

Numeric control

Compact6

Documentation

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Remarks

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TABLE OF CONTENT

TOPICS	5
1 DESCRIPTION	6
2 FUNCTIONAL SPECIFICATION	7
2.1 General requirements.....	7
2.2 Control specifications.....	7
2.3 Supported field buses.....	7
2.4 Additional functions.....	7
2.5 Power supply specifications.....	8
3 TECHNICAL DATA	9
3.1 Device.....	9
3.2 I/O.....	9
3.3 Expansion Board.....	9
3.4 Dimensions.....	10
4 DESCRIPTIONS OF THE INTERFACES	11
4.1 Supply connector.....	11
4.1 Connector PS/2 Keyboard and Mouse11	
4.2 RS232 and RS485 connectors.....	12
4.3 VGA video out 13	
4.4 LAN and EtherCAT connectors.....	14
4.5 USB connector.....	14
4.6 GBus4, CAN and FRO connectors.....	15
4.7 Other leds.....	15
5 INSTRUCTIONS	19
5.1 Operating temperature.....	19
5.2 Power supply.....	19
5.3 Expansion.....	19

REVISIONS

Revision number	Date	Protocol	Changes and/or changed paragraphs
Rev 0	18/10/2016		First version
Rev 1	21/10/2016		General update

TOPICS

Description of Compact6 Numeric Control



1 DESCRIPTION

Compact6 is substantially a computer embedded with bus PC104.

Compact6 is a small device that can be installed in an electric cabinet, with mounted DIN rail (omega rail) or wall mounting.

Compact6 offers following advantages

- small sizes
- low consumptions.

Compact6 philosophy consists of taking back the connections to the field by means of a set of buses.

2 FUNCTIONAL SPECIFICATION

2.1 General requirements

General requirements of the device:

- based on an embedded small-sized PC architecture
- Mounting on DIN Rail (in the event of both high and low profiles)
- The device includes 1 TMSBus expansion board
- 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
- 12 V external power supply
- Possibility of managing max. 6 axes with 1 ms real-time
- This device is fanless.

2.2 Control specifications

- based on a 3.5" MPU with 1GHz processor
- RAM DDR3 1066MHz, 1GByte (or higher)
- 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
- n°.1 USB

2.3 Supported field buses

- GreenBus v4.0
- CAN Bus (CAN TPA, S-CAN).
- EtherCAT.

2.4 Additional functions

- Feed-rate override port

2.5 Power supply specifications

- +12V +/- 10%, 3 A input supply
- Input protected and filtered.

3 TECHNICAL DATA

3.1 Device

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	12 V dc ± 10%, 3 A
Dimensions	62.8 x 118.5 x 162mm
Weight	800 g max
Assembly	DIN EN50022 or EN50035 rail

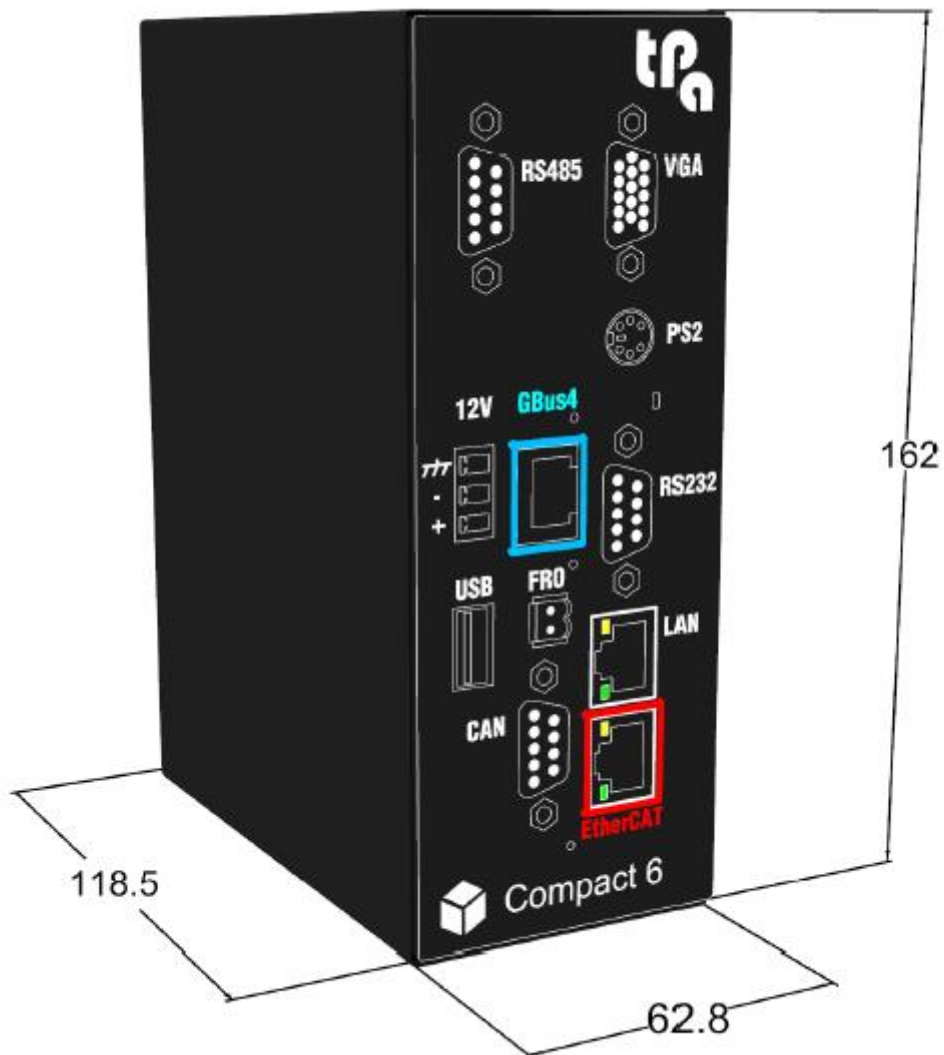
3.2 I/O

I/O Module	1 serial RS232 1 half-duplex serial RS485 (or full-duplex RS422) 1 PS/2 for keyboard and mouse
Ethernet	1 Lan Ethernet 10/100/1000 MB/s
CRT	1 out VGA for monitor
USB	1 USB 2.0

3.3 Expansion Board

TMSbus	CANBUS Management GreenBus 4.0 bus Possible Feedrate Technical data: see relative documents
EtherCAT	Made with on board LA card

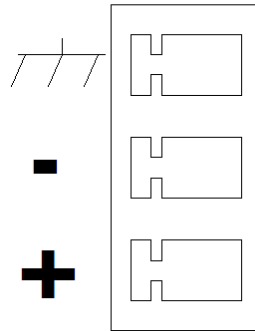
3.4 Dimensions



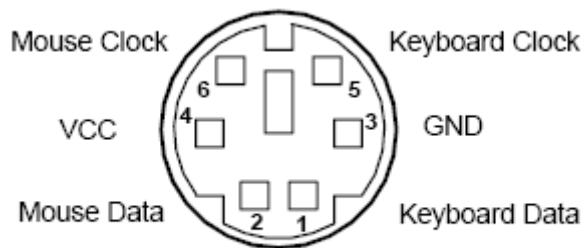
4 DESCRIPTIONS OF THE INTERFACES

4.1 Supply connector

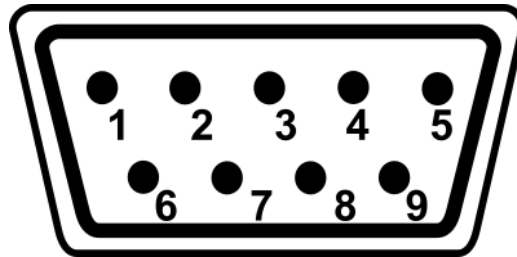
12V



4.1 Connector PS/2 Keyboard and Mouse



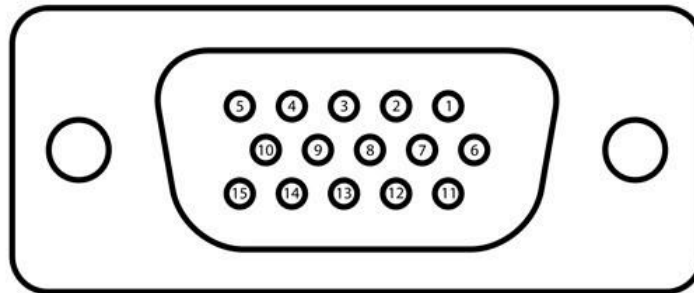
4.2 RS232 and RS485 connectors



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

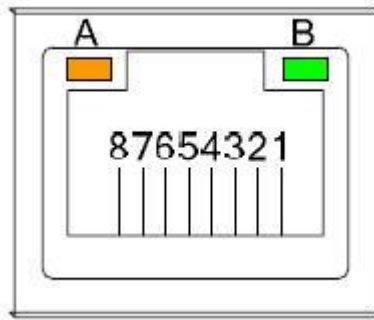
Pin	RS485	RS422 (by request)
1	DATA-	TX-
2	DATA+	TX+
3	nc	Rx+
4	nc	RX-
5	GND	GND
6	nc	nc
7	nc	nc
8	nc	nc
9	nc	nc

4.3 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

4.4 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

4.5 USB connector



Pin	Description
1	USB Vcc
2	USB -
3	USB +
4	USB Gnd

4.6 GBus4, CAN and FRO connectors

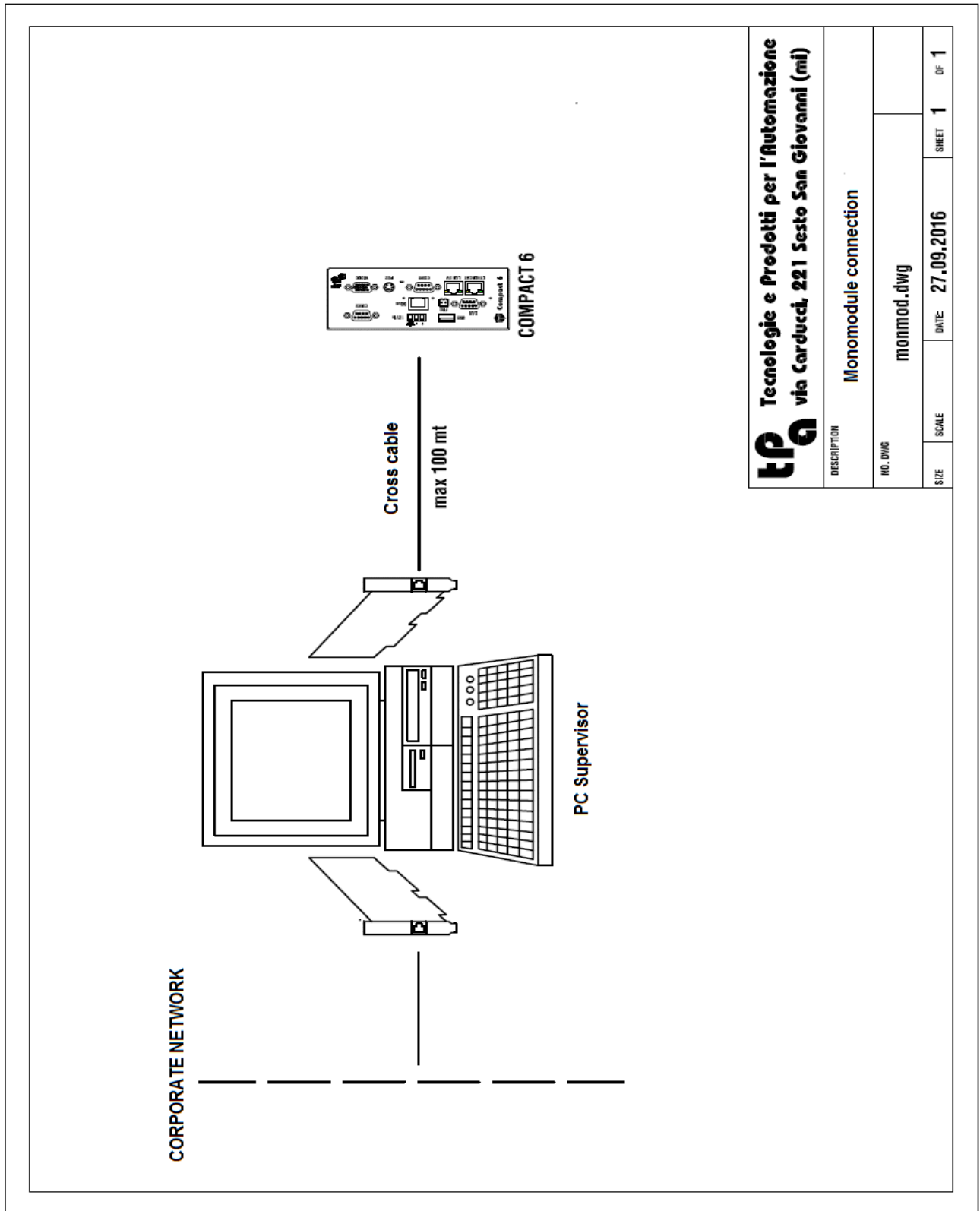
For their description, please read the TMSBus documentation


4.7 Other leds

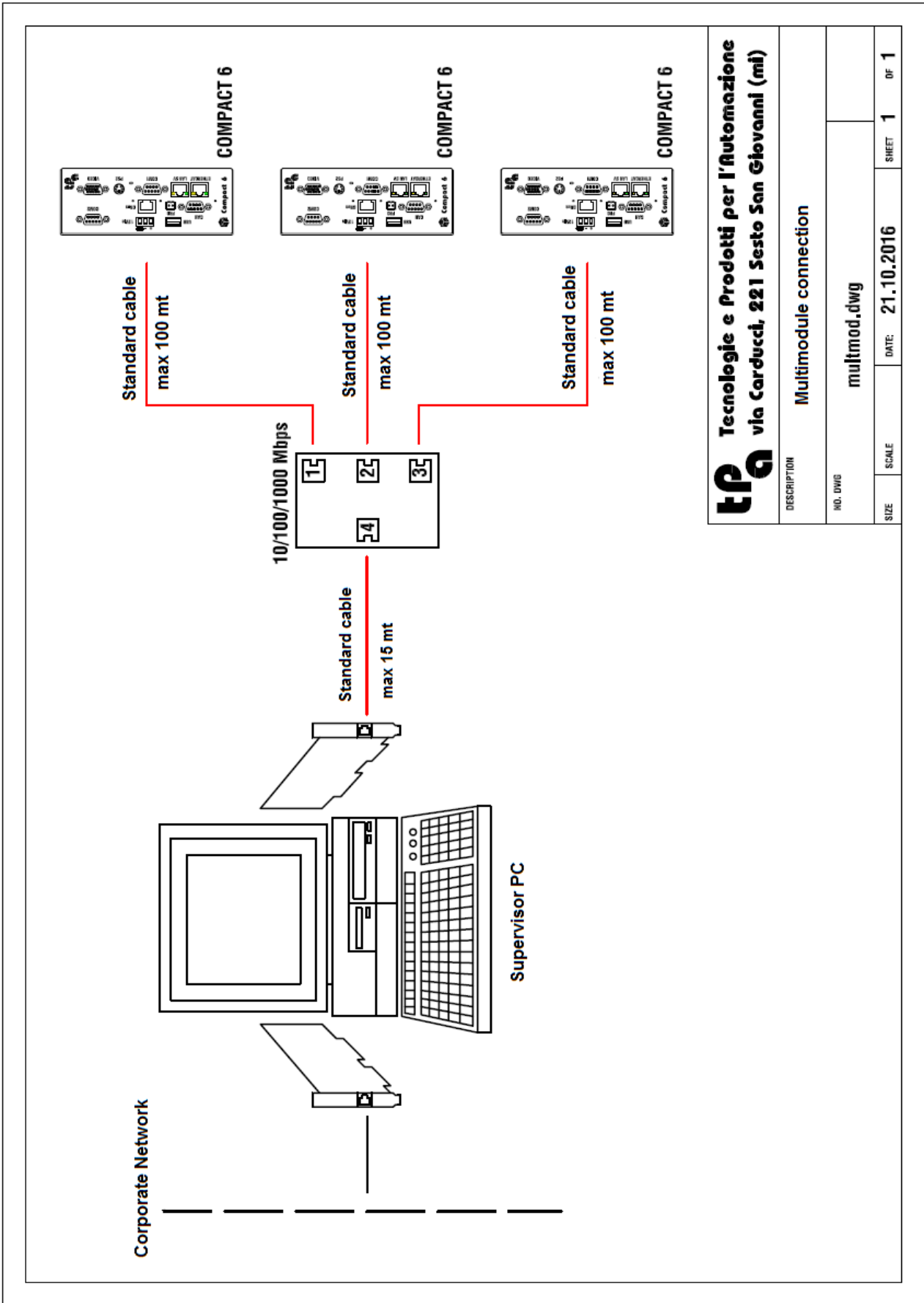
In addition to the leds on the RJ45 connectors, as previously described, below you will find the references for the leds on the interface.

As regards the warning lights located next to the GBus4 connector and to the CAN connector, please see the TMSBus documentation.

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

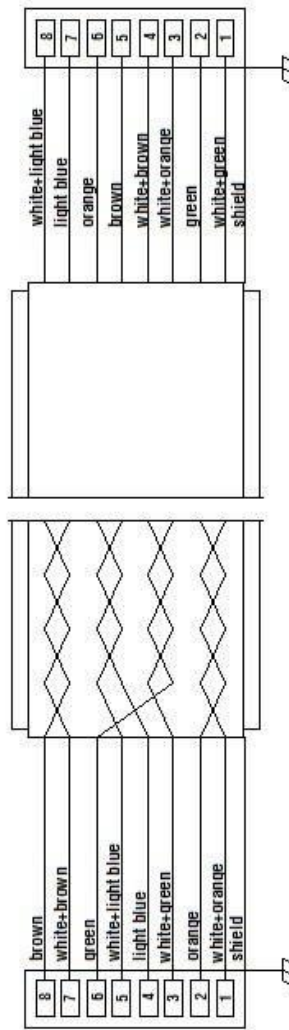


 Tecnologie e Prodotti per l'Automazione via Carducci, 221 Sesto San Giovanni (mi)			
DESCRIPTION	Monomodule connection		
NO. DWG	monmod.dwg		
SIZE	SCALE	DATE	SHEET
		27.09.2016	1 OF 1

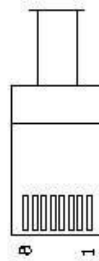


tpa **Tecnologie e Prodotti per l'Automazione**
via Carducci, 221 Sesto San Giovanni (mi)

DESCRIPTION	Multimodule connection		
NO. DWG	multmod.dwg		
SIZE	SCALE	DATE: 21.10.2016	SHEET 1 OF 1



on RJ45 connector colours sequence is in conformity with the T568B legislation



RJ45 connector with green cap

PATCH cable SFTP cat. 5E - flexible and shielded
 based on IEEE802.3 and 802.3U charts
 tested at 100 Mbps
 4 x 2 x AWG26

tpa Tecnologie e Prodotti per l'Automazione via Carducci, 221 Sesto San Giovanni (mi)			
DESCRIPTION	Cross Network Cable		
NO. DATA			
SCALE	1:1	DATE	DATE
OF		OF	

5 INSTRUCTIONS

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

Compact6 must be connected (by means of a power supply connector) to the earthing.

We suggest you to install Compact6 in an electrical cabinet or switchboard.

Compact6 is a computerized numeric control for general purposes in 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 the Compact6, we suggest the Mean-Well MDR40-12(ac/dc converter) power supply unit.

However, you can also use a power supply unit (ad/dc converter) whose technical features are: $V_{out} = 12V$ d.c. $\pm 10\%$, $I_{out} = 3A$.

5.3 Expansion

For the TMSBus expansion board, reference is made to the appropriate documentation for installation and cabling.

