinery Directive 2006/42/EC. • Any residual risks must be signaled using suitable pictograms positioned clearly in view and must be explained to the end user. • Position the identification plate of the machine in full view upon completion of the installation. • If the power cable is damaged, it must be replaced by the manufacturer or by the authorized technical assistance service, or in any case by duly qualified personnel, to avoid any risk.
• Keep this manual in the technical file together with the manuals of the other devices used to build the automation system.
• It is recommended to deliver all the user manuals relating to the products that make up the final machine to the end user.
• In the event of product malfunction, stop using it and contact customer service at https://www.ducatihome.it or at the telephone number indicated on the website

DISPOSAL OF THE PACKAGING
The packaging components (cardboard, plastics, etc.) are similar to solid urban waste and can be disposed of without no difficulty, simply by carrying out the separate collection for recycling.
Before proceeding, it is always advisable to check the specifi c regulations in force in the place of installation.
DO NOT DISPOSE IN THE ENVIRONMENT!

DISPOSAL OF THE PRODUCT
Our products are made from different materials. Most of them (aluminum, plastic, iron, electrical cables) are comparable to municipal solid waste. They can be recycled through collection and separate disposal in the centres authorised.
Other components (electronic boards, transmitter batteries, etc.) may instead contain polluting substances.
They must then be removed and handed over to companies authorized to recover and dispose of them.
Before proceeding, it is always advisable to check the specifi c regulations in force in the place of disposal.
DO NOT DISPOSE IN THE ENVIRONMENT!

CTH48 2.0 technical data (standard 12V version)

Technical data and features	**CTH48 2.0 (equips the KONTROL 9048 2.0 control unit)**
Use	made to manage 12V dc actuators to automate a swinging gate with 1 or 2 leaves
Mains AC Power supply	√ 12V ac/dc by means of a toroidal transformer 105W input AC 230V 50/60Hz or AC110V 50/60Hz transformer output 12Vac (yellow+ black cable). A rectifier on the board transforms the AC current into DC current. **Warning: for optimal performance it is recommended to always keep a backup battery battery wired to the system**
power supply from emergency battery for autonomous use during main AC power supplu power failure (black-out)	√. we recommend the use of a 12V 7A or 12V 12A lead- acid battery which can be housed inside the compartment of the control box unit (CTh48 is ompatible with commercial batteries) The 12V battery charger management system is integrated on board
Power supply by battery and solar panel	√. 12V max 20W solar panel can be wired directly to the electronic board input connecotors. The battery will be automatically recharges rby the 12V 10W or 20W solar panel (on-board battey charger management). The solar panel autonomously recharges the back-up battery (12V min.7A) and do not require any wiring to the mains AC power supply. Provides 100% autonomous use from renewable energetical sources, protecting the environment and savings on bills
stand-by absorption	0,008A
Anti-crushing safety system	√ **Obstacle detection safety system** in compliance with the EU EN12453. 2017 norms.
Radio receiver	√ Ducati rolling coded radio revceiver wuth 2 radio receiver channles: 1channel to store a remote control button that commands the full manoeuvre. 1 channel to store a remote control button to comman the pedestrian opening maneuvre. compatible with any Ducati rolling code radio remote control
Internal memory capacity for storing remote controls	Maximal storage capacity= 48 buttons. They can be stored indifferently on the 1st or 2nd radio reception channel. AAttention: memory position means 1 occupied position for each memorized button of a remote control
SOFT STOP soft approach of the door at low speed	√. Always active. both opening and closing. during travel at low speed the blue LED remains lit
Reverse direction in case of contact with an obstacle	√. during the initial phase of the manoeuvre, at high speed, in the event of contact with an obstacle, the gate reverses the direction of travel. during the final phase of the low speed maneuver (SOFT STOP) in case of contact with an obstacle, the gate stops.
Pedestrian opening cycle (partial opening of only 1 door) to allow pedestrians transit only)	√. It can be controlled both by radio control and by wired control (e.g. key switch, intercom button or similar)
Compatibility with use of electric lock	√. electric lock power output: 12V dc. compatible with 12V DC electic locks or 12V AC electric locks with booster module (transforms dc current into ac current).
Compatibility with the use of safety photo-cells	√. NC contact input (normally closed) the photocells are active during the closing cycle and produce the immediate reopening of the gate
Compatible with the use of a button for an emergency TOTAL STOP	√. NC contact input (normally closed) the emergency stop contact stops the gate and disables any function for the entire time the contact remains open.
Compatible with the use of a timed courtesy light	√ courtesy light power output 12V max 10W. The light will automatically turn on when the gate starts and will remain on for 40 seconds after the end of the manoeuvre. It is also possible to connect courtesy lights with 230V power supply using a power relay and the appropriate diagram
Compatible with the use of a remote light that signals the status of the gate	√
Compatible with the use of wired control systems such as key switch / push button/ GSM command/Wifi command to operate total	√ it is possible to connect in wire (use a bipolar cable min. 0.3mm2) control devices for starting the gate operation such as, for example, key switch, button, intercom button, control devices with Wi-fi system, GSM. Attention: clean contact input normally open. to command the start of the maneuver cycle the contact must be closed for 1 second only
anti-wind man-operate command	√. by keeping the START contact closed with the hold-to-run command, the forced maneuver is commanded with maximum motor power and without anti-obstacle amperometric control. This maneuver is only permitted with a man present who watches over the gate during the entire maneuver and aimed at concluding the maneuver in conditions of strong gusts of wind
AVAILABLE ADJUSYTMENTS	
Motor power adjustment during SOFT STOP (final part of the maneuver at low speed)	it is possible to increase or decrease the thrust force by rotating the potentiometer T2. In this way you can set the sentsitiveness in the event of an impact on an obstacle to comply with the anti-crushing EU norms. This adjustment affects the low speed stroke (SOFT STOP) which must correspond to the area of greatest risk of crushing foreseen by the EN12453- standards
Adjustment of the starting point of the SOFT STOP phase (deceleration)	It is possible to advance or postpone the beginning of the low speed maneuvering phase (SOFT STOP) by rotating potentiometer P3 in order to adapt the maneuver to the individual system. The slowdown occurs at least 8 seconds after the start of the maneuver and can be postponed up to max. 25 seconds from the start of the manoeuvre. The SOFT STOP function intervenes both in opening and closing. Pay attention that the slowdown occurs at the points where the regulation requires carrying out pressure tests with a specific dynamometer to certify the system in compliance with the EN12453-2017 norms
Gate wings lag time adjustment during in closing, to adjust the delay between M2 and M1 start in closure maneuver (only for gates with 2 swing leaves)	The phase shift between the start of motor M1 and M2 during opening is fixed. the phase shift of the leaves during closing is set by default and is adjustable with a range from 0 to 30 seconds.
Adjustment of the width of the pedestrian opening manoeuvre (timed adjustment)	Pedestrian opening is a time-controlled manoeuvre. by default the M1 leaf will open for 4 seconds. during this time it will be able to make a variable opening angle depending on the structure and the fixing position of the actuators. However, it is possible to manage and adjust the working time during pedestrian maneuvering as desired in order to open the M1 leaf with more or less degrees. The maximum time that can be set is 26 seconds.
WORKING MODE	
Step by step	√ lin step-by-step mode the impulses given by the radio control or by the wired device, both for the total maneuver and for the pedestrian manoeuvre, produce the following sequence: 1 impulse opens, 1 impulse during the movement stops, 1 impulse closes
FULL AUTOMATIC closing	√ In FULL-automatic closing mode, the impulses given by the radio control or wired device, to control the total manoeuvre, produce the following sequence: 1 impulse opens until the door reaches the mechanical end stop, it remains open and counts the set pause time (max. 100 sec.) then it closes automatically. During opening and pause time, it does not accept further commands, during closing a further impulse reopens the gate Attention for the pedestrian maneuver cycle: it is not possible to interrupt the movement either during opening or closing... the door opens, reaches the stop, stops, counts the time and then closes automatically after the set pause time (from 1 to 100 sec)
SEMI-AUTOMATIC closing	√ In SEMI-automatic closing mode, the impulses given by the radio control or wired device, to control the total manoeuvre, produce the following sequence: 1 impulse opens until the door reaches the mechanical end stop, gate remains open and counts the set pause time (max. 100 sec.) then it automatically closes. Both during opening as during the open pause, a command causes the gate to close immediately, while during closing a further impulse reopens the gate. Attention for the pedestrian maneuver cycle: it is not possible to interrupt the movement either during opening or closing. the door opens, reaches the stop, stops, counts the time and then closes automatically after the set pause time (from 1 to 100 sec)

Model	CTH48 2.0
Mains Power supply (V-50/60Hz)	230V -550/60Hz AC or 110V 50/60Hz AC check the the toroidal transformer in use
Motor power supply (V)	12V DC
Power supply to the electroni cbaord (V)	14-15 AC (form 105VA toroidal transformer)
Stand-by consumption (A)	0,008A
TWorking temperature(°C)	-20°C / + 55°C
Cycles/hour	120
Consecutive cycles	no limits
Average life (cycles)**	1.000.000

**The average life of the product is purely indicative and estimated in consideration of compliant conditions of use, installation and maintenance. It is also influenced by further factors, such as climatic and environmental conditions.

CONTROL UNIT

The CTH48 2.0 board is housed in the #PLBOX 812 model container for external use which also offers a compartment for housing a 12V lead-acid battery from 7A up to 12A
Inside the PLBOX 812 container, the board can be protected by the inner protective cover #PLBOX.

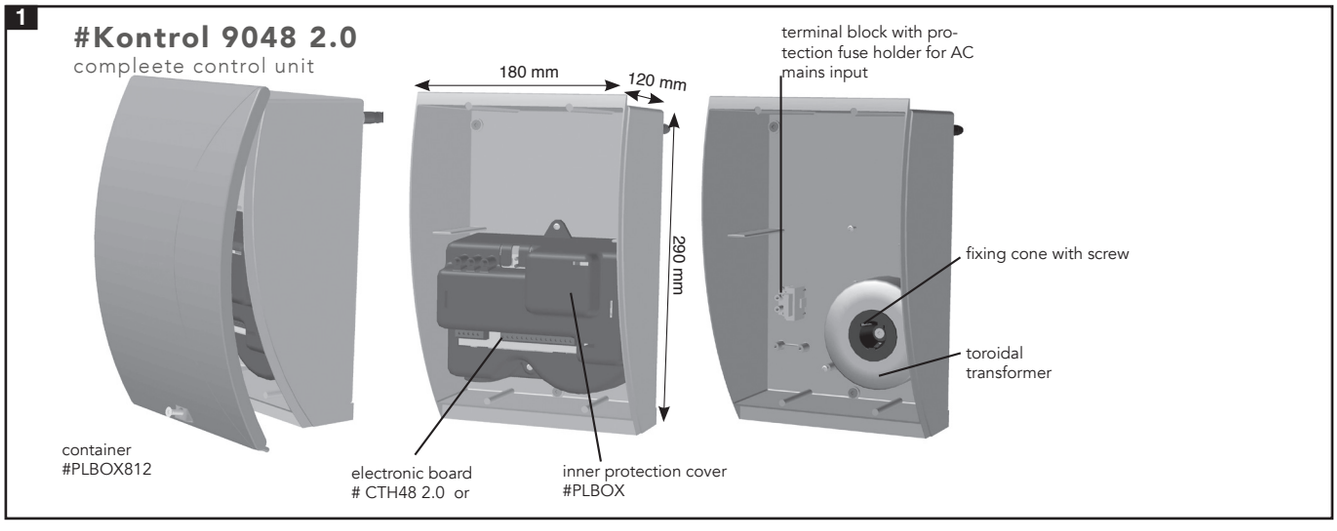
PREPARATIONS

Prepare insulated ducts for the passage of cables for the motors and accessories. Lay the system power cable (from the AC network and/or from the solar panel depending on the system) up to the position where you intend to fix the control unit
Warning: the connection to the AC 230V network must only be carried out by specialized electrician technicians.
Do not connect the AC power yourself: Danger of DEATH!
In the case of a system powered by a solar panel where you also want to maintain the possibility of being fed from the AC mains, it is recommended to use a switch upstream of the AC power input.
For the connection of the actuators it is recommended to use suitable junction boxes.
For gates with 2 swing leaves it is always necessary to prepare a suitable underground duct.
WIRING: for the connection of the actuators it is recommended to use a bipolar cable with a double external sheath of min. 1.5 sq mm
for accessories such as flashing light, key selector, other control switches, we recommend the use of a bipolar cable with a double external sheath of 0.3/0.5 mm2. For connection to photocells it is necessary to provide cables with a section of 0.3 mmq and more precisely a bipolar cable for the transmitter photocell 4-wire cable for the receiver photocell.
For the solar panel, a bipolar cable of min. 1.5 sq.mm is recommended if the panel is fixed at a maximum distance of 2m. in case of greater length, a cable with a larger section proportional to the length of the wiring must be used in order to limit the electrical resistance and the dispersion of energy.
Warning: provide a power supply disconnect device that can be activated in the event of an emergency
Warning: the control unit and activation commands must be placed in a place and at a height from the ground, which does not allow access and use by unauthorized third parties or minors.

WALL FIXING OF THE CONTROL UNIT

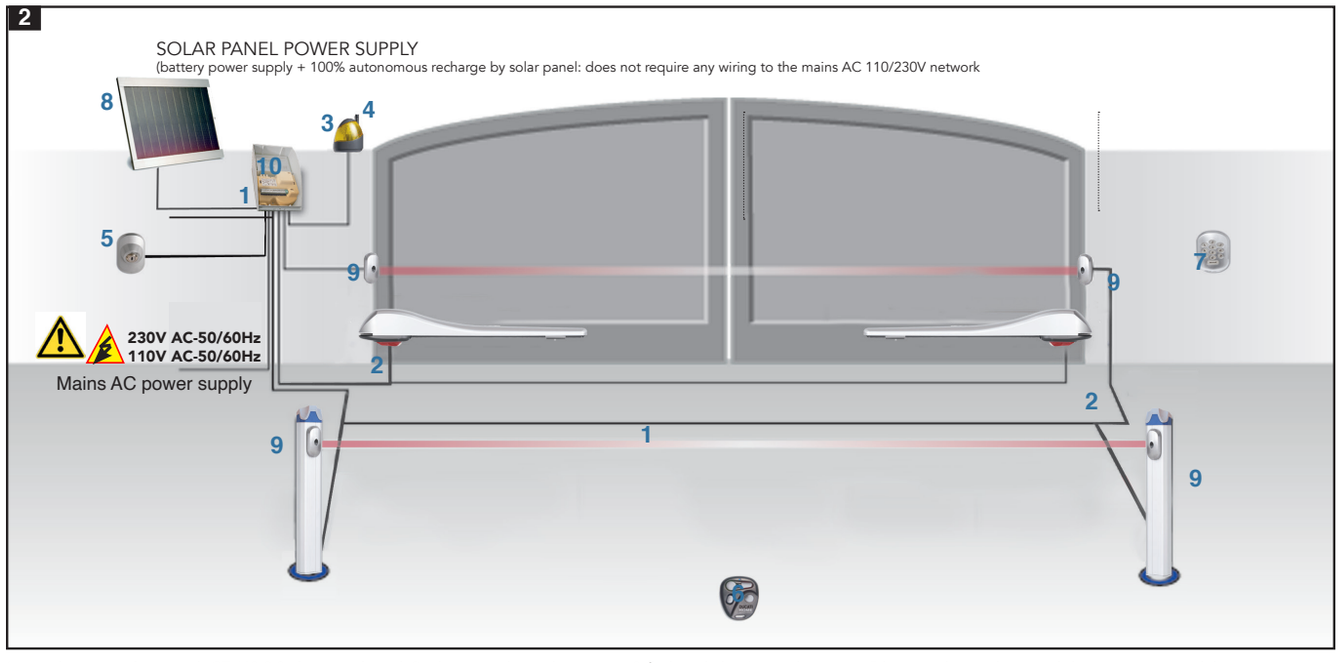
Fix the bottom of the PLBOX 812 container to the wall using suitable screws and dowels (not supplied)
It is advisable to seal any holes to prevent infiltration of water, humidity, dust and insects.
For the passage of wiring cables to the motors and other accessories it is necessary to drill the lower part of the PLBOX 812
It is recommended to use special cable glands or cable clamps (not supplied).
See fig. 1 complete "Kontrol 9048 2.0" control unit

1



EXAMPLE OF INSTALLATION ON A 2 SWINGING WINGS GATE

2



1-complete control unit with CTH48 2.0 electronic board; 2- electromechanical actuators; 3-flashing light; 4-aereal antenna; 5-key switch or other wired device to command the opener; 6-Ducati Rolling code radioremote control; 7-radio keyboard; 8-Solar panel; 9-safety photocells; 10-battery.
Note: the diagram presents a hypothesis of a system with a series of accessories by way of example: this diagram does not refer to any exact and predetermined kit composition

Power supply: by AC 230V or 110V mains

The board can be powered by the mains AC power supply by the specific 105VA toroidal transformer.
The use of toroidal transformers with double insulation guarantees maximum reliability and safety from sudden changes in voltage and ESD and durability over time. The toroidal transformer must be fixed to the base of the control unit container using the special cone and screw supplied.

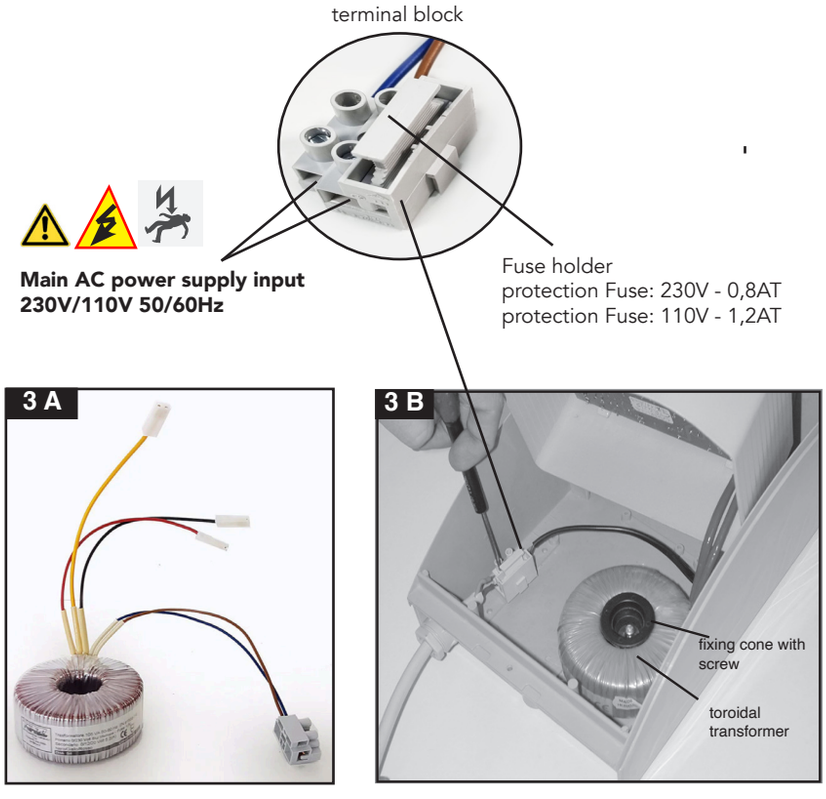
TOROIDALTRANSFORMER : transformer can be supplied in 2 alternative version:
model TRAfor 110V 50-60Hz AC power supply or for 230V 50-60Hz AC power supply
input cable for AC mains AC 230V-110V 50Hz power supply wiring
output cables for electronic board power supply: where:
black wire= 0;
yellow wire = 12V ac*;
red wire = 24V ac*

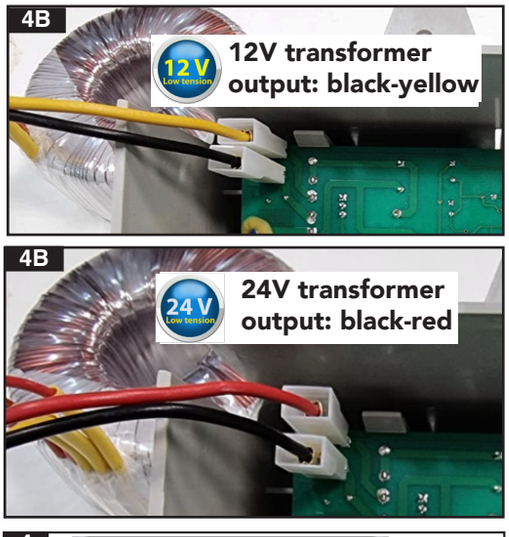
CTH48 2.0: for 12V openers: power the board from the toroidal transformer using the black and yellow wires (12V* ac)
CTH48 2.0/24V: for 12V openers: power the board from the toroidal transformer using the black and yellow wires (24V* ac)
*= nominal values)

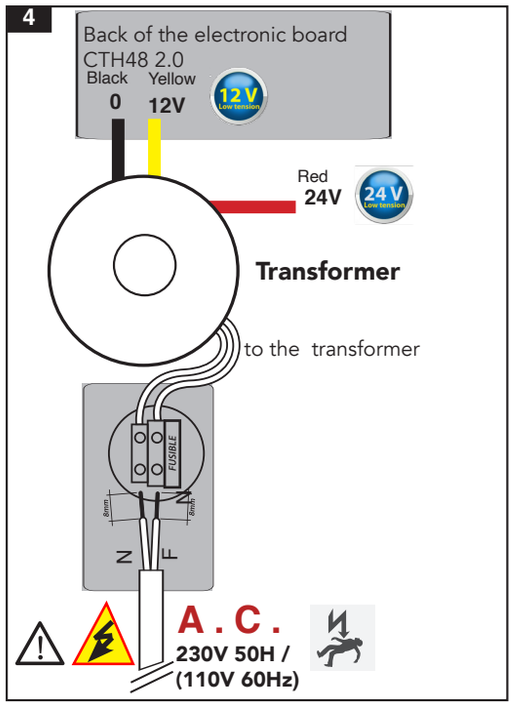
The power output cables from the transformer must be connected to the special male faston connectors located on the back of the electronic board. No polarity to respected.

Warning! Safety Recommendation: danger to life. The connection of the 230V high voltage mains power supply (110V on request) must be only performed by a certified electrician!
The power cable from the AC mains must be connected upstream of the toroidal transformer to the protection terminal block/fuse holder fixed to the base of the PLBOX812 container, as shown in the following images #3 and #4

The power cable from the AC mains must be connected upstream of the toroidal transformer to the protection terminal block/fuse holder fixed to the base of the PLBOX812 container, as shown in the following images #3 and #4







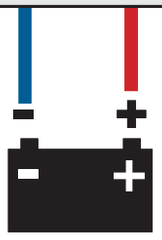
WARNING!
To avoid damage in transit, the transformer may be shipped not pre-installed in the control bix
In such case it will be necessary to fix the transformer to the base of the #PLBOX 812 container using the appropriate support cone with relative screw.

The terminal block for th AC power input with it's protection fuse must balso fixed to the base of the same container as shown in Fig.3B.

Backup battery Power supply (CTH48 2.0 12V)

5

red/blue cables
soldered on the board
CTH 48 2.0 (12V)



12V min.7A
lead-acid battery

WARNING!
respect the con-
nection polarity!
red= positive
blue= negative -

The CTH48 2.0 (12V) board is designed to be powered mains ac power supply
+ by a12V lead-acid emergency battery to guarantee self-operating maneuver in the event of a power failure /blackout from the AC network.

In the presence of AC mains power, battery recharging occurs automatically through the recharging system integrated in the circuit of the CTH48 2.0 board.

In the event of a black-out, the use of a 12V 7A battery guarantees up to an average of 4 days of operating autonomy. while with a 12V 12A battery, the operating autonomy extends up to 7 days

Use 12V lead/gel standard commercial batteries.
Standard commercial 12V batteries from 7A to 12A can be housed inside the #PLBOX 812 container of the control unit.
Larger capacity batteries may be used, but must be housed in a separate and suitable container.

Connect the battery to the electronic board using the cables with faston connectors soldered on the back of the board.

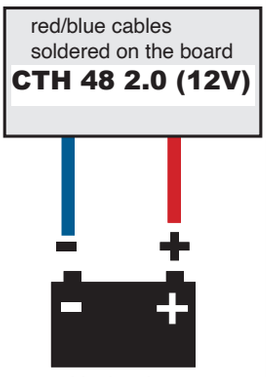
WARNING!
Output cables on the board are intend for wiring directly to a 12V dc battery:
red wire = positive(+);
blue wire = negative (-)

WARNING! respect the connection polarity!
Wiring the battery with inverted polarity causes the immediate breakage of the electronic board and the damage is not covered by the manufacturer's warranty.

Solar panel + battery Power supply (CTH48 2.0 12V)

Wiring the battery to the CTH48 2.0

7



Wire the positive pole of the battery to the red wire welded on the CTH48 2.0 electronic board.
Wire the negative pole of the battery to the blue wire welded on the CTH48 2.0 electronic board. See drawing n°7

Warning: Respect the wiring polarity. In the event of polarity inversion, the electronic board will result damaged and such damage is not covered by the manufacturer's limited warrnanty.

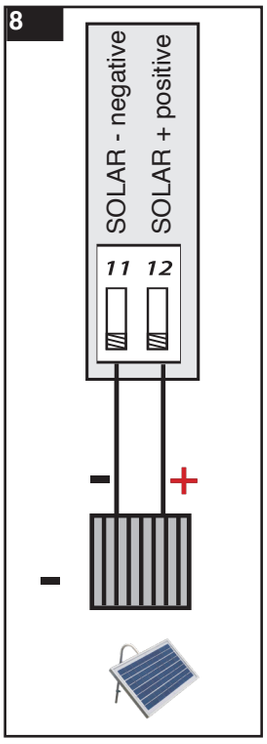
Warning: before usemake sure touse a fully charged 12V lead acid battery.

How to recharge a battery:
To charge the battery from an electrical socket, it is necessary to use a battery charger with charge control.

For preventive battery recharging, it is advisable to use the optional item #MP037 or any other battery charger suitable for lead-a-cid batteries with charge control and 13.8V-14V power supply output.
It is also possible to charge the battery using the toroidal transformer (see page 12) by connecting a cable with a plug for an electrical outlet to the transformer input (terminal board with protective fuse holder) and the 12V transformer output cables (yellow and black cables) to the male faston connectors present on the back of the board.
Connect the battery to the electronic board using the special red and blue connection cables soldered on the CTH48 2.0
Warning: Respect the connection polarity.
How to check the battery Voltage to ensure it is fully charged:
Once the battery has been charged it is recommanded to doublecheck the battery voltage by means o a voltimeter.
Two test shall be performerd: 1° measurement: battery witout absorption load; 2° measurement: battery with a load
A battery in perfect condition at full charge should have a voltave output measurement of 13-13.3V without any load absorption.
Battery efficiency should also be measured during absorption (workload during a manoeuvre). The voltage of a battery in good charge conditions must never drop below 12,5V measured with a working load.
Below 12V with load, the battery is to be considered flat or almost-flat. At the 11.5V level, the battery must be considered discharged below the minimum acceptable level and recharged immediately. Batteries are components subject to natural wear and tear. The decay can also be influenced by external factors. Warning: batteries should not always be kept at a high charge level even when not in use Attention. the charge capacity of the batteries decreases with temperatures below freezing point. The batteries are therefore not components covered by the manufacturer's limited warrnanty. A battery that even measures an excellent level of voltage when empty, and that with the load drops suddenly below 11 V, is to be considered exhausted and must be replaced with a new one

Wiring the solar panel to the CTH48 2.0

8



It is recommanded to use a Solar panel 12V 10W or 12V 20W. It is also possible to connect two 10W solar panels in parallel.

Wire solar panel **negative (-)** wire to **connector n° 11** of the CTH48 2.0 electronic board.
Wire solar panel **positive (+)** wire to **connector n° 12** of the CTH48 2.0 electronic board.

Warning: Respect the wiring polarity! **RED= POSITIVE= +** **BLUE/BLACK= NEGATIVE= -**

Cable dimension: the use of a 0,5mmq cable is enough cor cable lenght up tio 2m. for longer cabling 1/1,5mmq cables are re-commnded. while use 1,5mmq for longer cables.
The amount of recharge depends on 3 factors:
- hours of exposure to light
- light intensity.
- solar panel capacity (W)

Advice: by downloading applications on your smartphone that measure the light intensity and compare it according to the fixing position and inclination and orientation of the solar panel. A higher light intensity will result in a higher recharge of the battery.
The measurement of the Ampere (A) charged by the panel requires special instruments, but it is possible to estimate the Ampere (A) recharged with a certain proportionality, by measuring the V output from the solar panel cables with a simple Voltimeter. In prin-ciple, bear in mind that the output voltage corresponding to a minimum recharge of A is 15V-16V. In summer, in full sun, the voltage measurable from a 10W soalr panel output easily exceeds 20V. The electronic board manages battery recharge automatically.
ATTENTION:
By increasing the power of the panel, a greater recharge is obtained for the same time of exposure to light.
it is possible to connect 2 solar panels in parallel to increase the total charge capacity.
Increasing the battery capacity increases the duration of autonomy in the event of adverse weather conditions, thus guaranteeing greater autonomy even in the event of persistence of time with low brightness.
ATTENTION: It is not recommended to connect the solar panel and the 230V mains power supply at the same time, but it is also possible to connect to the mains power supply by providing a switch so as to be able to use the AC power supply only to recharge the battery or temporarily feed from the mains in if the climatic conditions do not ensure sufficient charging from the solar panel.

ABSORPTION CALCULA-TION	SWUINGING GATE	stand-by consumption (Ah)	daily 24h stand/by consumption (A)	average consumprion for mcycle open+ close (A)	**hypothesis of cycles performed in 1 day (open+ close)**	total daily c onsumptio: standby + maneuver hipotesis (A)	average A recharged / per hour by a 10W 12V solar panel in medium light conditions (Ah)	assumed hours of light exposure (seasonal aver age)	Totale ricarica di energia giorna Total daily energy recharge (A)	**Balance between consumption and recharge (A)**
ELECTRO-NIC BOARD CTH48 2.0	1 WING	0,008	0,19	0,012	**60**	0,91	0,3*	**5**	1,5	+ 0,59
	2 WINGS			0,024	**50**	1,39				+ 0,11

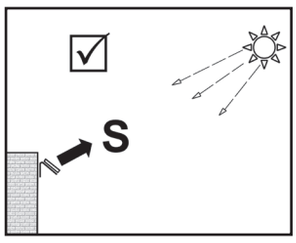
The table shows a hypothesis for calculating consumption and autonomy with 1 10W panel and 7A battery in winter weather conditions with average bri-ghtness (assuming only 5 hours of non-intense light with a minimum recharge of 0.3A/h) . Even in similar conditions it is possible to carry out 50 maneuver cycles per day with a positive energy balance, therefore without affecting the battery charge.

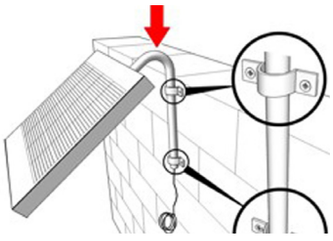
SOLAR PANEL INSTALLATION

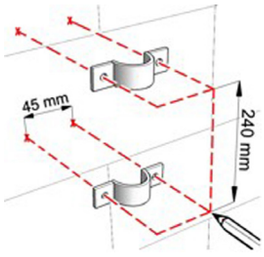
The solar panel/s should face SOUTH and in a well-lit place.
Avoid shady areas, which significantly reduce the load capacity.
Regularly clean the surface of the panel: the accumulation of dust or dirt generally reduces the charge capacity of the panel

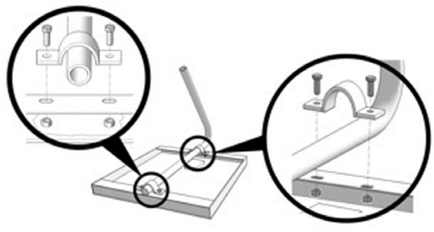
Position the solar panel at a recommended distance of up to 10 m from the automation control unit. If the panel is to be installed at a greater distance, it will be advisable to use a cable with a larger section to reduce the electrical resistance and the resulting loss of current.
Fix the panel to the wall or to another rigid support with the specific bracket supplied. The solar panel must face SOUTH.
Check that no obstacle casts shadow on the panel and that it is in full light.
Connect the panel to the electronic board paying attention to respect the polarity of the wiring.

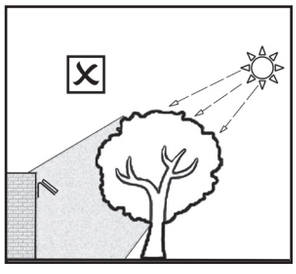
Example of fixing bracket for the 10W solar 1012 panel (attention the supplied brackets may vary from the images shown below

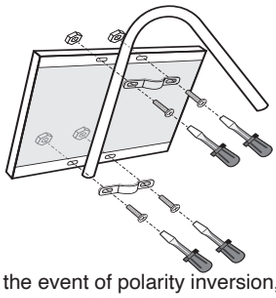






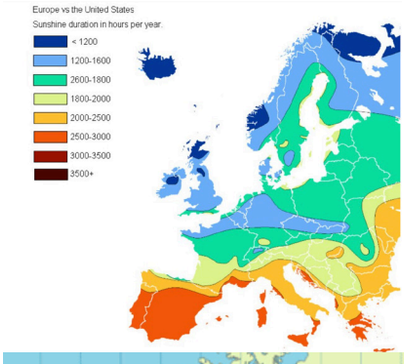


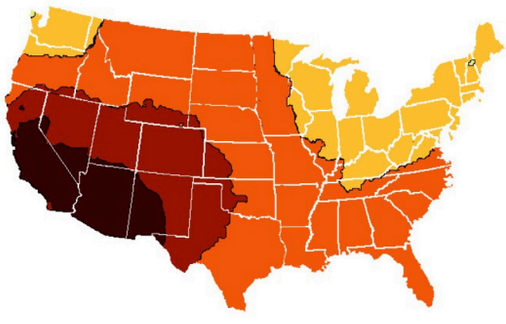


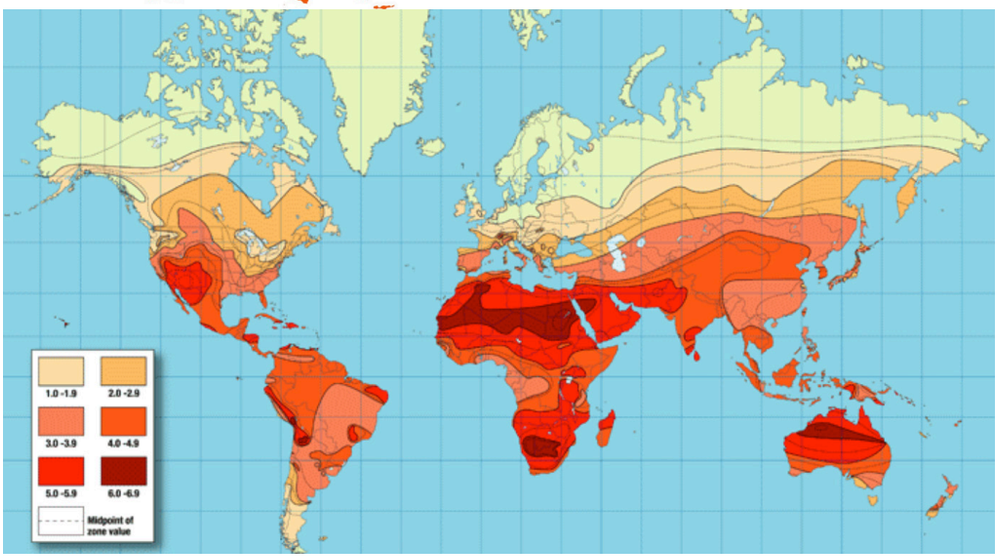


Warning: Respect the wiring polarity. In the event of polarity inversion, the electronic board will result damaged and such damage is not covered by the manufacturer's limited warrnanty. red cable= += positive blue/black cable= - = negative

MAP OF SOLAR RADIATION IN THE WORLD
the map shows the average hours of sunshine per year. the hours of sunshine also vary according to the seasons and local climatic conditions







Useful information on solar panel charge.

LUMEN:
Lumen is measures of the intensity of a luminous flux (Sun)
The greater the lumens of solar luminosity on the panel, the greater the recharge of A supplied to the batteries per unit of time.

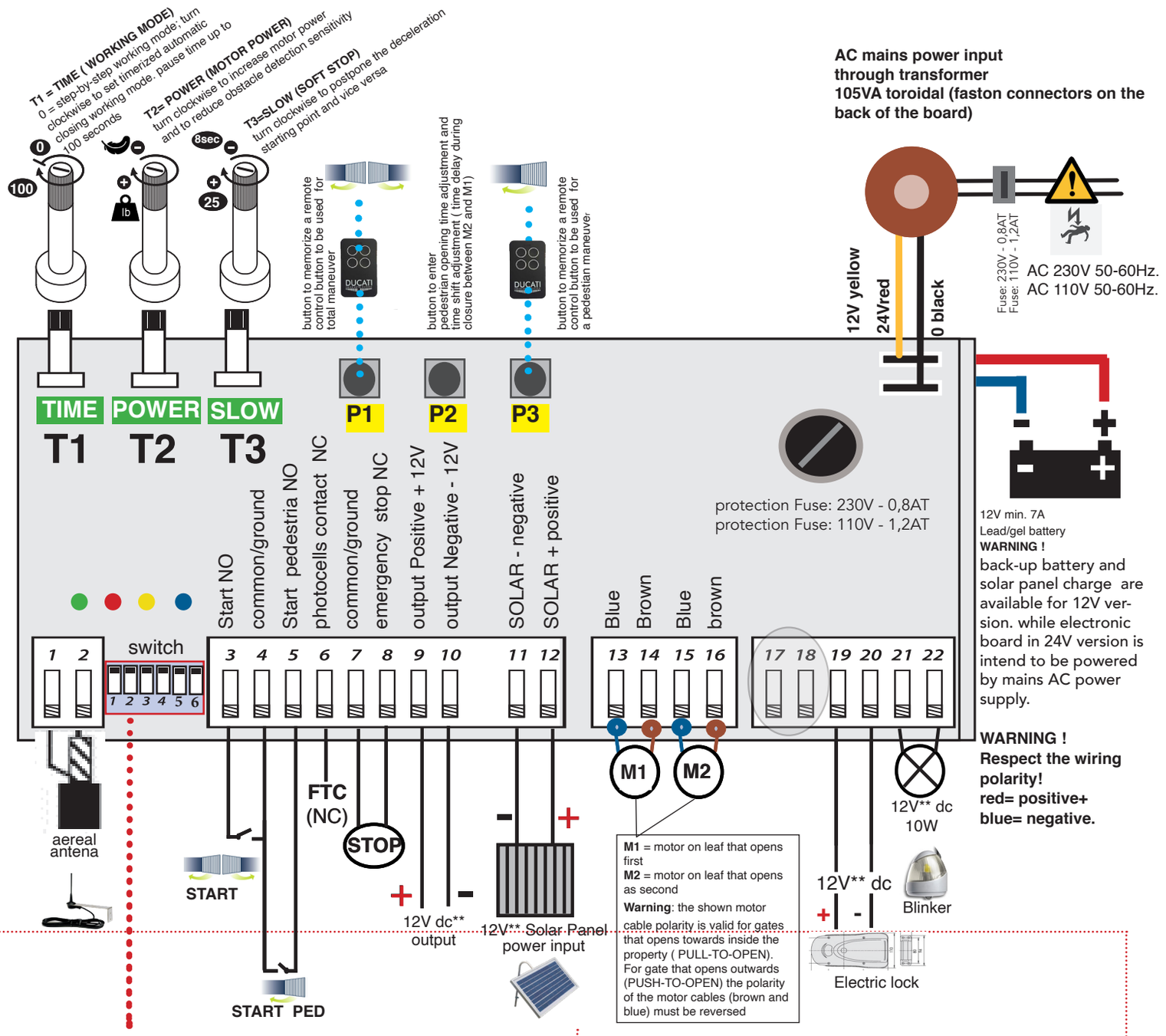
LUX
The values of lux and lumen are closely connected: in fact, lumens indicate the amount of light emitted by a source, while lux determines how much light is present on a given surface. A single lux is equivalent to 1 lumen per square metre.

Usegul tips: you can download on your smartphoe an App that that allow you to check how many lumens the panel receives in a given position. This can be a useful tool for choosing the ideal position and angle of the panel with respect to the sun.

On average, a 12V 10W panel with good light exposure is charged with a voltage between 17.6 and 22V.

With this voltage it is quite consistent to evaluate an effective recharge of 0.3-0.5Ah

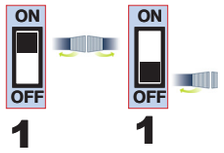
Wiring diagram CTH48 2.0



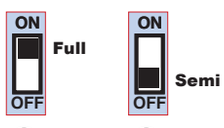
AC mains power input through transformer 105VA toroidal (faston connectors on the back of the board)

12V min. 7A Lead/gel battery
WARNING !
back-up battery and solar panel charge are available for 12V version. while electronic board in 24V version is intend to be powered by mains AC power supply.

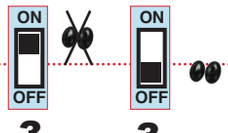
WARNING ! Respect the wiring polarity! red= positive+ blue= negative.



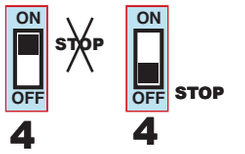
Switch n° 1:
- Set to "ON" (up) for use on a 2-leaf gate;
- Set to "OFF" (down) for use on a 1-leaf gate;



Switch n° 2:
this switch has effect only if the potentiometer T1 is turned clockwise selecting the operating mode with automatic closing.
- Position to"ON" (up) to select **FULL Automatic** closing mode;
-Position to "OFF" (down) to select **SEMI-Automatic** closing mode

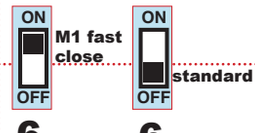


Switch n° 3:
- Set to "ON" (up) if infrared safety photocells are not wired to the baord. With this switch in the ON position, the NC contact is kept closed without the need for a physical jumper between terminals 6-7.
- Set to "OFF" (down) if photocells are used and wired to the photocell contact (NC) on terminals 6-7



Switch n° 4:
- Set to "ON" (up) if an emergency STOP button is not wired to the baord. With this switch in the ON position, the NC contact is kept closed without the need for a physical jumper between terminals 7-8.
- Set to "OFF" (down) if an emergency STOP button is used and wired to the STOP contact (NC) on terminals 7-8

Switch n° 5:
- Set to "ON" (up) to select the timed courtesy/ garden light function from terminals 17/18*
- Set to "OFF" (down) to select the gate status signaling light function from terminals 17/18
** (see specific wiring diagram further on this manual)



Switch n° 6:
- Set to "ON" (up) to select the following function: M1 closes at high speed without slowing down (recommended if electric lock is present)
- Set to "OFF" (down) for standard operation, i.e. both M1 and M2 both in opening and closing maneuver will slow down before stop (both wings will SOFT STOP in closure)

ATTENTION! all adjustments must be made with the gate closed and will take effect in the next cycle.
Warning: in the event of a black-out or even a short power failure, the gate will carry out an automatic safety closing maneuver as the mains AC power supply is restored.

Wirings

Connector n° **1 =** Ground aereal antenna
Connector n° **2** = **Aereal antenna** cable

3/4 START clean NO (normally open) contact input. By closing the contact for 1 second only, it commands a full opening manoeuvre cycle.
To operate the full cycle manoeuvre it is possible to use several wired control devices that can be connected in parallel wiring.
Example of compatible devices to be used: wired key switch, intercom button, GSM module, Wifi module. Connector n° **3** = NO contact; connector n° **4** = Common/ ground (COM)

4/5 PEDESTRIAN START clean NO (normally open) contact input. By closing the contact for 1 second only, it commands a partial opening manoeuvre cycle to allow pedestian access only. To operate the full cycle manoeuvre it is possible to use several wired control devices that can be connected in parallel wiring.
Example of compatible devices to be used: wired key switch, intercom button, GSM module, Wifi module. Connector n° **4** = Common / ground (COM); connector n° **5** = NO contact.

6/7 INFRARED SAFETY BEAM PHOTOCELLS= clean NC (normally closed) contact input. When, during the closing maneuver of the gate, an obstacle interrupts the infrared beam transmitted by the transmitter photocell to the receiver photocell, the contact opens and immediately reverses movement and the gate reopens. If this contact is kept open while the gate is open it inhibits its closing until the closure
of the contact is re-established.
Connector n° **6** = NC contact (FTC); connector n° **7** = Common / ground

7/8 EMERGENCY STOP = clean NC (normally closed) contact input. If the contact is opened, the gate stops in its current position. This contact can be used to stop movement in an emergency by pressing a wired button.
Connector **n° 7** = Common / ground; Connector **n° 8** = NC contact (STOP). It is possible to connect a button which, by opening the contact for 1 second, stops the gate which is then operational again, or to connect a switch which keeps the contact open and renders the gate inoperative until the contact is closed again.

9/10 2V dc POWER OUTPUT
Connector n° **9 +** 12V dc **Positive** service power supply output to be used to power photocells or other services
Connector n°**10 -** 12V dc **Negative** service power supply output to be used to power photocells or other services

SOLAR PANEL POWER SUPPLY INPUT
Connector n° **11** - 12V dc solar panel input **negative**. Attention: respect the connection polarity!
Connector n° **12** + 12V dc solar panel input **positive**. Attention: respect the connection polarity!

M1 MOTOR WIRING:
M1 is the actuator that opens first and close as second. For single wing gates wire the single motor as M1.
Connector n° **13** motor **M1** blue cable**
Connector n° **14** motor **M1** brown cable**

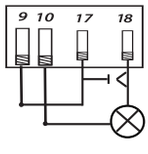
M2 MOTOR WIRING:
M1 is the actuator that opens as second and closes as first.
Connector n° **15** motor **M1** blue cable**
Connector n° **16** motor **M1** brown cable**

**= This is the wiring polarity for a standard gate that opens towards inside the property (pull-to-open). In case of a gate that opens outwards (push-to-open), it is necessary to invert the polarity between brown and blue cable

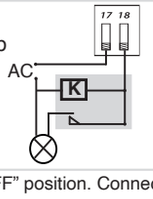
EXTRA FUNCION: COURTESY LIGHT OR GATE STATUS LIGHT WARNING
You can use one of the above mentioned functions by iusing connectors n° 17/18

A) TIMED COURTESY LIGHT. Place Switch n° 6 set in "ON" position. Connectors N° 17/18 have the function of timed garden light/courtesy light output. The light will switch on when the motors start and will switch off automatically 40 seconds after the end of the maneuver. See Following wiring diagram:

A1) courtesy light
12V up to 10W
lamp



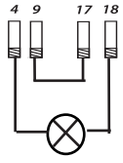
A2) courtesy light
220/110V /110V lamp
requires a suitable
power relay



B) REMOTE GATE STATUS INDICATOR LIGHT. Place Switch n° 6 set in "OFF" position. Connectors N° 17/18 will be used to wire a remote light to give a remote feedback of the gate status position. Use a 12V LED light up to 10W
- light on will indicate status: gate open
- light off will indicate status: gate closed
- light flashing slowly will indicate status: gate in opening manoeuvre
- light flashing quickly will indicate status: gate in closing manoeuvre

B1) Gate status indication light

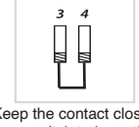
use a 12V max 12W
LED lamp



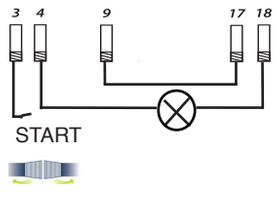
HELPFUL TIPS

B2) Option to have Gate status indication light + wires START command by 3 wires only:ver with option to keep the gate open by a switch terminal

turn clockwise potentiometer T1 (TIME) to set automatic or semi automatic workig mode



Keep the contact closed by a switch to keep the gate open even if in automatic or semi automatic working mode



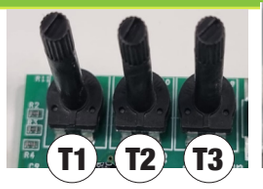
use a 12V max 12W LED lamp tfor the gate status indication light

19/20 ELECTRIC LOCK
Output for electric lock 12V dc (connector n° 19= positive/ connector n° 20 negative). Warning! compatible only with 12V dc electric locks. For 12V ac electric locks it is mandatory that the ac current electric lock is equipped with a booster module which transforms the dc output current from the board into ac current.

HELPFUL TIPS If you use an electric lock, you will need the gate to close at fast speed without soft stop to give a strong enough push to trigger the electric lock. To set the fast speed closing maneuver,set the switch n°6 to the "ON" position.

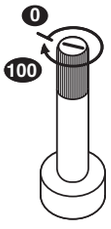
21/22 BLINKING LIGHT
Use a lamp 12V max 10W. No polarity to be respected. during opening the flashing light flashes slowly. during closing the flashing light will flash quickly

BACK-UP BATTERY WIRING. Output cables for direct connection to the 12V dc battery: **red wire = positive(+); blue wire = negative (-)**
Warning: respect the connection polarity! Connecting the battery with reverse polarity causes the immediate breakage of the electronic board and the damage is not covered by the manufacturer's warranty.



Warning: start instalaltion with the potentiometers in the following positions:
T1 TIME potentiometer: rotated counter-clockwise
T2 SENS/POWER potentiometer: rotated fully clockwise
T3 SLOW potentiometer: rotated anti-clockwise

POTENTIOMETERS:



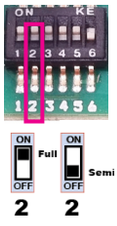
T1 = TIME: TO SET THE OPERATING MODE

Potentiometer T1 allows you to select the desired operating working mode between:

A) "**STEP-BY-STEP**" perating mode
Give 1 impulse (from the remote control or from a control device wired to the "START" contact) to open the gate.
The gate will open, remaining open in the position corresponding to the mechanical stop. To close the gate it will be necessary to give 1 impulse again.
To select this operating mode, turn potentiometer T1 fully anti-clockwise.

B) "**AUTOMATIC CLOSURE**"operating mode = give 1 impulse (from the remote control or from a control device wired to the "START" contact) to open.
The gate will open, rand stay open for the setted pause time, then it will close automatically after the set pause time.To set a pause time, turn the potentiometer clockwise. the maximum pause time is 100 seconds and corresponds to potentiometer turned fully clockwise.

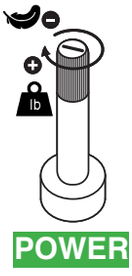
Note: by adjusting switch n° 2 you can further select a variant of the automatic closure working mode:



B.1) **FULL- Automatic working mode** = place switch n° 2 in "ON "position. in Full automatic working mode
- During opening maneuver it will not accept any further impulse. The opening maneuver cannot be stoppe or reversed.
- During pause time (gate open) it will not accept any further impulse to anticipate the automatic closure. It will only close after the pause time is expired.
- During closing maneuver it will accept a further impulse, reverse the direction of travel and open again.

B.2) **SEMI- Automatic working mode.**
- During opening maneuver it will accept a further impulse, reverse the direction of travel and close
- During pause time (gate open) it will accept a further impulse to anticipate the automatic closure. It will only close after the pause time is expired.
- During closing maneuver it will accept a further impulse, reverse the direction of travel and open again.

T2 = POWER: TO SET THE MOTOR POWER



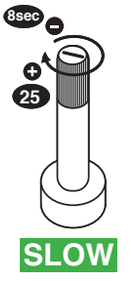
Potentiometer T2 allows you to adjust the thrust power of the motors.
Rotate clockwise to increase power.
Turn counterclockwise to reduce power.

The power must be adjusted according to the hardness and mechanical friction of the structure of the gate itself,
Increasing the power reduces the detection sensitivity in the event of an impact with an obstacle during the manoeuvre
When an amperometric peak in current absorption is detected, this is interpreted as the presence of an obstacle.
If this occurs during the high-speed maneuver phase, the gate stops and reverses directionof travel;
If this occurs during the maneuvering phase at slow speed (SOFT STOP), the gate stops.

HELPFUL TIPS
How to recognize if the gate is in the FAST phase or in SOFT STOP approach?
While the gate is in SOFT STOP approach the BLUE LED light on your CTH48 2.0 is Steady on.

HELPFUL TIPS
Attention, if the potentiometer T2 is adjusted with too low power level, a hard point of the gate could be detected as an obstacle. It is advisable to carry out the first maneuvers with the potentiometer at maximum (fully clockwise) and reduce the power only if necessary. If the power level is adjusted to a minimum level, during season changes, due to the variation of friction of the gate in lower temperature conditions, natural friction of the gate could be detected as an obstacle This could cause an incorrect stop or reversal of the gate depending on where the point of friction occurs. if this type of phenomenon occurs, it will be necessary to make a new adjustment by turning the potentiometer clockwise to increase the power

T3 = SOFT STOP: TO SET THE SOFT STOP PHASE

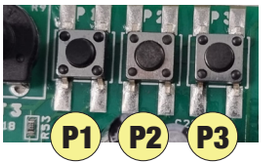


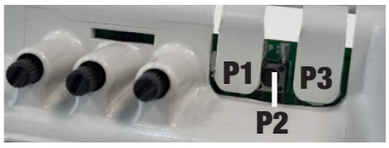
Potentiometer T3 adjusts the time after which, starting from the High speed of travel, the gate begins to slow down (SOFT STOP approach).
By turning the potentiometer to minimum (turned completely counterclockwise) the slowdown occurs 8 seconds after the motors start.
To postpone the start of slowdown, turn the potentiometer clockwise.
Carry out the adjustment paying attention that the gate starts to slow down at least 30cm before the gate wing reaches the end limit stops.
During the slow speed phase, the blue LED on the board lights up.

WARNING:
During the maneuver at high speed, in case of impact on an obstacle the gate will reverse the direction of travel.
During the maneuver at low speed (SOFT STOP) in case of impact on an obstacle the gate will stop.
Warning: It is extremely important that the slowdown occurs before contact with the mechanical limit switch to ensure that the gate stops at the limit switch without inverting movement.

HELPFUL TIPS
How to recognize if the gate is in the FAST phase or in SOFT STOP approach?
While the gate is in SOFT STOP approach the BLUE LED light on your CTH48 2.0 is Steady on.

HELPFUL TIPS
In case your gate opens and instead of stopping at the open position it automatically reverse the direction of travel and continues in continuous direction reversals instead of stopping in the open and closed position, this means that you have to turn potentiometer T3 anti-clockwise so that deceleration starts before the leaf reaches the end position.





PUSH BUTTONS

- set a remote for total opening
- erease all remote for total opening

P1 = top left button, (see also p.18)
Used to memorize the radio control keys that you want to use to command a total maneuver cycle.
The total maneuver consists of a total opening maneuver of the two leaves (M1+ M2) of a two-leaf gate.
In case of single leaf gate, it corresponds to the total opening of the single leaf (M1)
Furthermore, P1, if held down for about 30 seconds, is used to completely erase the memory of the previously stored remote controls.

HOW TO MEMORISE A REMOTE CONTROL button in the electronic board to command a complete maneuver cycle:
The gate must be in the closed position and inactive:
1) on the electronic board, press P1 for about 1 second: the red LED on the electronic board turns on with a steady light (= the board has entered the remote control code learning mode)
2) Release the P1 key
3) Within 8 seconds and while the red LED is on, press and keep pressed for a few seconds the button of the remote control that you want to memorise.
The red LED on the electronic board will flash rapidly to confirm successful storage.
4) wait for the red LED on the board to turn off.
The memorized button can now be used to command a complete maneuver cycle

HOW TO ERASE all previously stored radio remote controls buttons from the memory of the electronic baord:
If the electronic board memory is full (CTH48 2.8 total storage capacity is up to 40 remote controls buttons) or if a radio remote control is lost, it is possible to erase the full memory of the board. Warning: all previously stored remote controls will be completely erased nd remaining remote controls will need to be memorized again.
Attention: the gate must be closed and inactive
- Press and hold down P1and hold it pressed, the red LED lights up, wait by keeping P1 pressed until the red LED starts flashing to indicate total deletion of the memory (abiout after 30 seconds).
- Release P1
All previously memorized remote controls has been delated. You can now memorize again the desired remote controls you wish to be used.

Adjustments:
- phase shift
- pedestrian

P2 =top center button (see also p.17)
it is used to enter the adjustmetn of 2 parameters:
a) allows you to adjust the time lag between the start of the 1st leaf and the 2nd leaf when closing
b) allows you to adjust the working time and therefore the width of the opening angle in the pedestrian opening
Refer to the specific chapters " time lag " and " pedestrian opening adjustment " for detailed procedures.
Refer to the specific chapter "pedestrian opening adjustment" for detailed procedures.
(see next page)

- set a remote for pedestrian opening for total opening

P3 = top right button, (see also p.18)
use to memorize the buttons of the radio controls that you want to use to control a pedestrian maneuver cycle that has the purpose limit transit to pedestrians and/or motorcycles.
The pedestrian maneuver consists of a total or partial opening maneuver of only one of the two leaves (M1) of a two-leaf gate,
In the case of a system on a single leaf gate, it corresponds to the partial opening of the single leaf (M1).
The width of the opening in the pedestrian maneuver varies according to the set work time and which can be adjusted as desired by the user.

Refer to the specific chapter "pedestrian opening adjustment" for detailed procedures.
(see next page)

Warning: all adjustments must be made with the gate in the state: gate closed.

This means that the motorization and the electronic board must be in the gate closed position:
It is not enough to close the gate manually: if the gate is unlocked and closed manually, the electronic card will remain with the last state position in memory (therefore in the open gate position). It is therefore necessary for the gate to be closed with an electric command before making any adjustments. The new setting will be performed in the next cycle

Adjustment of the phase shift time between the 2 leaves during the closing manoeuvre. P2

The gate must be in the closed position.
By phase shift time we mean the delay time in the start between one leaf and another. During opening this time is fixed at 3 seconds and is not variable, while it is possible to modify it for the closing manoeuvre.

Premise. When opening, the leaf with motor M1 starts first and the second leaf (M2) starts immediately after (3 seconds)

In closing the opposite occurs, M2 starts first and then M1 starts

In some case (for example a gate where M1 leaf opens 90° and M2 leaf opens 120°) is it necessary to increase the phase shift time for the closing maneuver, thus increasing the delay in the closing start of motor M1 compared to M2.

This is necessary to prevent the leaves from overlapping incorrectly when closing; this could happen when the leaf with the M1 motor opens with a smaller angle than the leaf with the M2 motor.

To modify the closing delay time as desired, proceed as follows:
Gate must be in the closed position.
Press the P2 button then release it: the blue LED lights up and the board enters phase shift time programming mode.
Press P3 to increase the phase shift time
Press P1 to decrease the phase shift time. Each time you press P3 or P1 the time increases/decreases by 1 second.
When the full scale is reached (either maximum time = 30 seconds or minimum time = 1 second) the red LED lights up to warn that the limit of possible adjustment has been reached.
Once finished, wait for the blue LED to turn off.
The adjustment has been recorded and at the new manoeuvre, during closing M1 will start after M2 based on the set time.

Adjustment of the working time of the pedestrian opening P2

The gate must be in the closed position.
Pedestrian opening means the partial opening of only 1 door to allow pedestrian passage.
This maneuver has a working time. The work time set by default is 4 seconds. At the end of the time the door stops in the position it is in.
The opening width during this time varies depending on the geometry of the structure and the A and B measurements used in the installation of the actuators.
Depending on your needs, it is possible to increase or decrease the working time to open the door at a greater or lesser angle during pedestrian maneuvering.
Increase the working time if you want the pedestrian opening to be greater or vice versa.
To adjust the working time of the pedestrian maneuver, proceed as follows:
Press the P2 button and keep it pressed. The BLUE LED lights up steadily, keep pressed until the blue LED starts to flash, then release P2. The board enters pedestrian maneuver work time programming mode.
Press P3 to increase the working time (with each pulse the green LED lights up) or press P1 to decrease the working time (with each pulse the yellow LED lights up).
Each pulse changes the time by 2 seconds
When the full scale is reached, the yellow and red LEDs flash to warn that the limit of possible adjustment has been reached.
Once finished, wait for the blue LED to turn off.
The adjustment has been recorded and at the new pedestrian opening maneuver the M1 leaf will open for a time corresponding to the one set

meaning of warning lights through **LED lights**

- **Red LED steady on** **after pressing P1** = electronic board entered in remote control self-learning mode
- **Red LED steady on** **while gate is open** (when powered by 230Vac power supply only) =opener is set in step-by-step operating mode and gate is open wating a command to close
- **Red LED flashes** **while gate is open** (when powered by 230Vac power supply only) = opener is set in automatic or semi-automatic operating mode and gate is open counting time pause before automatically start to close

- **Red LED flashes** **by back-up battery power supply or Solar power supply** = Warning battery voltage is almost out of charge: Voltage less than 10.5V and the gate opener needs battery to be recharged to ensure a correct operation.

- **Green LED steady on** = powered by Mains AC power supply,
- **Green LED flashes slowly** = powered by battery

- **Yellow LED flashes** = Warning battery voltage is too low: Voltage less than 11.5V and the gate opener needs battery to be recharged to ensure a correct operation.

- **Blue LED steady on** **during the gate movement manoeuvre** = signals that the slowdown phase (SOFT STOP) / 2nd phase of the movement is underway
- **Blue LED steady on** **after pressing P3 button** = electronic board entered in the adjustment settings procedure (gates phase shift in closing or pedestrian maneuver work time)

RADIO REMOTE CONTROLS

the CTH48 2.0 card is compatible with original radio controls with DUCATI rolling code radio coding protocol
Compatible remote control (FOB) models: 6203 R, 6203P, 6203N, 6204, 6202 and 6208 + radio keypad SW6500, SW6504; Tasty 6700, Tasty 6704

DUCATI rolling code coding is a unique transmission protocol that transmits a unique code that changes with each pulse and communicates with the radio receiver on the basis of a complex mathematical algorithm that decrypts the code. In this way the possible combinations are 1 in over 3 billion and by changing with each pulse they make the transmission inviolable and safe. This prevents the possibility of inadvertent openings caused by radio interference or the possibility of a criminal duplicating your remote control without consent.
Ducati rolling code radio controls cannot therefore be copied by universal duplicators.
Each button on the remote control is factory programmed with a unique radio code corresponding to a transmission channel.
Each button can be used to control a different DUCATI automation or a different function on the same engine.
For example: a button to control the complete maneuver cycle (total opening of the gate), a button to control a pedestrian maneuver cycle (partial opening of only 1 leaf to allow access to pedestrians only).
With the addition of an external DUCATI rolling code radio receiver (ref. RIXY 6040 or RIXI 6043 with display) it is also possible to control automations from other brands with the same Ducati radio controls.

A) How to store a remote control button in the electronic card to command a complete maneuver cycle:

The gate must be in the closed position
1) on the electronic board press the P1 button: the red LED on the electronic board turns on with a fixed light
(= the board has entered radio control code learning mode)
2) Release the P1 button
3) Within 8 seconds and with the red LED constantly lit, press the radio control button you want to memorize once and hold it down for a few seconds. The red LED on the electronic board will flash quickly to confirm storage.
4) wait for the red LED on the board to turn off.
Procedure ended.
You can now use the stored button of your radio remote control to open your gate.

B) How to store a remote control button in the electronic card to command a pedestrian maneuver cycle: partial opening of 1 leaf only

The gate must be in the closed position
1) on the electronic board press the P3 button: on the electronic board the red and yellow LEDs light up with a fixed light
(= the board has entered the radio control code learning mode for pedestrian manoeuvre)
2) Release the P3 button
3) Within 8 seconds and with the red LED constantly lit, press the radio control button you want to memorize once and hold it down for a few seconds. The yellow LED on the electronic board will flash quickly to confirm storage.
4) wait until the red and yellow LEDs on the board goes off.
Procedure ended.
You can now use the stored button of your radio remote control to open your gate.

ATTENTION: The CTH48 2.0 card has a memory capacity limited to a maximum of 48 remote control's butotns.
If you need a larger number of remote controls, an optional external receiver is available (RIXY6040 or RIXI 6043)

C) Erease the previously stored remotes fro the control board (total loss of all stored remotes)

f the card memory is full or if a remote control is lost, it is possible to delete the set codes (be careful, this operation will cause a total loss of the memory).
After this operation it will be necessary to memorize the radio controls in the card again
Attention: the gate must be closed and inactive
- Press and hold down the P1 button, the red LED lights up, wait by holding down P1 until the red LED starts flashing to indicate total deletion of the memory.
- Release the P1 button. Procedure ended.

All previously memorized radio controls will no longer be active (both those memorized for the total maneuver command and those memorized for the pedestrian maneuver command.
It will therefore be necessary to memorize again the buttons of the radio controls that you wish to continue using, following the operations in points A and B.
If it is necessary to be able to delete/replace each specific remote control individually without deleting the entire memory of the card, we recommend the optional accessory: external radio receiver RIXY 6043 which with a convenient display allows you to select the single position of a specific remote control to be deleted/replaced.

DUCATI HOME AUTOMATION
Original Ducati Radio rolling coded remote controls

6203R 6203P 6203N 6208 6204* 6202* SW6500/6504 TASTY 6700/6704

*= compatible but discontinued models

- **PULT 6203 R =** remote control with Ducati rolling code protocol, 2 transmission buttons. blue body with blue buttons transmission range up to 50m. Battery: 1 x 12V C-23A Certified CE R&TTE + FCC USA
- **PULT 6203 P =** remote control with Ducati rolling code protocol, 2 transmission buttons. blue body with red buttons transmission range up to.100m. Battery: 1 x 12V C-23A Certified CE R&TTE + FCC USA
- **PULT 6203 N =** remote control with Ducati rolling code protocol, 2 transmission buttons. black body with black buttons transmission range up to 40m. Battery: 1 x 27A 12V Certified CE RED
- **PULT 6208 =** remote control with Ducati rolling code protocol, 4 transmission buttons. black body with black buttons transmission range up to 40m. Batteries: 2 x CR2016 3 Certified CE RED
- **SW6500 =** Radio keypad with Ducati rolling code protocol, 1 transmission channel. black body transmission range up to 30m. Battery 2 x CR2016 3 Certified CE RED
- **SW6504 =** Radio keypad with Ducati rolling code protocol, 4 transmission channel. black body transmission range up to 30m. Battery 2 x CR2016 3 Certified CE RED
- **TASTY 6700 =** Radio keypad with Ducati rolling code protocol, 1 transmission channel. stainless steel shell. transmission range up to 30m. Battery 2 x CR2016 3 Certified CE RED
- **TASTY 6704 =** Radio keypad with Ducati rolling code protocol, 4 transmission channel. stainless steel shell. transmission range up to 30m. Battery 2 x CR2016 3 Certified CE RED

HELPFUL TIPS

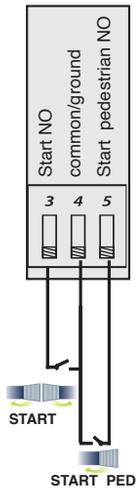
all Ducati rolling code radio controls are compatible with all Ducati engines that use the rolling code protocol. You can therefore use a single remote control to also control different Ducati engines: for example with button 1 you can open the gate of your house, with button 2 you can open your garage door, with button 3 you can open another gate or control the turning on the garden lights.
By adding an external Ducati rolling code radio receiver you will also be able to control other gear devices from your Ducati radio control

HELPFUL TIPS

CTH48 2.0 issupplied with a small antenna cable wired on connector n°2. Ducati recommends keeping the supplied antenna cable connected as it is without wiring any external aereal antenna. this because it guarantees, with the excellent quality of the supplied hybrid radio receiver, excellent quality of radio signal reception. The use of external antennas is recommended only where architectural barriers limit transmission or if the control unit is fixed away from the gate or embedded in a pillar or, for example an iron container.
It is recommended not to use an external antenna where not necessary as the use of external antennas may increase the risk of irreversible damage to the card produced by electrostatic discharges during storms. Such damage is not covered by warranty

WIRED COMMAND TO OPEN YOUR GATE (FULL OPENING / PEDESTRIAN OPENING)

It is possible to use different types of devices connected by cable to control the activation of an opening/closing maneuver of your gate.
it is possible to use a wired control device both to command the start of a total opening maneuver cycle and a pedestrian opening manoeuvre.



It is also possible to use third-party control devices provided they have the following characteristics:
- clean contact output (without current)
- NO contact (normally open)
- closing of the contact for only 1 second to start the maneuver cycle.

Examples of complementary control devices that can be used with wired connection to the board:

- key switch
- button
- intercom or video intercom button
- key selector
- RFID command
- keyboard with unlock code
- module with Wifi connection
- module with GSM connection

Warning: in the case of a gate opener powered by a solar panel, it has a very limited absorption system which guarantees operating autonomy.
If you want to add a third-party control device that requires electrical power (such as Wifi or GSM modules), you will need to provide a separate and autonomous power source for the additional device so as not to compromise the operation of the solar-powered motor.

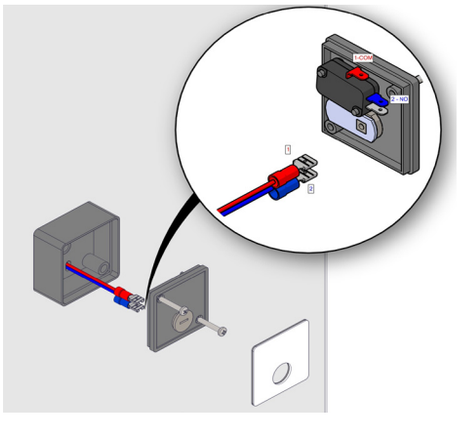
Wire the wired control with a 2x 0.3mm2 cable to the **START contact** (connectors 3-4) of the electronic board to control the complete opening maneuver
Wire the wired control with a 2x 0.3mm2 cable to the **PEDESTRIAN START contact** connectors 4-5) of the electronic board to control the pedestrian opening maneuver

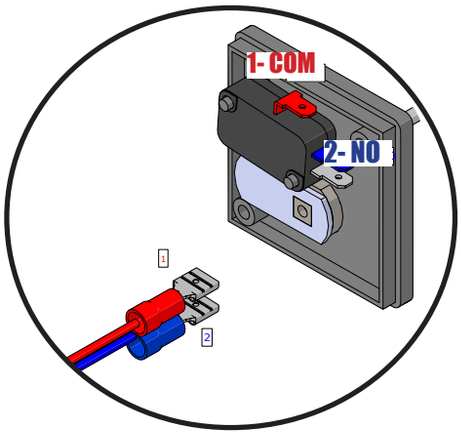
WARNING! if you open the gate with the pedestrian command in step-by-step mode, you will have to close the gate with the button or radio control for the pedestrian maneuver before being able to command a subsequent total opening cycle

HELPFUL TIPS

WARNING: infrared safety beam featuring a NO (normally open) contact output , can be mounted inside the property and connected to the “START” connectors of the gate opener to be used as opening command of the gate. Once a car or person crossed the driveway interrupting the infrared beam of th ephotocells, the gate will open. Be aware that this type of use could be dangerous if childs or pets are left alone in the gate’s area as they could command an unwanted opening maeuver.

Ducati’s key switch #KEY5005





SPECIAL ANTI-WIND MANEUVER

In the event of strong wind interfering with the movement of the gate, the electronic board could detect an increase in amperometric load as in the case of the presence of an obstacle. This means that the electronic board stops the motors in compliance with European regulations on anti-pressure safety.

Despite the presence of the anti-pressure safety system compliant with European regulations, the CTH48 2.0 board allows you to command a forced maneuver through a command from a connected device such as: key selector or button that keeps the “START” contact closed after the start of the manoeuvre.

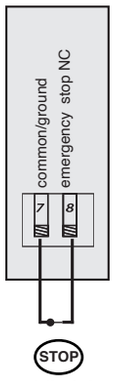
This ANTI-WIND command excludes the amperometric safety control and for this reason must be carried out exclusively with a dead-man operation.
This means that this command must only be given manually by a person who actively monitors the gate for the entire time of the manoeuvre, ensuring that there are no people crossing the gate or standing in the movement areas of the gate.

How to proceed:
After giving a start command via radio control, as soon as the gate starts, close and keep the START contact closed
(keep the key selector turned for the entire anti-wind maneuver cycle) and the gate will travel with maximum engine power and excluding the intervention of the electronics.
When the gate reaches the limit switch, return the start contact to the NO (normally open) state.
As soon as the person reopens the START contact the gate stops

WARNING: this maneuver is reserved for a responsible and expert administrator user.
The device used for this maneuver must not be accessible to any other person and above all it must not be activable by minors.
The manufacturer cannot be held responsible in any way for improper use of this command.

WIRED COMMAND TO STOP YOUR GATE (EMERGENCY STOP)

It is possible to use a complementary wired devices to stop your gate in any position in case of emergency.
It is also possible to use third-party control devices provided they have the following characteristics:
- clean contact output (without current)
- NCO contact (normally closed)



By opening the contact for only 1 second the gate will stop
By by opening and keeping the contact open, the gate will stop and remain stationary and inoperative in the position it is in until the closure of the contact is re-established

WARNING! if you open the gate with the pedestrian command in step-by-step mode, you will have to close the gate with the button or radio control for the pedestrian maneuver before being able to command a subsequent total opening cycle

Safety POHOTOCELLS

Infrared safety sensors are an complementary safety device to prevents persons or vehicles trepassing a gate driveway to be touched from a gate while it is closing.
One pair of photocells consist of a transmitter (TX) and its receiver (RX).
The TX transmitter emits a modulated infrared light beam received by the receiver RX. If this invisible light beam is interrupted a signal is sent to the electronic board.

CTH48 2.8 has a NC (normally closed)contact and 2 output connectors to power the photocells by 12V dc current
It is compatible with any phootcells that features NC contact and 12Vdc power imput. However, for solar panel powered openers, we recommand to use only Ducati aprroved photocels with low consumption technology such as following models:

LASER 5005/5005B; SW7120; LASER 7120; LASER 100/100B; LASER 200;
or also a pair of columns with integrated photocells model:
KOL 450; KOL 750; KOL120 SRL70

Transmitter and Receiver must be installed on side posts or walls and be correctly aligned. While the infrared beam is received by the photocell receiver, the NC (normallyclosed) contact on the gate opener control board is kept closed. Photocells are not active while the gate is opening.
Should a person, pet, or vehicle break the beam, while the gate is closing, the gate will immediately stop and reverse.
While the contact is kept open the gate will no longer close until the infrared beam alignement is restored and the contact kept closed.

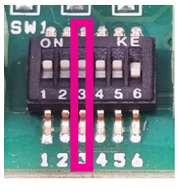
Photocells should not be installed more than 10 meters distance
It is recommanded to install the photocells at about 60cm high from the ground in order to easily detect a trepassing vehicle, pet or person.

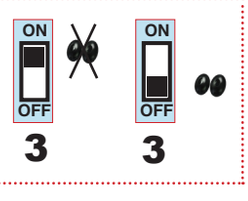
They can be installed inside or outside of the property on the sides of the gate, directly on gates posts or on small coloums in a position where the opening and closing operation of the gate does not interfere with their effectiveness.
It is possible to install as many pairs of photocells as desired. The connection must be made in series.

It is recommanded to avoid to use SW7120 or LASER7120 photocells wired in seried with a different photocell models
This could create wiring confusion as model 7120 has a specific and unique wiring diagram.

WARNING: VERY IMPORTANT!
by wiring photocells on CTH48 2.0 you must set the Switch n° 3 in the "OFF" position
- Set to "OFF" (down) if photocells are used and wired to the photocell contact (NC) on terminals 6-7

- Set to "ON" (up) if infrared safety photocells are not wired to the board. With this switch in the ON position, the NC contact is kept closed without the need for a physical jumper between terminals 6-7. By positioning switch no. 3 in the "ON" position the photocells are deactivated and will not be effective even if correctly wired






Laser 5005 Inox


Laser 5005 Laser 5005B


Laser 100 Laser 100B

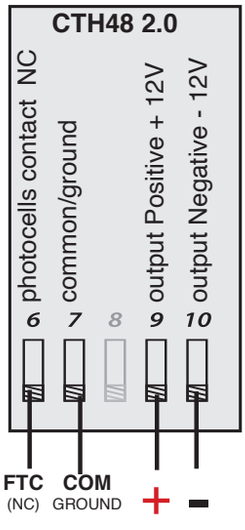

SW 7120


Laser 7120


KOL 450

KOL 750

KOL120 SRL70



PHOTOCELL WIRING ON THE CTH48 2.0

connector n° 6 = FTC / NC contact output
wire to the NC connector of the photocell receiver

connector n° 7 = COM/ GROUND
wire to the COM/GROUNDconnector of the photocell receiver

connector n° 9 = + =POSITIVE 12V power supply output
wire to the positive 12V power imput on both photocells: transmitter and receiver

connector n° 10 = - = NEGATIVE 12V power supply output
wire to the positive 12V power imput on both photocells: transmitter and receiver

Wiring diagram for Photocells model LASER 100/ LASER5005/ KOL450/ 750 /

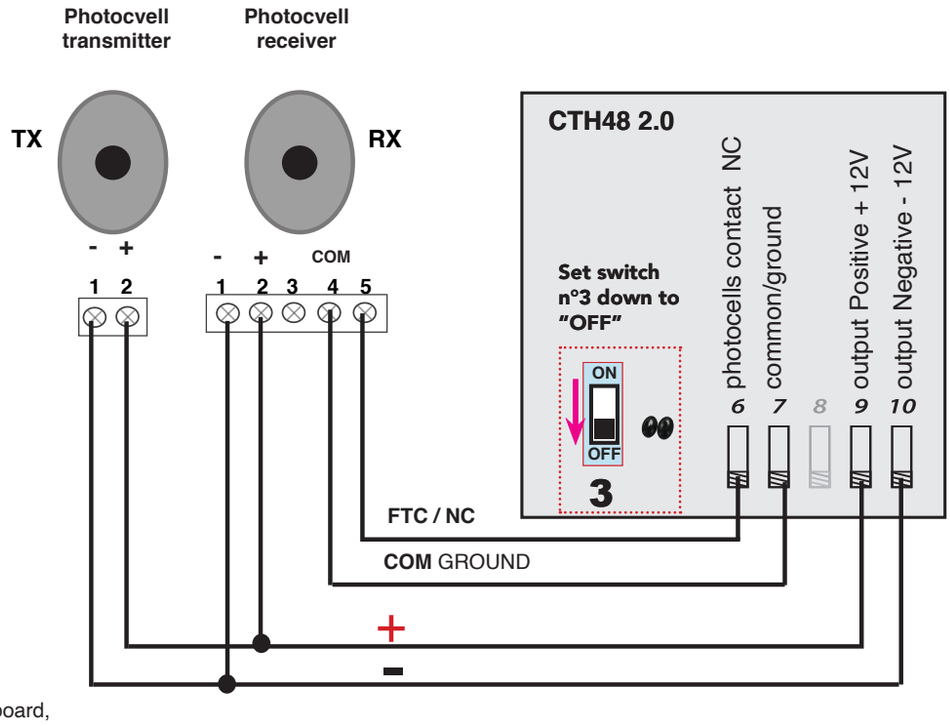
Standard reduced consumption universal 12V/24V ac/dc pair of infrared sensors with NC contact + NO contact
Unscrew the front cover to fix the photocells on the wall/post. Use an outdoor use a 2 wires 0,3-0,5mmq cable to power the Photocell transmitter (TX).
Use an outdoor use 4 wires 0,3-0,5mmq cable to power the Photocell receiver (RX).


Laser 5005 Inox


Laser 5005 Laser 5005B


Laser 100 Laser 100B


KOL 450 KOL 750 KOL120 SRL70



Photocells connectors:

1 = **- negative power supply** 12/24V ac/dc
2 = **+ positive power supply** 12/24V ac/dc
3 = START **NO (normally open) contact**
4 = **COM** ground/common.
5 = **FTC** NC (normally closed) photocell contact
WARNING When wiring photocells to the electronic board, you must remove the bridge which keeps the photocell contact closed. and set the switch n°3 to the "OFF" position

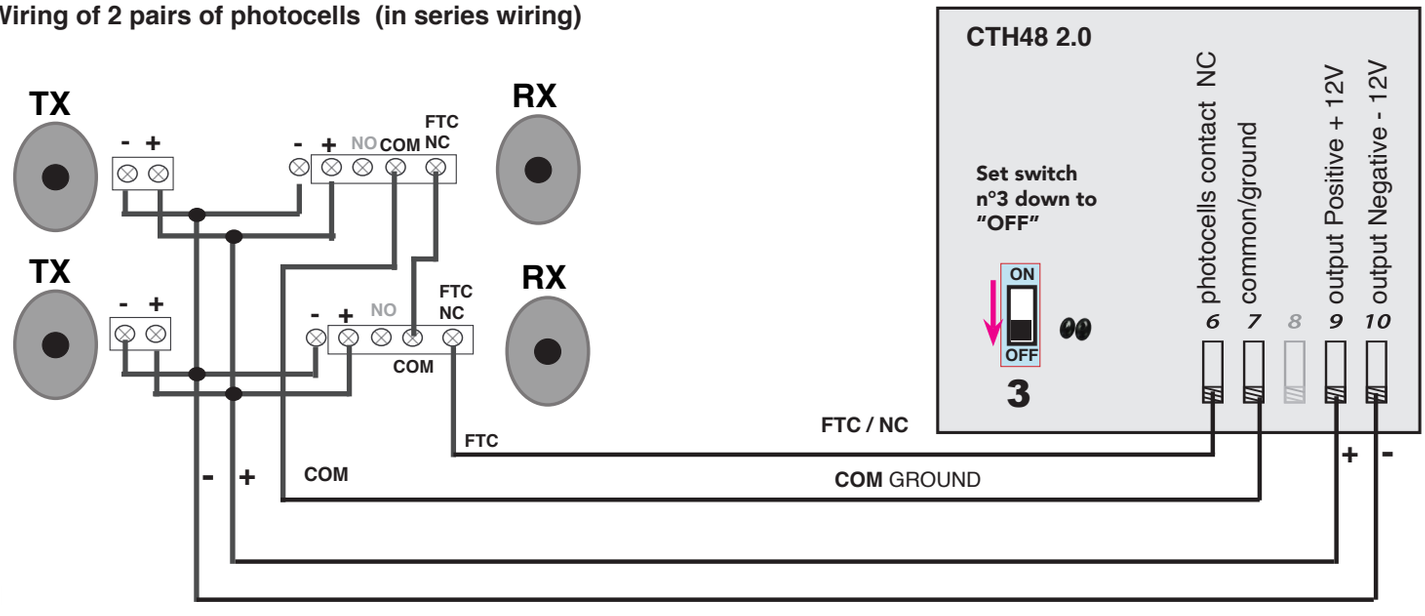
Use the Photocells as safety device:

power the photocells (connectors 1 & 2) + Wire connector n° 4 (COM) and N° 5= FTC (NC) contact to the electronic board of the device. Do not wire connector n° 3 (NO contact)
Should a person, pet, or vehicle break the beam, while the gate is closing, the gate will immediately stop and reverse. While the contact is kept open the gate will no longer close until the infrared beam alignement is restored and the contact kept closed.

Use the Photocells as gate opening command:

power the photocells (connectors 1 & 2) + Wire connector n° 4 (COM) and connector with NO contact (n° 3 on LASER 100 and N°4 on LASER 200) to the START connectors of the electronic bord of the device.
Should a person, pet, or vehicle break the beam, the gate will start an opening cycle.

Wiring of 2 pairs of photocells (in series wiring)



Wiring diagram for Photocells model LASER 100/ LASER5005/ KOL450/ 750 /

Standard reduced consumption universal 12V/24V ac/dc pair of infrared sensors with NC contact + NO contact
Unscrew the front cover to fix the photocells on the wall/post. Use an outdoor use a 2 wires 0,3-0,5mmq cable to power the Photocell transmitter (TX).
Use an outdoor use 4 wires 0,3-0,5mmq cable to power the Photocell receiver (RX).


Laser 5005
Inox

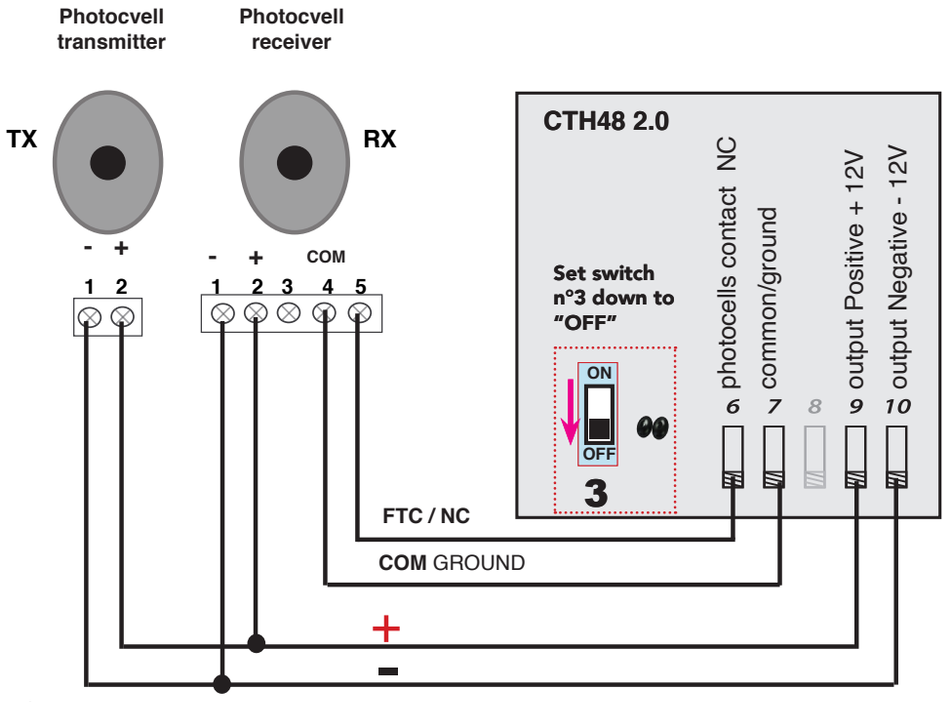

Laser 5005
Laser 5005B


Laser 100
Laser 100B


KOL 450

KOL 750

KOL120
SRL70



Photocells connectors:

1 = **- negative power supply** 12/24V ac/dc
2 = **+ positive power supply** 12/24V ac/dc
3 = START **NO (normally open) contact**
4 = **COM** ground/common.
5 = **FTC** NC (normally closed) photocell contact
WARNING When wiring photocells to the electronic board, you must remove the bridge which keeps the photocell contact closed. and set the switch n°3 to the "OFF" position

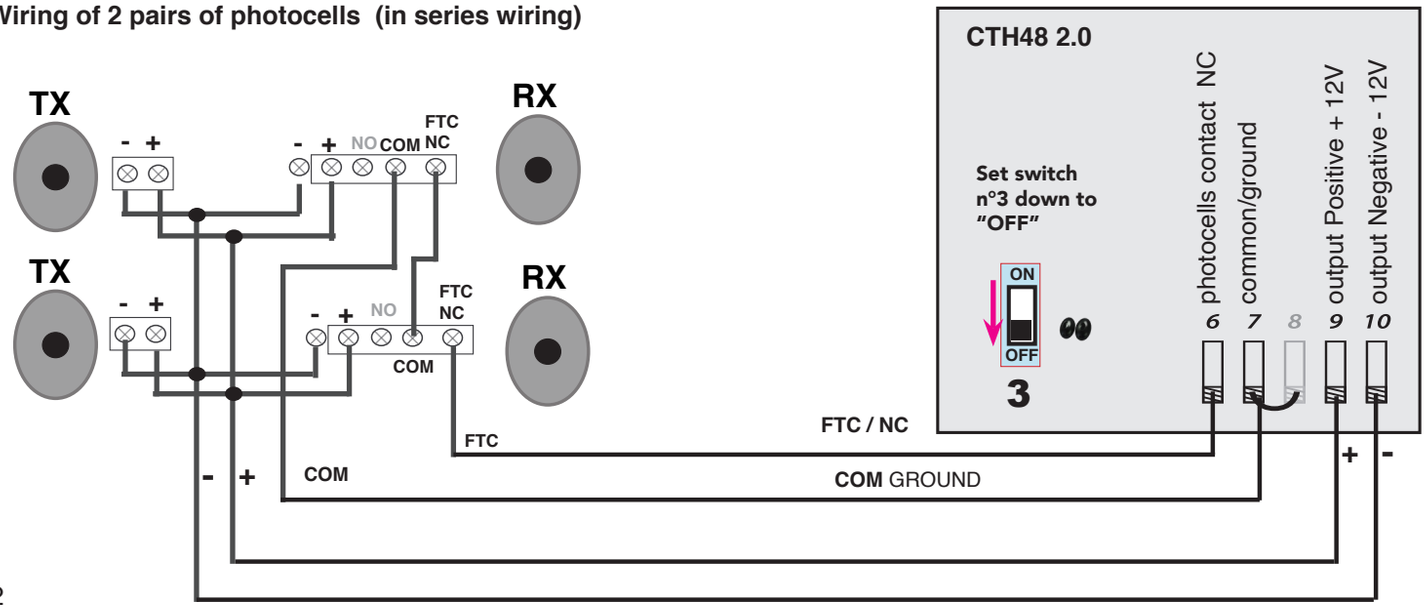
Use the Photocells as safety device:

power the photocells (connectors 1 & 2) + Wire connector n° 4 (COM) and N° 5= FTC (NC) contact to the electronic board of the device. Do not wire connector n° 3 (NO contact)
Should a person, pet, or vehicle break the beam, while the gate is closing, the gate will immediately stop and reverse. While the contact is kept open the gate will no longer close until the infrared beam alignement is restored and the contact kept closed.

Use the Photocells as gate opening command:

power the photocells (connectors 1 & 2) + Wire connector n° 4 (COM) and connector with NO contact (n° 3 on LASER 100 and N°4 on LASER 200) to the START connectors of the electronic bord of the device.
Should a person, pet, or vehicle break the beam, the gate will start an opening cycle.

Wiring of 2 pairs of photocells (in series wiring)



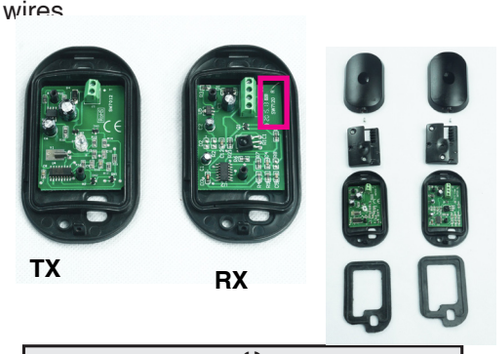
Wiring diagram for Photocells model SW7120 and LASER 7120

Special extra reduced consumption 12V dc pair of infrared sensors with NC contact
Unscrew the front cover to fix the photocells on the wall/post. Use an outdoor use a 2 wires 0,3mmq cable to power the Photocell transmitter (TX).
Use an outdoor use 3 wires 0,3mmq cable to power the Photocell receiver (RX).
Transmitter and receiver should not be installed at more than 10 m from each other.
Make sure they are correctly aligned.

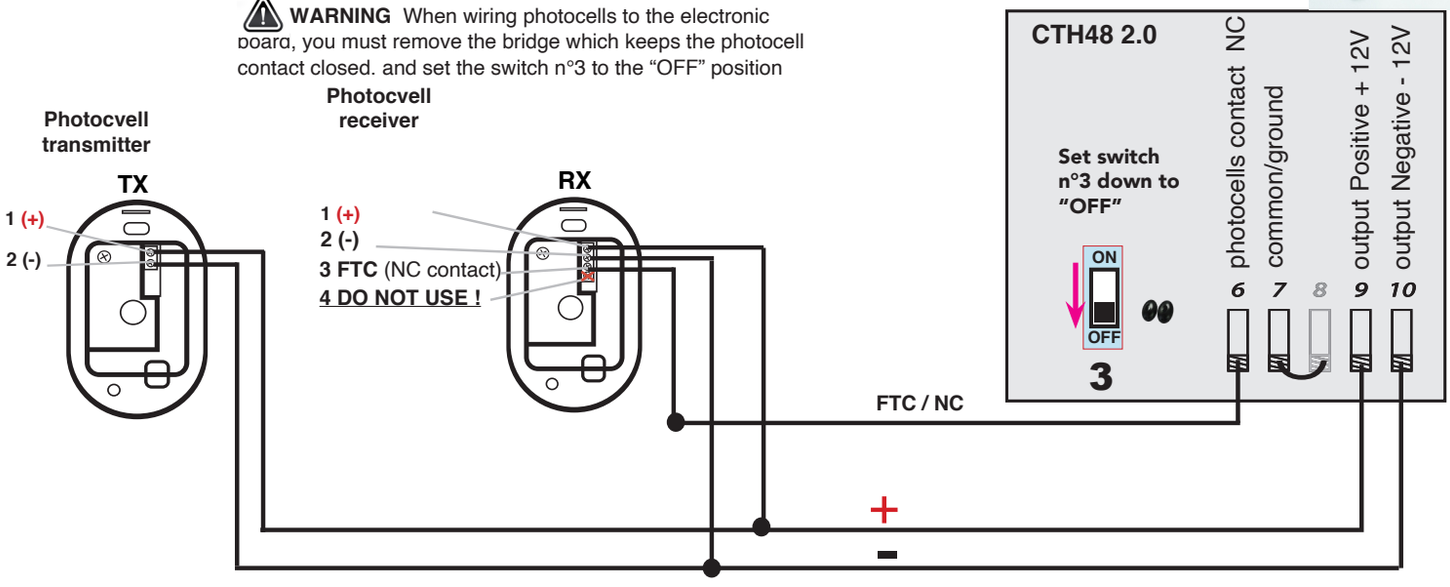
SW 7120 Laser 7120

Photocells connectors:

1 = + positive power supply 12/24V ac/dc
2 = - negative power supply 12/24V ac/dc
3 = FTC NC (normally closed) photocell contact .
4 = DO NOT WIRE THE CONNECTOR N° 4!



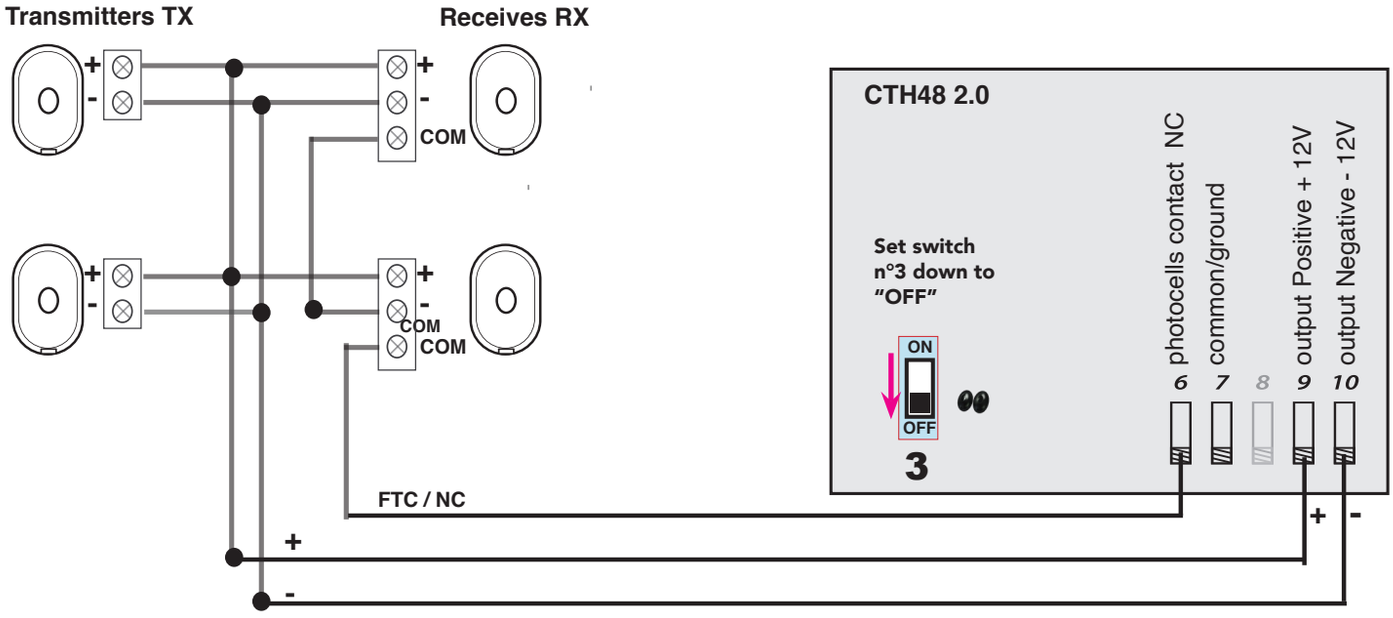
WARNING When wiring photocells to the electronic board, you must remove the bridge which keeps the photocell contact closed. and set the switch n°3 to the "OFF" position



Use the Photocells as safety device:

Power the photocells (connectors 1 & 2)
Wire connector n° 3 FTC (NC contact) to the electronic board.
Should a person, pet, or vehicle break the beam, while the gate is closing, the gate will immediately stop and reverse. While the contact is kept open the gate will no longer close until the infrared beam alignement is restored and the contact kept closed.

Wiring of 2 pairs of photocells (in series wiring)



Electic lock

The use of an electric lock is complementaruy and not mandatory as the Ducati actuators have an irreversible mechanical system and keep the gate leaves firmly on the mechanical stop.

The use of electric locks can be useful in cases of a gate with a leaf measuring more than 2.8m, especially in the case of very elastic leaves to keep the gate locked at the end of the leaf.

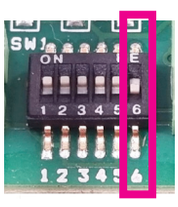
How it works:

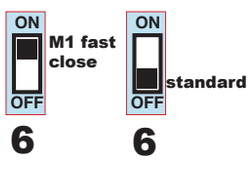
before the motors start opening, the CTH48 2.0 electronic board sends an impulse which triggers the electric lock, freeing the door.

The motors start opening.

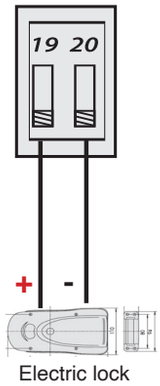
During closing, the thrust of the motor itself triggers the locking of the electric lock which engages and mechanically keeps the leaf still.

WARNING:
in case of connection of an electric lock it is recommended to position switch n° 6 at the bottom in the “OFF” position.
In this way, when closing, the M1 leaf will proceed without slowing down to give greater thrust to the leaf and trigger the locking of the electric lock even in the most extreme conditions.





Switch n° 6:
- Set to “ON” (up) to select the following function: M1 closes at high speed without slowing down (recommended if electric lock is present)
- Set to “OFF” (down) for standard operation, i.e. both M1 and M2 both in opening and closing maneuver will slow down before stop (both wings will SOFT STOP in closure)



Electric lock
12V dc

Ducati recommands to use the E-LOCK electric lock with BOOSTER 101 availables on www.ducatihome.it website

BOOSTER 1012

E-LOCK 1012

DUCATI PRODUCTS: A GUARANTEE OF SAFETY RELIABILITY IN FULL COMPLIANCE OF THE EU Norms

The installation and motorization of a gate requires the application of a series of standards and laws aimed at guaranteeing safety for the end user. Ducati Home automation has had all its products tested by authorized bodies such as NEMKO and INTERTEK in order to guarantee full compliance with the regulations listed below.

Our products have passed hundreds of scrupulous tests in the European laboratories of certifying institutes such as INTER-TEK, NEMKO and TUV, obtaining full and total certification to current European regulations.
Complete test reports carried out by external control bodies are available to the public upon simple request.

The installer will have to draw up the declaration of conformity in relation to the machinery directive 98/37/EC which, we remind you, differs depending on the type, swing door, sliding door, overhead door or sectional door. To this end, the installer is required to carry out a test of the structure by carrying out an anti-pressure test with a specific dynamometric instrument, issuing a test certificate to the end user.

In summary, the rules that the manufacturer must comply with concern:
1- Compliance with the 98/37 CE machinery directive 2- Compliance with the EMC electromagnetic compatibility directive 3- Compliance with the R&TTE99/05CE radio control directive 4- Compliance with anti-pressure safety harmonized standards EN12453-2017 and EN 12445

WE CERTIFY THAT THE PRODUCTS COMPLY WITH THE FOLLOWING REGULATIONS:

EMC -ELECTROMAGNETIC COMPATIBILITY
EN55014-1-2006+A1:2009
EN55014-2-1997+A1+A2:2008
EN61000-3-2:2006+A1+A2:2009
EN61000-3-3:2008

LVD - LOW VOLTAGE DIRECTIVE
EN60335 1-2001+A13 2008 + A14 2010
EN60335-2-103:2003 +A11 2009
EN62233-2008

IMPACT SAFETY REGULATIONS
EN 13241-1:2003 +A1
EN12453:2000
EN12455:2000

R&TTE - RADIO & TELECOMMUNICATIONS
EN301489-3V.1.4.1
EN 300 220-2V.2.1.2
Radio Equipment Directive (RED)

FCC- USA TELECOMMUNICATIONS COMMISSION
FCC ID: OLS137925764 Washington laboratories tested * remote mod.6203

RoHS - RESTRICTION OF HAZARDOUS SUBSTANCES

Intertek

Intertek Italia S.r.l.
Via Principe di Udine, 114
33030 Campoformido (UD)
Tel. +39 0432 653411 Fax 653499
Via Aldo Moro, 45
20060 Gessate (MI)
Tel. +39 039 6840110 Fax 039 6200249

Test Verification of Conformity

On the basis of the referenced test report(s), the sample(s) of the below product has been found to comply with the relevant harmonized standard(s) to the directive(s) listed on this verification at the time the tests were carried out.
The manufacturer may indicate compliance to said directive(s) by signing a DoC himself and applying the CE-marking to the product identical to the tested sample(s). In addition, the manufacturer shall file and keep the documentation according to the rules of the applicable directive(s) and shall consider changes of the standard(s) if relevant. Additional requirements may be applicable such as additional directives or local laws.

Applicant Name & Address	:	**DHA Srl** Via Agrate, 99/7 20863 Concorezzo (MB) ITALY
Product(s) Tested	:	Garage driver
Ratings and principal characteristics	:	771.004: 230V, 50Hz, 100W, 1000N Class I
Model(s) :		UP70-100; 8900; 771.004
Brand name	:	DHA, DUCATI HOME AUTOMATION ; Just open it
Relevant Standard(s) / Specification(s) / Directive(s)	:	EN 60335-2-95:2004 in conjunction with EN 60335-1:2002 + A1:2004 + A2:2006 + A11:2004 + A12:2006 + A13:2008 + A14:2010
Verification Issuing Office Name & Address	:	**Intertek Italia S.r.l. a Socio Unico** Via Principe di Udine, 114 33030 Campoformido (UD) - ITALY
Date of Test(s)	:	June – July 2012
Verification/Report Number(s)	:	2007990UDI-001a

NOTE: This verification is part of the full test report(s) and should be read in conjunction with it.

This Verification is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Verification. Only the Client is authorized to copy or distribute this Verification. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this Verification are relevant only to the sample tested. This Verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Signature
Name: Arianna Fogar
Position: Operations Manager
Date: 17 JUL 2012

www.intertek.com

SDI 12.3.3 - Rev. 1 – 16/12/2011

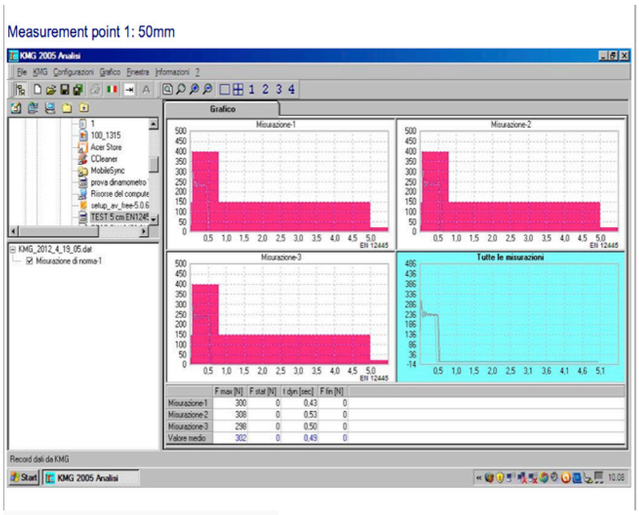
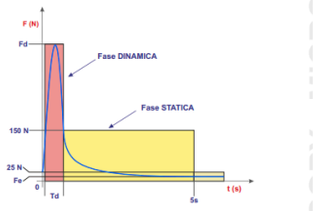


TABELLA DELLE FORZE DINAMICHE AMMESSE IN RAPPORTO ALLE DISTANZE DI MISURA

Forze Dinamiche Ammissibili	Tra i bordi di chiusura e i bordi di controchiusura: spazio / distanza da 50 mm fino a 500mm	Tra i bordi di chiusura e i bordi di controchiusura: spazio / distanza da 500mm	(*) Tra le aree piatte diverse bordi di chiusura e bordi controchiusura, >100 cm con nessun lato < 100m
Porta a movimento orizzontale (scorrevole, a libro)	400 N	1400 N	1400 N (in apertura)
Porta rotante attorno a un asse perpendicolare al pavimento (battente)	400 N	1400 N	1400 N (in apertura)
Porta a movimento verticale (sezionale, basculante)	400 N	400 N	1400 N
Chiusura rotante attorno a un asse parallelo al pavimento (barriera)	400 N	400 N	1400 N



Fase DINAMICA: area rossa, dove viene rappresentato il picco della forza dovuto all'impatto iniziale dell'anta.

Parametri e limiti della fase DINAMICA:
- **Fd:** valore massimo della "forza dinamica" che deve essere minore di 400N o 1400N, a seconda della collocazione del punto di misura e della tipologia di chiusura.
- **Td:** periodo durante il quale la forza supera i 150N, il "tempo dinamico" **deve essere minore di 0,75 secondi.**

Fase STATICA: area gialla, dove viene rappresentato l'andamento della forza che (normalmente dopo il picco iniziale) ridiscende sotto la soglia di 150N, e termina a 5 secondi dall'istante iniziale:

Parametri e limiti della fase STATICA:
- **Fs:** valore (medio) della forza, calcolato a partire dalla fine del periodo dinamico, fino a 5s dall'istante iniziale; non deve superare i 150N.
- **Fe:** valore finale della forza (rilevato a 5 secondi dall'istante iniziale); non deve superare i 25N.

Nemko

Intertek

FEDERAL COMMUNICATIONS COMMISSION FC USA

MANUFACTURER WARRANTY CONDITIONS

1) The warranty is valid exclusively if attributable to an original defect in the product.
2) The warranty period is 2 years from the date of sale.
3) The manufacturer's obligations are limited to the repair or, at its discretion, the replacement of defective parts/components due to defects inherent to the product or component. The refund of a defective product is never applicable. Defective parts will be repaired or replaced by new or in-house produced spare parts at the discretion of the manufacturer.
4) The transport, maintenance or installation costs relating to this product, for any reason, and also the return transport costs of the parts sent to the manufacturer for inspection under warranty and out of warranty, are not included in the warranty and are the sole responsibility of the customer or distributor and cannot be charged to the manufacturer.
5) The warranty becomes void if the product has been modified, tampered with or adapted in any way, if the product has been installed or used on structures that do not comply with those indicated in the manufacturer's installation and use manual. No refund is provided for direct or indirect damages resulting from the modifications described above. The warranty does not cover:
a) costs of installation, maintenance, periodic checks, maintenance, transfer, costs for installation of a repaired or replaced unit. b) parts subject to wear and tear such as: fuses, batteries, brushes, light bulbs, etc. are never included in the warranty;
c) transportation, maintenance or installation costs relating to this product, for any reason,
They are not attributable to product defects and therefore exclude the warranty:
1- improper use,
2- installation or electrical connection errors
3- malfunctions generated by factors unrelated to the product,
4- environmental interferences of any nature,
5- unauthorized repairs, alteration of the product,
6- structural problems related to pillars, gates, doors that are not in a workmanlike manner
7- damage caused by fire, humidity, water,
8- damage from natural phenomena such as: thunderstorms, downpours, floods, lightning,
9- problems caused by radio interference, magnetic interference or other interference from other electrical devices; 10- short circuits caused by an incorrect power supply or variation in the power supply voltage, or all other cases beyond the control of the manufacturer.
The warranty is subject to compliance with the technical characteristics and correct installation methods in accordance with the best practices, safety and conformity of use, expressly indicated in the technical documentation of the products themselves. The warranty also becomes void in the event of verified tampering or improper use of the product. Under no circumstances can the manufacturer be held responsible directly or indirectly for any damages or incidental costs resulting from the use or unusability of the product. Any problems, even if they fall within the warranty conditions, will not give any right to issue debit notes or refund requests to the manufacturer.

For further details or updates, always consult the website www.ducatihome.it

to the page: https://ducatihome.it/pages/warranty

AFTER SALE SERVICE

For all requests for assistance, whether under warranty or out of warranty, follow the following procedure:

1st CONTACT US
Send an e-mail or call us to describe the problem encountered, keep the model, date and place of purchase handy
Our manager will assist you by identifying the source of the problem. If possible, the technician will guide you to resolve the problem by telephone without the need to send us the product for inspection. write to info@ducatihome.it or help@ducatihome.it

2nd SEND DEFECTIVE COMPONENT PART FOR CHECK
If necessary, it will tell you which component of the product to send to our assistance center for inspection and repair/replacement. Attached to the package you must send a copy of the receipt or purchase invoice, description of the problem and your contact details (tel-email-address)
Attention: the component or product must be sent to our laboratory at the customer's expense. The goods travel at the customer's risk until they are delivered to the laboratory. We recommend insured shipping via courier to be able to track the shipment.
Responsibility for any damage suffered during transport cannot be attributed to the manufacturer who will verify the applicability of the warranty on the product in the state in which it will be found when it is delivered to the manufacturer.
Pack the product well to avoid damage during transportation.
No alterations or cancellations must appear on the proof of purchase for the warranty to be valid.

3rd ANALYSIS, REPAIR OR REPLACEMENT
Upon receipt, a check will be carried out on the material to verify compliance with the warranty conditions.
You will be contacted as soon as the analysis report is drawn up by the technical office (usually no later than 48 hours from receipt of the package).
In the event of a product out of warranty, we will send a quote for repair or replacement of parts.
Products under warranty will be repaired or replaced free of charge. Contact must be made exclusively with the manufacturing company, at the contact details found on the website www.ducatihome.it.

The service is carried out from the Ducati Italian headquarters for the whole world.

For further details or updates, always consult the website www.ducatihome.it

to the page: https://ducatihome.it/pages/after-sales-service

Testing and commissioning of the automation

These are the most important phases in the creation of automation to guarantee maximum safety of the system.

They must be carried out by qualified and expert personnel who will have to establish the tests necessary to verify the solutions adopted with respect to the risks present and to verify compliance with the provisions of laws, rules and regulations: in particular, all the requirements of the standards EN 12453-2017.

Additional devices must undergo specific testing.

Testing can also be used to periodically check the devices that make up the automation.
Every single component of the automation requires a specific testing phase.

Perform the test as follows:

1. Check that the provisions in the chapter - WARNINGS - have been strictly respected

2. Check the correctness of all electrical connections, and the good condition of fuses, cells and batteries.

3.Check the correct operation of the manual emergency release.
Unlock the gearmotor(s) and check whether it is possible to manually move the gate Opening and Closing with a force not exceeding the value foreseen by the limits of use. Lock the gearmotor.

4. Using the key selector or the control button or the transmitter, carry out gate closing and opening tests and check that the movement corresponds to what was expected

5. Check the correct functioning of each safety device present in the system.
   5.1 check that the photocells intervene in any case, switching from the active state to the alarm state and vice versa
   4.2 verify that the intervention causes the expected action in the control unit: for example, in the Closing maneuver it causes the movement to be reversed.

If the dangerous situations caused by the movement of the gate have been safeguarded by limiting the impact force the force measurement must be carried out according to the provisions of the EN 12453 standard using a specific dynamometric meter
If the 'Force' adjustment is used as an aid to the impact force reduction system, try until you find the adjustment which offers the best results

Commissioning can only take place after all the above-mentioned testing phases have been successfully carried out

Partial commissioning or in 'temporary' situations is not permitted.

Commissioning can only take place after all the above-mentioned testing phases have been successfully carried out
Partial commissioning or in 'temporary' situations is not permitted.

Create and keep (minimum 10 years) the technical file of the automation which must include: overall design of the automation, electrical connection diagram, risk analysis and related solutions adopted, manufacturer's declaration of conformity of all devices used, the CE Declaration of Conformity and a copy of the instruction manual for use and the automation maintenance plan.
Permanently attach a label or plate to the gate indicating the manual release operations of the gearmotor.
Permanently attach the danger warning label or plate to the gate: automated gate, to warn third parties of the presence of an automatic movement system.
Fill in and deliver the automation declaration of conformity to the owner of the automation
Give the owner of the automation the user manual
Create and deliver the maintenance plan to the owner of the automation

Force adjustment is important for safety and must be carried out with the utmost care by qualified people. Important!
- Adjust the force to a sufficient level that allows the maneuver to be carried out correctly; values greater than those necessary to move the gate can, in the event of impact with obstacles, develop forces capable of causing injuries to people and animals or damage to property

Before putting the automation into service, inform the owner adequately and in writing about the dangers and risks still present

Maintenance:

To maintain a constant level of safety and to guarantee maximum durability of the entire automation, it is necessary to carry out a regular maintenance check: within 6 months at most or after 20,000 operations at most, from the previous maintenance.

ATTENTION! – Maintenance must be carried out in full compliance with the safety warnings in this manual and as required by current laws and regulations.
Maintenance program:
- Check the state of deterioration of all the materials and components subject to wear that make up the automation: pay attention to erosion and oxidation of the structural parts; replace parts that do not provide sufficient guarantees.

Check the state of wear of the moving parts: hinges, pinions and all parts of the gate and replace the worn parts

Carry out all tests and checks required for testing.

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Ducati Home Automation
Automazione Cancelli DDA
via Cassani 43036 Fidenza (PR) ITALY
Phone +39-0524-527967
mob +39-335-1022019
info@ducatihome.it help@ducatihome.it
www.ducatihome.it

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