IP2357EN • 2020-03-06


# Ditec EL400

Made in Italy

Installation manual for digital control unit for 3-phase motors with encoder or mechanical limit switches

(Translation from original instructions)

# Index

# GENERAL SAFETY PRECAUTIONS

**Failure to observe the information given in this manual may lead to personal injury or damage to the equipment. Keep these instructions for future reference**

This installation manual is intended for qualified personnel only.
Installation, electrical connections and adjustments must be performed in accordance with Good Working Methods and in compliance with the present standards.
This product must only be used for the specific purpose for which it was designed.
Any other use is to be considered improper and therefore dangerous. The manufacturer cannot be held responsible for any damage caused by improper, incorrect or unreasonable use.
Read the instructions carefully before installing the product. Incorrect installation may cause danger.
The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as they are a potential source of danger.
Before installing the product, make sure it is in perfect condition.
Do not install the product in explosive areas and atmospheres: the presence of inflammable gas or fumes represents a serious safety hazard.
The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account the applicable laws and directives, Good Working Methods, installation premises, system operating logic and the forces developed by the automation.
Before connecting the power supply, make sure the plate data correspond to those of the mains power supply. An omnipolar disconnection switch with a contact opening distance of at least 3mm must be fitted on the mains supply.
Check that there is an adequate residual current circuit breaker and a suitable overcurrent cutout upstream of the electrical installation in accordance with Good Working Methods and with the laws in force.
When requested, connect the automation to an effective earthing system that complies with current safety standards.
During installation, maintenance and repair operations, cut off the power supply before opening the cover to access the electrical parts.
The electronic parts must be handled using earthed antistatic conductive arms.
The manufacturer of the motorisation device declines all responsibility if component parts not compatible with safe and correct operation are fitted.
Only use original spare parts when repairing or replacing products.

# DESCRIPTION

### Specific use

The control unit is specific for doors moved by a single motor.
Safely operation are guaranteed only with the normal specific use.
Ditec is not responsible for improper use or non-compliance with safety instruction contained in this manual.
No-changes are permetted, otherwise the declaration of conformity will be considered void.

**WARNING**: it is recommended to activate the impulsive mode only after having completed the set-up and adjustments of the control unit. In particular, during the limit switches adjustment select only the deadman operation mode.

### Spare parts

Use only original spare parts.

# DIRECTIVES

Entrematic Group AB declares that the Ditec EL500 control panel complies with the fundamental requisites and other relevant requirements laid down by the following EC directives:

Directives – EMC Directive 2014/30/EU
EN 61000-6-3 (2007) + A1:2011 Emission – Residential
EN 61000-6-1 (2007) Immunity – Residential
EN 61000-6-4 (2007) Emission – Industry
EN 61000-6-2 (2005) Immunity – Industry
EN 61000-4-3 (2006) +A1(2008) +A2(2010) RF-field immunity
EN 60335-1 (2012)/AC:2014 Safety – Part 1: General requirements

Directives – Low Voltage Directive LVD 2014/35/EU
EN 60335-1 (2012)/AC:2014 Safety of Household and similar electrical appliance/ Part 1.
EN335-2-103:2015

Technical documentation of safe integration provided.

TÜV certificate conformity with:
EN 12453 (2017) Industrial, Commercial and garage doors and gates. Safety in use
EN ISO 13849-1:2015 Safety of machinery

The production process is aimed to ensure the compliance of the equipment with the technical documentation and it is regularly evaluated by an independent certifying body.

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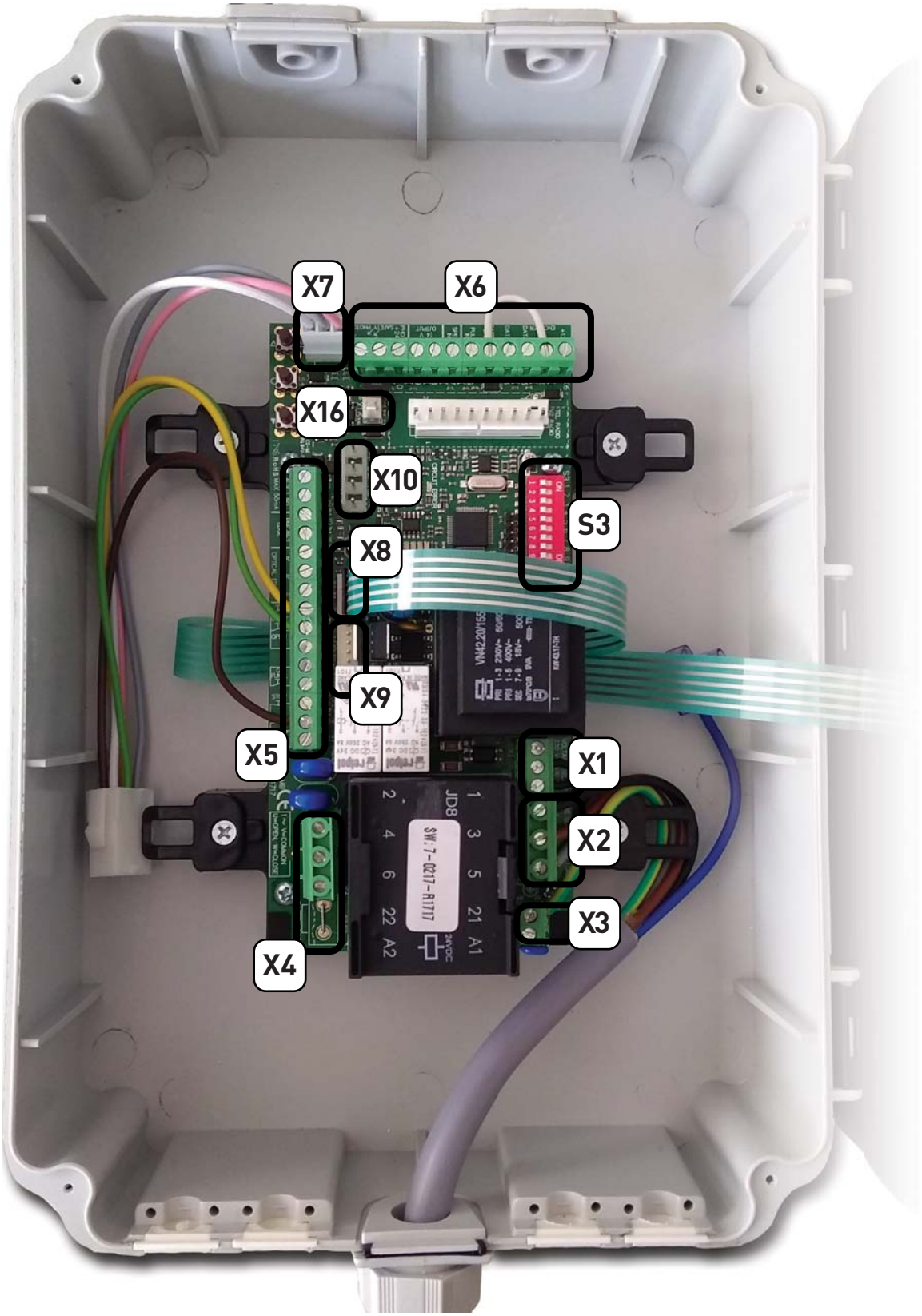
SE -261 44 Landskrona
Sweden

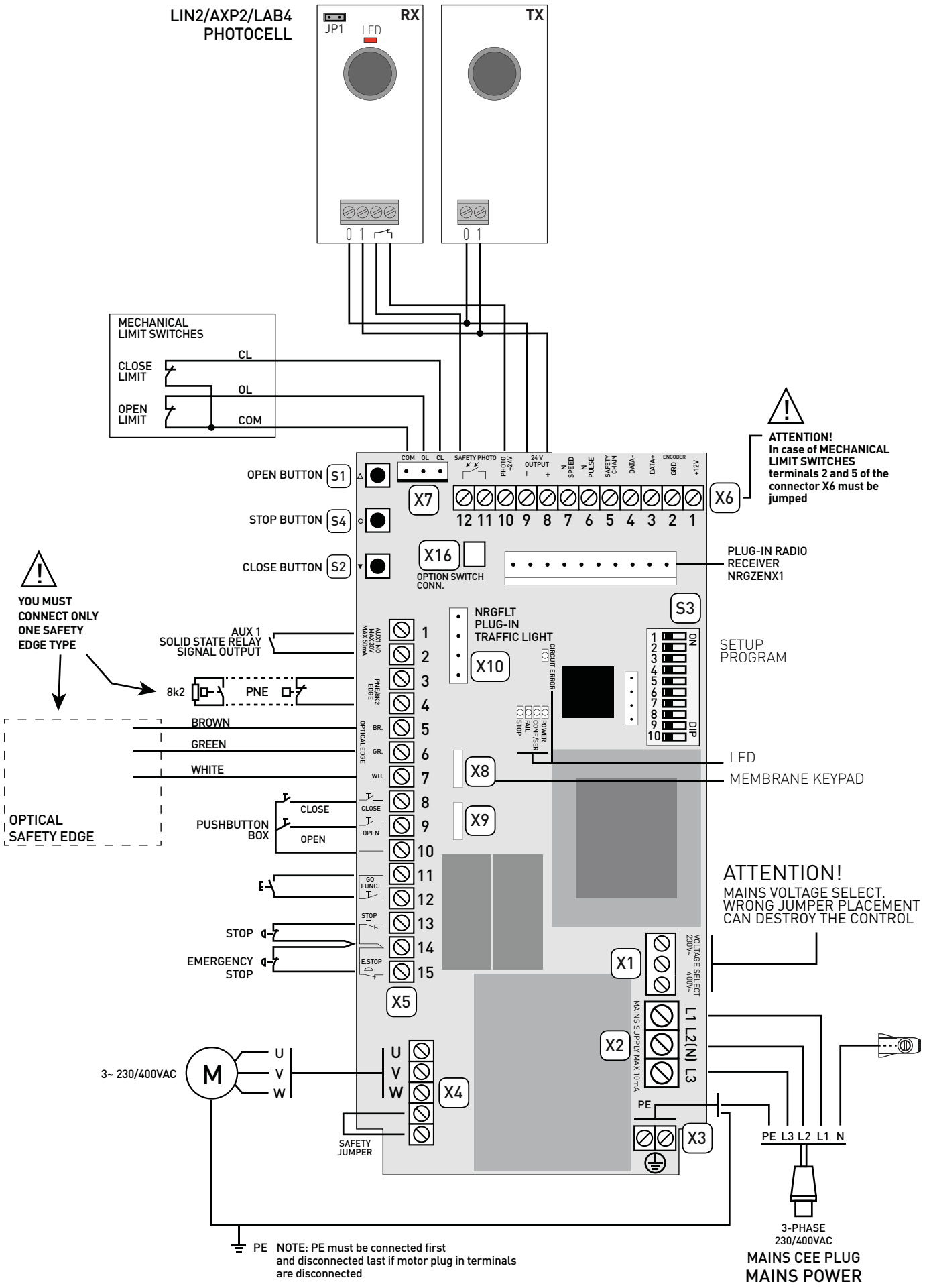
| Location | Date | Signature |
|---|---|---|
| Landskrona | 06-03-2020 | Matteo Fino |

# TECHNICAL DETAILS

| | |
|---|---|
| **Installation** | Vertical |
| **Temperature range (operating)** | -10°C / +50°C |
| **Humidity** | Up to 93% RH non-condensing |
| **Supply voltage:**<br>**(Selectable by jumper using terminal 'X1')** | 3x400VAC; 50/60Hz; ± 10% L1,L2,L3,PE ('N' required ONLY for services)<br>3x230VAC; 50/60Hz; ± 10% L1,N,PE<br>Mains fuse max: 3 x 10A |
| **Transformer** | Max 10 VA , VDE 0570/EN61558<br>Secondary winding is overload protected by fuses. |
| **Motor output** | Max motor load by 3 x 400VAC: 2.2kW |
| **Emergency stop, Stop and safety jumper** | Function as normal stop command and disconnect power to contactor coils |
| **24VDC Output (terminals X6-8,9)** | 24VDC ± 20% (non-regulated), Max load: 100mA |
| **Safety edge input**<br>**(X5-3 and 4)** | PNE/air switch<br>Electric type - 8k2 termination ± 10%<br>Optical type (Fraba OSE or Dalmatic TSS/RSS)<br>Performance level C, Category 2 |
| **Optical safety edge**<br>**(X5-5, 6 and 7)** | Input voltage high (green): 2.5 - 5.0V<br>Input voltage low (green): < 0.5V<br>Input frequency range (green): 250 – 2000Hz (50% duty-cycle)<br>Pulse interval maximum (green): 7.0ms (when not 50% dutycycle) |
| **Photocell input**<br>**(X6-8, 9, 10 and 12)** | X3-18, 22 or X12 1, 3 External photocell, 24VDC (e.g. self contain photocell)<br>Performance level C, Category 2 |
| **Limits** | Terminals X5 and X7 for mechanical limit (prewired).<br>Terminal X6 for electronic limit. |
| **AUX solid-state relay output (X5-1,2)** | NO output. Max 30V – Max 50mA |
| **Box dimension** | 305x210x120mm |




| | | | |
|---|---|---|---|
| **X1** | TERMINALS FOR VOLTAGE SELECTION | **X7** | TERMINALS FOR MECHANICAL LIMIT SWITCH |
| **X2** | MAIN SUPPLY TERMINAL (L1,L2(N),L3) | **X8** | PUSHBUTTON |
| **X3** | GROUND TERMINALS ⏚ | **X9** | PUSHBUTTON |
| **X4** | PLUG IN CONNECTOR FOR MOTOR (U, V, W) | **X10** | TRAFFIC LIGHT LAMP SLOT NRGFTL - OPTIONAL |
| **X5** | TERMINALS FOR SAFETY DEVICES | **X16** | CONNECTOR FOR EXTERNAL AUTO CLOSE SWITCH |
| **X6** | PHOTO CELL TERMINALS AND ENCODER LIMIT SWITCH | **S3** | DIP SWITCH FOR PROGRAMMING |


LIN2/AXP2/LAB4
PHOTOCELL
RX
TX
JP1
LED
MECHANICAL
LIMIT SWITCHES
CLOSE
LIMIT
OPEN
LIMIT
CL
OL
COM
OPEN BUTTON S1
STOP BUTTON S4
CLOSE BUTTON S2
X7
X6
X16
OPTION SWITCH
CONN.
PLUG-IN RADIO
RECEIVER
NRGZENX1
ATTENTION!
In case of MECHANICAL
LIMIT SWITCHES
terminals 2 and 5 of the
connector X6 must be
jumped
YOU MUST
CONNECT ONLY
ONE SAFETY
EDGE TYPE
AUX 1
SOLID STATE RELAY
SIGNAL OUTPUT
8k2
PNE
BROWN
GREEN
WHITE
OPTICAL
SAFETY EDGE
PUSHBUTTON
BOX
CLOSE
OPEN
STOP
EMERGENCY
STOP
NRGFLT
PLUG-IN
TRAFFIC LIGHT
X10
S3
SETUP
PROGRAM
LED
X8
MEMBRANE KEYPAD
X9
ATTENTION!
MAINS VOLTAGE SELECT.
WRONG JUMPER PLACEMENT
CAN DESTROY THE CONTROL
X1
X2
X5
X4
X3
3~ 230/400VAC
M
U
V
W
SAFETY
JUMPER
PE
PE L3 L2 L1 N
3-PHASE
230/400VAC
MAINS CEE PLUG
MAINS POWER
PE NOTE: PE must be connected first
and disconnected last if motor plug in terminals
are disconnected

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# 1. INSTALLATION

For a correct installation:

- Install where the control unit can be protected from rain or adverse weather conditions
- Mounting must be vertical
- The mounting surface must be flat and not be subject to vibrations
- Do not install in an area of potential risk of condensation
- It is important that the door can be clearly seen from the position of the control while operating
- Install in an area not accessible to children or unauthorized persons
- Do not perform any electrical connections before the installation is completely accomplished

# 2. ELECTRICAL OPERATING INSTRUCTIONS

Read carefully and respect the connection's sequence.

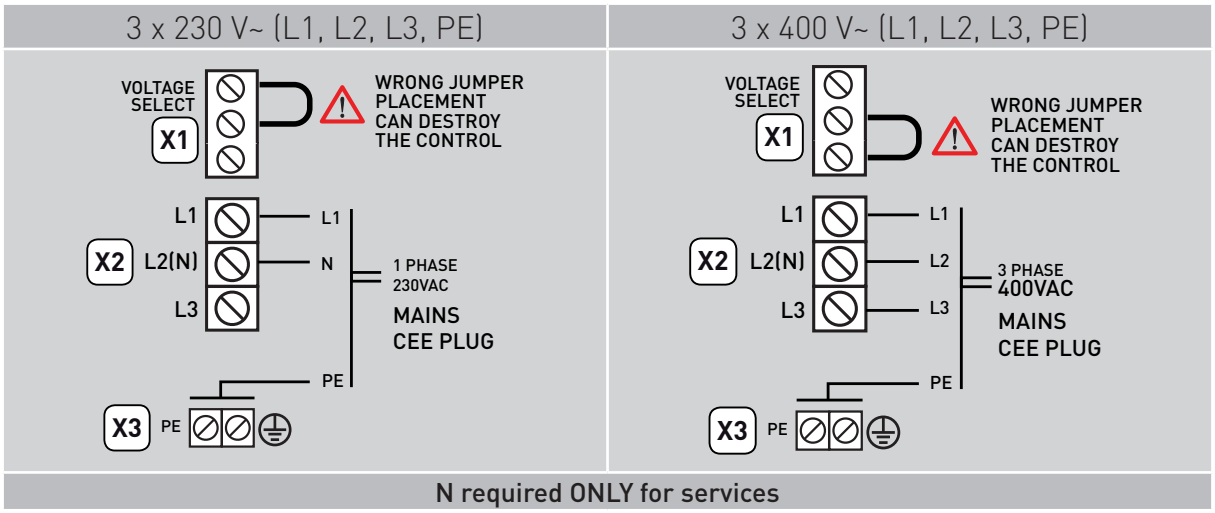
**IMPORTANT!** All the connection operations must be performed only after the main power supply has been disconnected.
**TURN OFF THE MAIN POWER SWITCH BEFORE ANY OTHER OPERATION!**

When connecting control to mains supply a mains isolator switch (16A CEE - plug) according EN 12453 is required.
The supply disconnect device (main switch or CEE plug) must be installed between 0.6m and 1.7m above floor level.

## 2.1 CONTROL UNIT POWER SUPPLY

The control unit can be powered in two different modes: 400V~ 3-phase or 230~ 3-phase.

**WARNING**! The installation must include an automatic cut off switch with minimum distance between the contacts of at least 3mm.
**WARNING**: The power supply of the motor and of the control unit must be the same. Otherwise you can damage the motor and the control unit and put at risk the safety of the installer.

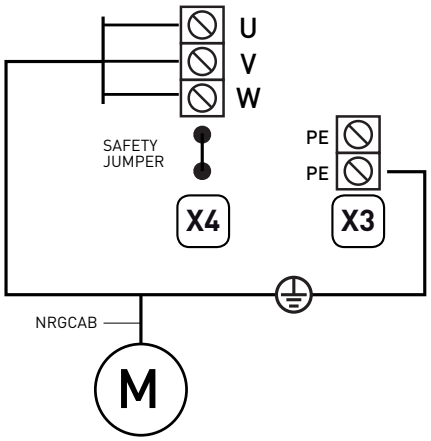



If you need to disconnect the power cable and then to reconnect it or change the control unit wiring sequence, you HAVE TO connect the wires properly, restoring the original configuration. Take care to connect the ground wire to the X3 terminal.

**WARNING!** Verify the direction of rotation of the motor supplied with 3ph x 400V or 1ph x 230V: pay attention to the direction of rotation of the motor: by pressing the OPEN button (S1) the door has to open while, by pressing the CLOSE button (S2), the door must close. In case of wrong direction, reverse two of the phases (L1, L2 and L3) on the X2 terminal or U (OPEN) and W (CLOSE) on X4 terminal.

## 2.2 CONNECTING THE CONTROL UNIT TO THE MOTOR

After the motor and control are fitted they can be connected with a plug-in cable.
The cable has plugs on each end for an easy fitting.
The plugs for motor and control panel are
different and cannot be interchanged.




**NOTE**: PE must be connected first and disconnected last if motor plug-in terminals are disconnected.



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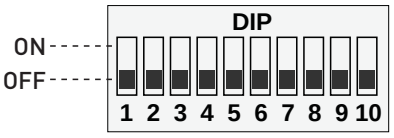
# 3. DIPSWITCH FUNCTIONS




| NOTE | OPERATING LOGIC | DIP 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | Dead-man OPEN/CLOSE | OFF | OFF | - | - | - | - | - | - | - | - |
| B | Impulse OPEN/CLOSE | ON | ON | - | - | - | - | - | - | - | - |
| C | Impulse OPEN / Deadman CLOSE | ON | OFF | - | - | - | - | - | - | - | - |
| | **OPTIONS** | | | | | | | | | | |
| D | Auto close (after delay time) | ON | ON | ON | - | - | - | - | - | - | - |
| E | Electronic after run / edge monitoring (FUTURE USE) | - | - | - | ON | - | - | - | - | - | - |
| F | Force control (Multiturn) (FUTURE USE) | - | - | - | - | ON | - | - | - | - | - |
| | Force control fine sense (FUTURE USE) | - | - | - | - | - | ON | - | - | - | - |
| G | Go Function Standard | - | ON | - | - | - | - | OFF | - | - | - |
| | Go Function Special (Start/Stop, radio) | - | ON | - | - | - | - | ON | - | - | - |
| | Edge super fast reverse 0.05 sec (FUTURE USE) | - | - | - | - | - | - | - | ON | - | - |
| | Edge reverse time – Normal (FUTURE USE) | - | - | - | - | - | - | - | OFF | ON | - |
| | **LIMIT SWITCH TYPE SELECTION** | | | | | | | | | | |
| | Mechanical limit switch | - | - | - | - | - | - | - | - | - | OFF |
| | Encoder limit switch | - | - | - | - | - | - | - | - | - | ON |

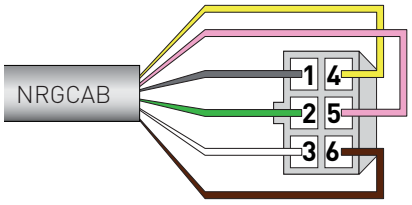
| NOTE | SAFETY LOGIC |
|---|---|
| A | When an obstacle is detected during the DOWN operation the movement is stopped with a brief upward movement; It has no effect on the way UP. |
| B | When an obstacle is detected during the UP operation It has no effect. During the DOWN operation the movement is reversed until the opening limit switch. |
| C | When an obstacle is detected during the UP operation It has no effect. During the DOWN operation the movement is reversed until the opening limit switch |
| D | **This function can only be selected when DIP2 is in ON position and safeties are connected**. The auto closing time is preset to 15 Sec. To reset a new time setting, run the door to open position and push both open and close buttons for minimum 5 Sec. When the red LED START flashing, release the buttons. After that wait until the new desired auto closing time and then push the close button. Max auto closing time is about 4 min. If max setting time is exceeded, the red LED STOP flashing and the auto close time is adjusted back to 15 Sec. Auto closing time is remembered after power OFF. Auto closing can also be disabled with a switch connected to X16 connector. |
| G | Special technical information - see par. 9. |

| ADDITIONAL FEATURES | |
|---|---|
| PHOTO | Photo circuit is tested before every close operation.<br>**Photo circuit must be connected during the setting process.** |
| SAFETY | The door cannot close when there is an error in the photo or safety edge. By a special code the door can close one time in hold to run mode.<br>Press and hold STOP when pressing 222111 (2 = DOWN push button and 1 = OP push button). Code must be pressed within 6s.<br>In addition to the photocell, only one type of additional safety device can be installed: PNE 8k2Ω (terminals 3-4) or optoelectronic safety edge (terminals 5-6-7). |

# 4. CONNECT TO MECHANICAL LIMIT SWITCH MOTOR

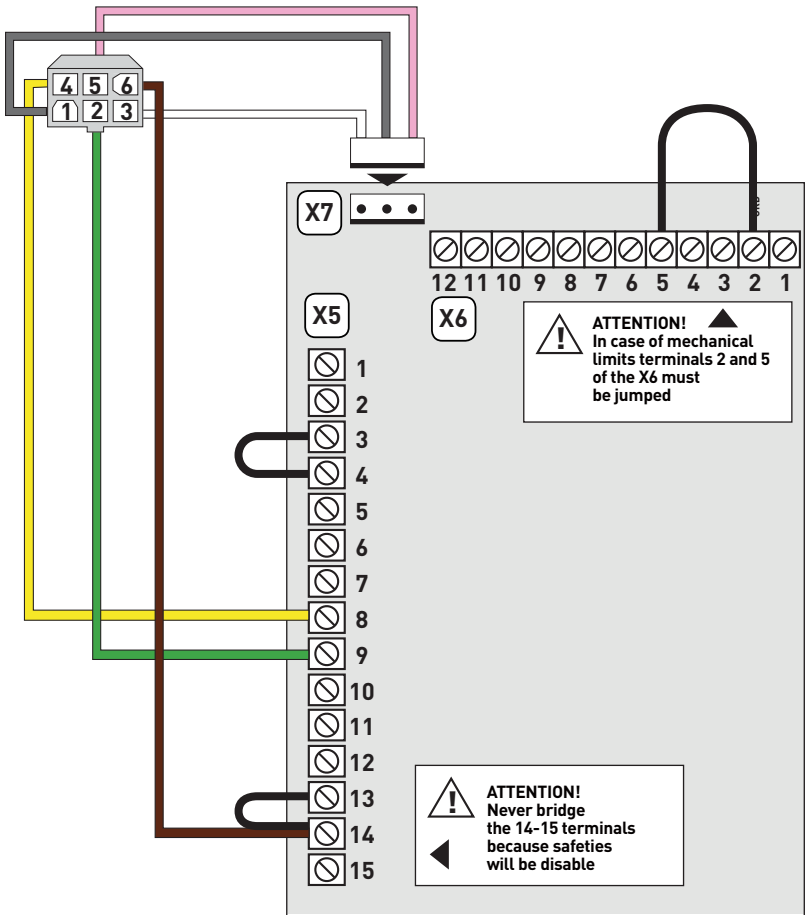
**ATTENTION**: if you connect a control unit already pre-set for mechanical limits to a motor with encoder limits, the motor won't work correctly. In particular, the motor will not find the limit positions and this could put at risk the safety of people and/or things.

In order to connect the Ditec EL400 with a motor with mechanical limits set the DIP10 on S3 in OFF.




| | | |
|---|---|---|
| 1 | GREY | → OPEN LIMIT SWITCH |
| 2 | GREEN | → OPEN BUTTON |
| 3 | WHITE | → SAFETY |
| 4 | YELLOW | → CLOSE BUTTON |
| 5 | PINK | → CLOSE LIMIT SWITCH |
| 6 | BROWN | → SAFETY |

**NB:** If you do not use a Ditec NRGCAB multicore cable, you must use a cable with an AMP 0172168 connector on both ends.




## 4.1 PROGRAMMING WITH MECHANICAL LIMIT SWITCH

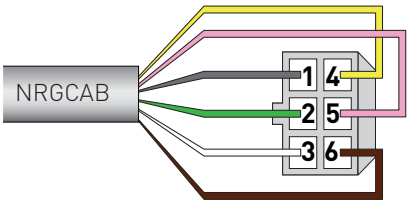
**ATTENTION**: to let the safeties work, these must be connected **BEFORE** starting the control unit setup.

| | |
|---|---|
| | **SETUP PROCESS - MECHANICAL LIMITS STANDARD** |
| 1 | Set DIP10 in OFF position for selecting mechanical limits and DIP1 and DIP2 to OFF position for deadman operation. Standard control for mechanical limits are for PNE edge type (3-4 terminals on X5) and no photo connected. **ATTENTION: Switching DIP10 to ON position and back to OFF will reset to mechanical standard with ONLY PNE edge type.** |
| 2 | Press OPEN or CLOSE to the desired close and open limit position and adjust cam until the limit is correct. **NOTE**: if door is moving in the wrong direction the 2 phases on the mains connection must be interchanged. |
| 3 | Limits are now adjusted. Check that the safety edge is working (if mounted). |
| | **SETTING PROCESS - MECHANICAL LIMITS WITH OTHER SAFETY CONNECTED** **ATTENTION: additional safeties as OSE (connected to X5 5-6-7) or photocell (connected to X6 8-9-10-12) will be active only after the setting process.** |
| 4 | Make setup process 1 and 2 and move the door away from close limit. |
| 5 | Connect the requested safeties. Activate setting by pressing OPEN+STOP for about 10 sec then release. The red LED FAIL (PCB) start with 2 short flashes. |
| 6 | Press STOP to stop setting the edge type and photo. Yellow LED SPEED/SER confirming with 1 sec. |
| 7 | Limits are now adjusted and edge type and photo circuit are memorised. Check that the safety functions are working as expected. **ATTENTION: moving DIP10 to ON position and back to OFF will reset to mechanical standard with ONLY PNE edge type.** |

# 5. CONNECT TO ELECTRONIC LIMIT SWITCHES MOTOR

**ATTENTION**: if you connect a control unit already pre-set for mechanical limits to a motor with encoder limits, the motor won't work correctly. In particular, the motor will not find the limit positions and this could put at risk the safety of people and/or things.

In order to connect the EL400 with a motor with electronic limit switch:
① remove the 3pins white terminal from the cable (Fig. 5A);
② peel the 3 wires and connect them as showed in Fig. 5B;
③ jumped 14-15 terminals;
④ set DIP10 to ON.




| | | |
|---|---|---|
| 1 | GREY | → GND |
| 2 | GREEN | → DATA - |
| 3 | WHITE | → GND |
| 4 | YELLOW | → DATA + |
| 5 | PINK | → SAFETY |
| 6 | BROWN | → +12V |

**NB:** If a Ditec NRGCAB multicore cable is not used, you must use a cable with an AMP 0172168 connector on both ends.

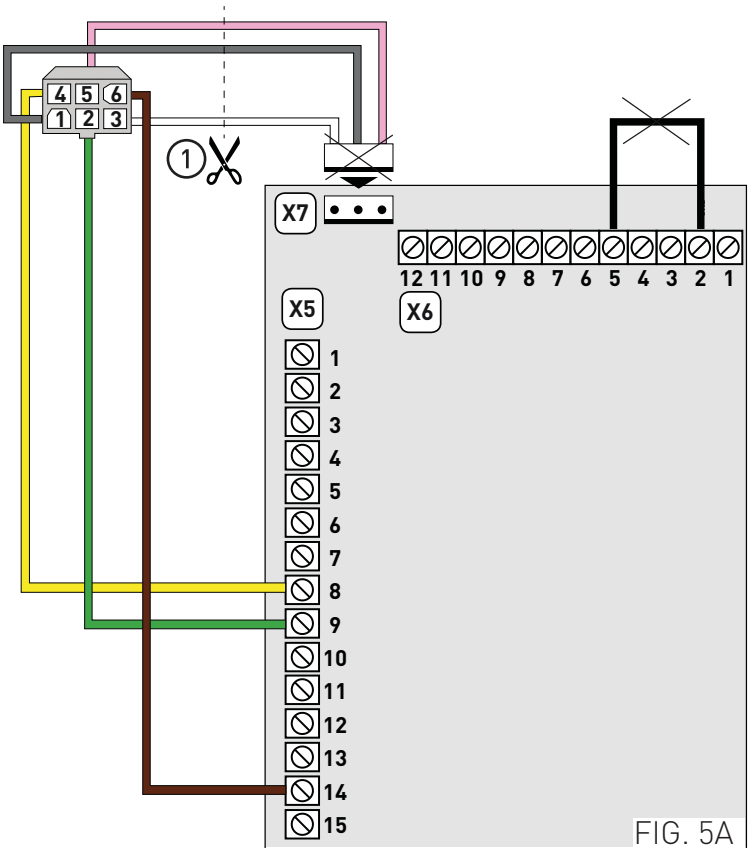



FIG. 5A

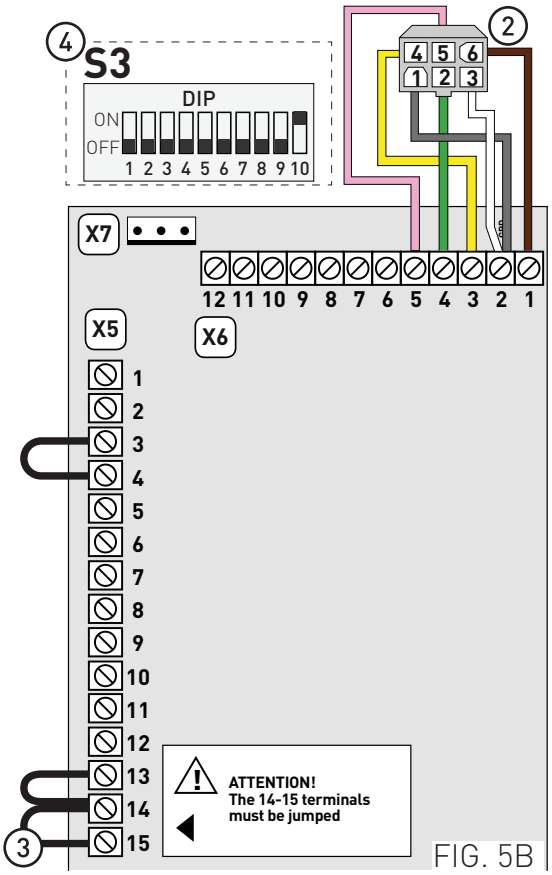



FIG. 5B

## 5.1 PROGRAMMING WITH ELECTRONIC LIMIT SWITCH

**ATTENTION**: to let the safeties work, these must be connected **BEFORE** starting the control unit setup.

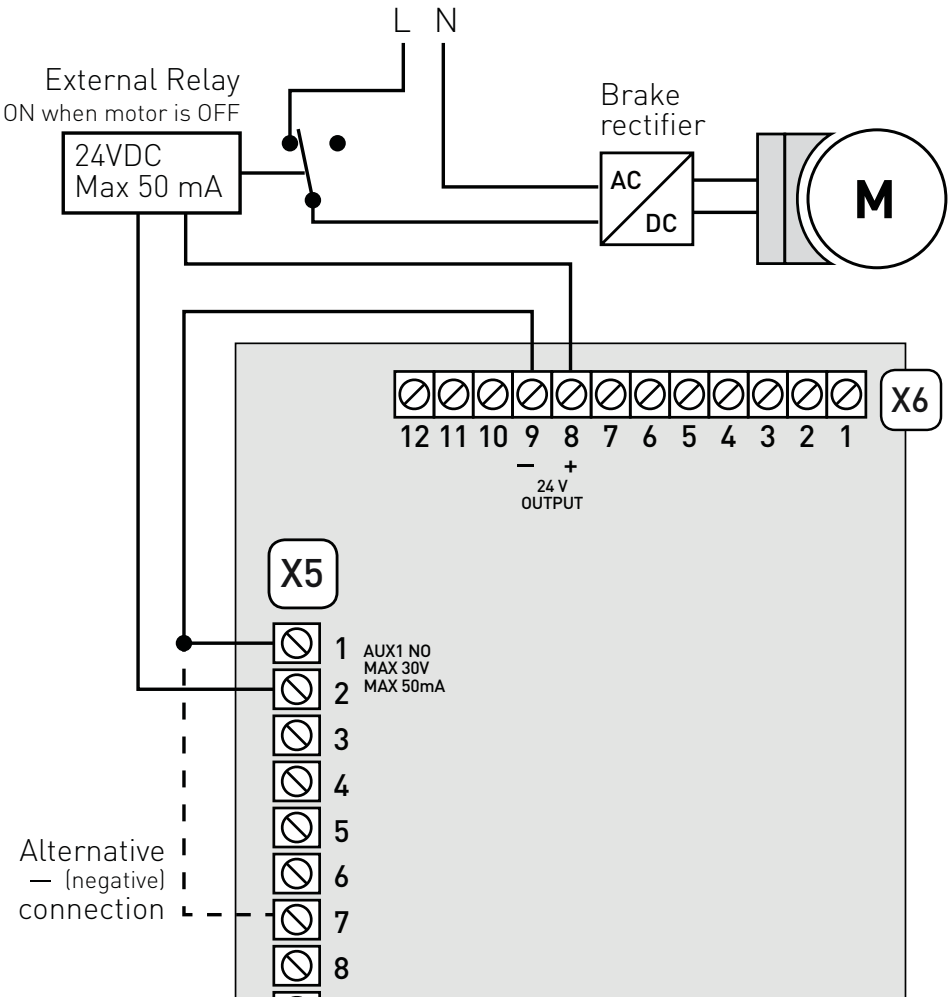
| SETUP PROCESS - ELECTRONIC LIMIT SWITCH | |
|---|---|
| 1 | Turn OFF the power and connect the encoder and all safety equipment.<br>The controller memorises the encoder type by power-up. |
| 2 | Set DIP10 in ON position and turn the power ON.<br>Activate setting by pressing OPEN + STOP for about 10 sec until the red LED FAIL (PCB) starts with 2 short flashes.<br>**WARNING: switching DIP10 ON and then OFF again restores the factory settings with only the pneumatic safety edge activated.** |
| 3 | First press the CLOSE button to the desired down limit position.<br>**NOTE**: if door is moving in the wrong direction the 2 phases on the mains connection must be interchanged.<br>(Alternatively choose the special phases interchange function by pressing OPEN + STOP for 20 sec. - Yellow LED SPEED/SER confirming with 1 sec.) |
| 4 | Press STOP to set the down limit position. Yellow LED SPEED/SER confirming with 1 sec. |
| 5 | Press OPEN to the desired UP limit position.<br>By open position you can adjust the UP limit position finely by running OPEN and CLOSE, but first operation must be in OPEN direction for minimum 2 sec. |
| 6 | Press STOP button to save the UP limit position, encoder direction, **edge type and photo**.<br>Yellow LED SPEED/SER confirming with 1 sec |
| 7 | Limits are now adjusted and edge type and photo circuit are set.<br>Check that the safety edge and photo functions are working as expected. |

# 6. BRAKE RELAY CONNECTIONS ON AUX1

**NOTE:** the Ditec EL400 control panel is compatible with third-party motors with a brake.

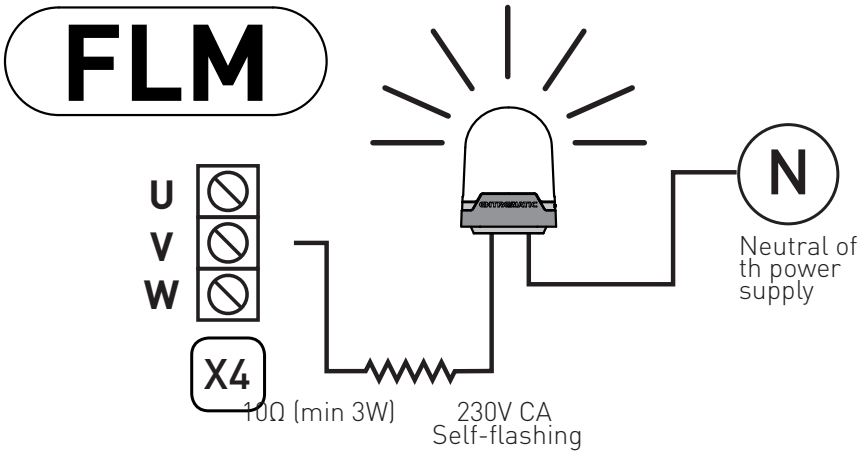
AUX1 output is going OFF 30ms before motor contactor is turned ON for releasing the brake a brief time before motor starts.

AUX1 output is going ON 20ms before motor contactor is turned OFF, for activating the brake a brief time before motor stops.




# 7. FLASHING LIGHT CONNECTIONS

**NOTE:** only for 3phase power supply.

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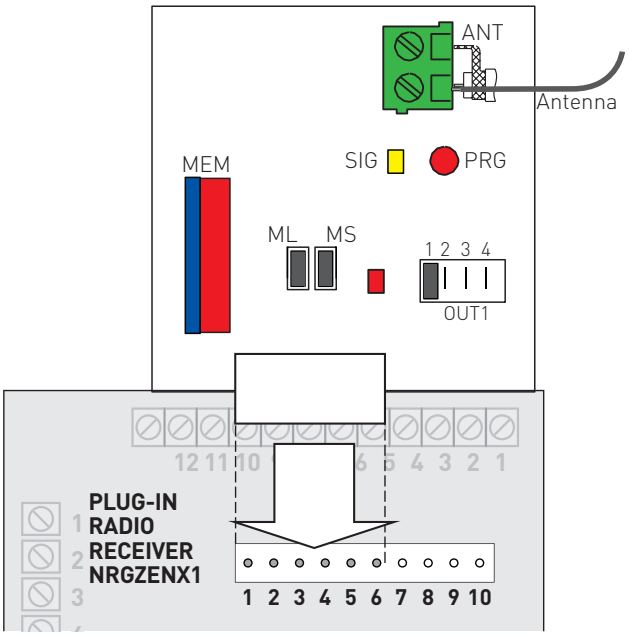
# 8. PLUG-IN RADIO RECEIVER NRGZENX1 (OPTIONAL)

By inserting the radio module in the specific connector, it is possible to command the control panel with a ZEN series remote control.

Put DIP7 in ON.

**NOTE:** for the configuration of the transmitters, refer to the instructions of the NRGZENX1 receiver.

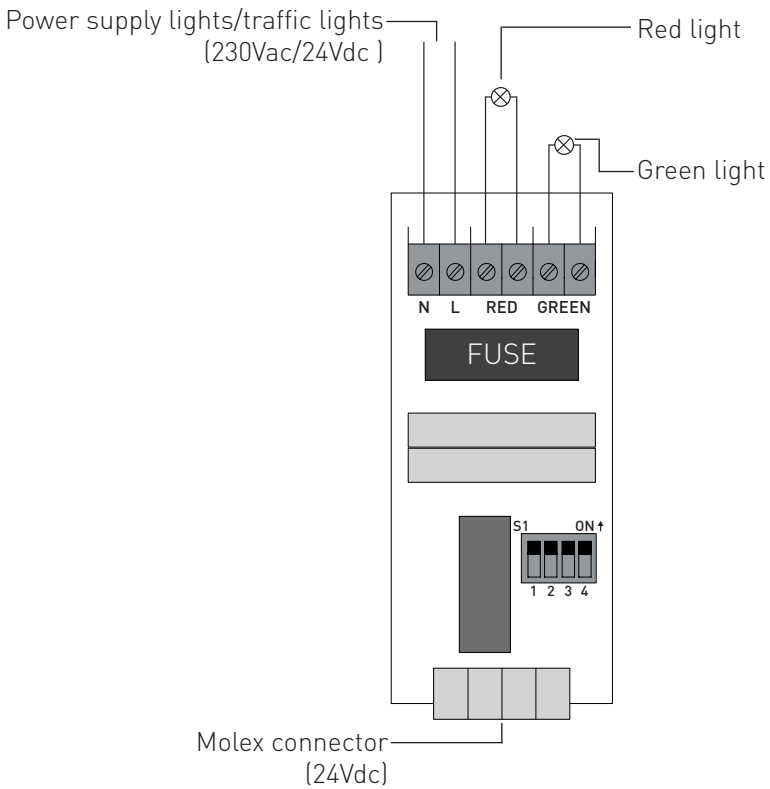



# 9. PLUG-IN TRAFFIC LIGHT NRGFTL (OPTIONAL)

This is a plug-in board to be used with the EL400 in order to control flashing lights, courtesy lamps or traffic lights during the operation of the door or shutter.

Connect the NRGFTL to X10.

**NOTE:** the possible operation options are described in the related instruction manual.



# 10. SPECIAL TECHNICAL INFORMATION

## CONDOMINIUM OPERATING LOGIC (GO function)

The remote control signal always commands the opening except when the door is fully open. In this case it orders the closure.

**GO function is available on 11-12 clips of the X5 terminal board.**
**DIP7 set to OFF.**

If photocell is connected to controller:

- When the door is close → the door will open
- When the door is open → the door will start closing
- When the door is running down → the door will open
- When the door is running up → no change

If no photocell is connected to controller:

- When the door is close → the door will open
- When the door is open → no closing (for safety reason because no photo)
- When the door is running down → the door will open
- When the door is running up → no change

## STEP-by-STEP OPERATING LOGIC (GO function Special)

Each activation of the remote control do this sequence commands OPEN → STOP → CLOSING → STOP

**GO function Special is available on 11-12 clips of the X5 terminal board.**
**DIP7 set to OFF.**

If photocell is connected to controller:

- When the door is close → the door will do opposite of last
- When the door is open → the door will start closing
- When the door is running down → the door will stop and next push opening
- When the door is running up → the door will stop and next push closing

If no photocell is connected to controller:

- The Go function Special is not active when no photo is connected. (safety)

## DISABLE THE PHOTOCELLS BEFORE THE DOOR REACHES THE GROUND

To disable the photocells a little distance before close limit:

1. Move the door to the desired disabling point.
2. Push STOP button first, hold STOP button with OPEN-CLOSE together for 5sec.
3. Confirm LED will flash 1sec.
4. Check that the disabling point is correct.

**ATTENTION**: the point where the photocells are disable must be as low as possible, in order to keep the installation safety.

**ATTENTION**: in case of a complete reprogramming, the disable photocells point must be set again.

# 11. TROUBLESHOOTING

## 11.1 LED GUIDANCE - MECHANICAL LIMIT SWITCH

| Yellow LED CONF./SER. (PCB) | |
|---|---|
| **Fixed light** | Service needed (open counts reached) |
| **1 sec. flash** | Confirming of learning process |

| Red LED FAIL (PCB) | |
|---|---|
| **Fixed light** | If Photo or Edge is activated when CLOSE pushbutton is activated |
| **1 long flash** | Auto close setting active |
| **2 long flashes** | Limits, edge and photo not learned |
| **2 long flashes** | Force control not learned (FUTURE USE) |
| **3 long flashes** | Door stopped by force control (FUTURE USE) |
| **4 long flashes** | Door stopped by runtime |
| **5 long flashes** | Door stopped by force control wear (FUTURE USE) |
| **6 long flashes** | Tacho failure – pulses missing (FUTURE USE) |
| **Continues long flashes** | Fail state PNE edge monitoring. Check impuls by floor missing (FUTURE USE) |

| Yellow LED STOP (PCB) | |
|---|---|
| **Fixed light** | Stop activated or both limits are active |
| **1 long flash** | Safety chain activated |
| **2 long flashes** | Photo – safety test failed. |
| **3 long flashes** | Safety edge – safety test failed |
| **4 long flashes** | Stop circuit – safety test failed |
| **5 long flashes** | Safety chain – safety test failed |
| **6 long flashes** | EEPROM failure. Elec. Counter or position counter by force control |
| **7 long flashes** | EEPROM failure. Powerup failure |
| **8 long flashes** | Welded contactor fail |
| **9 long flashes** | Internal watchdog timeout. |
| **10 long flashes** | Main processor crystal fail |

| Green LED POWER (PCB) | |
|---|---|
| **Fixed light** | The Control Unit has power |

| Red LED CIRCUIT ERROR (PCB) | |
|---|---|
| **Fixed light** | PCB circuit error fail |

## 11.2 LED GUIDANCE - ELECTRONIC LIMIT SWITCH

| Yellow LED CONF./SER. (PCB) | |
|---|---|
| **Fixed light** | Service needed (open counts reached) |
| **1 sec. flash** | Confirming of learning process |

| Red LED FAIL (PCB) | |
|---|---|
| **Fixed light** | If Photo or Edge is activated when CLOSE pushbutton is activated |
| **1 short flashes** | No answer from encoder. Check RS485. |
| **1 long flash** | Auto close setting active |
| **2 short flashes** | Limits, edge and photo not learned |
| **2 long flashes** | Force control not learned (FUTURE USE) |
| **3 long flashes** | Door stopped by force control (FUTURE USE) |
| **4 short flashes** | Wrong limit switch setting |
| **4 long flashes** | Door stopped by runtime |
| **5 long flashes** | Door stopped by force control wear (FUTURE USE) |
| **6 long flashes** | Tacho failure – pulses missing (FUTURE USE) |
| **7 short flashes** | Encoder position out of learned area. (Reset by power up or resetting) |
| **8 short flashes** | Kostal encoder – Power failure |
| **Continues long flashes** | Fail state PNE edge monitoring. Check impuls by floor missing (FUTURE USE) |

| Yellow LED STOP (PCB) | |
|---|---|
| **Fixed light** | Stop activated or both limits are active |
| **1 long flash** | Safety chain activated |
| **2 long flashes** | Photo – safety test failed |
| **3 long flashes** | Safety edge – safety test failed |
| **4 long flashes** | Stop circuit – safety test failed |
| **5 long flashes** | Safety chain – safety test failed |
| **6 long flashes** | EEPROM failure. Elec. Counter or position counter by force control |
| **7 long flashes** | EEPROM failure. Powerup failure |
| **8 long flashes** | Welded contactor fail |
| **9 long flashes** | Internal watchdog timeout |
| **10 long flashes** | Main processor crystal fail |

| Green LED POWER (PCB) | |
|---|---|
| **Fixed light** | The Control Unit has power |

| Red LED CIRCUIT ERROR (PCB) | |
|---|---|
| **Fixed light** | PCB circuit error fail |

The crossed-out wheeled bin symbol indicates that the product should be disposed of separately from household waste. The product should be handed in for recycling in accordance with local environmental regulations for waste disposal. By separating a marked item from household waste, you will help reduce the volume of waste sent to incinerators or landfill and minimize any potential negative impact on human health and the environment.