RBXM

AS5023.003 - CPU486 WITH “P.GUN” (>4axis)

AS5023.005 - CPU486 WITH “P.GUN” (<=4-axis) 4 SERIAL CHANNELS

Input / Output Words

The address indicated for each Input and Output word is the physical address of the word, as the CPU position in the rack is fixed (first slot on the left).

Number of Input Words: 16

Number of Output Words: 16

"Bit 0" is the least significant bit in the word, "Bit 15" is the most significant bit in the word.

Input Word 1: Panel keys state

"0" = key released; "1" = key depressed.

Bit 0: Key "ADV"
Bit 1: Key "MODE"
Bit 2: Key "FEED-"
Bit 3: Key "FEED+"

Bit 4 --> 15 non significant

Input Word 2: CPU configuration

Bits 0 + 1: CFG0 and CFG1, board configuration as follows:

CFG1	CFG0	
0	0	Not used
0	1	Not used
1	0	4-axis CPU
1	1	>4-axis CPU

Bits 2 --> 8 reserved to Robox

Bit s 9 --> 15 non significant

Input Word 3: State of teach pendant keys - part 1

"0" = Key released; "1" = Key depressed. (Key “DEAD-MAN” is an exception)

Bit 0:	Key "JOG1+"		
Bit 1:	Key "JOG2+"		
Bit 2:	Key "JOG3+"		
Bit 3:	Key "JOG4+"		
Bit 4:	Key "JOG5+"		
Bit 5:	Key "JOG6+"		
Bit 6:	Key "DEAD-MAN"	“0” = Key depressed;	“1” = Key released
Bit 7:	Key "MODE"		
Bit 8:	Key "JOG1-"		
Bit 9:	Key "JOG2-"		
Bit 10:	Key "JOG3-"		
Bit 11:	Key "JOG4-"		
Bit 12:	Key "JOG5-"		
Bit 13:	Key "JOG6-"		
Bit 14:	non significant		
Bit 15:	Key "EXP"		

Input Word 4: State of teach pendant keys - part 2

"0" = Key released; "1" = Key depressed.

Bit 0:	Key "PRESENCE"
Bit 1:	Key "HOLD"
Bit 2:	Key "L/V"
Bit 3:	Key "ADVANCE"
Bit 4:	Key "MEMO"
Bit 5:	Key "F1"
Bit 6:	Key "F2"
Bit 7:	Key "F3"
Bit 8 --> 15	non significant

Input Word 5: State of RBXPAN keys - part 1

"0" = Key released; "1" = Key depressed.

Bit 0:	Key "/"
Bit 1:	Key "*"
Bit 2:	Key "-"
Bit 3:	Key "+"
Bit 4:	Key "ENTER"
Bit 5:	Key "ESC"
Bit 6:	Key "F1"
Bit 7:	Key "F2"
Bit 8:	Key "F3"
Bit 9:	Key "F4"
Bit 10:	Key "F5"
Bit 11:	Key "F6"
Bit 12:	Key "F7"
Bit 13:	Key "F8"
Bit 14:	Key "0"
Bit 15:	Key "1"

Input Word 6: State of RBXPAN keys - part 2

"0" = Key released; "1" = Key depressed.

Bit 0:	Key "2"
Bit 1:	Key "3"
Bit 2:	Key "4"
Bit 3:	Key "5"
Bit 4:	Key "6"
Bit 5:	Key "7"
Bit 6:	Key "8"
Bit 7:	Key "9"
Bit 8:	Key "."
Bit 9:	Key "DEL" ("SHIFT"+".")
Bit 10:	Key "SPACE"
Bit 11:	Key "BACK SPACE"
Bit 12:	Key "HOME" ("SHIFT"+"7")
Bit 13:	Key "END" ("SHIFT"+"1")
Bit 14:	Key "PAGE UP" ("SHIFT"+"9")
Bit 15:	Key "PAGE DOWN" ("SHIFT"+"3")

Input Word 7: State of RBXPAN keys - part 3

"0" = Key released; "1" = Key depressed.

Bit 0:	Key "INS" ("SHIFT"+"0")
Bit 1:	Key "ARROW UP" ("SHIFT"+"8")
Bit 2:	Key "ARROW DOWN" ("SHIFT"+"2")
Bit 3:	Key "ARROW RIGHT" ("SHIFT"+"6")
Bit 4:	Key "ARROW LEFT" ("SHIFT"+"4")
Bit 5 --> 15	non significant

The single bit in input_words 5-7 is set by the operating system when the relevant key is depressed. It is then reset by the operating system when the key is released.

N.B.: only 1 key at a time can be set.
If F1 is depressed and then F2 without releasing F1, only the F2 bit will be set to 1

Input Words from 8 to 16 are reserved to Robox's.

Output Word 1: Led Keys and Test-Point

Bit 0:	Led Key "ADV" on Robox Debug Display (0=off 1=on)
Bit 1:	Led Key "MODE" on Robox Debug Display Debug Robox + panel (0=Off 1=On)
Bit 2:	Led Key "FFED-" on Robox Debug Display (0=Off 1=On)
Bit 3:	Led Key "FEED+" on Robox Debug Display (0=Off 1=On)
Bit 4:	Test Point "TP4" on Robox Debug Display - Reserved Robox
Bit 5:	Test Point "TP5" on Robox Debug Display - Reserved Robox
Bit 6:	Test Point "TP6" on Robox Debug Display - Reserved Robox
Bit 7:	Test Point "TP7" on Robox Debug Display - Reserved Robox
Bit 8 --> 15	non significant

Output Word 2: User's Leds (Led L1-->L6)

Bit 0:	Led "L1" on panel (0=Off 1=On)
Bit 1:	Led "L2" on panel (0=Off 1=On)
Bit 2:	Led "L3" on panel (0=Off 1=On)
Bit 3:	Led "L4" on panel (0=Off 1=On)
Bit 4:	Led "L5" on panel (0=Off 1=On)
Bit 5:	Led "L6" on panel (0=Off 1=On)
Bit 6 --> 15	non significant

Leds L7 + L8 are controlled by the operating system. Their meaning is as follows:

led L8	led L7	
Off	Off	user's message
Off	On	message from o.s. on eprom (see RBXM manual)
On	Off	message from o.s. on flash-eprom (see RBXM manual)
On	On	interrupt (see RBXM manual)

Output Word 3: Led of Robox teach pendant keys

Bit 0:	Led Key "PRESENCE" (0=Off 1=On)
Bit 1:	Led Key "HOLD" (0=Off 1=On)
Bit 2:	Led Key "L/V" (0=Off 1=On)
Bit 3:	Led Key "ADVANCE" (0=Off 1=On)
Bit 4:	Led Key "MEMO" (0=Off 1=On)
Bit 5:	Led Key "F1" (0=Off 1=On)
Bit 6:	Led Key "F2" (0=Off 1=On)
Bit 7:	Led Key "F3" (0=Off 1=On)
Bit 8 --> 15	non significant

Output Word 4: Ascii codes of the latest key depressed on the RBXPAN

Bit 0 --> 7 Ascii codes

Bit 8 --> 15 non significant

Keys Ascii codes:

Key "/"	=	2f Hex
Key "*"	=	2a Hex
Key "-"	=	2d Hex
Key "+"	=	2b Hex
Key "ESC"	=	1b Hex
Key "ENTER"	=	0d Hex
Key "0"	=	30 Hex
Key "1"	=	31 Hex
Key "2"	=	32 Hex
Key "3"	=	33 Hex
Key "4"	=	34 Hex
Key "5"	=	35 Hex
Key "6"	=	36 Hex
Key "7"	=	37 Hex
Key "8"	=	38 Hex
Key "9"	=	39 Hex
Key "."	=	2e Hex
Key "DEL"	=	7f Hex
Key "SPACE"	=	20 Hex
Key "BACK SPACE"	=	08 Hex

N.B.: Keys which have not been listed do not have any ASCII codes.
Codes are set by the operating system and they must be reset by the user.

Output Word 5: State of Robox RBXPAN keys part 1

Output Word 6: State of Robox RBXPAN keys part 2

Output Word 7: State of Robox RBXPAN keys part 3

For Output Words 5, 6, 7 addressing refer to Input Word 5, 6, 7, and consider the following:

The bits in Output Words 5, 6, 7 are set by the o.s. when the key is released and must be reset by the user.
As a consequence, if they are not reset, the Output Word will contain the logic or of all the keys depressed by the user.

The bits codes are the same as Input Words 5, 6, 7.

Output Words from 8 to 16 are reserved to Robox's.

Software Requirements.

To work correctly, the board needs the following minimum software requirements:

Operating System Flash (OSFM): Version 1.12 or higher

"RHLL" language: Version 22.00 or higher

"R" language: Version 3.23 or higher

WARNING: Operating System and RHLL Language versions depend on the type of boards installed in the rack. The versions used must satisfy the minimum sofware requirements of each board. Please refer to the technical specification of each board.

Enclosure: IU5023.003 - Rev.2 - 26.02.2001

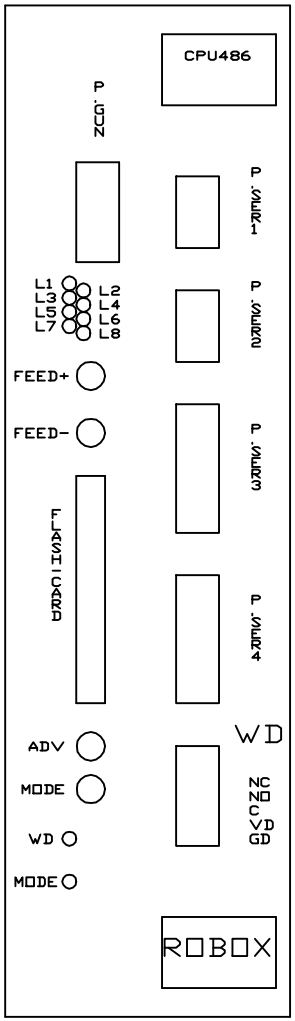
FRONT PANEL

BOARD:

CPU486

AS5023.003
AS5023.005

FRONT VIEW



WARNING

USE OF THE 'P.GUN' CONNECTOR
IS RESERVED TO CONNECT
THE ROBOX 'DISPAN' MINIGUN.

NO OTHER USE IS ALLOWED.

LED MEANING (WHEN ON)

NAME	COLOR	MEANING
L1-L8	RED	LED L1 - L8 MEANING DEPENDS ON THE SOFTWARE.
WD	GREEN	THE BOARD WATCH-DOG IS ON, THEN THE RELEVANT RELAY IS ON
MODE	YELLOW	LED MODE MEANING DEPENDS ON THE SOFTWARE. SEE THE RELEVANT MANUAL.

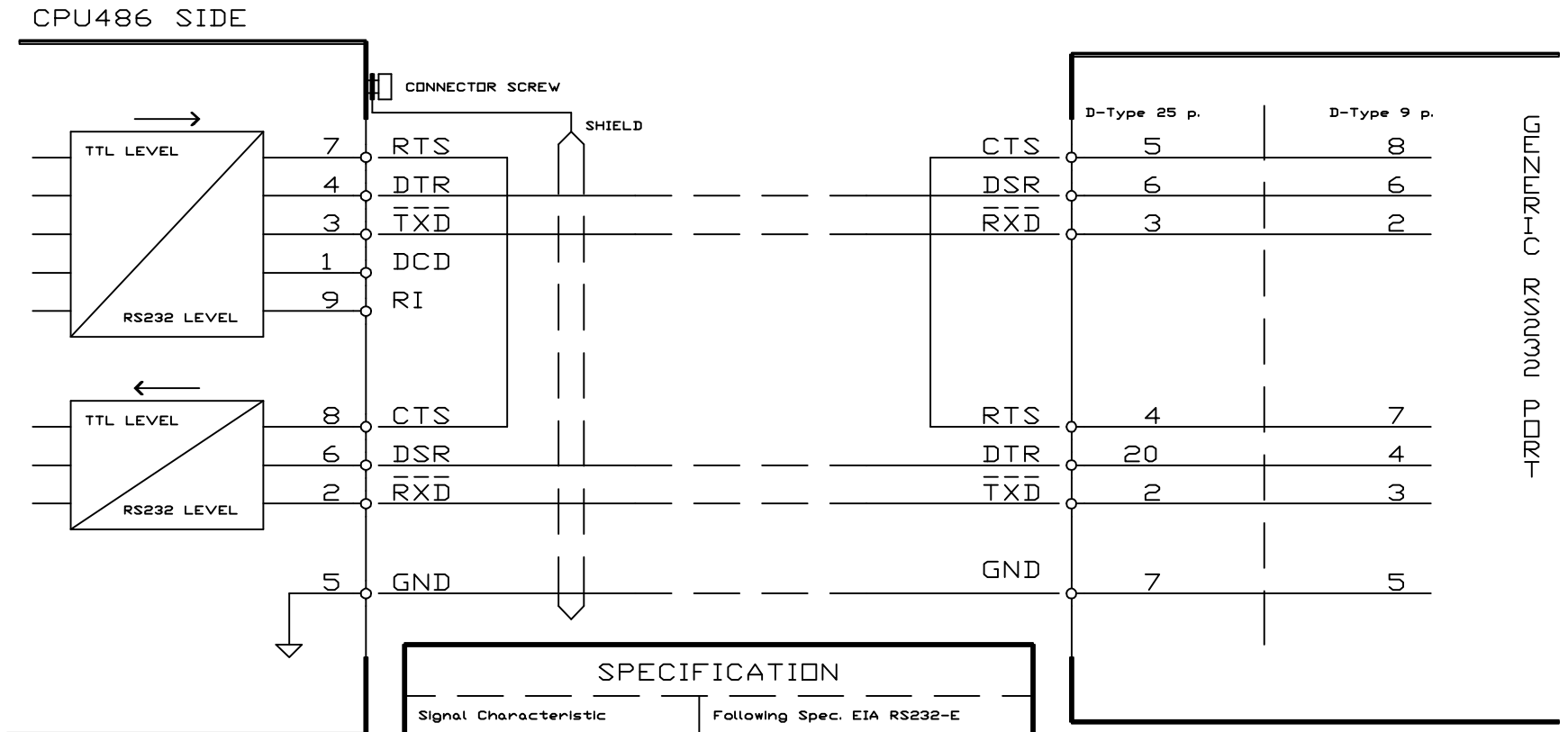
SPECIFICATION

Serial Channels:	
Number of RS232 Channels	2
Number of RS422 Channels	2
RS232 Cable Length	20 m Maximum
RS422 Cable Length	50 m Maximum
Watch-Dog:	
Contacts Switching Voltage	30V D.C. Maximum
Contacts Switching Current	1A D.C. Maximum
24V P.S. Current	500 mA Maximum
Backplane Current:	
5V P.S.	3 A Maximum
Environmental Condition:	
Temperature	from 0 to 50 degrees C
Humidity	85% Maximum (without condensation)

ROBOX SpA ITALY Via Sempione 82 Castelletto T. 28053 (NO)	Rev.N. 2 Data 26/02/01	Descr. Added RS485 connections	Dis. E.BRUNELLA Ver. A.TERUGGI App. A.TERUGGI	Disegno	AS5023.003 AND AS5023.005 USER'S INSTRUCTION FRONT PANEL CONNECTOR POSITION LED MEANING	Dis. R.COLOMBO Ver. BRUNELLA App. TERUGGI	D.N. IU5023.003 Data 19/12/97 FN 1	Di 6

P.SER1

Female D-type connector - 9 pins



SPECIFICATION

Signal Characteristic	Following Spec. EIA RS232-E
Cable Length	20 m Maximum (for higher length contact ROBOX)
Baud Rate	115000 bit/s Maximum

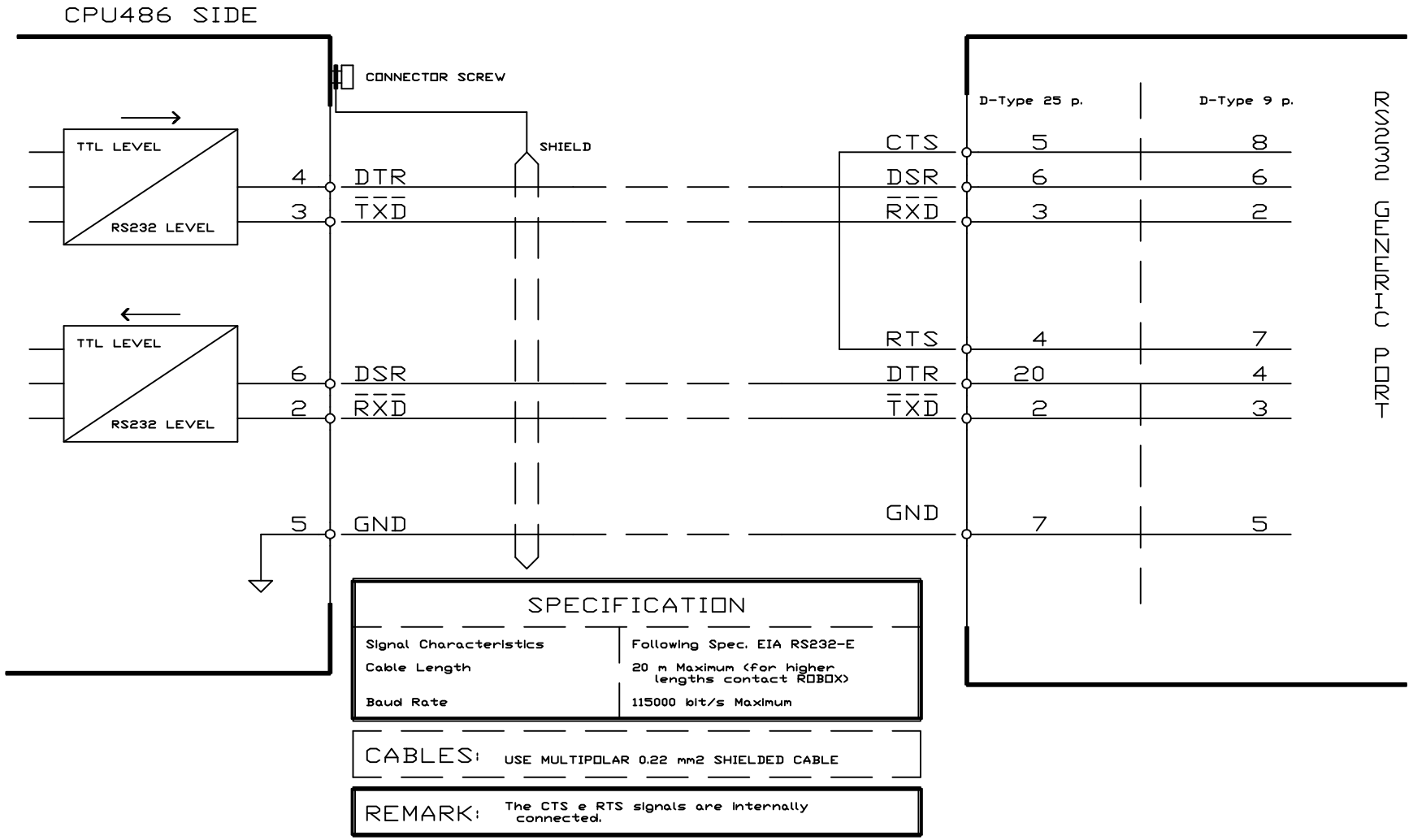
CABLES: USE MULTIPOLAR 0.22 mm2 SHIELDED CABLE

If the DCD and RI signals must be used, contact ROBOX

ROBOX® ROBOX SpA ITALY Via Sempione 82 Castelletto T. 28053 (NO)	Rev.N. 2	Descr.	Dis.	E.BRUNELLA	Disegno	AS5023.003 AND AS5023.005 USER'S INSTRUCTION	Dis.	R.COLOMBO	D.N.	IU5023.003
	Data 26.02.01		Ver.	A.TERUGGI	Foglio	SERIAL CHANNEL 1 (P.SER1)	Ver.	BRUNELLA	Data	19/12/97
			App.	A.TERUGGI			App.	TERUGGI	FN 2	DI 6

P.SER2

Female D-Type Connector - 9 pins



SPECIFICATION	
Signal Characteristics	Following Spec. EIA RS232-E
Cable Length	20 m Maximum (for higher lengths contact ROBOX)
Baud Rate	115000 bit/s Maximum

CABLES: USE MULTIPOLAR 0.22 mm2 SHIELDED CABLE

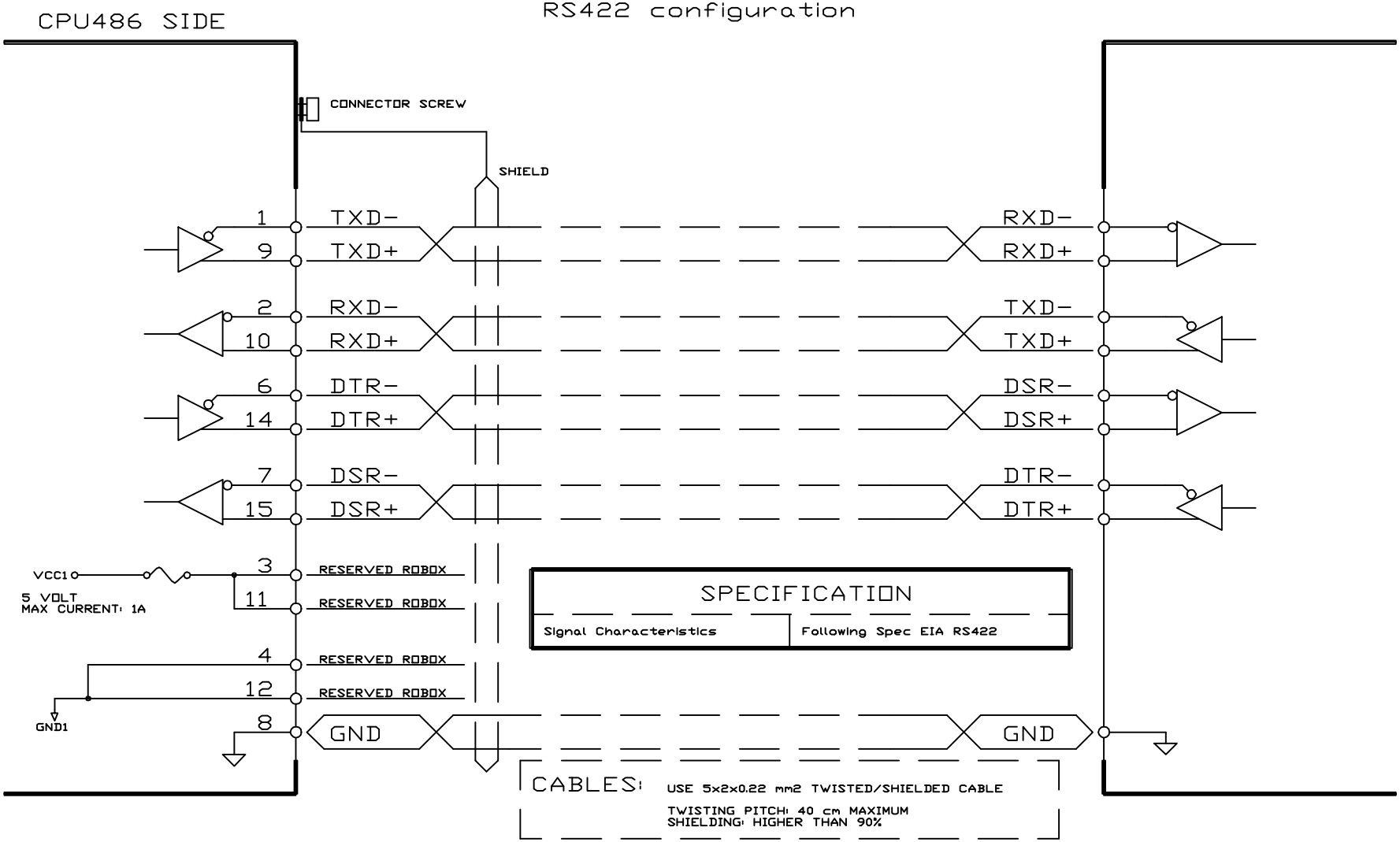
REMARK: The CTS e RTS signals are internally connected.

ROBOX SpA ITALY Via Sempione 82 Castelletto T. 28053 (NO)	Rev.N. 2 Data 26/02/01	Descr.	Dis. E.BRUNELLA Ver. A.TERUGGI App. A.TERUGGI	Disegno AS5023.003 AND AS5023.005 USER'S INSTRUCTION Foglio SERIAL CHANNEL 2 (P.SER2)	Dis. R.COLOMBO Ver. BRUNELLA App. TERUGGI	D.N. IU5023.003 Data 19/12/97 FN 3	Di 6

P.SER3 – P.SER4

Female D-type Connector – 15 pins

RS422 configuration



SPECIFICATION	
Signal Characteristics	Following Spec EIA RS422

CABLES: USE 5x2x0.22 mm2 TWISTED/SHIELDED CABLE

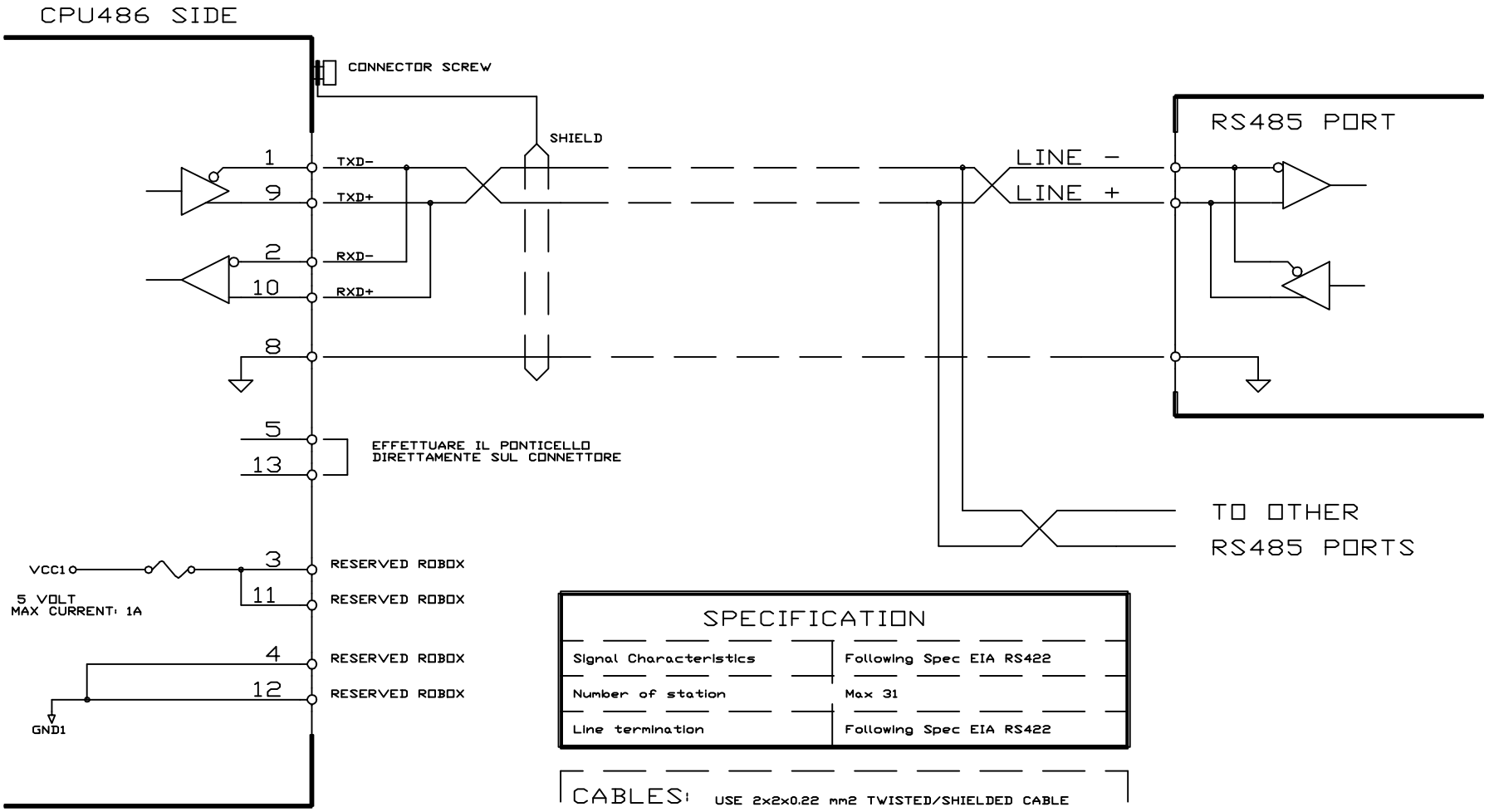
TWISTING PITCH: 40 cm MAXIMUM
SHIELDING: HIGHER THAN 90%

ROBOX® ROBOX SpA ITALY Via Sempione 82 Castelletto T. 28053 (NO)	Rev.N. 2	Descr.	Dis.	E.BRUNELLA	Disegno	AS5023.003 AND AS5023.005 USER'S INSTRUCTION	Dis.	R.COLOMBO	D.N. IU5023.003
	Data 26/02/01		Ver.	A.TERUGGI	Foglio	SERIAL CHANNELS 3 & 4 (P.SER3 & P.SER4)	Ver.	BRUNELLA	Data 19/12/97
			App.	A.TERUGGI			App.	TERUGGI	FN 4 Di 6

P.SER3 – P.SER4

Female D-type Connector – 15 pins

RS485 configuration



SPECIFICATION	
Signal Characteristics	Following Spec EIA RS422
Number of station	Max 31
Line termination	Following Spec EIA RS422

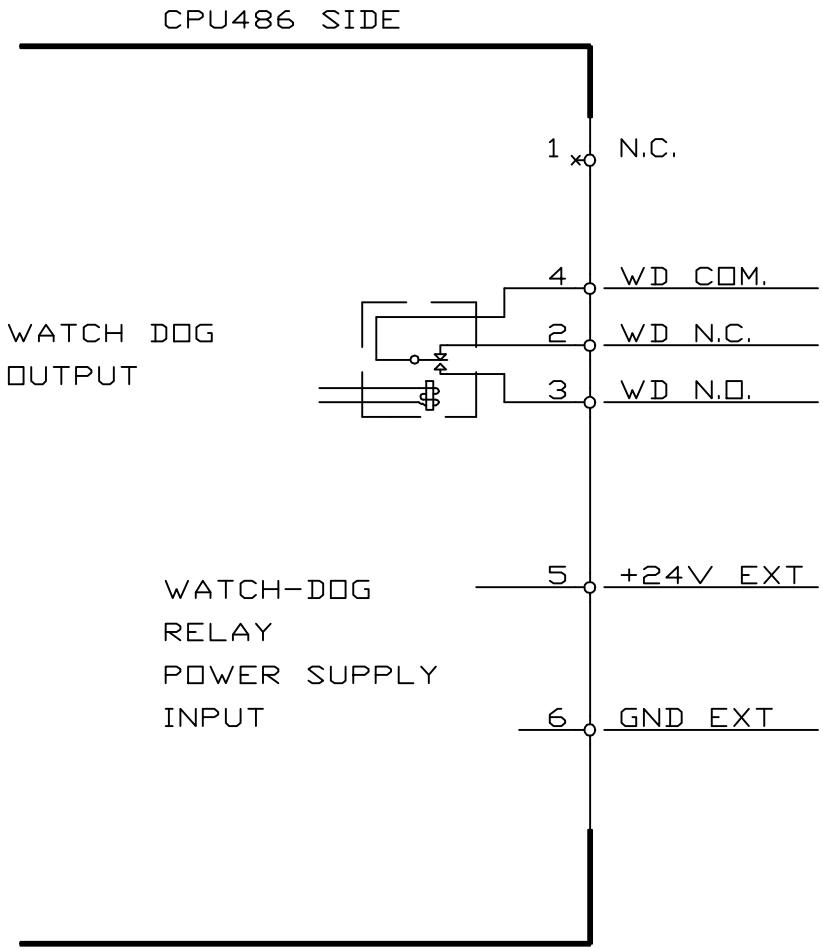
CABLES: USE 2x2x0.22 mm2 TWISTED/SHIELDED CABLE

TWISTING PITCH: 40 cm MAXIMUM
SHIELDING: HIGHER THAN 90%

ROBOX SpA ITALY Via Sempione 82 Castelletto T. 28053 (NO)	Rev.N. 2 Data 26/02/01	Descr.	Dis. E.BRUNELLA Ver. A.TERUGGI App. A.TERUGGI	Disegno AS5023.003 AND AS5023.005 USER'S INSTRUCTION Foglio SERIAL CHANNELS 3 & 4 (P.SER3 & P.SER4) IN RS485 MODE	Dis. R.COLOMBO Ver. BRUNELLA App. TERUGGI	D.N. IU5023.003 Data 19/12/97 FN 5 Di 6	

WD

Weidmuller Connector - 6 PINS



CABLES: SIGNALS: MULTIPOLAR CABLE SECTION MINIMUM 0.5 mm2
POWER SUPPLY: BIPOLAR CABLE SECTION MINIMUM 1 mm2

ROBOX SpA ITALY Via Sempione 82 Castelletto T. 28053 (NO)	Rev.N. 2 Data 26/02/01	Descr.	Dis. E.BRUNELLA Ver. A.TERUGGI App. A.TERUGGI	Disegno AS5023.003 AND AS5023.005 USER'S INSTRUCTION Foglio WATCH-DOG EXTERNAL CONNECTION	Dis. R.COLOMBO Ver. BRUNELLA App. TERUGGI	D.N. IU5023.003 Data 19/12/97 FN 6	DI 6