





Comptec

Comptec Door Drive 6 (CDD6)

Lift door Controller

USER MANUAL

Last FW reference version: 01.05.000

| | | | | | | | |
|----|----|---|---|---|---|----------------------------|--------|
| EN | CE |  |  |  |  | PRJ1166_01_07_02_01_01_IUM | rev.08 |
|----|----|---|---|---|---|----------------------------|--------|

Index

| | |
|--|----|
| Index of tables | 4 |
| Introduction | 6 |
| Glossary | 7 |
| 1 Technical Specifications | 8 |
| 1.1 Standards and Codes References | 8 |
| 1.2 Door Drive Data | 8 |
| 1.3 Compatible Motors Data | 8 |
| 1.4 System mechanical data | 9 |
| 2 Generalities | 10 |
| 2.1 Intended use | 10 |
| 2.2 System overview | 10 |
| 2.3 Compatibility for applications and motors | 11 |
| 3 Installation | 12 |
| 3.1 Preliminary mechanical checks | 12 |
| 3.2 Mechanical Installation | 13 |
| 3.3 Preliminary electrical checks | 13 |
| 3.4 Check of electrical parts | 14 |
| 3.5 Door set-up, Learning and Functional tests | 16 |
| 3.6 Installation trouble-shooting | 19 |
| 4 Functionalities | 20 |
| 4.1 System | 20 |
| 4.1.1 Working Modes | 22 |
| 4.2 Connections | 23 |
| 4.2.1 MLC signals connection | 23 |
| 4.2.2 Direct connection of optical detector to the CDD6 | 25 |
| 4.2.3 Connection of input signals from optional local contacts | 25 |
| 4.2.4 Motor connection Adaptors | 26 |
| 4.2.5 Auxiliary Battery connection | 28 |
| 4.3 HMI: front panel user interface | 29 |
| 4.3.1 Display | 29 |
| 4.3.2 HMI user interface description | 31 |
| 4.4 External handset user interface | 32 |
| 4.4.1 Functional description and keys usage | 32 |
| 4.4.2 Handset menu-tree | 33 |
| 4.5 Door Learning function | 34 |
| 4.5.1 Auto-set procedure: automatic learning function | 34 |
| 4.6 Diagnostic Functions | 37 |
| 4.6.1 Diagnostic operations by HMI | 37 |
| 4.6.2 Diagnostic operations by Handset | 38 |
| 4.7 Firmware upgrade function | 39 |
| 5 Parameters | 40 |

| | | |
|-------|---|----|
| 5.1 | Door operator configuration Parameters | 44 |
| 5.1.1 | P-28: installed skate space | 44 |
| 5.1.2 | P-90: installed motor type | 45 |
| 5.1.3 | P-91: recognized motor type | 48 |
| 5.1.4 | P-22: closing rotation sense | 48 |
| 5.1.5 | P-05: car door locking device settings..... | 48 |
| 5.1.6 | P-06: glass door settings | 49 |
| 5.1.7 | P-99: MLC interface logic settings..... | 49 |
| 5.1.8 | P-76 and P-77: Output DCS and DOS relays contact logic..... | 49 |
| 5.2 | Speed profiles | 50 |
| 5.2.1 | P-B4 and P-D4: Pre-set Speed Profiles | 50 |
| 5.2.2 | P-70: Speed Profiles Reset | 51 |
| 5.3 | Reversing management in closing direction | 52 |
| 5.3.1 | P-00: reversing events management | 52 |
| 5.3.2 | P-34: RVS output activation type | 52 |
| 5.3.3 | P-D9: Closing force limit value Auto-tuning | 52 |
| 5.3.4 | P-DA: Closing force detection settings | 53 |
| 5.3.5 | P-D8: Reversing Disabled offset at the end of closing..... | 54 |
| 5.4 | MLC interface management | 55 |
| 5.4.1 | P-01: MLC commands check mode | 55 |
| 5.4.2 | P-02: Door drive reaction on MLC commands not present..... | 55 |
| 5.5 | Input signals management | 56 |
| 5.5.1 | P-04: RVC input function..... | 56 |
| 5.5.2 | P-21: RVC input logic settings | 56 |
| 5.5.3 | P-31: DETC input logic settings | 57 |
| 5.5.4 | P-32: AUXC input function | 57 |
| 5.5.5 | P-19: FFC options | 58 |
| 5.5.6 | P-20: EOD function time-out (based on EOC input) | 58 |
| 5.6 | Output signals management | 59 |
| 5.6.1 | P-07: AUXS output options | 59 |
| 5.6.2 | P-A0: DOS output activation threshold..... | 59 |
| 5.7 | Door Closed parking management | 60 |
| 5.7.1 | P-49: Door Closed evacuation delay | 60 |
| 5.7.2 | P-84: PSO position error | 60 |
| 5.8 | EN81-20 functions parameters | 62 |
| 5.8.1 | P-49: Door Closed evacuation delay | 62 |
| 5.8.2 | P-47: Time-out detector failed..... | 62 |
| 5.8.3 | P-BA: Opening force limiter | 63 |
| 5.8.4 | P-BB: Opening reversing type | 63 |
| 5.9 | Particular Parameters | 64 |
| 5.9.1 | P-43: Door open parking with no torque | 64 |
| 5.9.2 | P-85: Reset Speed value..... | 64 |
| 5.9.3 | P-A8 / P-C8: Reduced Speed value..... | 64 |
| 5.9.4 | P-29: PIN21 output management | 65 |

| | | |
|-------|---|----|
| 5.9.5 | P-35: RVS output management in door open position | 65 |
| 5.9.6 | P-80: Closing delay when door completely reopened after reversing | 65 |
| 5.9.7 | P-82: DCS management during Unlocking jam retries | 66 |
| 5.9.8 | P-75: Storage of estimated motor temperature | 66 |
| 5.10 | Motor Thermal management | 66 |
| 6 | Maintenance | 68 |
| 6.1 | Alarms..... | 68 |
| 6.2 | Troubleshooting (FAQ) | 70 |
| 6.3 | Correct working check sequence | 71 |
| 7 | After sale | 76 |
| 7.1 | Customer support..... | 76 |
| 7.2 | Replacements | 76 |
| 7.3 | Material disposal | 76 |
| 8 | General information | 77 |
| 8.1 | General considerations..... | 77 |
| 8.2 | Confidentiality agreement..... | 77 |
| 8.3 | Safety..... | 77 |
| 8.4 | Installation personnel requirements | 78 |
| 8.5 | User requirements..... | 78 |
| 8.6 | Standard and codes reference..... | 78 |
| 8.7 | Warranty | 79 |
| 8.8 | Final considerations..... | 79 |
| 9 | Annex | 80 |
| 9.1 | Product conformity declaration (DDC) | 80 |

Index of tables

| | |
|--|----|
| - Table 1: door drive data | 8 |
| - Table 2: compatible motors data - | 8 |
| - Table 3: system limits - | 9 |
| - Table 4: list of connections/keys | 11 |
| - Table 5: mechanical installation of the drive –..... | 13 |
| - Table 6: installation of electrical parts (Encoder or Magnet switch version)–..... | 16 |
| - Table 7: configuration, learning and test sequence –..... | 19 |
| - Table 8: connections characteristics - | 21 |
| - Table 9: inputs types - | 21 |
| - Table 10: outputs types –..... | 22 |
| - Table 11: door drive working modes -..... | 22 |
| - Table 12: I/O signals connections vs MLC - | 24 |
| - Table 13: direct connection of the optical detector - | 25 |
| - Table 14: mean visualizations on the front panel display - | 30 |
| - Table 15: functional table of the CDD6 front panel -..... | 31 |
| - Table 16: functional table of the external diagnostic tool -..... | 32 |

| | |
|--|----|
| - Table 17: auto-set learning procedure - | 35 |
| - Table 18: possible errors during auto-set learning procedure – | 35 |
| - Table 19: possible errors during auto-set learning procedure – | 36 |
| - Table 20: I/O signals reported - | 38 |
| - Table 21: measurements reported in the monitor menu table - | 38 |
| - Table22: parameter list of the CDD6 door drive –..... | 43 |
| - Table 23: main skate types - | 44 |
| - Table 24: selectable motor list – | 47 |
| - Table 25: Trouble-shooting - | 70 |
| - Table 26: functional check sequence - | 75 |

Introduction

The present user manual contains all the necessary information for a safe and correct installation, configuration, use and maintenance of the lift door controller CDD6.

Before proceeding with the installation of the CDD6, it is necessary and strongly recommended that the installation personnel have read and understood all the parts described in the present manual.



Incorrect installation of the system may cause serious danger and/or injury.


The present user manual is in any case integral part of the CDD6 device, and it must be included to the installation documentation.

All the references to the safety and responsibility are reported in the chapter 8 “General information”.

The present manual contains detailed information related to the firmware version 01.05.000, regarding all descriptions about functional implementation.

NOTE: all the pictures, images, schematics reported in this manual have purely example purpose: the components of the lift system may result different, based on the installed motor and door operator.

Glossary

| Symbol | Description | Notes |
|---|---|--|
| CDD6 | Computec Door Drive 6 | |
| E.C. | Elevator Controller | |
| MLC | Main Lift Controller | |
| HMI | Human to Machine Interface | User Interface on the CDD6 front panel |
| DOC | Door Opening Command | Same as KA, VST-O |
| DCC | Door Closing Command | Same as KC, VST-S |
| RSC | Reduced Speed Command | Same as KB, VRVRT |
| RVC | Reversing Command | Same as KN |
| FFC | Fire-Fighting Command | Same as KFF |
| AUXC | Auxiliary Command | Same as KAUX |
| DTBC | Double TB Command (second door space) | Same as K2TB |
| EOC | Emergency Opening Command | Same as KEOD |
| DETC | Detector (barriers, photocell) Command | Same as Det.In. |
| DOS | Door Opened Signal | Same as LA, KET-O |
| DCS | Door Closed Signal | Same as LC, KET-S |
| RVS | Door Reversing Signal | Same as IM, KSKB |
| AUXS | Auxiliary Signal | Same as AUX |
| BUZS | Acoustic Signal | Same as BUZZ, PIN21 |
| SL | Door Self-learning active | |
| Au | Auto-Setup procedure active | |
| CL | Closing/Closed | |
| OP | Opening/Opened | |
| FSET | Reversing force setting | |
| TH | Door height | |
| TB | Door width | |
| DTBC | Second door width command | |
| AFT | Anti-Finger Trapping device function | |
| ms | Millisecond | |
| mA | milliAmpère | |
| Imp. | Space transducer pulses | |
| PSO | Parking with Skate Opened | |
|  | Important Note | |
| S20 | Aluminium Skate, 20mm space on the belt | |
| S90 | Iron Skate, 90mm space on the belt | |
| S120 | Iron Skate, 120mm space on the belt | |

1 Technical Specifications

1.1 Standards and Codes References

All references to the standards and Codes are reported in paragraph 8.6 “Standard and codes reference”.

1.2 Door Drive Data

| | | |
|------------------------------------|---|-----|
| Supply voltage | [100 ; 240]Vac 1-ph 50-60Hz, (115V – 20%, 230V + 30%) | Vac |
| Available Peak output power | 300 | VA |
| Nominal output power | 200 | VA |
| Working Temperature | [-10; +60] | °C |
| Humidity | [20;80] non condensing | % |
| Electrical protection | [5x20, 4A] rapid fuse on main power supply line [5x20, 8A] fuse on the battery supply line | |
| Environmental protection | IP-54 case | |

- Table 1: door drive data

1.3 Compatible Motors Data

| (Code) Motor Type / Transmission / Encoder | Nominal power | Nominal Voltage | Nominal current |
|---|---------------|-----------------|-----------------|
| DC Motors | | | |
| (12) GR 63x25 + SG80K (15:1) + Enc100 | 50VA | 24V | 2.7A |
| (13) GR 63x55 + SG120 (15:1) + Enc100 | 100VA | 24V | 4.9A |
| (20) M63x50 + SN40 (15:1) + IGO100/2 | 100VA | 24V | 4.9A |
| (21) M63x25 + SN31 (15:1) + IGO100/2 | 100VA | 24V | 2.7A |
| (23) M48x60 + SN 22,6 (7:1) + IGO100/2 | 50VA | 24V | 2.6A |
| (01) Moog™ 1Nm (4:1 belt) + Enc500 | 100VA | 24V | 3.6A |
| (02) Moog™ 2Nm (4:1 belt) + Enc500 | 200VA | 24V | 6.0A |
| (02) Siboni™ 2Nm 65/75PL130 | 200VA | 60V | 7.1A |
| (03) Siboni™ 65PC132 (4:1 belt) + Enc500 | 150VA | 65V | 2.7A |
| (04) Siboni™ 65PC132 QKS 11 | 150VA | 65V | 2.7A |
| (24) Sidor™ M2 (Siemens™) | 43VA | 24V | 1.8A |
| (25) Sidor™ M3 or M4 (Siemens™) | 120VA | 30V | 4.0A |
| (17) AT25™ M63x25 24V (Siemens™) | 70VA | 24V | 2.8A |
| (18) AT25™ M63x55 30V (Siemens™) | 120VA | 30V | 4.0A |
| (30) S78L™ (Prisma™ FOX) | 100VA | 24V | 5.6A |
| (31) M63x60/I + P63Z + IGO100/2 (Sele™) | 150VA | 40V | 3.0A |
| Brushless Motors | | | |
| (14) BG 62x60 + SG120 (15:1) + Enc100 | 130VA | 40V | 3.9A |
| (16) BG 62x30 + SG80K (15:1) + Enc100 | 70VA | 40V | 2.2A |
| (28) 1A (Prisma™ Jaguar) | 160VA | 40V | 4.0A |
| (29) 2A (Prisma™ Jaguar) | 320VA | 40V | 8.0A |
| DC Motors for Magnet switches applications | | | |
| (05) DC 1Nm comp. F28™/LMDC2010™ | 100VA | 24V | 3.6A |
| (06) DC 2Nm comp. F29™/LMDC2011™ | 200VA | 24V | 6.0A |
| (07) DC 1Nm comp. Digidoor™ 1Nm | 100VA | 24V | 3.6A |
| (08) DC 2Nm comp. Digidoor™ 2Nm | 200VA | 24V | 6.0A |
| (19) Siboni™ 65PC132 Poly V | 150VA | 65V | 2.7A |
| (22) Siboni™ 65PC132 Poly V Digidoor™ 1Nm | 150VA | 65V | 2.7A |

- Table 2: compatible motors data -

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1.4 System mechanical data

| Motor type | Moving mass limit | Maximum Parking force available during parking with door opened | Maximum force available during closing movement |
|---|-------------------|---|---|
| DC Motors | | | |
| (12) GR 63x25 + SG80K (15:1) + Enc100 | 180kg | 70N | 250N |
| (13) GR 63x55 + SG120 (15:1) + Enc100 | 300kg | 90N | 270N |
| (20) M63x50 + SN40 (15:1) + IGO100/2 | 300kg | 85N | 280N |
| (21) M63x25 + SN31 (15:1) + IGO100/2 | 180kg | 70N | 240N |
| (01) Moog™ 1Nm (4:1 belt) + Enc500 | 180kg | 150N | 290N |
| (02) Moog™ 2Nm (4:1 belt) + Enc500 | 300kg | 150N | 290N |
| (03) Siboni™ 65PC132 (4:1 belt) + Enc500 | 180kg | 150N | 290N |
| Brushless Motors | | | |
| (14) BG 62x60 + SG120 (15:1) + Enc100 | 300kg | 100N | 350N |
| (16) BG 62x30 + SG80K (15:1) + Enc100 | 200kg | 80N | 280N |
| DC Motors for Magnet switches applications | | | |
| (05) DC 1Nm comp. F28/LMDC2010 | 180kg | 150N | 290N |
| (06) DC 2Nm comp. F29/LMDC2011 | 300kg | 150N | 290N |
| (07) DC 1Nm comp. Digidoor 1Nm | 180kg | 150N | 290N |
| (08) DC 2Nm comp. Digidoor 2Nm | 300kg | 150N | 290N |

- Table 3: system limits -

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2 Generalities

2.1 Intended use

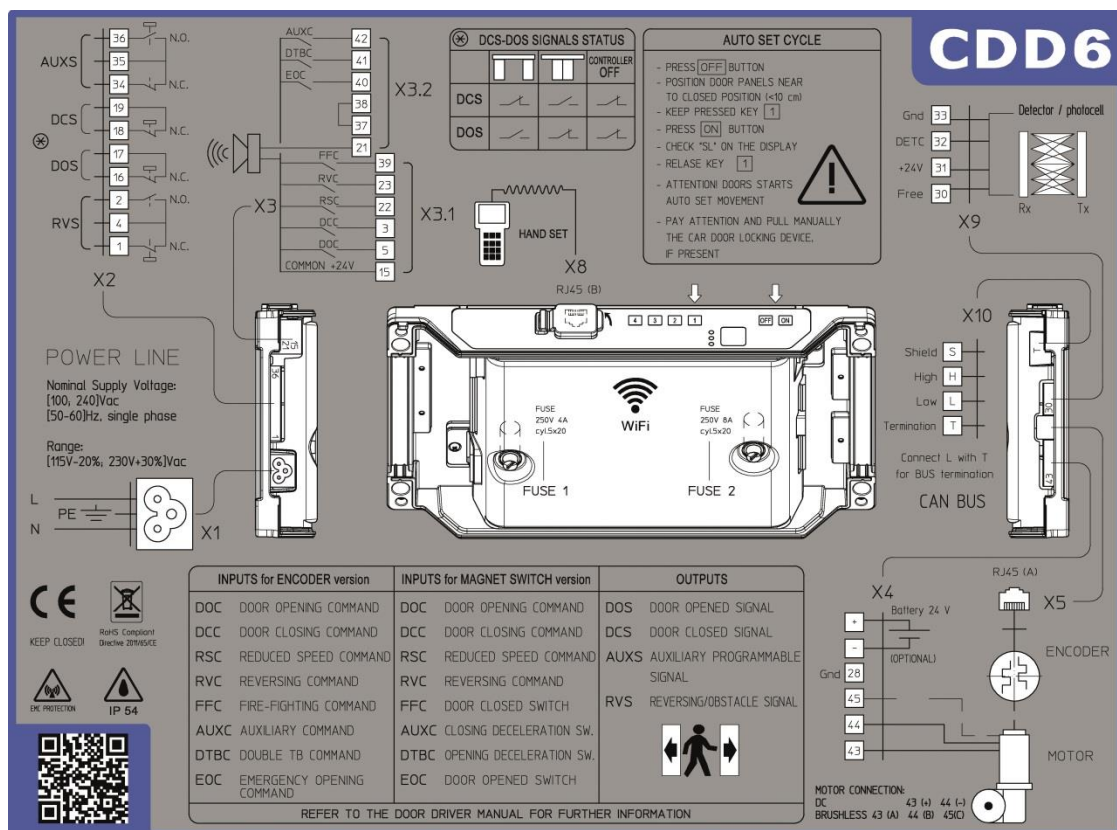
The CDD6 (Computec Door Drive 6) device is an electronic system that permits to operate all the lift doors operated by the motors described in the table “- Table 2: compatible motors data”.

The CDD6 controls the lift door opening and closing automatically, according to the commands received from the main lift controller of the lift system, and controls the time intervals, currents, speed profiles, different external devices directly pluggable to the drive, and the possible anomalous behaviour as over-voltages, connections interruptions, and so on.

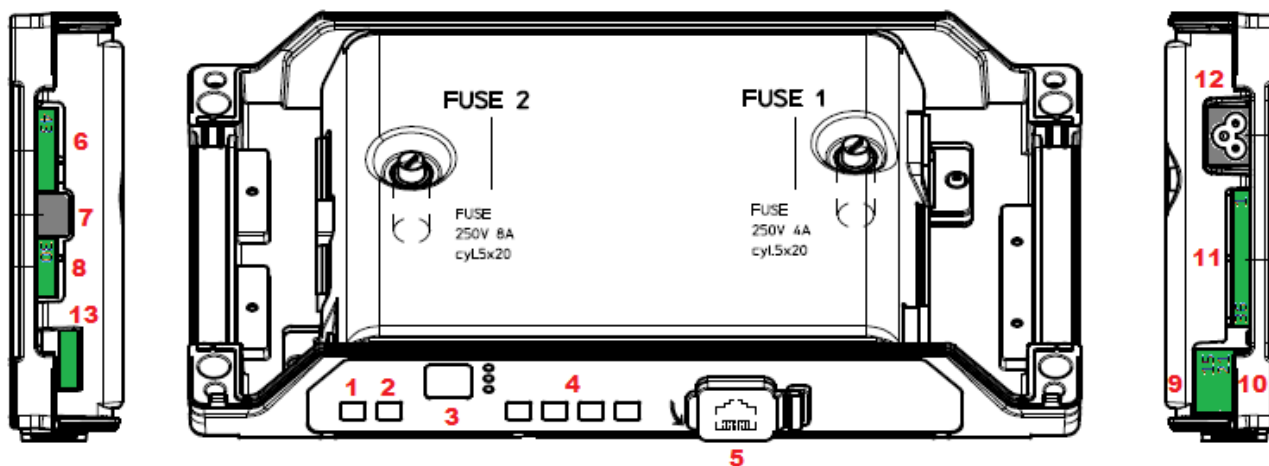
2.2 System overview

The CDD6 system is a part of the complete lift door operator, consisting in:

- Mechanical door operator:
 - o Header
 - o Carriages
 - o Belt
 - o Motor
- Door Drive (the CDD6)
- Contacts Interface to the main lift controller



- Figure 2-1: connection diagram of the CDD6



- Figure 2-2: identification of keys and connections

The controller is equipped with:

| N° | ID | Description |
|----|-----------------|---|
| 1 | ON | Power on key |
| 2 | OFF | Power off key |
| 3 | Display | 7-segment display (two digits) to show status/configuration |
| 4 | "1" "2" "3" "4" | Functional keys for visualization/movement/programming |
| 5 | X8 | Plug for upgrade/configuration external device |
| 6 | X4 | Plug for motor/battery |
| 7 | X5 | RJ45 plug for motor encoder |
| 8 | X9 | Direct connection of optical light curtains (including power) |
| 9 | X3.1 | Plug for Elevator controller commands |
| 10 | X3.2 | Plug for local inputs of the door operator |
| 11 | X2 | Plug for drive output to the elevator controller |
| 12 | X1 | Plug for main power supply |
| 13 | X10 | CAN bus connector |

- Table 4: list of connections/keys

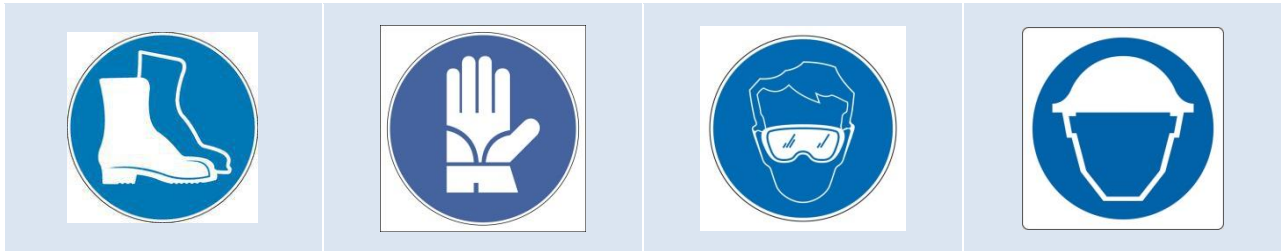
2.3 Compatibility for applications and motors

The CDD6 can be applied to all the lift door operators that use the motors reported in the compatibility table, in particular for that operator for which it is pre-set the configuration of the mechanical transmission (skate, motor pulley, ...).

It is possible in any case to adapt the system configuration to other door operator that uses the same motors, setting manually the specified parameters values. It is strongly suggested, in this case, to previously contact directly Computec technical support, for information about compatibility and configuration.

3 Installation

Before proceeding to the installation, verify the necessary safety devices:



In addition, verify the necessary instruments to perform all the operations:



Be sure to work in full safe conditions, setting the inspection mode on the lift before starting any operation.

3.1 Preliminary mechanical checks

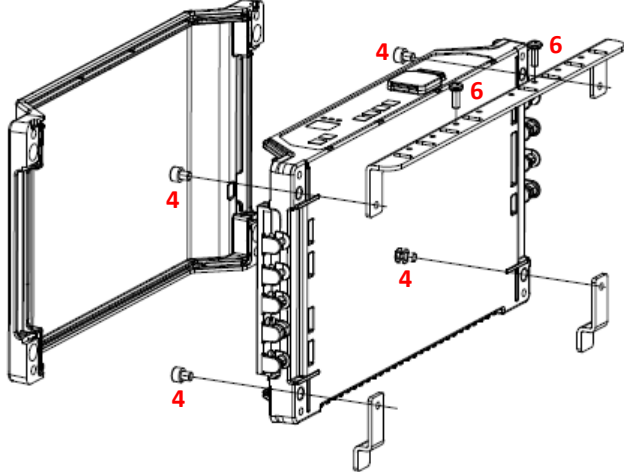
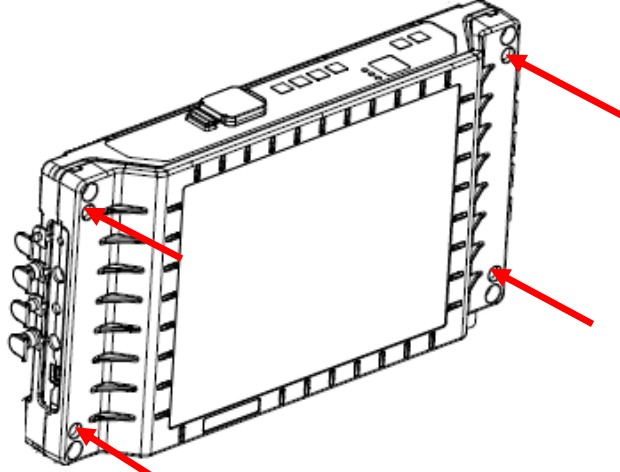
The installation of the door drive has to be performed by expert technical personnel, having all the professional requirements expected, based on the active law in the installation country.

Before proceeding with the installation of the door drive it is necessary to:

- Check the correct and good status of the door operator installation:
 - o Correct installation of the door panels
 - o Correct installation of the carriages
 - o Correct installation of the transmission (belt connection, belt)
 - o Correct installation of the gear-motors, according to table “- Table 2: compatible motors data”
- Check that the panels movement is free, without obstacles overall the complete door space.
- Check the material of the box:
 - o CDD6 door controller
 - o Retrofit fixation bracket to be fixed on the controller, in case of retrofit

3.2 Mechanical Installation

The mechanical installation of the door drive has to be executed according to the controller type to replace. For this reason, the CDD6 is supplied with the retrofit fixation bracket. The following table shows the two fixation possibilities.

| Fixation type | Description |
|---|--|
| <p>Installation with retrofit bracket</p> <ol style="list-style-type: none"> 1. Switch off the main power supply 2. Remove all the connection from the old door controller 3. Remove the door controller to be replaced 4. Remove the cover of the CDD6. Apply the retrofit bracket to the CDD6 5. Install the door controller, using the fixation holes aligned to the holes present on the operator. 6. Apply the previous fixation screws |  |
| <p>Installation on direct compatible systems</p> <ol style="list-style-type: none"> 1. Switch off the main power supply 2. Remove all the connection from the old door controller 3. Remove the door controller to be replaced 4. Remove the cover of the CDD6 5. Apply the door drive using the four fixation points present on the operator. |  |

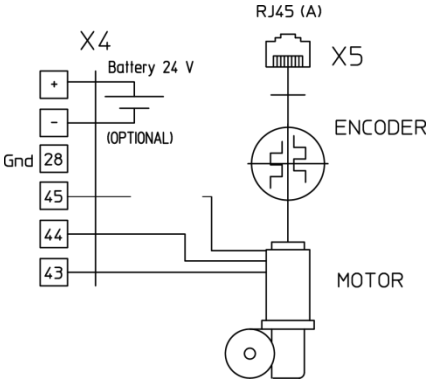
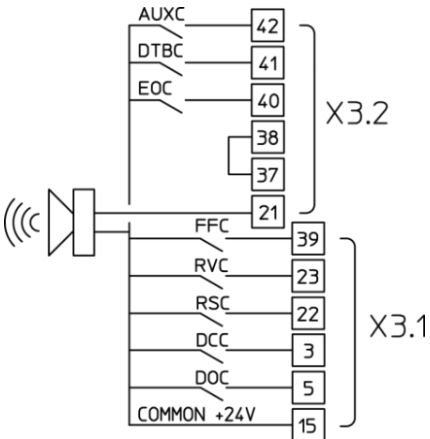
- Table 5: mechanical installation of the drive -

3.3 Preliminary electrical checks

Verify the presence of the correct supply voltage, as reported in the table “- Table 1: door drive data”.

Once the mechanical installation of the CDD6 drive is completed, and the CDD6 is fixated to its holding (with retrofit bracket or directly), proceed as reported below.

3.4 Check of electrical parts

| Step | Operation | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|--------|-------------|------------------------|---|-----------------------|--|-----|------------------|----------------------|----|-----|--|----|--------|-----------------|---|-----|-----------------|----|-----|-----------------------|----|-----|---------------------------------|----|-----|---------------------------------|-----|------|----------------------|----|------|------------------------------|----|------|----------------------------|----|-----|--------------------------------|----|-------|--|----|-------|--|----|------|-----------------------------|
| 0 | Preliminary checks | Press OFF button on the door drive front panel. Be sure that no power supply is present. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Motor Connections  | 1. Connect the motor cable to the pins of the X4 connector: <table border="1" data-bbox="703 517 1430 685"> <thead> <tr> <th>PIN</th> <th>DC motors</th> <th>Brushless motors</th> </tr> </thead> <tbody> <tr> <td>43</td> <td>Positive (Brown)</td> <td>phase A (Blue or Red or 1)</td> </tr> <tr> <td>44</td> <td>Negative (White)</td> <td>phase B (Black or 2)</td> </tr> <tr> <td>45</td> <td>-</td> <td>phase C (Brown or 3)</td> </tr> <tr> <td>28</td> <td>Shield</td> <td>Shield</td> </tr> </tbody> </table> Keep in any case the previous connection order, in case no numbering rings are present, or in case the wires color is different from the one described. 2. If present, connect the encoder cable with its RJ45 male to the X5 connector. 3. If present, connect the external battery kit to the positive (+) and negative (-) pins of the X4 connector. | PIN | DC motors | Brushless motors | 43 | Positive (Brown) | phase A (Blue or Red or 1) | 44 | Negative (White) | phase B (Black or 2) | 45 | - | phase C (Brown or 3) | 28 | Shield | Shield | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | DC motors | Brushless motors | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | Positive (Brown) | phase A (Blue or Red or 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | Negative (White) | phase B (Black or 2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | - | phase C (Brown or 3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Shield | Shield | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | MLC interface Input connection  | In case of replacement of different controllers with different plugs proceed as following reported, otherwise plug the previous connectors as they are. Check the common voltage used, and the used contacts: <table border="1" data-bbox="703 1160 1430 1361"> <thead> <tr> <th>Common</th> <th>Connections</th> </tr> </thead> <tbody> <tr> <td>Internal 24V_DD (CDD6)</td> <td>Check the presence of the 37-38 bridge as GND reference</td> </tr> <tr> <td>External 24V_EC (MLC)</td> <td>Remove the 37-38 bridge, only in case there are no local contact installed on the car roof</td> </tr> </tbody> </table> For further information please refer to the paragraph 4.2 Connection of the MLC commands and of the local contacts: For encoder applications <table border="1" data-bbox="703 1529 1430 1771"> <thead> <tr> <th>PIN</th> <th>Name</th> <th>X3.1 Pin Description</th> </tr> </thead> <tbody> <tr> <td>15</td> <td>24V</td> <td>Common 24V, available for MLC commands</td> </tr> <tr> <td>5</td> <td>DOC</td> <td>Opening command</td> </tr> <tr> <td>3</td> <td>DCC</td> <td>Closing command</td> </tr> <tr> <td>22</td> <td>RSC</td> <td>Reduced speed command</td> </tr> <tr> <td>23</td> <td>RVC</td> <td>Reversing command from detector</td> </tr> <tr> <td>39</td> <td>FFC</td> <td>Fire-Fighting mode enable input</td> </tr> </tbody> </table> <table border="1" data-bbox="703 1771 1430 2013"> <thead> <tr> <th>PIN</th> <th>Name</th> <th>X3.2 Pin Description</th> </tr> </thead> <tbody> <tr> <td>42</td> <td>AUXC</td> <td>Programmable Auxiliary input</td> </tr> <tr> <td>41</td> <td>DTBC</td> <td>Second TB management input</td> </tr> <tr> <td>40</td> <td>EOC</td> <td>Battery Evacuation floor input</td> </tr> <tr> <td>38</td> <td>0V_IN</td> <td>GND input for the photo-coupled inputs</td> </tr> <tr> <td>37</td> <td>0V_DD</td> <td>Auxiliary GND of the door drive for the inputs</td> </tr> <tr> <td>21</td> <td>BUZS</td> <td>Contact for Acoustic signal</td> </tr> </tbody> </table> | Common | Connections | Internal 24V_DD (CDD6) | Check the presence of the 37-38 bridge as GND reference | External 24V_EC (MLC) | Remove the 37-38 bridge, only in case there are no local contact installed on the car roof | PIN | Name | X3.1 Pin Description | 15 | 24V | Common 24V, available for MLC commands | 5 | DOC | Opening command | 3 | DCC | Closing command | 22 | RSC | Reduced speed command | 23 | RVC | Reversing command from detector | 39 | FFC | Fire-Fighting mode enable input | PIN | Name | X3.2 Pin Description | 42 | AUXC | Programmable Auxiliary input | 41 | DTBC | Second TB management input | 40 | EOC | Battery Evacuation floor input | 38 | 0V_IN | GND input for the photo-coupled inputs | 37 | 0V_DD | Auxiliary GND of the door drive for the inputs | 21 | BUZS | Contact for Acoustic signal |
| Common | Connections | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal 24V_DD (CDD6) | Check the presence of the 37-38 bridge as GND reference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| External 24V_EC (MLC) | Remove the 37-38 bridge, only in case there are no local contact installed on the car roof | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Name | X3.1 Pin Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 24V | Common 24V, available for MLC commands | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | DOC | Opening command | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | DCC | Closing command | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | RSC | Reduced speed command | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | RVC | Reversing command from detector | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | FFC | Fire-Fighting mode enable input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Name | X3.2 Pin Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | AUXC | Programmable Auxiliary input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | DTBC | Second TB management input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | EOC | Battery Evacuation floor input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 0V_IN | GND input for the photo-coupled inputs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | 0V_DD | Auxiliary GND of the door drive for the inputs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | BUZS | Contact for Acoustic signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

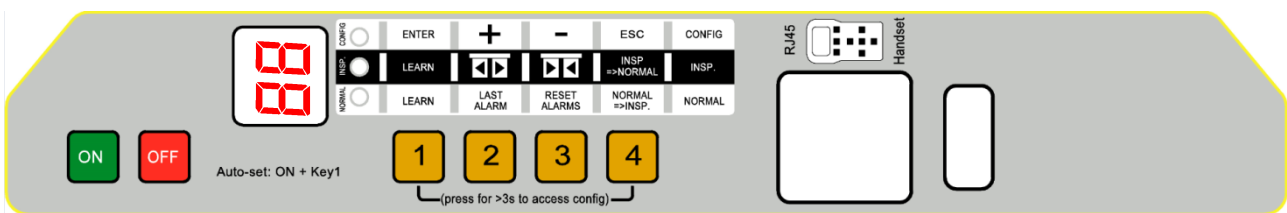
| | | <p>For magnetic switches applications</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>Name</th> <th>X3.1 Pin Description</th> </tr> </thead> <tbody> <tr> <td>15</td> <td>24V</td> <td>Common 24V, available for MLC commands</td> </tr> <tr> <td>5</td> <td>DOC</td> <td>Opening command</td> </tr> <tr> <td>3</td> <td>DCC</td> <td>Closing command</td> </tr> <tr> <td>22</td> <td>RSC</td> <td>Reduced speed command</td> </tr> <tr> <td>23</td> <td>RVC</td> <td>Reversing command from detector</td> </tr> <tr> <td>39</td> <td>LC (FFC)</td> <td>Door closed limit switch</td> </tr> <tr> <th>PIN</th> <th>Name</th> <th>X3.2 Pin Description</th> </tr> <tr> <td>42</td> <td>RC (AUXC)</td> <td>Closing deceleration limit switch</td> </tr> <tr> <td>41</td> <td>RA (DTBC)</td> <td>Opening deceleration limit switch</td> </tr> <tr> <td>40</td> <td>LA (EOC)</td> <td>Door open limit switch</td> </tr> <tr> <td>38</td> <td>OV_IN</td> <td>GND input for the photo-coupled inputs</td> </tr> <tr> <td>37</td> <td>OV_DD</td> <td>Auxiliary GND of the door drive for the inputs</td> </tr> <tr> <td>21</td> <td>BUZS</td> <td>Contact for Acoustic signal</td> </tr> </tbody> </table> | PIN | Name | X3.1 Pin Description | 15 | 24V | Common 24V, available for MLC commands | 5 | DOC | Opening command | 3 | DCC | Closing command | 22 | RSC | Reduced speed command | 23 | RVC | Reversing command from detector | 39 | LC (FFC) | Door closed limit switch | PIN | Name | X3.2 Pin Description | 42 | RC (AUXC) | Closing deceleration limit switch | 41 | RA (DTBC) | Opening deceleration limit switch | 40 | LA (EOC) | Door open limit switch | 38 | OV_IN | GND input for the photo-coupled inputs | 37 | OV_DD | Auxiliary GND of the door drive for the inputs | 21 | BUZS | Contact for Acoustic signal |
|-----------------|---|--|-----|---------------------|----------------------|---|------|--|--------|---------------------|-----------------|--------------|-------|-------------------|----------|-----|-------------------------------------|----|-----|---------------------------------|----|----------|--------------------------|-----|------|----------------------|----|-----------|-----------------------------------|----|-----------|-----------------------------------|----|----------|------------------------|----|-------|--|----|-------|--|----|------|-----------------------------|
| PIN | Name | X3.1 Pin Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 24V | Common 24V, available for MLC commands | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | DOC | Opening command | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | DCC | Closing command | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | RSC | Reduced speed command | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | RVC | Reversing command from detector | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | LC (FFC) | Door closed limit switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Name | X3.2 Pin Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | RC (AUXC) | Closing deceleration limit switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | RA (DTBC) | Opening deceleration limit switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | LA (EOC) | Door open limit switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | OV_IN | GND input for the photo-coupled inputs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | OV_DD | Auxiliary GND of the door drive for the inputs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | BUZS | Contact for Acoustic signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>3</p> | <p>MLC interface Output connection</p> | <table border="1"> <thead> <tr> <th>PIN</th> <th>Name</th> <th>X2 Pin Description</th> </tr> </thead> <tbody> <tr> <td>1, 4, 2</td> <td>Rev.</td> <td>Reversal relay</td> </tr> <tr> <td>16, 17</td> <td>Open</td> <td>Door open relay</td> </tr> <tr> <td>18, 19</td> <td>Close</td> <td>Door closed relay</td> </tr> <tr> <td>34,35,36</td> <td>AUX</td> <td>Auxiliary (Alarm signal by default)</td> </tr> </tbody> </table> <p>Please Note: by default, open/closed door relays are N.C. (they open in the final position). The behavior logic can be changed in the settings P-76 (door relay closed), P-77 (door relay open). When door drive is not powered, the contacts are always closed.</p> | PIN | Name | X2 Pin Description | 1, 4, 2 | Rev. | Reversal relay | 16, 17 | Open | Door open relay | 18, 19 | Close | Door closed relay | 34,35,36 | AUX | Auxiliary (Alarm signal by default) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | Name | X2 Pin Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1, 4, 2 | Rev. | Reversal relay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16, 17 | Open | Door open relay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18, 19 | Close | Door closed relay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34,35,36 | AUX | Auxiliary (Alarm signal by default) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>4</p> | <p>X10</p> | <table border="1"> <thead> <tr> <th>PIN</th> <th>X10 Pin Description</th> </tr> </thead> <tbody> <tr> <td>T</td> <td>Termination (connect bridge from T and L)</td> </tr> <tr> <td>L</td> <td>CAN BUS Low signal</td> </tr> <tr> <td>H</td> <td>CAN BUS High signal</td> </tr> <tr> <td>S</td> <td>Shield (GND)</td> </tr> </tbody> </table> | PIN | X10 Pin Description | T | Termination (connect bridge from T and L) | L | CAN BUS Low signal | H | CAN BUS High signal | S | Shield (GND) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN | X10 Pin Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T | Termination (connect bridge from T and L) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L | CAN BUS Low signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | CAN BUS High signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | Shield (GND) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 5 | | <p>Connect the Light curtain (if present)</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>X9 Pin Description</th> </tr> </thead> <tbody> <tr> <td>30</td> <td>Not connected - to help common wire connections</td> </tr> <tr> <td>31</td> <td>+24VDC maximum 100mA</td> </tr> <tr> <td>32</td> <td>Input pin: connect the status pin of the PNP NO or NC detector (P-31 Logic)</td> </tr> <tr> <td>33</td> <td>0V</td> </tr> </tbody> </table> | PIN | X9 Pin Description | 30 | Not connected - to help common wire connections | 31 | +24VDC maximum 100mA | 32 | Input pin: connect the status pin of the PNP NO or NC detector (P-31 Logic) | 33 | 0V |
|----------|---|---|-----|--------------------|----|---|----|----------------------|----|---|----|----|
| PIN | X9 Pin Description | | | | | | | | | | | |
| 30 | Not connected - to help common wire connections | | | | | | | | | | | |
| 31 | +24VDC maximum 100mA | | | | | | | | | | | |
| 32 | Input pin: connect the status pin of the PNP NO or NC detector (P-31 Logic) | | | | | | | | | | | |
| 33 | 0V | | | | | | | | | | | |
| 6 | <p>Power supply connection</p> | <p>Nominal Supply Voltage: [100 – 240]Vac [50-60]Hz, single phase Range: [115-20%, 230+30%]Vac</p> | | | | | | | | | | |
| 7 | <p>Final Checks</p> | <p>Verify that required signals are connected, then apply the cover. For further information please refer to the paragraph 4.2</p> | | | | | | | | | | |








- Table 6: installation of electrical parts (Encoder or Magnet switch version)-
















3.5 Door set-up, Learning and Functional tests


Once the physical installation phase described in the previous paragraph is completed, it is possible to proceed with the power ON of the device and its configuration. In case of problems during the execution of the phases, please refer to the paragraph 6.2. Refer to paragraph 4.3.2 for the front panel use.



| STEP | Operation | Description | Notes |
|----------|--------------------------|---|---|
| 1 | Power supply test | <p>Connect the main power supply.</p> <p>Press key and checks the front panel display as indicated.</p> <p>Then press key.</p> | <p>88 followed by --</p> |
| 2 | AUTOSET execution | <p>Put the door panels near to the panels closed position (gap<10cm), then press and keep pressed key on the door drive front panel.</p> | |

| | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--|-----|---|-----|-------|---|-----|-------|--|-----|-------|---|-----|-------|--|-----|-----|---|---|
| | | <p>Press  key, checking that "SL" is shown on the door drive display, then release key .</p> <p>Floor with DTBC contact active (not available for magnetic switches application): AUTOSET for second TB floor will start automatically. FIRST AUTOSET MUST NOT BE EXECUTED AT DTBC FLOOR</p> <p>The door starts the auto-set procedure auto-detecting:</p> <ul style="list-style-type: none"> - the closing rotation - the skate space - the door movement space - the door closing torque profile to optimize the closing force detection <p>In case the of errors or alarms, proceed with the checks suggested in the user manual.</p> <p>To optimize the execution of the learning procedure, it is suggested but not necessary to couple car and landing door, executing the operations from the car roof in inspection mode.</p> <p>The learning phase is completed.</p> | <p>NORMAL, INSP. and CONFIG LEDS are all ON</p> <p> fixed</p> <p>Auto-set for DTBC contact:  fixed</p> <p>In case or error:  alternate to the error code. In case of alarm:  alternate to the alarm code.</p> <p> fixed</p> | | | | | | | | | | | | | | | | | | |
| <h2 style="text-align: center;">3</h2> | <h3 style="text-align: center;">Door operator configuration (check & set)</h3> | <p>Check and configure the parameters related to the installed door operator (please refer to paragraph 5.1):</p> <table border="1" data-bbox="571 1245 1171 2060"> <tr> <td>P05</td> <td>SET</td> <td>Car door locking device: 0 = not present, 1 = present</td> </tr> <tr> <td>P22</td> <td>CHECK</td> <td>Closing rotation: 0 = clockwise 1 = counter-clockwise</td> </tr> <tr> <td>P28</td> <td>CHECK</td> <td>Skate type: 02 = S20 09 = S90 12 = S120 XX = custom size</td> </tr> <tr> <td>P90</td> <td>CHECK</td> <td>Installed motor type: 00 = self-recognized (refer to the - Table 24 for self-recognized motor type) XX = manual selected motor type</td> </tr> <tr> <td>P91</td> <td>CHECK</td> <td>Self-recognized motor type: 00 = autose procedure requested!? XX = recognized motor type</td> </tr> <tr> <td>P99</td> <td>SET</td> <td>MLC commands logic 0 = H active and RSC forced closing 1 = L active and RSC reduced speed 2 = H active and RSC reduced speed 3 = L active and RSC forced closing 4 = CAN BUS</td> </tr> </table> | P05 | SET | Car door locking device: 0 = not present, 1 = present | P22 | CHECK | Closing rotation: 0 = clockwise 1 = counter-clockwise | P28 | CHECK | Skate type: 02 = S20 09 = S90 12 = S120 XX = custom size | P90 | CHECK | Installed motor type: 00 = self-recognized (refer to the - Table 24 for self-recognized motor type) XX = manual selected motor type | P91 | CHECK | Self-recognized motor type: 00 = autose procedure requested!? XX = recognized motor type | P99 | SET | MLC commands logic 0 = H active and RSC forced closing 1 = L active and RSC reduced speed 2 = H active and RSC reduced speed 3 = L active and RSC forced closing 4 = CAN BUS | <p>Refer to paragraph 4.3.2 for the information about access to Configuration Mode.</p> |
| P05 | SET | Car door locking device: 0 = not present, 1 = present | | | | | | | | | | | | | | | | | | | |
| P22 | CHECK | Closing rotation: 0 = clockwise 1 = counter-clockwise | | | | | | | | | | | | | | | | | | | |
| P28 | CHECK | Skate type: 02 = S20 09 = S90 12 = S120 XX = custom size | | | | | | | | | | | | | | | | | | | |
| P90 | CHECK | Installed motor type: 00 = self-recognized (refer to the - Table 24 for self-recognized motor type) XX = manual selected motor type | | | | | | | | | | | | | | | | | | | |
| P91 | CHECK | Self-recognized motor type: 00 = autose procedure requested!? XX = recognized motor type | | | | | | | | | | | | | | | | | | | |
| P99 | SET | MLC commands logic 0 = H active and RSC forced closing 1 = L active and RSC reduced speed 2 = H active and RSC reduced speed 3 = L active and RSC forced closing 4 = CAN BUS | | | | | | | | | | | | | | | | | | | |

| | | | |
|----------|---|---|--|
| <p>4</p> | <p>Inspection mode</p> | <p>Put CDD6 in inspection mode by pressing key 4 and check the INSP. LED is ON.</p> |  <p>INSP. LED is ON</p> |
| <p>5</p> | <p>Speed Profiles check in Inspection mode</p> | <p>Press continuously key 3 to execute the door closing with normal speed, until the door is completely closed.</p> <p>Press continuously key 2 to execute the door opening with normal speed, until the door is completely opened.</p> <p>In case it is necessary to tune the speed profiles, please refer to the paragraph 5.2.1</p> | <p>Display visualization:</p> <p> blinking</p> <p> fixed (closed)</p> <p> blinking</p> <p> fixed (open)</p> |
| <p>6</p> | <p>Obstacle reversing check in Inspection mode</p> | <p>Put an obstacle at different points of the door access.</p> <p>Press and keep pressed key 3 to perform a door closing.</p> <p>When the panels meet the obstacle, the door drive will immediately reverse the movement starting the reopening.</p> <p>Release key 3 during the reopening movement and wait until the door is completely opened.</p> <p>In case it is necessary to configure reversing system, please refer to the paragraph 5.3</p> | <p>Display visualization:</p> <p> blinking</p> <p> blinking</p> <p> fixed or</p> <p> blinking</p> |
| <p>7</p> | <p>Detector check in Inspection mode</p> | <p>Execute this step only if external optical detector, light curtains or photocell are directly connected to the CDD6, to the RVC input or to the X9 plug.</p> <p>During the door closing, interrupt the light curtains and check the immediate reopening of the door, until the door is completely open.</p> <p>Remove any obstacle from the detector activation zone, and check the door closing until the door is completely closed.</p> <p>In case it is necessary to configure reversing system, please refer to the paragraph 5.3.</p> <p>In case it is necessary to configure input reversing, please refer to the paragraph 5.5.</p> | <p>Display visualization:</p>  <p>INSP. LED is ON</p> <p> blinking</p> <p> blinking.</p> <p> fixed.</p> <p> blinking</p> <p> fixed</p> |

| | | | |
|-----------------|---|--|--|
| <p>8</p> | <p>Functional check in Normal mode</p> | <p>Complete the door closing, if not performed: press and keep pressed key 3 until the door is completely closed.</p> <p>Release key 3.</p> <p>Check the closing force limit for reversing, with appropriate instrumentation.</p> <p>Activate the NORMAL mode of the controller, from the Inspection mode: press key 4 and check the LED NORMAL is ON.</p> <p>Now the controller works in Normal mode, and executes the commands received from the MLC, as well as the reversing from detector directly connected to the door controller.</p> <p>Perform all the functional checks with the complete system operating in Normal mode, from the car roof or from the landing, according to the procedure active for the involved maintenance people.</p> | <p>Display visualization:</p>  <p>NORMAL LED ON</p> |
|-----------------|---|--|--|

- Table 7: configuration, learning and test sequence -

3.6 Installation trouble-shooting

The installation sequence previously reported describes all the steps that have to be executed to operate a correct and complete set-up of the door system.

In case of issues, or if anomalous behaviours happen during the installation, please refer to the paragraph 6.2 “Troubleshooting (FAQ)”. For any alarms, please refer to the paragraph 6.1 “Alarms”.

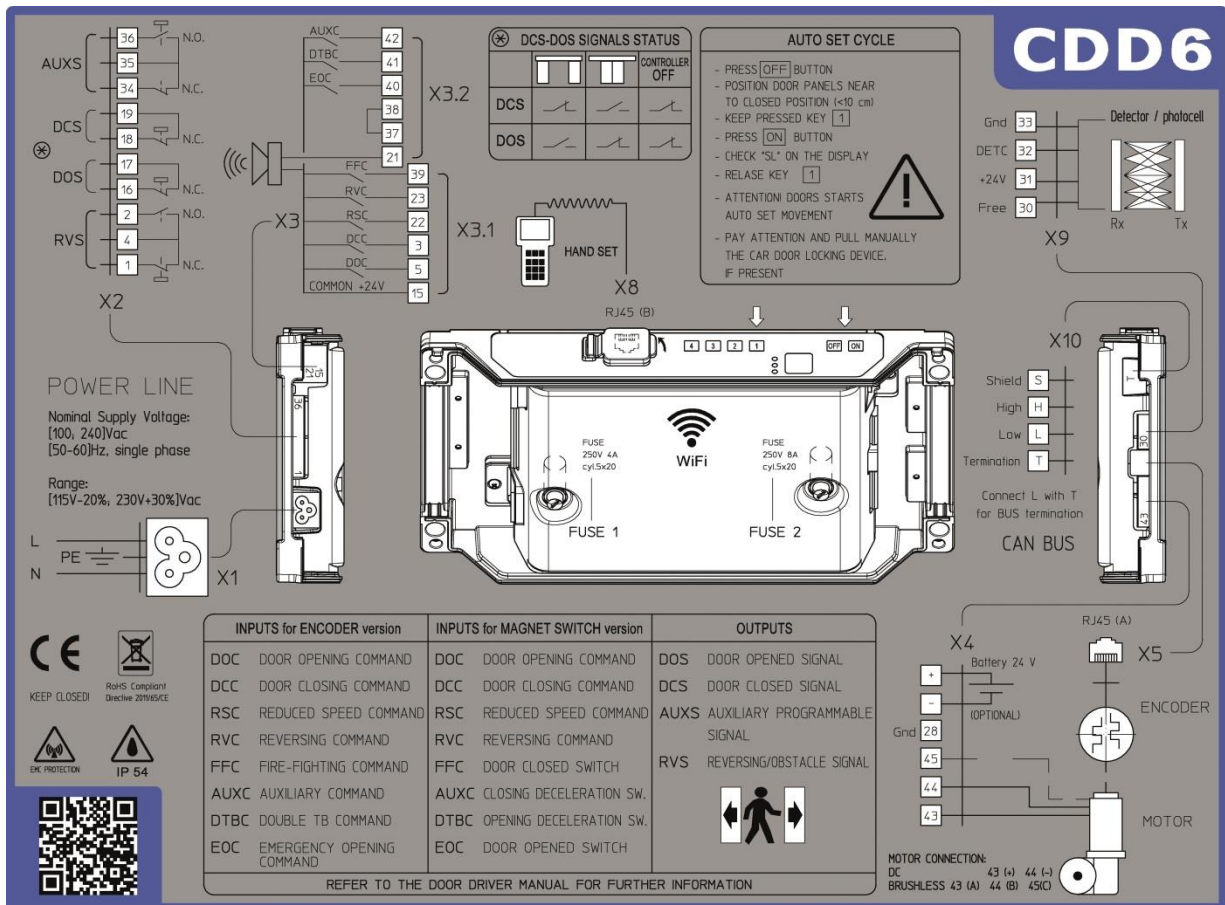
4 Functionalities

The present chapter describes in details the structure and the functionalities of the CDD6 door drive.

4.1 System

The CDD6 lift door drive is a part of the lift door operator. Refer to the paragraph 2.2 for the description of the different parts of the system. Refer to the paragraph 1.3 for the details about the compatible motors that can be controlled by the CDD6.

Following it is reported the connection diagram of the device:



- Figure 4-1: connection diagram of the CDD6 -

The connection details for every available plugs are reported below:

| Terminal N° | Connection mode | Connection type | Conductor type | Temperature range | Fixation torque | AWG UL/CL section |
|-------------|-----------------|---------------------------|---------------------------|-------------------|--------------------------|-------------------|
| X4 | Screw | Load (motor output power) | Use only copper conductor | 60°C (140°F) | Min 0.5 Nm Max 0.6 Nm | Min 20 Max 18 |
| X5 | Plug | Motor Encoder | Use only copper conductor | Not required | Not required | Not required |
| X9 | Screw | Optical Detector | Use only copper conductor | Not required | Min 0.5 Nm Max 0.6 Nm | Min 30 Max 12 |
| X3.1 | Screw | MLC commands | Use only copper conductor | Not required | Min 0.5 Nm Max 0.6 Nm | Min 30 Max 14 |
| X3.2 | Screw | | | Not required | | Min 30 Max 12 |

| | | | | | | |
|-----|-----------|----------------------|---|--------------|--------------------------|------------------|
| X2 | Screw | Outputs to MLC | Use only copper conductor | Not required | Min 0.5 Nm Max 0.6 Nm | Min 30 Max 12 |
| X1 | Insertion | Main power supply | Flexible cable according to UL ZICZ category. | 60°C (140°F) | Not required | Min 18 Max 12 |
| X8 | Insertion | Handset/ Upgrade key | - | Not required | - | - |
| X10 | Screw | CAN bus | Use only copper conductor | Not required | Min 0.5 Nm Max 0.6 Nm | Min 30 Max 12 |

- Table 8: connections characteristics -

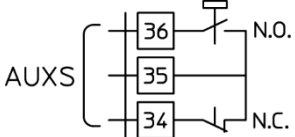
The following table reports all the INPUTS available on the controller:

| Signal | Position | Description | Contact type | Default status | Notes |
|--------|----------|---|--------------|----------------|---|
| DOC | X3.1.5 | Door Opening Command (from MLC) | Dry contact | Open | |
| DCC | X3.1.3 | Door Closing Command (from MLC) | Dry contact | Open | |
| RSC | X3.1.22 | Forced reduced speed closing command or Reduced speed enable command (from MLC) | Dry contact | Open | The MLC may activate this command when the light curtains (connected to MLC) are deactivated from the MLC, after a timeout or maximum closing retries |
| RVC | X3.1.23 | Reversing external source | Dry contact | Open | |
| FFC | X3.2.39 | Fire-Fighting mode enable command (from MLC) | Dry contact | Open | |
| DTBC | X3.2.41 | Second TB floor input command | Dry contact | Open | This contact is installed on the floor with a different opening space. It is necessary to execute a second door learning during installation phase |
| AUXC | X3.2.42 | Auxiliary contact (programmable) | Dry contact | Open | |
| EOC | X3.2.40 | Evacuation floor contact | Dry contact | Open | This contact is installed at the evacuation floor to permit the automatic opening cycle with drive powered by batteries |

- Table 9: inputs types -

The following table reports all the OUTPUTS available on the controller:

| Signal | Position | Description | Contact type | Default status | Notes |
|--------|----------------------|---|--------------|----------------|---|
| DOS | X2.16 X2.17 | Door Opened signal (to MLC) | Dry contact | Closed | Contact opens when the door is completely opened (see P-77). Ratings: 3A 250Vac 30Vdc |
| DCS | X2.18 X2.19 | Door Closed Signal (to MLC) | Dry contact | Closed | Contact opens when the door is completely closed. (see P-76). Ratings: 3A 250Vac 30Vdc |
| RVS | X2.1 X2.2 X2.4 | Reversing source active or reversing movement active (to MLC) | Dry contact | Double contact | |

| | | | | | |
|-----------------|-------------------------|---------------------------|----------------------|----------------|--|
| | | | | | This contact switches, (closing the N.O. contact on the common voltage or opening the N.C. contact), when and obstacle is present (from internal closing force limiter or from external sources) Ratings: 3A 250Vac 30Vdc |
| AUXS | X2.34 X2.35 X2.36 | Auxiliary signal (to MLC) | Dry contact | Double contact |  <p>Programmable functions Ratings: 3A 250Vac 30Vdc</p> |
| Acoustic signal | X3.2.21 | Acoustic signal | Open collector 100mA | Open | Activates the acoustic signal in different condition, based on the settings of different parameters |

- Table 10: outputs types -

4.1.1 Working Modes

The CDD6 door drive can activate the following working modes:

| MODE | DESCRIPTION |
|----------------------|---|
| NORMAL | This is the normal automatic working mode. The door drive after the power ON enters in this working mode. In this working mode the controller executes the movements requested from the commands sent by the MLC. |
| INSPECTION | This is the Inspection mode of the door drive. In this working mode the door drive does not accept commands from MLC, but executes the opening/closing movements, according to the pressure of “<>” (key 2) and “><” (key 3) buttons on the door drive front panel. |
| CONFIGURATION | This is the programming mode, where it is possible to configure and set all the parameters accessible front the door drive front panel. |
| DIAGNOSTICS | The controller enters in this working mode, when a recognized device is connected to the X8 plug. The door drive recognizes the connection of the external device and, from any of the previous working mode, enters in this one. In this working mode, the controller communicates with the external device for all the diagnostic/configuration/monitor/upgrade operations. When the external device is disconnected, the controller returns automatically in Normal mode. |
| UPGRADE | This is the mode in which the controller enters during the firmware upgrade. |

- Table 11: door drive working modes -

Please refer to paragraph 4.3 about the use of the door drive front panel, and how to move from one to another working mode.

4.2 Connections

4.2.1 MLC signals connection

The present paragraph reports the connections between door drive and MLC, focusing the attention on the connection for the common voltage to use, in case it is the common voltage from CDD (24_DD) or from MLC (24_EC), or from a 0V external common line (0V_EC).

Common voltage from CDD has maximum load limit current of 500mA.

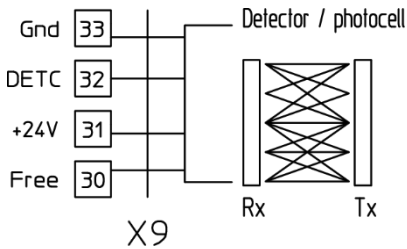
| Common Voltage | Connection | Notes |
|-------------------------------|------------|---|
| <p>Internal 24V_DD</p> | | <p>The 37-38 bridge must be present. The MLC uses the 24Vdc from the door drive as common voltage for commands and door drive outputs.</p> <p>Commands: DOC, DCC, RSC, RVC, FFC, AUXC, DTBC, EOC. As example only the first three are reported in the diagram: the others follow the same connection rules.</p> <p>The door drive outputs, being dry contacts, can be connected to another common voltage, if requested by the MLC. The output structure is so independent on the command common line. Please refer to the last row of this table, section "OUTPUTS"</p> |
| <p>External 24V_EC</p> | | <p>Remove the 37-38 bridge and connect the external 0V from MLC to the pin38. Commands: DOC, DCC, RSC, RVC, FFC, AUXC, DTBC, EOC. As example only the first three are reported in the diagram: the others follow the same connection rules.</p> <p>If local wired contacts are present:</p> <ol style="list-style-type: none"> 1. use the same common voltage active for the commands. 2. use the auxiliary 24Vdc of the door drive, recovering the 37-38 bridges. In this case check the compatibility between 0V_DD and 0V_EC. <p>The door drive outputs keep the same common voltage from MLC, used for the commands. The output structure is so independent on the command common line. Please refer to the last row of this table, section "OUTPUTS"</p> |

| | | |
|----------------------------------|--|--|
| <p>External 0V_EC</p> | | <p>Remove the 37-38 bridge and connect the internal 24Vdc from DD (available on pin15) to pin38. Then connect the external 0V to pin37.</p> <p>Commands: DOC, DCC, RSC, RVC, FFC, AUXC, DTBC, EOC. As example only the first three are reported in the diagram: the others follow the same connection rules.</p> <p>If local wired contacts are present:</p> <ol style="list-style-type: none"> 1. use the same common voltage active for the commands. 2. use the auxiliary 24Vdc of the door drive, recovering the 37-38 bridges. In this case check the compatibility between 0V_DD and 0V_EC. <p>The door drive outputs keep the same common voltage from MLC, used for the commands. The output structure is so independent on the command common line. Please refer to the last row of this table, section "OUTPUTS"</p> |
| <p>OUTPUTS</p> | | <p>The door drive outputs, being dry contacts, can be connected to another common voltage, if requested by the MLC. The output structure is so independent on the command common line.</p> <p>The door drive outputs have a dedicated common voltage available for each output.</p> <p>In the diagram they have been grouped in a single pin, that represents a series of bridges between X2.4, X2.16, X2.18, X2.35</p> |

- Table 12: I/O signals connections vs MLC -

4.2.2 Direct connection of optical detector to the CDD6

The present paragraph illustrates the connection of the external reversing sources (detector, light curtains, photocells) directly to the door drive, both as dry contacts or as devices that need also supply voltage.



The X9 plug permits to directly connect a PNP device (N.O. or N.C.) to the CDD6: the door drive gives the supply voltage for the device, as reported in the following table:

| PIN | DESCRIPTION | NOTES |
|-----|-------------|--|
| 33 | GND | 0V pin |
| 32 | DETC (IN) | Input pin: connect the status pin of the PNP N.O. or N.C. detector |
| 31 | +24Vdc | Voltage supply pin: 24Vdc, 100mA max |
| 30 | Free | Free pin: it may be used to fix the connection between RX and TX parts of the detector |

- Table 13: direct connection of the optical detector -

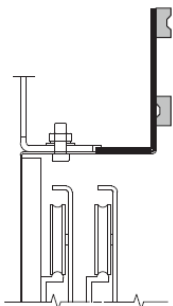
NOTE: if it is necessary to connect a detector with N.C. output, reverse the input signal polarity by the parameter described in the paragraph 5.5.3.

NOTE: if it is necessary to connect NPN detector, please contact Technical support per the dedicated instructions.

4.2.3 Connection of input signals from optional local contacts

The present paragraph describes how to connect to the door drive the signals from the special local contacts: EOC, DTBC AUXC.

In this case a magnetic switch is normally installed on the door operator (car side), while on the floor side it is installed a support plate with two magnets that permits the commutations of the magnetic switch, that will be active only when the car is between the two magnets (car at the floor).



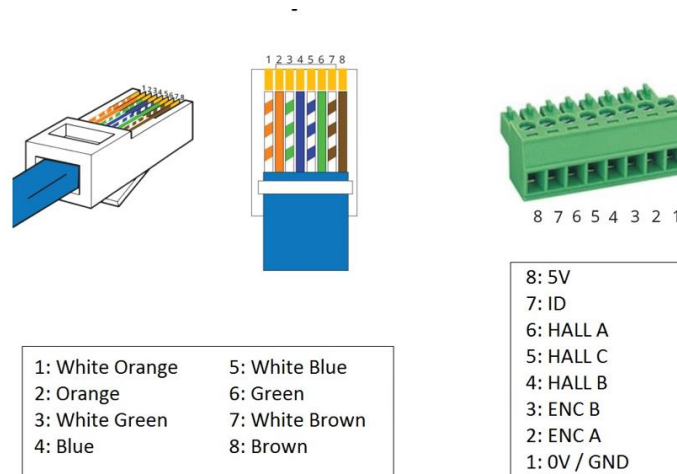
The magnetic switch should be then connected to the desired pin of the door drive. Refer to the paragraphs related to the different functions, for the specific descriptions.

4.2.4 Motor connection Adaptors

This paragraph describes the different types of adaptors needed to interface the motor driven by CDD6 door drive: in particular the transducers adaptors are reported. These adaptors are normally supplied included in specific connectors kits for the complete cabling (motor, I/O).

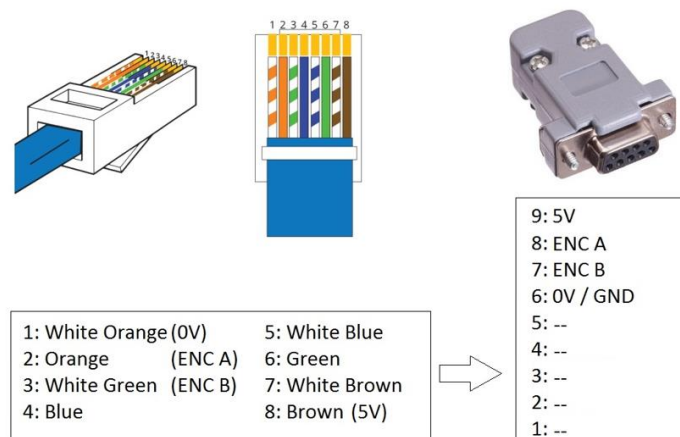
4.2.4.1 P2611 Kit, with RJ45 ⇔ 8p adaptor

This adaptor permits to interface a DC or Brushless motor transducer to the CDD6 RJ45 plug, when the motor transducer is supplied at 5Vdc. It is a generic 5Vdc transducer adaptor, since it permits the specific cabling of the signals into the 8-poles connectors. The connection diagram is reported below.



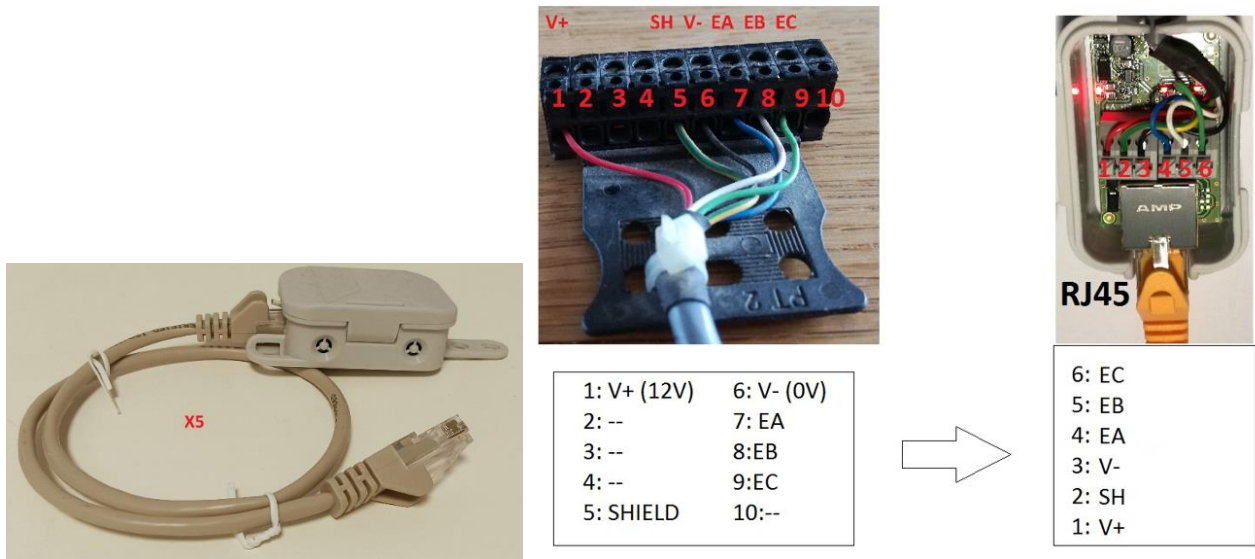
4.2.4.2 P2911 kit, with RJ45 ⇔ DB9 adaptor

This adaptor permits to interface a specific DC motor transducer plugged into DB9 connector, into the CDD6 RJ45 plug, when the transducer is powered at 5Vdc. The connection diagram is reported below.



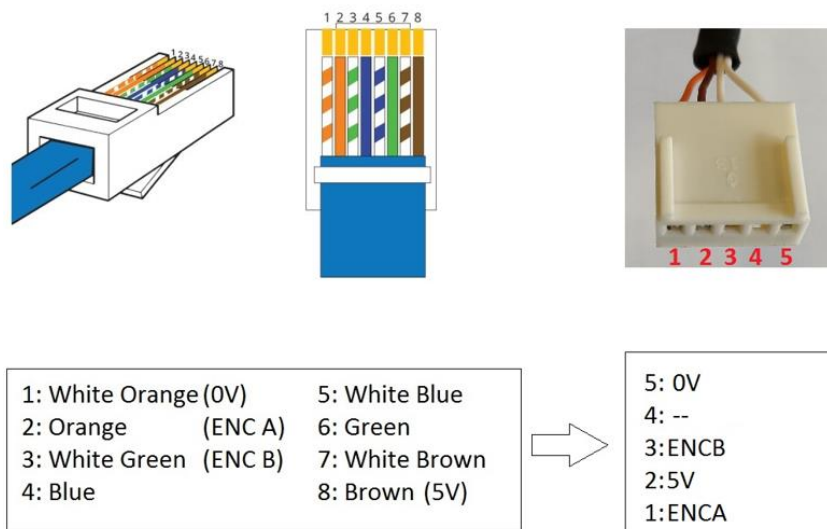
4.2.4.3 P2776 kit, with RJ45 ⇔ 12V encoder adaptor

This adaptor permits to interface a specific motor transducer into the CDD6 RJ45 plug, with aligned power supply, when the motor transducer is powered at 12Vdc. The connection diagram is reported below.



4.2.4.4 Kit P0756 con adattatore RJ45 ⇔ 5p

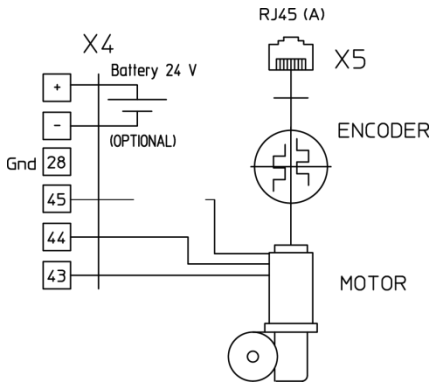
This adaptor permits to interface a specific DC motor transducer with 5-poles connectors, into the CDD6 RJ45 plug, when the transducer is powered at 5Vdc. The connection diagram is reported below.



4.2.5 Auxiliary Battery connection

This paragraph describes how to connect an auxiliary battery (Pb type) to the door drive, which type of battery can be connected and how the door drive works in battery mode, and how the battery charging works when main power supply is present.

The auxiliary battery must be connected to the X4 connector, at the specific “+” and “-” plugs.



IMPORTANT: respect the correct battery polarity when connecting it to the door drive.

The fuse dedicated to the auxiliary battery is a 8A fuse.

The below table resumes the possible CDD6 status related to battery management:

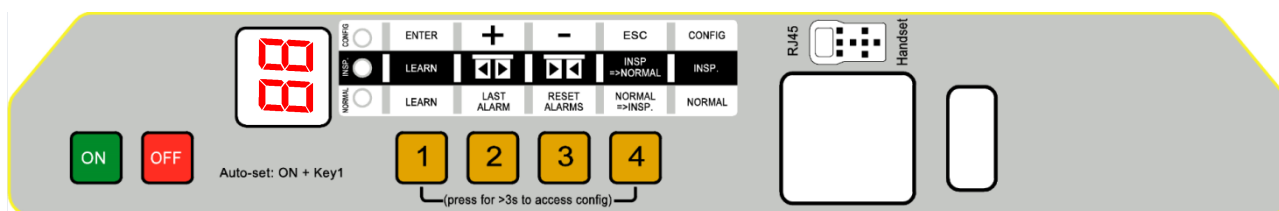
| Status | Battery voltage read on CDD6 | NOTES |
|---------------------------|--|---|
| Battery not present | $V_{battery} < 5V_{dc}$ | CDD6 works as if the battery is not connected |
| Battery present in charge | Charging if $V_{battery} < 24.5V$ | CDD6 works in normal mode (mains present) The charging current from CDD6 to the battery is about 130mA. |
| Battery charged | Charged if $V_{battery} \geq 25.5V$, or after 10h of continuous charging | CDD6 works in normal mode (mains present) |
| Battery active | $V_{battery} > 22V$ | When main power supply is OFF, the CDD6 works in battery mode, according to: - the active command, opening and closing at reduced speed profiles (P-A8, P-C8), based on the motor nominal current. Or - the KEOD function (if present), as described in paragraph 5.5.6 “P-20: EOD function time-out (based on EOC input)” |
| Battery not active | $V_{battery} < 22V$ | CDD6 works as if battery is not present: at power loss opens immediately the clutch if door is locked, and stops operations |



IMPORTANT: the battery capacity must be at least aligned to the installed motor nominal current (see table 2), or aligned to the desired working time in battery mode. If necessary, reduce P-A8 and P-C8 to reduce motor power consumption.

4.3 HMI: front panel user interface

The CDD6 door drive has a front panel that permits to activate different working modes: Normal, Inspection and Configuration.



- Figure 4-2: front panel of the CDD6 door drive -

4.3.1 Display

The display (7-segment, two digits) present on the front panel permits the direct visualization of the drive status and the current configurations, based on the active working mode. The following table reports the main possible visualizations:

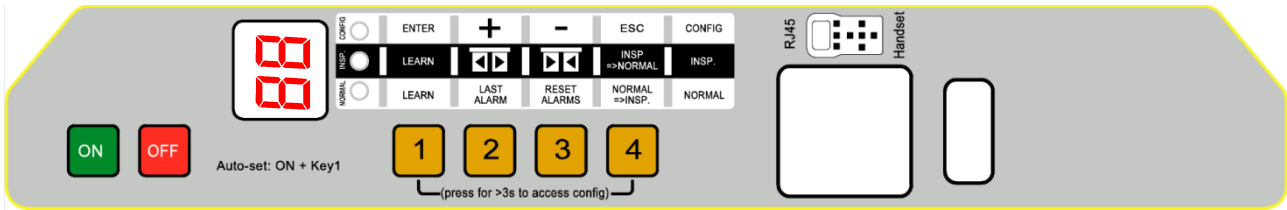
| Digits | Description |
|--------|--|
| OP | Blinking: OPENING in progress Fixed: Door OPENED |
| CL | Blinking: CLOSING in progress Fixed: Door CLOSED |
| SL | The controller auto-set procedure is in progress |
| S2 | The controller auto-set procedure is in progress (second TB, DTBC command is active) |
| Er | During the auto-set procedure when an error occurred, the procedure has been interrupted and it must be restarted. Alternate to the error code |
| AL | Alarm active, alternate to the alarm code. |
| FC | Blinking: forced closing with reduced speed is in progress |
| IN | Blinking: reversing movement in progress Fixed: an external reversing source is active, with door opened. |
| BL | Stop active: DOC and DCC are both present |
| nt | No torque: motor does not apply torque to the door panels. It is possible to move door panels manually by hands |
| uF | WiFi mode: it is possible to open and close door panels by "CDD6 APP" |

| | |
|-----|--|
| U6 | Upgrade of the Firmware Release in progress |
| H5 | Hand Set is plugged to X8 connector |
| 5b | Stand by: mains power is not present and the CDD6 has residual charge |
| 88 | During power ON to check all display segments |
| | Display OFF. If NORMAL LED is ON the CDD6 is in OFF state. Press Key ON to switch ON CDD6. |
| - - | <p>This means all the following:</p> <ul style="list-style-type: none"> - the door drive is waiting for a command - the door panels are at intermediate position (not opened and not closed) - the door drive is not receiving any command from the elevator controller |

- Table 14: main visualizations on the front panel display -

4.3.2 HMI user interface description

The CDD6 door drive has a front panel that allows to activate different functional modes: Normal, Inspection, Configuration.



| MODE | | NORMAL | INSPECTION | CONFIGURATION |
|-------------|----------|---|--|---|
| Description | | Normal mode (automatic): the door drive executes the commands from MLC | Inspection mode (manual): the door drive executes commands from the front panel keys | Configuration mode: parameters Programming |
| LEDS | NORMAL | ON | OFF | OFF |
| | INSP | OFF | ON | OFF |
| | CONFIG | OFF | OFF | ON |
| KEYS | 1 | Key 1 and key 4 pressed together per t>3s: Configuration mode access | | ENTER Access to parameter value OR Parameter value saving and return to parameters list |
| | 2 | Pressed and keep pressed (t>3s): Last alarm code showed ("no AL" if no alarm present) | Door opening Pressed and keep pressed (t>5s) together key 3: enable or disable Motor torque | + Increase Parameter index, OR Increase Parameter value |
| | 3 | Pressed for t>3s when last alarm is showed: reset of the last alarm codes ("no AL") | Door closing Pressed and keep pressed (t>5s) together key 2: enable or disable Motor torque | - Decrease Parameter index, OR Decrease Parameter value |
| | 4 | Access to Inspection mode (if only key 4 pressed for t>1s) Access to Configuration mode (if key 1 and key 4 pressed together for t>3s) | Return to Normal mode | ESC Exit from parameter selection OR Exit from Configuration mode and return to Normal mode |
| DISPLAY | | Door drive status showed: "--", "OP", "CL", "IM", "AL", .. | Door drive status showed: "--", "OP", "CL", "IM", "AL", .. | Parameter list: "P" alternate to the parameter index. Parameter modification: parameter value showed |
| NOTES | | This is the default mode at the power ON of the door drive. ALL inputs are active | DOC and DCC signals from the MLC are not active | Parameter selection: "P" showed alternate to the parameter index |

- Table 15: functional table of the CDD6 front panel -

4.4 External handset user interface

The CDD6 door drive can be connected with some of diagnostic and configuration tools, currently available on the market.

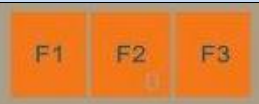




4.4.1 Functional description and keys usage

In this paragraph the keys functions are reported, for a proper use of the diagnostic/configuration tool.

When connecting the Handset you can check the FW and HW version, serial number, date and type of FW release.

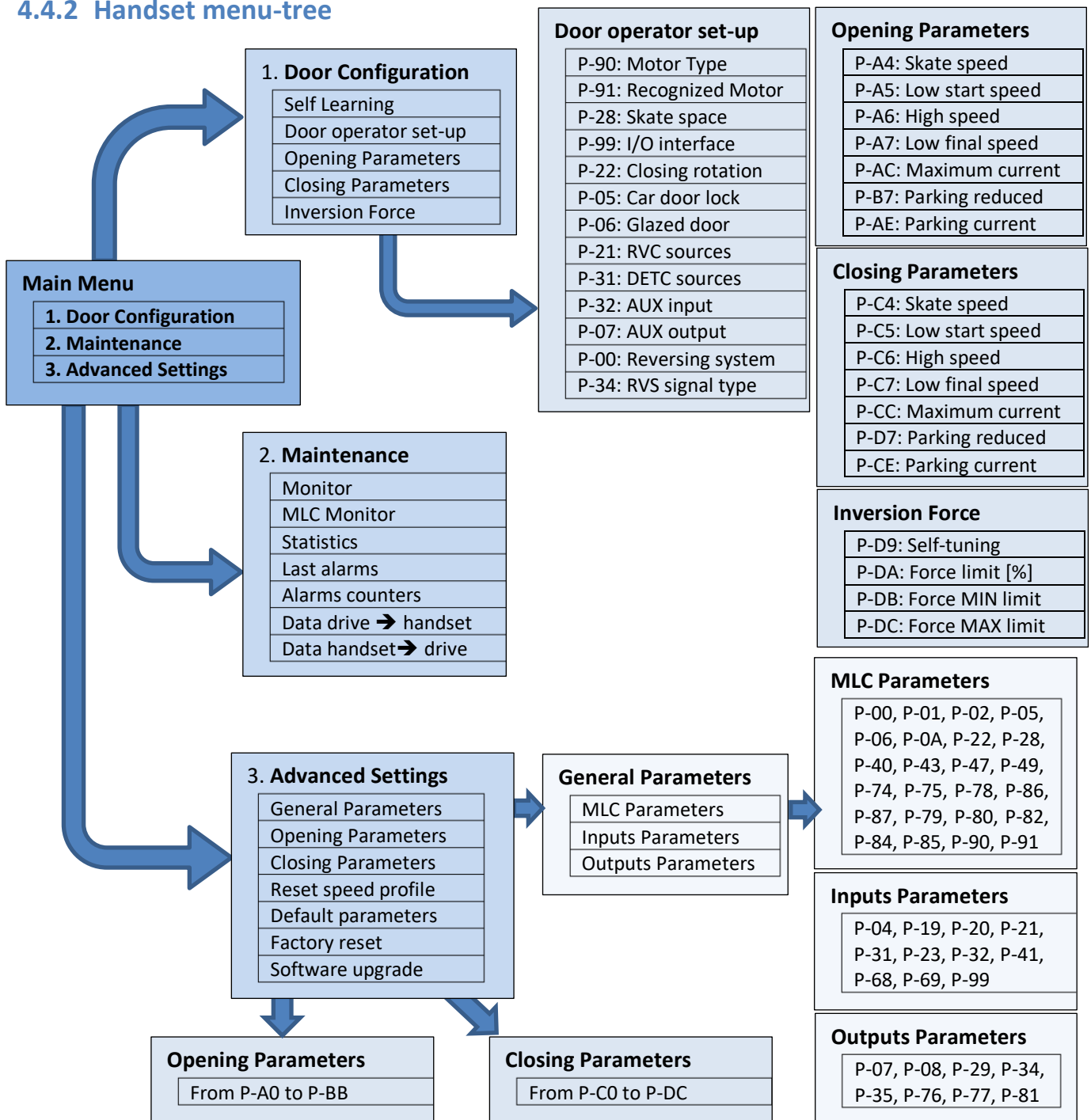


- Figure 4-3: Diagnostic/Programming tool example (Computec Handset) –

| KEY | DESCRIPTION |
|---|---|
|  | The F1 F2 and F3 keys have different functions, based on the current “menu”. In any case the key function is reported on the display above each key. |
|  | In the selection list menu, scroll the list from bottom to top. |
|  | In the selection list menu, scroll the list from top to bottom. |
|  | In the parameter change menu, permits to increase or decrease the parameter value. |
|  | In the list menu, access to the selected (highlighted) voice. In the selection menus, access to the parameter to change and to save the set value. |

- Table 16: functional table of the external diagnostic tool -

4.4.2 Handset menu-tree



4.5 Door Learning function

The door learning function is the basic fundamental operation to be performed, to obtain a correct behaviour of the system. The CDD6 controller can perform:

1. Automatic learning
 - This procedure permits to learn automatically: the installed motor (refer to the [table-25](#) for self-recognized motor type), the closing rotation, the skate space measured on the belt (the skate type too), the door space, closing torque profile at the normal speed profile. Please remember (before starting the learning procedure or after its completion), to set all the other parameters that identify the door operator (P-05 car door lock, P-06 glazed doors, P-99 MLC interface). The auto-set procedure allows an optimal tuning of the controller interfaced to the door operator.


NOTE: please refer to chapter 5, for the parameter list and set-up

4.5.1 Auto-set procedure: automatic learning function

This feature allows to automatically learn:

1. Installed motor type (P90 if set to zero)
2. Closing rotation (P22)
3. Skate space (P28)
4. Door space
5. Some motor types have predefined parameters set after auto learning (e.g. P-28, P-A4, P-C4, P-D7)

Execution:

| STEP | Operation | Action | Result / Checks |
|----------|--------------------------------|--|--|
| 1 | Door drive Power off | Switch off door drive by pressing OFF key | Check the door drive is OFF |
| 2 | Door panels positioning |  <p>Set manually the door position at closed panels and skate opened (gap between panels <10cm) To optimize the execution of the learning procedure, it is suggested but not necessary to couple car and landing door, executing the operations from the car roof in inspection mode.</p> | Check the correct panels closed position with gap <10cm |
| 3 | AUTOSET start | <p>Press and keep pressed key 1, and press ON key. When autaset started, release key 1.</p> <p>Floor(s) with DTBC contact active (not available for magnetic switches applications): AUTOSET for second TB will start automatically.</p> | <p>Press ON button on the door drive front panel, checking that "SL" ("S2" for DTBC contact floor) is shown on the door drive display.</p> <p>During all the autaset steps, in case the of errors or alarms, please refer to the NOTE at the end of this table.</p> |
| 4 | Motor check | Wait | <p>The door moves shortly in both directions to acquire information.</p> <p>The CDD6 performs the motor check: - connections</p> |

| | | | |
|-----------|---|------|--|
| | | | - motor type - closing rotation |
| 5 | Clutch closing | Wait | The door closes completely, locking the clutch |
| 6 | Clutch measurement | Wait | The door drive starts opening the clutch at reduced speed, and detects the clutch measure. ATTENTION: in case of car door only and car door locking device is present, pull manually the car door locking device, to avoid errors. |
| 7 | Door space measurement | Wait | The door continues to open at reduced speed to find the door open position |
| 8 | Door closing profile at normal speed | Wait | The door will close with the current speed profile set, to perform movement and torque analysis |
| 9 | Door opening profile at normal speed | Wait | The door will open with the current speed profile set, to perform movement analysis |
| 10 | AUTOSET completed | Wait | The AUTOSET is now completed, the door is open, and the door drive returns immediately in normal mode. |

- Table 17: auto-set learning procedure -

In case the procedure ends before it is completed, check the display to have information about the possible errors:

| Display | Error | Solution |
|---------------------------|---|--|
| AL + alarm code | An alarm occurred during auto-set procedure | Refer to alarms table (paragraph 6.1 "Alarms") and to the related solutions. AL04: wrong motor cables connection AL05: wrong or not present encoder connection AL07: motor cables not connected |
| Er + error code | An error occurred during auto-set procedure | Refer to error table reported in the next page, and to the related solutions. |

- Table 18: possible errors during auto-set learning procedure -



IMPORTANT: in case auto-set procedure completes correctly, but the resulting speed profiles show any anomalous behaviour near the panels closed position, repeat the procedure **paying attention to the initial panel position**. For some particular application it is possible that the clutch space cannot be measured correctly, in case set manually the clutch space by parameter **P-28**.

In the following page the AUTOSET error table is reported.

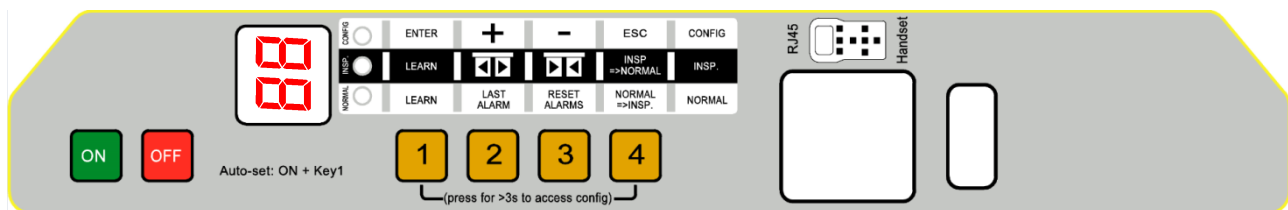
| "Er" | Error | Description | Actions |
|------|------------------------------------|--|--|
| 1 | Wrong initial door position | The initial door position is wrong. Or ONLY for magnetic switches application: see Er14 | Please check the door is in panels closed position, with gap less than 10cm. |
| 2 | Wrong skate space detected | The skate space measurement has not been successfully performed. | Please check door operator clutch |
| 3 | Obstacle present | The procedure has been interrupted due to an obstacle present during profiles check | Remove any obstacle present. |
| 4 | Locking/Unlocking jam | During AUTOSET execution and profiles check, a locking or unlocking jam has been detected | Check mechanical regulation of the locks and the clutch system. |
| 6 | Motor check | A valid motor has not been recognized | Check motor connections and installed motor type. |
| 7 | Motor Digidoor | ONLY for magnetic switches application: Missing LA magnetic switch for selected motor type | Check motor type or LA switch. |
| 8 | Main power failure | A failure of the main power supply voltage has been detected | Check power supply |
| 10 | Detector interruption | A detector (light curtains, photocells) interruption has been detected during procedure. | Check light curtains connections, or avoid to interrupt detector during AUTOSET. |
| 12 | Door moving | The door was already moving due to external command at the beginning of the AUTOSET | Repeat AUTOSET procedure |
| 13 | Motor | ONLY for magnetic switches application: A valid motor has not been recognized | Check motor connections and installed motor type. |
| 14 | Wrong magnetic switch | ONLY for magnetic switches application: the magnetic switch sequence is wrong | Check magnetic switches correct connections for LC RC RA LA. |

- Table 19: possible errors during auto-set learning procedure -

4.6 Diagnostic Functions

4.6.1 Diagnostic operations by HMI

The diagnostic operations allowed by door drive front panel are limited, but permit to execute some basic functions as described below.



- Figure 4-4: CDD6 front panel -

4.6.1.1 Profiles check in Inspection Mode

It is possible to verify the correct opening and closing of the door, activating the Inspection Mode from the front panel (pressing key 4, until INSP LED is ON). In this mode it is possible to check:

- Correct setting of the closing rotation (pressing key 2 or 3 and checking opening and closing accordingly)
- Correct execution of the normal speed profiles
- Correct setting of the door opened and door closed, checking the feedback from the display that shows **oP** and **L** blinking and becomes fixed when movement is completed.

4.6.1.2 Alarm code reading and alarms reset in Normal Mode

It is possible to read the last warning/alarm code activated by the door drive keeping pressed the key **2** on the drive front panel, when the drive is in Normal mode.

While the alarm is visualized, press key **3** for 3 second to delete it.

4.6.2 Diagnostic operations by Handset

The external handset permits to perform a deep diagnostics of the door controller:

- Check of ALL the settings
- Speed profiles check
- Drive readings check
- Check of ALL I/O

4.6.2.1 I/O diagnostics

Access to “Main Menu” → “Maintenance” → “MLC Monitor” and check the status of ALL inputs and outputs of the door drive. When the signal is active, the correspondent signal description results highlighted.



ATTENTION: in this menu the controller returns in Normal mode, and executes all the commands coming from the Main Lift Controller.

The following table shows the I/O visualization:

| INPUTS | | OUTPUTS |
|---------|---------|------------|
| DOC 5 | FFC 39 | DOS 17 |
| DCC 3 | AUXC 42 | DCS 19 |
| RSC 22 | DTBC 41 | RVS 1-2 |
| RVC 23 | EOC 40 | AUXS 34-36 |
| DETC 32 | | BUZS 21 |

- Table 20: I/O signals reported -

4.6.2.2 Profiles and measurements checks

Access to: “Main Menu” → “Maintenance” → “Monitor”. The “Monitor” menu permits to check the speed profiles (mm/s), motor Current (mA) and space profile (mm). By pressing OK button, it is possible to access to the measurements table as reported below:

| MEASUREMENTS | |
|--|--|
| Column 1 | Column 2 |
| Last panels opening time (even if partial reopening) | Last panels closing time (even if partial reclosing) |
| Learned door space (including clutch movement) | Skate Space (set or measured) |
| Current position | |
| Motor Type | |
| Instantaneous motor current | |
| Estimated motor temperature | |
| Closing force limit | |
| % of battery charge (-- = battery not connected) | |
| Mains voltage | Internal 24V Voltage (from HW 00.02.001) |

- Table 21: measurements reported in the monitor menu table -

NOTE: the space measurements are calculated based on the encoder mounted on the motor. The absolute precision is then influenced by all the transmission system tolerances.

4.7 Firmware upgrade function

The CDD6 door drive firmware can be upgraded, in case new versions are available, by:

- Computec handset
 - The Computec handset has a USB plug where it is possible to connect a normal USB stick where it is stored the firmware to install. Selecting the upgrade menu, it is possible to choose the correct file and upgrade the CDD6. Please refer to dedicated handset instruction for details
- Computec APP
 - When the door drive is connected via wi-fi to the Computec APP, it is possible to upgrade the door drive by the app following the related instruction.

Verify on the web site "www.computecelectronics.it" any available new firmware versions.

5 Parameters

The CDD6 door drive can be configured by parameters, most of them are accessible also from the door drive front panel. The following table reports all the parameters that can be changed by the door drive front panel. The associated functions are described in detail in the next paragraphs. **The parameters highlighted in the table represents the key parameters for the door operator configuration.**

| N° | RANGE | UNIT | DEFAULT | Name | Values Description |
|-----------|-----------------|-----------|----------|--|--|
| 00 | [0 ; 1] | - | 0 | Reversing events management | 00 = internal 01 = external when moving |
| 01 | [0 ; 2] | - | 0 | MLC commands check | 00 or 01 = level. 02 = activation edge |
| 02 | [0 ; 2] | - | 0 | Door drive reaction on MLC commands not present | 00 = instant stop 01 = low speed + stop 02 = low speed cycle |
| 04 | [0 ; 2] | - | 0 | RVC input option | 00 = reversing on RVC edge 01 = reversing on RVC active level 02 = mechanical safety edge |
| 05 | [0 ; 1] | - | 1 | Car door locking device | 00 = car door lock not present 01 = car door lock present |
| 06 | [0 ; 1] | - | 0 | Glazed door | 00 = not present 01 = present |
| 07 | [0 ; 3] | - | 3 | AUXS output options (if CAN bus is active this output is reserved for DCS redundant signal) | 00 = disabled 01 = active during door opening 02 = active after space % reached 03 = Alarm signal |
| 08 | [0 ; 99] | % | 50 | Space percentage (related to P-07=2) | 00 = door closed ... 99 = door opened |
| 0A | [0 ; 2] | - | 0 | WiFi module enable | 00 = disabled 01 = enabled 02 = reset Password & SSID |
| 19 | [0 ; 1] | - | 1 | Fire-Fighting mode | 00 = stop without command 01 = EN81-72 |
| 20 | [1 ; 5] | ' | 1 | Battery opening cycle duration (related to EOC command function) | Expressed in minutes |
| 21 | [0 ; 2] | - | 1 | RVC signal logic | 00 = OFF 01 = N.O. 02 = N.C. |
| 31 | [0 ; 2] | - | 1 | DETC signal logic | 00 = OFF 01 = N.O. 02 = N.C. |
| 22 | [0 ; 1] | - | 0 | Closing rotation | 00 = clockwise 01 = counter-clockwise |
| 23 | [10 ; 99] | % | 70 | % partial opening on AUXC active when P-32=01 | (00 = door closed)... 99 = door opened |
| 28 | [0 ; 15] | cm | 2 | Installed skate space in cm | On the front panel display the value is shown in cm. |
| 29 | [0 ; 1] | - | 0 | PIN21 output option | 00 = DISABLED 01 = BUZZER output |

| N° | RANGE | UNIT | DEFAULT | Name | Values Description |
|-----------|-----------------|--------------------|----------|---|--|
| 32 | [0 ; 3] | - | 0 | AUXC input options | 00 = disabled 01 = partial opening floor input (P-23) 02 = AFT with back-step 03 = AFT with torque free |
| 34 | [0 ; 2] | - | 0 | RVS output signal type | 00 = active until DOC (from MLC) 01 = active until DOS 02 = active until P-81 time (pulse) |
| 35 | [0 ; 1] | - | 0 | RVS output signal when door open | 00 = OFF 01 = ON |
| 41 | [1 ; 30] | s | 2 | Timeout after AFT or opening force limiter intervention | Pause time after AFT intervention or opening force limiter intervention |
| 43 | [0 ; 1] | - | 0 | Door opened parking without torque | 00 = disabled 01 = enabled |
| 47 | [0 ; 99] | S | 30 | Timeout detectors failure | Delay to start force closing in case of detector failure |
| 49 | [0 ; 99] | S | 0 | CL evacuation delay | Delay to start parking with open skate, to be enabled for EN81-20 requirements |
| 68 | [0 ; 15] | cm | 5 | RSE disabling space at door open | Blind zone for RSE when door open |
| 69 | [0 ; 15] | cm | 5 | RSE disabling space at door closed | Blind zone for RSE when door closed |
| 70 | - | - | - | Speed profiles reset | Trigger to reset speed profiles |
| 71 | - | - | - | Parameters reset | Trigger to reset all parameters |
| 75 | [0 ; 1] | - | 1 | Storage of estimated motor temperature | 00 = OFF 01 = ON |
| 76 | [0 ; 1] | - | 0 | DCS output logic | 0 = N.C., 1=N.O. |
| 77 | [0 ; 1] | - | 0 | DOS output logic | 0 = N.C., 1=N.O. |
| 78 | [0 ; 7] | - | 3 | CAN bit rate | 0 = 1000 kb 1 = 800 kb 2 = 500 kb 3 = 250 kb 4 = 125 kb 5 = 100 kb 6 = 50 kb 7 = 20 kb |
| 79 | [0 ; 1] | - | 0 | RSC input exclusion | 0 =not excluded, 1=excluded |
| 80 | [0 ; 5] | s | 1 | Closing delay when door opened after reversing | Active only if P-00=0 |
| 81 | [5 ; 15] | s 10 ⁻¹ | 5 | RVS output activation time | When P-34=2 this parameter defines the RVS output active time (5↔0.5s) |
| 82 | [0 ; 1] | - | 0 | DCS signal management during Unlocking jam retries | 00= DCS always inactive during retries 01= DCS changes status during retries |
| 84 | [0 ; 20] | cm | 10 | Parking Mode position error | Position offset respect to the skate open position to detect the loss of DCS output |
| 85 | [5 ; 20] | cm/s | 10 | Synchronization trips speed | Speed for synchronization trips |
| 86 | [2 ; 120] | - | 7 | CAN node ID | - |
| 87 | [1 ; 3] | - | 1 | CAN open door number | Door ID in case of CAN bus connection (P-99=4) |

| N° | RANGE | UNIT | DEFAULT | Name | Values Description |
|--------------------|-----------|-------------------|---------|---|--|
| 90 | [0 ; 31] | - | 0 | Installed motor type | 0 = self-recognized (refer to paragraph P-90: installed motor type for self-recognized motor type). For values different from zero, please refer to the motors compatibility table |
| 91 | [0 ; 31] | - | 0 | Recognized motor type | Represents the ID of the recognized motor, when P-90 = 0. If P-90 ≠ 0, reports the last recognized ID. |
| 99 | [0 ; 4] | - | 0 | MLC commands interface logic | 0 = DOC DCC RSC in normal logic, RSC is forced closing signal 1 = DOC DCC RSC in reversed logic, RSC is a reduced speed movement enable signal 2 = DOC DCC RSC in normal logic, RSC is a reduced speed movement enable signal 3 = DOC DCC RSC in reversed logic, RSC is forced closing signal 4 = CAN open |
| OPENING PARAMETERS | | | | | |
| A0 | [1 ; 40] | mm | 20 | Door open search threshold offset | Offset for door open position (from P-A1) |
| A1 | [0 ; 20] | mm | 5 | Door open parking threshold | Final space for door open parking position |
| A2 | [0 ; 100] | mm | 5 | Acceleration start space | Offset respect to the panels closed position |
| A3 | [10; 50] | mm | 20 | Back-step space in case of reversing during opening | Space of door re-closing when a reversing source is detected during opening |
| A4 | [5 ; 40] | cm/s | 30 | Skate speed | Maximum speed for skate opening profile. Only for skates > 40 mm, P-A5 otherwise. |
| A5 | [3 ; 10] | cm/s | 5 | Low start speed | Speed for opening profile start |
| A6 | [10;100] | cm/s | 50 | High speed | Maximum speed profile |
| A7 | [3; 10] | cm/s | 3 | Low final speed | Speed for opening profile end |
| A8 | [8 ; 30] | cm/s | 16 | Reduced speed value | Low speed (Nudging, Battery, Overtemp.) |
| A9 | [5 ; 25] | dm/s ² | 10 | Stop/Reverse deceleration | - |
| AA | [1 ; 20] | dm/s ² | 7 | Deceleration from RA limit | Only for magnet switches applications |
| AB | [1 ; 20] | dm/s ² | 7 | Acceleration from LC limit | Only for magnet switches applications |
| AC | [1 ; 12] | A | 9 | Profile maximum current | - |
| AD | [1 ; 12] | A | 9 | Reset Trip maximum current | - |
| AE | [25 ; 75] | % | 50 | Parking current | Percentage of nominal motor current |
| B4 | [0 ; 4] | - | 2 | Default Opening profile | - |
| B5 | [50;100] | % | 60 | Profile symmetry | - |
| B7 | [0 ; 99] | s | 30 | Timeout park with reduced current | - |
| B8 | [0 ; 50] | mm | 20 | Unlocking space at power-off | - |
| BA | [0 ; 99] | % | 90 | Reverse force value | - |
| BB | [0 ; 1] | - | 0 | Opening reversing type | 0=back-step, 1=no-torque |

| N° | RANGE | UNIT | DEFAULT | Name | Values Description |
|---------------------------|------------|-------------------|---------|---|---|
| CLOSING PARAMETERS | | | | | |
| C0 | [1 ; 20] | mm | 2 | Door locked search threshold offset | Offset for door close position (from P-C1) |
| C1 | [0 ; 10] | mm | 3 | Door locked parking threshold | Final space for door close parking position |
| C2 | [2 ; 100] | mm | 2 | Deceleration end space | Offset respect to the panels closed position |
| C3 | [10 ; 50] | mm | 20 | Back-step space in case of reversing during closing | Space of door re-opening when a reversing source is detected during closing |
| C4 | [5 ; 40] | cm/s | 30 | Skate speed | Maximum speed for skate closing profile. Only for skates > 40 mm, P-C7 otherwise. |
| C5 | [3 ; 10] | cm/s | 4 | Low start speed | Speed for closing profile start |
| C6 | [10 ; 50] | cm/s | 35 | High speed | Maximum speed profile |
| C7 | [3; 10] | cm/s | 3 | Low final speed | Speed for closing profile end |
| C8 | [8; 30] | cm/s | 16 | Reduced speed value | Low speed (Nudging, Battery, Overtemp.) |
| C9 | [5 ; 25] | dm/s ² | 10 | Stop/Reverse deceleration | - |
| CA | [1 ; 20] | dm/s ² | 4 | Deceleration from RC limit | Only for magnet switches applications |
| CB | [1 ; 20] | dm/s ² | 4 | Acceleration from LA limit | Only for magnet switches applications |
| CC | [1 ; 12] | A | 9 | Profile maximum current | - |
| CD | [1 ; 12] | A | 9 | Reset trip maximum current | During the first closing after power on |
| CE | [25 ; 75] | % | 50 | Parking current | Percentage of nominal motor current |
| D4 | [0 ; 4] | - | 2 | Default Closing profile | - |
| D6 | [0 ; 2] | - | 2 | Closing profile type | - |
| D7 | [0 ; 99] | s | 10 | Time-out park with reduced current | - |
| D8 | [-9 ; +20] | mm | 5 | Reverse disable offset from panels closed position | Offset respect to the panels closed position, to disable reversing |
| D9 | [0 ; 1] | - | 1 | Closing force limit self-tuning | 00=disabled 01=enabled |
| DA | [0 ; 99] | % | 50 | Set Force limit | - |
| DB | [8 ; 15] | N*10 | 11 | MIN force limit | - |
| DC | [15 ; 30] | N*10 | 15 | MAX force limit | - |

- Table22: parameter list of the CDD6 door drive –

The parameters specific for **magnetic switches** applications profiles tuning, are highlighted in the below extract of the general parameters table:

| N° | RANGE | UNIT | DEFAULT | Name | Values Description |
|---------------------------|-----------|-------------------|---------|----------------------------|---------------------------------------|
| OPENING PARAMETERS | | | | | |
| A5 | [3 ; 10] | cm/s | 5 | Low start speed | Speed for opening profile start |
| A6 | [10;100] | cm/s | 50 | High speed | Maximum speed profile |
| A7 | [3; 10] | cm/s | 3 | Low final speed | Speed for opening profile end |
| AA | [1 ; 20] | dm/s ² | 7 | Deceleration from RA limit | Only for magnet switches applications |
| AB | [1 ; 20] | dm/s ² | 7 | Acceleration from LC limit | Only for magnet switches applications |
| CLOSING PARAMETERS | | | | | |
| C5 | [3 ; 10] | cm/s | 4 | Low start speed | Speed for closing profile start |
| C6 | [10 ; 50] | cm/s | 35 | High speed | Maximum speed profile |
| C7 | [3; 10] | cm/s | 3 | Low final speed | Speed for closing profile end |
| CA | [1 ; 20] | dm/s ² | 4 | Deceleration from RC limit | Only for magnet switches applications |
| CB | [1 ; 20] | dm/s ² | 4 | Acceleration from LA limit | Only for magnet switches applications |




5.1 Door operator configuration Parameters

The present paragraph reports the description of all the parameters related to the set-up of the door operator, to associate the door drive to the installed door operator type.

With the auto-set procedure the drive automatically recognizes: motor type, closing rotation, skate type and learns the skate and door space; this procedure permits to the controller to learn the exact skate space, with important advantages with respect to the manual settings where the nominal skate space is applied. In case it is preferred to proceed with the standard door learning, it is necessary to set all the parameter of the door operator, before starting the procedure.

5.1.1 P-28: installed skate space

The installed door operator where the CDD6 is mounted, may have different skate types. To have a correct behaviour (opening and closing speed profiles, final approach to the panels closed, reversing, etc.), it is necessary to set the correct value for this parameter.

| Parameter value | Related automatic settings | Note s | Skate representation |
|-------------------|---|---|---|
| skate S20 | Aluminium skate Skate space = 20mm OP acceleration start = 20mm CL deceleration end = 25mm | The space measured on the belt between the skate opened and skate closed positions is about 20mm |  |
| skate S90 | Iron Skate Skate space = 90mm OP acceleration = 90mm CL deceleration end = 100mm | The space measured on the belt between the skate opened and skate closed positions is about 90mm |  |
| skate S120 | Iron Skate Skate space = 120mm OP acceleration = 120mm CL deceleration end = 125mm | The space measured on the belt between the skate opened and skate closed positions is about 120mm |  |

- Table 23: main skate types -






: it is possible to set manually any installed skate space value, in case the installed skate results different from the ones reported in the previous table, modifying the parameter. It is suggested anyway to perform in this case the auto-set procedure, to learn the exact values for all the parameters influenced by the actual skate space measured on the belt.

5.1.2 P-90: installed motor type

This parameter permits to set the installed motor type, applying the automatic selection or setting manually the installed motor code, as reported in the table below:

| Motor type | Reference image | | | | | | |
|---|--|--|--|---|---|--|--|
| 00 = self-recognized Note: Not all motor types supported by CDD6 are automatically recognized | The door drive automatically detects the motor type connected, only during AUTOSSET procedure. Motors automatically recognized: | | | | | | |
| | <table border="1"> <tr> <td>01 </td> <td>12 </td> <td>13 </td> </tr> <tr> <td>14 </td> <td>16 </td> <td>05 – 07 </td> </tr> </table> | 01  | 12  | 13  | 14  | 16  | 05 – 07  |
| 01  | 12  | 13  | | | | | |
| 14  | 16  | 05 – 07  | | | | | |
| 01 = Moog / Vickers 1Nm (4:1 belt) + Enc500 |  | | | | | | |
| 02 = Moog / Vickers / Siboni 2Nm, (4:1 belt) + Enc500 |   | | | | | | |
| 03 = Siboni 1Nm (4:1 belt) + Enc500 |  | | | | | | |
| 04 = Siboni 1Nm for QKS |  | | | | | | |
| 12 = GR 63x25 + SG80K (15:1) + Enc100 21 = M63x25 + SN31 (15:1) + Enc100 |  | | | | | | |
| 13 = GR 63x55 + SG120 (15:1) + Enc100 20 = M63x50 + SN40 (15:1) + Enc100 |  | | | | | | |
| 23 = M48x60 + SN 22,6 (7:1) + Enc100 |  | | | | | | |

| | | | |
|--|--|--|--|
| 24 = SIDOOR M2 | |  | |
| 25 = SIDOOR M3 | |  | |
| 25 = SIDOOR M4 | |  | |
| 17 = AT20 24V 63x25 (15:1) + Enc500 | |  | |
| 18 = AT20 30V 63x55 (15:1) + Enc500 | |  | |
| 30 = PRISMA S78L (Fox) | |  | |
| 31 = M63x60/I + P63Z (9:1) + IGO100/2 SN 40V (Sele) | |  | |
| 14 = BG 62x60 + SG120 (15:1) + Enc100 BRUSHLESS | |  | |
| 16 = BG 62x30 + SG80K (15:1) + Enc100 BRUSHLESS | |  | |
| 28 = PRISMA 1A (Jaguar) BRUSHLESS | |  | |
| 29 = PRISMA 2A (Jaguar) BRUSHLESS | |  | |

| | |
|--|--|
| <p>05 = DC 1Nm comp. F28/LMDC2010 with 4 MAGNET SWITCH 07 = DC 1Nm comp. Digidoor 1Nm with 3 MAGNET SWITCH</p> |  |
| <p>06 = DC 2Nm comp. F29/LMDC2011 with 4 MAGNET SWITCH 08 = DC 2Nm comp. Digidoor 2Nm with 3 MAGNET SWITCH</p> |  |
| <p>19 = DC 1Nm comp. F28/LMDC2010 with 4 MAGNET SWITCH 22 = DC 1Nm comp. Digidoor 1Nm with 3 MAGNET SWITCH</p> |  |

- Table 24: selectable motor list -

5.1.3 P-91: recognized motor type

This parameter permits to check the motor type recognized by the door drive during the self-learning procedure, in case the P-90=0 that means the self-recognition of the motor is enabled (refer to the previous paragraph for self-recognized motor type). In case the motor is recognized successfully, this parameter reports the index of the recognized motor. The P-91 reports in any case the index of the last recognized motor. Please refer to the previous paragraph for the motor indexes.

5.1.4 P-22: closing rotation sense


The motors installed on the field can have the rotation pulley mounted on the right or on the left with respect to the motor shaft: this means that the motor, to rotate in the correct sense need to rotate in opposite sense based on the installation type. This parameter permits to configure the correct closing rotation sense, as reported in the following table:

| Parameter value | Notes |
|-----------------------------------|---|
| 00 = clockwise (default value) | The motor pulley, in frontal view, rotates in clockwise sense when door is closing (except for some motors or wiring). |
| 01 = counter-clockwise | The motor pulley, in frontal view, rotates in counter-clockwise sense when door is closing (except for some motors or wiring). |

The motor rotation is learned during the AUTOSET procedure. Anyway, it is possible to execute the check of the rotation sense with door operator switched off, or checking the door movement with the door drive in Inspection mode.

5.1.5 P-05: car door locking device settings

This parameter allows to configure the system to manage the unlocking operation when the car door locking device is installed, as reported in the table below. The main function executed by the door controller in case the car door locking device is present is the unlocking movement when main power is off, to permit the evacuation from the car to the floor.

| Parameter value | Notes |
|--|--|
| 00 = not present | The car door locking device is not present: in case of black-out, when door is closed, the controller keeps the skate closed, with the residual energy stored inside the controller. |
| 01 = present (default value)  | The car door locking device is present: in case of black-out, when door is closed, the controller tries immediately to open the skate and the panels for the mm set in P-B8, with the residual energy stored inside the controller. If the cabin is inside the unlocking zone, this movement permits the unlocking of the hook, and the consequent possibility to open manually the car and landing door. If the car is outside the unlocking zone, this movement is not permitted by the hook, and the car door remains blocked, because the evacuation is not possible. Pay attention when removing main power during maintenance, motor try to open panels! |

5.1.6 P-06: glass door settings

This parameter allows you to configure the type of installed door, if with or without glass panels, to activate, if necessary, the functions related to the glass panels, according to the standards limits.

| Parameter value | Notes |
|---|---|
| 00 = door panels not glazed (default value) | All the door panels of the lift haven't glass panels |
| 01 = glazed door panels | At least one of the door panels of the lift has glass. This activates P-BA parameter and limits the maximum speed to 500mm/s. |



: refer to paragraph 8.6 for the verification of the standards limits.

5.1.7 P-99: MLC interface logic settings

This parameter permits to configure the MLC commands (DOC, DCC, RSC) management on the door drive, even from the input logic side, that on from the function of the RSC, as reported in the following table:

| Parameter value | Notes |
|---|--|
| 00 = DOC DCC RSC active high and RSC function is forced closing at reduced speed signal (default value) | The DOC DCC RSC commands are high active (the MLC closes the signals to the used 24Vdc). The RSC signal is a forced closing signal. The activation of the RSC from the MLC means the high priority closing with reduced speed, even if DOC signal is active (Nudging). |
| 01 = DOC DCC RSC active low, RSC function is reduced speed movement enable signal | The DOC DCC RSC commands are low active (the MLC closes the signals to the used 0V). The RSC command is the enable signal for the reduced speed movement. The activation of the RSC itself does not start any movement, but: DOC + RSC = opening with reduced speed DCC + RSC = closing with reduced speed |
| 02 = DOC DCC RSC active high, RSC function is reduced speed movement enable signal | The DOC DCC RSC commands are high active (the MLC closes the signals to the used 24Vdc). The RSC command is the enable signal for the reduced speed movement. The activation of the RSC itself does not start any movement, but: DOC + RSC = opening with reduced speed DCC + RSC = closing with reduced speed |
| 03 = DOC DCC RSC active low and RSC function is forced closing at reduced speed signal | The DOC DCC RSC commands are low active (the MLC closes the signals to the used 0V). The RSC signal is a forced closing signal. The activation of the RSC from the MLC means the high priority closing with reduced speed, even if DOC signal is active (Nudging). |
| 04 = CAN OPEN LIFT protocol | DOC DCC RSC commands are not active. All movement and signalling commands come from the CAN open protocol. Only AUXS output relay is used to signal the door closed. AUXS switches when the door panels are in closed position. |

5.1.8 P-76 and P-77: Output DCS and DOS relays contact logic


By default, open-door relays and closed-door relays are normally closed (they open in the final position). The behavior logic can be changed in the settings P-76 (door relay closed), P-77 (door relay open).

Please Note: when the CDD6 is off, the relays DCS and DOS are closed regardless of the parameters.

5.2 Speed profiles

5.2.1 P-B4 and P-D4: Pre-set Speed Profiles


The speed profiles can be changed simply selecting the value of this parameter P-B4 for the opening speed profile, and P-D4 for the closing speed profile, that offers the possibility to choose between 5 pre-set speed profiles:

| Parameter value | Notes | Performances |
|--------------------|--------------|---|
| 04 | Profile 150% |  |
| 03 | Profile 125% | |
| 02 (default value) | Profile 100% | |
| 01 | Profile 75% | |
| 00 | Profile 50% | |

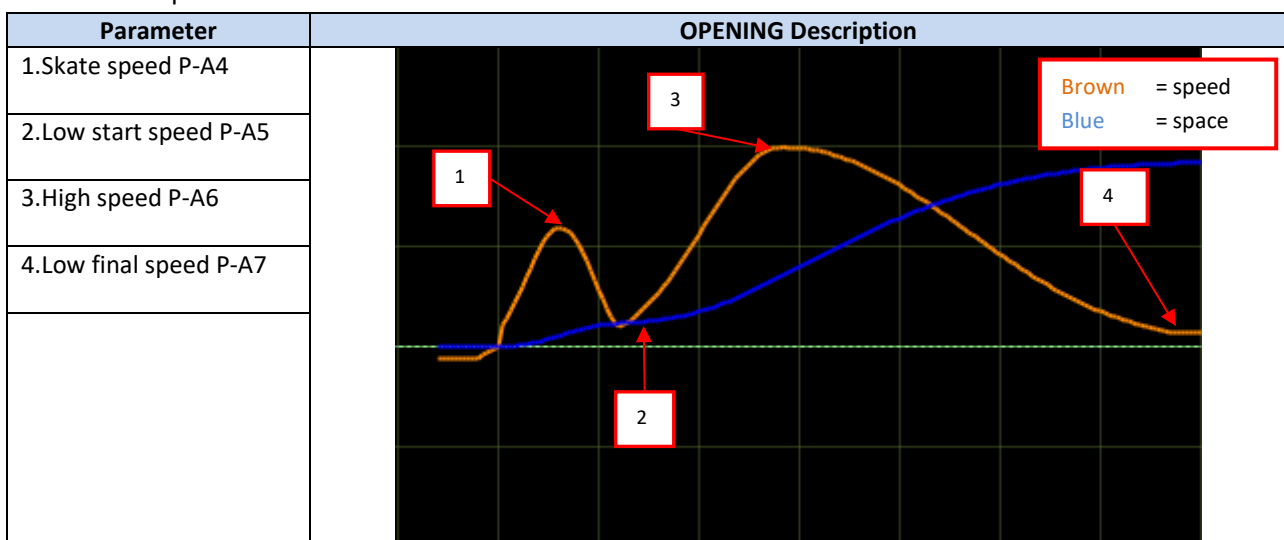
: refer to paragraph 8.6 to check the standards and code limits.

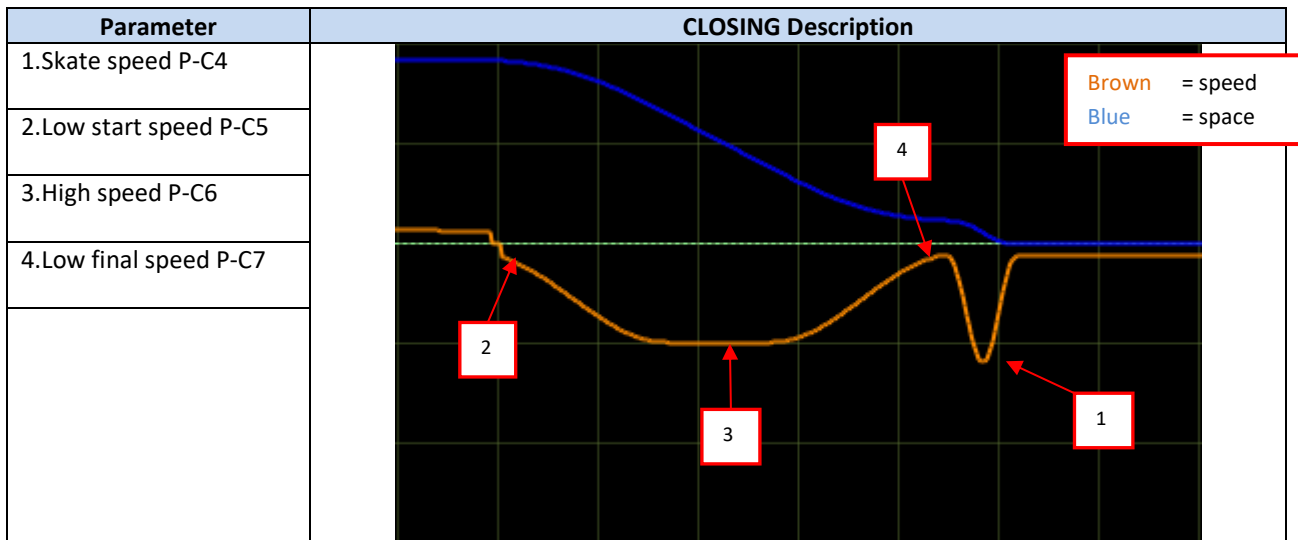
The speed profiles are associated both to opening and closing, as shown in the following table:

| Profile | Parameters | Default Profile | | | | |
|---------|-----------------|-----------------|---------|----------------|---------|---------|
| | | 50% | 75% | 100% | 125% | 150% |
| OPENING | Low start speed | 45mm/s | 45mm/s | 50mm/s | 55mm/s | 55mm/s |
| | High speed | 300mm/s | 400mm/s | 500mm/s | 600mm/s | 700mm/s |
| | Low final speed | 30mm/s | 30mm/s | 35mm/s | 40mm/s | 40mm/s |
| CLOSING | Low start speed | 35mm/s | 35mm/s | 40mm/s | 45mm/s | 45mm/s |
| | High speed | 250mm/s | 300mm/s | 350mm/s | 400mm/s | 450mm/s |
| | Low final speed | 30mm/s | 30mm/s | 35mm/s | 40mm/s | 40mm/s |

 the reported values refer to default conditions, and may be different based on the installed firmware version.

In case it is necessary to fine tune the speed profiles, it is possible to change the following parameters related to the profile:





NOTE: Closing high speed must not exceed the values shown below (10J kinetic Energy):

| Panels weight [Kg] | Max High speed |
|--------------------|----------------|
| 80 | 500 mm/s |
| 100 | 440 mm/s |
| 150 | 360 mm/s |
| 200 | 310 mm/s |
| 250 | 280 mm/s |
| 300 | 255 mm/s |

$$High\ Speed \leq \sqrt{20/Weight}$$

Where Speed is expressed in m/s and Weight is expressed in Kg

5.2.2 P-70: Speed Profiles Reset

This parameter allows to reset the speed profiles configuration to the default value, for both opening and closing speed profiles. This is a trigger parameter.

See previous description to check default settings of speed profiles.

5.3 Reversing management in closing direction

5.3.1 P-00: reversing events management

| Parameter value | Notes |
|----------------------------------|---|
| 00 = internal (default value) | The door drive, once received the activation of a reversing source, external or internal (closing force limiter), reopens automatically the door activating the RVS output, without waiting for any command from the MLC. |
| 01 = external when moving | The door drive, once received the activation of a reversing source, external or internal (closing force limiter), reduce speed immediately, activates the RVS output and waits for a command from MLC. |

NOTE: if values 01 is set, the controller waits always for a DOC command from the MLC to reopen.

5.3.2 P-34: RVS output activation type


This parameter regulates the RVS output duration, as reported in the following table:

| Parameter value | Notes |
|--|--|
| 00 = active until DOC command activated (default value) | The door drive, once the external reversing source is active or the closing force limiter is active, activates the RVS output that remains active until MLC will activate its DOC command. |
| 01 = active until reopening completed | The door drive, once the external reversing source is active or the closing force limiter is active, activates the RVS output that remains active until the reopening movement is completed, that means when DOS signal is active. |
| 02 = active for a fixed time defined by P-81 | The door drive, once the external reversing source is active or the closing force limiter is active, activates the RVS output for a fixed time defined by parameter P-81 (by default set to 0.5s). |

NOTE: if P-00 is set to 01, P-34 may be set to 00 or 02 values

5.3.3 P-D9: Closing force limit value Auto-tuning

This parameter permits to enable/disable the auto-tuning function of the closing force limit:

| Parameter value | Notes |
|---|--|
| 00 = disabled | The closing force limit auto-tuning function is not active, and the set value for the closing force limit (see next page) remains unchanged. |
| 01 = enabled (default value) | <p>The auto-tuning function is active:</p> <ul style="list-style-type: none"> - Every time that the closing force limiter detects an obstacle, a reversing event is generated. The closing force limiter automatically increments the closing force limit by 6N, until the maximum value FMAX (P-DC) - Every time that a closing movement is completed without obstacle, the closing force limiter automatically decreases the closing force limit by 0.1N, until the minimum value FMIN (P-DB) <p>This management permits to adapt the system reaction to the change of frictions.</p> <p>IMPORTANT: when this function is enabled it is very important to define the FMIN limit to avoid false reversing and assure that reversing happens according to active codes.</p> |
|  | |

5.3.4 P-DA: Closing force detection settings

The closing force limit sets the threshold to recognize an obstacle during the door closing; it can be changed from a pre-set minimum value FMIN, until to a maximum value FMAX.

Together with parameter P-D9 (previous paragraph), this parameter permits a complete management of the closing force reversing limit.

There can be particular field installations that have non-optimal working conditions, and where it is necessary to increase the FMAX limit above the nominal 150N.



IMPORTANT: in case of measurement of the actual closing force limit for reversing with a specific instrument, to guarantee the codes limits, it is strongly suggested to set P-D9 to zero and P-DA to 100%, before to execute the measurements of the closing force comparing them with the value of P-DA value, in order to avoid closing force limit auto-adaptation. Please refer to the previous paragraph for the details. After the measurements the parameters P-D9 and P-DA can be re-set to the desired value.

| Forces | Default value | Notes |
|--------------------|---------------|---|
| FMIN (P-DB) | 110N | Adjustable between 80N and 150N |
| FSET (P-DA) | 50% | Adjustable between 0 and 99% |
| FMAX (P-DC) | 150N | Adjustable between 150N and 300N or the maximum force available for the installed motor |

NOTE: If P-D9 is set to 01, P-DA will change automatically in according to previous paragraph.

P-DA = 0% is equivalent to FMIN (P-DB), P-DA = 99% is equivalent to FMAX (P-DC).



IMPORTANT: reversing force setting suggestion, in case of particular installation situations or not good working conditions.

In case of particular working conditions (old lifts, floors with different mechanical conditions) the closing force management may lead to false closing force limiter activations, with consequent door reversing and not desired call-backs. To obtain a more robust management with a single closing force limiter level, the following sequence permits to optimize the behavior.

1. Deactivate the closing force self-tuning, by setting P-D9 = 0
2. Set P-DA = 99
3. Tune the reversing force changing P-DC parameter



Under this condition, it is strictly necessary in this case to execute closing force measurements with instrument, in particular when it's necessary to set P-DC parameter value higher than 150.

5.3.5 P-D8: Reversing Disabled offset at the end of closing

This parameter allows to fine tune the obstacle detection disabled space, that disable also the closing force limiter, at the end of the closing movement. The parameter represents the offset with respect to the position of panels closed and skate opened. The set value may be affected by possible errors related to the skate settings, or skate measurement during installation. The correct settings of the skate space with P-28 (paragraph 5.1.1) has to be verified, before applying any modification to this parameter.

| Value | Value in mm | Notes |
|----------------|-------------|---|
| -9 | -9mm | Minimum: the closing force limiter is active also when panels are closed and the skate is partially closed -9mm in case of side doors -18mm in case of centre doors |
| 0 | 0mm | Panels closed and skate opened position |
| Default | +5mm | This setting allows to theoretically detect obstacle: 5mm in case of side doors 10mm in case of centre doors |
| 20 | +20mm | Maximum: the closing force limiter is disabled 20mm before the panels are closed. 20mm in case of side doors 40mm in case of centre doors |




IMPORTANT: the set value is a theoretical value, and it is strongly affected by external factors (belt tension, mechanical tolerances, etc.). Verify the actual minimum obstacle detected and perform a fine tuning in case of need.

5.4 MLC interface management

5.4.1 P-01: MLC commands check mode

This parameter defines how the door drive checks the commands coming from MLC. The following table shows the possible options:

| Parameter value | Active command status | Notes |
|---|---|---|
| 00 or 01= level (default value) | Signal level always checked | The command is considered active until the input signal is present. During parking the command can be removed |
| 02 = edge |  | One activation edge of the command is enough to generate a complete door movement. Suggested only when strictly necessary (old MLC compatibility) |

5.4.2 P-02: Door drive reaction on MLC commands not present

This parameter defines the behaviour of the door drive when no commands are present from MLC and P-01 is set to 00 or 01, when the door is at intermediate position (not completely closed and not completely opened).

| Parameter value | Notes |
|---|---|
| 00 = instant stop (default value) | The controller, in case no commands are present, stops immediately the door and keeps the actual position with low torque applied to the motor. |
| 01 = low speed + stop | The controller completes the current movement with reduced speed until the final position is reached |
| 02 = low speed cycle | The controller executes a reduced speed cycle: at the commands interruption, the door opens completely with reduced speed, remains opened for 30s, then closes completely with reduced speed (evacuation oriented). |

5.5 Input signals management

5.5.1 P-04: RVC input function

This parameter permits to set type and function related to the RVC command input.

| Parameter value | Notes |
|--|---|
| 00 = edge reversing input signal (default value) | The signal connected to the RVC / DETC pin is a dry contact from an external reversing source (light curtains, photocells, ...). The activation of the signal during door closing implies the door reversing until the complete reopening of the door (according to P-00 settings that defines if the controllers reopens automatically or waits for a MLC DOC command) |
| 01 = level reversing input signal | The signal connected to the RVC / DETC pin is a dry contact from an external reversing source (light curtains, photocells, ...). The activation of the signal during door closing implies the door reversing and reopening until RVC is active (according to P-00 settings that defines if the controllers reopens automatically or waits for a MLC DOC command) |
| 02 = mechanical safety edge | <p>The signal connected to the RVC pin is a dry contact from an external retractable safety edge. In this case the controller applies a signal filter to disable the input signal based to the door position, when the door is in the “blind zones” of the safety edge, that means the positions where the edge retracts automatically near to the door opened position and near to panels closed position.</p> <p>The values of these “blind zones” are programmable as parameters: “Disabling threshold start closing P-68”: default 50mm, adjustable from 0mm to 150mm “Disabling threshold end closing P-69”: default 50mm, adjustable from 0mm to 150mm.</p> <p>The diagram below reports the “blind zones” position:</p> <p>Please Note: DETC will reopen the door completely regardless P-68 and P-69.</p> |

5.5.2 P-21: RVC input logic settings

This parameter allows to set the RVC input signal logic.

| Parameter value | Notes |
|--|---|
| 00 = OFF | The signal connected to RVC input is not active |
| 01 = Normally OPEN (default value) | The signal connected to RVC input is normally open signal |
| 02 = Normally CLOSED | The signal connected to RVC input is normally closed signal |

5.5.3 P-31: DETC input logic settings

This parameter allows to set the DETC input signal logic.

| Parameter value | Note |
|---------------------------------------|---|
| 00 = OFF | The signal connected to DETC input is not active |
| 01 = Normally OPEN (default value) | The signals connected to DETC input is normally open signal |
| 02 = Normally CLOSED | The signals connected to DETC input is normally closed signal |

5.5.4 P-32: AUXC input function

This parameter allows to set the AUXC input function.

| Parameter value | Notes |
|--|--|
| 00 = disabled (default value) | No function is associated to the AUXC input |
| 01 = partial opening | <p>The signal connected to the AUXC input is a special contact that is active when the car is stopped at one or more particular floors that have landing doors with different reduced opening space.</p> <p>With the P-23 parameter “% partial opening” it is possible to set the opening percentage based on the door learned space associated to the complete car door opening space.</p> <p>Example: side car door, width 1200mm Special floor with 1000mm opening space → $P-23 = (1000/1200) \% = 83\%$</p> <p>Example: Central car door, width 1200mm Special floor with 1000mm opening space In this case the door is seen from the door drive as $1200\text{mm}/2 = 600\text{mm}$ but the proportion remains unchanged ⇒ $P-23 = (1000/2) / (1200/2) = 1000/1200 = 83\%$.</p> |
| 02 = external “anti-finger trapping” device with back-step | <p>The signal connected to the AUXC input comes from an anti-finger trapping device, to activate the reversing during opening: the reclosing is performed as defined by P-A3 and then the door is stopped, until the signal is active. When AUXC signal is no more active waits P-41 delay and then the door returns to execute the active command.</p> <p>Normally the AFT it is a sensitive strip applied to the moving door panels made with glass, to prevent the finger trapping.</p> |
| 03 = external “anti-finger trapping” device with torque free | <p>The signal connected to the AUXC input comes from an anti-finger trapping device, to activate the reversing during opening: when the input is active, the door is immediately stopped and the torque is removed from the motor, until the AUXC signal is active. When AUXC signal is no more active waits P-41 delay and then the door returns to execute the active command.</p> <p>Normally it is a sensitive strip applied to the moving door panels made with glass, to prevent the finger trapping.</p> |

5.5.5 P-19: FFC options

This parameter sets how the controller manages the door movements, when the FFC command is active, and the system is in Fire-Fighting mode. The other reversing sources eventually connected to the controller (barriers, photocells) are always disabled when FFC command is active. The closing force limiter is in both cases set to a reduced sensitivity.

| Parameter value | Notes |
|---|---|
| 00 = closing force limiter disabled | The controller, when in Fire-Fighting mode, drives the door closing with the closing force limiter disabled (the door operation is manually managed by the fire-fighter directly from the car). The door stops any movement in case non commands are present. |
| 01 = Closing force limiter enabled with reduced sensitivity (default value) | EN81-72: The controller, in any door closing condition (also during reduced speed closing), keeps the closing force limiter active, with sensitivity reduced to the minimum. In case no commands are present, the door will perform according to the code: If the door was opening, the door will close If the door was closing, the door will reopen |

5.5.6 P-20: EOD function time-out (based on EOC input)

This parameter allows to change the total time of the emergency opening cycle. This function is active when:

1. The emergency battery is connected to the door drive (+ and – plugs of the X4 connector)
2. The EOC contact is installed at the evacuation floor, and connected to the EOC input plug of the X3.2 connector.

In this way, when the main power supply fails, the MLC drives the car to the emergency floor. The door controller then detects the EOC input active, and proceed with a temporized opening of the door. Once the set time is elapsed, the door will close. EOD speed profiles are set by P-A8 and P-C8.

The total time of this cycle (from door closed to door closed) is defined with this parameter. The parameter is expressed in minutes and it is adjustable in the range [1 ; 5]minutes. The default value is 1'.

5.6 Output signals management

5.6.1 P-07: AUXS output options

This option permits to configure the AUXS output, that is a double contact relay.

| Parameter value | Notes |
|-----------------------------------|--|
| 00 = disabled | The AUXS output not used |
| 01 = active during door opening | The AUXS output is active when the door is opening. In this case it is normally connected to an acoustic device (gong), that indicates the opening movement in progress. |
| 02 = space percentage | The AUXS output is active when the door position reached is higher than the space percentage indicated by the P-08 parameter |
| 03 = Error signal (default value) | The AUXS output is active when the door drive is in alarm status, or in case of motor overheating. |

5.6.2 P-A0: DOS output activation threshold

This parameter allows to configure the DOS limit output activation offset (P-A0 + P-A1). During the door opening, the controller checks that door position reaches the door opened position, verifying:

1. The space quote is reached
2. The end position is reached, detecting panels hitting the bumpers

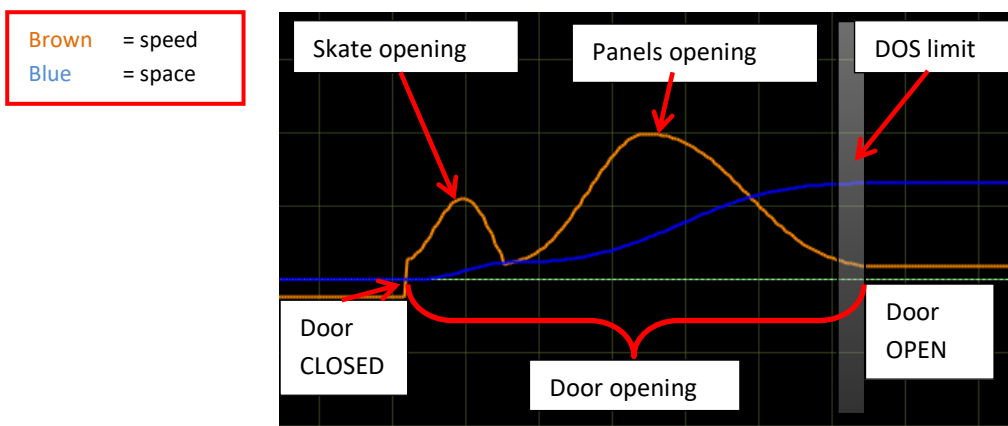
To cover installation tolerances, this parameter permits to accept door open position lower than learned open parking position, until 40mm less.

- Default value: 20mm
- Range: [1 ; 40]mm



IMPORTANT: in case this limit is reached, and the DOC is deactivated, the door will anyway complete the opening movements, keeping DOS output signal active.

The figure below shows the operating zone of the parameter:



- Figure 5-1: door opening profile and DOS activation zone -

5.7 Door Closed parking management

5.7.1 P-49: Door Closed evacuation delay

This parameter permits to enable the “Parking with Skate Opened” (PSO) function.

| Parameter value | Notes |
|---|--|
| 00 = PSO not active (default value) | The controller, during parking with door closed, keeps ALWAYS the skate closed, applying a reduced parking torque to the motor enough to keep the closed position. |
| 01...99 = PSO active | The controller enables the PSO function, activating the PSO after the correspondent delay in seconds |



The PSO function is required for EN81-20 applications, and it must be set to a value different from zero (suggested 10s)

The door closed parking phase generates, mainly for long parking period during lift unused time, a power consumption and a continuous torque applied to the motor to keep the skate closed also if the car is parking at the floor.

For this reason, the PSO function has been developed. To manage this option, it is necessary that MLC:

1. Removes DCC command when car is parking at the floor without calls
2. Not activate error or alarms, in case the safety chain gets open during the parking phase at floor after PSO activation (the open skate opens the locks)
3. Activate DCC command at least 2s before the car starts to move for a call

If all the previous conditions are satisfied, it is possible to exploit all the advantages given by the PSO function.

In the table below are reported all the sequences that configure the PSO management.

5.7.2 P-84: PSO position error

| Parameter | Range | Default value | Description |
|-----------|-------------|---------------|--|
| P-84 | [0 ; 20] mm | 10mm | Maximum position error in opening direction, after which the DCS is disabled and the controller gets out of PSO mode |

The PSO function activation sequence is reported in the table below:

| N. | Phase | MLC signals | CDD6 signals | Notes |
|----------|---------------------------|----------------------------------|----------------|--|
| 1 | Closed skate parking | DCC active RSC not active | DCS active | Skate closed, parking torque applied to the motor |
| 2 | Delay to open skate | DCC not active RSC not active | DCS active | Door drive waits for PSO activation delay expiration. If during this phase DCC is activated the door drive returns to phase 1 |
| 3 | Skate opening | DCC not active RSC not active | DCS active | The door drive opens the skate. If in this phase DCC is activated the controller goes to phase 5 |
| 4 | Parking with opened skate | DCC not active RSC not active | DCS active | The door drive is in active PSO, with opened skate and panels closed; the position control is set by a space control. If in this phase DCC is activated the door drive goes to phase 5 |
| 5 | Skate closing | DCC active RSC not active | DCS active | The door drive closed the skate, because of DCC active |
| 6 | DCS deactivation | DCC not active RSC not active | DCS not active | If an external force moves the panels in opening direction to a position higher than P-84, the controller removes the DCS output and returns to wait for a MLC command. |



if in any phase of this sequence the MLC activates the DOC command, the door begins immediately the requested opening movement, starting from the current door position.

5.8 EN81-20 functions parameters

5.8.1 P-49: Door Closed evacuation delay

This parameter, described in the previous paragraph at 5.7.1, is strictly related to the EN81-20 evacuation function. In case of installation on EN81-20 lift, it is STRICTLY necessary to set the value of this parameter to a value different from zero, to permit the clutch relaxing when the door is parking at the floor. The MLC must remove the DCC command to permit this function.

| Parameter value | Notes |
|--|--|
| 00 = PSO not active (default value) | The controller, during parking with door closed, keeps ALWAYS the skate closed, applying a reduced parking torque to the motor enough to keep the closed position. |
| 01...99 = PSO active | The controller enables the PSO function, activating the PSO after the correspondent delay in seconds |



The PSO function is required for EN81-20 applications, and it must be set to a value different from zero (suggested 10s)

5.8.2 P-47: Time-out detector failed

This parameter allows to activate the closing at reduced speed with limited kinetic energy 4J, when external reversing sources are active for the defined time, meaning that the reversing source is broken.

| Parameter value | Notes |
|--|--|
| 00 = function disabled | The function is not enabled |
| 01...99 = function enabled (default value is 30s) | The door drive will start the reduced speed closing sequence as described below, after the defined time-out. Sequence: <ul style="list-style-type: none"> • Door open • RVS active with P-00 = 0 • DCC active • The door remains open, since reversing source is active. • After the timeout defined by P-47 parameter, the door drive will start to close the door at reduced speed, with kinetic energy limited to 4J. |

5.8.3 P-BA: Opening force limiter

This parameter set the opening force limiter (based on parameter P-AC), that must be active according to EN81-20, at least for the door made of glass (parameter P-06=1).

| Parameter value | Notes |
|-----------------|--|
| 00...99% | The function is enabled when P06 is active. The percentage represents the opening force limit set to generate the reversing. In case the opening force limit is overpassed, the door drive will react according to P-BB settings as described in the next table. |



it is strongly recommended to measure with appropriate instrumentation to verify the code limit of 150N.

5.8.4 P-BB: Opening reversing type

This parameter allows to activate different reactions on the door drive, after an opening force limiter detection.

| Parameter value | Notes |
|-----------------------------------|--|
| 00 = back-step (default value) | In case the opening force limit is overpassed, the door drive will react as follows: <ul style="list-style-type: none"> - Stops immediately the door - Performs a back-step in the closing direction according to P-A3 mm - Waits for a time-out according to P-41 settings. During this time the commands are ignored until the timeout is expired. After that the door drive will execute the active command. |
| 01 = no torque | In case the opening force limit is overpassed, the door drive will react as follows: <ul style="list-style-type: none"> - Stops immediately the door - Removes the torque to the motor, so the door can be moved manually - Waits for a time-out according to P-41 settings. During this time the commands are ignored until the timeout is expired. After that the door drive will execute the active command. |

5.9 Particular Parameters

5.9.1 P-43: Door open parking with no torque

This parameter permits to enable the opening parking without torque applied to the motor. There are some field installations with landing manual swing doors, and car automatic sliding doors, the normally park at the floor with the car door opened to permit the manual opening of the landing swing door.

This condition, similarly to the closed parking management, implies a continuous torque applied to the motor. To avoid this, it is possible to enable this function.

| Parameter value | Notes |
|--|--|
| 00 = OP parking with Torque (default value) | The controller, during the OP parking phase, keeps always active the parking torques to the motor. |
| 01 = OP parking without Torque | The controller activates the OP parking phase without torque |

5.9.2 P-85: Reset Speed value

This parameter allows to change the reduced speed value during power ON synchronization trip

| Parameter | Range | Default value |
|---------------|------------------|---------------|
| Reduced speed | [50 ; 200] mm/s | 100 mm/s |

5.9.3 P-A8 / P-C8: Reduced Speed value

This parameter allows to change the reduced speed value during reduced speed trips (when RSC is active, or in battery working)

| Parameter | Range | Default value |
|---------------|------------------|---------------|
| Reduced speed | [80 ; 240] mm/s | 160 mm/s |



NOTE: Reduced speed must not exceed the values shown below (4J kinetic Energy):

| Panels weight [Kg] | Max Reduced speed |
|--------------------|-------------------|
| 80 | 310 mm/s |
| 100 | 280 mm/s |
| 150 | 230 mm/s |
| 200 | 200 mm/s |
| 250 | 180 mm/s |
| 300 | 160 mm/s |

$$\text{Reduced Speed} \leq \sqrt{8/\text{Weight}}$$

Where Speed is expressed in m/s and Weight is expressed in Kg

5.9.4 P-29: PIN21 output management

This parameter allows to manage the PIN21 output of the door drive. This output is an open collector output, that can be set to activate acoustic signal, base on particular working conditions.

| Parameter value | Notes |
|----------------------------------|--|
| 00 = DISABLED (default value) | The pin21 output is disabled: the output is never activated by the door drive |
| 01 = BUZZER | The pin21 output is activated: <ul style="list-style-type: none"> - During the reduced speed closing when RSC command is active and the related parameter P-99 is 0 or 3. - During the reduced speed cycle, when P-02 = 1, or P-02 = 2 |

5.9.5 P-35: RVS output management in door open position

This parameter allows to manage the RVS signal when door is in open position. The following table shows the settings.

| Parameter value | Notes |
|-----------------------------|--|
| 00 = OFF (default value) | In door open condition, when door is parking, the RVS signal is never activated, even if the reversing sources (DETC or RVC) are active. This means that the door drive does not inform the lift controller if an external reversing source is active when the door is parking in open position, permitting the closing of the door. If the reversing source is active when the DCC is active, the door drive will immediately activate the RVS signal, and reacts according to P-00 settings. |
| 01 = ON | In door open condition, when door is parking, the RVS signal is activated every time the external reversing sources (DETC or RVC) are active. This means that the door drive informs the lift controller if an external reversing source is active when the door is parking in open position, permitting the reset of the closing timer or the final timer on the lift controller side. |

5.9.6 P-80: Closing delay when door completely reopened after reversing

This parameter allows to activate a delay, when the door is completely reopened in front of reversing during closing, when the P-00 is set to zero (internal reversing management). When the door has completed the reopening movement, and the DCC command is still present, the door drive applies this delay, before executing the next closing movement. This delay is not applied in case of partial reopening movement, when the closing starts in intermediate position.

| Parameter value | Notes |
|---|--|
| 00 = function disabled | The delay is not applied, so when the door has completed the reopening, and the DCC command is active, the door will start closing immediately. |
| 01...05 = function enabled (default value is 1s) | The delay is applied, so when the door has completed the reopening, and the DCC command is active, the door will start closing only when the timeout is expired. |

5.9.7 P-82: DCS management during Unlocking jam retries

This parameter allows to manage the DCS signal when door is performing the unlocking retries to open the clutch. The door drive implements the management of retries in case of:

- Door opening: at the beginning of door opening, the door drive opens the clutch, but in case of jam the door drive recloses the clutch (returns to door locked position) activate AL03 warning, and after 1s retries to open the clutch. After the 3rd retry the door drive stops in door unlocked position.
- Door closing: at the end of door closing, the door drive close the clutch, but in case of jam the door drive reopen the clutch (returns to door unlocked position) activate AL03 warning, and after 1s retries to close the clutch. After the 3rd retry the door drive stops in door locked position.

During the unlocking retries the door drive can be configured to toggle the DCS signal, to inform the lift controller that the retries are in progress. The following table shows the settings.

| Parameter value | Notes |
|-----------------------------|--|
| 00 = OFF (default value) | The DCS signal never changes status during locking/unlocking retries. - Unlocking retries: the DCS signal is always INACTIVE |
| 01 = ON | The DCS signal changes status during locking/unlocking retries. - Unlocking retries: the DCS signal is INACTIVE when the door is opening the clutch, and ACTIVE when the door is reclosing the clutch |

5.9.8 P-75: Storage of estimated motor temperature

The door drive estimates the motor temperature with I2T algorithm, since there isn't physical thermal sensor on the motors. This parameter allows to activate the storage of the estimated motor temperature, to keep the last value of the estimated motor temperature at the controller start-up. The following table shows the settings.

| Parameter value | Notes |
|---------------------------------|---|
| 00 = DISABLED | The estimated motor temperature is not stored in the internal memory. Every time that the door drive is switched off, at the next power-on the estimated motor temperature is set to 25°C. Then the motor temperature is updated based on the door drive algorithm. |
| 01 = ENABLED (default value) | The estimated motor temperature is stored periodically (every 30') in the internal memory. Every time that the door drive is switched off, at the next power-on the estimated motor temperature is set last saved value. Then the motor temperature is updated based on the door drive algorithm. |

5.10 Motor Thermal management

The monitoring of the motor thermal state is important to:

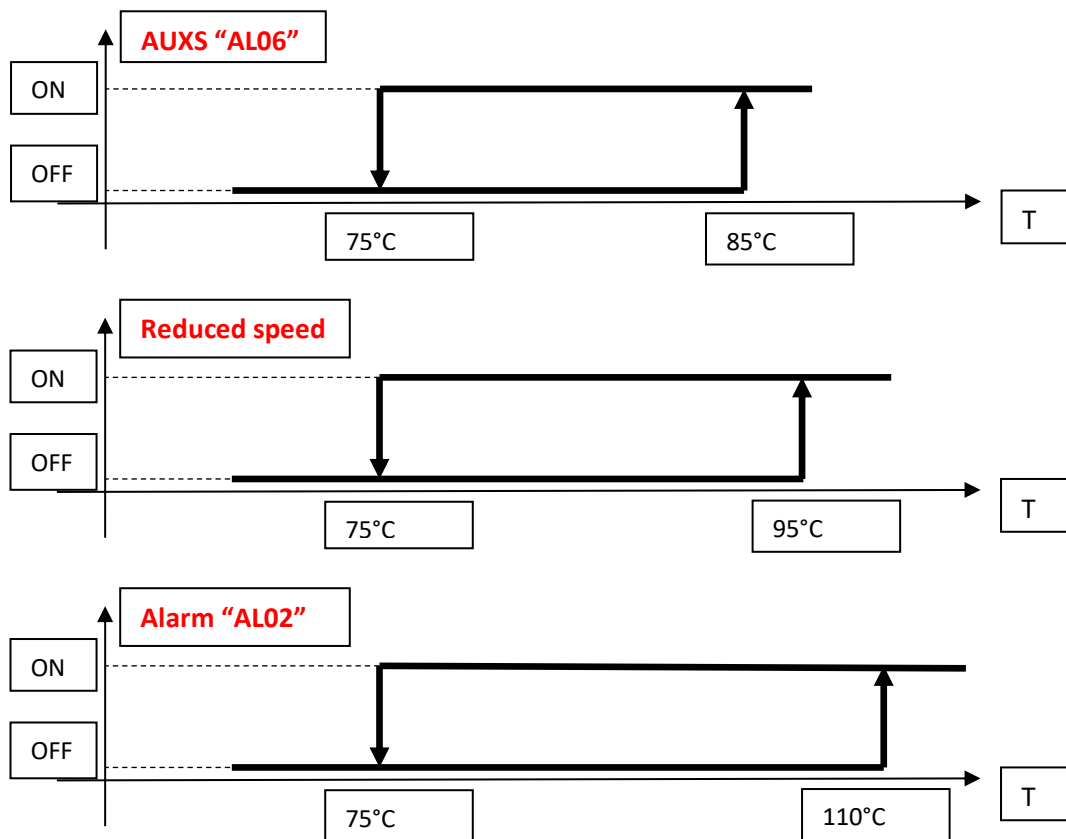
- Prevent motor over-heating
- Preserve the motor to extend its lifetime
- Prevent functional problems

The motor in use does not have temperature probes installed inside, for this reason the motor temperature is estimated based on I2T model. For each motor type are defined the Thermal Resistance and Capacity, used with the motor current to calculate the motor temperature estimation.

Under particular working condition (wrong mechanical or electrical settings, too heavy door for the installed motor type, additional frictions, etc.), it can happen that during the normal working cycle of door opening and closing, the estimated motor temperature derives, this is a symptom of motor over-heating. If the estimated motor temperature becomes higher than:

- the first threshold (85°C), the door drive activates AUXS output (if P-07 = 3).
- the second threshold (95°C) the door speed is reduced both for opening and closing
- the alarm threshold (110°C), the door drive stops the door and waits for the recover temperature (75°C) to restart normal behavior.

The following diagrams represent the behavior of the described signals.



- Figure 5-2: thermal trend under progressive over-heating conditions -

The repetitive activation of thermal protection, is a clear symptom that the working conditions are not correct for the installed system, and deep checks must be performed on the mechanical system and settings and on the motor / door moving mass ratio.

6 Maintenance

6.1 Alarms

The CDD6 door drive implements a warning/alarms/errors list, with which it can communicate functional errors external or internal of the CDD6; these codes are very important to detect the causes of issues during maintenance phase.

The following table reports the codes list.

| "AL" | Alarm | Description | Actions |
|------|---|--|--|
| 1 | Parameter mismatch | An internal parameter set integrity error has been detected | This event automatically recovers after internal check |
| 2 | Motor overtemperature | The estimated motor temperature is over the alarm threshold | Check door operator and panels, check manually free movement of the door, remove friction. Check speed profiles and door duty cycle timings |
| 3 | Lock/Unlock failure | The locking/unlocking of the clutch was not possible due to obstacle or mechanical jam | Check clutch movement and remove any mechanical jam source. Check clutch roller and pin. The clutch has to be free when the panels are closed. |
| 4 | Motor connection error | The motor has been cabled reversing the phase wires | Check motor cable connection and correct it |
| 5 | Motor encoder failure | The motor encoder signal is not working properly | Check motor encoder cable connection |
| 6 | Motor overtemperature | The estimated motor temperature is over the warning threshold | AUXS output (if P-07 = 3). |
| 7 | Motor jerk | The motor cable is not connected or one single wire is not connected | Check motor cable connection and fix it |
| 8 | Overvoltage | The maximum value of the Vbus voltage has been reached | Check speed profile according the moving mass, and reduce the speed profile and/or P-A9 and/or P-C9 |
| 9 | Motor output short-circuit | There is a short-circuit on the motor output | Check the motor integrity, and the motor cable connection. Remove any possible short-circuit |
| 10 | Internal 24V Voltage (possible short-circuit) | There is a short-circuit on the 24V or internal 24V voltage is damaged | Check the common PIN 15 connection. Remove any possible short-circuit. (from HW 00.02.001) |

| | | | |
|----|---|---|---|
| 11 | Power unit overtemperature | The estimated temperature of the power supply unit reached the maximum value. | This event is automatically recovers when the estimated temperature decreases below the recovery threshold. Check power consumption related to: applied speed profiles, moving mass, door duty cycle. |
| 12 | Analog input error | Test of analogic reading has not passed | Check motor cable connection The CDD6 is damaged |
| 13 | Power supply overvoltage and undervoltage | The input power supply voltage is lower than the minimum allowed threshold or higher than the maximum allowed threshold | This event automatically recovers when the power supply voltage returns to normal value. Check power supply voltage, and available input power according to door drive specifications. |
| 14 | Analog offset error | Test of analogic offset has not passed | The CDD6 is damaged |
| 15 | Upgrade error | The firmware upgrade was not performed. The CDD6 is working, but the firmware upgrade is not possible | - |
| 16 | Storage memory error | An internal storage memory (parameters, statistics, ...) error has been detected | - |

6.2 Troubleshooting (FAQ)

The table below reports the most common possible issues, with the related solutions.

| ID | Problem | Actions |
|----|---|--|
| 1 | The system does not switch ON | <ul style="list-style-type: none"> - Check the presence of the main power supply voltage, within the declared operating range - Check that power cable is connected to X1 plug of the controller - Check status of F1 fuse - Check that ON button has been pressed |
| 2 | The panels don't move | <ul style="list-style-type: none"> - Check that no obstacle/frictions are present and that the panels movement is free - Check that all motor connections are present - Check main power supply presence - Check that door drive is powered and switched ON - Check the door movements in Inspection mode - Check RVC-DETC logic input P-21 P-31 |
| 3 | The system switches ON, but the door does not move properly | <ul style="list-style-type: none"> - Check the selected motor, parameter P-90 - Check the movements in Inspection mode: <ul style="list-style-type: none"> o if the door is moving in the opposite side → check P-22 settings o if the display shows an alarm code → refer to the alarms table - Check the speed profiles: <ul style="list-style-type: none"> o The door is moving with reduced speed → check the RSC input and that P-99 is correctly set o The door does not move and the display shows an alarm code → refer to the alarms table |
| 4 | The system moves properly in Inspection mode, but not in Normal mode | <ul style="list-style-type: none"> - Check if CDD6 is correctly set in Normal mode - Check the bridge on pin 37-38 of X3.2 connector - Check the wiring in general - Check the correct opening after DOC activation without RCS command - Check the correct closing after DCC activation without RCS command - Check correct settings of parameter P-99 |
| 5 | The system does not react to the activation of the external reversing sources | <ul style="list-style-type: none"> - Check that external reversing sources are correctly connected to the door drive and that the wirings are correct - Check the reversing sources are correctly powered and switch according the obstacle presence. - Check the correct settings for parameters P-04 P-21 P-31 |
| 6 | The system does not activate the closing force detection | <ul style="list-style-type: none"> - Check correct settings for closing force limit - Check correct settings of parameters P-00. |

- Table 25: Trouble-shooting -

In the next paragraph are reported, in a more detailed way and as check-list, the main situations described in the previous table, with the related checks and actions to be performed so to fix the possible issue.

6.3 Correct working check sequence

The following table reports the sequence of checks and actions to be executed for a functional test on the field. Based on the problem found on the field, start the sequence from the related step.

| Problem | Check | STEP | Question | Answer | Action |
|--------------------------|---------------------------------|------|---|---|---|
| The system does not work | Main power supply voltage check | 1 | Is the controller powered? Is the front panel display showing "- -", "oP" or "CL"? | NO | Go to step 2 |
| | | | | YES | Go to step 6 |
| | | 2 | Is the power supply cable connected to door drive? | The power supply cable is NOT connected | Connect power supply cable and return to step 1 |
| | | | | The power supply cable is connected | Go to step 3 |
| | | 3 | Check that power supply voltage is inside the declared operating range: [90;290] Vac single phase | The supply voltage is correct | Go to step 4 |
| | | | | The supply voltage is NOT correct | Correct power supply voltage and return to step 1 |
| | | 4 | Check CDD6 F1 fuse | F1 is open | Replace fuse F1 and return to step 1 |
| | | | | F1 is OK | Go to step 5 |
| | | 5 | Press ON button on the door drive front panel | The display is not showing anything | Go to step 6 |
| | | | | The controller starts | Go to step 7 |
| | | 6 | Check if the NORMAL LED is ON | The NORMAL LED is ON | ON button does not work |
| | | | | The NORMAL LED is OFF | The controller is not working |

| Problem | Check | STEP | Question | Answer | Action |
|---|-----------------------------------|------|--|--|--|
| The system switch ON but does not move properly | Movement check in Inspection mode | 7 | Activate the Inspection mode (press key 4 for 1s, or until INSP. LED is ON) | Door already closed by external command ("CL" fixed on the display). | Go to step 8 |
| | | | | The display shows an alarm ("AL" alternate to alarm code) | Refer to alarms table (paragraph 6.1) |
| | | | | If display shows "--". | Go to step 8 |
| | | 8 | Press and keep pressed key 2 to open, then press and keep pressed key 3 to close and check the panels movement | The door is moving properly: it closed when key 3 is pressed and opens when key 2 is pressed | Go to step 9 |
| | | | | The door is not moving and the display shows an alarm ("AL" alternate to alarm code) | Refer to alarms table (paragraph 6.1) |
| | | | | The door is moving in the opposite direction: it's closing instead opening and opening instead closing | Check the set closing rotation and correct parameter P-22. Then return to step 7 |
| | | 9 | Check opening speed profile. Press and keep pressed key 3 to close completely the door, until "CL" is shown fixed on the display. Then press and keep pressed key 2 until the door is completely open ("oP" shown fixed) | The door opens correctly with the set speed profile | Go to step 10 |
| | | | | The door opens with reduced speed | The RSC command (X3.1.22) is active. Correct wiring or settings (P-99) |
| | | | | The door not opening and the display shows "CL" | The RSC command (X3.1.22) is active. Check wiring or settings (P-99) |
| | | | | The door opens with speed too low or too high | Change speed profiles (P-B4) |
| | | 10 | Check closing speed profile. Press and keep pressed key 3 to close the door, until the door is completely closed ("CL" shown fixed) | The door closes correctly with the set speed profile | Go to step 11 |
| | | | | The door closes with reduced speed | The RSC command (X3.1.22) is active. Check wiring or settings (P-99) |
| | | | | The door closes with speed too low or too high | Change speed profiles (P-D4) |
| | | | | The door is not moving and the display shows "oP" or the door moving but the display shows "IM" | The RVC or DETC command (X3.1.23 or X9.32) is active. Check wiring or settings (P-21 or P31) |

| Problem | Check | STEP | Question | Answer | Action |
|--|--------------------------------|------|--|--|--|
| The system is moving properly in Inspection mode, but does not work in Normal mode | Movements check in Normal mode | 11 | Check if the door drive is in Normal mode | NO | Activate normal mode (press key 4 for 1s, or until NORMAL LED is ON) |
| | | | | YES | Go to step 12 |
| | | 12 | Apply an opening command to DOC input (X3.1.5) | The door opens properly with the set speed profile | Go to step 14 |
| | | | | The door opens with reduced speed | The RSC command (X3.1.22) is active. Check wiring or settings (P-99) |
| | | | | The door is not moving and the display shows an alarm ("AL" alternate to alarm code) | Refer to alarms table (paragraph 6.1) |
| | | | | The door is not moving or is moving not properly | Go to step 13 |
| | | 13 | Check if DOC command is really active: if available, with the external handset access to "MLC monitor" menu (4.4.2) and check if DOC is active (highlighted) | The DOC opening command is not active | Check commands wirings (X3). Check that supply voltages are correct. Then return to step 12 |
| | | | | The DOC opening command is active | Check that ONLY DOC command is active and that DCC or RSC are not active. Check the set speed profile and, if necessary, perform a speed profile reset (5.2.2). then return to step 12 |
| | | 14 | Apply a closing command to DCC input (X3.1.3) | The door closes correctly with the set speed profile | Go to step 16 |
| | | | | The door closes with reduced speed | The RSC command (X3.1.22) is active. Check wiring or settings (P-99) |
| | | | | The door is not moving and the display shows an alarm ("AL" alternate to alarm code) | Refer to alarms table (paragraph 6.1) |
| | | | | The door is not moving or is moving not properly | Go to step 15 |

| | | 15 | Check if DCC command is really active: if available, with the external handset access to “MLC monitor” menu (4.4.2) and check if DCC is active (highlighted) | <p>The DCC closing command is not active</p> <p>The DCC closing command is active</p> | <p>Check commands wirings (X3), in particular the DCC. Verify that all the supply voltages are correct. Then return to step 14</p> <p>Check that ONLY the DCC command is active. Check the set speed profile and, if necessary, perform a speed profile reset (5.2.2). then return to step 14</p> |
|---|--|----|---|---|---|
| Problem | Check | ST | Question | Answer | Action |
| The system does not reverse after activation of one or more reversing sources | Check of the reversing sources, internal and/or external | 16 | Closing force limiter check. Open the completely the door. Close the door putting an obstacle between panels | The door, when the panels touch the obstacle, reverses and reopens. | Go to step 17 |
| | | | | The door, when the panels touch the obstacle, continues to push against the obstacle | Check the settings of the closing force limit and the P-00 setting: if P-00 set to external check that DOC command is activated from MLC after activation of RVS by the CDD6. Correct settings. Then repeat step 16 |
| | | 17 | Check reversing source connected to RVC input (X3.1.23): with the external handset access to “MLC monitor Q.M.” menu (4.4.2), activate the external reversing device and check that RVC is active (highlighted) | The RVC signal is active | Go to step 18 |
| | | | | The RVC signal is not active | Check RVC connection (X3.1.23) and verify the correct settings for: P-04 (5.5.1) or P-21 (5.5.2). Then repeat step 17 |
| | | 18 | Check reversing source connected to DETC input (X9): with the external handset access to “MLC monitor Q.M.” menu (4.4.2), activate the external reversing device and check that DETC is active (highlighted) | The DETC signal is active | Go to step 19 |
| | | | | The DETC signal is not active | Check the light curtains connection and the setting of P-31 (5.5.2). Then repeat step 18 |

| | | | | | |
|--|--|--|---|--|--|
| | Check proper working of RVS output | 19 | Check closing force limiter. Open completely the door. Then close the door putting an obstacle between panels. with the external handset access to “MLC signal monitor” menu (4.4.2), and check that RVS output is active (highlighted) | The RVS outputs is active based on the settings of parameter P-34 (5.3.2). | Go to step 20 |
| | | | | The RVS signal is not active | Check the closing force reversing activates correctly. Check the settings of P-34 (5.3.2), if P-34=2 note that the RVS signal will be active only for 0.5s. Repeat with P34=0. |
| | Check false reversing (execute this test only in case the door reverses during closing without any obstacle) | 20 | From door open condition apply a closing command and check the actual closing profile | - | Check if any friction is present (dust accumulated on the sill, mechanical settings on the operator). Go to step 21 |
| | | | | 21 | Switch off the door drive and check manually the panels movement |
| | The panels movement is free without any friction | Switch ON the door drive and check the force limits settings: if necessary, increase the P-DB P-DC or P-DA value and repeat step 20. | | | |

- Table 26: functional check sequence -

7 After sale

7.1 Customer support

A complete customer support is active to help field installer or maintenance people to problem solving, that cannot be reached with all the information contained in the present user manual.

Check on the website www.computeelectronics.com/cdd6, about how to access to technical support.

7.2 Replacements

All the available replacement parts and the ordering information are available on the www.computeelectronics.com/cdd6 website. In addition to the CDD6 door controller, other parts can be ordered, as: power supply cable, complete connectors kit. The order codes and available parts are always updated on the reported website.

It is always necessary to contact technical support for further information or suggestion.

7.3 Material disposal

It is necessary to follow laws and rules of the country where the door drive is installed, to proceed with the correct disposal of the materials, both in case of packaging parts or in case of failed parts not returned.

8 General information

8.1 General considerations

Before starting any operation, it is mandatory to read and understand all the information reported in the present user manual.

8.2 Confidentiality agreement

The hardware and software/firmware components that form the CDD6 device and all the: information, ideas, concepts, know-how are intended confidential and exclusive property of Computec.

All the information reported in the present user manual and any other support given by Computec, has to be considered confidential and property of Computec, that reserves the author rights: no parts can be copied or reproduced in any form.

All the information reported in the present manual cannot be forwarded to others, without the written permission of Computec, through authorized personnel.

The customer that use the CDD6 system, is implicitly committed to:

- not use the confidential information that are property of Computec,
- not re-project the CDD6 system

All the information reported in the present manual are checked and correct at the moment of the document release. In any case this does not constitute any obligation from Computec, that reserves the rights to apply modification considered necessary, also without any notification.

Computec declines any responsibility about any damage or claim caused to people, animals or things, due to errors or wrong interpretation/comprehension of the present document.

8.3 Safety

All the maintenance operation or cleaning performed on the automation or on the door, and the replacement of any component must be executed only after power supply has been interrupted. No maintenance operations different from the ones described in the present manual have to be performed. For any other failure detected on the door parts, contact the authorized technical support or qualified personnel.

It is forbidden to remove or apply change/falsify the plates and labels attached/printed/fixed from the manufacturer on the automation or on any related accessory parts.

In case the intended use of CDD6 system is in places where the presence of disabled, elderly, weak or with limited motorial skills people, it is suggested the supervision of responsible persons.

Don't stay inside the movement range of the door to avoid risk or danger situation. The children must be taken under control to avoid that they play inside the movement range of the door.

The door (complete lift) must be put out of service in case maintenance intervention are necessary or in case the door is not in perfect working conditions.

8.4 Installation personnel requirements

The installation of the CDD6 system must be executed exclusively by competent and qualified technical personnel, having all the technical and professional requirements provided by the current active legislation in the installation country.

The installer **MUST** check the conformity and compatibility of the doors to be driven with the CDD6 system, especially the door system must be compliant to the standards and codes also related to the safety of use.

The installer **MUST** execute all the system installation and commissioning operations, and operate when present power supply voltage coming from electric cabinets and/or branch boxes, and he has to be enabled to perform all the electrical and mechanical operations.

The installer **MUST** provide to the final customer all the information about the system behaviour, in normal or inspection mode.

The installer is the only responsible subject of any wrong installation, or of any non-compliance to the instructions reported in the present manual. The installer is responsible towards the customer or others about any damage to people, things, animals that are caused by wrong installation of the system.

8.5 User requirements

The user must be aware of all the necessary information reported in the present document.

8.6 Standard and codes reference

The CDD6 product is compliant to the following directives:

- 2006/42/CE Machine
- 2014/35/CEE Markings
- 86/188/CEE acoustic emission, modified according to 98/24/CEE
- 2014/30/UE electromagnetic compatibility

And according to the following particular codes:

- EN12015/EN12016
- EN13015
- EN81-1 EN81-2 (1)
- EN81-20/50 (1)
- AS1735 (1)

(1): compliance evaluated when coupled to the motors reported in the table “- Table 2: compatible motors data”.

The certified copy of the declaration of conformity for the product is reported in paragraph 9.1.



: the codes compliance to the maximum reversing force and to kinetic energy limit (maximum and average), is considered at own installer responsibility, that has to measure all the necessary values with appropriate instrumentation.

8.7 Warranty

Computec guarantees the optimal performances only if the original parts are directly sold and correctly installed.

Computec furthermore:

- Reserves the rights to undertakes updates of the present document, that will be downloadable from the website reported, in its last revision
- Inside its continuous improvement politics, it reserves the rights to implement design and materials modification of the product.

Therefore:

parts produced or added to the Computec product, without previous Computec check or permission, or non-original parts based on the Computec design (even if supplied by authorized retailer), cannot be considered under warranty, as the following conditions are cannot be insured:

1. Raw material quality control
2. Process quality control
3. Product quality control
4. Compliance product test according Computec specifications (resumed in the technical data).
5. Conformity test according to Computec specifications

8.8 Final considerations

The present user manual has been written, keeping in consideration that the company installing Computec product, satisfies the following requirements:

- The personnel responsible of the system installation or maintenance must apply the General and Specific codes for safety and hygiene (89/391/CEE – 89/654/CEE – 89/656/CEE).
- The personnel responsible of the system installation or maintenance must be familiar and trained to the use of the Computec product
- The devices used for the installation and maintenance, must be in optimal operating condition and has to be calibrated when necessary (89/655/CEE)

9 Annex

9.1 Product conformity declaration (DDC)



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EU – DECLARATION OF CONFORMITY



THE MANUFACTURER ()**

Computec s.r.l. / via C. A. Dalla Chiesa 5, 25017 Lonato del Garda (BS) Italy

STATES

Hereby, that the following component:

(P2546) CDD6 Door Drive

And to which this declaration refers, is manufactured

IN CONFORMITY WITH

Referring directives and standards

European Directive 2014/30/EU

European Standard EN 12015 : 2014 – Electromagnetic compatibility. Product family standard for lifts, escalators and passenger conveyors – Emission

European Standard EN 12016 : 2013 – Electromagnetic compatibility. Product family standard for lifts, escalators and passenger conveyors – Immunity

Authorized Responsible:

Paolo Lagi

Amministratore delegato

Lonato del Garda, 12th December 2019

(**) See the name of manufacturer indicated on the product identification label. Only one of the manufacturers (mentioned in headline) applies to this declaration of conformity.



Computec s.r.l.