

3. ELECTRIC REPAIRING OPERATIONS

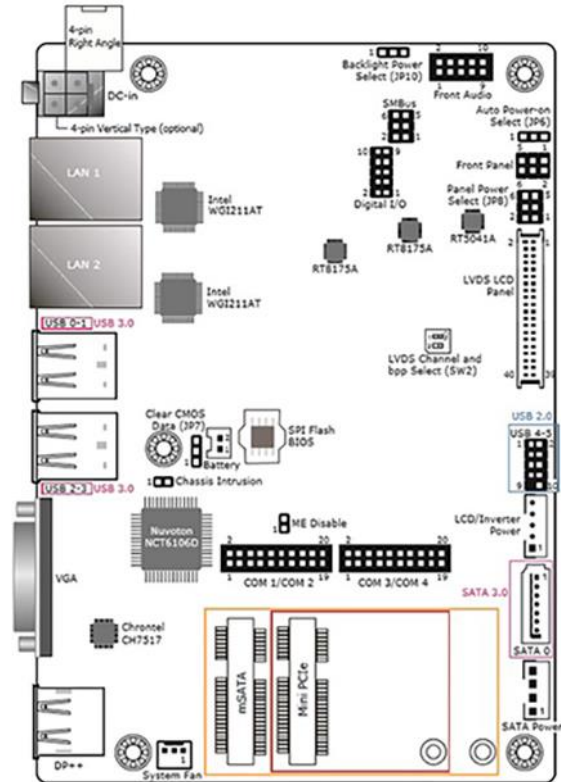
3.1. DIAGNOSIS AND ELECTRONIC PART DESCRIPTION

3.1.1. PC LINUX BOARD

The machine is provided with a Linux PC board on which the high-level machine software is memorised.

The Linux PC board receives the Ethernet connection from the LAN1 port and is internally connected to the MAB board via RS-232. The Linux board has RS-232 and USB ports necessary to connect some accessories like the scale.

The Linux PC board is powered with 12V.



3.1.2. MAIN AUTOMATION BOARD (MAB)

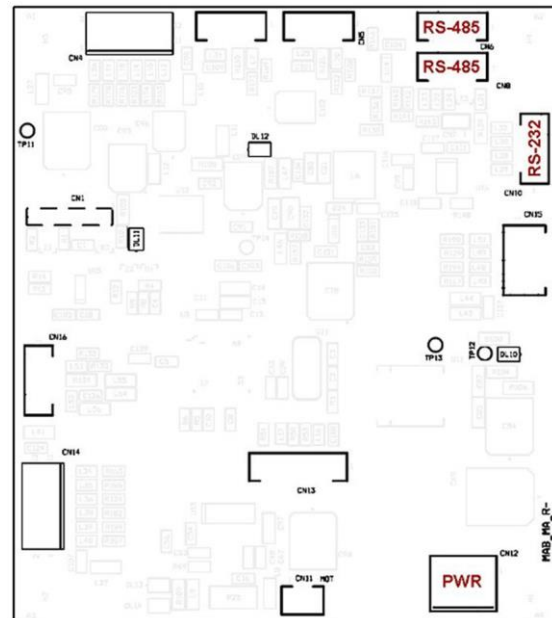
The machine management firmware MAB board is saved on the MAB board. The orders sent by the high-level software are managed at MAB level. This board organises the machine cycle by interrogating and sending orders via RS-485 to the slave boards of the single circuits.

The MAB board is supplied with 24Vdc.

The MAB board controls directly:

- the status lamp and the stop button
- hole beam locator lasers
- the can presence photocell

CN13 is used for programming the firmware via bootloader (see chapter 4 – PROGRAMMING THE ELECTRONIC BOARDS).



3.1.3. SCCB BOARD

Each circuit (colorants, bases, storages, Cartesian axes and autocap) is managed by a dedicated SCCB board addressed according to the machine configuration set in the software.

Each board is powered with 24 V (two separate lines for logics and power) and 48V, controls the digital sensor inputs and integrates the control drivers of two DC 24V peripheral units (DC motor stirring and/or electrovalves) and of one stepper motor.

The board generates the necessary on-board service voltage. To facilitate the diagnosis, each power supply features a status LED (on = power connected):

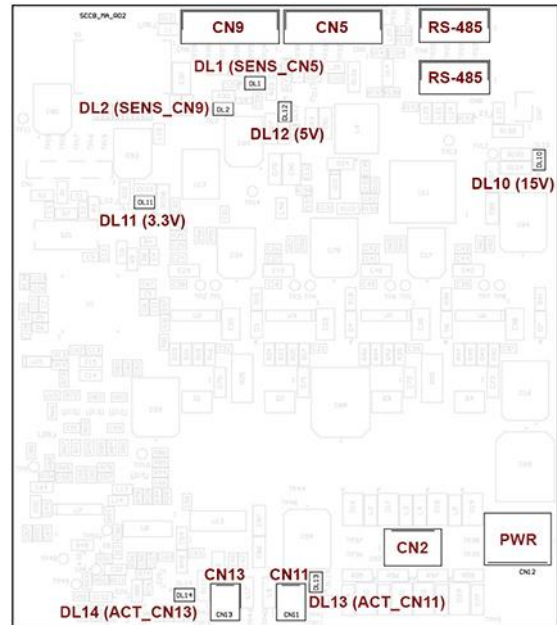
- DL11 = 3.3V
- DL12 = 5V
- DL10 = 15V

In case one or more power supply LEDs is OFF, check the fuse relevant status (see para. 3.2).

Likewise, the DC MOT (CN13) and EV (CN11) outputs have a status LED that indicates when they are powered.

Following is a list of the controls of each SCCB board:


CN1 connector is always used for programming and updating the firmware via PICKIT (see chapter 4 – PROGRAMMING THE ELECTRONIC BOARDS).



CIRCUIT	CN2	CN5	CN6	CN8	CN9	CN11	CN12	CN13
BASE 1	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
BASE 2	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
BASE 1	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
BASE 2	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 1	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 2	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 3	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 4	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 5	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 6	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 7	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 8	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 9	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 10	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 11	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 12	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 13	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 14	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 15	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 16	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
AUTOCAP	STEPPER	HOME PHOT.	RS485	RS485			PWR	

3.2. CHECKING AND REPLACING THE NETWORK FUSES

In case of mains malfunction or problems, the safety fuses could blow and cut power. Fuses are located in the fuse holder built in the plug with switch on the back panel. To replace the interrupted fuse open fuse holder using a flat screwdriver to prise it open. Remove the fuse and its holder and install a new fuse.

	<p>USE ONLY FUSES OF THE SAME TYPE AND THE NOMINAL RATING SHOWN IN THE PRODUCT LABEL.</p> <p>Fuse requirements: EU - IEC 60127 Approval US - UL248-1 and UL248-14 Approval</p>
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3.3. REPLACING THE POWER SUPPLY UNITS

In case of an electric fault in one or more power supply units of the machine, proceed as follows to replace them:

- To reach the power supply unit compartment, remove the rear panel as described in chapter 2 - EXTERNAL COVER REMOVAL.
- Disconnect the wiring between the power supply unit to be replaced and the rest of the machine.
- Remove the power supply unit by fitting a small flat screwdriver in the suitable retaining tab and remove the unit from the DIN bar.



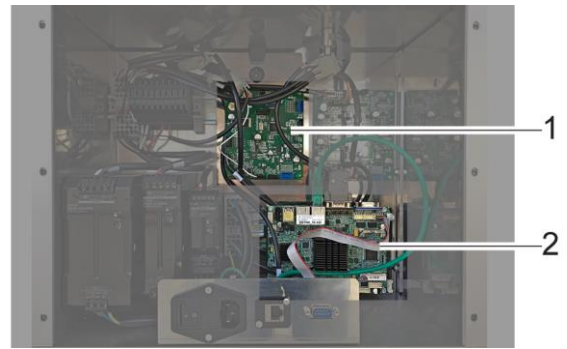
- Fit the new power supply unit manually on the DIN bar.
- Reconnect the power supply unit to the wiring according to the attached wiring diagram.
- Reposition the previously removed protection panel.

WARNING: use only genuine spare parts supplied by the manufacturer.

3.4. REPLACING THE LINUX/MAB BOARD

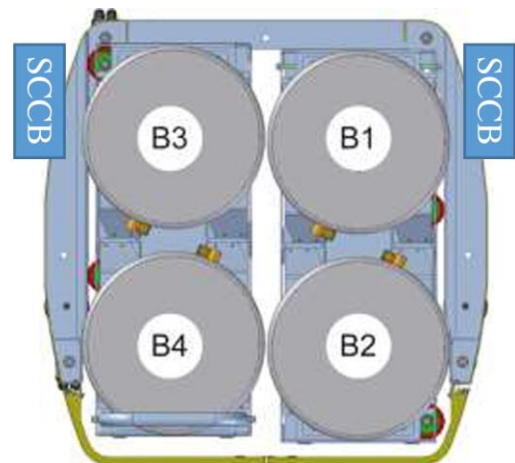
To replace the Linux PC or MAB boards, proceed as follows:

- Remove the rear power supply panel as described in chapter 2 - EXTERNAL COVER REMOVAL.
- Disconnect the power supply and signal cables from the board to be replaced.
- Removed the MAB (1) or Linux PC (2) board to be replaced from the supports on its corners (pressure-fit plastic supports for the MAB board and M3 retaining screws to the Linux board).
- Insert a new board on the supports having care not to damage its components.
- **WARNING:** Use an already programmed board or the suitable programmer to install the correct software/firmware. To reprogramme the boards refer to chapter 4.
- Restore the electric connections.



3.5. REPLACING THE SCCB BOARD BASE CIRCUIT

- To reach the SCCB boards of the base or semi-finished circuits (if any), remove the lateral panels as described in paragraphs 2.1.2.3 and 2.1.2.5, then proceed as described below.



- Find the position of the group board to be replaced.
- Disconnect the power supply and signal cables from the board.
- Remove the board by releasing it from the supports on its corners.
- Insert a new board on the supports having care not to damage its components.
- **WARNING:** Use a board already programmed with the function of the replaced board. To reprogramme the boards refer to chapter 4.
- Restore the previously disconnected connections according to the wiring diagram.



Left side boards:
B3 (bottom) and B4 circuits



Right side boards:
B1 (bottom) and B2 circuits

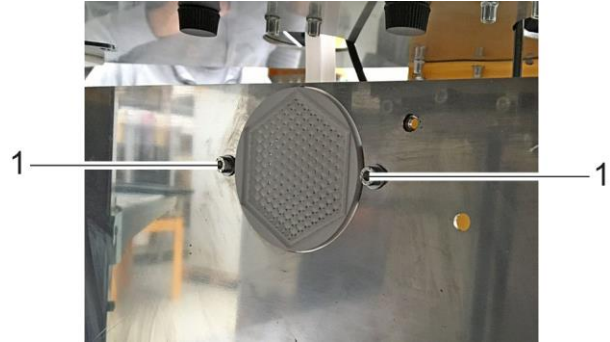
3.6. REPLACING THE CAN PRESENCE PHOTOCELL/REFLECTIVE PANEL

The reflective panel is not a part usually subject to damages and most of the problems connected to it can be solved with a suitable cleaning.

Nevertheless, to replace the photocell or the relevant reflective panel proceed as described below.

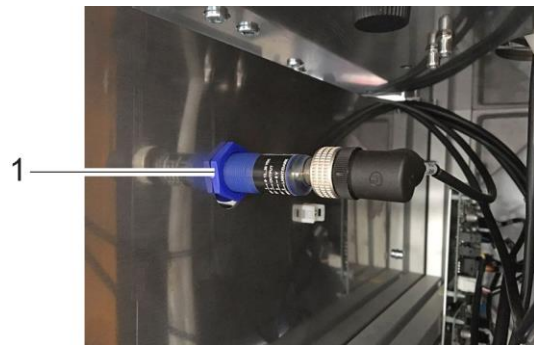
3.6.1. REPLACING THE REFLECTIVE PANEL

- Remove the rear cover as described in para. 2.1.2.3 or the front cover as described in para. 2.1.2.4.
- Inside the tunnel loosen the two M4 retaining screws (1) using an Allen wrench of 2.5 mm.
- To loosen the screws keep the nuts on the other side of the panel with a 7-mm wrench.
- Remove the component, position the new reflective panel and fix it with the previously removed screws.



3.6.2. REPLACING THE PHOTOCELL

- Remove the rear cover as described in para. 2.1.2.3 or the front cover as described in para. 2.1.2.4.
- Loosen the photocell retaining plastic ring nut (1) by hand or using a wrench.
- Then loosen the front round ring nut (2) until removing it from the photocell.
- Slide the component out of the wall.
- Disconnect the photocell screw connector and connect the new photocell.
- Fix the new photocell to the wall using the supplied ring nuts.
- Adjust the height in order to obtain an optimal detection of the can presence. We recommend in most of the cases to fix the photocell to the slot top part.



3.7. LTE ROUTER SETTINGS

When a hard-wired ethernet network is not available, it is still possible to obtain a remote connection to the machine via an LTE Router.

A VPN client - duly installed and set up - is necessary to connect to the machine.

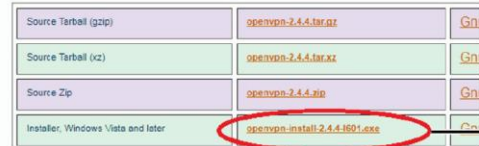
3.7.1. CONNECTION VIA VPN CLIENT ON WINDOWS 7 AND 10

To install the VPN Client, proceed as described below:

- Open an internet browser at <https://openvpn.net/index.php/open-source/downloads.html>
- Click “openvpn-install-2.4.4-I601.exe” (1) and download the file.

Please note that OpenVPN 2.4 installers will not work on Windows XP.

If you find a bug in this release, please file a bug report to our [Trac bug tracker](#) first, either using the [openvpn-devel mailinglist](#) or the developer IRC channel (help take a look at our official [documentation](#), [wiki](#), [forums](#), [openvpn-users mailing list](#), [irc.freenode.net](#)).



NOTE: the GPG key used to sign the release files has been changed since OpenVPN 2.4.4. The new GPG public key is available [here](#).

We also provide static URLs pointing to latest releases to ease automation. For more information, see [here](#).

- Open the downloaded file, then press “Next” (2) on the following screen page.

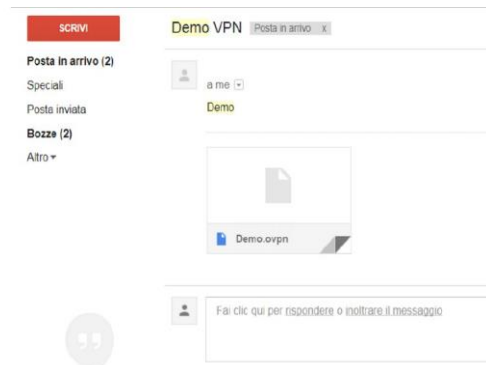


- Check the boxes indicated in the figure on the side, then press “Next”.

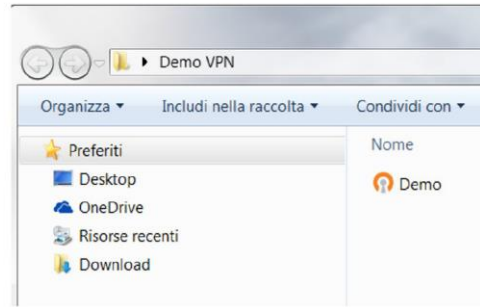


To connect to the machine via the VPN Client, proceed as described below:

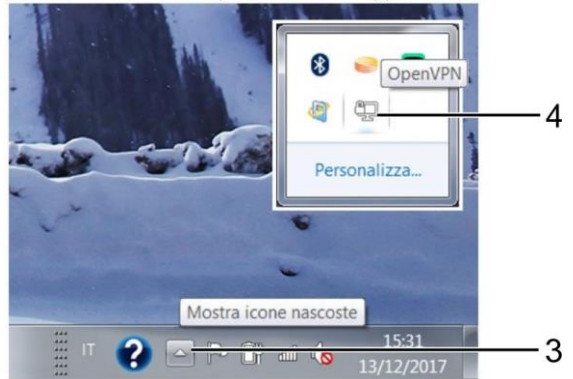
- Download the file containing the login credentials sent by Alfa via email.



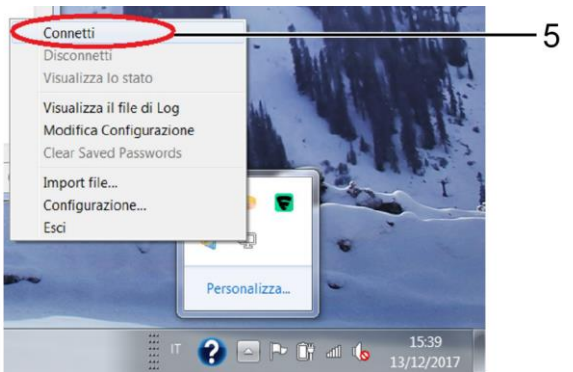
- Save the file containing the credentials in C:/programs/OpenVPN/Config
- Make sure you save it as an “.opvn” file.



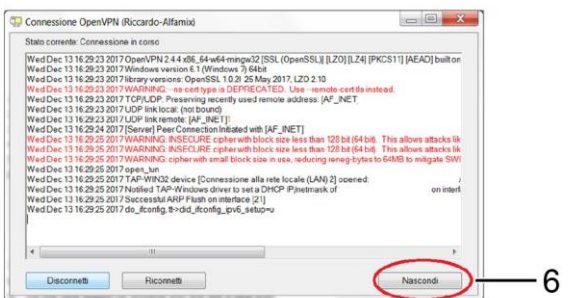
- On Windows Toolbar, click the arrow icon “show hidden icons” (3) then find the icon “OpenVPN” (4) in the pop-up.



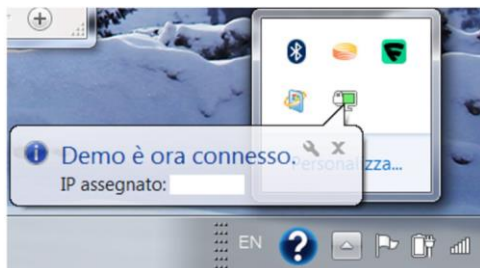
- Right click on the icon and select “Connect” (5);



- Press “Hide” (6) to close the following page;



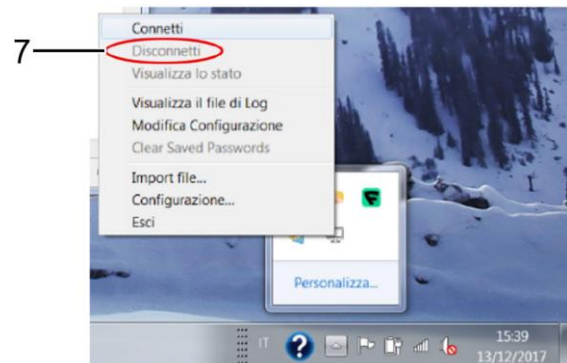
- After a few seconds a new pop-up will open on the toolbar, near the clock indicating that the PC is connected. This window could close automatically, while the OpenVPN icon will become green.



- To connect to the machine, open your internet browser.
- In the address bar, enter the IP address of the machine you wish to establish connection with, usually indicated on the LTE router.
- Enter the login credentials given by Alfa.



To disconnect from the machine, right click on OpenVPN icon and select “Disconnect” (7).



3.7.2. CONNECTION VIA VPN CLIENT FROM ANDROID DEVICES

To install the VPN Client, proceed as described below:

- From the Home screen of your device, open Play Store.
- In the search bar, type “openvpn for android”.
- Click the green button (1) to install the application.

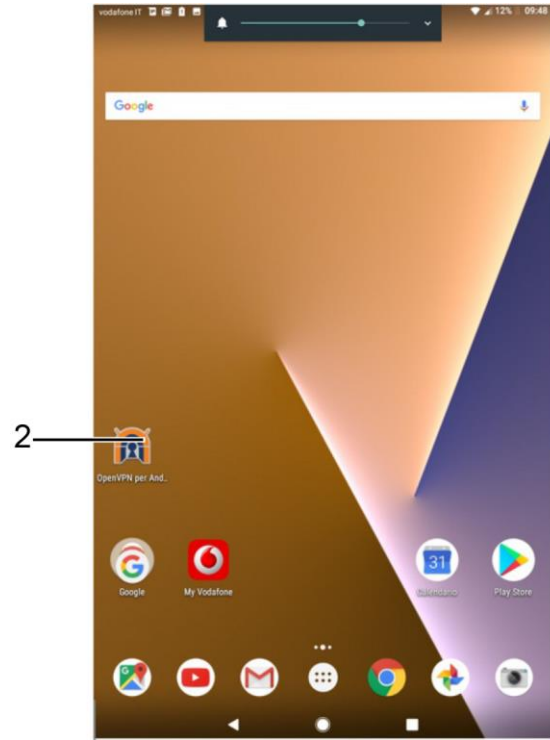


To connect to the machine via the VPN Client, proceed as described below:

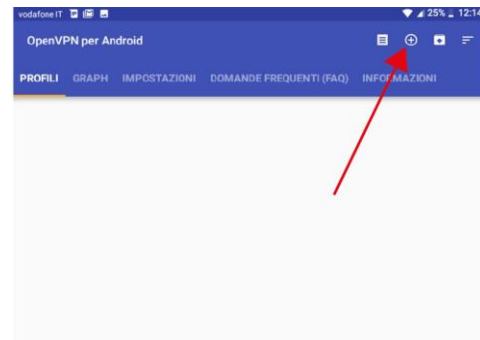
- Download the file containing the login credentials sent by Alfa via email.



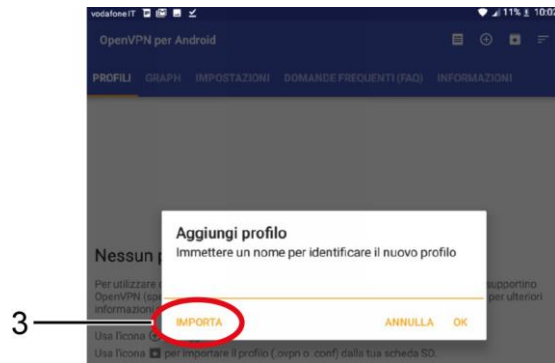
- Run the app OpenVPN (2) previously installed.



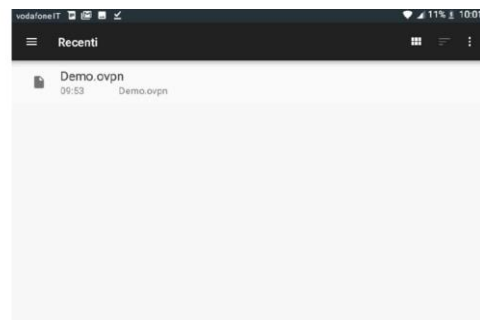
- Press symbol “+” present on the bar at top right of the app screen.



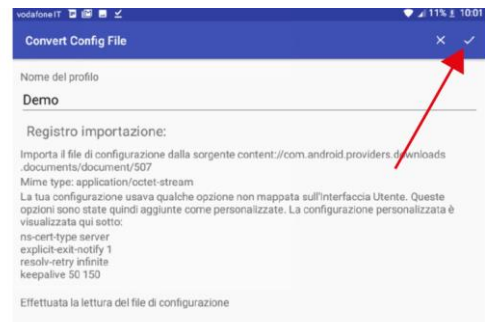
- Press “Import” (3).



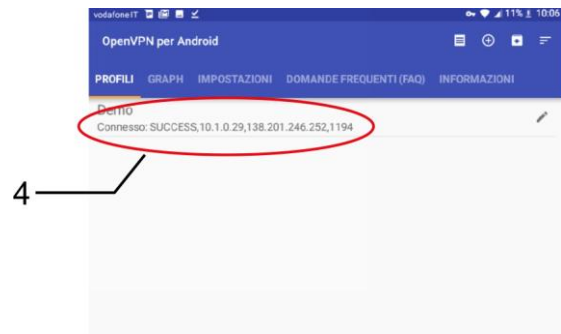
- Select the “.ovpn” file previously downloaded;



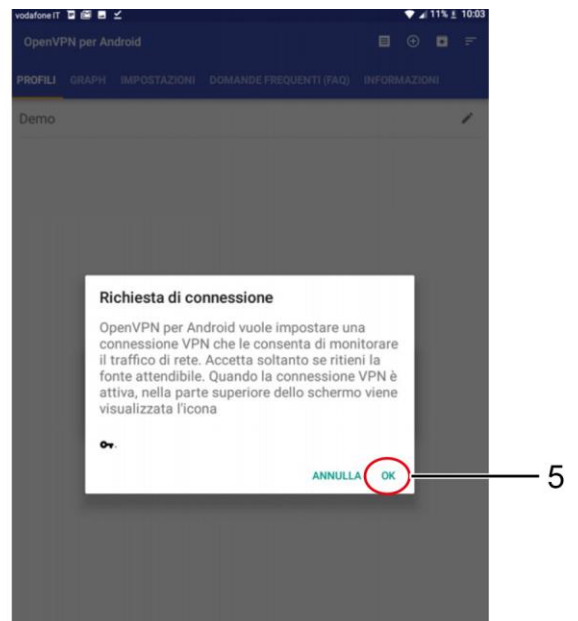
- Press on the check mark in the top right corner;



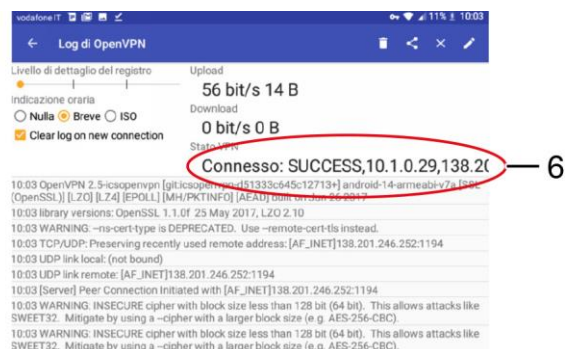
- Press on the just-added file (4).



- Press OK (5) on the next window.



- Now the VPN status must be “Connected” (6).

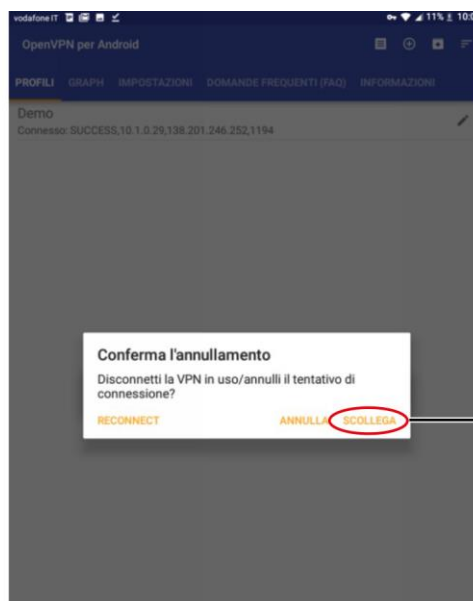


Technical Manual – Color Lab

- To connect to the machine, open your internet browser.
- In the address bar, enter the IP address of the machine you wish to establish connection with, usually indicated on the LTE router.

Enter the login credentials given by Alfa.

- To disconnect from the machine, open the app OpenVPN, then select the “Profiles” menu and press “Disconnect” (7).



4. PROGRAMMING THE ELECTRONIC BOARDS

Depending on board version, programming can be carried out in either of two different methods:

- Boards with no bootloader (programming via PICKit): see paragraph 4.1
- Board with bootloader: see paragraph 4.2.

4.1. PROGRAMMING OF BOARDS WITH NO BOOTLOADER

4.1.1. PROGRAMMING DEVICES

Each SCCB board must have the dedicated firmware. For the SCCB boards, the firmware depends on the group to control.

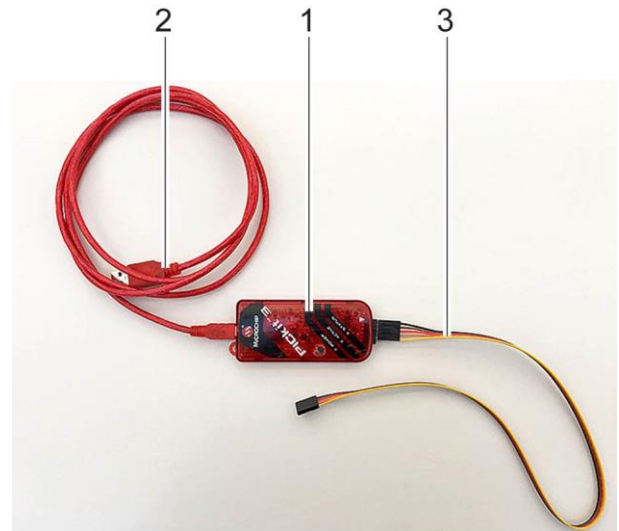
To programme the boards, use a suitable USB programmer (1) and the MPLAB IDE programming software.

If you do not have the suitable programmer, contact the Alfa technical service.

The programmer uses a USB cable (2) for the connection to the PC.

It could be useful to use an extension (3) to connect the programmer to the boards positioned in points that are hard to reach.

NOTE: The boards can be programmed both on the machine and on the bench. To programme the boards they must be powered by means of CN12 connector. If you use the previously programmed boards for other functions it is recommendable to disconnect the RS-485 serial connectors before powering the machine.





4.1.2. INSTALLING THE MPLAB IDE SOFTWARE

The MPLAB IDE programming software can be downloaded from the reserved area of the website www.alfadispenser.com or from the download area of the website <http://www.microchip.com>. The software can be installed on a Windows, Linux or Mac PC.

4.1.3. PROGRAMMING WORKSPACE

To write the firmware it is necessary have a programming workspace to upload in the MPLAB IDE software as better described below.

The programming workspaces are different for the SCCB (4) boards and the MAB (5) board.

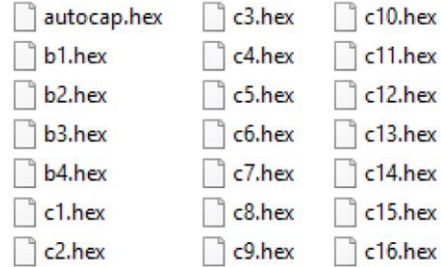
	Actuators_release_PICKIT3.mcw	4
	MABrd_Release_PcKit3.mcw	5

4.1.4. PROGRAMMING THE BOARDS

Download the workspace and the last available firmware version from the Alfa website reserved area, or contact the Alfa technical service to receive the firmware. If you do not have the credentials to access the reserved area, contact the Alfa technical service.

SCCB: according to the group to which the board must be connected, the following firmware is available:

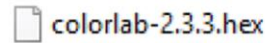
- up to 24 firmware versions (from c1 to c24) that can be used on colorant groups of the machine*;
- up to 8 firmware versions (from b1 to b8) that can be used on base groups or semi-finished products of the machine*;
- Autocap group firmware;



*: see the circuits enabled in the “Slave configuration” of the “Device-Machine” menu of the Admin interface. For further information consult the Software manual

MABs and OTHER BOARDS:

- MAB board Color Lab firmware;
- SGBRDB board firmware (if present);
- Firmware of other optional boards (HUTBRD, SPB, etc.)

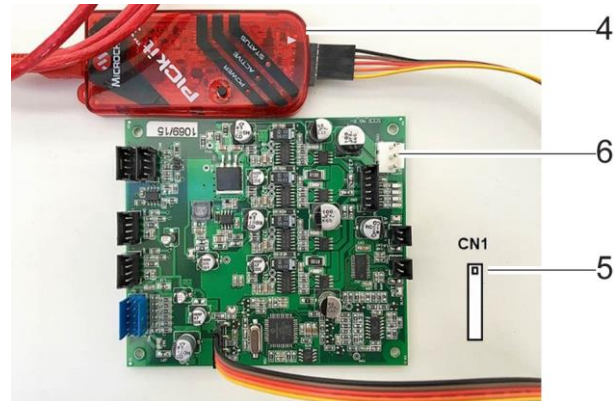


WARNING: CAREFULLY READ THE RELEASE NOTE TO CHECK THE FIRMWARE VERSION COMPATIBILITY

Connect the USB programmer, if necessary use an extension, to CN1 connector of the board to be programmed.

WARNING: Check that pin 1 of the programmer (4) is connected to pin 1 of CN1 connector (5)!

Power the board by connecting the CN12 connector (6) to the machine.



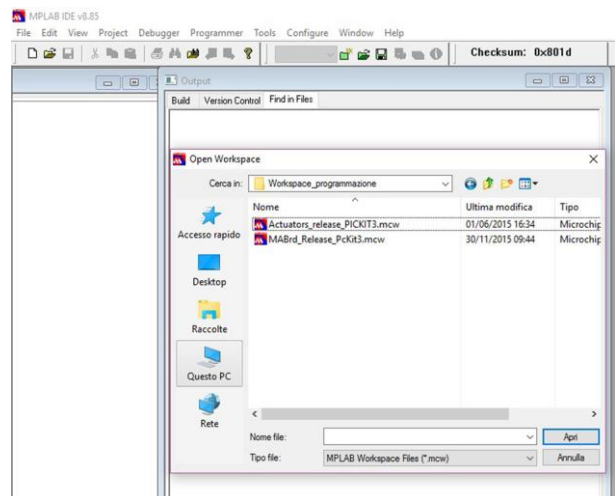
WARNING: do not connect the CN6 and CN8 connectors of the RS-485 communication to avoid problems linked with possible address conflicts.

Launch the MPLAB IDE software

Access to “File – Open workspace...” and select the workspace of the board to programme (MAB or SCCB), then select Open. For the SGBRD board, use SCCB workspace.

WARNING: if you have connected a MAB board, upload the “MABrd” workspace, whereas if you have connected an SCCB board, upload the “Actuators” workspace (see para. 4.3).

If message “No PICkit 3 Connected” is displayed, it means that the programmer is not connected correctly.



When the programmer is correctly connected and detected, the software will show the message “PICkit 3 detected”.

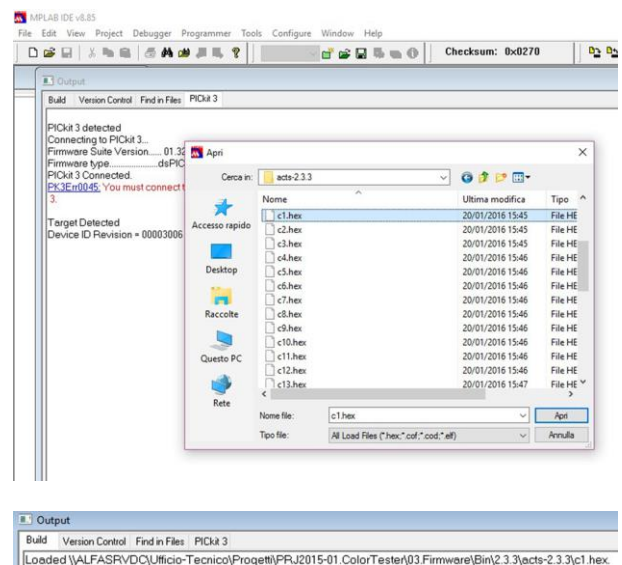
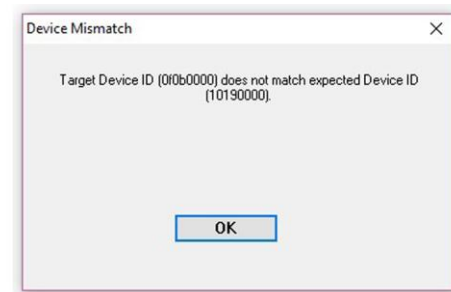
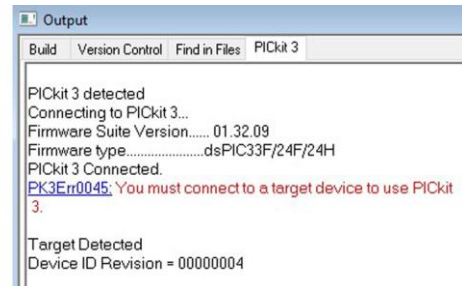
When connecting the board to the programmer and powering it, the software shows the message “Target Detected” besides the DEVICE ID of the connected board.

WARNING: If you upload a MAB Workspace and connect an SCCB board (or vice versa), the software will show the error “Target device ID does not match expected Device ID”.

When everything is ready, programme the board in “File – Import...” and select the suitable firmware version.

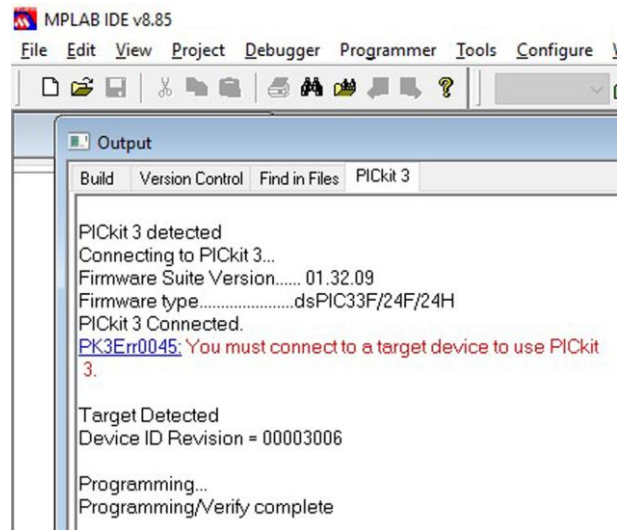
Select the suitable firmware version and select “Open”.

If the operation is completed successfully, the display will show the message “Loaded....”



Select “Program” in the “Programmer” menu to start the board programming.

At the end of the operation, the display will show the message “Programming/Verify complete”.



Now it is possible to disconnect the power supply and the programmer.

The board is ready to be used on the machine.

WARNING: Before programming a new board, make sure the loaded Workspace is the correct one. If this is not the case, go back to the “File – Open workspace...” menu and upload the new workspace.

4.2. PROGRAMMING OF BOARDS WITH BOOTLOADER

4.2.1. SOFTWARE “BOOTLOADERAPP”

The most recent boards are preloaded with BOOT firmware for the management of the BootLoader, i.e. the application that allows the updating of the machine control firmware.

NOTE: To program a board that does not feature preloaded BOOT, please contact Alfa technical service.

To program a hard-wired board via BootLoaderAPP, it is necessary to follow this procedure:

1. Shut off the machine;
2. connect the special cable Alfa USB BOOT LOADER (code 305001893) across CN13 connector of the MAB board and a USB port of the PC/LAPTOP on which the application BootloaderAPP.exe is installed;
3. run BootloaderAPP;
4. switch the machine on.


TO USE A MACHINE IN BOOT MODE, YOU MUST FIRST CONNECT THE USB CABLE FROM MAB TO PC / LAPTOP AND THEN SWITCH MACHINE ON.

BootLoaderAPP installation procedure is described in the following paragraph. If the software is already installed on the PC, go directly to the following paragraph explaining software use for programming boards.

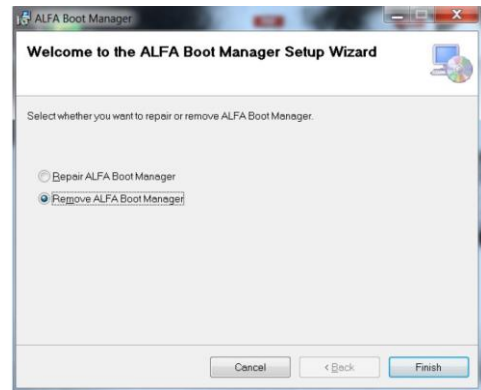
4.2.2. INSTALLATION OF “BOOTLOADERAPP”

If a version of the application is already present on the PC, you must first remove it before installing a new version.

In this case, run the installation software

 ALFA Boot Manager and select option “Remove ALFA Boot Manager”, then press “Finish”.

Wait until uninstall is completed and press “Close”.



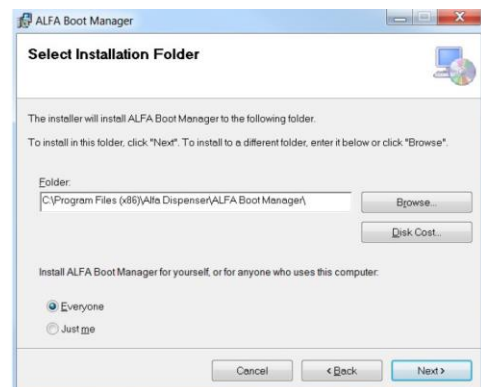
To install the application:

1. Run the installation file  ALFA Boot Manager .

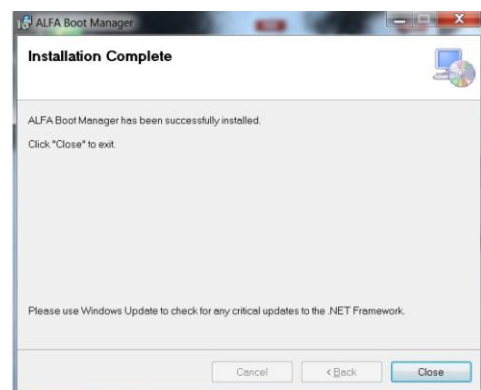
The page on the side will open.



2. In the following window, select the software installation path and select option “Everyone”, then press “Next >”.

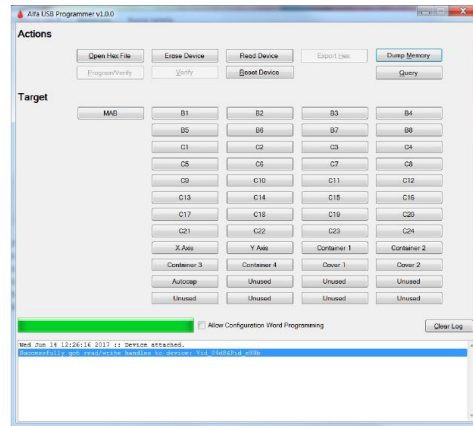


3. When prompted, press “Next >” until completing the installation procedure, then press “Close” to end the installation procedure.



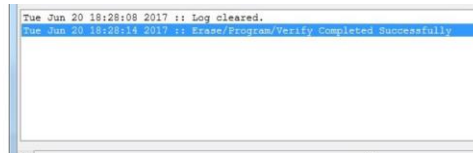
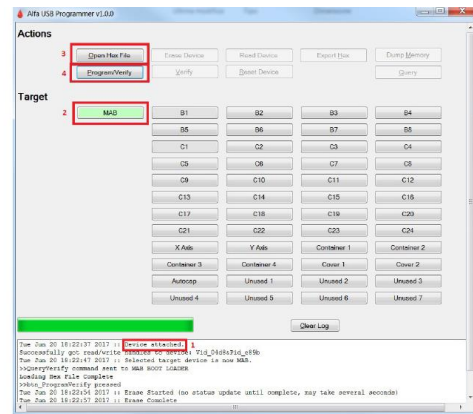
4.2.3. STARTING THE BOOTLOADER

Run BootloaderApp on the PC (the application is in the folder selected in step 2 of the installation procedure). The following window will open.



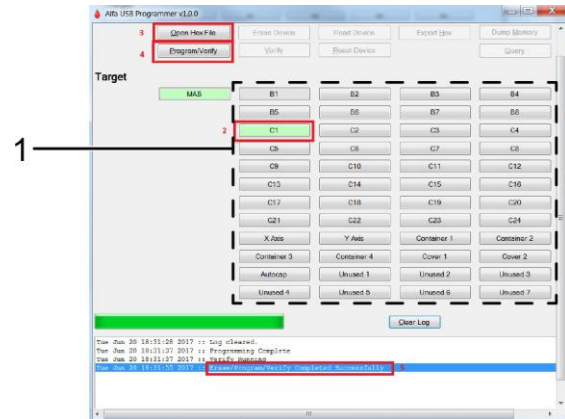
4.2.4. MAB FIRMWARE UPDATE

- Check that the software detected the presence of a MAB 'Device attached' (1)
- Select the MAB board to be used by pressing the MAB button (2) 'Selected target device is now MAB' + 'QueryVerify command sent to MAB BOOT LOADER'
- Select the Intel HEX file to be programmed, and press 'Open Hex File' (3) 'HEX File Complete'
- Proceed with Programming and Verification, by pressing 'Program/Verify' (4) ': wait for the final message 'Erase/Program/Verify Completed Successfully'
- If programming is successful, the 'MAB' button becomes GREEN.



4.2.5. ACTUATOR FIRMWARE UPDATE (SCCB BOARDS)

- Connect the special cable Alfa USB BOOT LOADER (code 305001893) across CN13 connector of the MAB board and a USB port of the PC for programming;
- Switch the machine on (or the board when programming it on a bench);
- Check that the software detected the presence of a MAB 'Device attached';
- Select actuator board (1) to be programmed by pressing the corresponding button (Fig. C1) (2) 'Selected target device is now C1' + 'QueryVerify command sent to MAB BOOT LOADER';
- Check that the address set in the actuator board to be programmed is consistent with the selected device (please refer to the following paragraph "SETTING ADDRESSES");
- Select the Intel HEX file to be programmed, and press 'Open Hex File' (3) 'HEX File Complete';
- Proceed with Programming and Verification, by pressing 'Program/Verify' (4), then wait for the final message 'Erase/Program/Verify Completed Successfully' (5);
- If programming is successful, the 'C1' button becomes GREEN.



4.2.6. SETTING ADDRESSES

For programming an SCCB actuator board, the address set via the dip-switches must be consistent with the Target selected via the programming software (see previous paragraph).

Before programming a board, set the corresponding dip-switches accordingly.

Dip-switch addressing is a binary code.

The least significant bit is the leftmost one. A dip-switch set to ON corresponds to a bit value of '1'.

SCCB must have a fixed addressing, as follows:

GROUP OR CIRCUIT	DIP-SWITCH
BASE or MASTER B1-B8 (or M1-M8): ADDRESS 1...8	
COLORANTS C1-C24: ADDRESS 9...32	
X-AXIS: ADDRESS 33	
Y-AXIS: ADDRESS 34	
CAN SELECTOR 1-4: ADDRESS 35...38	
CAPPING 1-2: ADDRESS 39...40	
AUTOCAP: ADDRESS 41	
CAN LIFTER: ADDRESS 42	
HUMIDIFIER: ADDRESS 43	

Each address must be unique in the machine.

After programming, board address can be changed but only into addresses belonging to the same group of circuits (colorants, bases, etc.).

4.3. BOOTLOADER 2.0

Boot Loader 2.0 generation will include the possibility to remotely update the Firmware of ALFA machines, only by means of ALFA Software, with no need of any USB cable and without physically switching the machine off and back on.

If newer Firmware versions are found, a message will warn the operator, specify the name and type of the Firmware versions available, and propose the update with a new Firmware version. The operator shall then select which versions to install.

5. HANDLING THE MACHINE

5.1. MOVING THE MACHINE

Color Lab must only be handled in safe conditions.

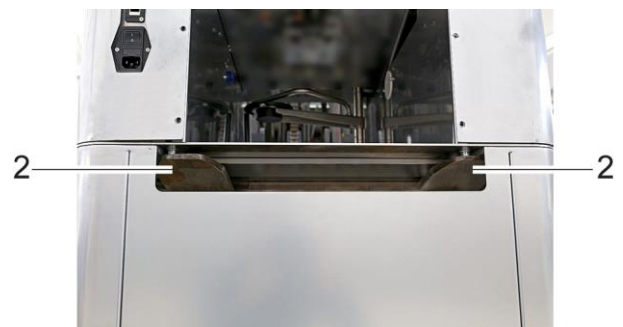
For small movements of the machine with the cabinet, it is possible to raise the support feet and use the dedicated wheels.

IN ORDER TO AVOID THE RISK OF PAINTING SPILLS INSIDE THE MACHINE, NEVER MOVE THE MACHINE WITH THE COLORANT CIRCUITS FULL.

BEWARE OF ANY STEPS OR IRREGULARITIES IN THE FLOORING/TERRAIN THAT COULD RESULT IN SUDDEN STOPPAGES, AS THESE COULD CAUSE MACHINE TO BECOME UNBALANCED. ALWAYS PROCEED AT A LOW SPEED WITH TWO PEOPLE HANDLING THE MACHINE AT ALL TIMES.

For bigger movements, it is necessary to use a suitable lifting mean. In this case, proceed as follows:

- Switch the machine off and disconnect all electric connections (power supply, ethernet, serial).
- Open the cabinet doors to reach the trays of the base or semi-finished circuits and then pull them out.
- Disconnect the trays hydraulic and electrical circuits described in paragraph 2.3.1., and make sure that the hydraulic valves are closed in order to avoid leaking of the paint inside the pipes;
- Disconnect the tray ground connections using suitable carabiner (see para. 2.3).
- Extract the trays from the cabinet;
- Using a lift truck with tilting forks, insert the forks into the cabinet and lift the machine. The position of the forks is illustrated in the adjacent image (2), shown from the back of the machine.
- Be careful not to damage the pipes and cables present in the lower compartment!



LIFT THE MACHINE CAREFULLY, TAKING CARE TO MAKE SURE THAT IT IS GRIPPED PROPERLY AND IS NOT AT RISK OF TIPPING OVER

- Handle the machine using the fork lift truck and position it in the required installation space.

Place the machine on a surface suitable for sustaining its weight or on perfectly smooth and level flooring.



Once the movement has been completed, lower the support feet to stabilise the machine and reconnect the circuits. Use a spirit-level to level the machine.

6. ACCESS TO THE DIAGNOSTIC FUNCTIONS

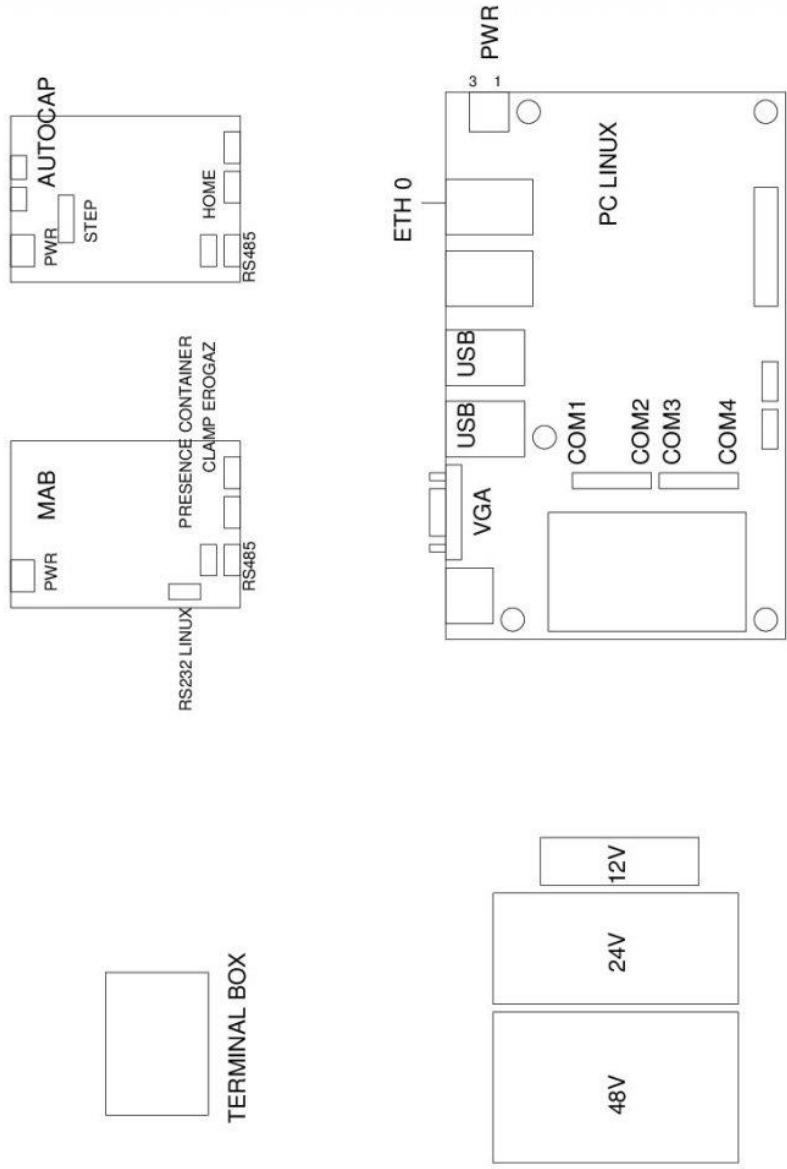
6.1. ADMIN CONTROL AND DIAGNOSTIC INTERFACE

The web control browser Admin interface has diagnostic functions that indicate the status of the machine and of the relevant circuits, as well as specific controls to activate and test each single circuit or the valve and motor functions.

For information about the interface access modes and the function description refer to the software manual.

7. CONNECTION DIAGRAMS

ELECTRICAL LAY OUT



Nota: Per i programmi e i collegi a vedere i manuali di riferimento di Alfa.

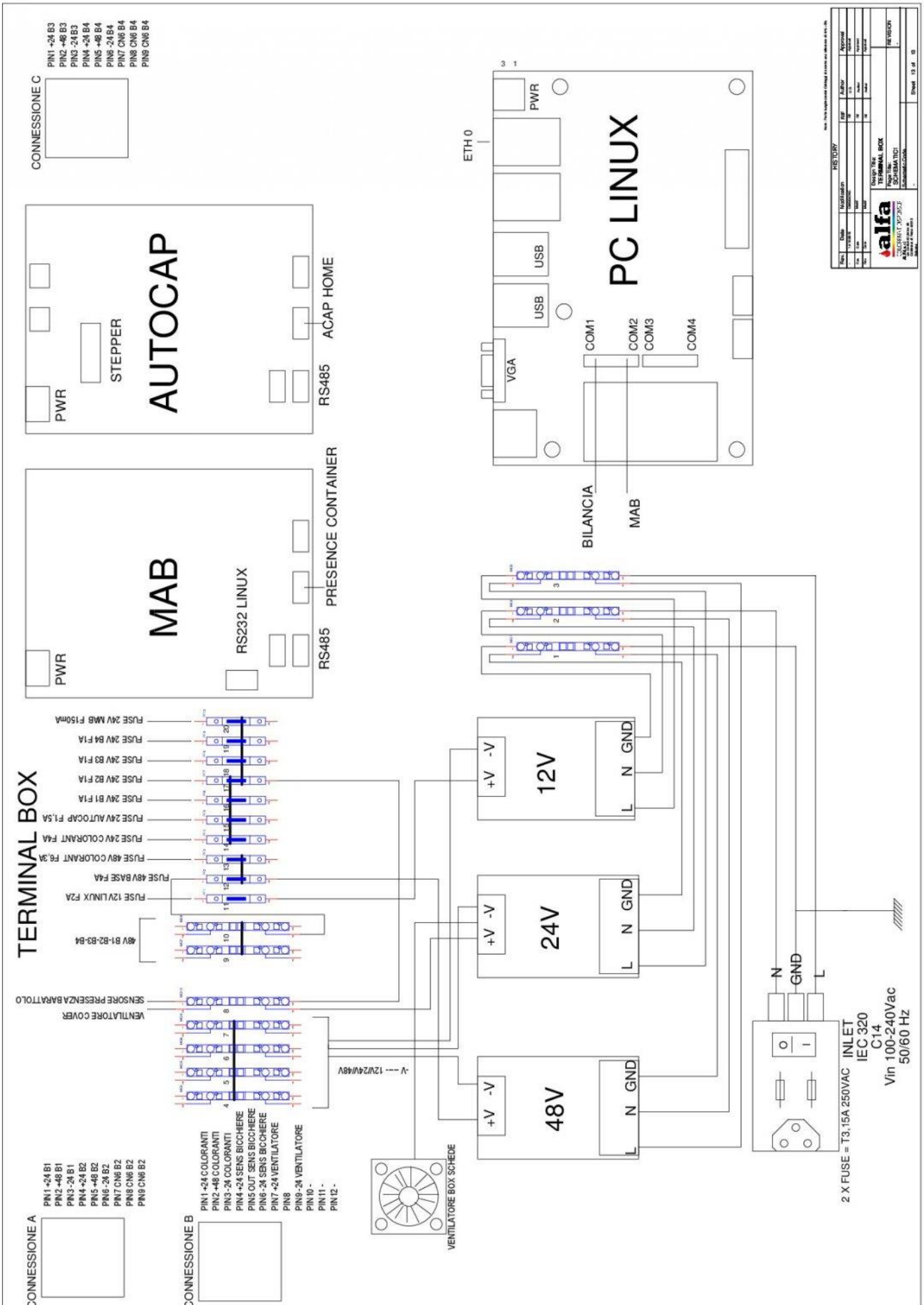
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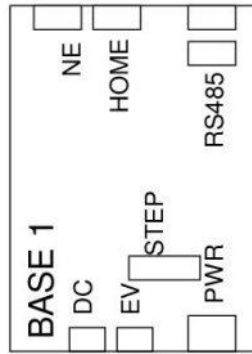
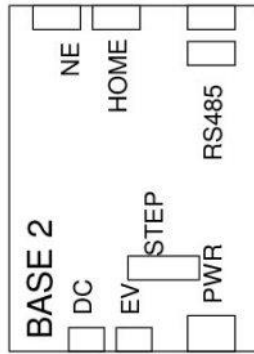
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Schematic Code: **SCHEMATIC CODE**

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Sheet 10 of 13

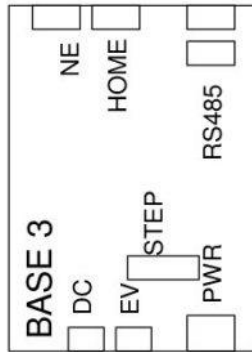
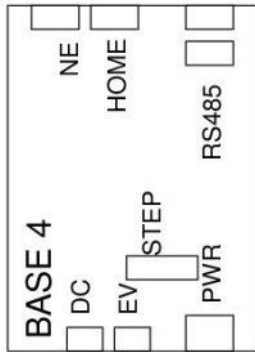




Note : Per le lunghezze dei Cablaggi si accetta una tolleranza di 0% -5%

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 COLORPAINT DISPENSER Alfa s.p.a. di Ustica,26 Calabiana di Reno 40012 BOBONE		Design Title: MACHINE RIGHT ELETRICAL LAY OUT Page Title: SCHEMATIC1 Schematic Code:	REVISION -
-			Sheet 12 of 13



Note: Per le lunghezze dei Cablaggi si accetta una tolleranza di 0% -45%

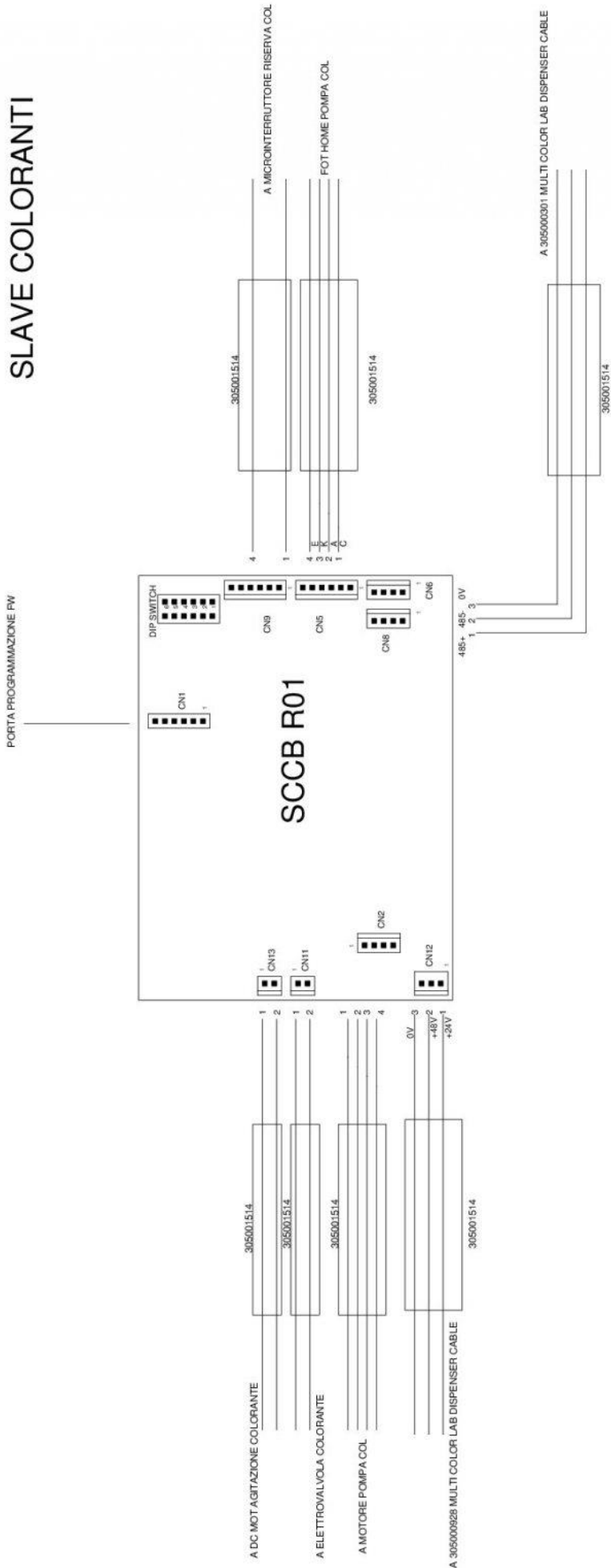
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Rev	Date	Modif	Rif	Author	Approval

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Page Title:	SCHEMATIC1
Schematic Code:	REVISION
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<p>ALFA s.r.l. Via Cavadati di Ustica 28 Caldarone di Reno 40112 BOLOGNA</p>		Sheet 11 of 13
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CONNESSIONI GRUPPO COLORANTE VALIDO PER CIASCUN GRUPPO PRESENTE IN MACCHINA

SLAVE COLORANTI

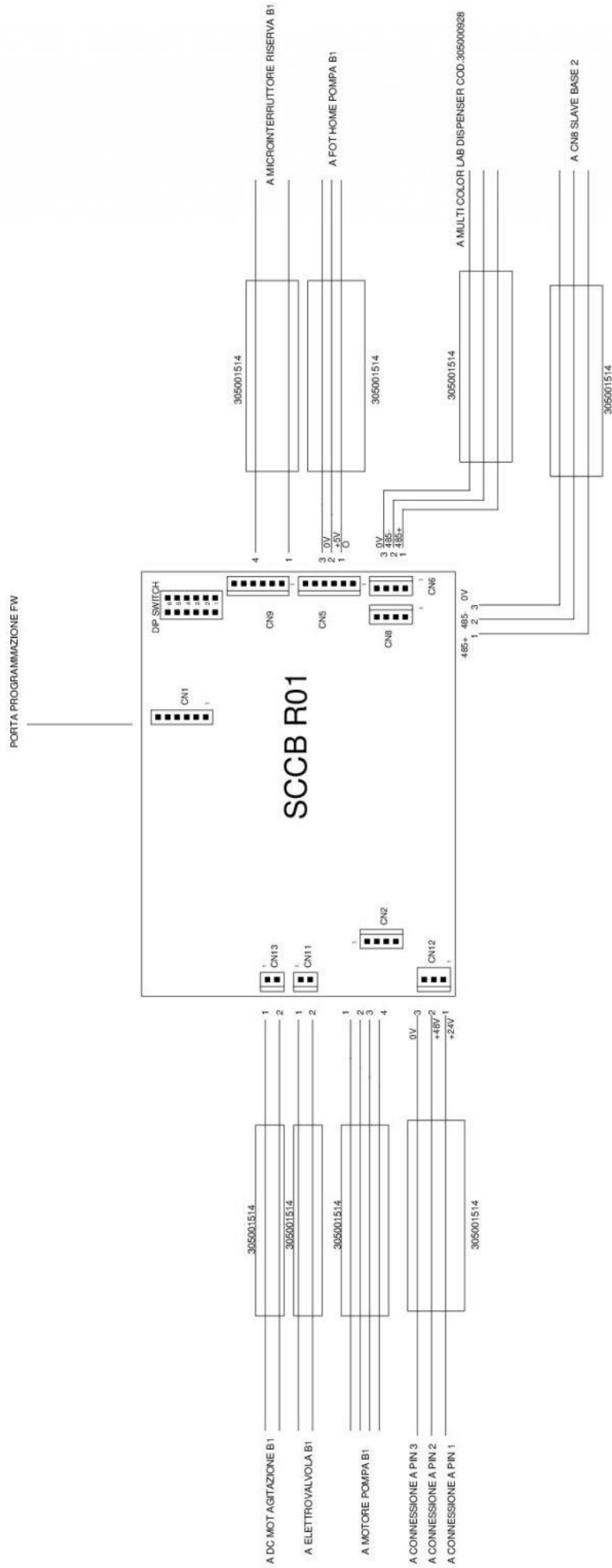


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Rev. 09 of 10

SLAVE BASE 1



View the legend and design rules and address at the link

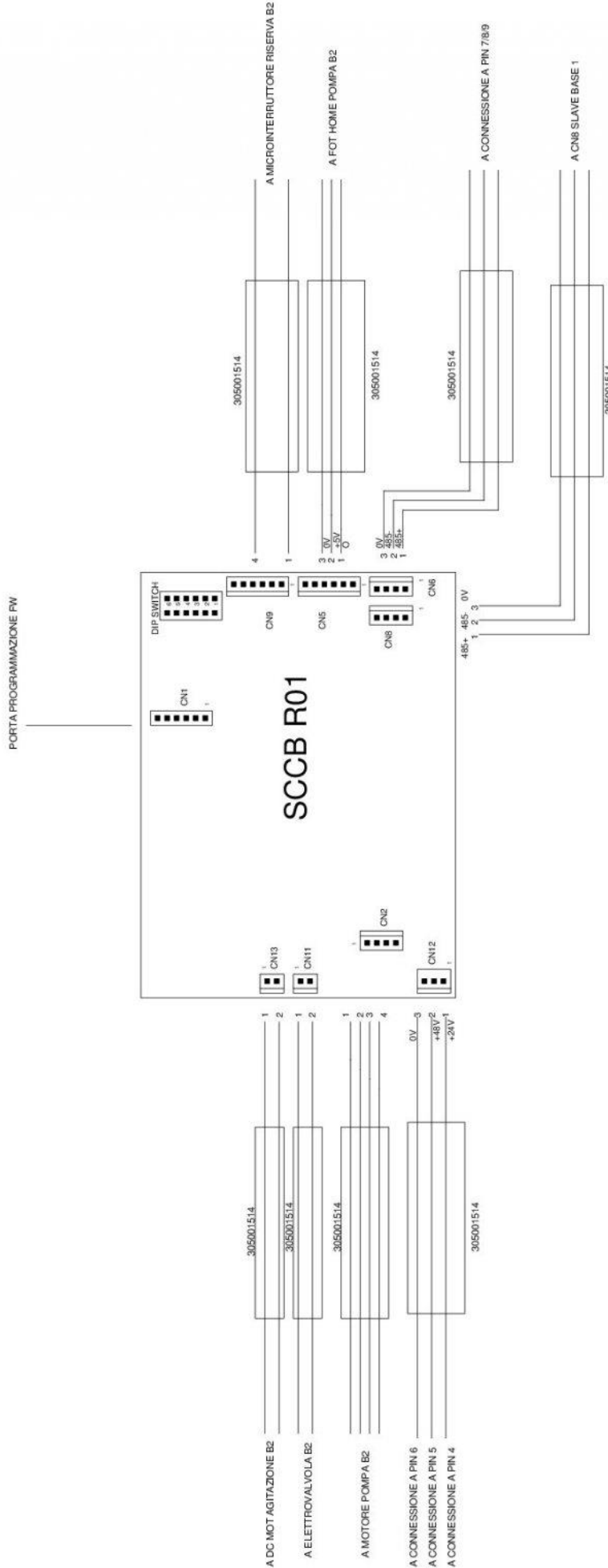
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Design Title: CONNESSION SLAVE BASE 1
 Project: 305001514
 Revision: 1

Sheet 5 of 13

SLAVE BASE 2



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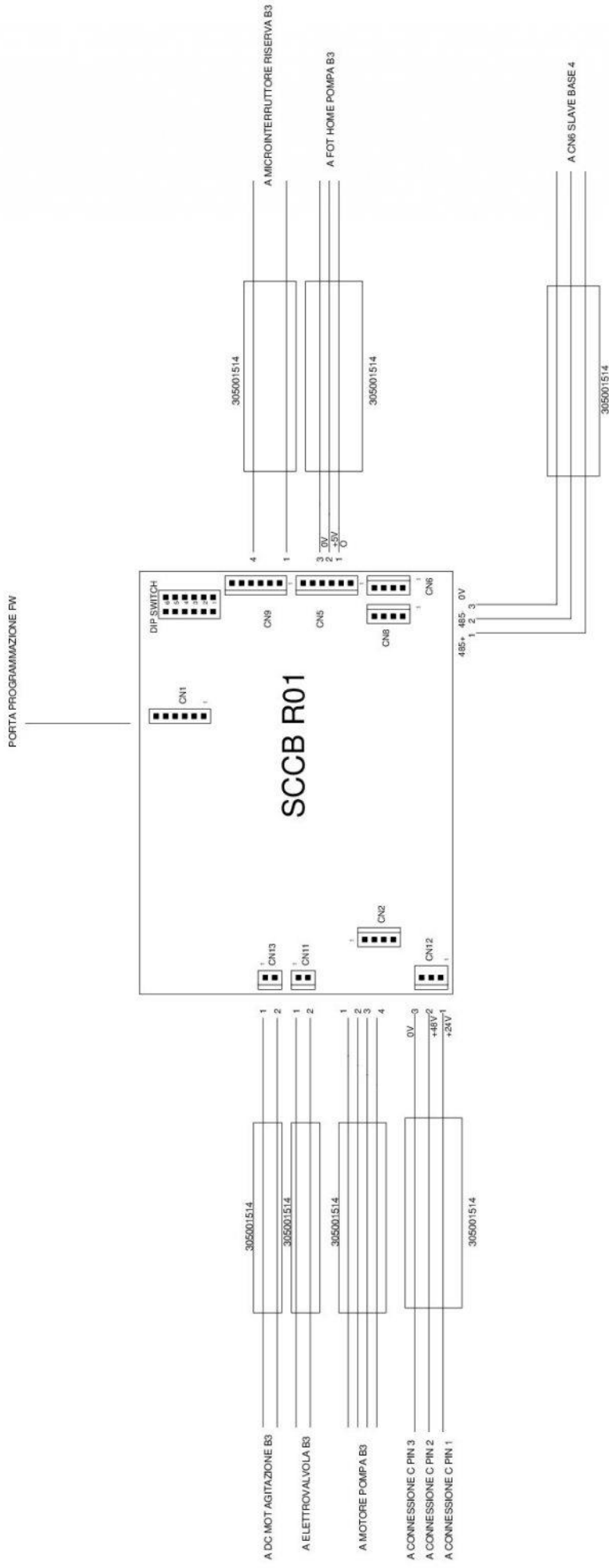
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Sheet 9 of 19

SLAVE BASE 3



Rev. 1.00

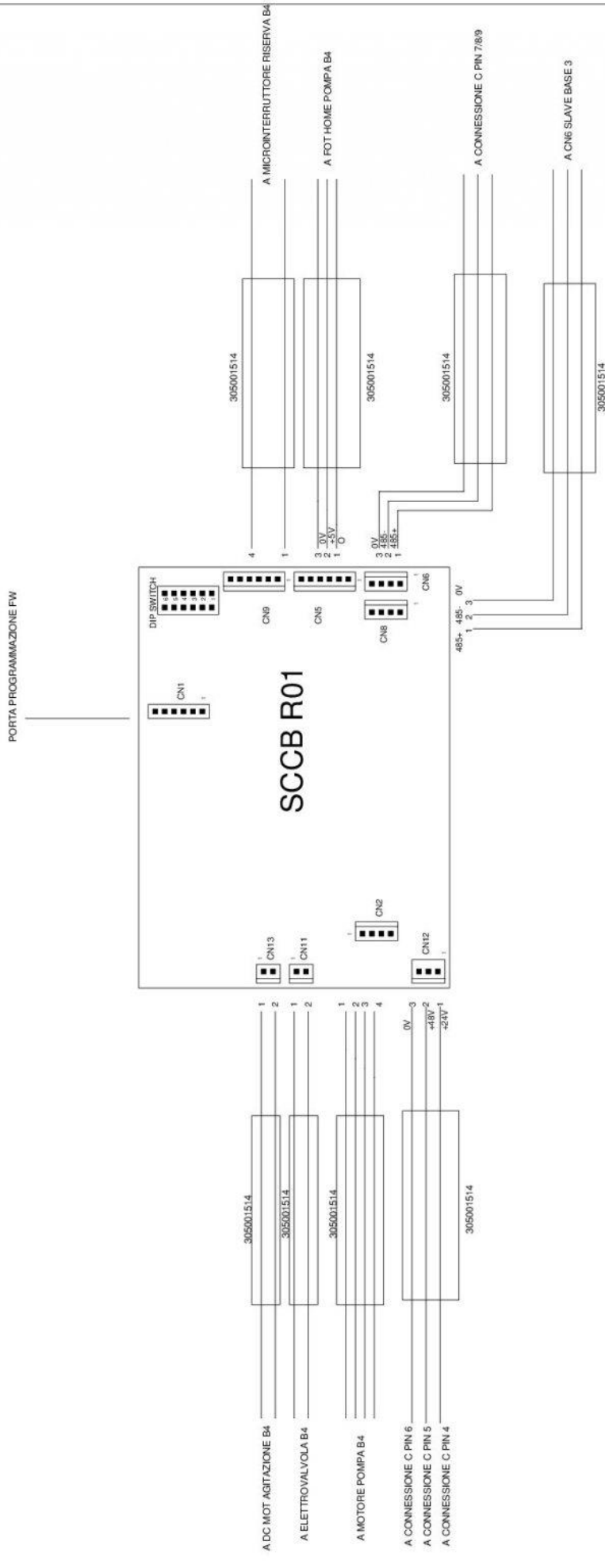
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Design Title: CONNESSION SLAVE BASE 3
 Project Name: ALFA LAB (SISTEMI AUTOMATICI)
 Revision: 1.00

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SLAVE BASE 4

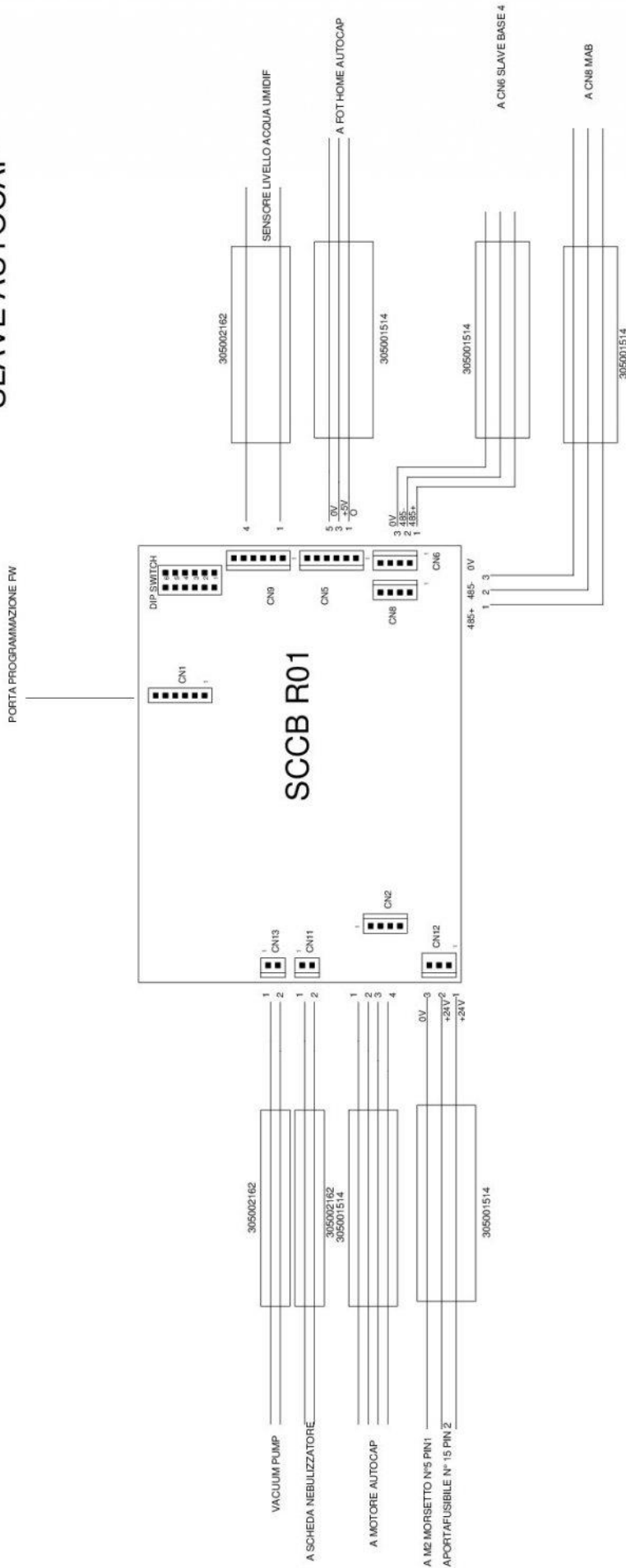


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Page Title: **CONNECTION SCHEMATIC**
Page No: ...
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Date: ...
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SLAVE AUTOCAP



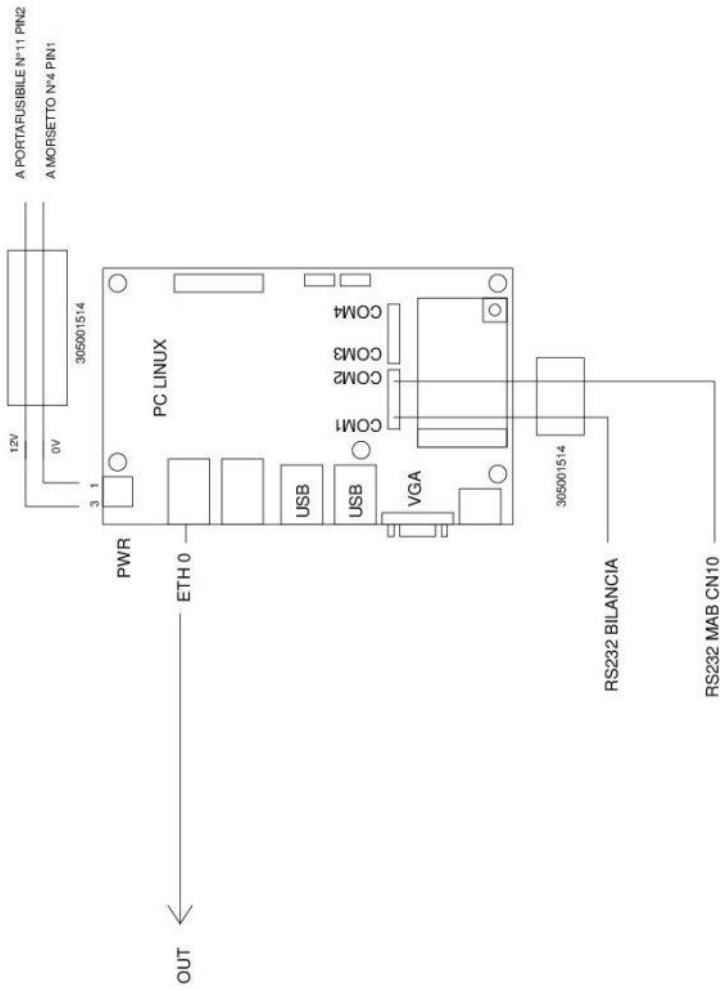
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CONNECTION SLAVE AUTOCAP
PRODOTTORE:
ALFA PAINT SYSTEMS
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Revision:
CONNECTION SLAVE AUTOCAP
PRODOTTORE:
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PC LINUX



Nota: Per le segnalazioni di errori o per altre informazioni, scrivere a: alfa@alfa.com

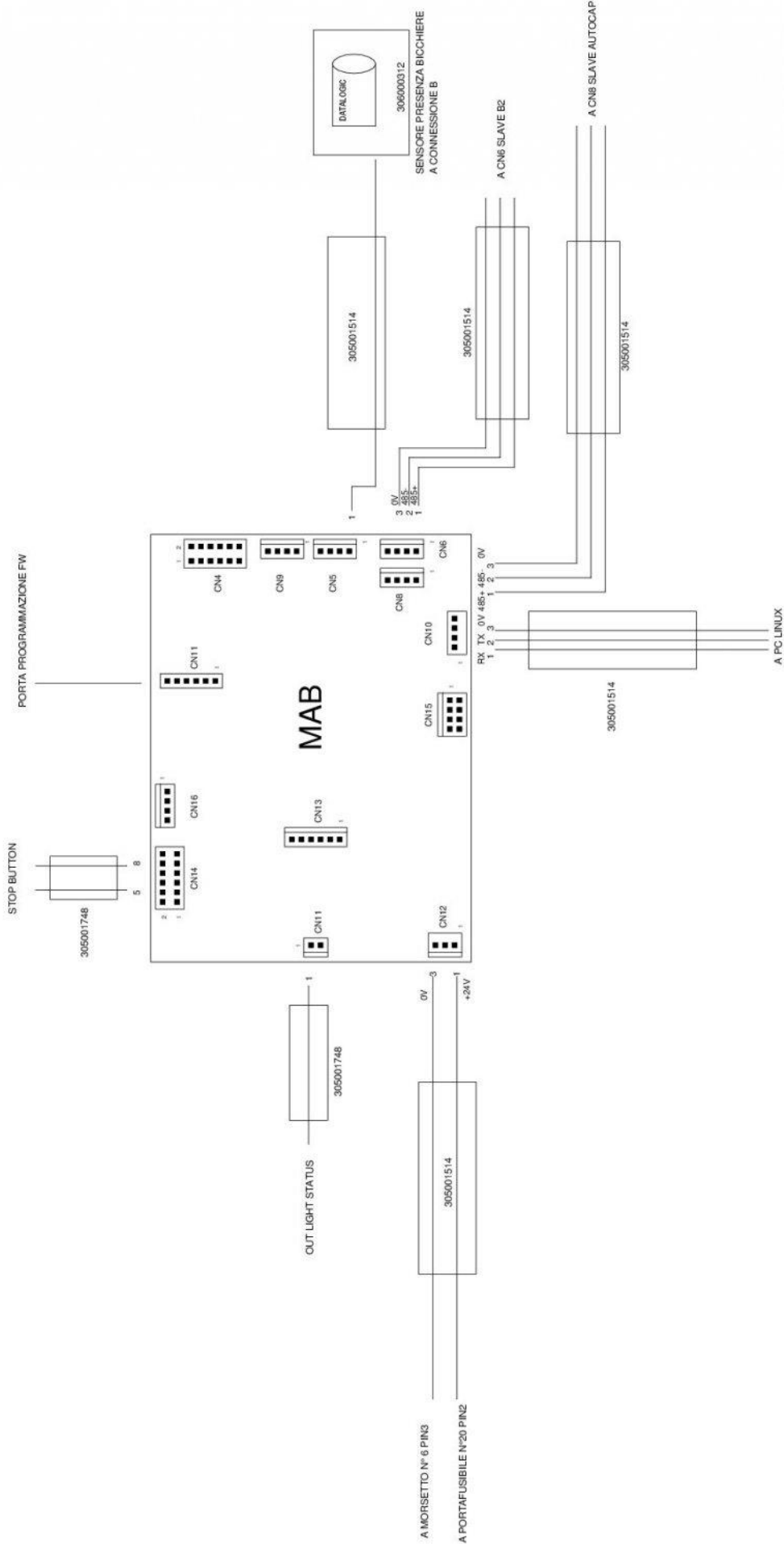
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 Email: alfa@alfa.com

MODELLO: CONNESSIONI PC LINUX
 TIPO: SCHEMATICO
 AUTORE: REVISIONI
 DATA: 15/03/2011
 VERSIONE: 01

Foglio 3 di 10

MAIN AUTOMATION BOARD

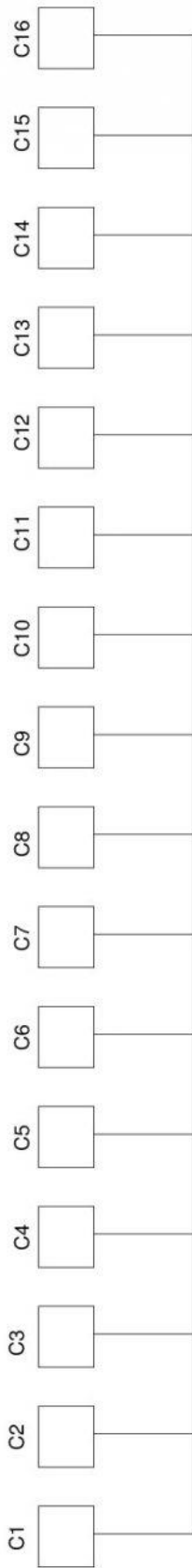


Rev. 1.0 - 14/09/2010 - Modificato il collegamento al morsetto A e al CN6.

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 Checked: ...
 Approved: ...
 Date: ...
 Scale: ...
 Sheet: 2 of 13

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RS 485

A CN16 SLAVE BASE 1

FILO VERDE 48V
FILO ROSSO 24V
FILO NERO 0V

A CONNESSIONE B PINZ +48 COLORANTI
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REVISIONE							
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