I/O logger box

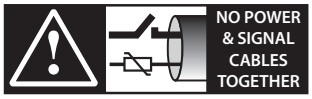
CAREL

ENG

User manual

LEGGI E CONSERVA QUESTE ISTRUZIONI

READ AND SAVE THESE INSTRUCTIONS



READ CAREFULLY IN THE TEXT!

High Efficiency Solutions

WARNING

CAREL bases the development of its products on decades of experience in HVAC, on the continuous investments in technological innovations to products, procedures and strict quality processes with in-circuit and functional testing on 100% of its products, and on the most innovative production technology available on the market. CAREL and its subsidiaries nonetheless cannot guarantee that all the aspects of the product and the software included with the product respond to the requirements of the final application, despite the product being developed according to start-of-the-art techniques.
The customer (manufacturer, developer or installer of the final equipment) accepts all liability and risk relating to the configuration of the product in order to reach the expected results in relation to the specific final installation and/or equipment.
CAREL may, based on specific agreements, act as a consultant for the positive commissioning of the final unit/application, however in no case does it accept liability for the correct operation of the final equipment/system.

The CAREL product is a state-of-the-art product, whose operation is specified in the technical documentation supplied with the product or can be downloaded, even prior to purchase, from the website www.CAREL.com.
Each CAREL product, in relation to its advanced level of technology, requires setup / configuration / programming / commissioning to be able to operate in the best possible way for the specific application. The failure to complete such operations, which are required/indicated in the user manual, may cause the final product to malfunction; CAREL accepts no liability in such cases.
Only qualified personnel may install or carry out technical service on the product.
The customer must only use the product in the manner described in the documentation relating to the product.

In addition to observing any further warnings described in this manual, the following warnings must be heeded for all CAREL products:

- Prevent the electronic circuits from getting wet. Rain, humidity and all types of liquids or condensate contain corrosive minerals that may damage the electronic circuits. In any case, the product should be used or stored in environments that comply with the temperature and humidity limits specified in the manual.
- Do not install the device in particularly hot environments. Too high temperatures may reduce the life of electronic devices, damage them and deform or melt the plastic parts. In any case, the product should be used or stored in environments that comply with the temperature and humidity limits specified in the manual.
- Do not attempt to open the device in any way other than described in the manual.
- Do not drop, hit or shake the device, as the internal circuits and mechanisms may be irreparably damaged.
- Do not use corrosive chemicals, solvents or aggressive detergents to clean the device.
- Do not use the product for applications other than those specified in the technical manual.

All of the above suggestions likewise apply to the controllers, serial boards, programming keys or any other accessory in the CAREL product portfolio.
CAREL adopts a policy of continual development. Consequently, CAREL reserves the right to make changes and improvements to any product described in this document without prior warning.

The technical specifications shown in the manual may be changed without prior warning.

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DISPOSAL

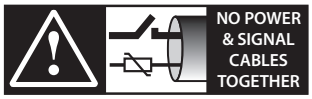
INFORMATION FOR USERS ON THE CORRECT HANDLING OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

In reference to European Union directive 2002/96/EC issued on 27 January 2003 and the related national legislation, please note that:

- WEEE cannot be disposed of as municipal waste and such waste must be collected and disposed of separately;
- the public or private waste collection systems defined by local legislation must be used. In addition, the equipment can be returned to the distributor at the end of its working life when buying new equipment;
- the equipment may contain hazardous substances: the improper use or incorrect disposal of such may have negative effects on human health and on the environment;
- the symbol (crossed-out wheeled bin) shown on the product or on the packaging and on the instruction sheet indicates that the equipment has been introduced onto the market after 13 August 2005 and that it must be disposed of separately;
- in the event of illegal disposal of electrical and electronic waste, the penalties are specified by local waste disposal legislation.

Warranty on the materials: 2 years (from the date of production, excluding consumables).

Approval: the quality and safety of CAREL INDUSTRIES Hqs products are guaranteed by the ISO 9001 certified design and production system.



READ CAREFULLY IN THE TEXT!

WARNING: separate as much as possible the probe and digital input signal cables from the cables carrying inductive loads and power cables to avoid possible electromagnetic disturbance.
Never run power cables (including the electrical panel wiring) and signal cables in the same conduits.

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1. GENERAL CARACTERISTICS

1.1 Description

I/O logger box is an electronic device that automatically collects data over time with a configurable frequency and stores it in an internal memory. There are two available versions based on the maximum number of managed inputs: 10 or 20. Different combinations of magnitudes as temperature, pressure, humidity and digital inputs, can be measured and recorded by using the device working mode that best suits the needs of each installation. All the information is available by simply touching the front 7-inch display.

Main features	Up to 10 or 20 inputs with thirteen different working modes (inputs combinations)
Hardware	c.pCO mini and PlantWatchPRO
User interface	c.pco built in pGD, PlantWatchPRO user interface
Languages	EN
Unit of measure	Temperature: °C , Inputs: On/Off, Pressure: bar, Other: %
Alarms	Low and high alarms and connect./broken probe alarm
	Alarms log on PlantWatchPRO
Supervisor protocol	Modbus

Tab. 1.a

1.2 Instructions and general warnings

Before carrying out any operations, carefully read the following instructions.

1.2.a Installation and maintenance

- Check that the power supply matches the electrical panel requirements and that the line is protected in accordance with standards and based on the application.
- Install the panel in environments suitable for its IP protection rating.
- Fix the casing using the holes provided; if assembly brackets are needed, refer to the corresponding instructions.
- When fixing the casing, pay special care not to damage the components inside the panel.
- Clean any impurities from inside the casing, such as screws, washers, cut-off pieces of wire, shavings from drilling etc.
- Make the electrical connections with reference to the wiring diagram.
- Use suitable tools to attach the wires to the terminal blocks, so as to avoid damaging the terminal and the ferrule, and make sure the wires are firmly held in place
- Disconnect mains power before working inside the electrical panel.
- Verify the cause of activation before resetting the protection devices.
- In the event of faults, replace the components with others that have the same features and ratings as those being replaced.

1.2.b General operation

- Plug the power cable into a power socket to use the panel.
- If possible, test the panel with all the connected devices active.

1.2.c Checking protection devices

- Fuses are provided to protect the main and auxiliary circuit; use fuses that have the same features as replacements.
- In the event of faults involving the main transformer, replace it with another that has the same features.

1.2.d Testing

- Dielectric test: main circuit 1000V for 1 second.

The fact that the electrical panels have undergone routine testing by the manufacturer does not exempt the installer from the requirement to verify correct operation after installation. The manufacturer declines all liability for any damage caused to things and/or people as a result of tampering with the panel and/or the equipment it contains by unauthorised and unqualified personnel (by law, technical personnel must be professionally qualified and competent).
NB: Do not remove the identification labels from the panel.

1.3 Part numbers

Code	Description
PW3C000TP100	I/O LOGGER BOX 230VAC POWER SUPPLY 10 UNIVERSAL CHANNELS PW3PNN0TP000 INSIDE
PW3C000TP200	I/O LOGGER BOX 230VAC POWER SUPPLY 20 UNIVERSAL CHANNELS PW3PNN0TP000 INSIDE

Tab. 1.b

1.4 Technical Data

Power supply	230V 1~ +N+T 50/60 Hz Max 50W
Weight	7 – 7.2 Kg
Operating conditions	-20...+60 °C, <85% RH non-condensing
Storage conditions	-20...+70 °C, <85% RH non-condensing
Classification of protection against voltage surges	Class II
Case	Black plastic, dimensions 380x300x120 mm
Protection rating	IP56

Tab. 1.c

1.5 Link to other documents

Following documents available on carel.com web site can be consulted for further details:

c.pCO mini: Consult the c.pCO leaflet (+0500058IE) and manual (+0300057EN)

PlantWatchPRO: Consult the PlantWatchPRO leaflet (+050001655) and manual (+040000191)

1.6 Layout, components and dimension

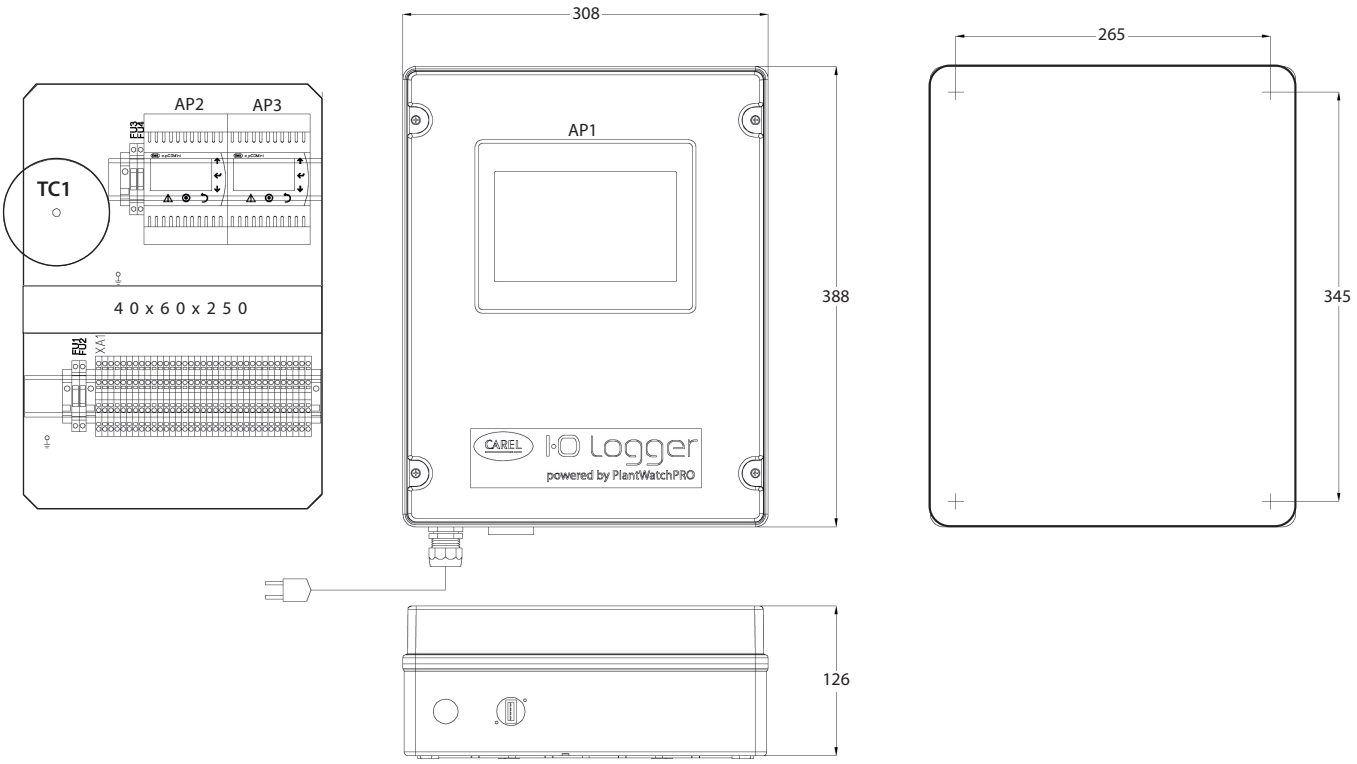


Fig. 1.a

2. INSTALLATION AND CONFIGURATION

2.1 Mounting

1. Panel fixing:
   Following drilling template (section 1.3), drill 4 holes on the wall;
   Unscrew the 4 fixing screws of the frontal cover;
   Remove frontal cover;
   Fix the panel to the wall by using screws with suitable length to wall thickness.
2. Inputs/outputs connection:
   Drill the panel surface where necessary and mount the cable glands;
   Connect input/outputs to AX1 terminal (check the electrical wiring section for further details).
   This section reports some connections examples.
3. Close frontal by screwing the 4 screws
4. Power on the I/O Logger box (230Vac)

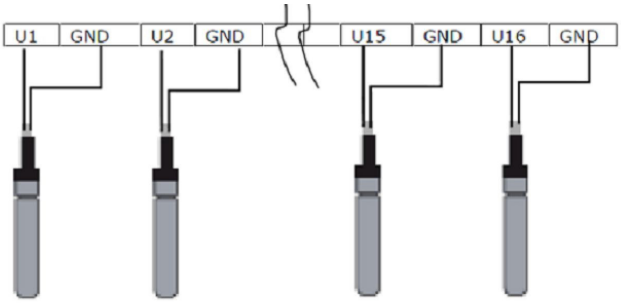


Fig. 2.a

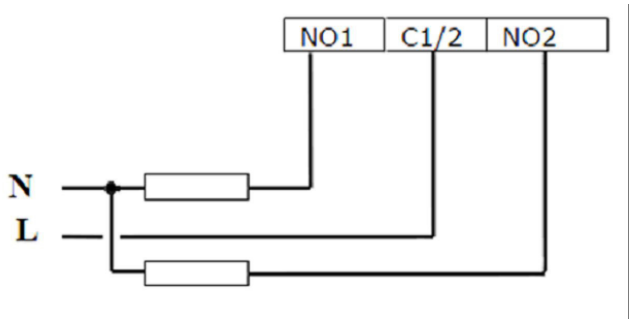


Fig. 2.b

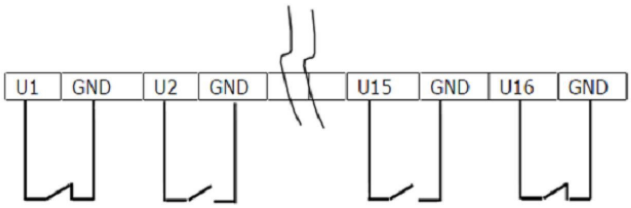


Fig. 2.c

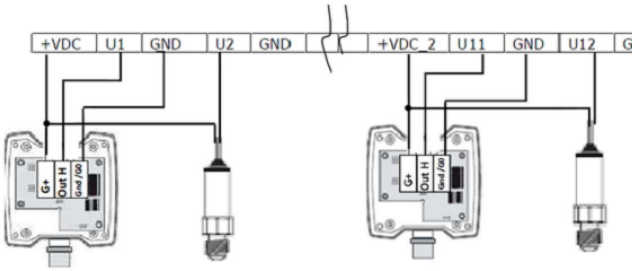


Fig. 2.d

2.2 Working modes

I/O logger box offers thirteen different working modes which provide the universal inputs combinations shown in the following table for each c.pco mini. The configuration of the working mode can be done by using the PlantWatchPRO user interface (see 2.7) or the c.pco mini built in display (see 2.3).

Universal inputs

Working mode	Description	Temperature		Analog			Digital input	UoM
		NTC	PT1000	4-20mA	0.5-4.5 ratiometric	0-5 external		
0	None	Max 10	Max 10	Max 4	Max 2	Max 2	Max 10	--
1	10 NTC probes	U1-U10	---	--	--	--	--	°C
2	10 PT1000 probes	---	U1-U10	--	--	--	--	°C
3	5 NTC probes and 5 digital inputs	U1-U5	--	--	--	--	U6-U10	°C
4	5 PT1000 probes and 5 digital inputs	--	U1-U5	--	--	--	U6-U10	°C
5	10 digital inputs	--	--	--	--	--	U1-U10	--
6	4 NTC probes, 4 pressure probes and 2 digital inputs	U1-U4	--	U5-U8	--	--	U9-U10	bar, °C
7	4 PT1000 probes, 4 pressure probes and 2 digital inputs	--	U1-U4	U5-U8	--	--	U9-U10	bar, °C
8	4 NTC probes, 4 pressure probes and 2 digital inputs	U1-U4	--	--	U5-U6	U7-U8	U9-U10	bar, °C
9	4 PT1000 probes, 4 pressure probes and 2 digital inputs	--	U1-U4	--	U5-U6	U7-U8	U9-U10	bar, °C
10	4 NTC probes, 4 humidity probes and 2 digital inputs	U1-U4	--	U5-U8	--	--	U9-U10	% ,°C
11	4 PT1000 probes, 4 humidity probes and 2 digital inputs	--	U1-U4	U5-U8	--	--	U9-U10	% ,°C
12	4 NTC probes, 4 humidity probes and 2 digital inputs	U1-U4	--	--	--	U5-U8	U9-U10	% ,°C
13	4 PT1000 probes, 4 humidity probes and 2 digital inputs	--	U1-U4	--	--	U5-U8	U9-U10	% ,°C

Tab. 2.d

2.3 C.pco mini configuration

C.pco mini is configured with the following protocol parameters by default:

Protocol	Modbus
Baud rate	19200
Data bits	8
Parity	None
Stop bit	1

Tab. 2.e

The default serial address is set to 1. In case of using the 20 universal inputs version, the serial address of the second c.pco mini, has to be set to 2. To do so, on the c.pco mini built in display, use the Enter button to navigate to the address option and the Up and Down buttons to set the 2 value.

ATTENTION: it is necessary to restart the c.pco mini everytime the default protocol parameters are modified.

The working mode can be configured from the display in the same way by acting on the Model field. Remember to do it for both the c.pco mini when present.

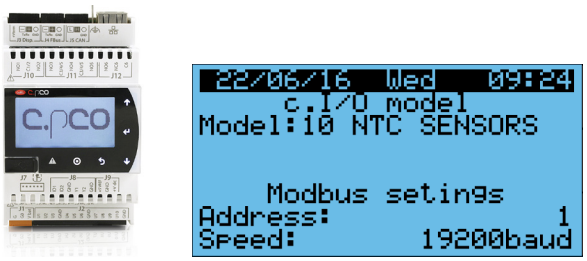


Fig. 2.e

In case of connecting further devices on the same line with different protocol parameters to the c.pco mini default ones, it is possible to change them (speed, parity and stop bit) by following the same above procedure.

2.4 PlantWatchPRO communication configuration

In the configuration menu of PlantWatchPRO, enter in the Line configuration area, select the right line (the default wiring configuration is on line 1) and in the connection section, set the same protocol parameters of the c.pco mini (see 2.3) to enable the communication:

Fig. 2.f

2.5 PlantWatchPRO devices configuration

There are five different variables lists available on PlantwatchPRO to match the different working modes. Check following table for the correspondence:

Working mode	PWPRO model
0	None
1 and 2	IOLOGGER_10T_MODE_1TO2
3 and 4	IOLOGGER_5T_5DI_ MODE_3TO4
5	IOLOGGER_10DI_MODE_5
6, 7, 8 and 9	IOLOGGER_4T_4P_2DI_MODE_6TO9
10, 11, 12 and 13	IOLOGGER_4T_4rH_2DI_MODE_10TO13

Tab. 2.f

1. In the configuration - Line configuration - line section (line 1 is used by default), enter the devices menu and click the + button to add the necessary devices (1 in the 10 universal inputs version and 2 in the 20 universal inputs version).

2. Select your model from the list. Above table reports the model associated to each working mode. Set the right serial address (c.pco mini serial address is 1 by default).

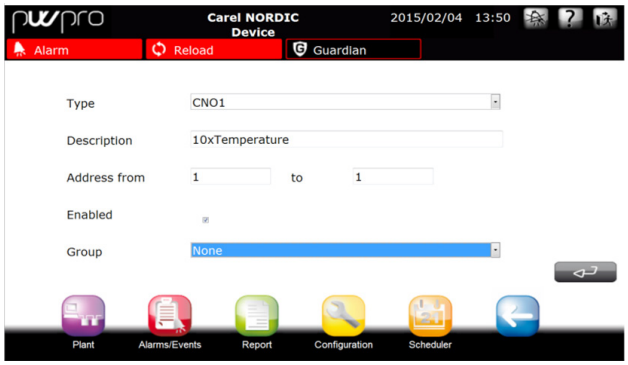


Fig. 2.g

3. Repeat previous points in case of using the 20 universal inputs version. Serial address should be setup to 2 for the second c.pco mini on both c.pco mini and PlantWatchPRO sides.

4. Now new devices are present in the plant

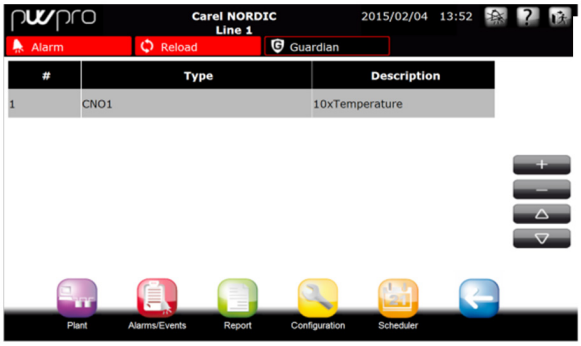


Fig. 2.h

5. In order to activate the new configuration, it is always necessary to reload the PlantWatchPRO. Click on the Reload tab and confirm the operation. This procedure is also necessary to apply any further change introduced in a second step

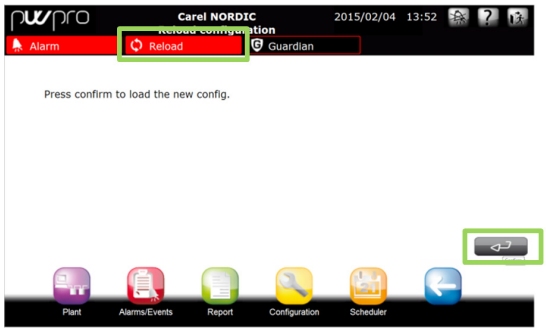


Fig. 2.i

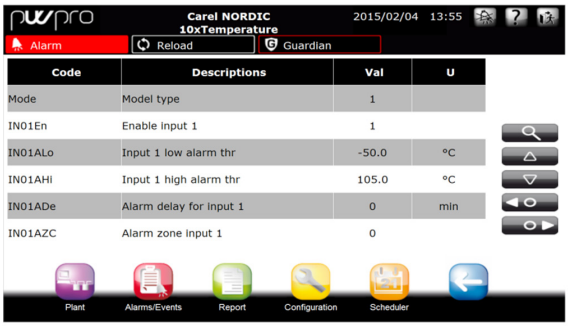


Fig. 2.l

2.6 PlantWatchPRO main functionalities

- In the plant section an overview of all the configured devices with the main parameters is available
- Click on the image selected area to enter to the specific device details

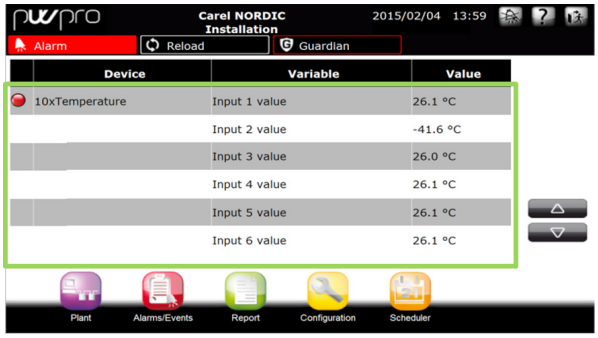


Fig. 2.j

- Once a device is accessed, it is possible to read and write parameters, check active and reset alarms and access the graph for analysis. All the 10 or 20 universal inputs are sampled and stored with a frequency of 15 minutes by default. In order to modify this configuration, check PlantWatchPRO manual

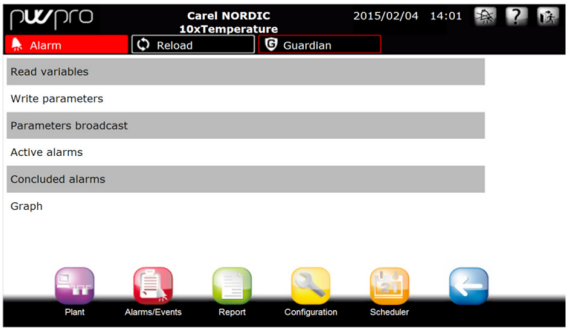


Fig. 2.k

2.7 Logger configuration

From the write parameters section of PlantWatchPRO ,it is possible to configure the working mode, enable/disable the alarms, set the high and low alarm thresholds, configure the zone management, etc. See next sections for further information about parameters to be set.

Variable 'Mode – Model type' defines the working mode (0-13). Click on it to introduce the mode value.

2.8 Data saving and data export

All the 10 or 20 inputs are configured by default to be sampled every 15 minutes which means, by considering the capacity of the PlantWatchPRO, that 1 year of data can be stored locally.

Data extraction is possible by using a USB memory key or SD card. Log or HACCP reports can be scheduled and saved to a mass storage device connected to the USB port or SD Card reader. For further information, please consult the PlantWatchPRO quick guide.

2.9 Alarms management

PlantWatchPRO I/O data logger box can manage the followings alarms:

- High temperature alarm
- Low temperature alarm
- Probe alarm: connection or faulty probe will generate this alarm
- Alarm from digital input

.

All the alarms above have an associated delay time. A single delay time is possible for each probe so high and low temperature alarms will have the same delay which can be configured by using the INxxADe parameters. Probe alarms have a fixed delay of 10 seconds.

By default, alarms are enabled (value 1) to indicate any anomalous situation. It is possible to disable all or some of the alarms associated to the probes by setting the enable variables (INxxEn) to zero value. Section 2.7 reports how to write parameters

2.10 Digital inputs alarm management

Each digital input can be associated to an alarm (from alarm 31 to 40) by using variables DIxxACo in the following way:

DIxxACo value	No alarm	Alarm if opened	Alarm if closed
0	X	---	---
1	---	X	---
2	---	---	X

Tab. 2.g

Section 2.7 reports how to write parameters

2.11 Alarms zone management

Each input can be associated to a zone, A or B, by using variables INxxAZC. Section 2.7 reports how to write parameters. If any alarm is active for the associated inputs, the corresponding output (Relay A or Relay B) will be nergized or de-energised in response to the alarm.

INxxAZC value	General alarm	Relay A	Relay B
0	X	---	---
1	X	X	---

2	X	---	X

Tab. 2.h

The following table reports the zones and outputs associations:

Digital outputs	Description	Type
NO1	Alarm zone A	Normally opened
NO2	Alarm zone A	Normally closed
NO3	Alarm zone B	Normally opened
NO4	Alarm zone B	Normally closed
NO5	Not used	---
NO6	General alarm	Normally opened/ Normally closed

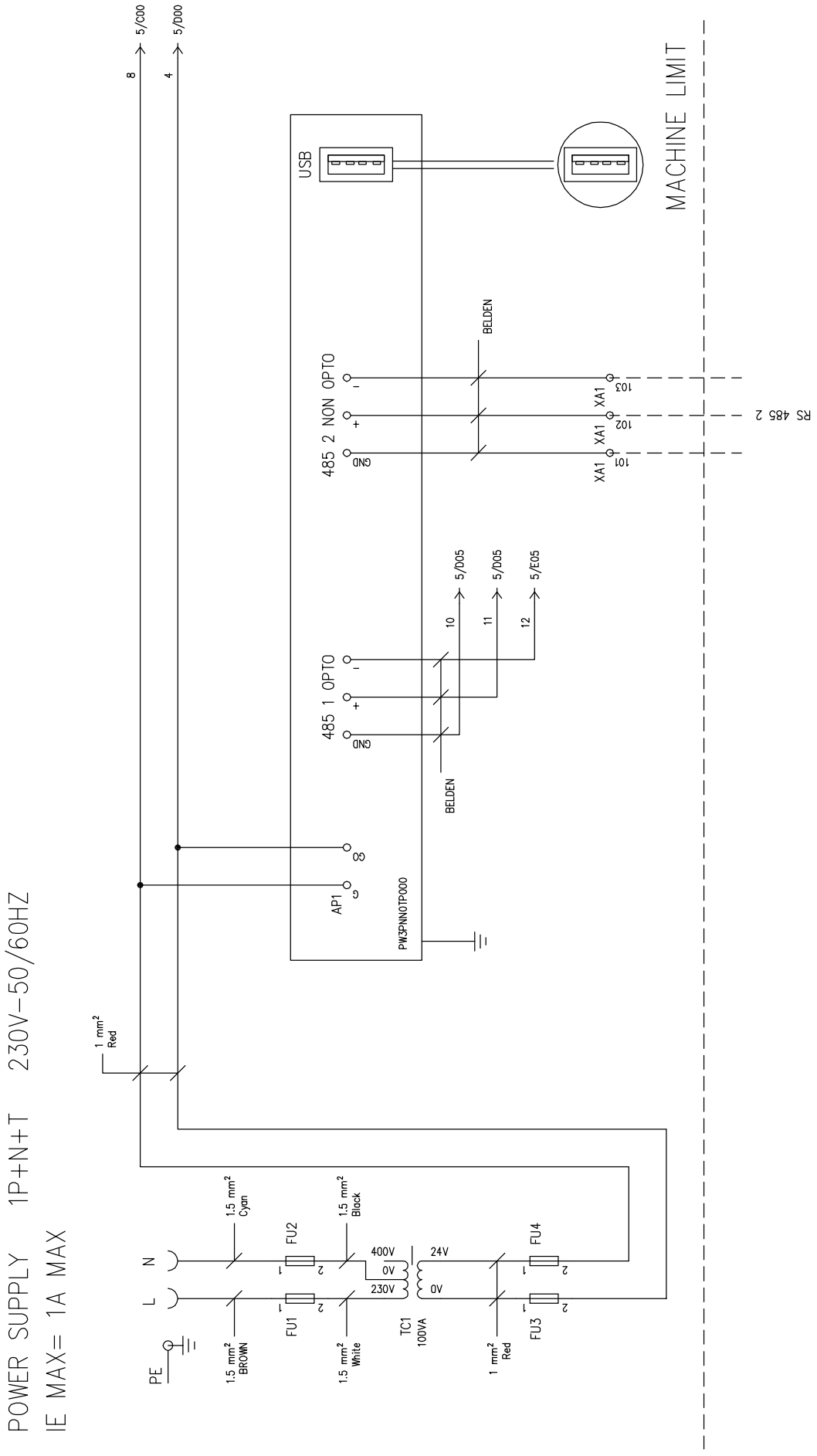
Tab. 2.i

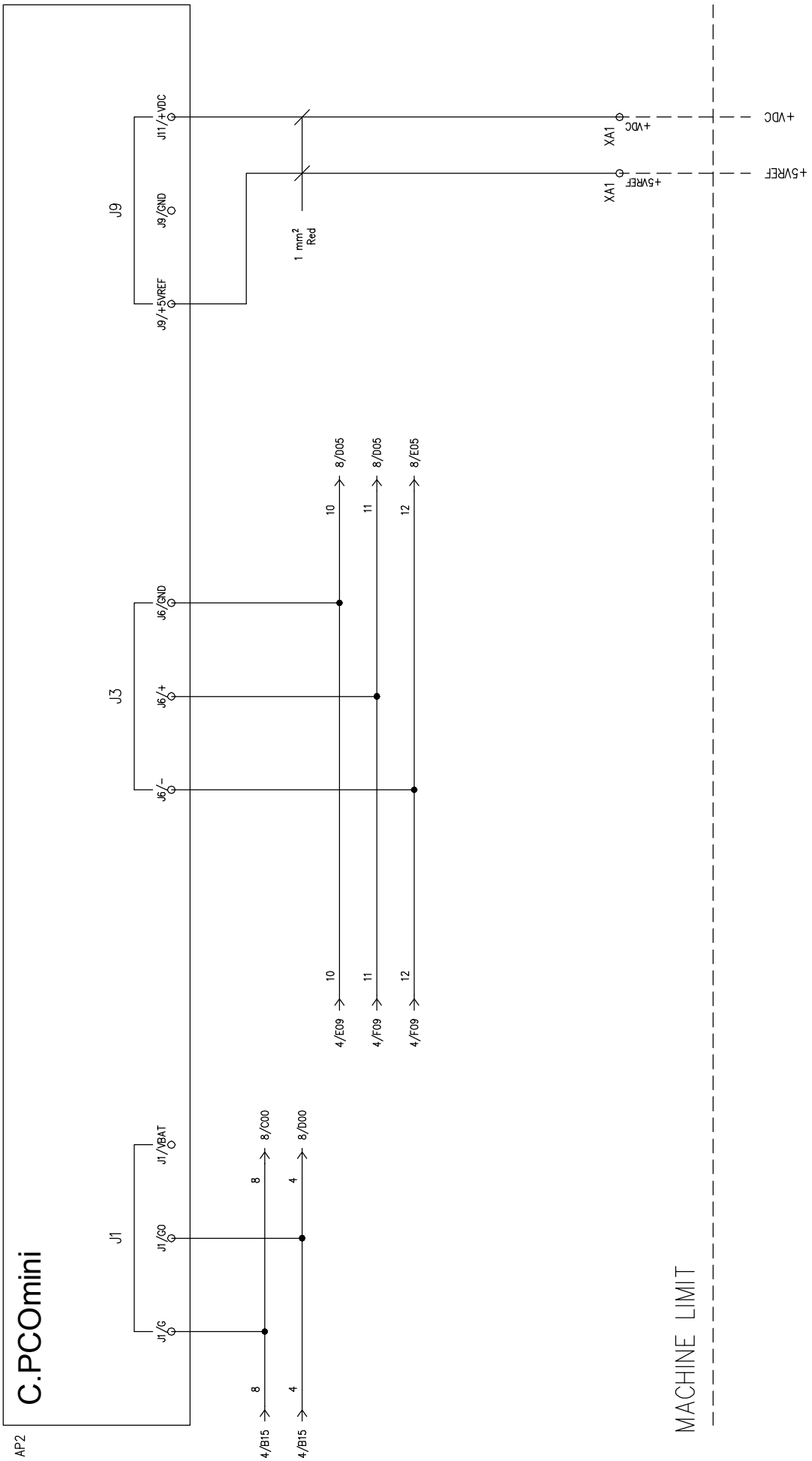
2.12 Alarms table

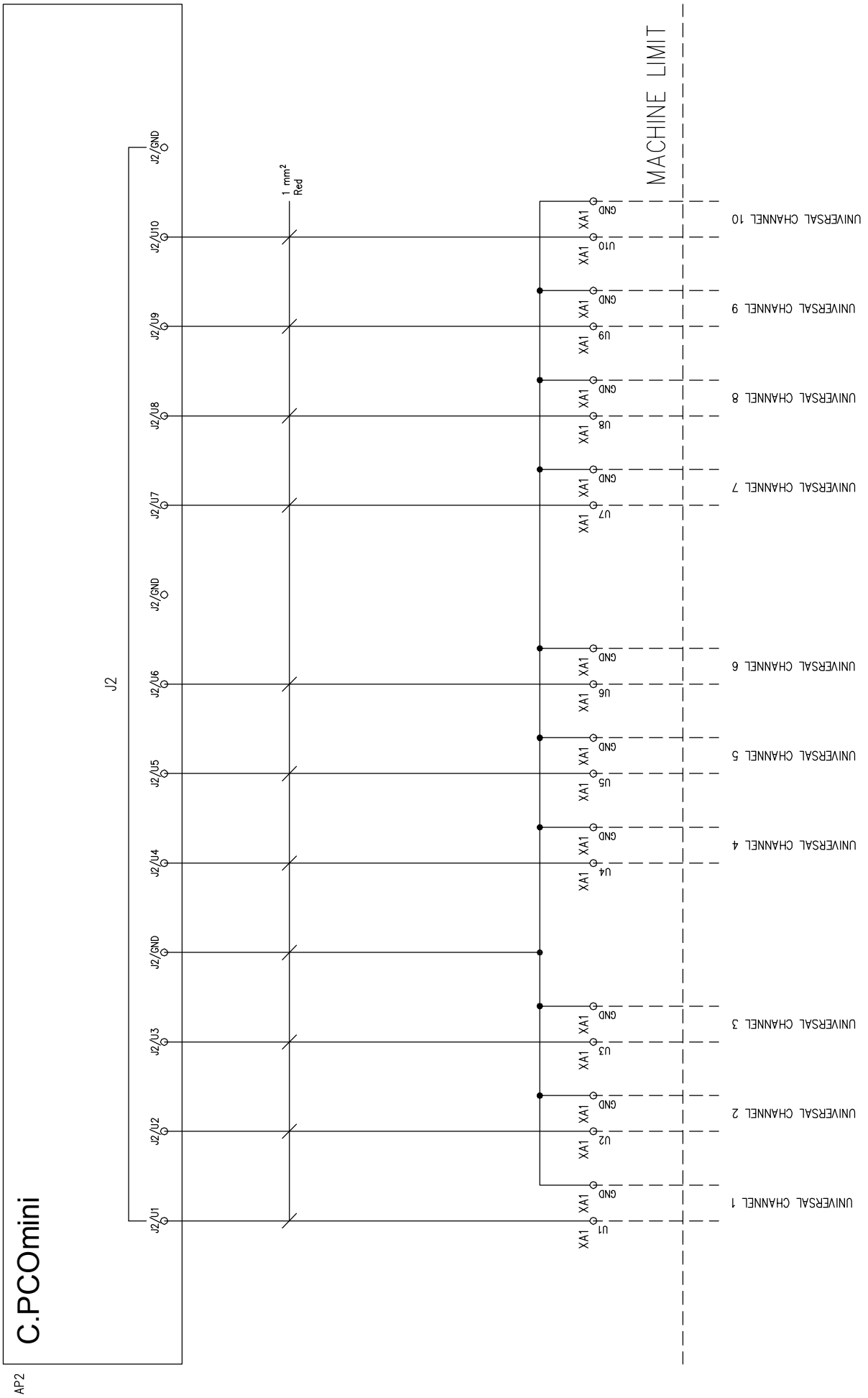
Alarm Code	Description	Alarm delay	Reset type
AL001	Low alarm input 1	Parameter, delay in min	AUTO
AL002	Low alarm input 2	Parameter, delay in min	AUTO
AL003	Low alarm input 3	Parameter, delay in min	AUTO
AL004	Low alarm input 4	Parameter, delay in min	AUTO
AL005	Low alarm input 5	Parameter, delay in min	AUTO
AL006	Low alarm input 6	Parameter, delay in min	AUTO
AL007	Low alarm input 7	Parameter, delay in min	AUTO
AL008	Low alarm input 8	Parameter, delay in min	AUTO
AL009	Low alarm input 9	Parameter, delay in min	AUTO
AL010	Low alarm input 10	Parameter, delay in min	AUTO
AL011	High alarm input 1	Parameter, delay in min	AUTO
AL012	High alarm input 2	Parameter, delay in min	AUTO
AL013	High alarm input 3	Parameter, delay in min	AUTO
AL014	High alarm input 4	Parameter, delay in min	AUTO
AL015	High alarm input 5	Parameter, delay in min	AUTO
AL016	High alarm input 6	Parameter, delay in min	AUTO
AL017	High alarm input 7	Parameter, delay in min	AUTO
AL018	High alarm input 8	Parameter, delay in min	AUTO
AL019	High alarm input 9	Parameter, delay in min	AUTO
AL020	High alarm input 10	Parameter, delay in min	AUTO
AL021	Probe alarm input 1	10s	AUTO
AL022	Probe alarm input 2	10s	AUTO
AL023	Probe alarm input 3	10s	AUTO
AL024	Probe alarm input 4	10s	AUTO
AL025	Probe alarm input 5	10s	AUTO
AL026	Probe alarm input 6	10s	AUTO
AL027	Probe alarm input 7	10s	AUTO
AL028	Probe alarm input 8	10s	AUTO
AL029	Probe alarm input 9	10s	AUTO
AL030	Probe alarm input 10	10s	AUTO
AL031	Alarm from input 6 in case of digital input	Parameter, delay in min	AUTO
AL032	Alarm from input 7 in case of digital input	Parameter, delay in min	AUTO
AL033	Alarm from input 8 in case of digital input	Parameter, delay in min	AUTO
AL034	Alarm from input 9 in case of digital input	Parameter, delay in min	AUTO
AL035	Alarm from input 10 in case of digital input	Parameter, delay in min	AUTO
AL036	Alarm from input 1 in case of digital input	Parameter, delay in min	AUTO
AL037	Alarm from input 2 in case of digital input	Parameter, delay in min	AUTO
AL038	Alarm from input 3 in case of digital input	Parameter, delay in min	AUTO
AL039	Alarm from input 4 in case of digital input	Parameter, delay in min	AUTO
AL040	Alarm from input 5 in case of digital input	Parameter, delay in min	AUTO

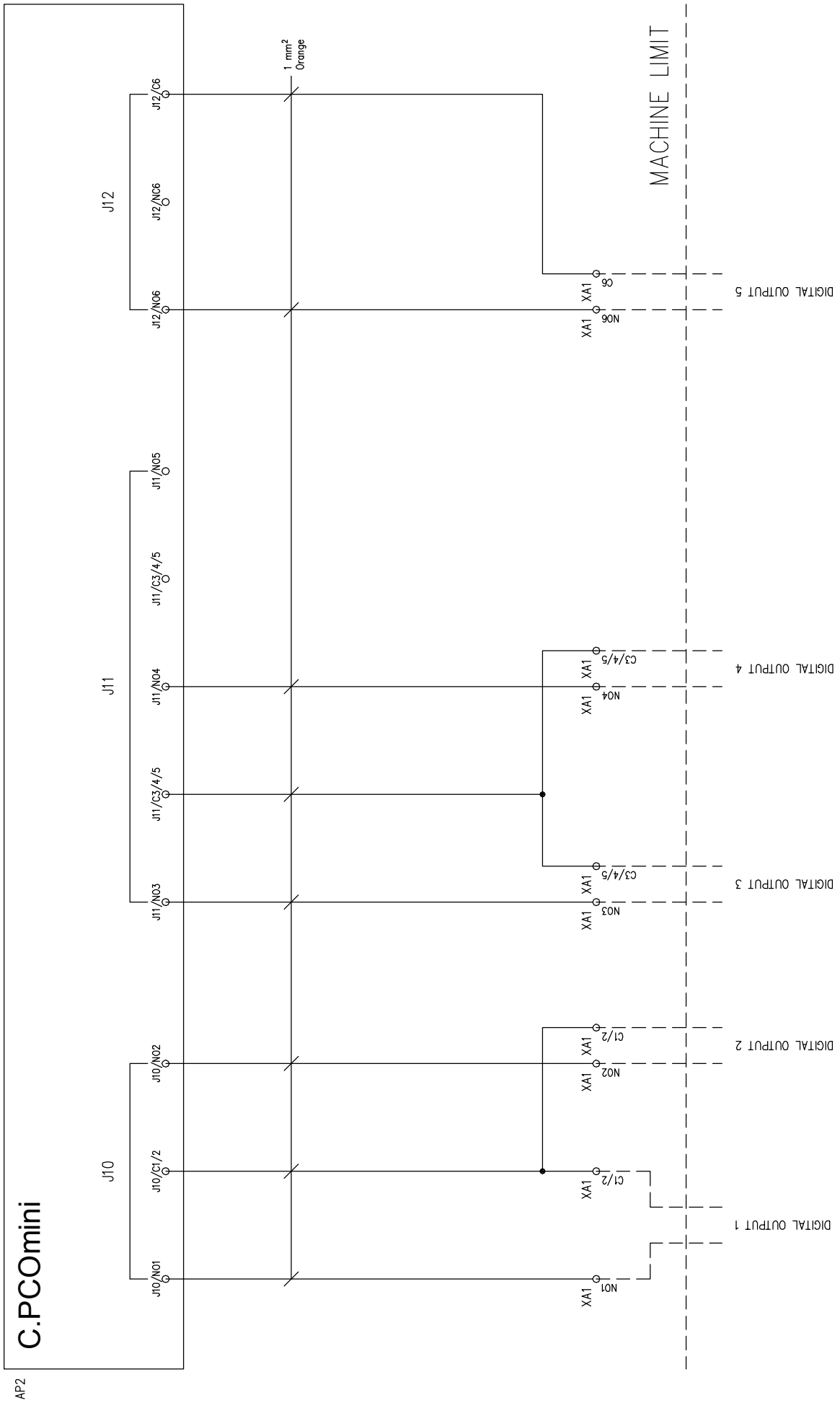
Tab. 2.j

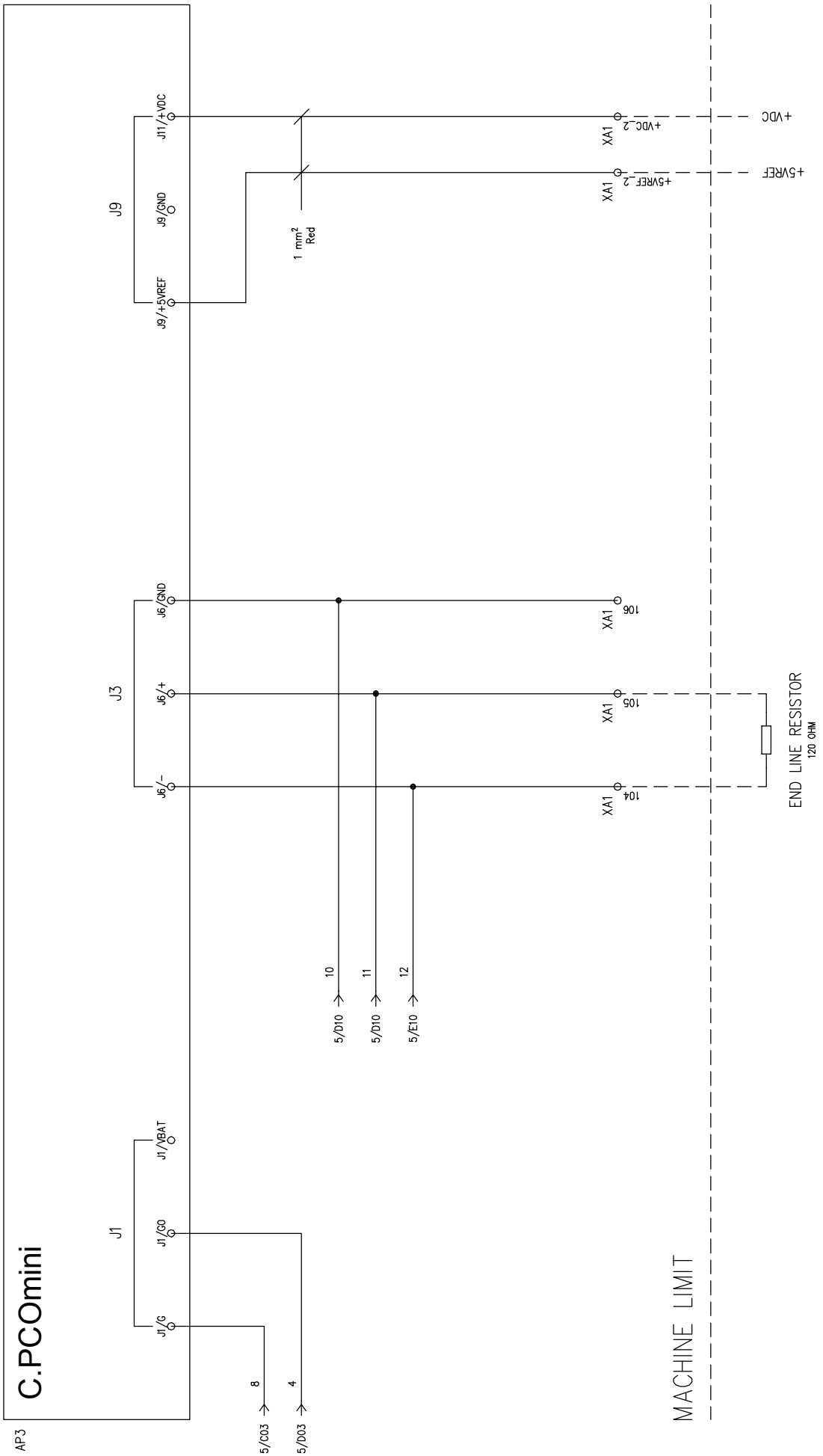
3. ELECTRICAL WIRING

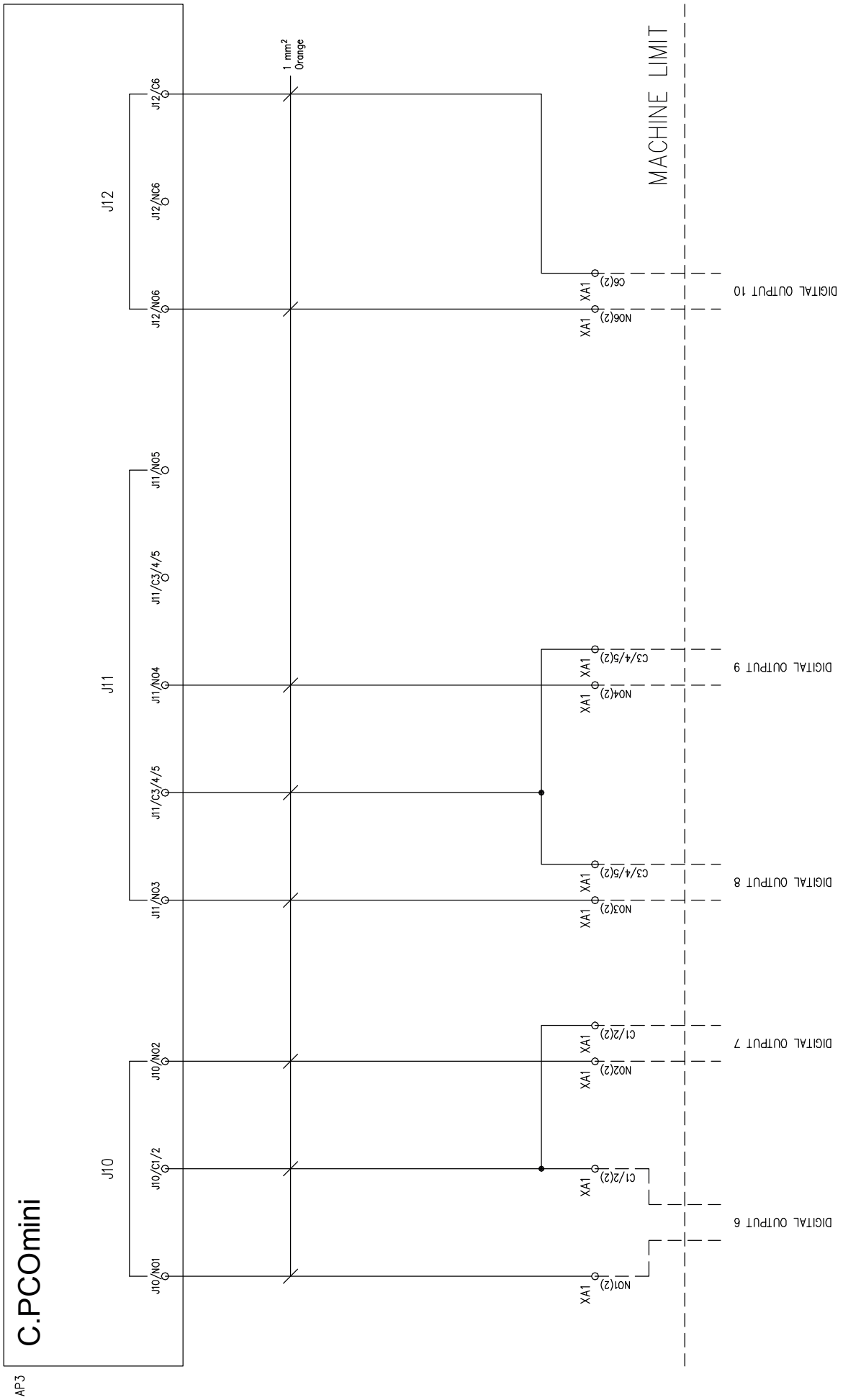


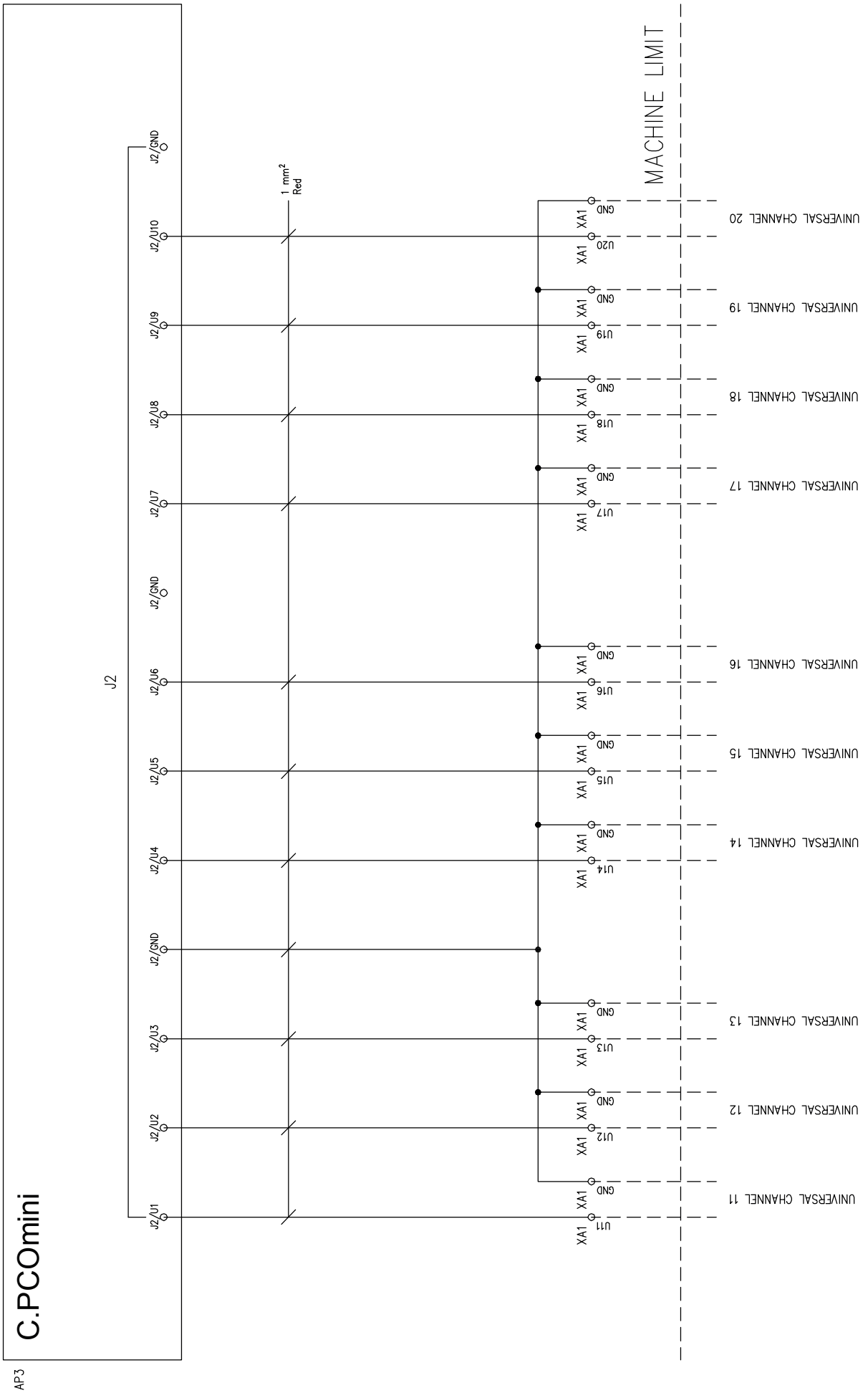

AP2
C.PCOmini
J1
J1/VBAT
J1/G0
J1/G
J3
J6/GND
J6/+
J6/-
J9
J11/+VDC
J9/GND
J9/+5VREF
1 mm² Red
XA1
+VDC
+5VREF
MACHINE LIMIT
8/C00
8/D00
8/D05
8/D05
8/E05
4/B15
4/B15
4/E09
4/F09
4/F09
8
4
10
11
12

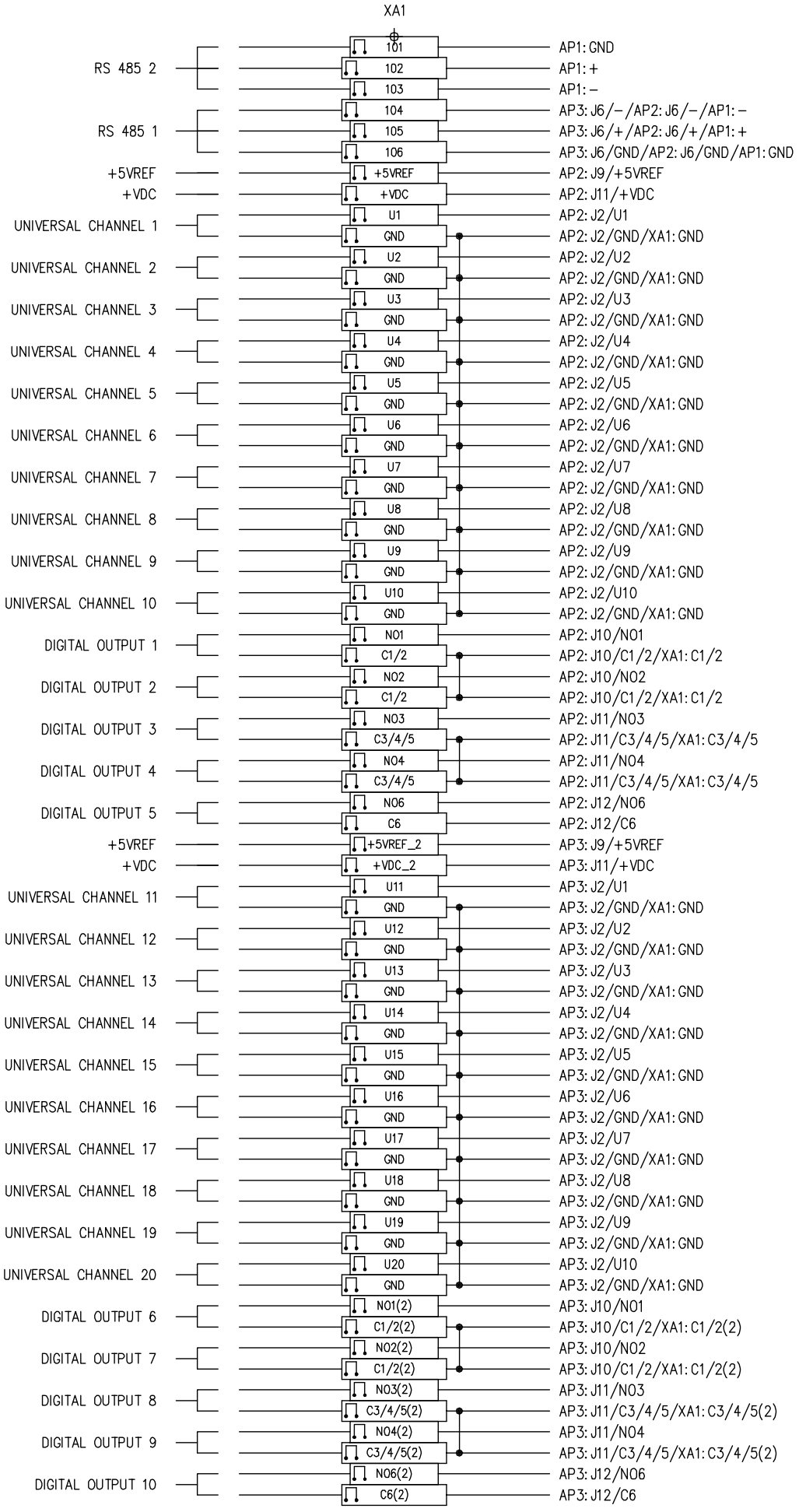

AP2
C.PCOmini
J2
J2/GND
J2/U10
J2/U9
J2/U8
J2/U7
J2/GND
J2/U6
J2/U5
J2/U4
J2/GND
J2/U3
J2/U2
J2/U1
1 mm²
Red
MACHINE LIMIT
XA1
GND
U10
U9
U8
U7
U6
U5
U4
U3
U2
U1
UNIVERSAL CHANNEL 10
UNIVERSAL CHANNEL 9
UNIVERSAL CHANNEL 8
UNIVERSAL CHANNEL 7
UNIVERSAL CHANNEL 6
UNIVERSAL CHANNEL 5
UNIVERSAL CHANNEL 4
UNIVERSAL CHANNEL 3
UNIVERSAL CHANNEL 2
UNIVERSAL CHANNEL 1


AP2
C.PCOmini
J10
J11
J12
J10/C1/2
J10/NO1
J10/NO2
J11/C3/4/5
J11/NO3
J11/NO4
J11/C3/4/5
J11/NO5
J12/C6
J12/NO6
J12/NC6
1 mm²
Orange
MACHINE LIMIT
XA1
C1/2
NO1
NO2
C3/4/5
NO3
NO4
C3/4/5
C6
NO6
DIGITAL OUTPUT 1
DIGITAL OUTPUT 2
DIGITAL OUTPUT 3
DIGITAL OUTPUT 4
DIGITAL OUTPUT 5


C.PCOmini
AP3
J1
J1/VBAT
J1/G0
J1/G
8
5/C03
4
5/D03
J3
J6/GND
J6/+
J6/-
10
5/D10
11
5/D10
12
5/E10
J9
J11/+VDC
J9/GND
J9/+5VREF
1 mm²
Red
XA1
106
XA1
105
XA1
104
XA1
+VDC_2
XA1
+5VREF_2
+VDC
+5VREF
END LINE RESISTOR
120 OHM
MACHINE LIMIT


AP3
C.PCOmini
J10
J11
J12
J10/C1/2
J10/NO1
J10/NO2
J11/C3/4/5
J11/NO3
J11/NO4
J11/NO5
J12/C6
J12/NO6
1 mm²
Orange
MACHINE LIMIT
DIGITAL OUTPUT 6
DIGITAL OUTPUT 7
DIGITAL OUTPUT 8
DIGITAL OUTPUT 9
DIGITAL OUTPUT 10
XA1
C1/2(2)
NO1(2)
NO2(2)
C3/4/5(2)
NO3(2)
NO4(2)
C6(2)
NO6(2)


AP3
C.PCOmini
J2
J2/GND
J2/U10
J2/U9
J2/U8
J2/U7
J2/GND
J2/U6
J2/U5
J2/U4
J2/GND
J2/U3
J2/U2
J2/U1
1 mm²
Red
MACHINE LIMIT
XA1
GND
U20
U19
U18
U17
U16
U15
U14
U13
U12
U11
UNIVERSAL CHANNEL 20
UNIVERSAL CHANNEL 19
UNIVERSAL CHANNEL 18
UNIVERSAL CHANNEL 17
UNIVERSAL CHANNEL 16
UNIVERSAL CHANNEL 15
UNIVERSAL CHANNEL 14
UNIVERSAL CHANNEL 13
UNIVERSAL CHANNEL 12
UNIVERSAL CHANNEL 11


XA1
RS 485 2
RS 485 1
+5VREF
+VDC
UNIVERSAL CHANNEL 1
UNIVERSAL CHANNEL 2
UNIVERSAL CHANNEL 3
UNIVERSAL CHANNEL 4
UNIVERSAL CHANNEL 5
UNIVERSAL CHANNEL 6
UNIVERSAL CHANNEL 7
UNIVERSAL CHANNEL 8
UNIVERSAL CHANNEL 9
UNIVERSAL CHANNEL 10
DIGITAL OUTPUT 1
DIGITAL OUTPUT 2
DIGITAL OUTPUT 3
DIGITAL OUTPUT 4
DIGITAL OUTPUT 5
+5VREF
+VDC
UNIVERSAL CHANNEL 11
UNIVERSAL CHANNEL 12
UNIVERSAL CHANNEL 13
UNIVERSAL CHANNEL 14
UNIVERSAL CHANNEL 15
UNIVERSAL CHANNEL 16
UNIVERSAL CHANNEL 17
UNIVERSAL CHANNEL 18
UNIVERSAL CHANNEL 19
UNIVERSAL CHANNEL 20
DIGITAL OUTPUT 6
DIGITAL OUTPUT 7
DIGITAL OUTPUT 8
DIGITAL OUTPUT 9
DIGITAL OUTPUT 10
101
102
103
104
105
106
+5VREF
+VDC
U1
GND
U2
GND
U3
GND
U4
GND
U5
GND
U6
GND
U7
GND
U8
GND
U9
GND
U10
GND
NO1
C1/2
NO2
C1/2
NO3
C3/4/5
NO4
C3/4/5
NO6
C6
+5VREF_2
+VDC_2
U11
GND
U12
GND
U13
GND
U14
GND
U15
GND
U16
GND
U17
GND
U18
GND
U19
GND
U20
GND
NO1(2)
C1/2(2)
NO2(2)
C1/2(2)
NO3(2)
C3/4/5(2)
NO4(2)
C3/4/5(2)
NO6(2)
C6(2)
AP1: GND
AP1: +
AP1: –
AP3: J6/– /AP2: J6/– /AP1: –
AP3: J6/+ /AP2: J6/+ /AP1: +
AP3: J6/GND/AP2: J6/GND/AP1: GND
AP2: J9/+5VREF
AP2: J11/+VDC
AP2: J2/U1
AP2: J2/GND/XA1: GND
AP2: J2/U2
AP2: J2/GND/XA1: GND
AP2: J2/U3
AP2: J2/GND/XA1: GND
AP2: J2/U4
AP2: J2/GND/XA1: GND
AP2: J2/U5
AP2: J2/GND/XA1: GND
AP2: J2/U6
AP2: J2/GND/XA1: GND
AP2: J2/U7
AP2: J2/GND/XA1: GND
AP2: J2/U8
AP2: J2/GND/XA1: GND
AP2: J2/U9
AP2: J2/GND/XA1: GND
AP2: J2/U10
AP2: J2/GND/XA1: GND
AP2: J10/NO1
AP2: J10/C1/2/XA1: C1/2
AP2: J10/NO2
AP2: J10/C1/2/XA1: C1/2
AP2: J11/NO3
AP2: J11/C3/4/5/XA1: C3/4/5
AP2: J11/NO4
AP2: J11/C3/4/5/XA1: C3/4/5
AP2: J12/NO6
AP2: J12/C6
AP3: J9/+5VREF
AP3: J11/+VDC
AP3: J2/U1
AP3: J2/GND/XA1: GND
AP3: J2/U2
AP3: J2/GND/XA1: GND
AP3: J2/U3
AP3: J2/GND/XA1: GND
AP3: J2/U4
AP3: J2/GND/XA1: GND
AP3: J2/U5
AP3: J2/GND/XA1: GND
AP3: J2/U6
AP3: J2/GND/XA1: GND
AP3: J2/U7
AP3: J2/GND/XA1: GND
AP3: J2/U8
AP3: J2/GND/XA1: GND
AP3: J2/U9
AP3: J2/GND/XA1: GND
AP3: J2/U10
AP3: J2/GND/XA1: GND
AP3: J10/NO1
AP3: J10/C1/2/XA1: C1/2(2)
AP3: J10/NO2
AP3: J10/C1/2/XA1: C1/2(2)
AP3: J11/NO3
AP3: J11/C3/4/5/XA1: C3/4/5(2)
AP3: J11/NO4
AP3: J11/C3/4/5/XA1: C3/4/5(2)
AP3: J12/NO6
AP3: J12/C6

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Agenzia / *Agency:*

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