

# Numeric control

*CN2008 SE*

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Documentation

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## REVIEWS

No. of review	Date	Protocol	Changes and/or changed paragraphs
Rev 0	20/12/2016		First release

## CONTENTS

This document describes the CN2008 Second Edition Numeric Control (hereafter abbreviated as SE).



## 1 DESCRIPTION

Substantially, CN2008 SE is a computer embedded with bus PC104.

CN2008 SE is a small device that can be installed in an electric cabinet, with mounted DIN rail (omega rail) or wall mounting.

CN2008 SE offers following advantages:

- small sizes
- low consumptions.

CN2008 SE philosophy is to take back to the field the connections by means of a set of buses. According to the set of boards in the CN2008 SE, it is possible to configure a field bus.

## **2 FUNCTIONAL SPECIFICATION**

### **2.1 General requirements**

General requirements of the device are as follows:

- based on an embedded small-sized PC architecture.
- Mounting on DIN Rail (with both high and low profile).
- The basic configuration includes 1 TMSBus or TMSCAN expansion board.
- This system permits the expandability thanks to an additional PC104 board homologated by TPA.
- All the connections are displayed on the front side.
- Connection with PC supervisor through Ethernet 10/100/1000 Mb/s.
- Windows CE Operating System
- Serigraphics indications
- 24 V external power supply.
- Fanless system

### **2.2 Control specifications**

- based on a 3.5" MPU with 1GHz processor.
- RAM DDR3 1066MHz, 1GByte (or higher).
- Flash: 512MByte (or higher).
- Fanless board
- n°.1 VGA output for monitor.
- n°.1 PS/2 I/F for mouse + keyboard.
- no.1 serial RS232
- n°.1 serial RS485 (RS422 configurable by request).
- n°.1 LAN Ethernet 10/100/1000 Mb/s for connection to PC supervisor.
- n°.1 LAN Ethernet for EtherCAT bus.

### **2.3 Expansion specific boards**

- PC104 standard format
- Dedicated panel
- Front connectors.
- TPA's approval on expansion board.

## **2.4 Power supply specifications**

- +24V +/- 10%, 4A input supply
- Input protected and filtered.



### 3 TECHNICAL DATA

#### 3.1 System

Processor:	1 GHz, 512KB cache
RAM memory	DDR3 1066 MHz, 1GB (or higher)
Flash memory	512MB (or higher)
Operating system	Windows CE
Operation temperature	5 - 45° C
Storage temperature	NA
Moisture	10 - 95% relative moisture, without condensation
Power Supply	24 V dc $\pm$ 10%, 4 A
Dimensions	185 x 128 x 81.1 mm (DIN rail hook included)
Weight	900 g max
Assembly	DIN EN50022 or EN50035 rail

#### 3.2 I/O

I/O Module	1 serial RS232 1 RS485 half-duplex serial (or RS422 full-duplex) 1 PS/2 for keyboard and mouse
Ethernet	1 Lan Ethernet 10/100/1000 MB/s
CRT	1 out VGA for monitor

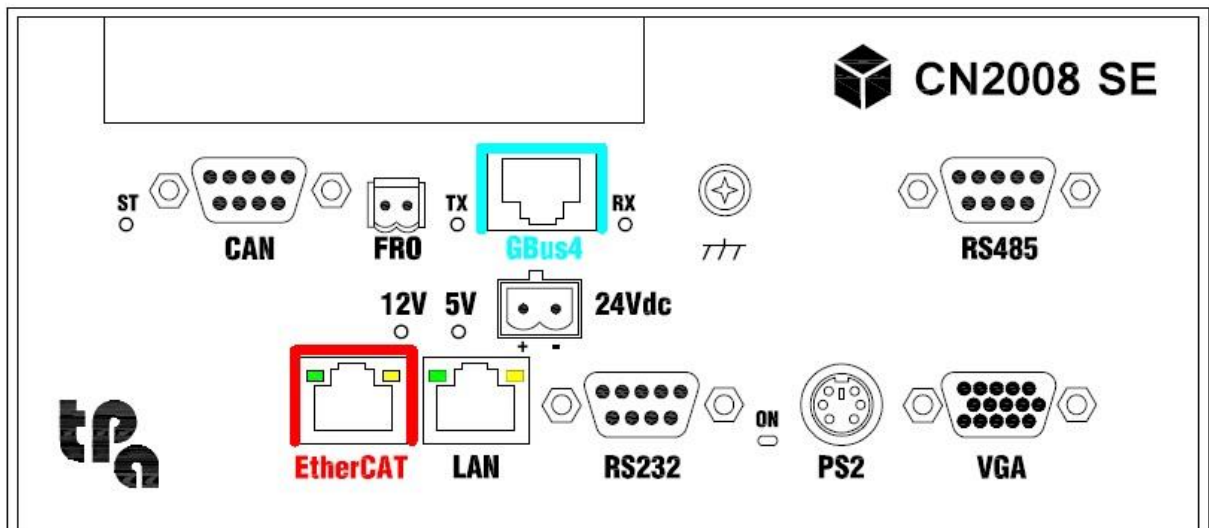
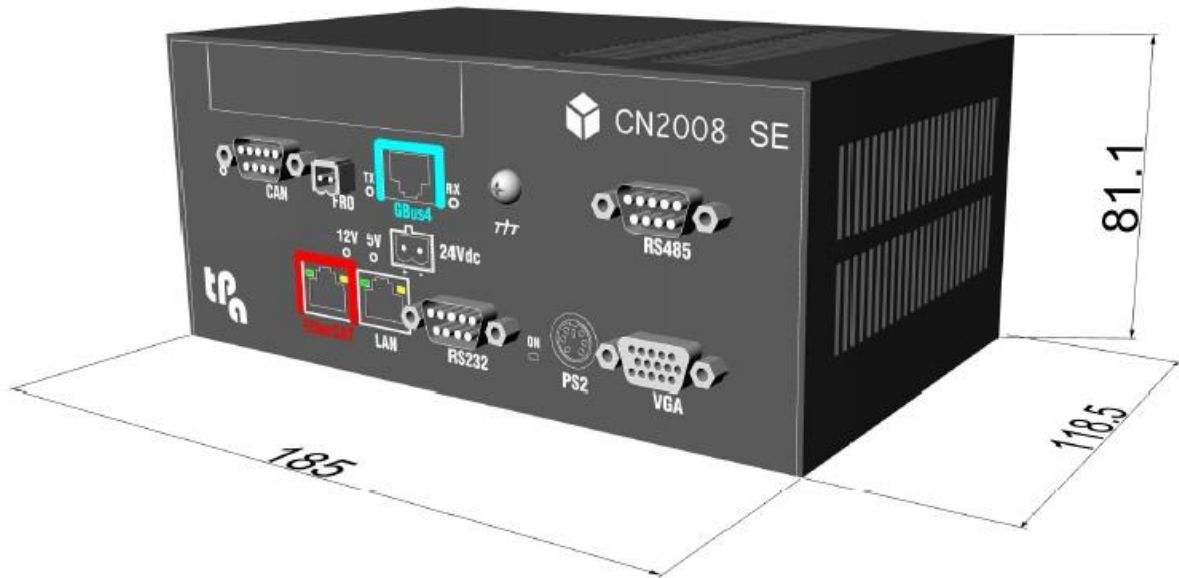
### 3.3 Expansion Slot

AlbMech-e	Control up to 8 digital Mechatrolink II ® axes (at 1 ms) Technical data: see relative documents
TMSbus	CAN Bus Management GreenBus 4.0 bus Feedrate override port Technical data: see associated documents
TMSCAN	CAN Bus: CANOpen Feedrate override port Technical data: see associated documents
EtherCAT	Made with on-board LAN card.

Any combination of expansion boards as above can be used unless exceptions and/or constraints and restrictions depending on the application.

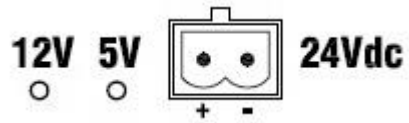
The basic control includes a TMSBus or a TMSCAN.

### 3.4 Dimensions



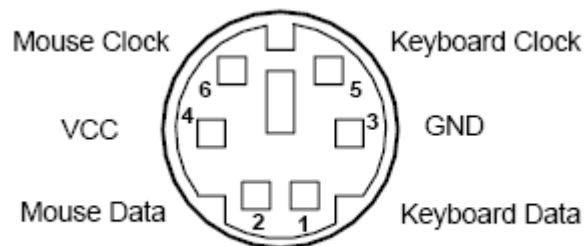
## 4 DESCRIPTIONS OF THE INTERFACES

### 4.1 24Vdc connector

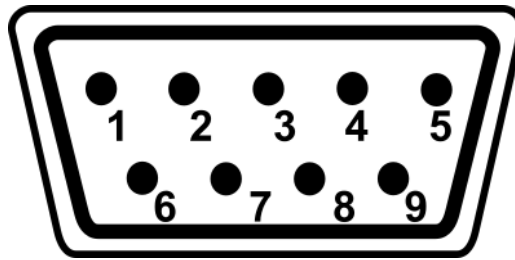


- 12V: internal 12V power led
- 5V: internal 5V power led
- 24Vdc: power connector with polarization serigraphy

### 4.2 Connector PS/2 Keyboard and Mouse



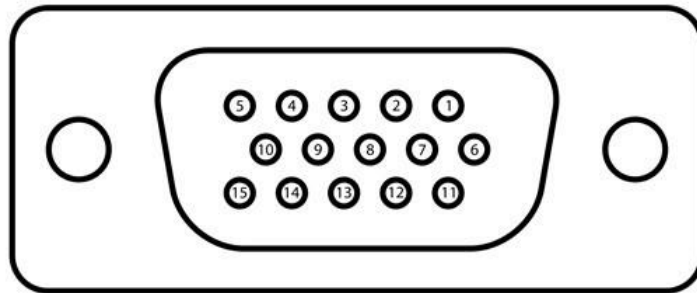
### 4.3 RS232 and RS485 connectors



Pin	RS232
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RING

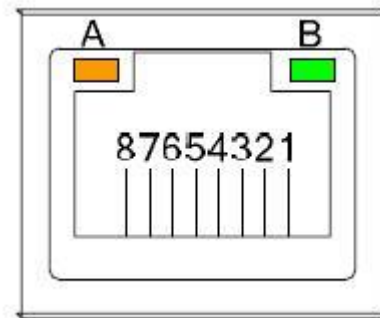
Pin	RS485	RS422 (by request)
1	DATA-	TX-
2	DATA+	TX+
3	nc	Rx+
4	nc	RX-
5	GND	GND
6	nc	nc
7	nc	nc
8	nc	nc
9	nc	nc

#### 4.4 VGA video out connector



Pin	Description
1	Red
2	Green
3	Blue
4	nc
5	Gnd
6	AGnd
7	AGnd
8	AGnd
9	nc
10	Gnd
11	nc
12	DDC dat
13	HSync
14	VSynC
15	DDC Clk

## 4.5 LAN and EtherCAT connectors



Pin	Description
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI2+
5	MDI2-
6	MDI1-
7	MDI3+
8	MDI3-
A	Act Link LED
B	Speed LED

## 4.6 CAN and FRO connectors

For the description, please, read the documentation of the TMSBus or TMSCAN board according to the board integrated into the basic control.

## 4.7 GBus4 connector

It works only if the board integrated into the basic control is TMSBus; please, the associated documentation.

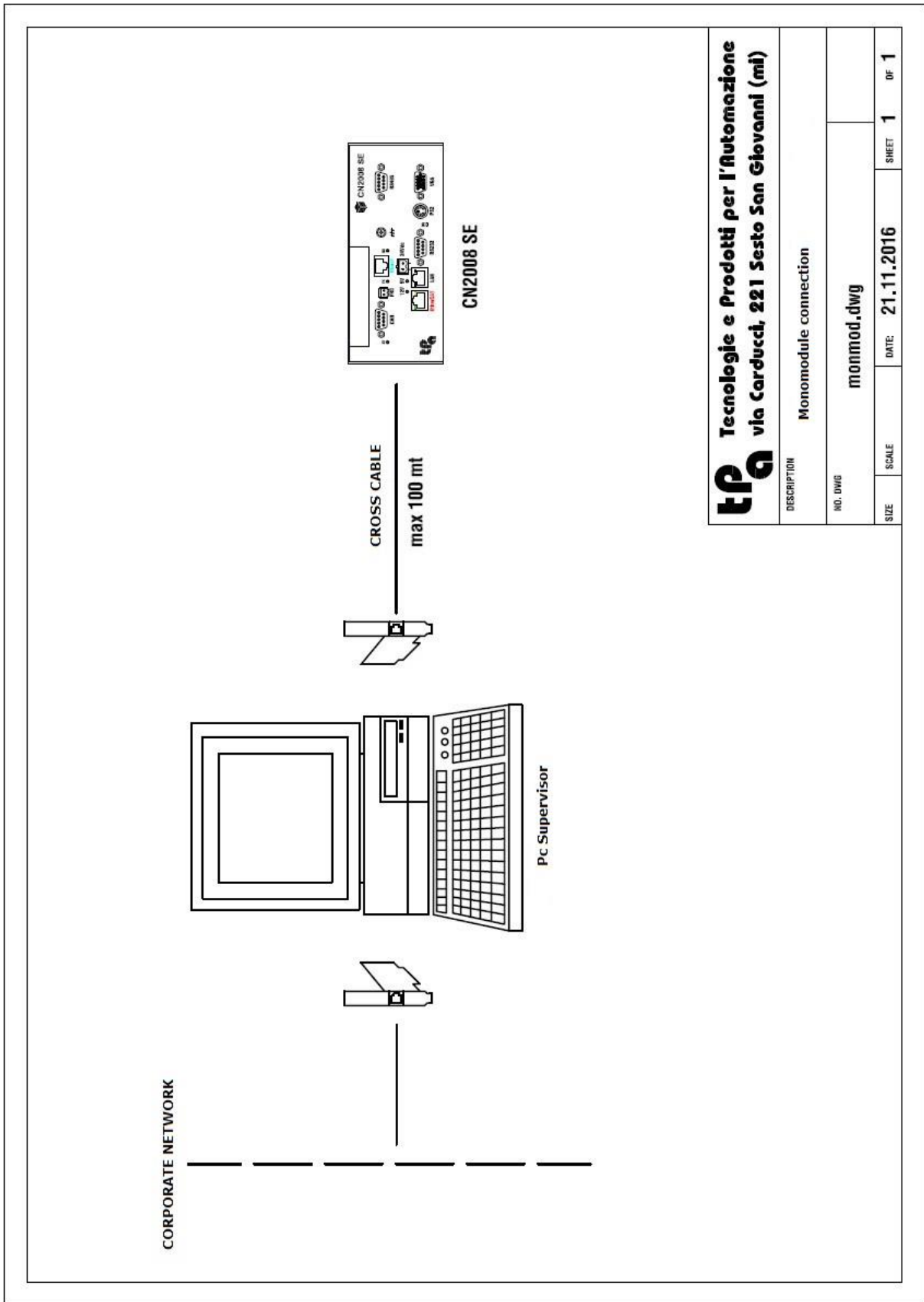
## 4.8 Other leds

In addition to the leds available on the previously described RJ45 connectors, hereafter you will find the references for the other leds on the interface.

For the TX, RX and ST warning lights, please, see the TMSBus/TMSCAN documentation according to the basic configuration.

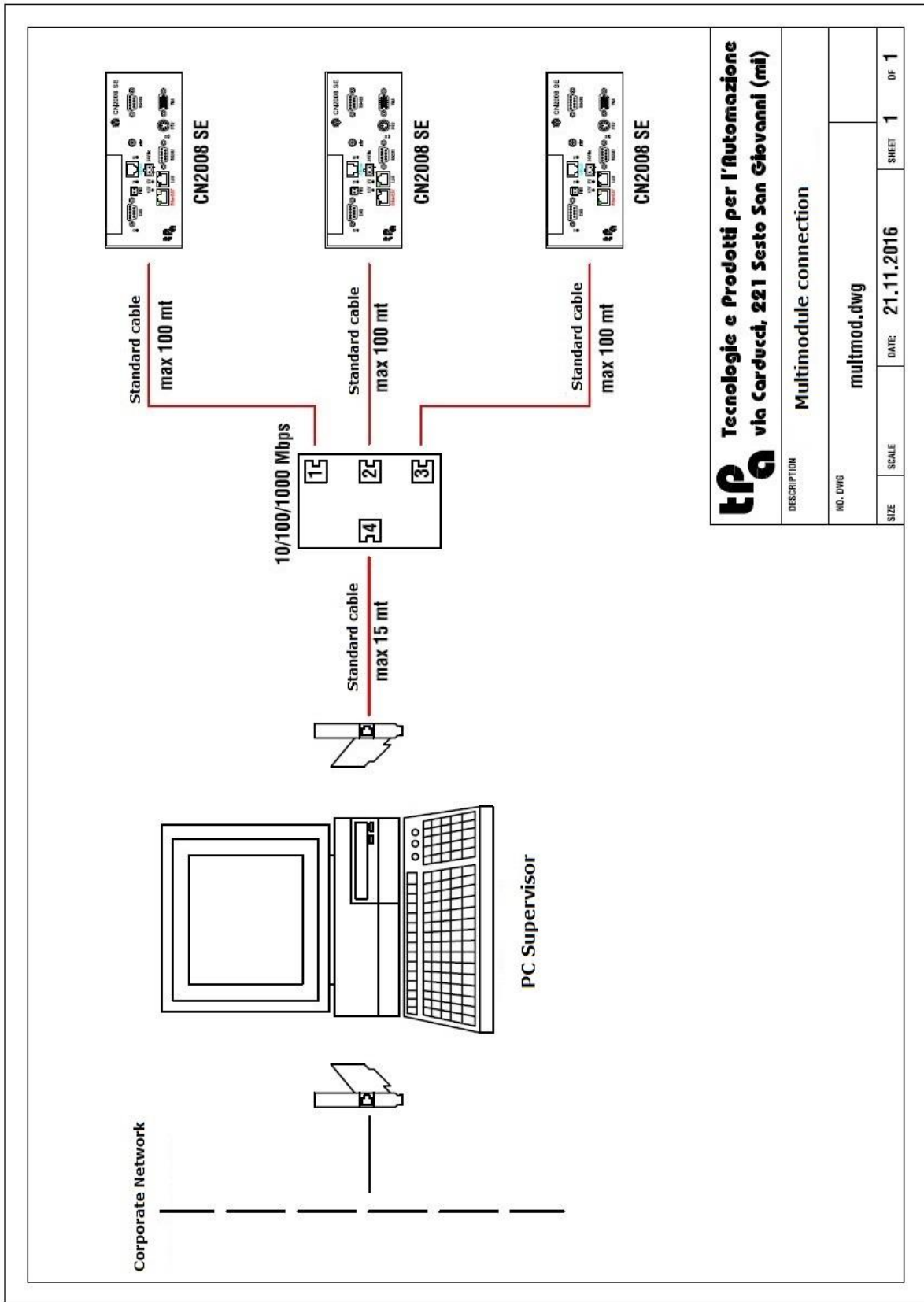
The led "ON" next to the RS232 connector shows the operating state of the control. It is normally green-red, when turned on.





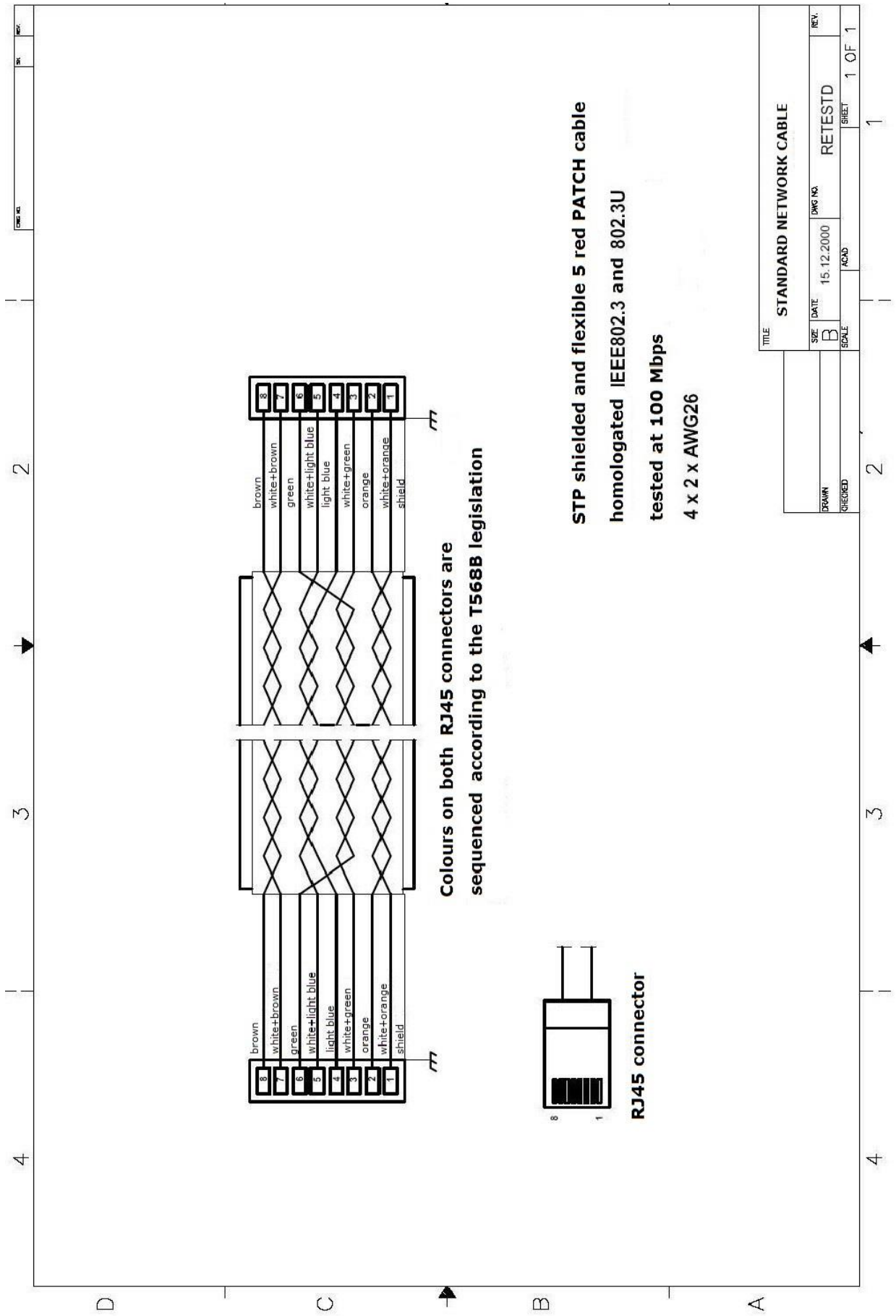
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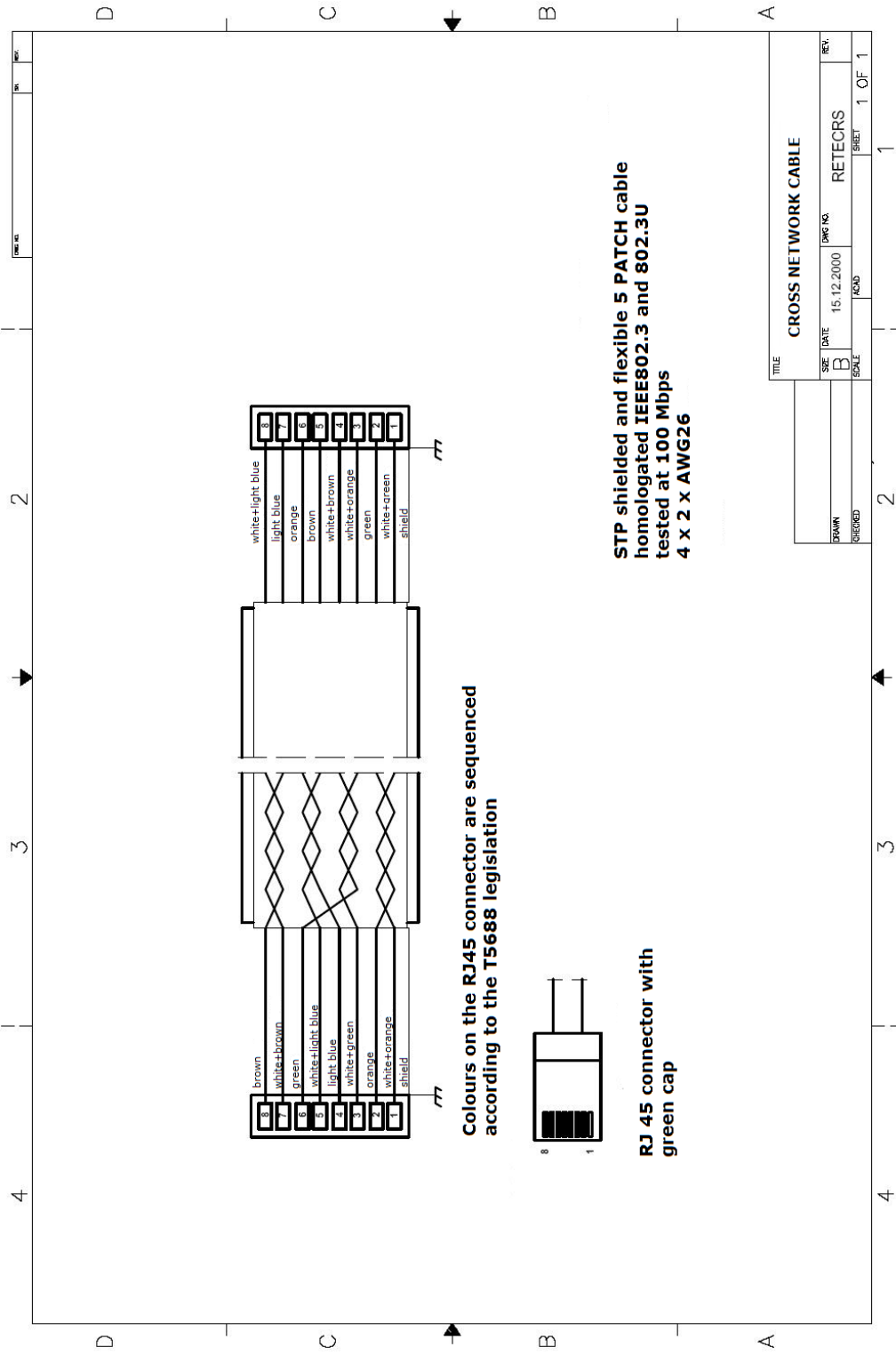
DESCRIPTION	Monomodule connection		
NO. DWG	monmod.dwg		
SIZE	SCALE	DATE	SHEET
		21.11.2016	1 OF 1



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DESCRIPTION		Multimodule connection	
NO. DWG		multimod.dwg	
SIZE	SCALE	DATE	SHEET
		21.11.2016	1 OF 1





## **5 INSTRUCTIONS**

Generally, the values of power supply, temperature and moisture must not exceed the values indicated in the chapter 3.

CN2008 SE must be connected (by means of a special screw) to the grounding.

We suggest you to install CN2008 SE in an electric cabinet or electric switchboard.

CN2008 SE is a computerized numeric control for general purposes in the environment of the light industry.

It is a class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take the due precautions .

### **5.1 Operating temperature**

Operating ambient temperature in the basic version : from 5°C to 45 ° C.

### **5.2 Power Supply**

To use CN 2008 SE we suggest Mean-Well DR120-24.(ac/dc converter) power supply.

However, you can also use a power supply unit (ad/dc converter) whose technical features are:  $V_{out} = 24V$  dc  $\pm 10\%$ ,  $I_{out} = 4$  A, so that CN2008 SE functions can be guaranteed. in all its configurations described in the chapter 3.

### **5.3 Expansion**

According to the expansion(s) used, please make reference to the suitable documentation for the rules concerning installation and cabling.



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