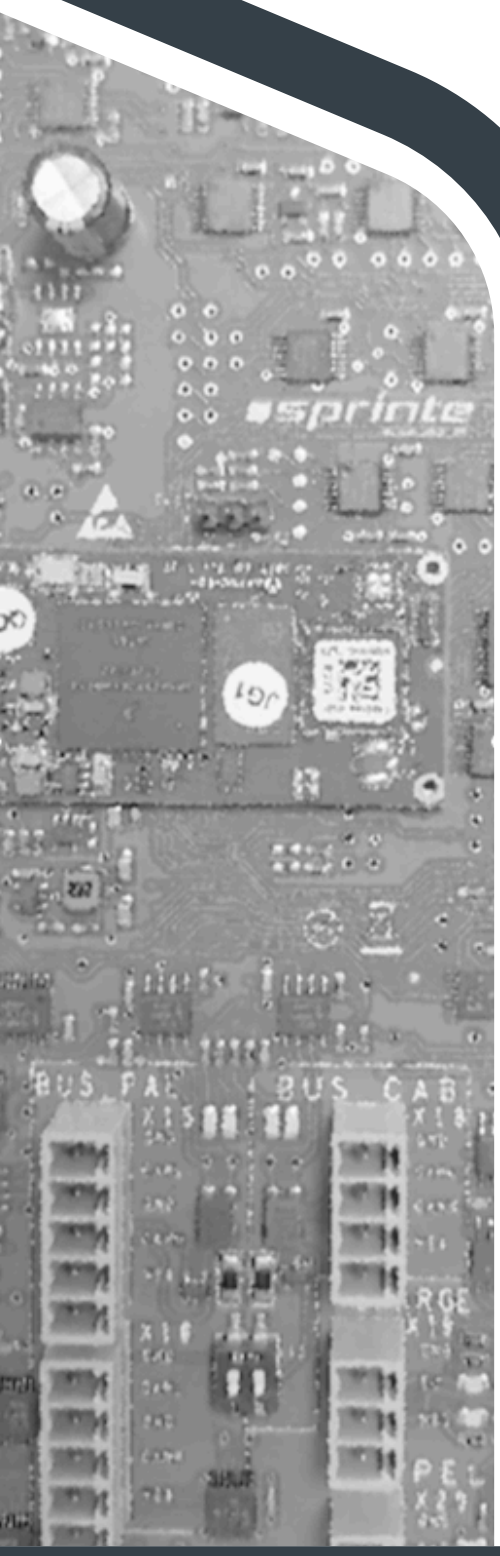
sprinte
move your lift



Lift control panel

tetra

USER MANUAL

Besoin d'aide technique ?

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Table of contents

Safety rules

Some informations need particular attention, it will be marked as follow all through this document

DANGER	Risk of death or serious accident if procedures are not followed.
ATTENTION	Risk of accident or materials damage if procedures are not followed
IMPORTANT	Mandatory instruction to follow to ensure the proper operation and safety of the lift.
NOTE	Recommendation to make operations efficient and avoid minor problems

These informations could be accompanied with the following symbols (EN ISO 7010:2012 compliant) :


. General danger


Danger,electrial voltage


Parts susceptible to damage by ESD


. Danger, hot surface


. Danger,rotating parts


. Danger,risk of falling


. Danger,risk of crushing


Obligation to shutdown electrical power supply before any operation


Obligation to wear a protection helmet


Obligation to wear protection gloves


Obligation to wear protection visor

Edition version: 2026-03-06 .

Presentation

This document is the reference manual of the lift controller TETRA from SPRINTE company.
All of the features and functionalities are here detailed for an overall understanding of the product.
Thanks to its versatility , the TETRA lift controller is especially fit for modernization of all kind of lifts.

- **Main features**

EN81-20, EN81-21, EN81-70 , EN81-71, NF82-230, NF82-207 standards compliant

The requirements of the latest Lift Standards are all covered by the TETRA controller

CANopen LIFT standard compliant

The TETRA controller is fully compliant with CANopen LIFT standard protocol. This open protocol brings interoperability with all other CANopen LIFT compliant devices (dsiplays, load weighing device, doors operator, VVF,etc...) whatever the manufacturer is

24 stops, 2,5m/s, 2 doors services, Lift group 4 cabins

To cover most of the lift modernization market

Smart Travel technology

The movement of the cabin is managed with Smart Travel technology, which is a regulation by the position in the shaft and no longer by speed: the installation is simplified (no more deceleration settings, only level altitudes) and performance are increased.

STO technology

The controller also take advantage of the SIL3 certified STO function (Safe torque operation) of the frequency inverter, that allows to suppress power contactors, thereby eliminating noise and wear problems.

Multi voltage support

The electrical transformer offers a wide range of available voltages in order to support most of the equipments already installed in your lifts to modernize

Touchpad Tablet as programming tool

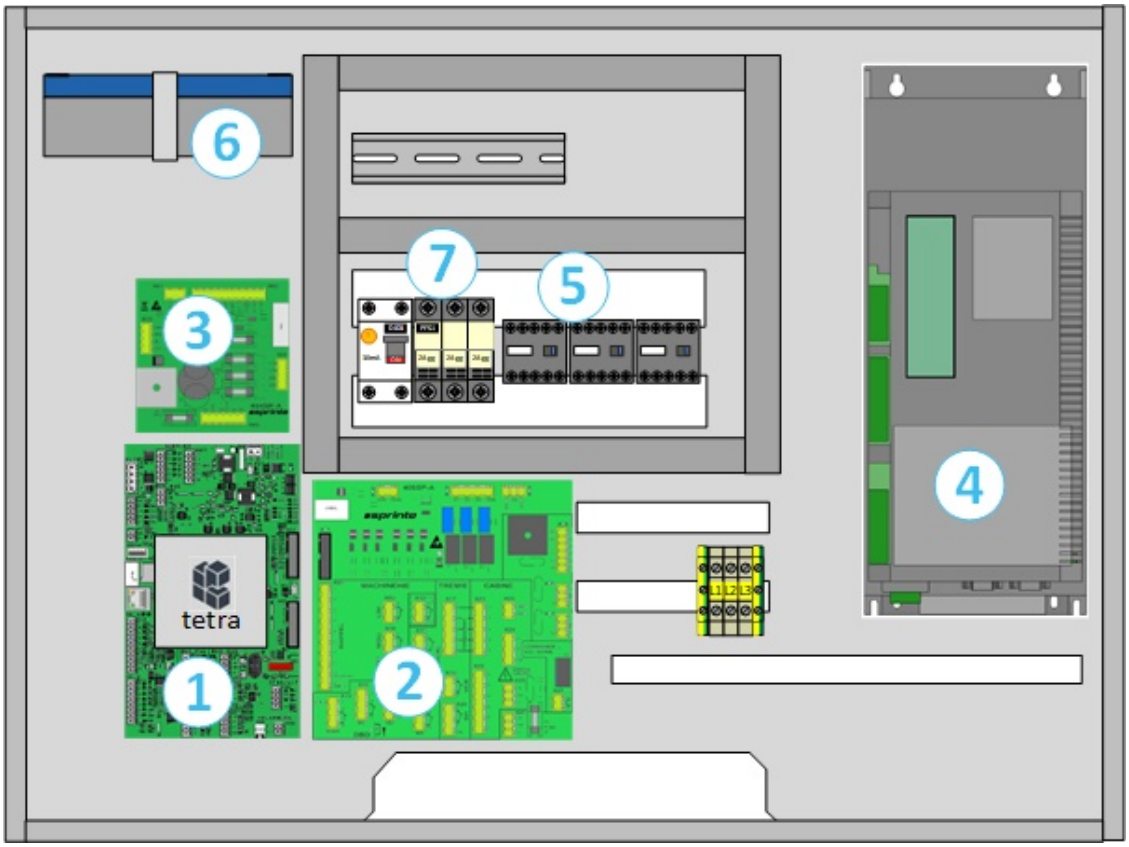
Diagnosis and programming tool of the TETRA controller is a pre-installed application on a 7' inches touchpad tablet. The wireless connection to the controller makes it a mobile and ergonomic tool, that can be used around the controller or on the roof of the car.

Machinery's equipments

The boxes of the machinery may have several configuration regarding the existence of a machine room and spaces available in the shaf.

- **Case of a machine room**

  - Only one box



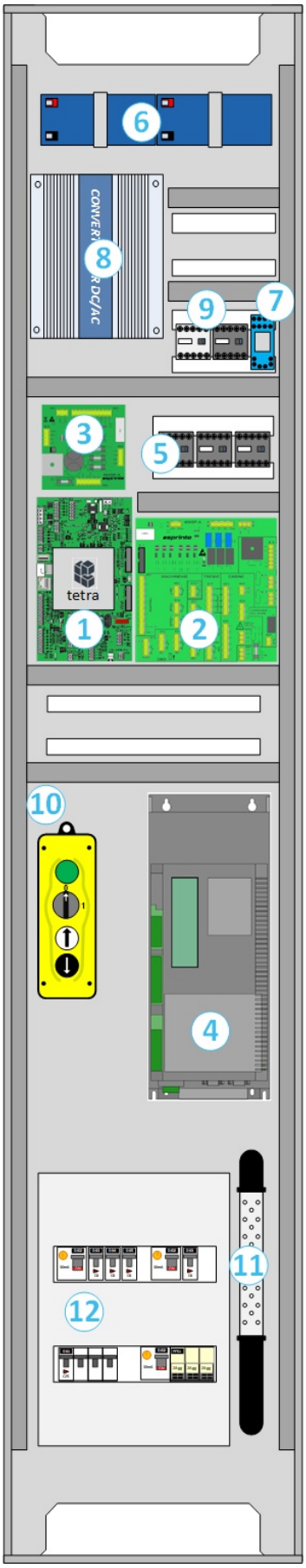
Dimensions : H:575mm, L : 780mm, P: 225mm

Item	Description
1	Main controller's board 400SP
2	Safety chain and power commands board 405SP
3	Transformer and power supply board 404SP
4	Frequency inverter
5	STO and brake contactors
6	Backup battery(12Vdc)
7	Electrical protections (Power supply, safety chain)

- **Case of a machine roomless**

In case of a machineroomless lift, several boxes configuration are available :

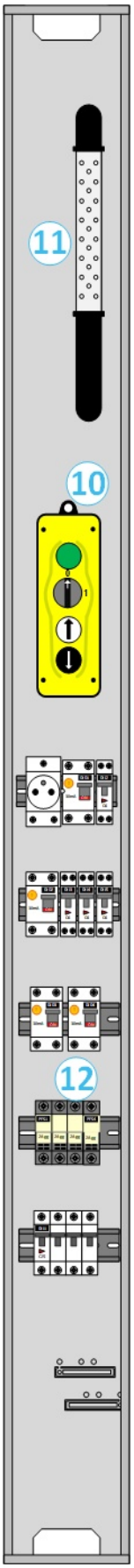
o A whole height cabinet located beside a landing door



	Description
	Main controller's board 400SP
	Safety chain and power commands board 405SP
	Transformer and power supply board 404SP
	Frequency inverter
	STO and brakes contactors
	Backup batteries ((24Vdc)
	Overspeed governor triggering relay
	24Vdc/230Vac converter
	Main/backup power supply switching contactors
	Emergency operation box
	Portable lamp
	Electrical protection devices panel

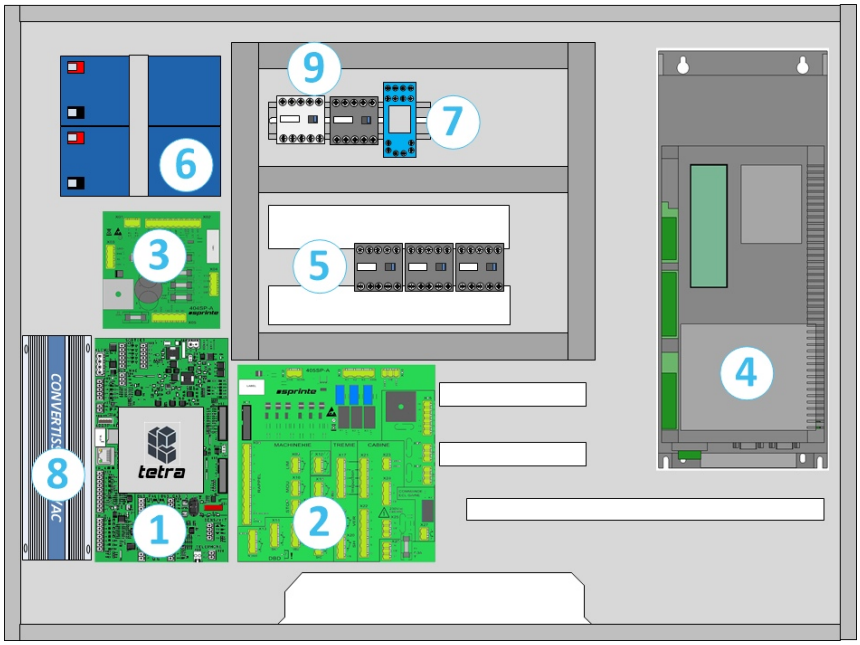
Dimensions ; H : 2000mm, L : 382mm, P: 225mm

o A door-frame box with one or two boxes in shaft :



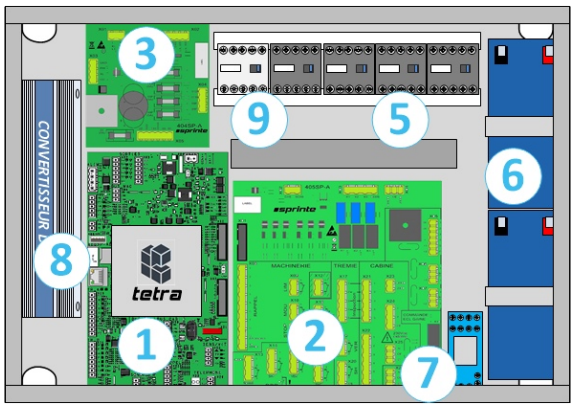
Dimensions : H:1800mm, L : 153mm, P: 150mm

- one box in shaft



Dimensions : H:575mm, L : 780mm, P: 225mm

- two boxes in shaft



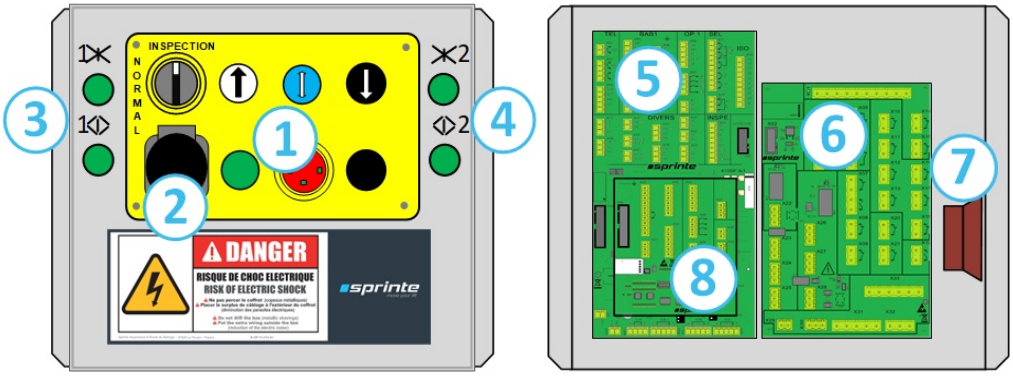
Dimensions : H:350mm, L : 500m, P: 180mm

Dimensions : H:470mm, L :202mm, P: 180mm

Item	Description
1	Main controller's board 400SP
2	Safety chain and power commands board 405SP
3	Transformer and power supply board 404SP
4	Frequency inverters
5	STO and brakes contactors
6	Backup batteries ((24Vdc)
7	Overspeed governor triggering relay
8	24Vdc/230Vac converter
9	Main/backup power supply switching contactors
10	Emergency operation box
11	Portable lamp
12	Electrical protection devices panel

Car's main equipments

- Car roof inspection box External view Internal view

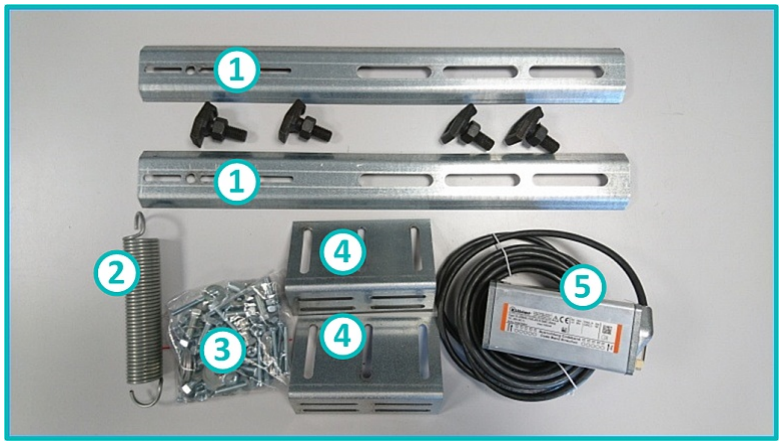


Dimensions : L:355mm , l:285mm , H:135mm

Item	Description
1	Commands (Inspection, Up, Run, Down,Light,Emergency stop)
2	230Vac socket
3	Door 1 commands (optional)
4	Door 2 commands (optional)
5	Car's main board 410SP
6	Safety chain board 415SP 415SP
7	Loudspeaker
8	Expansion board 417SP (optional)

- Absolute positioning kit K05SP

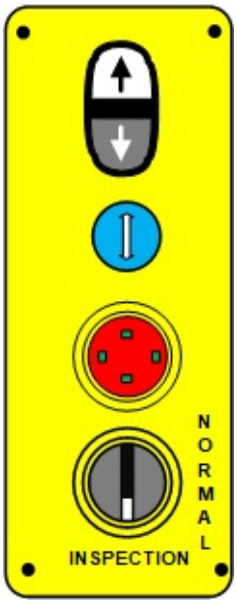
This package includes the reader housing, a stainless steel encoded tape, and all the mechanical parts for fixture



Item	Description
1	Rail fastening plates for the tape (x2) and clamping plates (x4)
2	Tension spring for the tape
3	Screws, bolts and nuts kit
4	Fixing bracket for the reader (x2)
5	Absolute reader housing 126 x 55 37mm
6	Stainless steel encoded tape

Pit & Shaft's main equipments

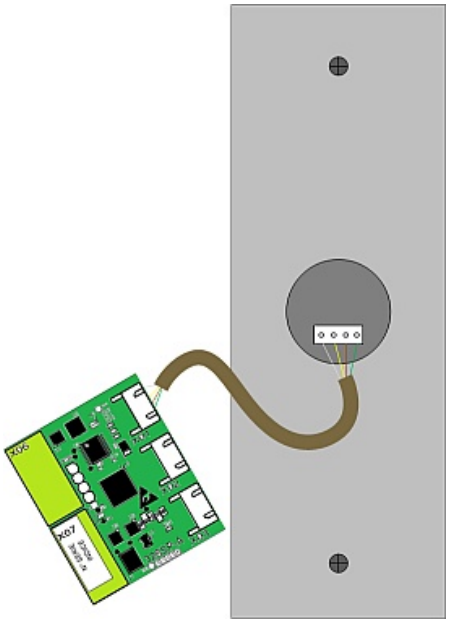
- Pit inspection box



Dimensions : 95m x 105mm x 250mm

- Landing operating panels & boards

Number of Lops may vary according to the number of levels and the different options of the lift.
Standard dimension : 70mm x 200mm



Control panel configuration

The tool of the TETRA controller is the Sprinte Control application installed on a provided touchpad tablet.

For commissioning and maintenance of your lifts, six main sections are offered by the application.

DASHBOARD

For monitoring :

- The lift mode,
- its working condition
- the state and position of the car
- the moving speed,
- ...

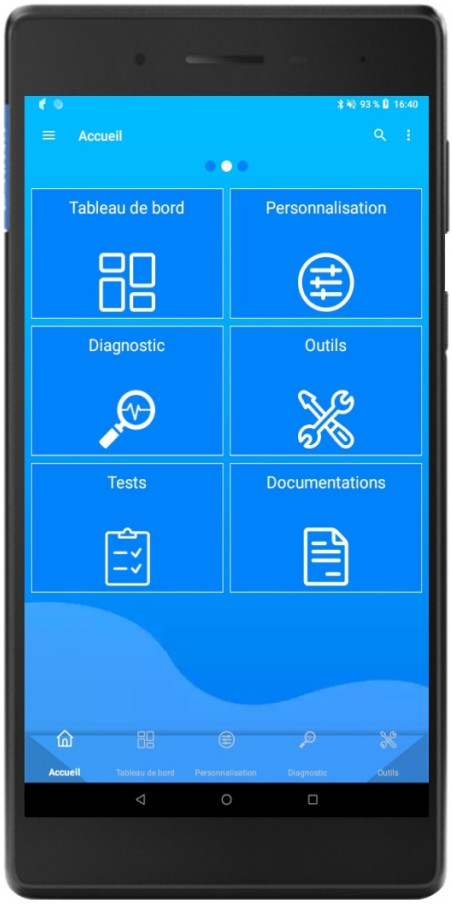
DIAGNOSIS

To check :

- the faults history ,
- the usage statistics,
- CAN bus status,
- Inputs/Ouputs values
- ...

TESTS

To run all the commissioning tests



CUSTOMIZATION

To set :

- the hoist , the reader, the doors
- the operations, the floors,
- ...

To adjust :

- the speed, the floors heights,
- the dispalys, the messages,
- ...

TOOLS

To enable :

- automatic movement
- the VAT (vocal technical assistance) ,
- the motor tuning, encoder phasing
- ...

DOCUMENTATIONS

To consult :

- Installation manual
- User manual
- Electric diagrams of the lift

NOTE

The tablet is provided with the controller, but you can use the application on every other devices equiped with Android operating system.The Sprinte Control application is available for free on Google Play Store
You can download it using the QRcode or following this link:
https://play.google.com/store/apps/details?id=eu.sprinte.swift

Connection to the controller

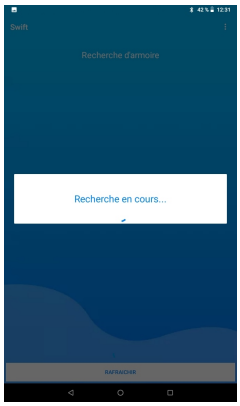
Communication with the Tetra controllers is done through Bluetooth connection of the device.
This connection is available on the controller's board 400SP in machinery and on the car inspection's board 410SP.

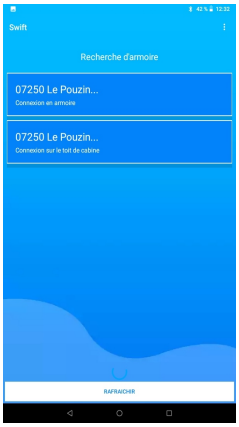
NOTE

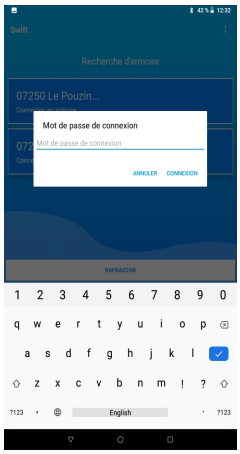
The controller is seen by the application only when the lift is in technician mode (inspection , temporary or emergency operation), or the lift is out of order for the users.
When the lift is in service for the users :

- *The controller can be seen 10h after the last connection or after the last reset.*
- *If 10h have elapsed without any connection, the controller can't be seen anymore by the application..*
- *When the controller can't be seen, pushnig together ◄|► button and lowest car call button on COP, makes the controller visible for 1 minute in order to establish the connection.*
  Once connected the 10h timer will applied after disconnection.

1 Once the application is launched, it first seeks for the Tetra controllers nearby ▶ 2 A list of detected controllers is displayed after few seconds ▶ 3 At the very first connection only , you will be asked for a password





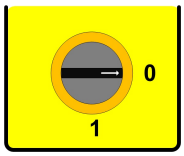


This password is set in factory with the number of the equipment which appears on the QR code stick in the cabinet in the machineroom or beside the landing door: 508423 in the example .

If this password doesn't work, and you don't know the new password, you can reset it at this factory value as below. :

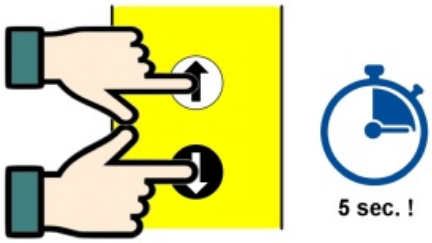
STEP 1

- Set the emergency operation switch to ON position



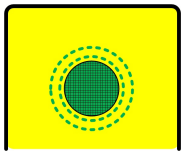
STEP 2

- Push Up and Down buttons together for 5s



STEP 3

- The door zone ligth blinks fast for 2 seconds. The password has been properly reset to the factory value

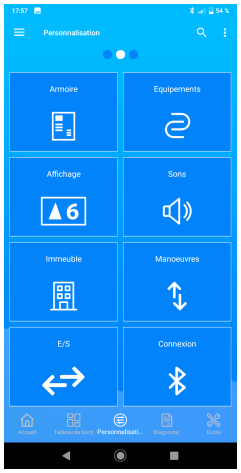


NOTE

If the password still doesn't work, the controller may have been replaced without being configured for the target lift. Try then "sprinte2" or "1234"

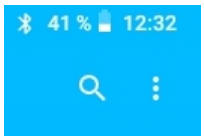
Customization

The ***Customization*** section gives you access to all of th parameters and settings of the controller , for an potimizing operation of the lift

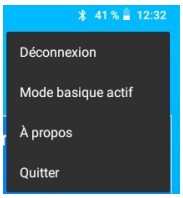


- Most of changes are immediatly taken into account and thus there is no need to restart the controller. Only the modifications of installation parameters that concern the equipments need the controller to restart. If such modifications have been done, a message will appear on the top of the application
- Most of parameters and settings are accessible, but some touchy ones which are to be modified with care will be displayed only in expert mode.

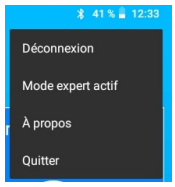
To switch the application in expert mode, press the 3 points on up right corner of the screen



The default mode is basic mode



Press the basic mode line to switch to expert mode



The specific parameters of the expert mode will be tagged with the label ***EXPERT*** in the following menus lists

NOTE	*The parameters described in the following chapters , are available with the application Sprinte Control version 2.5 and above*

- ***CONTROLLER***

Category	Description
LIFT INFORMATIONS	Sub menu for configuration of informative datas of the lift
LANGUAGES	Sub menu for configuration of the voice synthesis languages
CONTROLLER DATE/TIME	Sub menu for configuration of date/time adn day/night timeslot of the controller

o ***LANGUAGES***

Parameter	Description
Users vocal messages	Language of the vocal messages intended for users (floor announcement, next departure) **English, French**
Technicians vocal messages	Language of the vocal messages intended for technicians (faults, shaft learning, VTA...) **English, French**

o ***CONTROLLER***

Parameter	Description
Controller Date & Time	Seetings of the controller's date and time This information is used for timestamping of the faults, log files, and is given on the car and floors displays
Date/Time synchronization now	By selecting this action, the controller will be set to the current date & time of the tablet. **OK**
Time zone	Time zone of the location of the lift, useful for automatic update. Default value is **Europe/Paris** **Paris, London, Lisbon, Dublin, Algiers, GMT**
Night time beginning	These settings define the time range for the night,mainly necessary for the voice synthesis to use the correct volume
NIght time end	

- ***EQUIPMENTS***

Category	Description
HOIST	Sub menu for configuration of the hoist of the lit
DOOR	Sub menu for configuration of car doors and floors access
READER	Sub menu for configuration of the car position reader
RELEVELLING	Sub menu for configuration of relevelling operation
SAFETY	Sub menu for conifuration of the safety components of the lift
LOAD WEIGHING DEVICE	Sub menu for configuration of the load weighing device.

- ***EQUIPMENTS ►ELECTRIC VVF HOIST***

NOTE	*All of the sub-menus of **EQUIPMENTS ►HOIST** below are available only if parameter **Hoist Type** is set to **Electric VVF***

Category / Parameter	Description
VVF model	Indicates the model of VVF installed in the cabinet
	ADL300 , ZADyn
MOVEMENT PROFILE	Sub menu to set the positioning mode of the car in the shaft
SPEEDS	Sub menu to set all of the different travel speeds
MOTOR	Sub menu to set all the motor datas
ENCODER	Sub menu to set all the motor's encoder datas
BRAKES	Sub menu to set all the motor's brakes datas
GAINS	Sub menu to set all the motor's regulation datas
COMFORT	Sub menu to set all the travel's comfort datas
Skidding timer	Detection of non-movement of the car during a move order (because of the skidding of the ropes or the pulley for a traction lift) is a requirement of EN81-20 in chapter 5.9.2.7.1 ..This parameter sets the necessary time of non-movement of the car to detect this fault.
	5,000...20,000s
Thermal protection	Regarding the motor, the thermal protecion used may be either resistive or volt free contact. Set here this protection type
	Resistive , Volt free contact
PLASTIC ROPES WEAR	Sub menu to set the monitoring of the plastic ropes wear

- ***EQUIPMENTS ►HOIST ► MOVEMENT PROFILE***

Category / Parameter	Description
Movement profile	The Smart Travel profile is a positioning of the cabin by altitude. You have nothing more to adjust after learning the shaft. This profile is only possible with closed-loop electric traction and a absolute reader(K05SP) The Velocity profile is a positioning of the car by decreasing speed commands (high speed, low speed, stop). After learning the shaft, you must adjust at which distance from the level these instructions should be applied.
	Smart travel, Velocity

The parameters below are available only for ***Velocity*** profile

Category / Parameter	Description
Stopping distance	Set here at which distance from the level, the stop command should be applied
	10mm...100mm
Slowdown distance	Set here at which distance from the level, the slowing command should be applied.
	0mm...5000mm
INTER LEVELS SLOWDOWN DISTANCE	**In case of reduced distance between floor to floor, you can set here a specific slowidown distancae.**

- ***EQUIPMENTS ►HOIST ►PROFILE TYPE ►INTER-LEVELS SLOWDOWN DISTANCE***

Category / Parameter	Description
Single setting	Shortcut to set the same value once for the slowdown distances of all 31 levels below:
Level 0 - 1	Set here at what distance from the N level, the slowing command should be done in the case the car moves from level 0 to level 1, or 1 to 0.
	0mm...5000mm
.....	.....
Level N - N+1	Set here at what distance from the N level, the slowing command should be done in the case the car moves from level N to level N+1, or N+1 to N.
	0mm...5000mm

- ***EQUIPMENTS ►HOIST ►SPEEDS***

	Category / Parameter	Description
	Nominal speed	Speed for user mode.It is most of the time the same as the maximum speed. But if needed , it may be lower than this maximum speed.
		0,000 m/s...2,500m/s
	Approach speed	Speed requested when reaching the deceleration point to stop at the floor ***This speed is only used for Velocity profile***
		0,001 m/s...0,500m/s
	Inspection speed	Speed for inspection mode
		0,000 m/s...0,630m/s
EXPERT	***Reduced inspection speed***	Reduced speed in inspection , used when moving in highest and lowest zone in the shaft (The settings of these zones are in Equipements -> Lecteur)
		0,040 m/s...0,300m/s
	Emergency operation speed	Speed for emergency operation
		0,040 m/s...0,300m/s
EXPERT	***Relevelling speed***	Speed for relevelling operation
		0,010 m/s...0,300m/s
EXPERT	***Levelling maximum speed***	Maximum speed allowed for levelling operation (early opening of the door)
		0,010 m/s...0,800m/s
EXPERT	***Commissioning speed***	Speed for the installation of the lift (while using the temporary box)
		0,040 m/s...0,630m/s
EXPERT	***Evacuation maximum speed***	Maximum speed allowed for evacuation operation by natural drift. Once this speed is reached , the controller releases the brakes
		0,000 m/s...0,200m/s

- ***EQUIPMENTS ►HOIST ►MOTOR***

	Category / Parameter	Description
	Rated voltage	Rated voltage as written on the motor plate
		0,00V...690,00V
	Rated current	Rated current as written on the motor plate
		0,0A...1500,0A
	Rpm speed	Motor's rated speed in rounds per minutes as written ont he motor plate
		0tr/min...9999tr/min
	Equivalent car speed	Equivalent speed of the car if the motor turns at its maximum speed (rated speed above) ***This speed is not always the same as the lift maximum speed, it may be higher.***
		0,00 m/s...10,00m/s
EXPERT	***Speed 0 threshold***	Set the threshold value of the motor speed that matches the stop of the car For synchronous motors, it has to be set at 1 or 2 rpm For asynchronous motors, it has to be set at 30 rpm
		0tr/min...1000tr/min

	Category / Parameter	Description
	Poles number	Poles number as written on the motor plate ***Sometimes , the value written on the plate is for poles pair number, in that case the value has to be doubled before being entered here***
		0...40
	Rated torque	Rated torque as written on the motor plate Modification of this value changes automatically the value of the rated power(see below)
		0,00 Nm...9999,99Nm
	Rated power	Rated power as written on the motor plate Modification of this value changes automatically the value of the rated troque (see above)
		0,00 Kw...99,99Kw
	Regulation mode	Selection of the regulation mode of the motor An encoder fixed on the shaft of the motor is necessary in Closed loop mode Additional parameters are available in Open loop mode (see below)
		SSC, Closed loop, Autotune
	MOTOR'S AUTO TUNING	Sub menu to perform the auto-tuning of the motor

The parameters below are available only for **asynchronous motor in open loop regulation mode**

	Category / Parameter	Description
	Rated frequency	Rated frequency as written on the motor plate plaque
		10,0 Hz...1000,0 Hz
	Rated power factor	Rated power factor as written on the motor plate plaque
		0,0...1,0
EXPERT	***V/F***	**Sub menu to access specific parameters of the motorSous menu pour des réglages supplémentaires du moteur**

- ***EQUIPMENTS ►HOIST ►MOTOR ►V/F***

Category / Parameter	Description
Voltage flux boost	**These parameters has to modified only if requested by the After - sales department of Sprinte**
Voltage torque boost	
V/F voltage	
V/F frequency	
V/F shape type	

- ***EQUIPMENTS ►HOIST ►ENCODER***

Category / Parameter	Description
Type	Encoder type
	ENDAT,SinusHIPER, Sinus SSI, Sinus ENDAT, Sinus SINCOS, Sinus, DIgital F, Digital FP
Resolution	Number of pulses per encoder revolution.
	0...16384
Reverse rotation	Enables to revert the encoder pulses to match the motor sense of rotation
	YES , NO
AUTO TUNING CODEUR	Sub menu to perform the auto-tuning of the encoder
EXPERT ***Peripheral encoder***	Indicates whether the encodeur is mounted on the motor's pulley edge instead of being mounting on the shaft of the motor
	YES , NO
EXPERT ***Motor pulley diameter***	Motor pulley diameter linked to the encoder pulley
	1mm...65000mm
EXPERT ***Encoder pulley diameter***	Encoder pulley diameter linked to the motor pulley
	1mm...65000mm

- ***EQUIPMENTS ►HOIST ►BRAKES***

Category / Parameter	Description
Brakes self monitoring	The self monitoring of the position of the brakes fulfiils the requirement of the EN81-20 standard in chapter 5.6.7.3 regarding the self monitoring of the protection device against the unintended car movement. **YES , NO**
Contacts polarity	Indicates the position of the brakes contact ● NO : the contact is open whilst the brake is released. ● NC : the contact is closed whilst the brake is released. **Not connected , Contact NO , Contact NF**
Brakes boost time	Indicates how long the voltage of the brakes coil is boosted when raising the brakes This voltage boost is managed on 310SP board The boosted volatge is at 207Vdc, the normal voltage is at 103Vdc ***For brakes coils rated at 207Vdc, set this time to the maximum value (65s)*** **0s...65s**
EXPERT ***Opening time***	TIme necessary for the brakes to be totally open The VVF inverter holds electrically the motor during this time before starting to move. A too short time will create a jolt in car when starting, and a too long time will create an unuseful delay before moving **0ms...10000ms**
EXPERT ***Closing time***	TIme necessary for the brakes to be totally closed, once the car is stopped. The VVF inverter holds electrically the motor during this time before stopping curren injection in the motor. A too short time will create a jolt in car when stopping, and a too long time will create an unuseful delay before opening the doors **0ms...10000ms**
EXPERT ***Down current delay***	Duration of the current injection in the motor, once the brake closing time is elapsed (see above). This time avoids unwanted noise during stopping phase **0ms...10000ms**

- ***EQUIPMENTS ►HOIST ►GAINS***

Category / Parameter	Description
Rollback	In case of rollback on starting, press + to increase gradually the proportional/integral gains until it disappears In case of vibrations on starting , press - to decrease gradually the proportional/integral gains until it disappears **-** **+**
Speed stabilization	If the speed of the car is too changing during a travel,press + to increase gradually the proportional/integral gains until it stabilizes In case of vibrations while moving , press - to decrease gradually the proportional/integral gains until it disappears **-** **+**
Parameters below are available only in expert mode. These paramaters helps to adjust finely the regulation loop and gains, but have to be modified only if the settings above are not effective.	
EXPERT ***Profile***	Profile used among four available : ● Profile 1: Gain P1/I1 are used ● Profile 21: Gains P1/ I1 and P2 / I2 are used ● Profile 321: Gains P1/ I1 , P2 / I2 and P3 / I3 are used ● Profile 0213: Gains P0 / I0, P1/ I1 , P2 / I2 and P3 / I3 are used ***Profile 0213 is recommended*** **Profile 1, Profile 21, Profile 321, Profile 0213**
EXPERT ***Regulation P0***	Proportional regulation gain 0 **0%...1000%**
EXPERT ***Regulation I0***	Integral regulation gain 0 **0%...1000%**
EXPERT ***Regulation P1***	Proportional regulation gain 1 **0%...1000%**
EXPERT ***Regulation I1***	Integral regulation gain 1

Category / Parameter	Description
	0%...1000%
EXPERT Regulation P2	Proportional regulation gain 2
	0%...1000%
EXPERT Regulation I2	Integral regulation gain 2
	0%...1000%
EXPERT Regulation P3	Proportional regulation gain 3
	0%...1000%
EXPERT Regulation I3	Integral regulation gain 3
	0%...1000%
EXPERT Regulation Threshold 0_2	Speed threshold to switch from P0 / I0 gains to P2 / I2 gains
	0%...100%
EXPERT Regulation Threshold 2_1	Speed threshold to switch from P2 / I2 gains to P1 / I1 gains
	0%...100%
EXPERT Regulation Threshold 3_2	Speed threshold to switch from P3 / I3 gains to P2 / I2 gains
	0%...100%
EXPERT Regulation Band 0_2	Bandwidth to switch from P0 / I0 gains to P2 / I2 gains
	0%...100%
EXPERT Regulation Band 2_1	Bandwidth to switch from P0 / I0 gains to P2 / I2 gains
	0%...100%
EXPERT Regulation Band 3_2	Bandwidth to switch from P0 / I0 gains to P2 / I2 gains
	0%...100%
EXPERT Regulation N gain P	Proportional coefficient of regulation loop
	0%...100%
EXPERT Regulation N tps I0	Integral coefficient of regulation loop
	0%...100%

- *EQUIPMENTS ► TRACTION ► COMFORT*

Category / Parameter	Description
Comfort	Select with the cursor the desired confort in the car while moving. This will affect acceleration and deceleration time when starting and stopping
	1 : Soft.....4 : Normal.....7 : Dynamic
Parameters below are available only in expert mode. These paramaters helps to adjust different acceleration/deceleration variations between start and stop	
EXPERT Accélération	Acceleration ramp
	0,01 m/s² 10m/s²
EXPERT Initiale acceleration	Acceleration variation on start
	0,01 m/s³ 20m/s³
EXPERT Final acceleration	Acceleration variation once speed is reached
	0,01 m/s³ 20m/s³
EXPERT Deceleration	Deceleration ramp
	0,01 m/s² 10m/s²
EXPERT Initiale deceleration	Deceleration variation once slowdown starts
	0,01 m/s³ 20m/s³
EXPERT Final deceleration	Deceleration variation on stop
	0,01 m/s³ 20m/s³
EXPERT Max stopping ramp	Final stopping ramp
	0,01 m/s³ 10m/s³

- ***EQUIPMENTS ►HOIST ►ROPES WEAR***

Category / Parameter	Description
Ropes wear monitoring	Enables the monitoring of the plastic-coated ropes wear
	YES , NO
Parameters below are available only if monitoring function has been enabled (see above)	
Maximum number of direction changes	Once the direction changes of the car reached this value, it activates the following fault "Traction ropes must be replaced". This fault sets the lift out of order
	0 ... 100 000 000
Ropes wear warning level	Once the direction changes of the car reached this percentage of its maximum value (see above), it activates the following warning "Plan to replace the traction ropes" in the fault history list
	0 ... 99%
Current number of direction changes	Displays the current value of direction changes done (view only)
	XX XXX XXX
Current level of ropes wear	Displays the current percentage of maximum direction changes done (view only)
	XX %
Replacement done	Indicates that the traction ropes have been replaced .This will reset the current number of direction changes and the current level of ropes wear.
	OUI , NON
REPLACEMENT LOG	Sub menu to see the values of direction changes done for the last 20 replacements

- ***EQUIPMENTS ►HOIST ►TRACTION ROPES WEAR ►LOG***

Category / Parameter	Description
Direction changes done 1st remplacement	Display the value of direction changes done on the first replacement of the ropes(view only)
	XX XXX XXX
.....	.....
	.....
Direction changes done 20th remplacement	Display the value of direction changes done on the 20th replacement of the ropes(view only)
	XX XXX XXX

o ***EQUIPMENTS ►ELECTRIC 2 SPEEDS HOIST***

NOTE	*All of the sub-menus of **EQUIPMENTS ►HOIST** below are available only if parameter **Hoist Type** is set to **Electric 2 speeds***

Category / Parameter	Description
Inspection speed	Selection of the speed used for inspection mode
	Nominal speed, Approach speed
Skidding timer	Detection of non-movement of the car during a move order (because of the skidding of the ropes or the pulley for a traction lift) is a requirement of EN81-20 in chapter 5.9.2.7.1 ..This parameter sets the necessary time of non-movement of the car to detect this fault.
	5,000...20,000s
Thermal protection	Regarding the motor, the thermal protecion used may be either resistive or volt free contact. Set here this protection type
	Resistive , Volt free contact
PLASTIC ROPES WEAR	Sub menu to set the monitoring of the plastic ropes wear (submenu detailed in previous chapter Electric VVF)
Overheating protection	The presence of a motor overheating protection is set on connector X17 of 400SP board. see I/O menu.

o ***EQUIPMENTS ► HYDRAULIC***

NOTE	*All of the sub-menus of **EQUIPMENTS ►HOIST** below are available only if parameter **Hoist Type** is set to **Hydraulic**.*

Category / Parameter	Description
Hydraulic hoist	Indicates the type of hydraulic hoist installed in the machineroom
	Standard, Bucher iValve, Gmv NGV-A3
MOVEMENT PROFILE	Sub menu to set the positioning mode of the car in the shaft
SPEEDS	Sub menu to set all of the different travel speeds
MOTORIZATION	Sub menu to set all the hydraulic hoist motor datas
ADDITIONAL SAFETY VALVE	Sub menu to set the use of an additional downward safety valve
ANTI-CREEP SYSTEM	Sub menu to set the use of the anti-creep system.
Skidding timer	Detection of non-movement of the car during a move order (because of the skidding of the ropes on the pulley for a traction lift) is a requirement of EN81-20 in chapter 5.9.2.7.1 ..This parameter sets the necessary time of non-movement of the car to detect this fault.
	5,000...20,000s
Overheating protection(s)	The presence of a motor overheating protection is set on connector X17 of 400SP board. The presence of an oil overheating protection is set on connector X46 of 406SP board. see I/O menu.

- ***EQUIPMENTS ►HOIST ►PROFILE TYPE***

Category / Parameter	Description
Profile type	For hydraulic lifts , only Velocity profiel is available. The Velocity profile is a positioning of the car by decreasing speed commands (high speed, low speed, stop). After learning the shaft, you must adjust at which distance from the level these instructions should be applied.
	Velocity

Category / Parameter	Description
Upward Stopping distance	Set here at which distance from the level, the stop command should be applied on an upward travel.
	10mm...100mm
Downward Stopping distance	Set here at which distance from the level, the stop command should be applied on a downward travel.
	10mm...100mm
Slowdown distance	Set here at which distance from the level, the slowing command should be applied
	0mm...5000mm
EXPERT ***INTER LEVELS SLOWDOWN DISTANCE***	**In case of reduced distance between floor to floor, you can set here a specific slowidown distancae.**

- ***EQUIPMENTS ►HOIST ►PROFILE TYPE ►INTER-LEVELS SLOWDOWN DISTANCE***

Category / Parameter	Description
Single setting	Shortcut to set the same value once for the slowdown distances of all 31 levels below:
Level 0 - 1	Set here at what distance from the N level, the slowing command should be done in the case the car moves from level 0 to level 1, or 1 to 0.
	0mm...5000mm
…..	.....
Level N - N+1	Set here at what distance from the N level, the slowing command should be done in the case the car moves from level N to level N+1, or N+1 to N.
	0mm...5000mm

- ***EQUIPMENTS ►HOIST ►SPEEDS***

Category / Parameter	Description
Nominal speed	Speed for user mode.It is most of the time the same as the maximum speed. But if needed , it may be lower than this maximum speed.
	0,000 m/s...2,500m/s
Approach speed	Speed requested when reaching the deceleration point to stop at the floor ***This speed is only used for Velocity profile***
	0,001 m/s...0,500m/s
Inspection speed	Selection of the speed used for inspection mode
	Nominal speed, Approach speed

- ***EQUIPMENTS ►HOIST ►MOTOR***

Category / Parameter	Description
Motor start sequence	Choice of the motor start sequence
	Direct, Star delta
Star/Delta timer	Duration of star connection before switching to delta connection
	0,000s...3,000s
Up valve start sequence	Shifting of the Up valve command on start (relative to the motor command). To avoid the shifting, set the associated timer to 0 value
	Before motor, After motor
Up valve start timer	TIme of the shifting duration between up valve command and motor command at start.
	0,000s...5,000s
Up valve stop sequence	Shifting of the Up valve command on start (relative to the motor command). To avoid the shifting, set the associated timer to 0 value
	Before motor, After motor
Up valve stop timer	TIme of the shifting duration between up valve command and motor command on stop
	0...40
Relevelling motor	Indicate here the motor used for upward relevelling of the car
	Auxiliary motor, Main motor
Phase inversion detection	Detecting the inversion of grid phases will immediatly set the lift out of order. This dectetion is fundamental to protect the hydraulic hoist if the motor is directly wired to the grid phases.
	YES , NO

- ***EQUIPMENTS ►HOIST ► ADDITIONAL SAFETY VALVE***

Category / Parameter	Description
Additional safety valve	Indicate here whether a second safety dowanward valve is used as the protection means against uncontrolled car movement.
	YES , NO
Timer at start	At start, the additional safety valve is first powered, then the other downward valves will be powered after this timer
	0,000s...5,000s
Timer on stop	On stop, the slow speed downward valve is unpowered, then the additional safety valve will be unpowered after this timer
	0,000s...5,000s

- ***EQUIPMENTS ►HOIST ► ANTI-CREEP SYSTEM***

Category / Parameter	Description
Anti-creep system	This system is mathcing the one described in chapter 5.12.1.10 of EN81-20 standard, to add a protrction to the downward creeping of the car. If enabled, the car will go to the lowest floor after the delay defined below
	Enabled , Disabled
Anti-creep timer	Delay for triggering the anti-creep system after the last normal movement of the car.
	0mn...60mn

o ***EQUIPMENTS ►DOORS***

Category / Parameter	Description
Numberof doors	Number of doors in car
	1 , 2
CAR DOOR 1	Sub menu to set all of car door 1 datas
CAR DOOR 2	Sub menu to set all of car door 2 datas
DOORS AND ACCESSES ON LANDINGS	Sub menu to set all of the doors type and accesses on each landing

- ***EQUIPMENTS ►DOORS ►CAR DOOR X***

Category / Parameter	Description
TIMERS	Sub menu to set all of car door 1 temporisations
CAM	Sub menu to set the unlocking cam parameters
Motorization	This setting is necessary for the controller to drive properly the commands In case of 3 phase motor, the commands are driven in machinery. In case of VVF inverter, the commands are driven on the car's roof
	YES , NO
Opening limit switch	Indicate here whether the door is equipped with an opening limit switch or not
	YES , NO
Closing limit switch	Indicate here whether the door is equipped with a closing limit switch or not
	YES , NO
Nudging	Indicate here whether the door is able to close in nudging mode (at low speed without torque)
	YES , NO
Thermal probe	Indicate here whether the door is equipped with a thermal probe for motor overheating detection
	YES , NO
Early opening	When this function is enabled, the opening of the door starts as soon as the car enters the door unlocking zone, before the complete stop. In that case , your controller has to be equipped with a safety relay
	YES , NO
Maintained closure	Indicate here whether the closing command has to be maintained while the car is moving
	YES , NO
Maintained closure on stop	Indicate here whether the closing command has to be maintained while the car is stopped (for door that opens by itself because of inertia)
	YES , NO
Maintained opening	Indicate here whether the opening command has to be maintained once the door is fully open (for door that closes by itself because of inertia)
	YES , NO

- ***EQUIPMENTS ►DOORS ►CAR DOOR X ►TEMPORIZATIONS***

Category / Parameter	Description
Parking	Time during which door keeps open while parking at a floor
	1s...60s
Long parking	Time during which door keeps open if lift becomes out of order
	1s...60s
Short parking	Time during which door keeps open because of a shock or a light barrier detection Set this time shorter than the parking time so as not to delay the departure
	1s...60s
Nominal opening time	Set here the normal duration of the total travel of the door in opening. For doors not equipped with an opening limit switch, the opening command will be stopped at the end of this time For doors equipped with an opening limit switch, the opening command will be stopped at the end of twice this time
	1s...60s

Category / Parameter	Description
Nominal closing time	Set here the normal duration of the total travel of the door in closing. For doors not equipped with a closing limit switch, the closing command will be stopped at the end of this time For doors equipped with a closing limit switch, the closing command will be stopped at the end of twice this time
	1s...60s
Nudging closing time	Set here the normal duration of the total travel of the door in nudging (closing at low speed without torque).
	1s...60s

- ***EQUIPMENTS ►DOORS ►CAR DOOR X ►CAM***

Category / Parameter	Description
Unlocking cam	Indicate here if an unlocking cam is used
	YES , NO
Releasing	Indicate here when the unlocking cam has to be released
	Before car door opening, After car door opening
Releasing time	Indicate here the time for the cam to unlock the landing doors once it has been released. In case of releasing before car door opening; the opening will be done after this time elapses
	0,1s...3s
EXPERT ***Raising time***	Indicate here the time for the cam to lock the landing doors once it has been engaged; the movement of the car will start after this time elapses
	0,1s...3s

- ***EQUIPMENTS ►DOORS ►DOORS AND ACCESSES ON LANDINGS***

Category / Parameter	Description	
Floor 0 to 31	Models of landing doors at this floor for accesses 1 and 2	
	None, **Automatic,** **Swing**	- No landing door (no access) - Landing door with automatic opening - Swing door with manual opening
	Type of access in case of two landing doors at this floor	
	Way through, **Selective**	- Access with simultaneous opening - Access with independent opening
Deboucing time	This timer is launched as soon as the swing door is closed before a travel. The car door starts to close only when this time is elapsed, to avoid hte bouncing of the swing door ***This setting is effective only with a swing door on landing***	
	0s...10s	

o ***EQUIPMENTS ►SHAFT READER***

Category / Parameter	Description
Shaft reader model	Choice of the shaft reader for the absolute positioning of the car
	K04SP , K05SP, K06SP, Flags reader

- Parameters below are available only for absolute shaft readers**K04SP, K05SP & K06SP:**

Category / Parameter	Description
FLOORS HEIGHTS	Sub menu to set all of the floor heights
Inspection deceleration high height	Indicates the height of the upper area in shaft where the car will move at a reduced speed in inspection (This reduced speed can be set in dans Equipments->Hoist->Speeds)
	0,000m ... 150,000m
Inspection deceleration low height	Indicates the height of the lower area in shaft where the car will move at a reduced speed in inspection (This reduced speed can be set in dans Equipments->Hoist->Speeds))
	0,000m ... 150,000m
Toe guard height	In case of an automatic folding toe-guard automatic , the height where it unfolds has to be indicated here. Its safety conact is bypassed below this height, and the controller has to check that this safety contact is operating outside of this zone
	0,000m ... 150,000m
SHAFT LEARNING	Execute the shaft learning from this menu
FAST SHAFT LEARNING	Execute the fast shaft learning from this menu

- ***EQUIPMENTS ►SHAFT READER ►FLOORS HEIGHTS***

Category / Parameter	Description
Floor 0 to 31	Height in shaft for each floor These values are automatically set while performong the shaft learning procedure You can refine it here
	0,000m ... 150,000m

- Parameters below are available only for **Flag readers** (optical, or magnetic)

Category / Parameter	Description
Maximum number of consecutive calibration	This parameter defines the maximum attempts of calibration are done in case of failure, before setting the lift out of order.
	1...9
Rise time at calibration start	At calibration start, the car moves upward during this time, in order to reach the lowest slow-down reference flag at nominal speed during the following downward phase.
	0s...9s
TYPE OF DECELERATION FLAGS	Sub menu to define the deceleration flags between each floor

- ***EQUIPMENTS ►SHAFT READER ►FLOORS HEIGHTS***

Category / Parameter	Description
Floor 0-1 to Floor30-31	In case of standard distance between floorsDans (2.70m), for a car moving at 1m/s, the deceleration flags have to be crossed in order to slow down at the right distance. Choose "Crossed flags" for that.
	Normal, Crossed flags

o *EQUIPMENTS ► RELEVELING/LOADING PAWLS*

Category / Parameter	Description	
Level retention device	Select the device used to keep the car flush to the floor.	
	None	No additional device is necessary to keep the car flush to the floor.
	Re-levelling	In case of the creeping of the car with doors open, it will be brought back flush to the floor. A safety relay bypasses the doors safety contacts in the door unlocking zone to allow the movement of the car.
	Loading pawls device	Pawls are extended under the car and sustained in hollows in shaft allow the car to keep at the floor without any creeping during heavy loads phases of the car.

▪ *EQUIPMENTS ► RE-LEVELLING/LOADING PAWLS ► RE-LEVELLING*

Category / Parameter	Description
Re-levelling start distance	Set here the distance from the floor where the re-levelling will start
	10mm...100mm
Upward re-levelling stop distance	Set here the distance from the floor where the upward re-levelling will stop
	5mm...100mm
Downward re-levelling stop distance	Set here the distance from the floor where the downward re-levelling will stop
	5mm...100mm
Re-levelling holding time	Once the stop distance is reached, the releveling action can be hold during this time
	0s...5s
Re-levelling counter	Set here the maximum number of relevelings allowed in less than 2 minutes on the same floor. If this value is reached, the lift will be set out of order with "Repeated releveling" fault recorded
	0...30
Re-levelling maximum time	Set here the maximum time allowed for a releveling.If the car didn't reach back the floor before this time, the lift will be set out of order with "Releveling too long" fault recorded
	3s...30s

▪ *EQUIPMENTS ► RE-LEVELLING/LOADING PAWLS ► LOADING PAWLS*

Category / Parameter	Description
Pawls release distance	Set here the distance above the floor at which the loading pawls will be released.
	20mm...120mm
Maximum release time of the pawls	During the pawls releasing phase, if the "Loading pawls released" signal doesn't occur before this time, the "Loading pawls not released" fault will be logged. After the number of consecutive failed attempts (configurable below) , the lift will be set out of order.
	0,10s...8,00s
Maximum retraction time of the pawls	During the pawls retracting phase, if the "Loading pawls retracted" signal doesn't occur before this time, the "Loading pawls not retracted" fault will be logged. After the number of consecutive failed attempts (configurable below) , the lift will be set out of order.
	0,10s...8,00s
Pawls releasing delay in technician mode	In emergency operation and inspection modes, when the car stops, the release of the pawls will be delayed for this time.
	0,5s...30s
EXPERT ***Number of attempts***	Indicate here how many consecutive attempts for releasing or retracting pawls are done in case of failure, before setting the lift out of service.
	1...9
EXPERT ***Time between two attempts to release the pawls***	Set here the waiting time between two attempts to release the pawls
	3s...30s
EXPERT ***Time between two attempts to retract the pawls***	Set here the waiting time between two attempts to retract the pawls
	3s...30s

o *EQUIPMENTS ► SAFETY*

Category / Parameter	Description	
Pit inspection box	Indicate here if a pit inspection box is present on the installation	
	YES , NO	
Pit inspection reset system	Choice of the reset system of the lift when exiting pit inspection mode	
	By the controller,	- The reset procedure is done by the controller (as described in B1 annex of installation manual B-DP-22-XX-XXX)
	External device	- La remise en marche se fait par un dispositif externe indépendant de l'armoire
Reduced clearances system	Indicate here which system is used to manage clerance system	
	None	No reduced clerances for this lift
	Movables stops	Mechanical movables stops are used
	SGT02	The electronic trigger SGT02 of the overspeed governor is used
Overspeed governor model	Model of the overspeed governor installed on the lift	
	Mechanical,	- Overspeed governor in machineroom with mechanical tripping only
	Remote controlled on roof,	- Overspeed governor on car roof, with both electrical and mechanical tripping
	Remote controlled in shaft,	- Overspeed governor in shaft, with both electrical and mechanical tripping
	WIth anticreep system on roof	- Overspeed governor on car roof, with both electrical and mechanical tripping, linked to a coil that has to be powered to unlock the governor
	WIth anticreep system in shaft	- Overspeed governor in shaft, with both electrical and mechanical tripping, linked to a coil that has to be powered to unlock the governor
	With reset on roof	- Overspeed governor on car roof, with both electrical and mechanical tripping, which needs an electrical reset to get unlock after tripping
Counterweight overspeed governor model	Model of the overspeed governor for the counterweight	
	None ,	- No counterweight overspeed governor
	Remote controlled in shaft,	- Overspeed governor in shaft, with both electrical and mechanical tripping
Automatic toe-guard	Indicate here if an automatic toe-gaurd is present on the installation	
	YES , NO	

o ***EQUIPMENTS ► LOAD-WEIGHING DEVICE***

Parameter	Description	
Load weighing device type	**Wired device on car's roof**	The weighing device is on the car's roof and closes dry contacts wired on the 410SP board to signal load limits
	Wired device in machinery/shaft	The weighing device is in the machineroom or shaft and closes dry contacts wired on the 400SP board to signal load limits. Choose this type is the weighing is managed by the hydraulic hoist
	OMEGA 6-C/12-C	The weighing device is the OMEGAxxC CANopen model from Dinacell It may be connected to the CAN landing bus if installed in machineroom/shaft or to the CAN car bus if installed on the car's roofIl peut être connecté au bus palier lorsqu'il est installé en gaine ou au bus cabine sur la carte 410SP lorsqu'il est installé sur le toit de cabine.
OMEGA6C-12C LOAD WEIGHING DEVICE CALIBRATION	Sub menu for settings and calibration of the Omega6C-12C weighing device.	

Category / Parameter	Description
Reeving	Indicate here the reeving factor of your lift
	1:1 ; 2:1 ; 3:1 ; 4:1
Number of sensors/ropes	Indicate here the number of rope sensors connected to the weighing device. It matches the number of ropes
	1...12
Rated car load	Indicate here the rated car load
	100kg...20 000kg
START THE CALIBRATION	Execute the weighing device calibration process from this menu

- ***DISPLAY***

Category	Description
IN CAR	Submenu for complete displays configuration in car
ON FLOORS	Submenu for complete displays configuration on floors

o ***DISPLAY ►IN CAR***

Category	Description
CAR OPERATING PANEL #1	Submenu for complete displays configuration of cop *#1*
CAR OPERATING PANEL #2	Submenu for complete displays configuration of cop #2 (if present)

▪ ***DISPLAY ►IN CAR ►COP 1 & 2***

Category / Parameter	Description
FLOORS INDICATION	Sub menu for choice of indication at each floor in car
Model	Display model
	232SP / 262SP, - TFT color display 3,5 or 4,3 inches **236SP,** - TFT color display 7 inches **CANopenLIFT ,** - FlexyPage or CANopenLIFT compliant display **VEGA** - VEGA display
Door(s) associated	Indicates to which door the display is associated
	Door 1, Door 2, Doors 1 &2
Parameters below are available only for 232SP/262SP displays	
Date and time	Display of the date and time (only for 232SP)
	YES, NO
Background	Choice of the background color
	Red, Blue , Black, White
Orientation	Choice of the display orientation
	Horizontal , Vertical
Parameters below are available only for 236SP display	
BACKGROUND	Sub menu to configure the background of the display
LOAD PLATE	Sub menu to enter the datas of the load plate
BACKGROUND	Sub menu to enter additional informations of the display
Load Plate	Choice of the informations displayed on the load plate area of the 236SP **None,** - No load plate displayed **Load,** - Load in kg and number of persons **Load + Serial,** - Addition of serial number **Load + Serial + CE mark** - Addition of CE mark
Rated load	Free text for the rated load
	16 characters maximum
Lift serial number / Year	Free text for the lift serial number and its year of construction
	16 characters maximum
CE mark	Free text for the CE mark
	4 characters maximum
One background per floor	The backgorund will be different for each floor (Floor 0: background 0, Floor1 : background 1, etc...) Enabling this function will disable the unique background display parameter below
	YES,NO
Background	Choice of the background picture among 28 images (customizable), or enable a slideshow of these 28 images
	Diaporama , Fond d'écran 1,....Fond d'écran 28
Slideshow timer	Set here the delay between two images for the slideshow mode
	1min ... 1440 min (1440 min = 24 hours)
Logo	Displaying your logo (customizable) over the background
	YES,NO

Category / Parameter	Description	
Maintenance date	Choice of the maintenance date to display	
	None, **Last visit ,** **Next visit**	The last and next visit maintenance dates can be set in the TOOLS section of the application.

- ***DISPLAY ►IN CAR ►COP 1 & 2 ►FLOORS INDICATION***

Category / Parameter	Description
Floor 0 to 31	Choice of the indication at each floor
	-5 à -0, 0 to 23, P0 to P9, S , RJ , RC , RH , RB , SS , ME, 0/1 to 7/8

NOTE	*The 3 sub-menus described below are available only for 236SP car display.*

- ***DISPLAY ►IN CAR ►COP 1 & 2 ► BACKGROUND***

Catégorie / Paramètre	Description
Orientation	Choice of the orientation of the display
	Horizontal, Vertical
Theme	Choice of the background's theme
	Color, Light, Dark
Parameter below are available only for Color theme	
One background per floor	The backgorund will be different for each floor (Floor 0: background 0, Floor1 : background 1, etc...) Enabling this function will disable the unique background display parameter below
	YES,NO
Background	Choice of the background picture among 28 images (customizable), or enable a slideshow of these 28 images
	Slideshow , Background 1,...Background 28
Slideshow timer	Set here the delay between two images for the slideshow mode
	1min ... 1440 min (1440 min = 24 hours)

- ***DISPLAY ►IN CAR ►COP 1 & 2 ► LOADPLATE***

Category / Parameter	Description
Load Plate	Choice of the informations displayed on the load plate area of the 236SP **None,** - No load plate displayed **Load,** - Load in kg and number of persons **Load + Serial,** - Addition of serial number **Load + Serial + CE mark** - Addition of CE mark
Rated load	Free text for the rated load
	16 characters maximum
Lift serial number / Year	Free text for the lift serial number and its year of construction
	16 characters maximum
CE mark	Free text for the CE mark
	4 characters maximum
Emergency device message	A message indicating that the lift is equipped with an emergency device scrolls on the display
	YES,NO

- ***DISPLAY ►IN CAR ►COP 1 & 2***

Category / Parameter	Description	
Date and time	Display of the date and time (only for 232SP)	
	YES, NO	
Logo	Displaying your logo (customizable) over the background	
	YES,NO	
Maintenance date	Choice of the maintenance date to display	
	None, **Last visit ,** **Next visit**	The last and next visit maintenance dates can be set in the TOOLS section of the application.

o ***DISPLAY ►LANDINGS***

Category	Description
FLOORS INDICATION	Sub menu for choice of indication at each floor on landings
DISPLAY ON 400SP BOARD	Sub menu for configuration of the display plugged on 400SP board
DISPLAY - FLOOR 0 - DOOR x	Sub menu for configuration of the display installed on floor 0 door x
DISPLAY - FLOOR n - DOOR x	Sub menu for configuration of the display installed on floor n door x
DISPLAY - FLOOR Max - DOOR x	Sub menu for configuration of the display installed on last floor door x

▪ ***DISPLAY ►LANDINGS ►FLOORS INDICATION***

Parameter	Description
Floor 0 to 31	Choice of the indication at each floor
	-5 à -0, 0 to 23, P0 to P9, S , RJ , RC , RH , RB , SS , ME, 0/1 to 7/8

▪ ***DISPLAY ►LANDINGS ►DISPLAY - FLOOR n - DOOR x***

Parameter	Description	
Model	Display model	
	232SP / 262SP,	- TFT color display 3,5 or 4,3 inches
	236SP,	- TFT color display 7 inches
	CANopenLIFT,	- FlexyPage or CANopenLIFT compliant display
	VEGA	- VEGA display
Parameters below are available only for 232SP/262SP displays		
Background	Choice of the background color	
	Red, Blue , Blanc , Noir	
Orientation	Choice of the display orientation	
	Horizontal , Vertical	
Parameters below are available only for 236SP display		
One background per floor	The backgorund will be different for each floor (Floor 0: background 0, Floor1 : background 1, etc...) Enabling this function will disable the unique background display parameter below	
	YES,NO	
Background	Choice of the background picture among 28 images (customizable), or enable a slideshow of these 28 images	
	Diaporama , Fond d'écran 1,....Fond d'écran 28	
Slideshow timer	Set here the delay between two images for the slideshow mode	
	1min ... 1440 min (1440 min = 24 hours)	
Logo	Displaying your logo (customizable) over the background	
	YES,NO	

- ***SOUNDS***

Category	Description
IN CAR	Sub menu for configuration of the user voice synthesis in car
ON CAR ROOF	Sub menu for configuration of the technician voice synthesis on car roof
ON LANDINGS	Sub menu for configuration of the user voice synthesis on landings
EMERGENCY PHONE	Sub menu for configuration of the emergency phone in car

o ***SOUNDS ►CAR***

Category / Parameter	Description
DOOR 1 ANNOUNCEMENTS	Sub menu to set each floor voice announcement on door 1
DOOR 1 ANNOUNCEMENTS	Sub menu to set each floor voice announcement on door 2
MUSIC	Sub menu to set music playback in car
VOLUMES	Sub menu to set all different volumes of sounds in car
Opening announcement	Voice announcement at doors opening
	YES ; NO
Closing announcement	Voice announcement at doors closing
	YES , NO
Next departure announcement	Voice announcement for the next deprature once the doors are open
	YES , NO

▪ ***SOUNDS ► CAR ►DOOR 1/2 ANNOUNCEMENTS***

Category / Parameter	Description
Floor 0 to 31	Choice of the voice announcement for each floor and door ***To create your own voice announcements, select SPECIAL1 to SPECIAL16 , and rename your MP3 file to « SPECIAL1.mp3 » to « SPECIAL16.mp3 »,then copy it in the "SPECIAUX" folder of the SDcard of the 312SP board located in the car operating panel (COP)***
	No message, Ground floor , 1st Floor to 27th Floor, Basement 6 to Basement , Floor 0, Floor 0 0, ,Floor 1 / 2 to Floor 17 / 18, Floor 0 A, Floor 0 B, Floor 0 H, Floor 0 down, Floor 0 up, 1st floor down / up to 5th floor down/up, Ground floor down, Ground floor up, **Entrance, Courtyard, Garden, Terrace, Main floor, Leisure center, Exit floor, Exit, Garage, Car Park, Lobby, Cafeteria, Hotel, Garden level , Entresol, Mezzanine** **SPECIAL1 to SPECIAL16**

▪ ***SOUNDS ► CAR ► MUSIC***

Category / Parameter	Description
Activation code	For copyright reasons, you need to have a license for activation of the musical playback in car. This code will be provided together with the license. This license (and therefore the code) is valid for a single lift.
	00000...99999
Style	Set the musical style you want to have in the car. Choosing « OFF » will stop the function. By choosing a predefined style , you will playback the music provided by Sprinte. The musical files provided by Sprinte are under license (©) . This playback license is valid for a single lift. By choosing « CUSTOM », you will broadcast the musical files located in the folder « User » of the SDcard of the 410SP car roof board. If you want to broadcast your own musical files, be sure that you have the legal rights to do it.
	0...7
Random playback	Random selection of the next file to play among the chosen style.
	YES, NO
VOLUMES	Sub menu to adjust the night & day playback volumes
	0...7

▪ ***SOUNDS ► CAR ►VOLUMES***

Category / Parameter	Description
Message day volume	Setting of the volume for the user messages in car during day time (time slot adjustable in the Controller menu)
	0...7
Message night volume	Setting of the volume for the user messages in car during night time (time slot adjustable in the Controller menu)
	0...7
Beep day volume	Setting of the volume for the user buttons beep during day time (time slot adjustable in the Controller menu)
	0...7
Beep night volume	Setting of the volume for the user buttons beep during night time (time slot adjustable in the Controller menu)
	0...7
Inductive loop volume	Setting of the volume for the Sprinte inductive loop (314SP board), used for emergency phone communications
	0...7

o ***SOUNDS ►CAR ROOF***

Category / Parameter	Description
Message day volume	Setting of the volume for the technician messages on the roof of the car during day time (time slot adjustable in the Controller menu)
	0...7
Message night volume	Setting of the volume for the technician messages on the roof of the car during night time (time slot adjustable in the Controller menu)
	0...7
User alarm siren	Enbale here a alarm siren in shaft as soon as the alarm button in car is pressed by an user (unconditionnally, only in user mode)
	YES , NO

o ***SOUNDS ►FLOORS***

Category / Parameter	Description
VOLUMES	Sub menu to set all different volumes of sounds on landings
Opening announcement	Voice announcement at doors opening
	YES ; NO
Closing announcement	Voice announcement at doors closing
	YES , NO
Next departure announcement	Voice announcement for the next departure once the doors are open
	YES , NO

▪ ***SOUNDS ► FLOORS ►VOLUMES***

Category / Parameter	Description
Message day volume	Setting of the volume for the user messages on landings during day time (time slot adjustable in the Controller menu)
	0...7
Message night volume	Setting of the volume for the user messages on landings during night time (time slot adjustable in the Controller menu)
	0...7
Beep day volume	Setting of the volume for the user buttons beep during day time (time slot adjustable in the Controller menu)
	0...7
Beep night volume	Setting of the volume for the user buttons beep during night time (time slot adjustable in the Controller menu)
	0...7

o ***SOUNDS ► PHONE***

Catégorie / Paramètre	Description
Emergency phone volume	Setting of the car loud speaker volume for the emergency phone communications
	0...7

- ***BUILDING***

Category / Parameter	Description
Number of floors	Numbers of floors in the building
	2 ... 32
Main floor	Main access floor of the building
	0 ... 31
LIFT GROUP	Sub menu to set the lift in a lift group
AUTOMATIC RETURN	Sub menu to set an automatic return of the car to a selected floor
ACCESS CONTROL	Sub menu to set access control for each floor and,door.

o ***BUILDING ► LIFT GROUP***

Category / Parameter	Description
Lift group	Lift group mode
	Simplex mode , No lift groupe, the lift is alone **Multiplex mode** Group up to 4 lifts
Lift number	Number of the lift used in lift group. Each lift must have a unique number
	1 ... 8
Gap levels	Floor difference between the lowest floor of this lift, and the lowest floor of the building reachable by any lift
	0 ... 31

o ***BUILDING ►AUTOMATIC RETURN***

Category / Parameter	Description
Automatic return	Enable here an automatic return of the lift to a designated floor, after a delay of .inactivity
	YES , NO
Return level	Floor of the automatic return
	0 ... 31
Return delay	Delay of inactivity before automatic return
	1min...60min

o ***BUILDING ►ACCESS CONTROL***

Category / Parameter	Description
FLOORS ACCESS CODE DOOR 1	Sub menu to set access codes in car for each floor on door 1.User"s buttons are used to enter these codes
FLOORS ACCESS CODE DOOR 2	Sub menu to set access codes in car for each floor on door 2.User"s buttons are used to enter these codes
CALLS BLOCKING ON TIME SLOTS	Sub menu to set time slots during which landing and/or car calls will be blocked
Unblocking time for car calls	Setting of the time during which a car call under access control (digital code, blocking input, etc.) will be unblocked when the matching unblocking input is activated.
	0s...600s
Unblocking time for landing calls	Setting of the time during which a landing call under access control (digital code, blocking input, etc.) will be unblocked when the matching unblocking input is activated.
	0s...600s

- ***BUILDING ►FLOOR ACCESS CODES DOOR 1 & 2***

Category / Parameter	Description
FLOOR ACCESS CODES 0 to 31 DOOR 1 & 2	Sub menu to set activation mode et access code value of floor and door associated

- ***BUILDING ►FLOOR ACCESS CODES DOOR 1 & 2 ►FLOOR 0 to 31 DOOR 1 & 2***

Parameter	Description	
Code Fx Dy Activation	Select here when an access code has to be entered for the car call to be granted	
	Disabled ,	No access code for this call
	Enabled	The access code must always be entered
	Enabled on day time	The access code has to be entered during day time only
	Enabled on night time	The access code has to be entered during night time only
	Enabled by external signal	The access code has to be entered if the matching input ***"Code Fx Dy Activation"*** is ON *(Configure this input on 307SP or 333SP boards)*
Code Nx Fy Value	Set here the value of the access code This is a four digits code and only buttons for car calls 0 to 9 are used	
	X - X - X - X,	

- ***BUILDING ► ACCESS CONTROL ► RESTRICTIONS BY TIME SLOTS***

Category / Parameter	Description
RESTRICTIONS BY TIME SLOTS	Configure up to 32 weekly access restrictions based on time slots

Parameter	Settings	
RESTRICTION n° 1 *.....* ***RESTRICTION n° 32***	Type	
	☐ **Car call cabine** ☐ **Appel palier montée** ☐ **Appel palier descente**	Choose the request type subject to the access restriction
	Niveau	
	☐ **Niveau 0** ☐ **Niveau 1** ☐ **Niveau ....** ☐ **.....** ☐ **Niveau Max**	Choose the floors where the access restriction applies
	Jour de la semaine	
	☐ **Lundi** ☐ **Mardi** ☐ **Mercredi** ☐ **Mardi** ☐ **Jeudi** ☐ **Vendredi** ☐ **Samedi** ☐ **DImanche** ☐ **Mercredi**	Choose the weekdays when the access restriction applies
	Porte	
	Porte 1, **Porte 2,** **Portes 1 & 2**	Choose the doors subject to the access restriction
	Plages horaires	
	Début **HH : MM** **Fin** **HH : MM**	Set the time slot in day when the access restriction applies You canset up to 3 times slots in a day.

- ***OPERATIONS***

Parameter	Description	
USER OPERATION	Submenu for the user operation settings	
FIREMEN OPERATION	Submenu for the Firemen operation settings	
FIRE OPERATION	Submenu for the fire operation settings	
OUT OF USE OPERATION	Submenu for the out of use operation settings	
SEISMIC OPERATION	Submenu for the seismic operation settings	
Evacuation operation	Evacution operation type in case of main power failure	
	Manual drift ,	The car will be moved to the floor by natural drift by opening of the brakes of the machine This operation has to be done manually by the rescue service
	Automatic drift ,	The car will be moved to the floor by natural drift by opening of the brakes of the machine This operation is done automatically by the controller, only in case of main power failure. The manual drift remains available for other failures
	Automatic drift with VVF drive	The car will be moved to the floor at low speed by the VF drive; this requires an additional UPS to power again the drive This operation is done automatically by the controller, only in case of main power failure. The manual drift remains available for other failures
	Disabled	No evacuation operation

o ***OPERATIONS ►USER OPERATIONS***

Parameter	Description	
Operation type	User operation type	
	Universal ,	Fitted for residential buildings with a low capacity cabin
	Collective ,	Fitted for building with an important traffic Choose this , whatever the collective you need : up, down or full.
	Universal with record	Fitted for residential buildings with a high capacity cabin This operation is quite the same as 'Universal', except that all car calls are recorded
Car light itme	Time during the car light remains ON, once the lift is available doors closed	
	0s....60s	
Parking time shortening	The parking time will be shorten a soon as a car call is acknowledged.	
	YES , NO	

o ***OPERATIONS ►FIREMEN OPERATION***

Parameter	Description	
Operation type	Firemen operation type	
	Disabled ,	No firemen operation for this lift
	French NF82-207 ,	Firemen operation compliant to the NF82-207 French standard
Firemen access level	Select the floor where the firemen will access to the lift; the lift will be send at this floor as soon as the fireman key is turned ON	
	0...31	
Fireman Key configuration	The input for the fireman key has to be configured on 328SP board (see Menu I/O 328SP); (The floor associated with the key isn't relevant, the firemen access level configured above will be used)	

o *OPERATIONS ►FIRE OPERATION*

Parameter	Description	
Operation type	Fire operation type	
	Disabled ,	No fire operation for this lift
	European EN81-73	Fire operation compliant to EN81-73 European standard
	French U36	No stops on at stricken floors in compliance with the french regulation (Art U36 Arr. 10-12-2004)
Fire recall main level	Select the main floor where the car will be recalled in case of the activation of fire operation The fire operation is enabled as soon as the dedicated key is turned ON, or a fire detector is ON	
	0...31	
Door(s) to open	Indicates here the door(s) to open at the fire recall level to evacuate the persons.	
	Door 1 , Door 2, Doors 1 & 2	
Fire recall replacement level	In case the fire recall main level can't be used (because of fire detector), the level defined here will be used to evacute the persons	
	0...31	
Door(s) to open	Indicates here the door(s) to open at the fire recall replacement level to evacuate the persons.	
	Door 1 , Door 2, Doors 1 & 2	
Fire Key configuration	The input for the fire recall key has to be configured on 328SP, 307SP or 33SP board (The floor associated with the key isn't relevant, the recall floors configured above will be used)	
Fire detectors configuration	The input for a fire detector has to be configured on 328SP, 307SP or 33SP board	

o *OPERATIONS ►OUT OF USE OPERATION*

Paramètre	Description	
Operation type	Out of use operation type	
	Disabled ,	No out of use operation for this lift
	Out of use doors closed ,	Once the lift has been set out of use, the doors will be kept closed
	Out of use doors open	Once the lift has been set out of use, the doors will be kept opened
Out of use level	Select the floor where the car will be set out of use, by turining the dedicated key ON	
	0...31	
Out of use key configuration	The input for the out of use activation key has to be configured on 328SP, 307SP or 33SP board (The floor associated with the key isn't relevant, the floor configured above will be used)	

o *OPERATIONS ►SEISMIC OPERATION*

Paramètre	Description	
Operation type	Seismic operation type	
	NOne ,	No specific operation of the lift, in case of seismic conditions
	European EN 81-77	In case of seismic conditions, the lift will operate as reuired in the EN81-77 european standard.
Out of use key configuration	Inputs for Primary wave detection, Seismic wave detection, and to set the lift back in order, inouts necessayry for this operation, has to be configure 333SP board inputs (see 333SP I/O menu) , or 328SP board inputs (see 328SP I/O menu)	

- ***INPUTS / OUTPUTS***

Catégorie	Description
CONTROLLER (400SP)	Sub menu for IO configuration of car controller's board
CAR INSPECTION (410SP)	Sub menu for IO configuration of car inspection board
CAR ROOF EXPANSION (417SP)	Sub menu for IO configuration of car roof expansion board
LANDING BOARDS (328SP)	Sub menu for IO configuration of landing boards
EXPANSION BOARDS (333SP)	Sub menu for IO configuration of expansion boards

o ***I/O ➡ CONTROLLER***

Input / Output	Settings	
X13-1 Button 0 à X14-8 Button 11	Activation	
	Enabled, Disabled.	Input activation
	Polarity	
	NO. / **NF.**	Contact is normally open / Contact is normally closed
	Configuration ▸ Type	
	Car call, Hall call up, Hall call down, Out of use. Shaft light Fireman key/ Fire recall key Stricken floor	Selection of the input type
	Configuration ▸ Level (if relevant)	
	0 ... 31	Level associated with the input
	Configuration ▸ Door(s) (if relevant)	
	1, 2, 1 & 2.	Door(s) associated with the input
	Configuration ▸ Lift(s) (if relevant)	
	1 2 3 4 5 6 7 8 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Lift(s) associated with the input
Configuration for the ouput lights below is not accessible if the associated inputs are set as calls buttons		
X13-1 Light 0 à X14-8 Light 11	Activation	
	Enabled, Disabled.	Output activation
	Polarity	
	NO, / **NC.**	Contact is normally open / Contact is normally closed
	Configuration ▸ Type	
	Fireman/Fire recall light, Out of use indcator light, Attendant indicator light, Car presence, Floor light Lift out of order	Selection of the output type
	Configuration ▸ Level (if relevant))	
	0 ... 31	Level associated with the output
	Configuration ▸ Door(s) (if relevant)	
	1, 2, 1 & 2.	Door(s) associated with the output
	Configuration ▸ Lift(s) (if relevant))	
	1 2 3 4 5 6 7 8 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Lift(s) associated with the output

o *IO ➡ LANDINGS BOARDS (328SP)*

Category	Description
LANDING BOARD LEVEL 0 DOOR 1	Sub menu for IO configuration of the landing board of level 0 associated to door 1(i f present)
LANDING BOARD LEVEL 0 DOOR 2	Sub menu for IO configuration of the landing board of level 0 associated to door 2(i f present)
LANDING BOARD LEVEL 1 DOOR 1	Sub menu for IO configuration of the landing board of level 1 associated to door 1(i f present)
....	.....
LANDING BOARD LEVEL 31 DOOR 1	Sub menu for IO configuration of the landing board of level 31 associated to door 1(i f present)
LANDING BOARD LEVEL 31 DOOR 2	Sub menu for IO configuration of the landing board of level 31 associated to door 2(i f present)

▪ *IO ➡ LANDINGS BOARDS ➡ LANDING BOARD LEVEL 0 to 31 DOOR 1 to 2*

Input / Output	Settings	
X01-3 Button 1 à X04-3 Button 4	Activation	
	Enabled, Disabled.	Input activation
	Polarity	
	NO.	Contact is normally open
	NF.	Contact is normally closed
	Configuration ▸ Type	
	Car call, Hall call up, Hall call down, Hall call disable, Car call disable, Car call enable, Out of use, Shaft light Fireman key/Fire recall key Fireman alarm, Head room refuge insured, Pit refuge insured, Stricken floor Overload, Full car, Forbid access to floor, Floor to floor auto movement, Request door open, Restart the controller, Erasing faults, Overheating sensor in machineroom	Selection of the input type
	Configuration ▸ Level (if relevant)	
	0 ... 31	Level associated with the input
	Configuration ▸ Door(s) (if relevant)	
	1, 2, 1 & 2.	Door(s) associated with the input
	Configuration ▸ Lift(s) (if relevant)	
	1 2 3 4 5 6 7 8 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Lift(s) associated with the input
Configuration for the ouput lights below is not accessible if the associated inputs are set as calls buttons		
X01-2 Light 1 à X04-2 Light 4	Activation	
	Enabled, Disabled.	Output activation
	Polarity	
	NO,	Contact is normally open
	NC.	Contact is normally closed
	Configuration ▸ Type	

Input / Output	Settings	
	Car call light, **Hall call up light,** **Hall call down light,** **Fireman/Fire recall light,** **Out of use indcator light,** **Attendant indicator light** **Car presence** **Floor light** **Position indicator light** **Car alarm button state** **Grid power failure,** **Car light fault,** **Landing doors locked,** **Landing doors closed,** **Car doors closed,** **Primary safety contacts established,** **Lift is in user mode,** **Lift is in car inspection mode,** **Lift is in pit inspection mode,** **List is n emergency operation mode,** **Lift is out of order,** **Car is going up,** **Car is going down,** **Car is moving,** **Car stoped in door area,** **Car stopped outside door area** **Door is opening,** **Door is closing,** **Door open,** **Door closed,** **Shock,** **Light barrier,** **Overload,** **Full car,** **Head room refuge red light,** **Head room refuge green light,** **Pit refuge red light,** **Pit refuge green light,** **Hall call(s) disabled,** **Car call(s) disabled,** **Hall call(s) enabled,** **Car call(s) enabled,** **Lift is in seismic operation,** **Seismic signal light,** **Primary wave light,** **Reset seismic sensor,** **Battery fault,** **Opening button state,** **Closing button state,** **Car call buttons state,** **Hall call buttons state**	Choix du type de sortie
	Configuration ▸ Level (if relevant))	
	0 ... 31	Level associated with the output
	Configuration ▸ Door(s) (if relevant)	
	1, 2, 1 & 2.	Door(s) associated with the output
	Configuration ▸ Lift(s) (if relevant))	
	1 2 3 4 5 6 7 8 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Lift(s) associated with the output

o *I/O ➡ EXPANSION BOARDS (333SP)*

Catégorie	Description
EXPANSION BOARD 1	sub menu for IO configuration of expansion board 1 (if present)
EXPANSION BOARD 2	Sub menu for IO configuration of expansion board 2 (if present)
....	.....
EXPANSION BOARD 8	Sub menu for IO configuration of expansion board 8 (if present)

▪ *I/O ➡ EXPANSION BOARDS ➡ EXPANSION BOARD 1/8 ➡ INPUTS X04 & X05*

Inputs	Settings	
X04-1 Input 1 ***X04-2 Input 2*** ***X04-3 Input 3*** ***X04-4 Input 4*** ***X05-1 Input 5*** ***X05-2 Input 6*** ***X05-3 Input 7*** ***X05-4 Input 8***	Activation	
	Activée, **Désactivée.**	Input activation
	Polarity	
	NO. **NC.**	Contact is normally open, Contact is normally closed
	Configuration ▸ Type	
	Car call, **Hall call up,** **Hall call down,** **Hall call disable,** **Car call disable,,** **Hall call enable,** **Car call enable,** **Set out of use,** **Shaft light** **Fireman key/Fire recall key** **Fireman alarm,** **Head room refuge insured,** **Pit refuge insured,** **Stricken floor** **Overload,** **Full car,** **Forbid access to floor,** **Floor to floor auto movement,** **Request door open,** **Restart the controller,** **Erasing faults,** **Seismic signal,** **Primary wave signal,** **Overheating sensor in machineroom,** **Anti-creep coil status,** **Car resting on loading pawls,** **Loading pawls retracted,** **Loading pawls released,** **Loading pawls safety contact,**	Selection of the input type
	Configuration ▸ Level (if relevant)	
	0 ... 31	Level associated with the input
	Configuration ▸ Door(s) (if relevant)	
	1, 2, 1 & 2.	Door(s) associated with the input
	Configuration ▸ Lift(s) (if relevant)	
	1 2 3 4 5 6 7 8 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Lift(s) associated with the input

▪ *I/O ➡ EXPANSION BOARDS ➡ EXPANSION BOARD 1/8 ➡ OUTPUTS X06 & X07*

Outputs	Settings	
X06-1 Output 1 ***X06-2 Output 2*** ***X06-3 Output 3*** ***X06-4 Output 4*** ***X07-1 Output 5*** ***X07-2 Output 6***	Activation	
	Activée, **Désactivée.**	Output activation

Outputs	Settings	
X07-3 Output 7 ***X07-4 Output 8***	Polarity	
	NO.	Contact is normally open,
	NC.	Contact is normally closed
	Configuration ▸ Type	
	Car call light, **Hall call up light,** **Hall call down light,** **Fireman/Fire recall light,** **Out of use indcator light,** **Attendant indicator light** **Car presence** **Floor light,** **Car moving up arrow** **Car moving down arrow,** **Position indicator light** **Car alarm button state** **Grid power failure,** **Car light fault,** **Landing doors locked,** **Landing doors closed,** **Car doors closed,** **Primary safety contacts 3 closed (SP3),** **Primary safety contacts 2 closed (SP2),** **Primary safety contacts 1 closed (SP1),** **Lift is in user mode,** **Lift is in car inspection mode,** **Lift is in pit inspection mode,** **List is n emergency operation mode,** **Lift is out of order,** **Car is going up,** **Car is going down,** **Car is moving,** **Car stoped in door area,** **Car stopped outside door area** **Door is opening,** **Door is closing,** **Door open,** **Door closed,** **Shock,** **Light barrier,** **Overload,** **Full car,** **Head room refuge red light,** **Head room refuge green light,** **Pit refuge red light,** **Pit refuge green light,** **Head room and pit refuges green light,** **Hall call(s) disabled,** **Car call(s) disabled,** **Hall call(s) enabled,** **Car call(s) enabled,** **Lift is in seismic operation,** **Seismic signal light,** **Primary wave light,** **Reset seismic sensor,** **Battery fault,** **Opening button state,** **Closing button state,** **Car call buttons state,** **Hall call buttons state;** **Car inspection up button status,** **Car inspection down button status,** **Pit inspection up button status,** **Pit inspection down button status,** **Emergency recall up button status,** **Emergency recall down button status,** **Car inspection down button status,** **Loading pawls retraction command,** **Gray code display - Bit 0**	Selection of the output type
	Configuration ▸ Level (if relevant)	

Outputs	Settings	
	0 ... 31	Level associated with the output
	Configuration ▸ Door(s) (if relevant)	
	1, 2, 1 & 2.	Door(s) associated with the output
	Configuration ▸ Lift(s) (if relevant)	
	1 2 3 4 5 6 7 8 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Lift(s) associated with the output

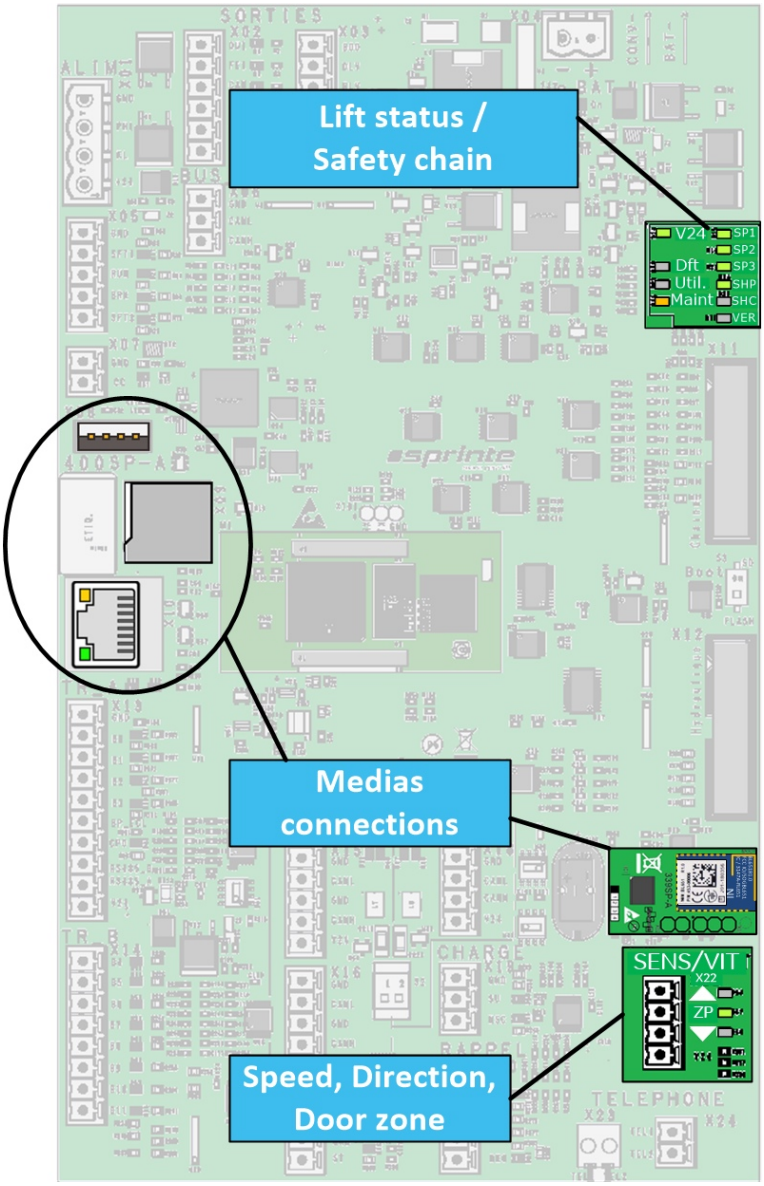
- ***CONNECTION***

Category / Parameter	Description
Connection Password	Here you can change the connection password required by the controller to the application
	...free text...

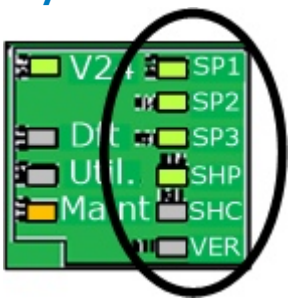
Local HMI

The main controller's board 400SP integrates different interface elements in order to

- get the status of the lift and the safety chain
- get the moving direction of the car and whether it is in unlocking door zone or not.
- access to the files of the controller(log files , diagnosis files, configuration files)
- update the software version of the controller (keeping the parameters)
- complete reprogramming of the controller (software and parameters)



Safety Chain



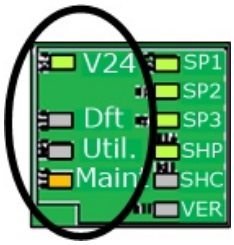
The main controller's board 400S¨P displays continuously the status of the safety chain among 6 information points:

- SP1 for the primary safety contacts in shaft.
- SP2 for the primary safety contacts in car.
- SP3 for the primary safety contacts bypassed by the emergency operation : Safety gear, overspeed governor, buffer , extreme limit switches.
- SHP for the closing contacts of the manual landing doors.
- SHC for the closing contacts of the car's doors
- VER for the locking contacts of the landing doors

The following table gives all of the possible states of the safety chain :

SP1	SP2	SP3	SHP	SHC	VER	Safety chain status
●						A primary safety contact in shaft is open
●	●					A primary safety contact in car is open
●	●	●				One of the primary safety bypassed by emergency operation is open
●	●	●	●			All of the primary safety contacts are closed, a manual landing door is open
●	●	●	●	●		All of the landing doors are closed, one of the car's door is open
●	●	●	●	●	●	All of the car doors are closed,one of the landing doors is unlocked
●	●	●	●	●	●	All of the landing doors are locked, a car travel is now possible

Lift status

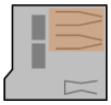


3 leds **Dft**, **Util**. et **Maint** also gives you permanently the operating modes of the lift.
Table below details all different states of the lift according to the states of these leds.

Dft	●	●	●	●
Util.	●	●	●	●
Maint.	●	●	●	●
Operating Mode	The lift is in normal operating mode for the users.	A fault sets the lift out of order for the users	The lift is in maintenance : emergency or temporary operation or inspection.	A fault prevents any movement in maintenance mode

The **V24** led indicates the presence of 24Vdc voltage that supplies the electronic boards of the whole controller.

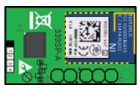
Mediums connections



Micro SD-Card

The content of the SD card includes logs files, diagnosis files and statistics files regardig the use and the operation of the Lift. It also stores all of the configuration files of the tool and former configuration files archive.

NOTE	*For the proper operation of the controller, the SD card shall never be removed from its socket (except in case of replacement). Accessing the files shall always be done via USB key.*



Bluetooth

Bluetooth interface is integrated to the controller for the connection with the touchpad tablet (see previous chapter).

Ethernet

Ethernet interface is used for connecting a remote supervising unit in case of a single lift, or interconnect the lift group (in that case, the supervising unit is connected to the router's of the group)

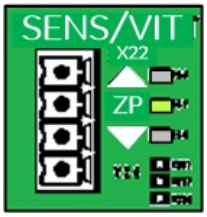
USB

USB interface is the sole access to the files of the controller, in order to :

- retrieve diagnosis,configuration, logs and statistics files of the lift.
- import a whole configuration to your controller
- update the software version of the controller.

All of these operations can be done with the app on the tablet in the menu ***TOOLS*** ➡ ***CONTROLLER'S MAINTENANCE***.

Speed, direction , and door unlocking zone



The 2 leds ▲(up), et ▼(down), indicates the moving direction and speed of the car as described in the table below:

Up ▲	●	●	★	●	●
Down. ▼	●	●	●	●	★
Direction & speed	The car is stopped	The car is going up	The car is going up at overspeed	The car is going down	The car is going down at overspeed

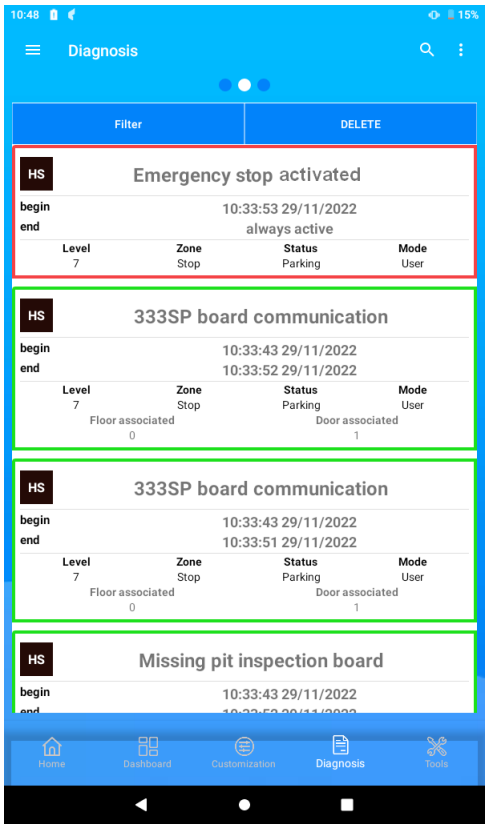
● : led OFF
● : led ON
★ : led blinking

La led **ZP** (zone de porte) est allumée lorsque la cabine se trouve en zone de déverrouillage de porte

NOTE	*These indications are available on outputs 1,2 and 3 of X22 connector X22 (see 400SP)*

Faults List

This chapter details all faults managed by the controller
The **Diagnosis -> Faults** menu of the Tetra App. displays the chronological list of faults that happened on the lift.



Faults list is detailed in tables as below :

Title	Severity	Description
....	...	...
....	....	....

- ***Title*** column***:***

  Message as displayed in the application fault menu

- ***Severity*** Column

  Gives severity level of the fault :

  ALR (Alarm) :
  This fault is a minor failure and doesn't prevent the operation of the lift
  OSU (Out of service for Users) :
  This fault sets the lift out of order for the users; but the lift keeps operational for technicians mode (inspection and emergencey operation)
  OSM (Out of service maintained) :
  This fault sets the lift out of order; and requests to be cleared by a technician the bring back the lift operational, event if the fault source disappeared.
  OST (Out of service for Technicien):
  This fault sets the lift out of order for users mode and tehcnicians mode, only temporary operation (for commissioning) is allowed.
  OS (Out of Service) :
  This fault sets the lift out of order for all modes of the lift.

- ***Description*** Column :

  Detailed explanation of the fault, with possible causes and solutions.

Power supply faults

Title	Severity	Description
Main power failure	OS	The main power supply of the controller is down ● *Check the main breaker DIJ1 and the PFS1 fuses.*
24Vdc power supply from grid is missing	OS	The 24Vdc low power supply generated by 404SP board form the grid power supply is missing.All of the electronic lboards of the lift controller are powerad by the back-up battery although the gird power supply is present. ● *Check the 22V fuse (5AT) on 404SP board.* ● *Check the power supply connections between 400SP board (X01) and 404SP board (X03).* ● *Check the transformer secondary voltage on X05-1 and X05-2 terminals of 404SP board. It has to be around 22Vac.*
Battery missing	OSU	The backup battery is missing or discharged. In case of main power failure, it will be impossible to fulfill the emergency operation for users. Lift keeps operational for inspection mode
Battery too low	ALR	The backup battery isn't charged enough to ensure the emergency operation up to 1h after a main power failure , as required in chapter 5.9.2.3.1.b of EN81-20 standard
Car llight	ALR	The power supply for car light is missing. ● *Check DIJ2 cirucit breaker and DJD1 RCD*
Voltage converter failure	OSU	The voltage converter didn't provide the 230Vac during the emergency operation after a power failure ● *Check the wiring of the voltage converter and its ON/OFF switch button*

Controller faults

Title	Severity	Description
Missing car inspection board ***Car inspection board communication***	OST	The controller can't communicate with 410SP car inspection board ● *Check CAN bus connections on controller (X18-400SP) and car inspection box (X28-410SP).* ● *Check dip-switch S2-2 of 400SP board , it to has to be set to ON.*
Missing pit inspection board ***Pit inspection board communication***	OSU	The controller can't communicate with pit inspection board ● *Check CAN bus connections on controller (X16-400SP), on the lowest landing board and in the pit inspection box* ● *Check dip-switch S2-1 of 400SP board :* *It to has to be set to ON in case of top machineroom.* *It to has to be set to OFF in case of bottom machineroom.*
328SP LOP board communication (#1 to #32)	ALR	The controller can't communicate with 328SP #xx LOP board ● *Check ID number of the 328SP board* ● *Check dip-switch S2-1 of 400SP board :* *It to has to be set to ON in case of top machineroom.* *It to has to be set to OFF in case of bottom machineroom.*
Missing VF Drive ***VF Drive communication***	OS	The controller can't communicate with VF Drive ● *Check CAN bus connections on the controller (X06-400SP) and the VF drive* ● *Vérifiez que le DIP S2-2 de la carte 400SP est positionné sur ON.*
Inverter configuration failure	OS	The controller failed to configure the inverter for the porpoer operation of the LIFT (I/O, STO function...) ● *Check CAN bus connections with the inverter (see above).* ● *Then power OFF and ON both controller and inverter (Main power supply circuit breaker)*
Button stuck	ALR	One of the user button of the lift is kept pressed longer than 2'30". The informations associated to this button(Lift, floor, door) are given in the diagnosis page of the smartphone app.
Stricken floor (0 to 31)	ALR	The lift can't stop anymore on floor X, as the associated fire detector has been activated
Controller clock not set	ALR	Date and time of the controller are not properly set. These informations are necessary for to controller to have relevant log events records
Roof SD card missing	ALR	The car's roof baord 410SP can't detect the presence of its SD card containing audio files. Vocal announcements can no longer work.
Machineroom overheating	OS	The thermal probe of the machineroom, connected on a 333SP expansion board, indicates an overheating status.

Title	Severity	Description
		• *Check the proper air cooling of the machineroom* • *Check the wiring of the thermal probe on 333SP board, and its trigger setting.*
Missing load weighing device ***Load weighing device communication***	OS	The controller can't communicate with the load weighing device on the CAN bus • *Check CAN bus connections on the weighing device and on 410SP board (weighing device on roof) or 328SP (weighing device in shaft)* • *Check the setup (EQUIPMENTS►LOAD WEIGHING DEVICE) matches the weighing device installed*
Load weighing device setup error	OS	A weighing device is detected on the CAN bus although a wired device is configured in the controller setup. • *Check the setup (EQUIPMENTS ►LOAD WEIGHING DEVICE) matches the weighing device installed.*
333SP for loading pawl device is missing	OS	The 333SP board used to manage the informations/command of loading pawls is not detected on the CAN Bus by the 400SP controller board. • *Check positions of dips-switches IT1-4 on 333SP board and S2-1 on 400SP board as described in wiring diagram : B-PE-24-057 333SP Boards can bus connections.* • *Check the dips-switches IT1-1 to 3 of 333SP board are set to ON (Up position).*

Hoist machine faults

Title	Severity	Description
Contactors control at startup ***Contactors control at stop***	OS	One of the power contactors (LA, LB, FR , L, LD, ✶ or ▲) is already closed on a startup or has remained closed at a stop. • *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace the external contactor and/or 405SP board*
Contactors control while moving	ALR then OS	One of the electromechanical device that operates the brakes (contactors FR, LA ou LB) didn't close at startup or opened while moving • *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace the external contactor and/or 405SP board*
Traction motor overheating	OS	The thermal probe of the traction motor indicates an overheating • *Check the proper air cooling of the motor* • *Check the wiring of the thermal probe (X17-400SP, see Câblage de la sonde)*
Maximum moving time reached	OSU	The travel exceeded the maximum time allowed, as required by EN81-20 standard in chapter 5.9.7.2 Le déplacement a dépassé la durée maximum autorisée, conformément à l'exigence 5.9.2.7.2 de la norme EN81-20. • *Check the traction cables don't slip on the pulley* • *Check the nominal speed setting .*
Wrong moving direction	ALR then OSU	The moving direction of the car is in the opposite direction to that ordered to the VF drive • *Check the wring of the motor phases and the motor encoder (see Motor wiring)*
No car movement detected	OSM	On a travel order, the car didn't move for a time longer than the anti skidding timer. The lift shall be set out of order until the intervention of a technician as required in chapter 5.9.2.7.1 a) of EN81-20 standard • *Check the suspension means, power supply of the motor, and the shaft reader.*
Stopping accuracy	ALR then OSU	The car stopped beyond the stopping area when arriving at floor. If it occurs on 5 consecutive travels , the lift is set out of order. • *Check that the stopping distance set is not too short.* • *Check that the slowing distance set is not too short (used in case of speed profile, flags reader or hydraulic lift).*
Car sliding	OSU	The car stopped beyond the door unlocking area when arriving at floor. If it occurs on 5 consecutive travels , the lift is set out of order. • *In case of a flags reader, check that the screen for door area is properly placed.* • *Check that the slowing distance set is not too short (used in case of speed profile, flags reader or hydraulic lift).*

Hydraulic hoist faults

Title	Severity	Description
Oil overheating	OS	The thermal probe for the oil of the hydrulic hoist indicates an overheating ● *Check the proper air cooling of the motor and th hoist* ● *Check the wiring of the thermal probe for oil (X45-406SP)*
Hydraulic hoist overpressure	OS	The hydraulic hoist indicates an overpressure status on X45-SPR input of 406SP board. ● *Check the wiring on X45SPR and on the hydraulic device.* ● *Check the load in car.*
Grid phases reverted	OS	The controller detected that 2 phases among the three ones of the grid power supply are reverted. The lift is immediately set out of order to prevent the hydraulic hoist pump motor from rotating upside down. ● *Check the correct order of cables L1, L2 L3 in the electric board of the machine-room.* ● *Check the correct order of cables L1, L2 L3 i the terminal of the controller's panel.*
SMA signal enabled on start	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal has been detected ON before a new start ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
SMA signal enabled while moving	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal has been detected ON during a travel ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
SMA signal disabled on stop	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal remained OFF after a stop ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
SMA signal enabled for too long after a stop	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal remained ON more than 6s after a stop ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
READY signal disabled on stop	OSM	In normal operation, the READY control signal produced by the GMV NGV-A3 hydraulic hoist is enabled on stop and disabled while moving. This fault has been recorded because this signal remained disabled after a stop ● *Check the wiring of READY signal on X3-51 of NGV-A3. hoist* ● *Check the wiring of READY signal on X50-I1 input of 406SP board*
RUN signal disabled while moving	OSM	In normal operation, the RUN control signal produced by the GMV NGV-A3 hydraulic hoist is disabled on stop and enabled while moving. This fault has been recorded because this signal remained disabled while moving ● *Check the wiring of RUN signal on X3-50 of NGV-A3. hoist* ● *Check the wiring of RUN signal on X50-I2 input of 406SP board*
READY signal enabled while moving	OSM	In normal operation, the READY control signal produced by the GMV NGV-A3 hydraulic hoist is enabled on stop and disabled while moving. This fault has been recorded because this signal remained enabled while moving . ● *Check the wiring of READY signal on X3-51 of NGV-A3. hoist* ● *Check the wiring of READY signal on X50-I1 input of 406SP board*
RUN signal enabled on stop	OSM	In normal operation, the RUN control signal produced by the GMV NGV-A3 hydraulic hoist is disabled on stop and enabled while moving. This fault has been recorded because this signal remained enabled after a stop ● *Check the wiring of RUN signal on X3-50 of NGV-A3. hoist* ● *Check the wiring of RUN signal on X50-I2 input of 406SP board*
RUN/READY signals invalid on start	OSM	In normal operation, the RUN/READY control signals produced by the GMV NGV-A3 hydraulic hoist are respectively OFF and ON before a start. This fault has been recorded because both signals were in the wrong state on start ● *Check the wiring of both signals on X3 of NGV-A3. hoist* ● *Check the wiring of both signals on X50-i1 & I2 inputs of 406SP board.*

Title	Severity	Description
RUN/READY signals invalid on stop	OSM	In normal operation, the RUN/READY control signals produced by the GMV NGV-A3 hydraulic hoist are respectively OFF and ON after moving. This fault has been recorded because both signals were in the wrong state on stop ● *Check the wiring of both signals on X3 of NGV-A3. hoist* ● *Check the wiring of both signals on X50-i1 & I2 inputs of 406SP board.*
RUN/READY signals are not operational	OSM	The RUN/READY control signals produced by the GMV NGV-A3 hydraulic hoist never change during travels of the lift. ● *Check the wiring of both signals on X3 of NGV-A3. hoist* ● *Check the wiring of both signals on X50-i1 & I2 inputs of 406SP board.*

Electric hoist machine faults

Title	Severity	Description
Brakes control alarm	OSM	The safety brakes didn't raise for a start, or didn't release after a stop ● *Check the wiring of the brakes contact on the VF drive (see Brakes wiring).* ● *Check the wiring of the brakes coils on 405SP traction board (X06 & X07, see Brakes coils).* ● *Check also the proper configuration of polarity and type of the brakes contact*
SFT1 control at startup ***SFT1 control at stop***	OS	SFT1 feedback input for STO function of the VF drive, is at the wrong state at startup or after a stop. ● *Check the input wiring on controller board (X05.2 -400SP and on the VF drive (T3).* ● *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace 400SP board and/or the VF drive..*
SFT1 control while moving	ALR then OS	SFT1 feedback input for STO function of the VF drive, is at the wrong state during a movement If it occurs 5 consecutive times, lift is set out of order. ● *Check the input wiring on controller board (X05.2 -400SP and on the VF drive (T3).* ● *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace 400SP board and/or the VF drive.*
SFT2 control at startup ***SFT2 control at stop***	OS	SFT2 feedback input for STO function of the VF drive, is at the wrong state at startup or after a stop. ● *Check the input wiring on controller board (X05.5 -400SP and on the VF drive (Safety terminal).* ● *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace 400SP board and/or the VF drive.*
SFT2 control while moving	ALR then OS	SFT2 feedback input for STO function of the VF drive, is at the wrong state during a movement If it occurs 5 consecutive times, lift is set out of order. ● *Check the input wiring on controller board (X05.5 -400SP and on the VF drive (Safety terminal).* ● *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace 400SP board and/or the VF drive.*
Run VF signal always ON	OS	The VF drive output to enable the movement is always detected ON by the controller, even after a stop command ● *Check the input wiring on controller board (X05.3 - 400SP) and on the VF drive (T3 terminal).*
Brake VF signal always ON	ALR then OS	The VF drive output to operates the brakes is always detected ON by the controller,whereas the output to enable the movement is OFF. After 5 consecutive detection of this fault , the lift is set out of order. ● *Check the input wiring on controller board (X05.4 - 400SP) and on the VF drive (T3 terminal)..*
Plan to replace traction ropes	ALR	The monitoring function of the cables wear has detected that the configured wear alert level has been reached. Plan soon to replace the cable before the lift will be set out of order
Traction ropes must be replaced	OS	The monitoring function of the cables wear has detected that the maximum direction reversals counter has been reached. The lift is set out of service until the cables are replaced. The fault will be cleared only when the controller will be informed that the replacement has been realized; this action is done in the menu Ropes wear.

Shaft reader faults

- ***ABSOLUTE READER***

Title	Severity	Description
Shaft reader error	**OSU**	The shaft reader has an internal fault; it shall be replaced.
Shaft reader invalid datas	**OSU**	The car position detected by the shaft reader is out of the range determined by the heights defined during the shaft's learning phase. ● *Carry out a new shaft's learning phase (see Shaft's learning phase)*
Two floors have the same height	**OSU**	Once the shaft's learning phase has been performed, two floors have the same height's value, which is a fault case for the controller. ● *Change manually the heights in the menu Equipments►Reader menu* ● *Carry out a new shaft's learning phase (see Shaft's learning phase)*
Two floors have opposite heights	**OSU**	Once the shaft's learning phase has been performed, one floor has an higher height value than another upper floor in the shaft. ● *Change manually the heights in the menu Equipments►Reader menu* ● *Carry out a new shaft's learning phase (see Shaft's learning phase)*
Wrong shaft reader	**OSU**	The shaft reader detected by the contrller doesn't match the one configured ● *Check the configuration in the menu PCustomization -> Equipments -> Shaft reader*
Missing shaft reader ***Shaft reader communication***	**OSU**	The controller can't communicate with the shaft reader ● *Check the connection of the shaft reader in the inspection box (X31-415SP)* ● *Check the position of dip-switches S1 ,that must be set to ON if X29 and X30 on 410SP board, are empty.*

- ***FLAGS READER***

Title	Severity	Description
Reader not calibrated	**ALR**	Indicates that a calibration phase has to be done before turning the lift in service for users.
Reader calibration error	**ALR** then **OSU**	The calibration of the reader has failed. After 3 failed attempts, the lift is set out of order. ● *Check the placement of each flag in the shaft.* ● *Check the placement of the down slowdown flag.* ● *Check the wiring of each sensors (A, B, C, RB & RH)*
Reader input XX error	**ALR**	Input A, B or C of the flag reader is not correctly detected while the car is moving. Then , the car stops, and a calibration phase is launched. ● *Check the wiring of the matching sensor*
Door area is missing	**ALR**	On arrival at the floor, the door area flag is not detected. ● *Check the placement of the door zone flag at the floor detected*
Door area wrongly placed	**ALR**	A door area flag has been detected between two floors.Then , the car stops, and a calibration phase is launched.This fault may be detected by one of the following cases : ● *A stopping or slowdown flag is missing, the reader can shift its position.* ● *Two stopping or slowdown flags are too close together, i.e. a closer than the distance between sensor A and sensor B.* ● *A stopping flag is still active while the door flag is not.*
Door area never detected	**ALR**	During a travel across several floors, no door area flags have been detected. Then , the car stops, and a calibration phase is launched. ● *Check the presence of sensor C and its wiring.* ● *Check also the correct alignment in front of the flag..*
End slowdown flags detected together	**OSU**	RB & RH sensors (connected on X12 of 410SP board)for end slowdown area detection are both enabled. ● *Check the presence of RH & RB flags in the shaft.* ● *Check also the correct alignment of the sensors in front of the flags...*

Relevelling faults

Title	Severity	Description
Uninedtended car movement	OSM	The car has overpassed the unlocking door zone while a releveliing or levelling operation was in progress. ● *Check the correct disposal of the magnet used for the unlocking door zone* ● *Check the brake system (leveling only)*
Safety realy always ON	OSU	The safety relay is closed with the car out of an unlocking door zone The lift will get back in order as soon as relay is in the correct state ● *Check the safety relay wiring* ● *Check the magnet sensor and its cable* ● *Check the connection of the magnet sensor on X11 terminal of 415SP board*
Safety relay alwas OFF	ALR	The safety relay didn't close as requested for a relevelling/levelling operation ● *Check the correct disposal of the magnet used for the unlocking door zone* ● *Check the safety relay wiring*
Relevelling too long	OSU	The car did not reach back the floor in the maximum time configured ● *Increase this maximum relevelling time* ● *Check the speed of relvelling*
Too many relevellings	OSU	The maximum number of consecutive relevelings at the same floor (within 2 minutes) has been reached.. ● *Check the relevelling start and stop distances* ● *Increase the value of this counter*
Unlocking door zone error	OS	The unlocking door zone has been detected 1meter far form the nearest floor. ● *Check the correct disposal of the magnet used for the unlocking door zone* ● *Check the connection of the magnet sensor on X06 terminal of 315SP board*

Loading pawls devices faults

Title	Severity	Description
Loading pawls not released	ALR then OSU	During the phase of pawls releasing, the "Loading pawls released" signal doesn't appear in the allotted time (configurable). After the number of failed consecutive attempts (configurable), the lift is set out of order. ● *Check the pawls contacts and the wiring.* ● *Check the wiring of "Loading pawls released" signal on X04-2 of 333SP board on the controller* ● *Check the wiring of "Loading pawls retraction command" output on X06-1 of 333SP board on the controller.*
Loading pawls not retracted	ALR then OST	During the phase of pawls retraction, the "Loading pawls retracted" signal doesn't appear in the allotted time (configurable). After the number of failed consecutive attempts (configurable), the lift is set out of order. ● *Check the pawls contacts and the wiring.* ● *Check the wiring of "Loading pawls retracted" signal on X04-3 of 333SP board on the controller* ● *Check the wiring of "Loading pawls retraction command" output on X06-1 of 333SP board on the controller.*
No information whether the car is resting on pawls	OSU	Once the pawls have been released just above the floor, the car is moving down to rest on the pawls at the floor. This fault is logged if the "Car on loading pawls" signal doesn't appear and the car moved below the stopping zone or the signal doesn't appear 15s after the down movement. ● *Check the position of the rest mounting of the pawls in the shaft* ● *Check the wiring of "Car on loading pawls" signal on X04-1 of 333SP board on the controller side and "Zero pressure" signal on hydraulic unit side.*
Wrong information stating that the car is resting on pawls.	OSU	Either the "Car on loading pawls" signal appeared before the downward movement to rest the car on the pawls or the signal is always active. Both cases are erroneous. ● *Check the position of the rest mounting of the pawls in the shaft*

Title	Severity	Description
		• *Check the wiring of "Car on loading pawls" signal on X04-1 of 333SP board on the controller side and "Zero pressure" signal on hydraulic unit side.* • *Check that parameter "Pawls release distance" is not too low.*
Impossible to bypass the pawl safety contact.	**OSU**	During the phase of pawls retraction, the safety contacts are bypassed by a safety relay to allow the upward movement. This fault is logged if the safety chain isn't closed on X12 terminal of the 405SP board, when the safety relay is closed. • *Check the wiring of the safety relay on the roof on the car and on X12 terminal on 405SP.*
Missing magnet in the unlocking door zone error	**OSU**	The magnet used to enable the safety relay is not detected in the unlocking door zone. Thus, the bypass of the pawls safety contact isn't possible. • *Check the correct disposal of the magnet used for the unlocking door zone* • *Check the connection of the magnet sensor on X11 terminal of 410SP board*
Safety relay used to bypass pawl safety contacts is always closed	**OSU**	The safety relay is always closed even when not driven by the controller. • *Check the wiring of the safety relay on the roof on the car and on X12 terminal on 405SP.*

Other faults

Title	Severity	Description
Anti-creep always active	**OSM**	This fault only concerns the overspeed governor with a parking coil to prevent the creep of the car. It is detected when the coil is powered to make the car move, but the monitoring input of its state indicates that the overspeed governor is not released. • *Check the wiring of the monitoring input on 433SP or 428SP board* • *Check the configuration of this input and its polarity which has to be NC.* • *Check the proper operation of the coil.*
Anti-creep always inactive	**OSM**	This fault only concerns the overspeed governor with a parking coil to prevent the creep of the car. It is detected when the coil is not powered to ensure the car is stopped, but the monitoring input of its state indicates that the overspeed governor is still released. • *Check the wiring of the monitoring input on 433SP or 428SP board* • *Check the configuration of this input and its polarity which has to be NC.* • *Check the proper operation of the coil.*

Doors faults

Title	Severity	Description
Closing limit switch defective (door 1 or 2)	ALR then OSU	The closing limit switch is not detected when the door is supposed to be closed. ● *Check the wiring (X08.2-415SP door 1,, X44.2-417SP door 2).*
Opening limit switch defective (door 1 or 2)	ALR	The closing limit switch is not detected when the door is supposed to be closed. ● *Check the wiring (X08.3-415SP door 1, X44.3-417SP door 2).*
Door motor overheating (door 1 or 2)	ALR then OSU	The door motor thermal probe indicates an overheating ● *Check the motor is not permanently powered* ● *Check the wiring (X08.5-415SP door 1, X44.5-417SP door 2).*

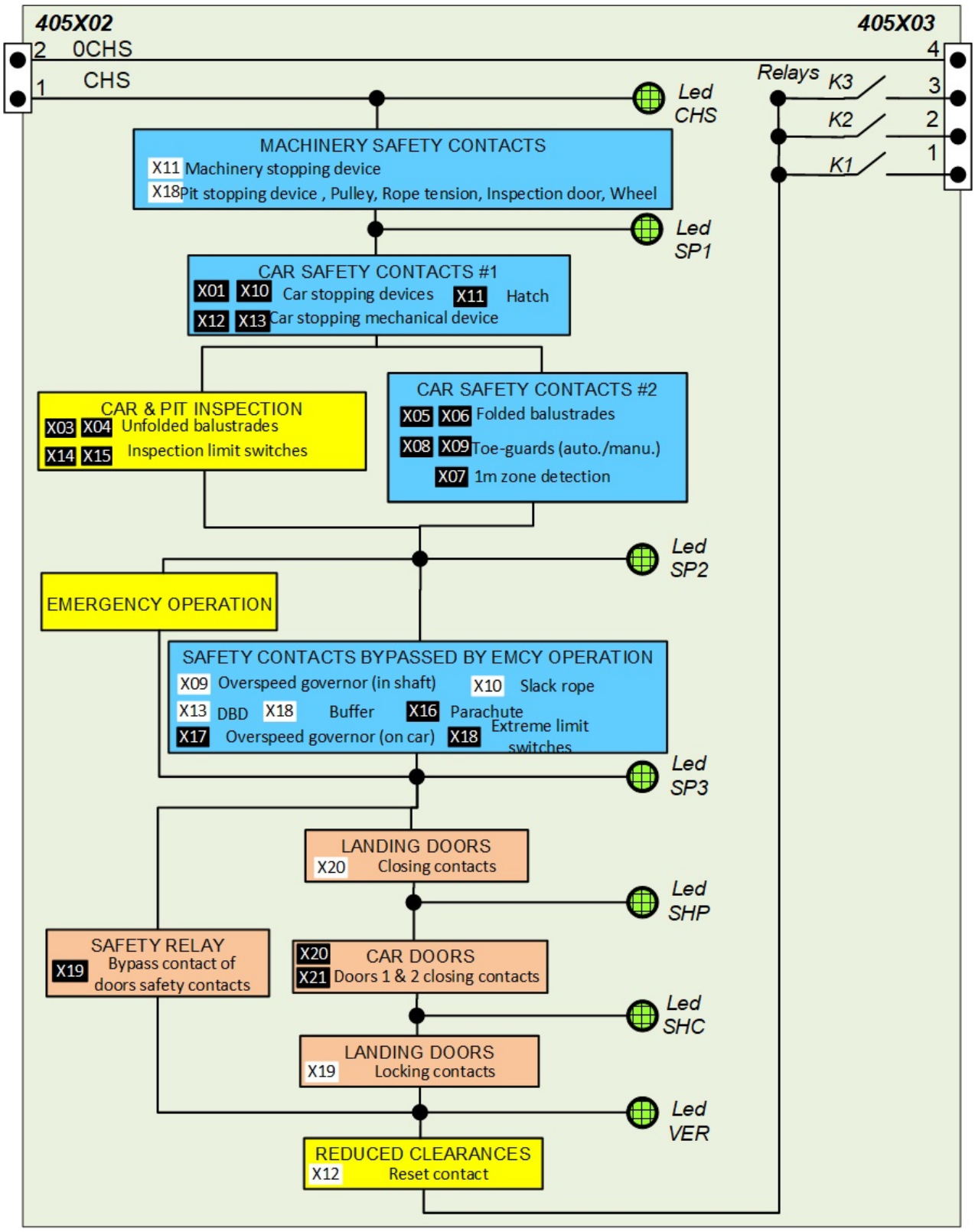
Safety chain faults

Title	Severity	Description
Memorized primary security engaged	OSM	One of the primary safety contact bypassed by emergency operation box (safety gear, end limit switch, overspeed governor) is or was open.
Emergency stop activated	OST	One of the primary safety contact (MCY stops, wheel, toe-guard...) is open
Safety chain power supply failure	OS	Supply voltage for the safety chain is missing ● *Check DJD4 earth leak circuit breaker in the controller cabinet.*
Car door safety contact defective	OSU	Despite several attempts to close the car door , the associated safety contact is still open ● *Check the position of the safety contact.*
Hall door safety contact	OSU	Despite several attempts to close the hall door , the associated safety contact is still open ● *Check the position of the safety contact.*
Hall door locking contact	OSU	Despite several attempts to lock the hall door , the associated safety contact is still open ● *Check the position of the safety contact.*
Locking safety contact open while moving	ALR	The landing door locking safety contact opened during movement of the car Le contact de verrouillage des portes palières s'est ouvert pendant un déplacement. ● Check the landing door lock contact and the hook on the car door.
DBD active	OSU	The door bypass device is engaged, while the lift is not in maintenance mode (inspection, emergency operation, temporary). ● *Check the DBD connectors X13 to X16 on 405SP board*
Safety chain closed with a door open	OSU	In user mode, the safety chain kept closed with a door totally open ● *Check the locking door contacts is not bypassed on connector X19 of the 405SP board*
Safety chain closed during stop in maintenance mode	ALR	In maintenance mode (inspection, emergency operation, temporary) the safety chain is closed while the car is stopped. ● *Check the primary safety contact are not bypassed.*
Safety chain closed while cam is released	OSU	In user mode, with car available at the floor, the landing doors locking contact is closed although the cam is not engaged. ● *Check the locking door contacts is not bypassed on connector X19 of the 405SP board*
Safety chain closed with loading pawls released	OSU	In user mode, with car stopped, the safety chain is closed although the loading pawls are released. ● *Check that the safety contacts of the loading pawls on connector X12 of the 405SP board*
Toe-guard safety contact isn't properly wired	ALR	The safety chain is closed in the low area of the despite the toe guard despite the toe guard safety contact isn't bypassed. ● *Check the wiring of the bypass switch on X07 of 415SP board* ● *Check the wiring of the toe guard safety contact on X08 (and X09 if there is a second toe guard)of 415SP board*
Toe-guard is bypassed beyond the low area of the shaft	OS	The safety contact of the toe guard is bypassed despite the car is not in the low area of the shaft and the toe guard is unfold ● *Check the wiring of the bypass switch on X07 of 415SP board*

Safety devices

Safety Chain

Below is a representation of the safety chain of the TETRA controller.
The safety chain supply voltage is connected on X02 of 405SP board, and as soon as the safety chain is closed, this voltage is provided on X03 terminal output of 405SP board for the contactors.



LEGEND :

- Technician boxes
- Primary safety contacts
- Doors safety contacts
- X.. 405SP board connections (Machinery)
- X.. 415SP board connections (Car roof)

UCM protection

In the case the lift has to be equipped with an unintended car movement protection mean (case determined by the lift manufacturer), the TETRA controller is a certified safety component according to 2014/33/UE directive fulfilling the functions of the following sub-systems of this protection mean :

- The sub-system for detecting an unintended car movement , constituted by the safety relay with sensor+magnets , which opens the safety chain as soon as the car leaves the unlocking zone with door open.
- The sub-system for activating the stopping mean , constituted by the set of contactors , which open as soon as the safety chain is open, thus disabling the power supply of the stopping mean which may be :
  - the safety brakes for an electric traction lift.
  - the motor of the pump in case of upward movement for a hydraulic lift.
  - the downward valves in case of downward movement for a hydraulic lift.

The characteristics of the TETRA controller regarding this feature are given below :

- For electric traction lifts :

Response time	Nominal : 40ms ; Maximum : 45ms
Stopping means supported	CE safety brakes as stopping mechanism of the uncontrolled car movement (2 x 3A -600W max)

- For hydraulic lifts :

Response time	Nominal : 42ms ; Maximum : 47ms
Stopping means supported	hydraulic hoist equipped with self-monitored system as stopping mechanism of the uncontrolled car movement.

IMPORTANT	*The total stopping time of the device is the sum of the response time given here and the reaction time of the stopping means (CE safety brakes).* *It is up to the lift manufacturer to ensure that the stopping distances according to this total stopping time, comply with the prescriptions of EN81-20 standard in chapter 5.6.7.5*

IMPORTANT	*The correct operation of the detection and activation of the protection device has to be check on commissioning. Use for that purpose the **Relevelling test** documented in Annex A9 of the installation manual ref B-DP-23-005*

IMPORTANT	*The correct operation of safety brakes (stopping mean) of the protection device has to be check on commissioning. Use for that purpose the **Brakes efficiency test** documented in Annex A8 of the installation manual ref B-DP-23-005*

IMPORTANT	*The correct operation of safety brakes self-monitoring has to be check on commissioning. Use for that purpose the **Brakes self-monitoring test** documented in Annex A2 of the installation manual ref B-DP-23-005*

Electronic boards

This chapter lists the connections of all of controller's electronic boards
Together with the image of the board, a table lists the informations of each of its connection points.
These tables look like this :

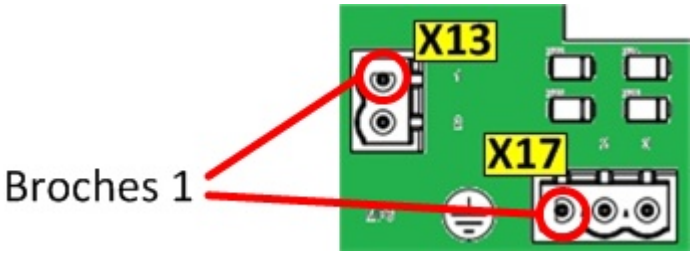
Connector	Pin	Type	Description
....	...	...	...

- ***Connector*** column*:*

  Label of the connector as seen on the picture of the board

- ***Pin*** column:

  Indicates the pin of the connector which is described. On the picture the pin 1 is always the closest to the connector label.
See the example below for X13 and X17 connectors of the 304SP board



- ***Type*** column*:*

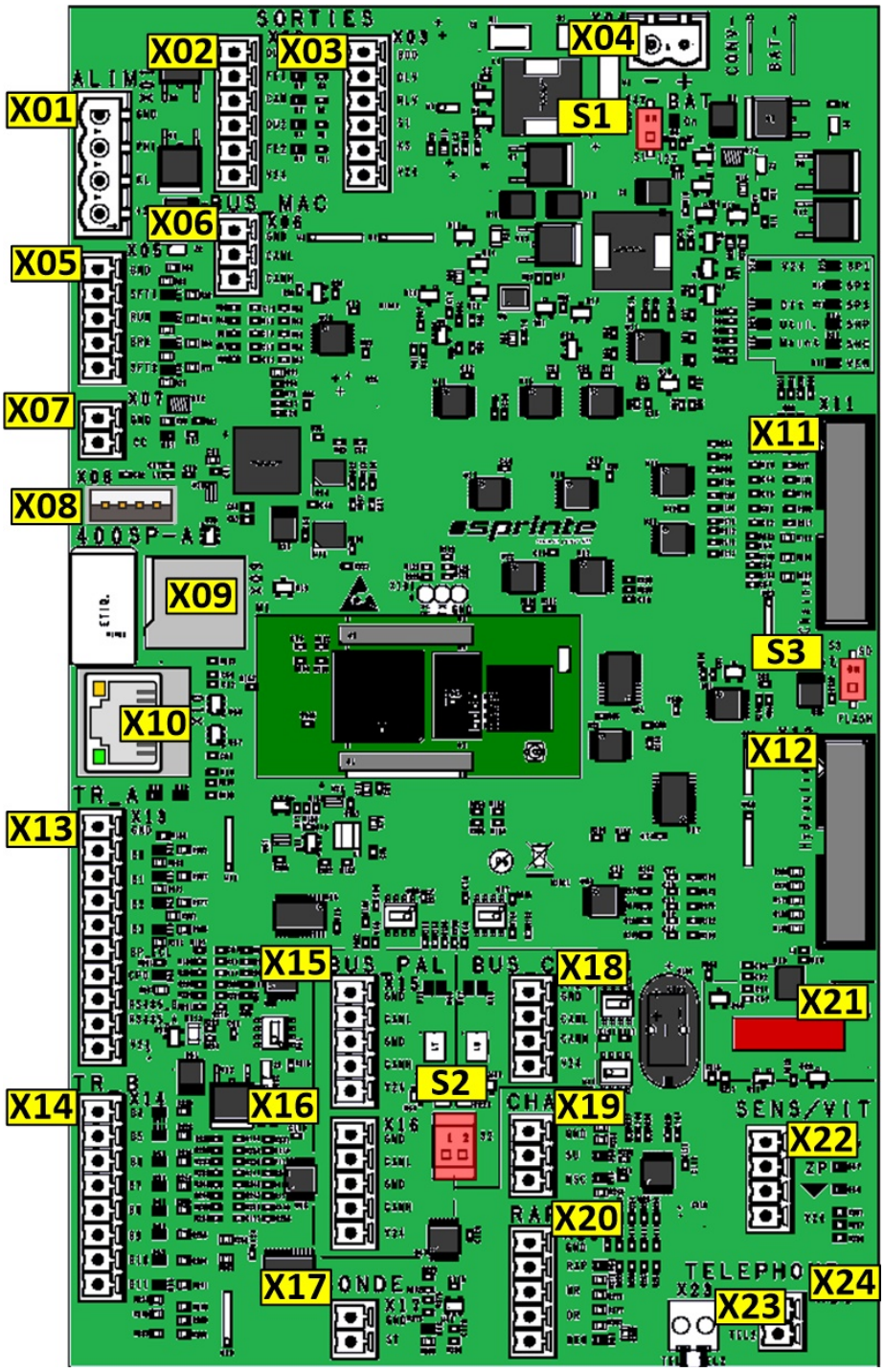
  Gives the type of the pin's electric signal according to the legend below:
  Input : Low voltage incoming signal on the board
  Output : Low voltage outgoing signal of the board.
  Bus : Bidirectionnal signal of indsutrial bus (CANopen, RS485...)
  LowPS : Very low voltage power supply signal(below 120V DC or 50V AC)
  InPS : Low voltage power supply (mostly 230V AC) to be brought onto the board
  OutPS : Low voltage power supply (mostly 230V AC) provided by the board.
  SCC : safety chain contact
  Media : Standard connection for media device.
  Other : specific connection.

- ***Description*** column

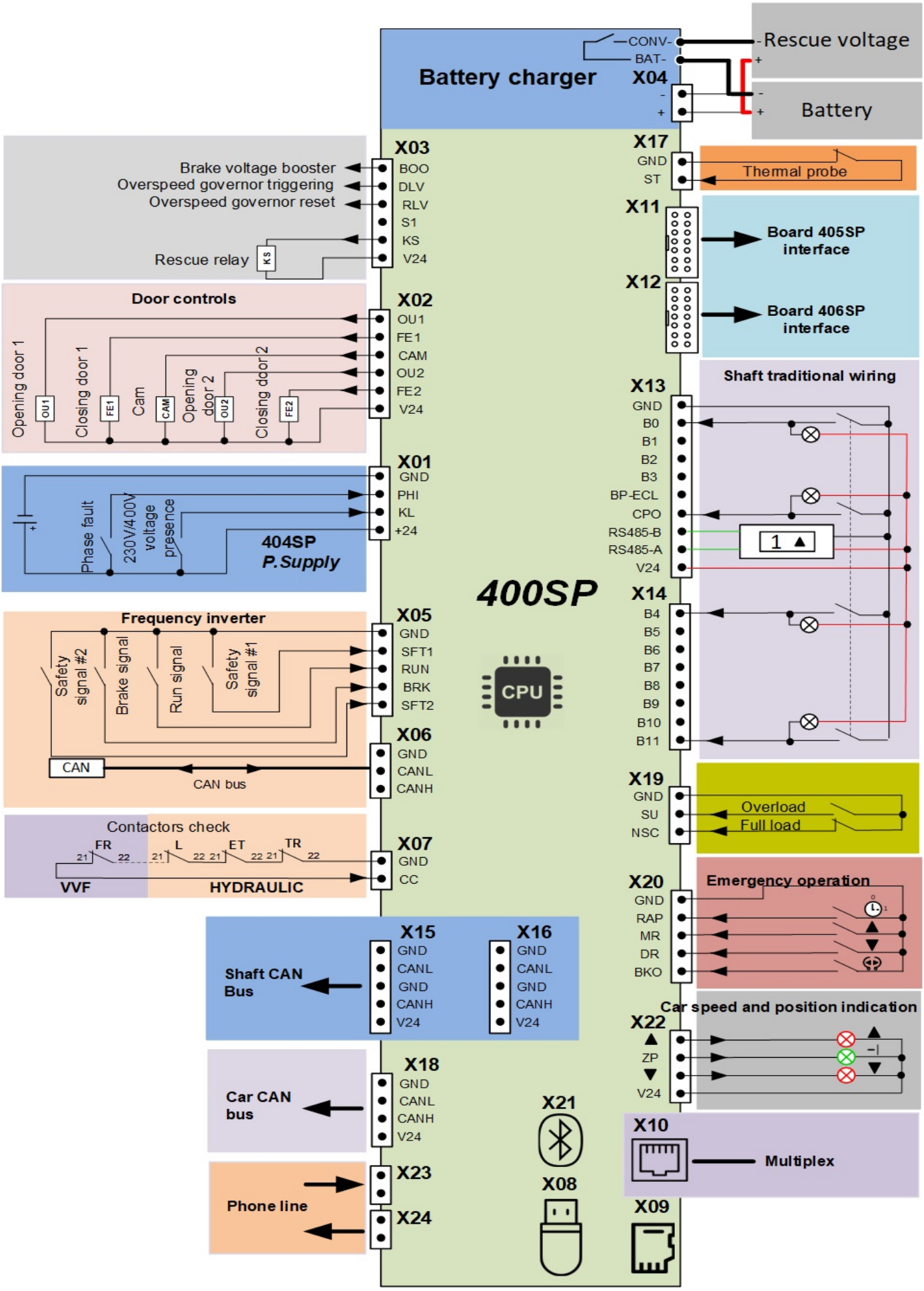
  Gives a detailed description of the pin's connection

400SP

400SP board is the mother board of the TETRA lift's controller.



Wiring synoptic :



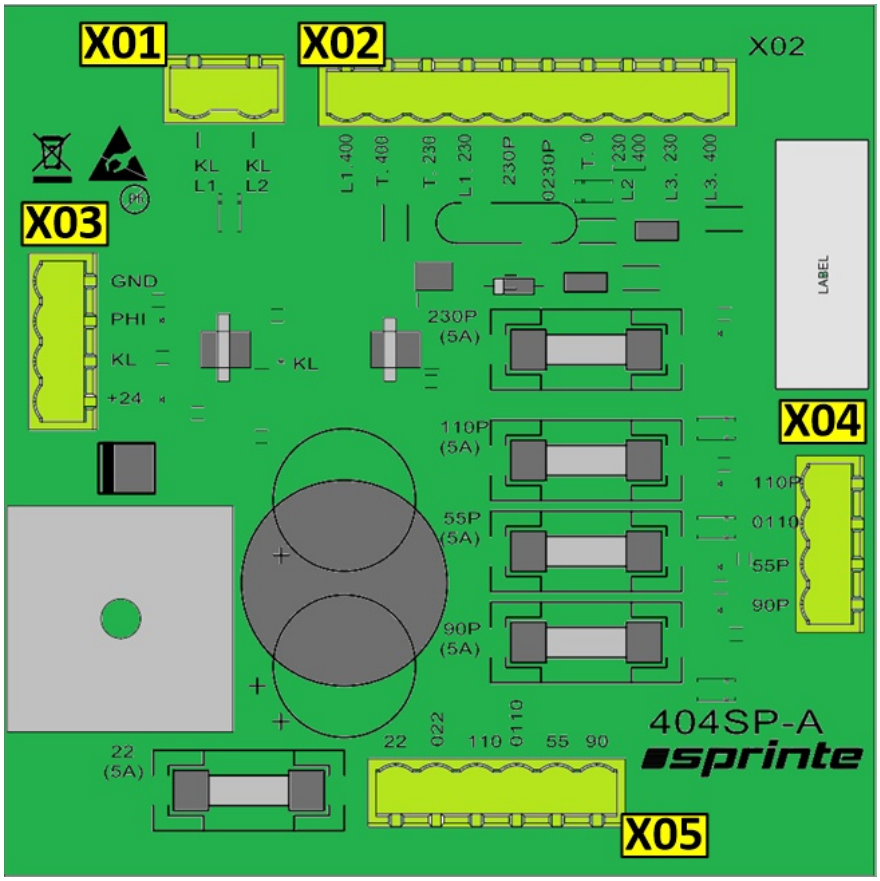
Connections detail :

Connector	Pin	Type	Description
X01	1 (GND)	LowPS	GND
	2 (PHI)	Input	Phase fault information
	3 (KL)	Input	Grid power supply presence information
	4 (+24V)	LowPS	+24V input from transformer
X02	1 (OU1)	Ouput	Door 1 opening contactor command
	2 (FE1)	Ouput	Door 1 closing contactor command
	3 (CAM)	Ouput	Retiring cam contactor command
	4 (OU2)	Ouput	Door 2 opening contactor command
	5 (FE2)	Ouput	Door 2 closing contactor command
	6 (V24)	LowPS	V24
X03	1 (BOO)	Ouput	Brake coil voltage boost control
	2 (DLV)	Ouput	Overspeed governor triggering
	3 (RLV)	Ouput	Overspeed governor engagement
	4 (S1)	Ouput	Generic output 1
	5 (KS)	Ouput	Rescue power supply relay control
	6 (V24)	LowPS	V24
X04	1 (-)	LowPS	0V Backup battery
	2 (+)	LowPS	24V Backup battery
X05	1 (GND)	LowPS	GND
	2 (SFT1)	Input	VF Drive safety 1 signal
	3 (RUN)	Input	VF Drive run signal
	4 (BRK)	Input	VF Drive brake signal
	5 (SFT2)	Input	VF Drive safety 2 signal
X06	1 (GND)	LowPS	GND
	2 (CANL)	Bus	Ligne basse du Bus CAN connecté au variateur
	3 (CANH)	Bus	Ligne haute du Bus CAN connecté au variateur
X07	1 (GND)	LowPS	GND
	2 (CC)	Input	Contactors check
X08		Media	USB Port
X09		Media	Micro SD card socket
X10		Media	RJ45 ethernet port
X11	1 to 20	Other	405SP Power/Safety board connection
X12	1 to 20	Other	406SP hydraulic board connection
X13	1 (GND)	LowPS	GND
	2 à 5 (B0 à B3)	Input/Ouput	0 to 3 users calls button/light
	6 (BP-ECL)	Input	Shaft light button
	7 (CPO)	Input/Ouput	Fireman key
	8 (RS485B)	Bus	RS485 bus B line for TFT display
	9 (RS485A)	Bus	RS485 bus A line for TFT display
	10 (V24)	LowPS	V24
X14	1 à 10 (B4 à B11)	Input/Ouput	4 to 11 users calls button/light
X15 X16	1 (GND)	LowPS	GND
	2 (CANL)	Bus	CAN bus low line for floors boards
	3 (GND)	LowPS	GND
	4 (CANH)	Bus	CAN bus high line for floors boards
	5 (V24)	LowPS	V24
X17	1 (GND)	LowPS	GND
	2 (ST)	Input	Main motor overheating thermal probe
X18	1 (GND)	LowPS	GND
	2 (CANL)	Bus	CAN bus low line for car boards
	3 (CANH)	Bus	CAN bus high line for car boards
	4 (V24)	LowPS	V24
X19	1 (GND)	LowPS	GND

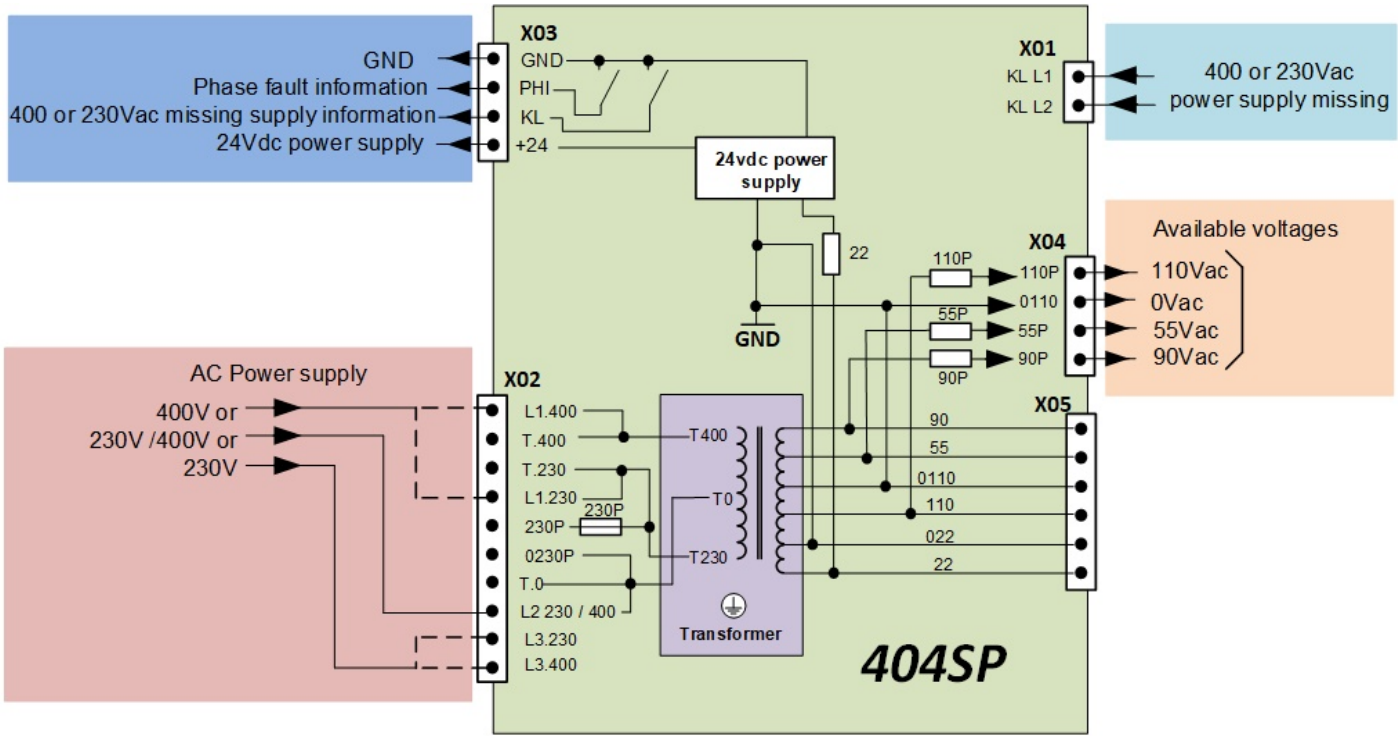
Connector	Pin	Type	Description
	2 (SU)	Input	Overload
	3 (NSC)	Input	Full load
X20	1 (GND)	LowPS	GND
	2 (RAP)	Input	Emergency operation main switch
	3 (MR)	Input	Emergency operation up button
	4 (DR)	Input	Emergency operation down button
	5 (BKO)	Input	Brake opening button
X21	1 à 10	Autre	339SP bluetooth board connection
X22	1 (▲)	Ouput	Car upward movement indication
	2 (ZP)	Ouput	Car in door zone indication
	3 (▼)	Ouput	Car downward movement indication
	4 V24	LowPS	V24
X23	1 à 2 (TEL1, TEL2)	Bus	Emergency phone line incoming
X24	1 à 2 (TEL1, TEL2)	Bus	Emergency phone line outgoing to car (via flat cable)
S1	1	Other	Dip-switch for battery voltage configuration OFF :12Vdc Battery ON : 24Vdc Battery
S2	1	Other	Dip-switch for Shaft CAN bus 120ohms termination activation
	2	Other	Dip-switch for Car CAN bus 120ohms termination activation
S3	1	Other	Dip- switch for manual reprogramming of the controller See procedure in Annex of this document

404SP

404SP board is the power supply board.



Wiring synoptic :

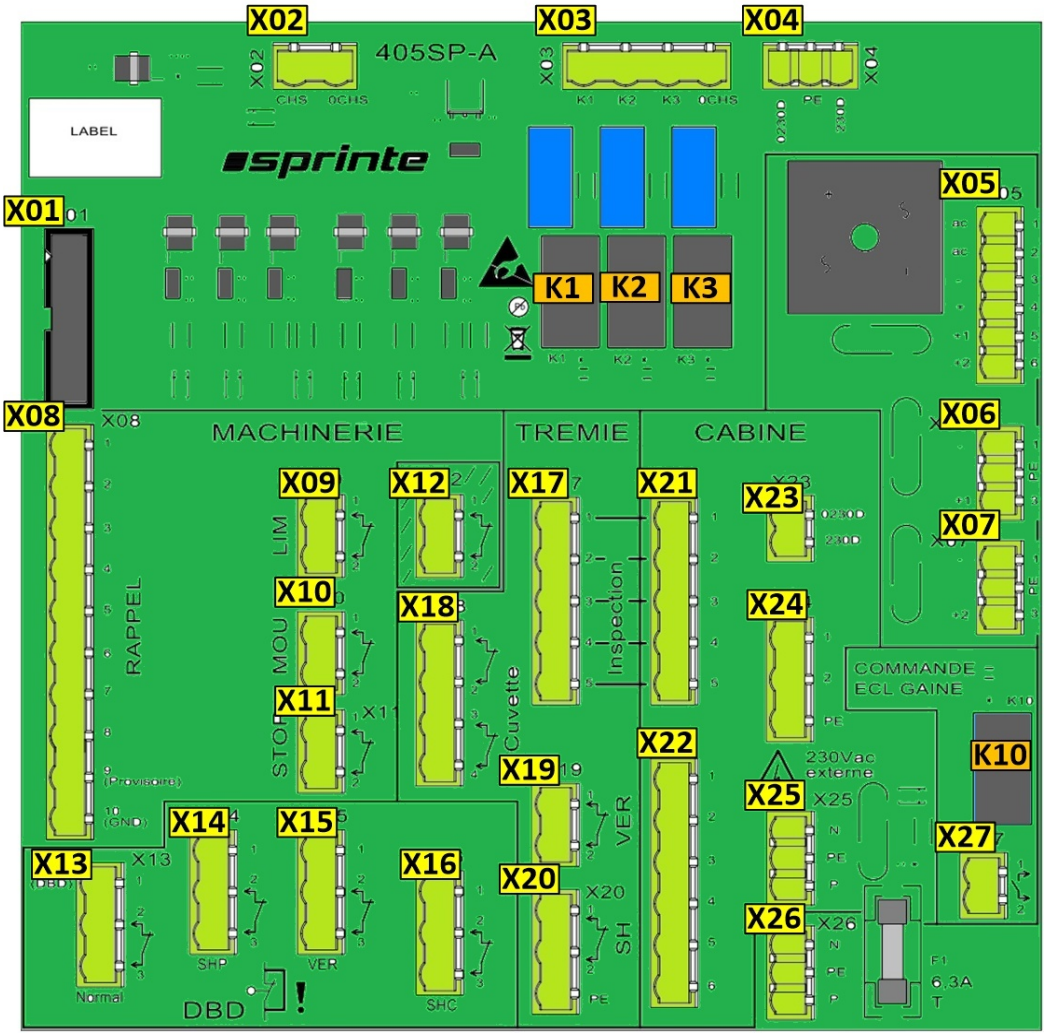


Connections detail :

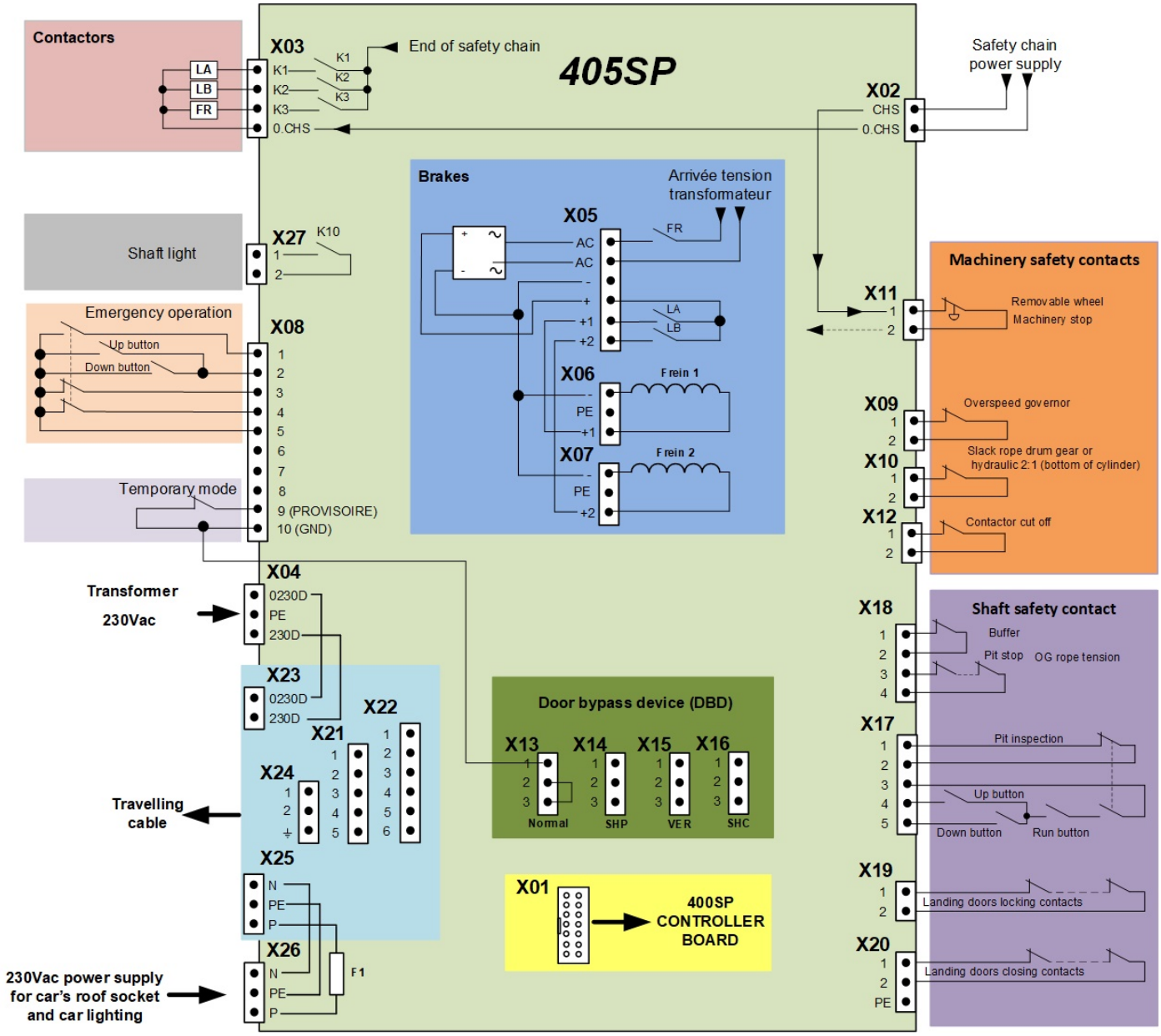
Connector	Pin	Type	Description
X01	1 KL L1 2 KL L2	InPS	Missing power supply detection 400Vac or 230Vac
X02	1 L1.400	InPS	400Vac main power supply phase 1
	2 T.400	OutPS	Transformer's 400Vac primary winding
	3 T.230	OutPS	Transformer's 230Vac primary winding
	4 L1.230	InPS	Three phase 230Vac main power supply phase 1
	5 230P 6 0230P	OutPS	230Vac protected(fused) main power supply for controller
	T .0	OutPS	Transformer's 0Vac primary winding
	L2.230/400	InPS	400Vac or three phase 230Vac main power supply phase 2
	L3.230	InPS	Three phase 230Vac main power supply phase 3
	L3.400	InPS	400Vac main power supply phase 3
X03	1 (GND)	LowPS	GND
	2 (PHI)	Output	Phase loss/fault information
	3 (K3)	Output	Missing power supply information
	4 (+24)	LowPS	24Vdc from grid power supply
X04	1 (110P)	OutPS	110Vac protected voltage(fuse)
	2 (0110)		0Vac voltages common point
	3 (55P)		55Vac protected voltage(fuse)
	3 (90P)		90Vac protected voltage(fuse)
X05	1 (90) 2 (55) 3 (0110) 4 (110) 5 (022) 6 (22)	InPS	Transformer's secondary windings

405SP

405SP board is the safety contacts and power elements board.



Wiring synoptic :



Connections detail :

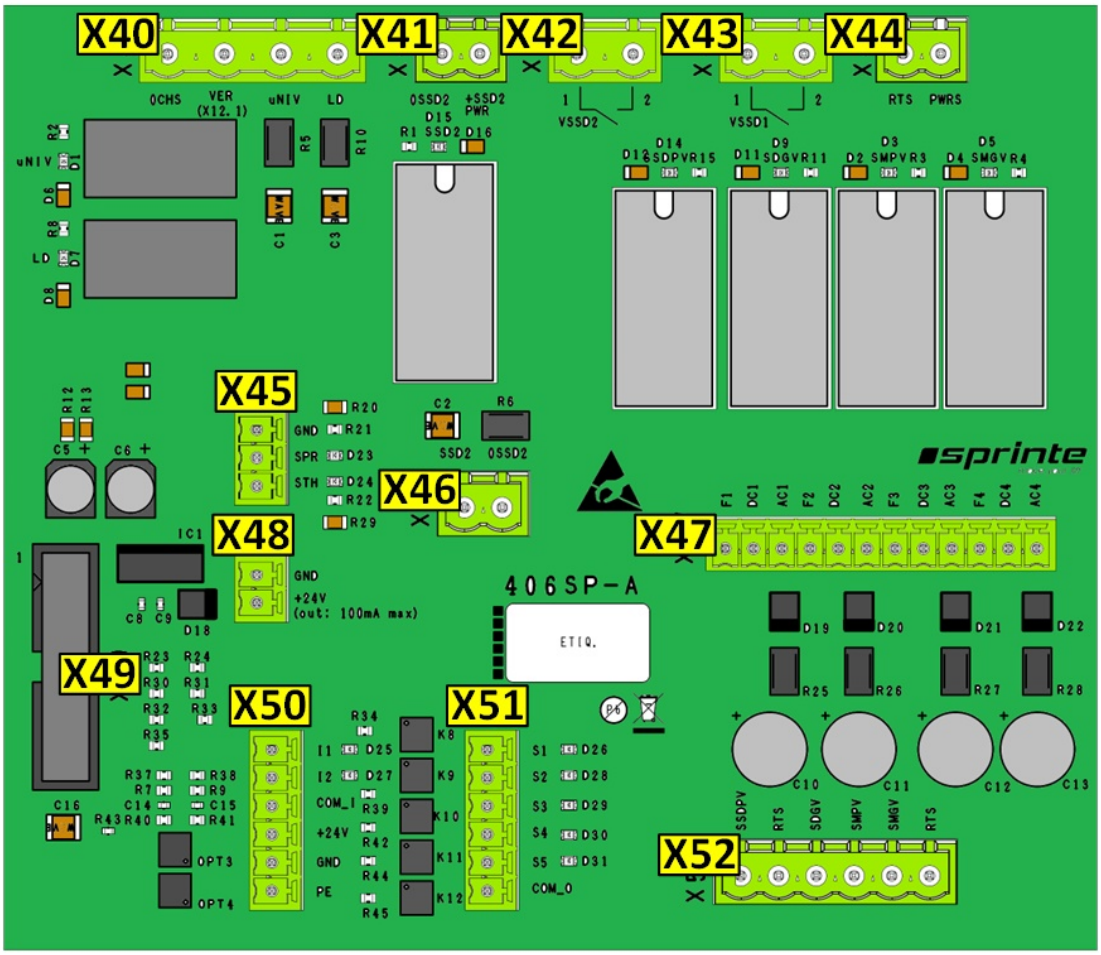
Connector	Pin	Type	Description
X01	1 to 20	Other	Connection with 400SP controller board
X02	1 (CHS) 2 (0CHS)	InPS	Safety chain power supply
X03	1 (K1) 2 (K2) 3 (K3) 4 (0.CHS)	Output Output Output OutPS	K1 contactor coil command K2 contactor coil command K3 contactor coil command K1,K2,K3 contactors coils common point
X04	1 (0230D) 2 (PE) 3 (230D)	InPS	230Vac RCD protected (0V point) Protective earthing 230Vac RCD protected (230V point)
X05	1 (AC) 2 (AC) 3 (-) 4 (+) 5 (+1) 6 (+2)	InPS OutPS InPS 	Alternative power supply for brakes Negative terminal of DC voltage for brakes Positive terminal of DC voltage for brakes (before power contacts) Positive terminal of DC voltage for brake 1 (after power contacts) Positive terminal of DC voltage for brake 2 (after power contacts)

Connector	Pin	Type	Description
X06	1 (-)		Negative terminal of DC voltage for brake 1
	2 (PE)	OutPS	Protective earthing
	3 (+)		Positive terminal of DC voltage for brake 2
X07	1 (-)		Negative terminal of DC voltage for brake 2
	2 (PE)	OutPS	Protective earthing
	3 (+)		Positive terminal of DC voltage for brake 2
X08	1	SCC	Emergency operation contact
	2	SCC	Emcy op. Up/Down buttons contact
	3	SCC	SP2 safety chain point
	4	SCC	Key set safety chain point
	5	SCC	Safety chain point above overspeed governor
	6	SCC	Landing doors locking contact safety chain point
	7	SCC	Safety cahin power supply
	8	SCC	SP1 safety chain point
	9	Input	Commissioning mode information
	10	LowPS	GND
X09	1 à 2	SCC	Overspeed governor contact
X10	1 à 2	SCC	Slack rope contact for geared motor drum, or cylinder bottom contact for 2:1 hydraulic lift.
X11	1 à 2	SCC	Machinery stopping device contact
X12	1à 2	Other	Contactors opening with brake opening button pressed
X13	1	Input	Door bypass device (DBD) engaged information
	2 à 3	SCC	Safety chain contact of door bypass device (DBD)
X14	1	Other	unused
	2 à 3	SCC	Landing doors closing contacts bypassed
X15	1	Other	unused
	2 à 3	SCC	Landing doors locking contacts bypassed
X16	1	Other	unsued
	2 à 3	SCC	Car doors closing contacts bypassed
X17	1 à 2	SCC	NC contact of pit inspection switch (from pit)
	3	SCC	NO contact of pit inspection switch (from pit)
	4	SCC	Pit inspection up button contact (from pit)
	5	SCC	Pit inspection down button contact (from pit)
X18	1 à 2	SCC	Buffer in shaft contact
	3 à 4	SCC	Rope tension/Pit stopping device contact
X19	1 à 2	SCC	Landing doors locking contacts
X20	1 à 2	SCC	Landing doors closing contacts
	3 (PE)	Other	Protective earthing
X21	1 à 2	SCC	NC contact of pit inspection switch (to car)
	3	SCC	NC contact of pit inspection switch (to car)
	4	SCC	Pit inspection up button contact (to car)
	5	SCC	Pit inspection down button contact (to car)
X22	1	SCC	SP1 safety chain point
	2	SCC	Safety chain point below buffer
	3	SCC	SHC safety chain point
	4	SCC	SHP safety chain point
	5	SCC	SP3 safety chain point
	6	SCC	VER safety chain point
X23	1 (0230D)	OutPS	230Vac RCD protected (0V point)
	2 (230D)		230Vac RCD protected (230V point)
X24	1	SCC	SP1 safety chain point
	2	SCC	Safety chain point below key set
	3 (PE)	Other	Protective earthing
X25	1 (N)		230Vac Neutral, for car lilght/Car's roof socket
	2 (PE)	OutPS	Protective earthing
	3 (P)		230Vac Phase, for car lilght/Car's roof socket

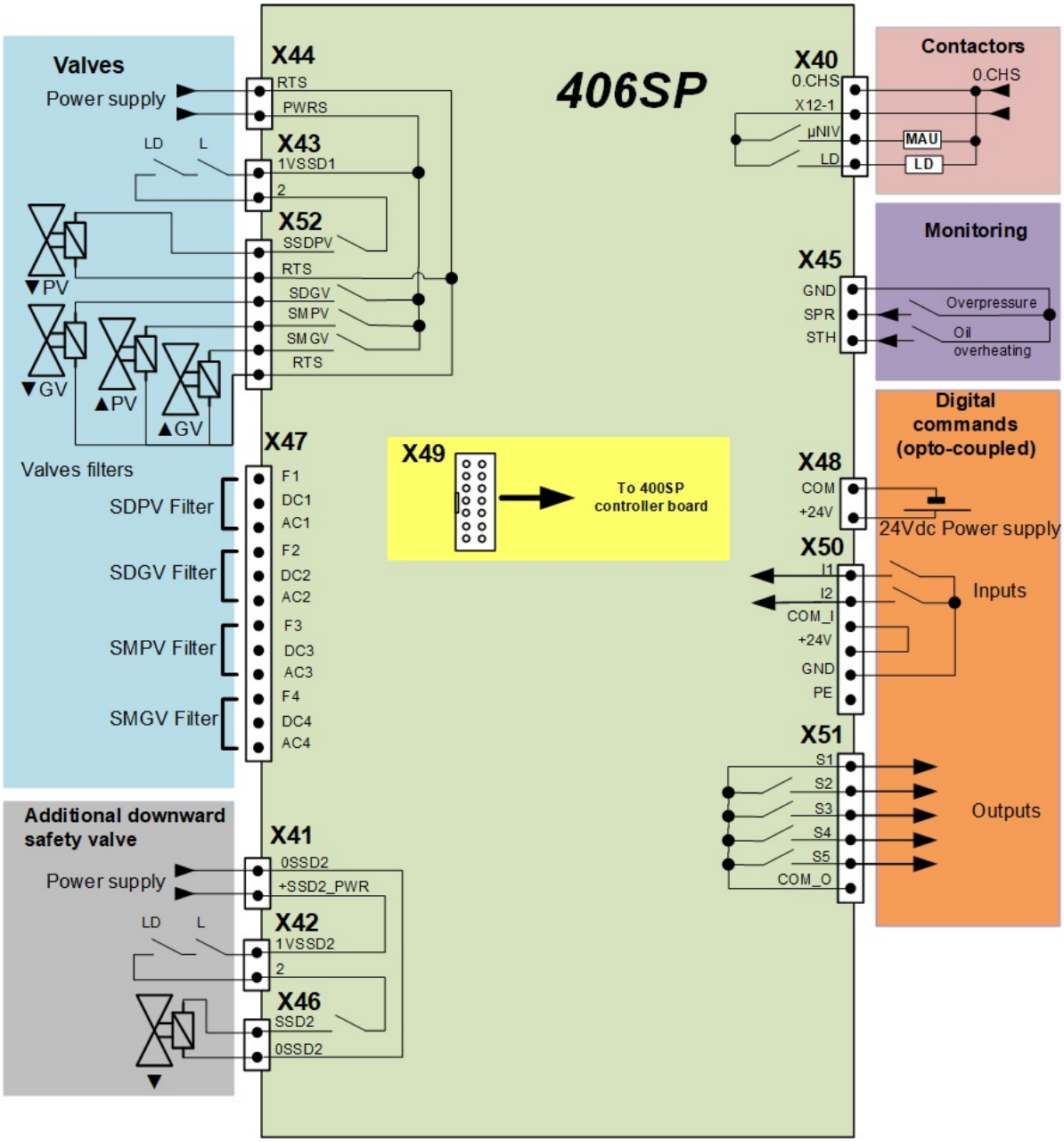
Connector	Pin	Type	Description
X26	1 (N)	InPS	230Vac Neutral, for car lilght/Car's roof socket
	2 (PE)		Protective earthing
	3 (P)		230Vac Phase, for car lilght/Car's roof socket
X27	1	Output	Relay dry contact for shaft's lighting command
	2		

406SP

404SP board is hydraulic hoists driving board.



Wiring synoptic :



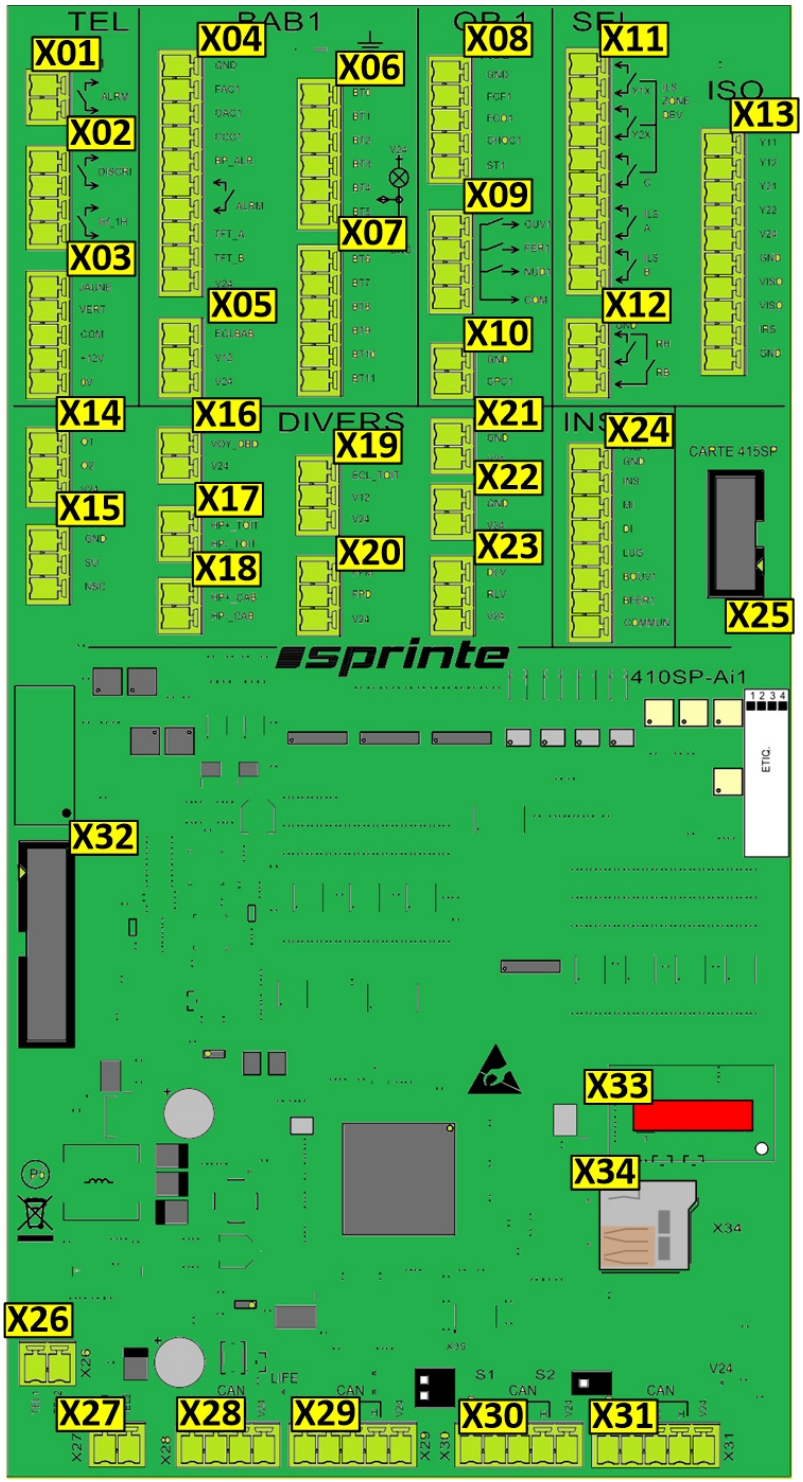
Connections detail :

Connector	Pin	Type	Description
X40	1 0CHS 2 X12-1	InPS	Voltage at the end of the safety chain
	3 µNIV	Output	Relevelling motor contactor command
	4 LD	Output	Low-speed and additive downward safety valves contactor command
X41	1 0SSD2 2 +SSD2_PWR	InPS	Power supply for additive safety downward valve
X42	1 VSSD2	OutPS	Positive voltage of the power supply for additive downward safety valve
	2	InPS	Positive voltage of the power supply for additive downward safety valve after power contacts
X43	1 VSSD1	OutPS	Positive voltage of the power supply for low-speed downward safety valve
	2	InPS	Positive voltage of the power supply for low-speed downward safety valve after power contacts
X44	1 RTS 2 PWRS	InPS	Power supply for Hi-speed downward valve, low speed and hi speed upward valves
X45	1 GND	LowPS	GND
	2 SPR	Input	Oil overpressure
	3 STH	Input	Oil overheating
X46	1 SSD2	Output	Additive downward safety valve command

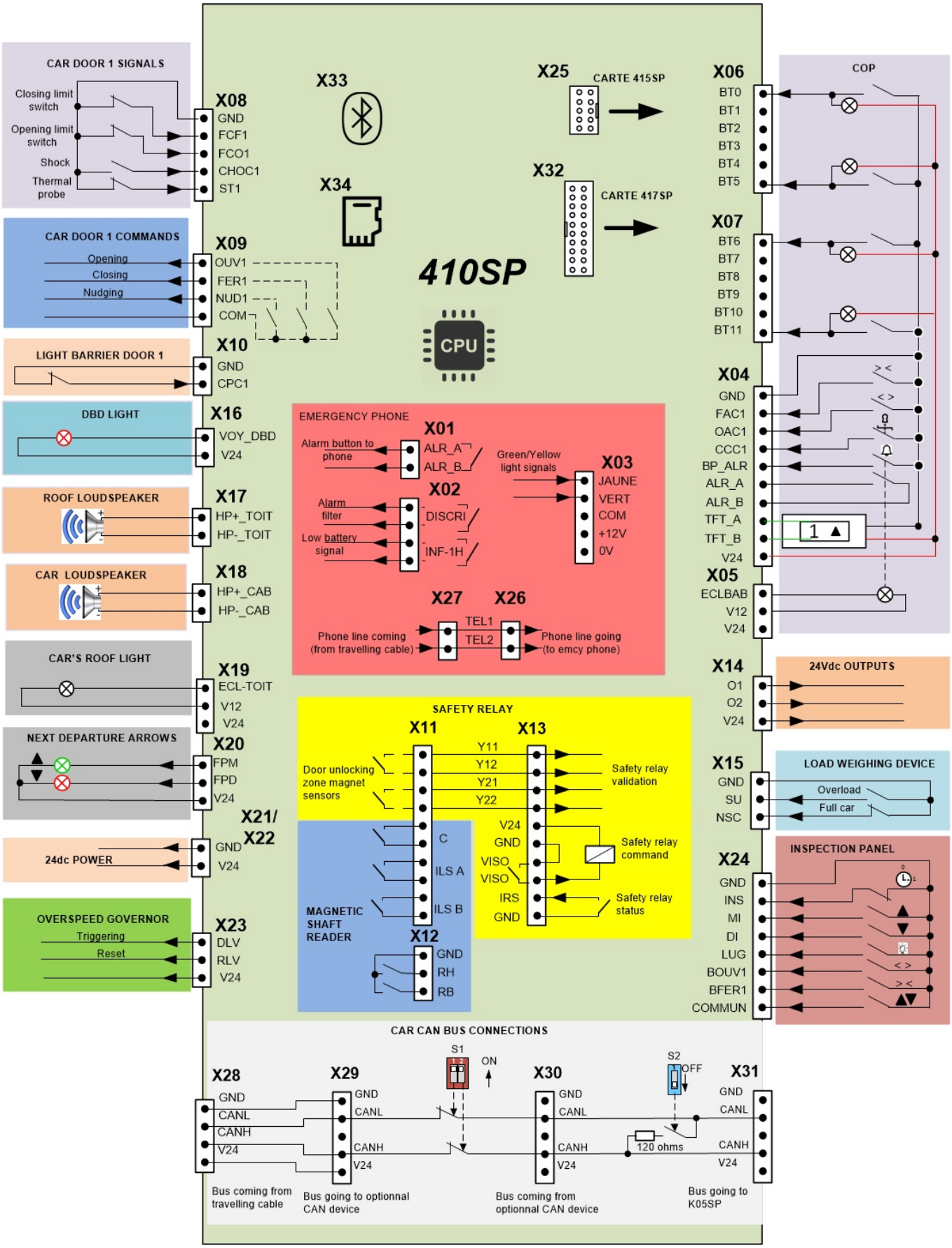
Connector	Pin	Type	Description
	2 0SSD2	OutPS	Negative voltage of the power supply for additive downward safety valve
X47	1 F1	Other	Low-speed downward valve filter
	2 DC1		Option for direct current low-speed downward valve
	3 AC1		Option for alternating current low-speed downward valve
	4 F2		Hi-speed downward valve filter
	5 DC2		Option for direct current hi-speed downward valve
	6 AC2		Option for alternating current hi-speed downward valve
	7 F3		Low-speed upward valve filter
	8 DC3		Option for direct current low-speed upward valve
	9 AC3		Option for alternating current low-speed upward valve
	10 F4		Hi-speed upward valve filter
	11 DC4		Option for direct current hi-speed upward valve
	12 AC4		Option for alternating current hi-speed upward valve
X48	1 GND	LowPS	GND
	2 +24V		As input: 24Vdc for digital commands interface with hydraulic hoist As output : 24Vdc available 100ma max, if no digital interface is used
X49	1 to 20	Other	Connection with 400SP controller board
X50	1 I1	Input	Opto-coupled digital input #1 for interface with hydraulic hoist
	2 I2	Input	Opto-coupled digital input #2 for interface with hydraulic hoist
	3 COM_I	Other	Common point for digital inputs
	4 +24V	LowPS	24Vdc for hydraulic hoist iterface board (from X48)
	5 GND	LowPS	GND
	6 PE	Other	Protective earthing
X51	1 S1	Output	Opto-coupled digital output #1 for interface with hydraulic hoist
	2 S2	Output	Opto-coupled digital output #2 for interface with hydraulic hoist
	3 S3	Output	Opto-coupled digital output #3 for interface with hydraulic hoist
	4 S4	Output	Opto-coupled digital output #4 for interface with hydraulic hoist
	5 S5	Output	Opto-coupled digital output #5 for interface with hydraulic hoist
	6 COM_O	Other	Common point for digital outputs
X52	1 SSDPV	Output	Low-speed downward safety valve command
	2 RTS	OutPS	Negative voltage of the power supply for valves
	3 SDGV	Output	HI-speed downward safety valve command
	4 SMPV	Output	Low-speed upward safety valve command
	5 SMGV	Output	Hi-speed upward safety valve command
	6 RTS	OutPS	Negative voltage of the power supply for valves

410SP

415SP board is the manager board of the different devices of the car.



Wiring synoptic :



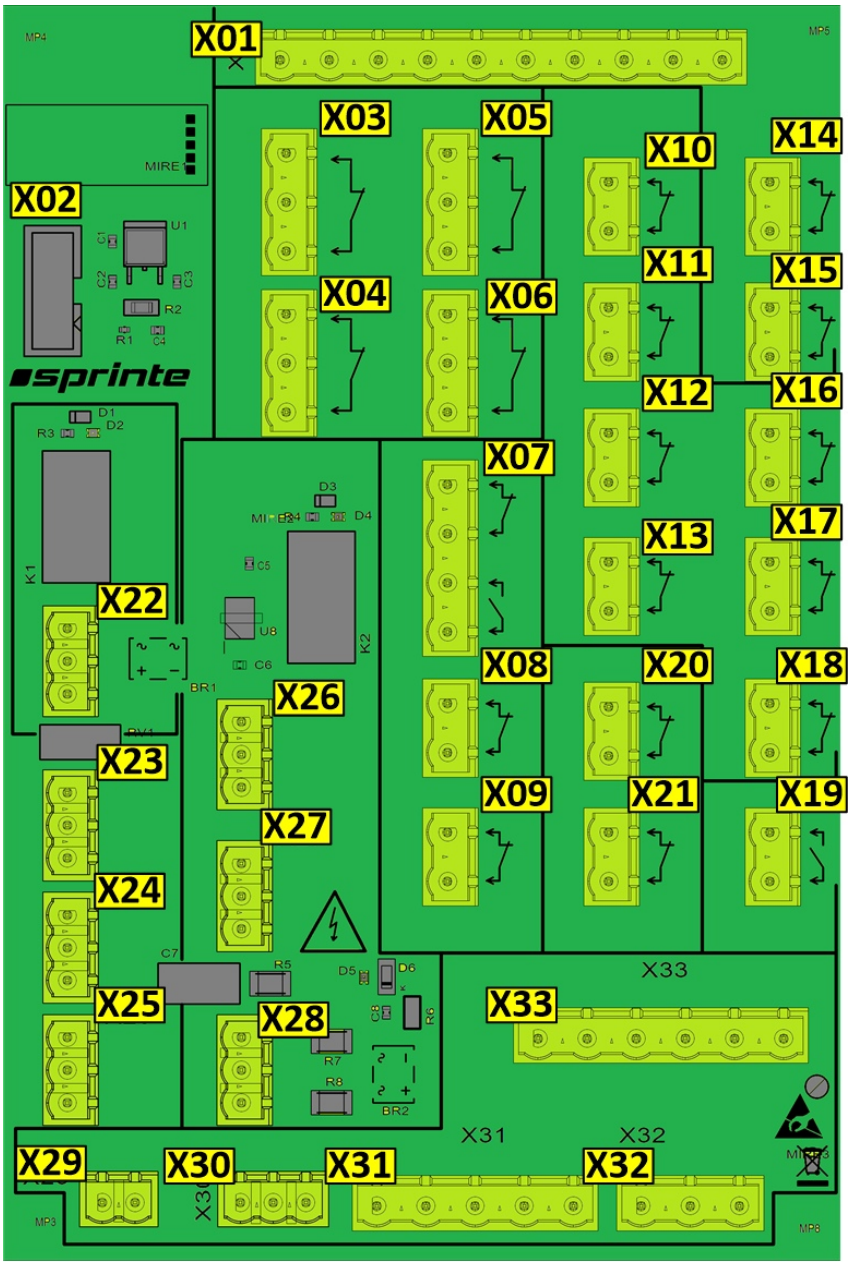
Connections detail :

Connector	Pin	Type	Description
X01	1 to 2	Other	Alarm button routing from COP (via X04 6&7) to emergency phone
X02	1 et 2	Output	Opto-insulated output for alarm button filter (to emergency phone)
	3 et 4	Output	Opto-insulated output for low battery information button filter ((to emergency phone)
X03	1	Input	Opto-insulated input for yellow pictogram
	2	Input	Opto-insulated input for green pictogram
	3	Other	Common point of opto-insulated inputs
	4	LowPS	V12
	5	LowPS	GND
X04	1	LowPS	GND
	2	Input	Door 1 closing button (FAC1)
	3	Input	Door 1 opening button (OAC1)
	4	Input	Car priority key (Attendant service) (CCC1)
	5	Input	Alarm button contact # 1 for controller
	6 et 7	Other	Alarm button contact # 2 routed to emergency phone (via X01 1&2)
	8 et 9	Bus	RS485 bus A&B lines for TFT display in car (TFT_A, TFT_B)
	10	LowPS	V24
X05	1	Output	Pilotage éclairage secours en cabine
	2	LowPS	V12
	3	LowPS	V24
X06	1 à 6	Input	Bouton usager configurable 1 à 6 (BT0 , ... BT5)
X07	1 à 6	Input	Bouton usager configurable 7 à 11 (BT6 , ... BT11)
X08	1	LowPS	GND
	2	Input	Fin de course fermeture porte 1 (FCF1)
	3	Input	Fin dec ourse ouverture porte 1 (FCO1)
	4	Input	Choc porte 1 (CHOC1)
	5	Input	Sonde thermique porte 1 (ST1)
X09	1	Output	Commande ouverture porte 1 (OUV1)
	2	Output	Commande fermeture porte 1 (FER1)
	3	Output	Commande de nudging porte 1 (NUD1)
	4	Other	COmmun de sorties des commandes de porte 1 (COM)
X10	1	LowPS	GND
	2	Input	Cellule porte 1 (CPC1)
X11	1 et 2	Other	Arrivée contact capteur 1 pour renvoi vers le relais de sécurité sur X13
	3 et 4	Other	Arrivée contact capteur 2 pour renvoi vers le relais de sécurité sur X13
	5	Input	Capteur de zone de déverrouillage (C)
	6	LowPS	GND
	7	Input	Capteur A d'aimant/écran de position (C)
	8	LowPS	GND
	9	Input	Capteur A d'aimant/écran de position (C)
	10	LowPS	GND
X12	1	LowPS	GND
	2	Input	Ralentisseur haut (RH)
	3	Input	Ralentisseur bas (RB)
X13	1 et 2	Other	Renvoi du contact du capteur 1 pour validation du relais de sécurité
	3 et 4	Other	Renvoi du contact du capteur 2 pour validation du relais de sécurité
	5	LowPS	V24
	6	LowPS	GND
	7 et 8	Output	Commande du relais de sécurité (VISO)
	9	Input	État du relais de sécurité (IRS)
	10	LowPS	GND
X14	1	Output	Sortie générique 1 (O1)
	2	Output	Sortie générique 2 (O2)
	3	LowPS	GND

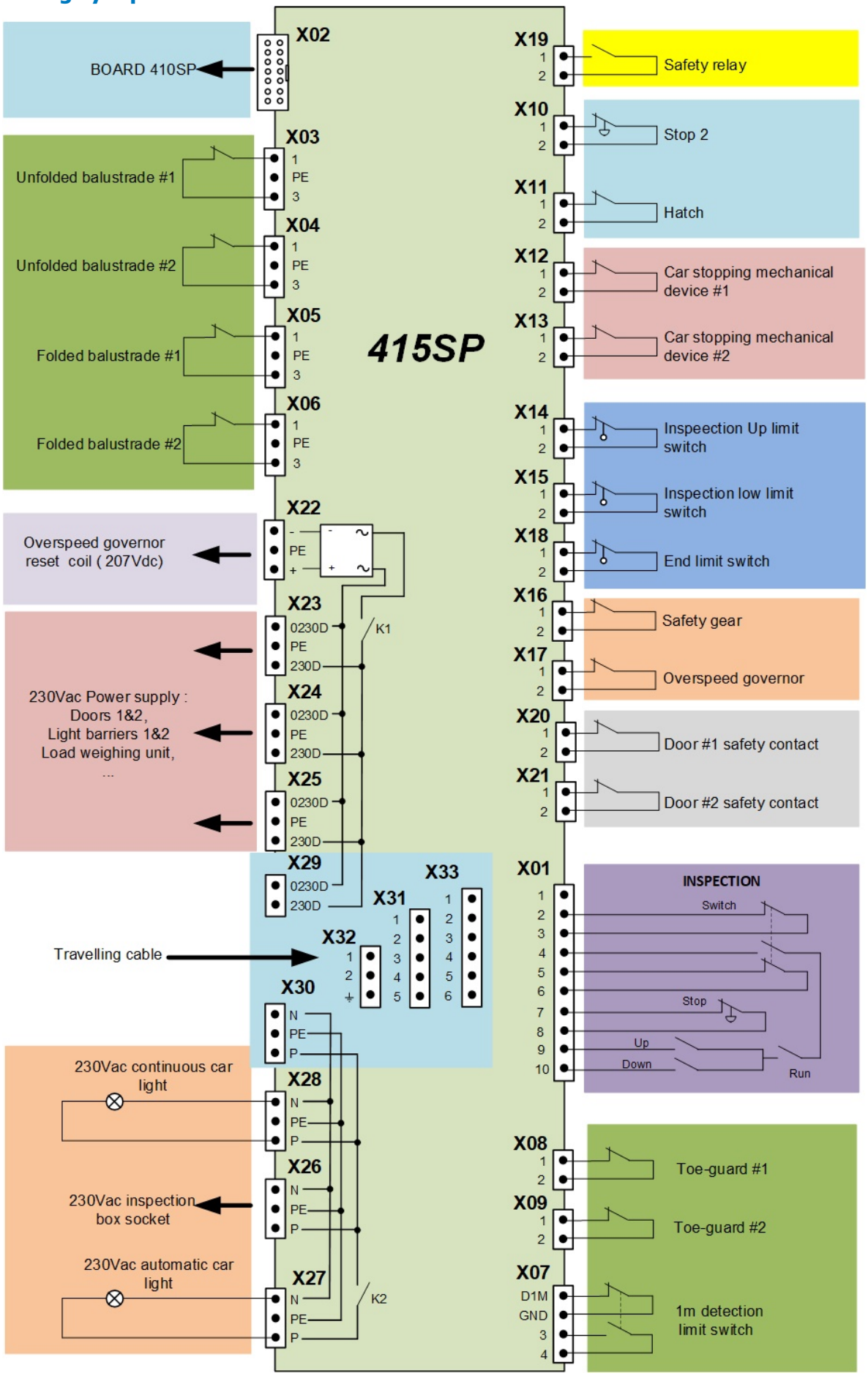
Connector	Pin	Type	Description
X15	1	LowPS	GND
	2	Input	Cabine en surcharge (SU)
	3	Input	Cabine plein (NSC)
X16	1	Output	Voyant DBD (VOY_DBD)
	2	LowPS	V24
X17	1 et 2	Other	Connexion haut-parleur toit de cabine
X18	1 et 2	Other	Connexion haut-parleur en cabine
X19	1	Output	Pilotage éclairage toit de cabine
	2	LowPS	V12
	3	LowPS	V24
X20	1	Output	Flèche prochain départ en montée (FPM)
	2	Output	Flèche prochain départ en descente (FPD)
	3	LowPS	V24
X21	1	LowPS	GND
X22	2		V24
X23	1	Output	Déclenchement du limiteur (DLV)
	2	Output	Réarmement du limiteur (RLV)
	3	LowPS	V24
X24	1	LowPS	GND
	2	Input	Commutateur d'inspection(INS)
	3	Input	Bouton montée inspection (MI)
	4	Input	Bouton descente inspection(DI)
	5	Input	Bouton lumière gaine (LUG)
	6	Input	Bouton ouverture porte 1 (BOUV1)
	7	Input	Bouton fermeture porte 1 (BFER1)
	8	Input	Bouton commun (COMMUN)
X25	1 à 10	Other	Connexion avec la carte de sécurité 415SP
X26	1 et 2	Other	Départ ligne téléphonique vers téléalarme
X27	1 et 2	Other	Arrive ligne téléphonique depuis le pendentif
X28	1	LowPS	GND
	2	Bus	Bus CAN Low (arrivée du pendentif) (CANL)
	3	Bus	Bus CAN High (arrivée du pendentif) (CANH)
	4	LowPS	V24
X29	1	LowPS	GND
X30	2	Bus	Bus CAN Low (CANL) pour équipements optionnels (aller X29-retour X30)
	3	LowPS	GND
	4	Bus	Bus CAN High (CANH) pour équipements optionnels (aller X29-retour X30)
	5	LowPS	V24
S2	1 et 2	Other	Dip-switches d'activation du bus CAN des équipements optionnels
X31	1	LowPS	GND
	2	Bus	Bus CAN Low (CANL) pour connexion K05SP
	3	LowPS	GND
	4	Bus	Bus CAN High (CANH) pour connexion K05P
	5	LowPS	V24
S1	1	Other	Dip- switch d'activation de la résistance de terminaison du bus CAN
X32	1 à 20	Other	Connexion avec carte d'extension 417SP
X33	1 à 10	Other	Connexion avec module bluetooth 339SP
X34	1 à 8	Other	Connecteur micro SD card

415SP

415SP board is the connection board for power supply of the devices and safety chain contacts , located on the car's roof.



Wiring synoptic :

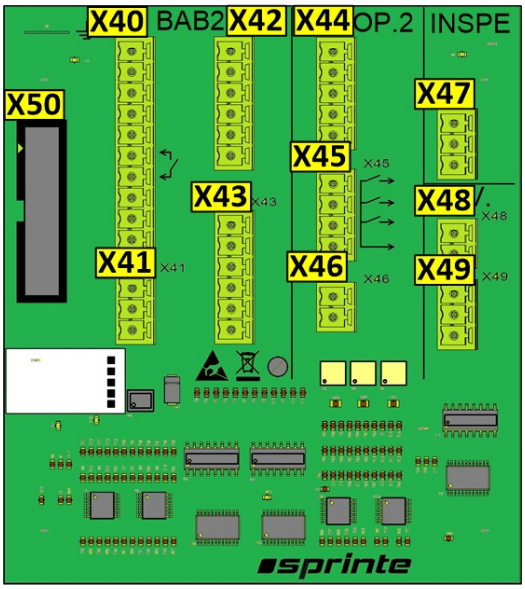


Connections detail :

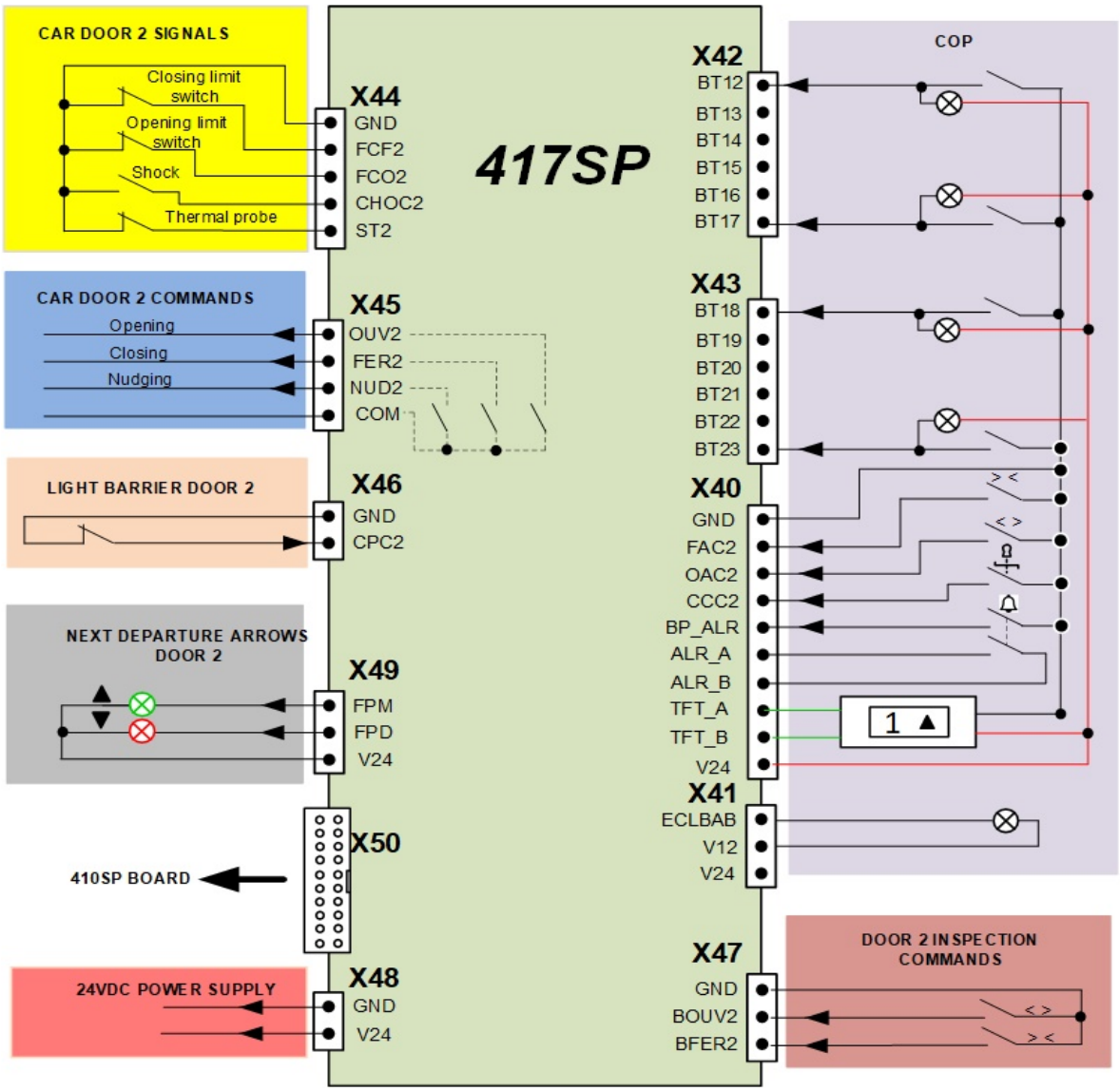
Connector	Pin	Type	Description
X01	2 to 3	SCC	NC contact of inspection switch
	4	SCC	NO contact of inspection switch
	5 to 6	SCC	NC contact of inspection switch
	7 to 8	SCC	Inspection box emergency stopping device
	9	SCC	Up button (in series with Run button and NO contact of inspection switch)
	10	SCC	Down button (in series with Run button and NO contact of inspection switch)
X02	1 to 10	Other	Connection with 410 SP car's roof management board
X03	1 et 3	SCC	Unfolded balustrade 1
	2	Other	Earth
X04	1 et 3	SCC	Unfolded balustrade 2
	2	Other	Earth
X05	1 et 3	SCC	Folded balustrade 1
	2	Other	Earth
X06	1 et 3	SCC	Folded balustrade 2
	2	Other	Earth
X07	1	Input	1m zone detection
	2	LowPS	GND
	3 to 4	SCC	Toe-guards bypass contac
X08	1 to 2	SCC	Automatic toe-guard door 1 (GP1)
X09	1 to 2	SCC	Automatic toe-guard door 2 (GP2)
X10	1 to 2	SCC	Seconde emergency stopping device (STOP2)
X11	1 to 2	SCC	Car hatch (TRAP)
X12	1 to 2	SCC	Car stopping mechanical device 1 (DM1)
X13	1 to 2	SCC	Car stopping mechanical device 1 (DM2)
X14	1 to 2	SCC	Inspection up limit witch (FCMI)
X15	1 to 2	SCC	Inspection down limit switch (FCDI)
X16	1 to 2	SCC	Safety gear (PARA)
X17	1 to 2	SCC	Overspeed governor (LIM)
X18	1 to 2	SCC	End limit switch(FCE)
X19	1 to 2	SCC	Safety relay (ISO)
X20	1 to 2	SCC	Door 1 closing contact (SHC1)
X21	1 to 2	SCC	Door 2 closing contact (SHC2)
X22	1 et 3	Output	Overspeed governor triggering (190-210Vdc)
	2	Other	Earth
X23 X24 X25	1	OutPS	Controller power supply 0Vac neutral (0230D)
	2		Earth
	3		Controller power supply 230Vac phase (230D)
X26	1	OutPS	Secondary power supply 0Vac neutral for inspection box socket
	2		Earth
	3		Secondary power supply 230Vac phase for inspection box socket
X27	1	OutPS	Secondary power supply 0Vac neutral for automatic car light
	2		Earth
	3		Secondary power supply 230Vac for automatic car light
X28	1	OutPS	Secondary power supply 0Vac neutral for permanent car light
	2		Earth
	3		Secondary power supply 230Vac phase for permanent car light
X29	1	InPS	Controller power supply 0Vac neutral (from travelling cable)
	2		Controller power supply 230Vac phase (from travelling cable)
X30	1	InPS	Secondary power supply 0Vac neutral (from travelling cable)
	2		
	3		Secondary power supply 230Vac phase (from travelling cable)
X31	1 to 5	SCC	Safety contacts coming and going to machine room
X32	1 to 2	SCC	Safety contacts coming and going to machine room
	3	Other	Earth
X33	1 to 6	SCC	Safety contacts coming and going to machine room

417SP

417SP board is the expansion board for the second door of the car and the additonal user's buttons



Wiring synoptic :

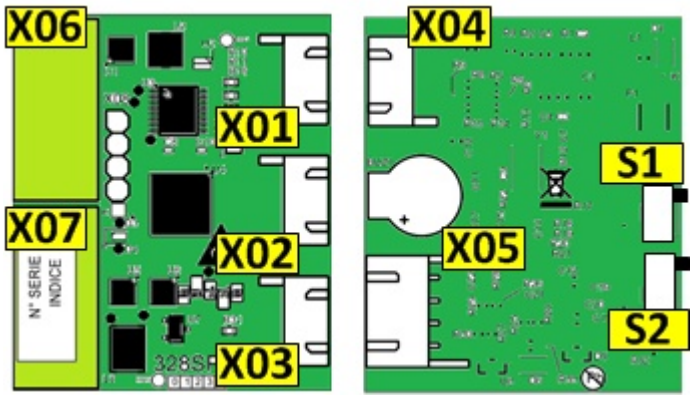


Connections detail :

Connector	Pin	Type	Description
X40	1	LowPS	GND
	2	Input	Door 2 closing button(FAC2)
	3	Input	Door 2 opening button(OAC2)
	4	Input	Lift attendant key (CCC2)
	5	Input	Alarm button contact #1 (to controller)
	6 &t7	Other	Alarm button contact #2 to emergency phone through X50
	8 & 9	Bus	RS485 bus lines for TFT display(TFT_A, TFT_B)
	10	LowPS	V24
X41	1	Output	Emergency light in car (ECLBAB)
	2	LowPS	V12
	3	LowPS	V24
X42	1 to 6	Input	Configurable users' call button 12 to 17 (BT12 , ... BT17)
X43	1 to 6	Input	Configurable users' call button 18 to 23 (BT18 , ... BT23)
X44	1	LowPS	GND
	2	Input	Door 2 closing limit switch (FCF2)
	3	Input	Door 2 opening limit swtich (FCO2)
	4	Input	Door 2 shock (CHOC2)
	5	Input	Door 2 thermal probe (ST2)
X45	1	Output	Door 2 opening command (OUV2)
	2	Output	Door 2 closing command (FER2)
	3	Output	Door 2 nudging command (NUD2)
	4	Other	Common point for door 2 outputs command (COM)
X46	1	LowPS	GND
	2	Input	Light barrier door 2(CPC2)
X47	1	LowPS	GND
	2	Input	Door 2 inspection opening button (BOUV2)
	3	Input	Door 2 inspection closing button (BFER2)
X48	1	LowPS	GND
	2		V24
X49	1	Output	Arrow for upward next departure (FPM)
	2	Output	Arrow for downward next departure (FPD)
	3	LowPS	V24
X50	1 to 20	Other	Connection with 410SP board

328SP / 428SP

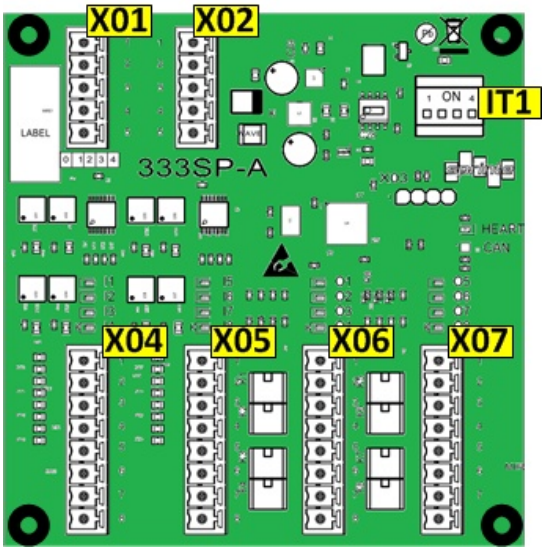
328SP or 428SP board is the landing board for hall calls and display on the floors; it is also used for the pit inspection box.



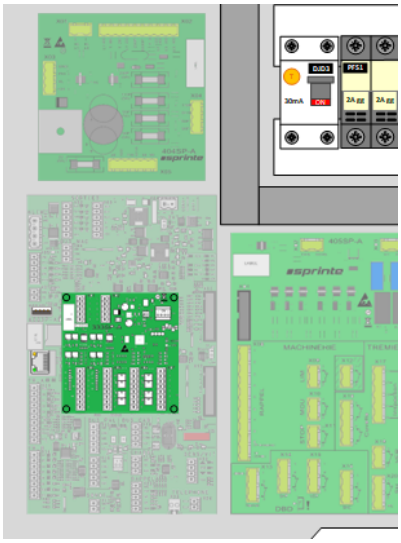
Connector	Pin	Type	Landing board Description	Pit inspection board Description
X01	1	LowPS	24Vdc	
	2	Output	Up hall call light	
	3	Input	Up hall call button	Inspection up button
	4	LowPS	GND	
X02	1	LowPS	24Vdc	
	2	Output	Down hall call light	
	3	Input	Down hall call button	Inspection down button
	4	LowPS	GND	
X03	1	LowPS	24Vdc	
	2	Output	Car presence light	
	3	Input	Shaft light button (lowest floor landing board) or customizable (Other floors landing boards)	Inspection switch
	4	LowPS	GND	
X04	1	LowPS	24Vdc	
	2	Output	Out of use light	
	3	Input	Fireman key or Out of use key	Inspection down button
	4	LowPS	GND	
X05	1	Bus	RS485 B (TFT display)	
	2	Bus	RS485 A (TFT display)	
	3	LowPS	GND	
	4	LowPS	24Vdc	
X06 X07	1	LowPS	GND	
	2	Bus	CAN1 Low (Landing BUS)	
	3	LowPS	CAN Gnd	
	4	Bus	CAN1 High (Landing BUS)	
	5	LowPS	24Vdc	
S1		Input	Dip for board identification mode activation (associated door & floor)	OFF Position  ON Position 
S2		Input	Dip for CAN1 (Landing BUS) 120ohms termination activation	OFF Position  On Position 

333SP / 433SP

333SP or 433SP board is the generic IO expansion board (stricken floor, remote control,etc..). It is usually located close to the controller but may be located everywhere in the Lift area (shaft, landings, car...) thanks to its CAN bus connection 8 boards maximum may be installed, thus bringing up to 64 additional inputs & 64 additional outputs



333SP board has to be mounted over the 400SP board in place of the metallic protection plate.



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Connector	Pin	Type	Description
X01 X02	1	LowPS	GND
	2	Bus	CAN Low
	3	LowPS	CAN Gnd
	4	Bus	CAN High
	5	LowPS	24Vdc
X04	1 to 4	Input	Opto-insulated inputs 1 to 4
	5	Input	Common point for inputs 1 to 4 (24Vdc or GND)
	6		*not connected*
	7	LowPS	24Vdc
	8	LowPS	GND
X05	1 to 4	Input	Opto-insulated inputs 5 to 8
	5	Input	Common point for inputs
	6		*not connected*
	7	LowPS	24dc
	8	LowPS	GND
X06	1 to 4	Output	Opto-insulated outputs 1 to 4
	5	Output	Common point for ouputs 1 to 4 (24Vdc or GND)
	6		*not connected*
	7	LowPS	24Vdc
	8	LowPS	GND
X07	1 to 4	Output	Opto-insulated outputs 5 to 8
	5	Output	Common point for ouputs 5 to 8 (24Vdc or GND)
	6		*not connected*
	7	LowPS	24Vdc
	8	LowPS	GND
IT1	1 to 3	Input	Dip for board identification (1 to 8)
	4	Input	Dip for CAN bus 120ohms termination activation

ANNEX : Proceedings

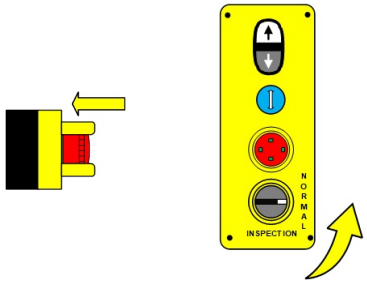
This annex describes the different proceedings to apply , in order to ensure misceallaneous functions required on the lift :but also maintenance functions of the controller.

Return to normal operation from pit inspection

This proceedings for return to normal operation after pit inspection mode is required in chapter 5.12.1.5.2.2.c) of EN81-20 standard

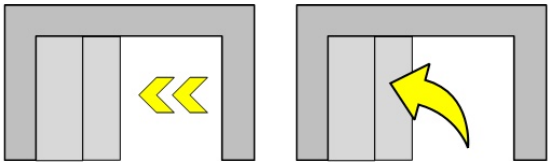
STEP 1

Once you are done with your intervention, push the emergency stop device near the shaft access and switch bac k to normal operation.
The car doors are closing in case they are opened



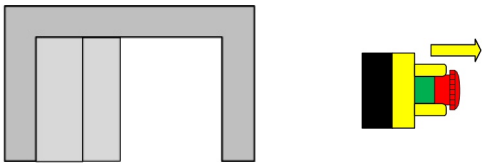
STEP 2

Open the landing door and exit from the shaft



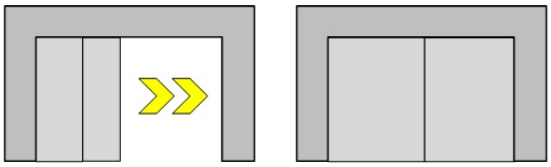
STEP 3

Once outside the shaft , with landing door still opened, pull the emergency stop device near the shaft access.



STEP 4

Close the landing door assuming it's properly locked.

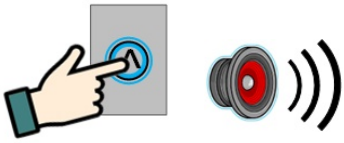


STEP 5

You have now to press the landing call button for 5s within the next 15s.

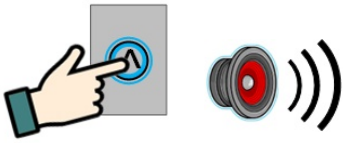
STEP 6

When the button beeps, the return to normal operation of the lift has **succeeded**



FAILURE

If the button doesn't beep, the return to normal operation of the lift has **failed.**
Reopen the landing door and get back to STEP 4

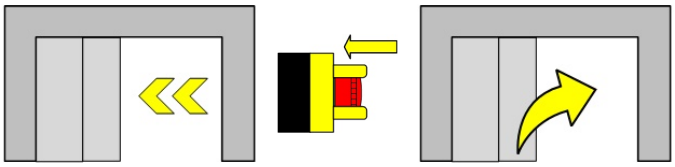


Accessing the shaft with reduced clearance in the headroom

NOTE *This procedure is valid only for a reduced clearance systems realized with movable stops*

STEP 1

First access in shaft through the landing door of the lowest floor, and push the emergency stop device as soon as you enter the pit.

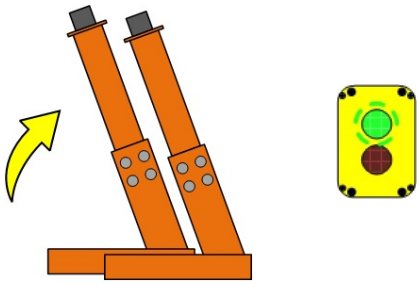


STEP 2

Red light is ON, indicating you that no refuge spaces is insured.

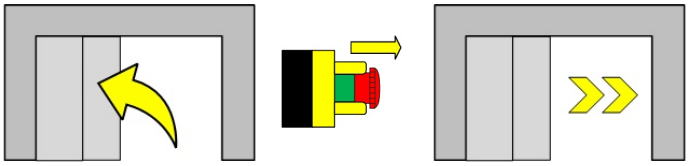
STEP 3

Extend all of the movable stops installed in the pit.
Once the movable stops extended, the green light shall be ON, indicating that refuge spaces are insured.



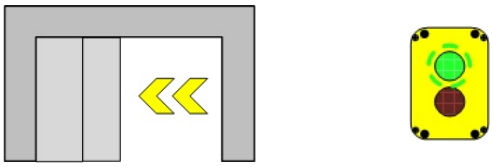
STEP 4

Exit the shaft and pull the emergency stop device, before closing the doors.



STEP 5

Afterwards, open the landing door allowing acces to the car roof, the green light shall be ON.

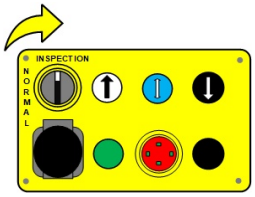


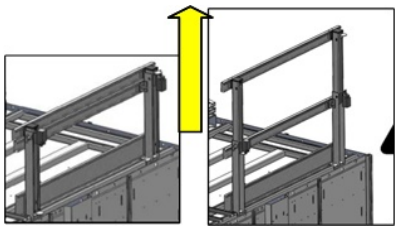
DANGER

Never access the shaft if the red light is ON : the refuge spaces are not insured, there is a risk of crushing !!!

STEP 6

Once on the car roof, switch to inspection mode and extend the balustrade.

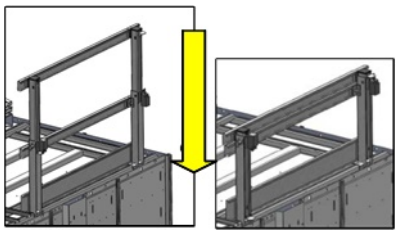


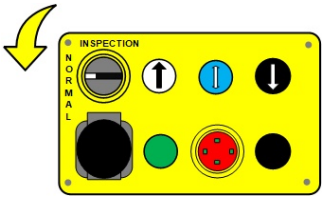


NOTE *You can now move the car in inspection in complete safety: the movable stop deployed in the pit prevents the cabin from moving at the top of the shaft, creating a refuge space for you.*

STEP 7

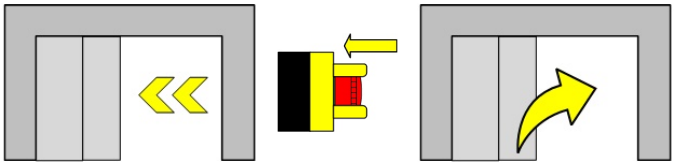
Once you are done with your intervention, lower the balustrade and switch back to normal operation. You have to to return to the pit to lower the movable stop.





STEP 8

Go back to the lowest floor, and push the emergency stop device as soon as you enter the pit.

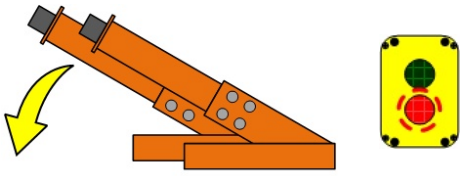


ÉTAPE 9

Green light is ON, indicating you that the refuge spaces are still insured.

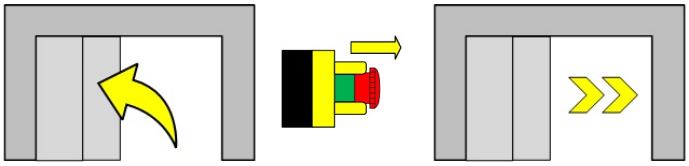
ÉTAPE 10

Lower all ofthe movable stops in pit.
Once done, the red light shall be ON, indicating that the refuge spaces are no more insured.



STEP 11

Exit the shaft and pull the emergency stop device, before closing the doors.



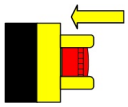
IMPORTANT	*To get the lift back in service, you have to go to the machinery space to carry out the return to normal operation. See "Resetting reduced clearances" procedure.*

Accessing the shaft with reduced clearance in the pit

NOTE *This procedure is valid only for a reduced clearance system realized with movable stops*

STEP 1

First access in shaft through the landing door of the lowest floor, and push the emergency stop device as soon as you enter the pit.

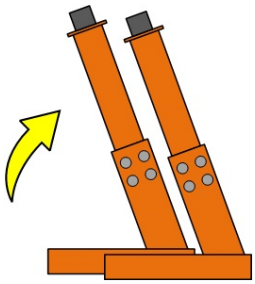


STEP 2

Red light is ON, indicating you that no refuge spaces is insured.

STEP 3

Extend all of the movable stops installed in the pit.
Once the movable stops extended, the green light shall be ON, indicating that refuge spaces are insured.

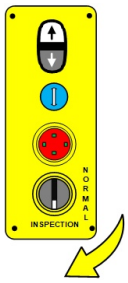


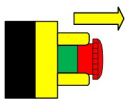
DANGER

Do not stay in pit if the red light is still ON : the refuge spaces are not insured, there is a risk of crushing !!!

STEP 6

Switch to inspection mode and pull the emergency stop device near the shaft access

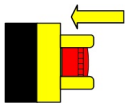


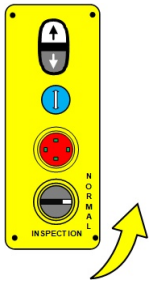


NOTE *You can now move the car in inspection in complete safety: the movable stop deployed in the pit prevents the cabin from moving at the bottom of the shaft, creating a refuge space for you.*

STEP 7

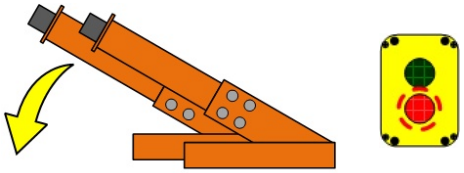
Once you are done with your intervention, push the emergency stop device near the shaft access and switch bac k to normal operation.





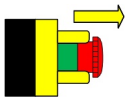
ÉTAPE 8

Lower all ofthe movable stops in pit.
Once done, the red light shall be ON, indicating that the refuge spaces are no more insured.



ÉTAPE 9

Exit the shaft and pull the emergency stop device, before closing the doors.



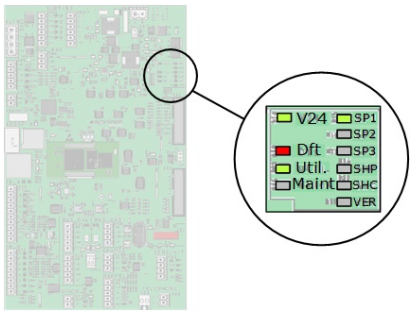
IMPORTANT	*To get the lift back in service, you have to go to the machinery space to carry out the return to normal operation. See "Resetting reduced clearances" procedure.*

Return to normal operation after accessing the shaft with reduced clearances

NOTE	*This procedure is valid only for a reduced clearance systems realized with movable stops*

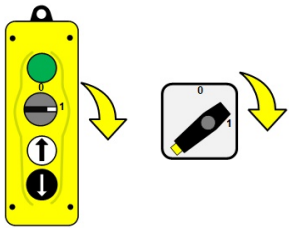
ÉTAPE 1

Sur la carte contrôleur 400SP, les leds de la chaîne de sécurité sont OFF à partir du point SP2. L'ascenseur est en hors-service (led Dft rouge ON) en mode usager (led Util. verte ON)



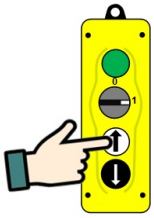
ÉTAPE 2

Passez en manoeuvre de rappel et maintenez la clé Set activée



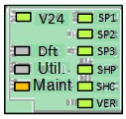
ÉTAPE 3

Appuyez sur Montée (ou Descente sleon la position de la cabine) pour effectuer un déplacement
L'armoire demande la fermeture des portes.



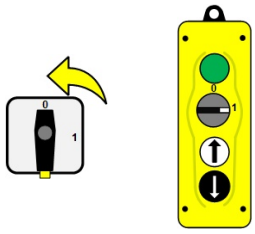
ÉTAPE 4

Quand les portes sont fermées, les leds de chaîne de sécurité sont toutes sur ON.
Le déplacement va démarrer.



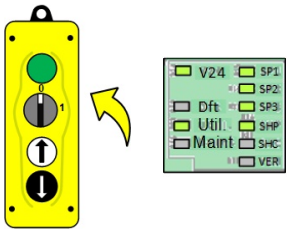
ÉTAPE 5

Vous pouvez relâcher la clé set et le bouton de la manoeuvre de rappel



ÉTAPE 6

Quitter la manoeuvre de rappel; après 5s ,l'ascenseur est en service (led Dft rouge OFF) en mode usager (led Util. verte ON). La chaîne de sécurité est fermée jusqu'au contacts de porte (led SP3)



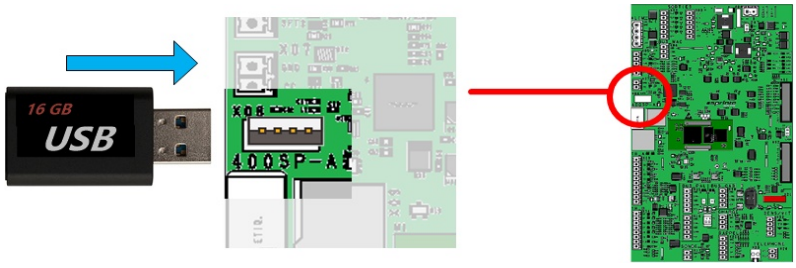
TETRA software update process

To perform the software update of the TETRA controller , download file ***UpdateTetra_vXXXX.YY.tar.gz.gpg*** on our website https://www.sprinte.eu or by using the followong QR code.
(You may also contact our after-sales department technique@sprinte.eu to get this file).
For security matter, the controller only accept, these kind of files authenticated and provided by Sprinte for the update process.

NOTE	*If the file you have downloaded or have been sent to you is a **ZIP** file, you necessarily have to unzip this file before to use it. This update file shall have the extension **.GPG** to be processed by the 400SP controller board.*

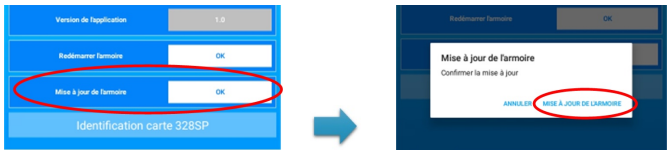
STEP 1

Copy the file at the root of an empty USB key and insert it in the USB socket of the 400SP board; wait a few seconds for the key to be detected.



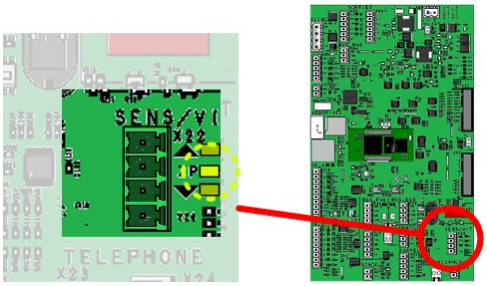
STEP 2

Launch the update process from Sprinte Control application
To do so, get into the
TOOLS ►CONTROLLER MAINTENANCE
menu and select "Update the controller", then confirm.



STEP 3

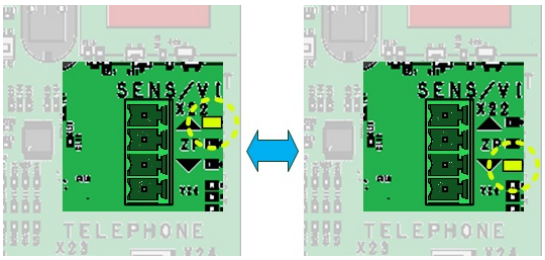
After around 40s, the controller restarts.
When the direction leds are lit still and the door unlocking zone led blinks on 400SP board (X22), the software update process has begun.



NOTE	*For indication purpose, the whole update process lasts around 5 min for a 2 stops lift, and 8 min for 8 stops lift..*

STEP 4

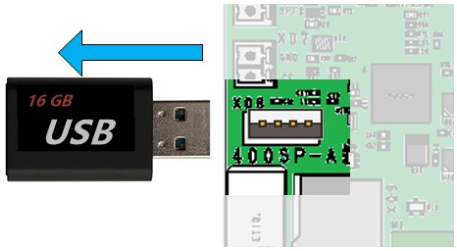
When the direction leds on 400SP board (X22) blink alternatively, the software update process is over.



STEP 5

After few seconds the leds get off and the controller is now operational with the new software version.

You can remove the USB stick.



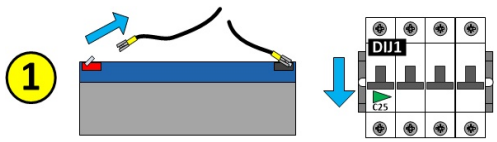
Manual reprogramming of the controller

The manual reprogramming of the 400SP controller erases the current software and configuration, to reload the software and the parameters located on the SD card.
This manual reprogramming helps to replace a defective controller with a new one, keeping the current configuration of your lift

NOTE	*The manual programming works only with a SD card provided by Sprinte : either the one get off the defective controller or the one sent by our after sales department*

STEP 1

Disconnect the backup battery and switch off the main power supply (DIJ1)



STEP 2

Insert the SD car on the 400SP controller board.

STEP 3

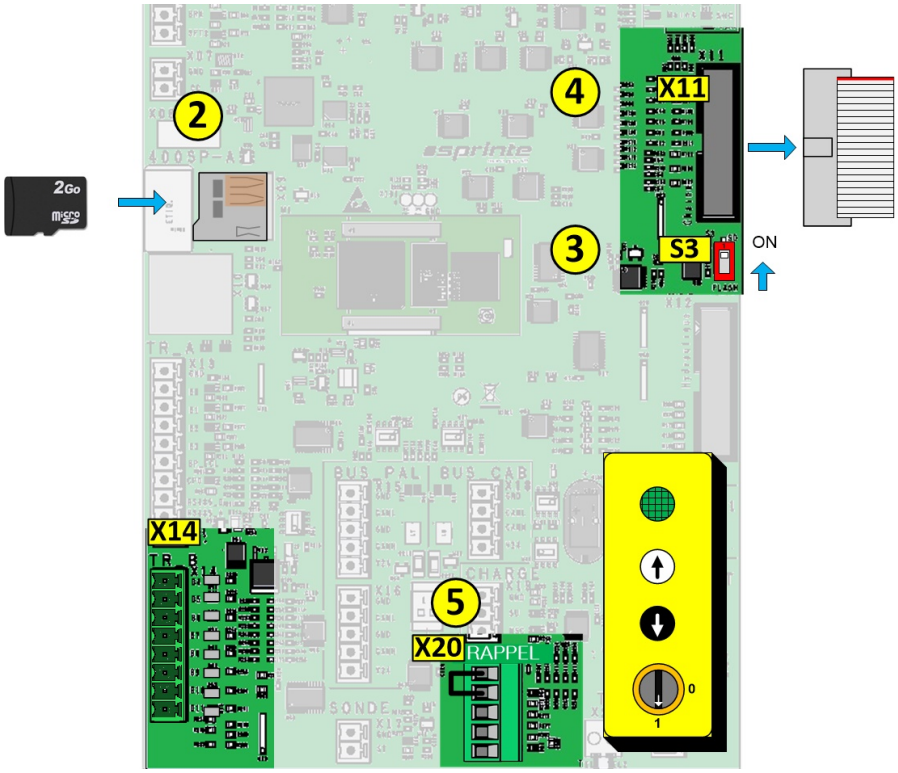
Set the S3 dip-switch to "ON " position

STEP 4

Disconnect from X11 the flat cable link to 405SP board

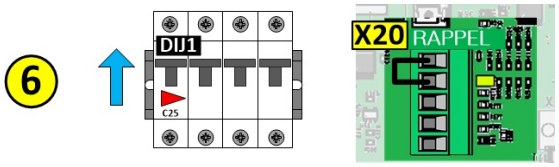
STEP 5

Switch to emergency operation mode.
if you don't have this box, just connect terminals 1 and 2 of X20 connector



ÉTAPE 6

Switch ON the main power supply (DIJ1 circuit breaker),
The Emergency Operation led shall be ON
The controller board is booting for around 20s

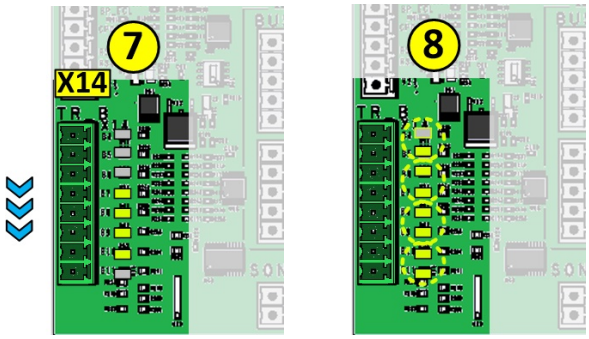


ÉTAPE 7

Aftrer 20seconds, leds B4 to B11 start to scroll : the programming of the board has started..The scrolling speeds up as the process progresses, which lasts approximately 1 minute.

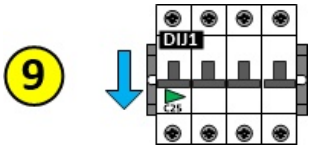
ÉTAPE 8

After 1 minute, leds are blinking simultaneously, the programming process is over.



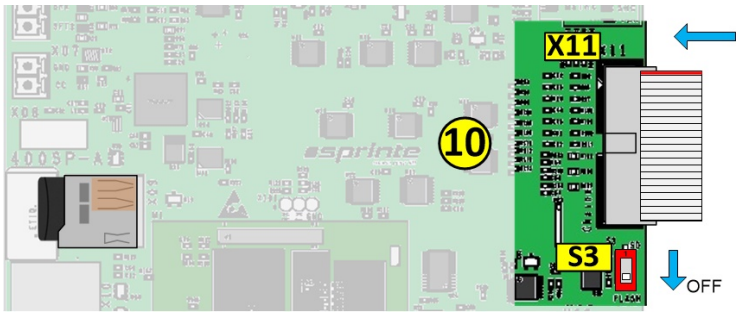
ÉTAPE 9

Switch off again the main power supply (DIJ1 circuit breaker)



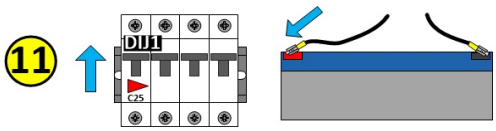
ÉTAPE 10

Set back the S3 dip-switch to its OFF position and plug the flat cable in X11
Keep the SD card into its socket, as it's now the reference card of the 400SP controller board



ÉTAPE 11

Switch ON the main power supply (DIJ1 circuit breaker), and connect the backup battery



END

The reprogramming is now over, the controller is starting and update the other electronic boards if necessary (see Software update process)

NOTE	*For indication purpose, the whole update process lasts around 5 min for a 2 stops lift, and 15min for 12 stops lift..*

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sprinte
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