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## MCE\_P1P20F - 022 : Connections

### 1. Informations

#### 1.1 Release

			
<b>Document:</b>	<b>mce_p1p20f-022</b>		
<b>Description:</b>	Electrical Connections Manual p1p20f-022		
<b>Editor:</b>	Omar Sbalchiero		
<b>Approver</b>	Gabriele Bazzi		
<b>Link:</b>	<a href="https://www.qem.eu/doku/doku.php/en/strumenti/qmoveplus/j1p20/p1p20f-022/mce_p1p20f-022">https://www.qem.eu/doku/doku.php/en/strumenti/qmoveplus/j1p20/p1p20f-022/mce_p1p20f-022</a>		
<b>Language:</b>	English		
Release document	Description	Note	Date
01	New manual		18/09/2020

#### 1.1.1 Specifications/Copyright

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## 2. Description

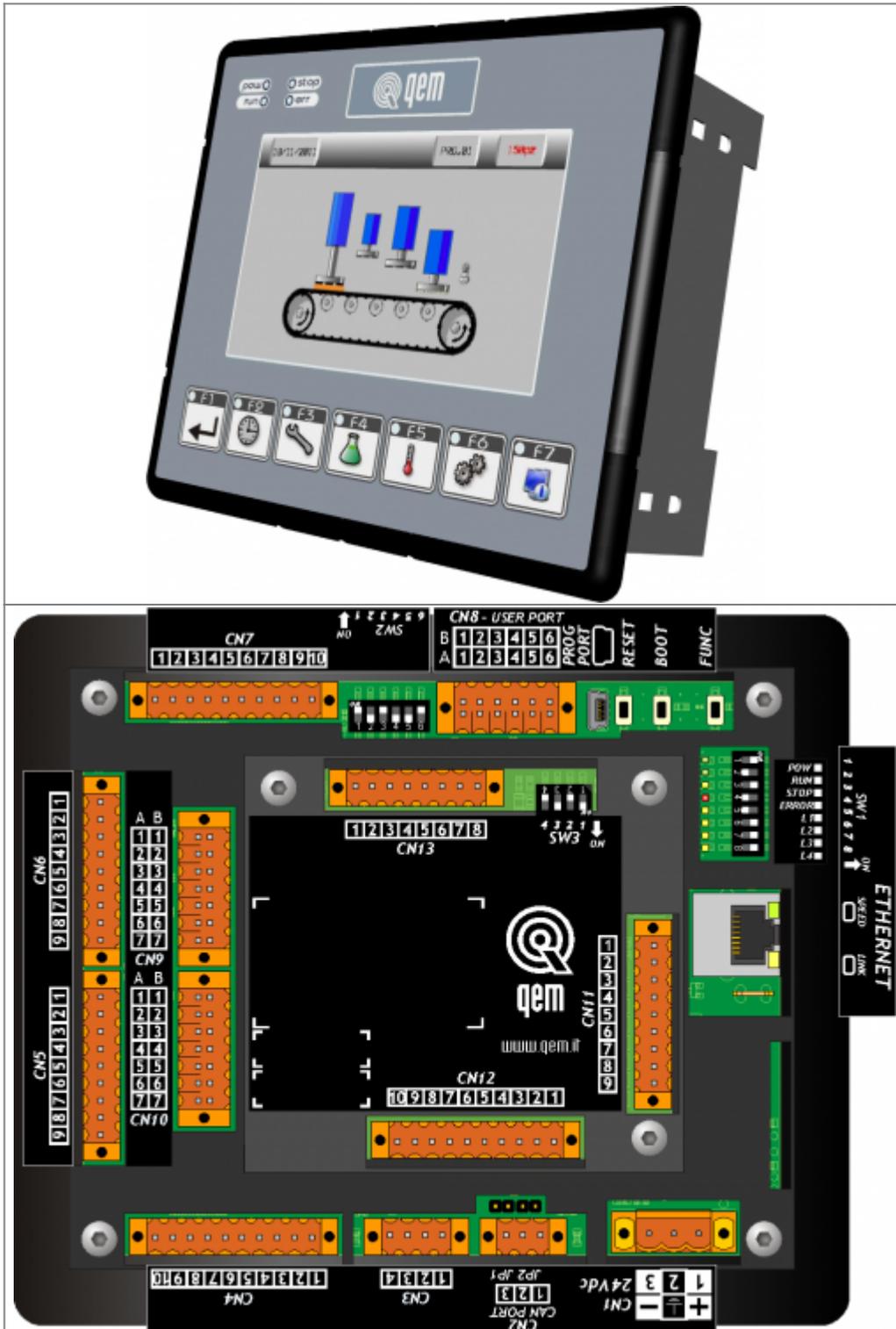
The **P1P20F - 022** software, controls the automation of **polishing machine max 20 heads**.

**N.B.**

- If you want to separately control the activation of the head motors with the lower and lift of the heads, you need to use the remote I/O module (RMC3M).

## 3. Hardware and connections

### 3.1 Operator panel

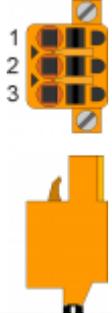




[MIMJ1P20Fx\\_BASE:Installation and Maintenance Manual](#)

## 3.2 Power supply

The instrument will need to be powered to 24Vdc. Install an external fuse in series to the positive conductor +24Volt.

	PIN	ID	DESCRIPTION
	1	+24V	Positive power supply <b>+24Vdc</b>
	2	PE	Ground-PE
	3	0V	Common power supply <b>0Vdc</b>

## 3.3 Connectivity

Nr. 1 PROG PORT → Serial with logical TTL standards for programming

Nr. 1 ETHERNET PORT

Nr. 1 CAN PORT for connection with external I/O module

### 3.3.1 PROG PORT (USB mini-B)

PROG PORT	Description
	Serial used for transferring and firmware update You must use only with the <a href="#">IQ009</a> or <a href="#">IQ013</a> accessories.

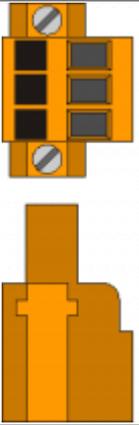
### 3.3.2 ETHERNET port

ETHERNET PORT	Description
	Connector RJ45.  LED: * LINK: green led = cable connected (led on signals the cable is connected to both ends) * DATA: yellow led = data transmission (flashing led signals data transmission)

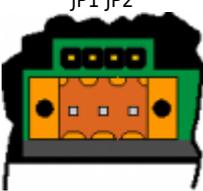
### 3.3.3 CANbus PORT

#### 3.3.3.1 CN2

Terminal	Symbol	Description
----------	--------	-------------

	Terminal	Symbol	Description
	1	CAN H	CAN H terminal
	2	CAN L	CAN L terminal
	3	0V	CAN common

### 3.3.3.1.1 Terminating Resistance Setting

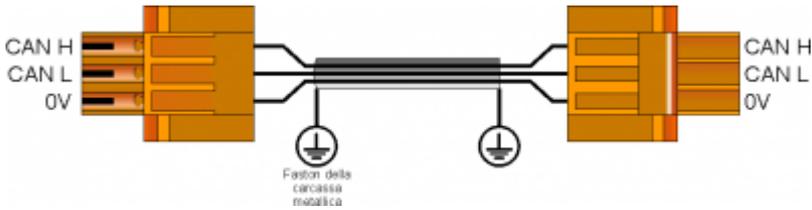
	Name jumper	Setting	Function
	JP1	INSERTED	Termination CAN activate
	JP2		

### 3.3.3.1.2 Baud-rate CANbus selector

SW1	Dip	DIP setting	Function
1	1	-	-
2	2	-	-
3	3	-	-
4	4	-	-
5	5	ON	Speed selection of CANbus transmission
	7	ON	
6		Baud-rate 1MB/S	
	6	-	-
8	8	-	-

OFF ↔ ON

### 3.3.3.1.3 Connection example



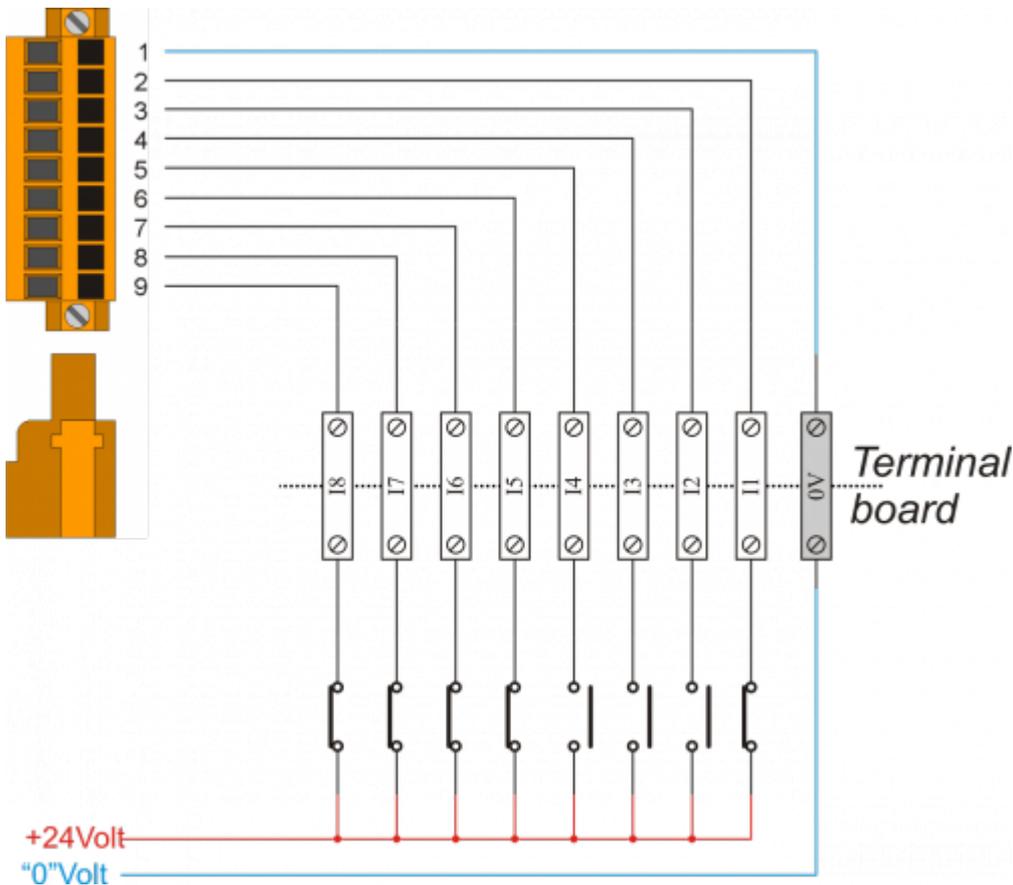
## 3.4 Digital inputs

<b>S = State</b>	<b>A = Action</b>	<b>ID</b>
<b>NO = Normally Open</b>	<b>I = Impulsive</b>	<b>ID = Software</b>
<b>NC = Normally close</b>	<b>C = Continuous</b>	

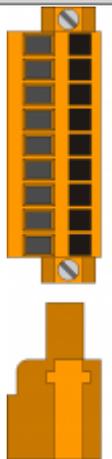
### 3.4.1 CN6

	PIN	ID	DESCRIPTION	S	A
	1	0V	Digital inputs common - Connected internally to 0Volt (PIN 3 - CN1)		
	2	I1	<b>Emergency</b>	-	NC C
	3	I2	<b>Descent Heads/Start Motors</b>	<b>OFF</b> = Descent Heads <b>ON</b> = Start Motors	NO C
	4	I3	<b>Motors start</b>	Function enabled with <i>MP-05</i> = 1 o 2 parameter Start rolling activation of motors	NO I
	5	I4	<b>Enabled auxiliaries</b>	Machine ready to work	NO C
	6	I5	<b>NE</b>	Automatically, stop the bridge and conveyor/Reset the message "incorrect start rotating motors"	NC C
	7	I6	<b>Thermals</b>	Thermals line	
	8	I7	<b>Carter</b>	Protections line	
	9	I8	<b>Pressure switch</b>	Without air	

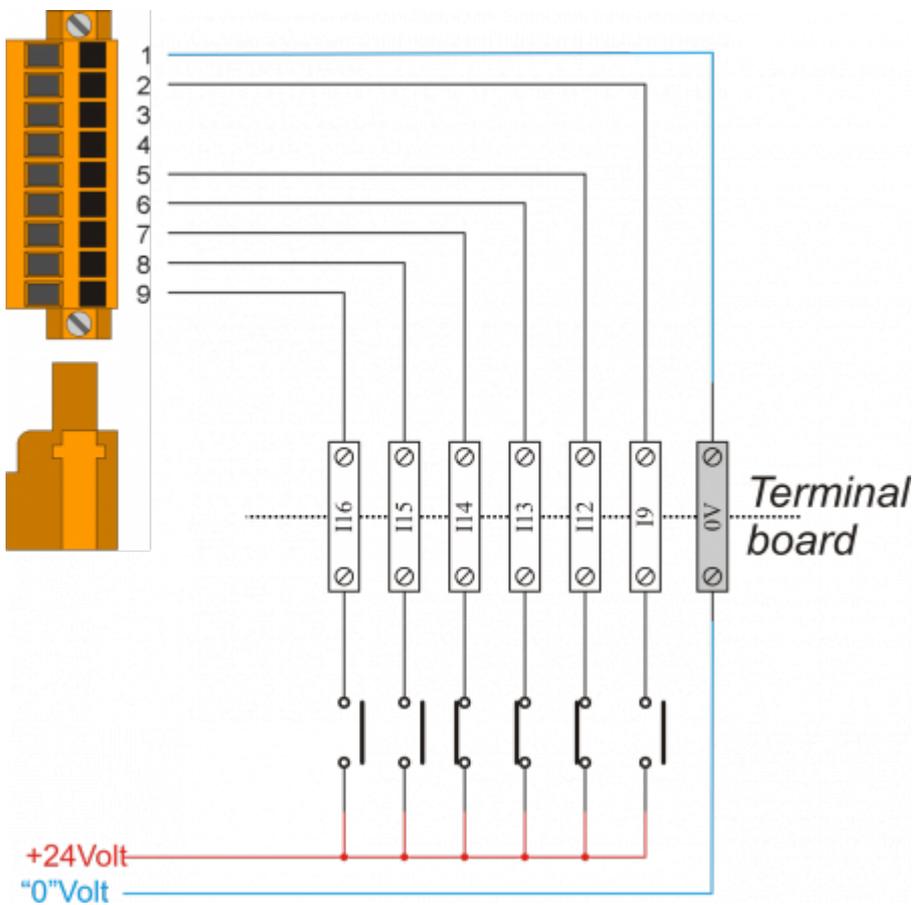
#### 3.4.1.1 Connection example



### 3.4.2 CN5

	PIN	ID	DESCRIPTION	S	A				
	1	0V	Digital inputs common - Connected internally to 0Volt (PIN 3 - CN1)						
	2	I9	<b>Piece acquisition</b>	Piece acquisition limit switch	NO	C			
	3	I10	n.u.	-	-	-			
	4	I11	n.u.	-	-	-			
	5	I12	<b>Fault inverter</b>	Inverter alarm					
	6	I13	<b>Forward bridge</b>	Limit switch	With fast speed	(MP-04 = 1)	NC	C	
	7	I14	<b>Backward bridge</b>						
	8	I15	<b>Forward slowing bridge</b>		With slow speed			NO	C
	9	I16	<b>Backward slowing bridge</b>						

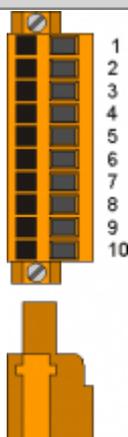
#### 3.4.2.1 Connection example



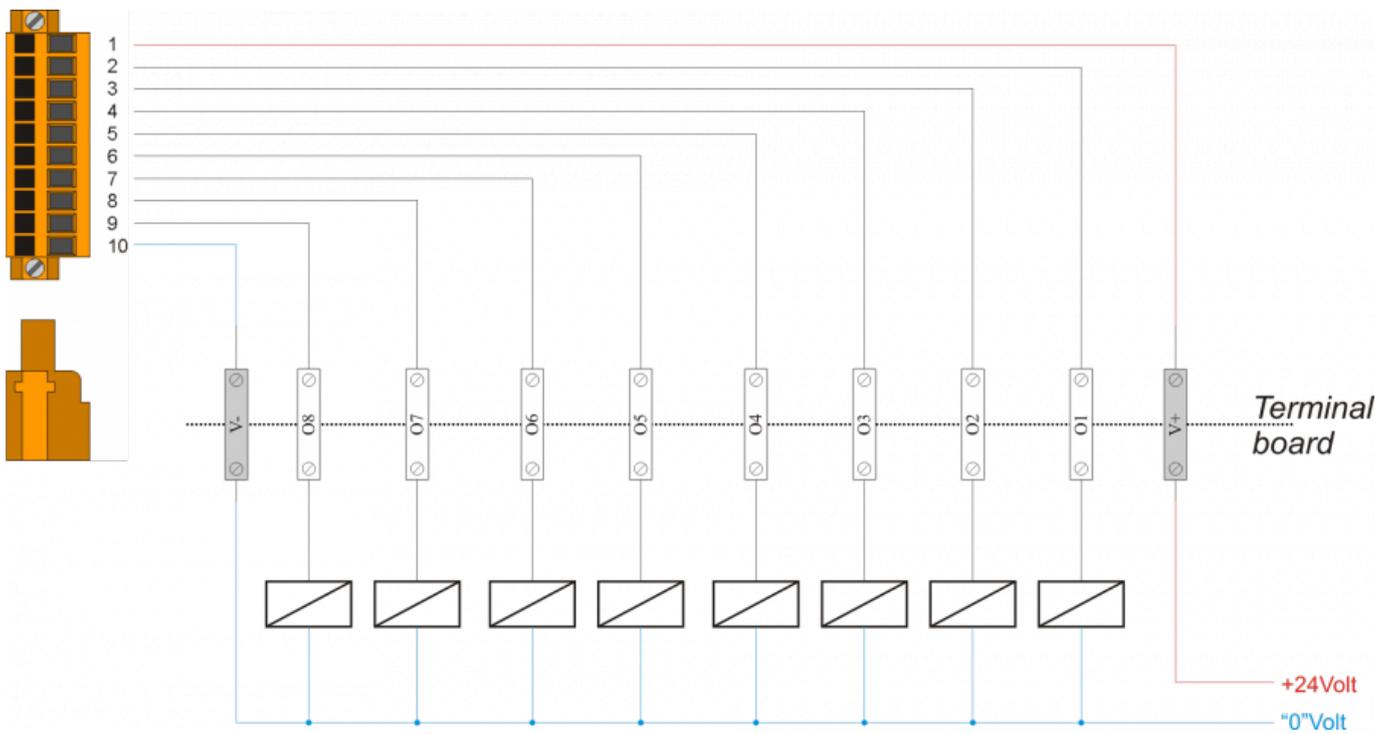
### 3.5 Digital outputs

S = State	ID
OFF	ID = Software
ON	

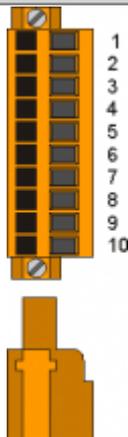
#### 3.5.1 CN7

	PIN	ID	DESCRIPTION	S								
	1	V+	Input power outputs O1÷O8 (12÷28Vdc)									
	2	O1	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>8</td></tr> </table> Head descent or motor start control	1	2	3	4	5	6	7	8	OFF
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
3	O2											
4	O3											
5	O4											
6	O5											
7	O6											
8	O7											
9	O8											
10	V-	Input power outputs (0Vdc)										

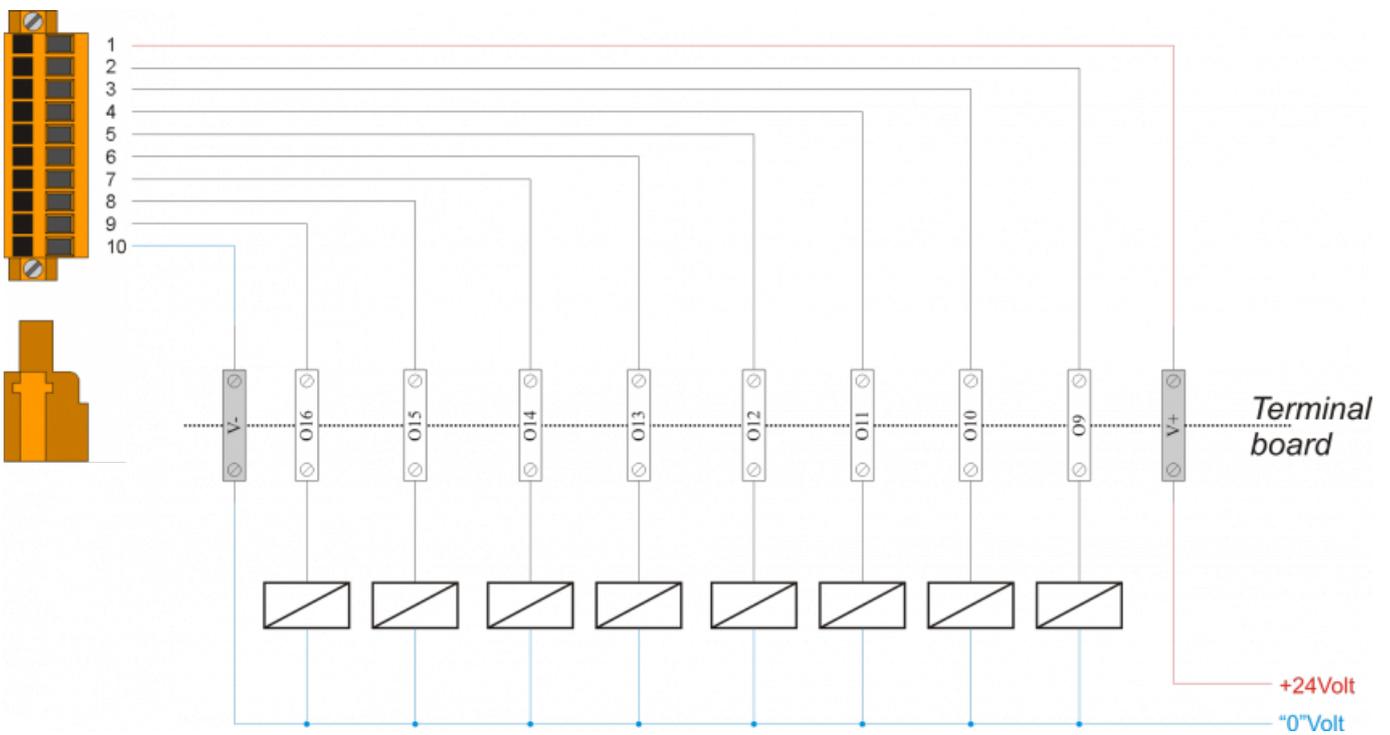
#### 3.5.1.1 Connection example



### 3.5.2 CN4

	PIN	ID	DESCRIPTION	S								
	1	V+	Input power outputs O9÷O16 (12÷28Vdc)	OFF								
	2	O9	<table border="1"> <tr><td>9</td></tr> <tr><td>10</td></tr> <tr><td>11</td></tr> <tr><td>12</td></tr> <tr><td>13</td></tr> <tr><td>14</td></tr> <tr><td>15</td></tr> <tr><td>16</td></tr> </table> Head descent or motor start control		9	10	11	12	13	14	15	16
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
3	O10											
4	O11											
5	O12											
6	O13											
7	O14											
8	O15											
9	O16											
10	V-	Input power outputs (0Vdc)										

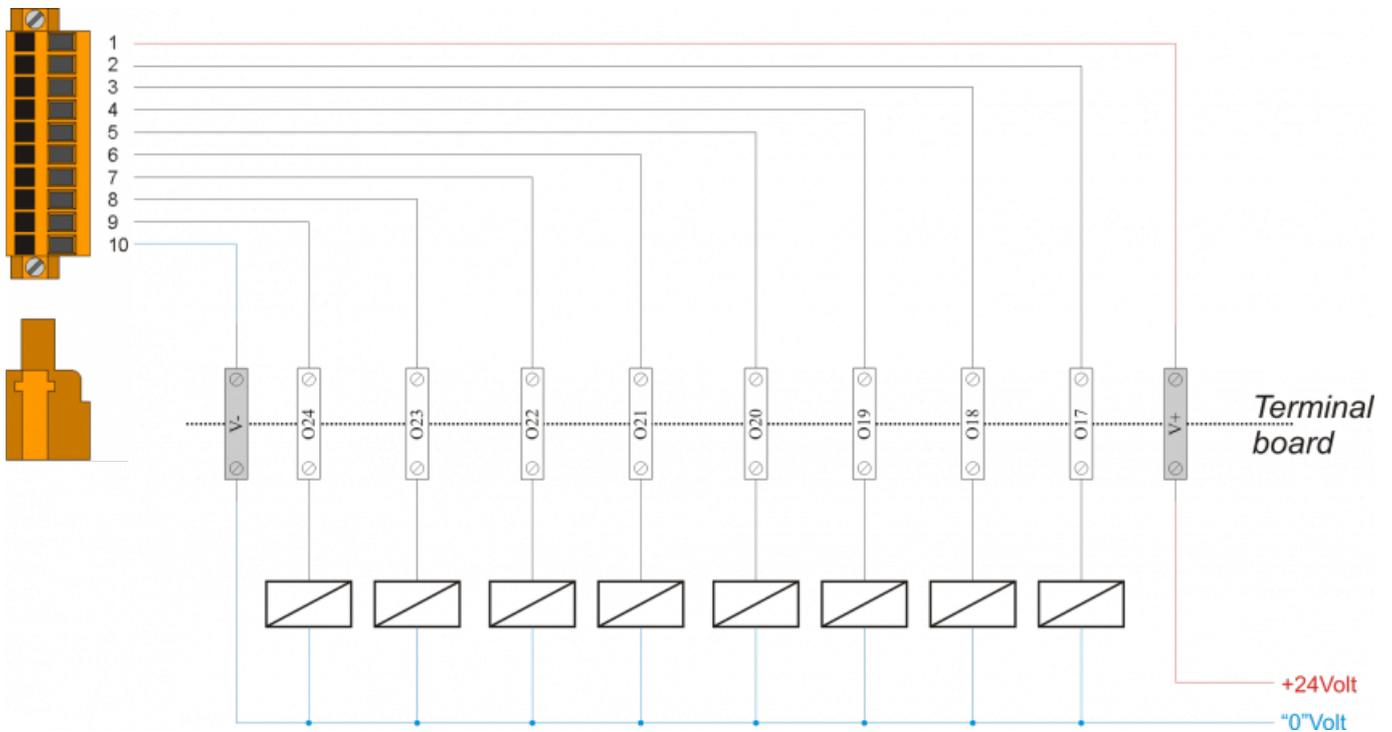
#### 3.5.2.1 Connection example



### 3.5.3 CN12

PIN	ID	DESCRIPTION	S
1	V+	Input power outputs O17÷O24 (12÷28Vdc)	
2	O17	<b>Descent Heads/Start Motors</b> OFF = Descent Heads ON = Start Motors	- OFF
3	O18	<b>End of start motors</b> Signals the completion of the cascade motor start cycle.	- OFF
4	O19	<b>Mix Out</b> Functions of the mix cycle, with activation and deactivation times settable in set-up.	- -
5	O20	<b>Piece alarm</b> Activated when the number of pieces in simultaneous operations is equal to or greater than 30	- -
6	O21	<b>Conveyor direction</b> OFF = forward ON = backward	- -
7	O22	<b>Bridge direction</b> OFF = forward ON = backward	- -
8	O23	<b>Brush</b> The output is activated when there is at least one piece in the machine	- -
9	O24	<b>Water valve</b>	- -
10	V-	Input power outputs (0Vdc)	

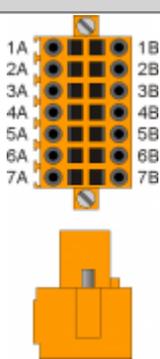
#### 3.5.3.1 Connection example



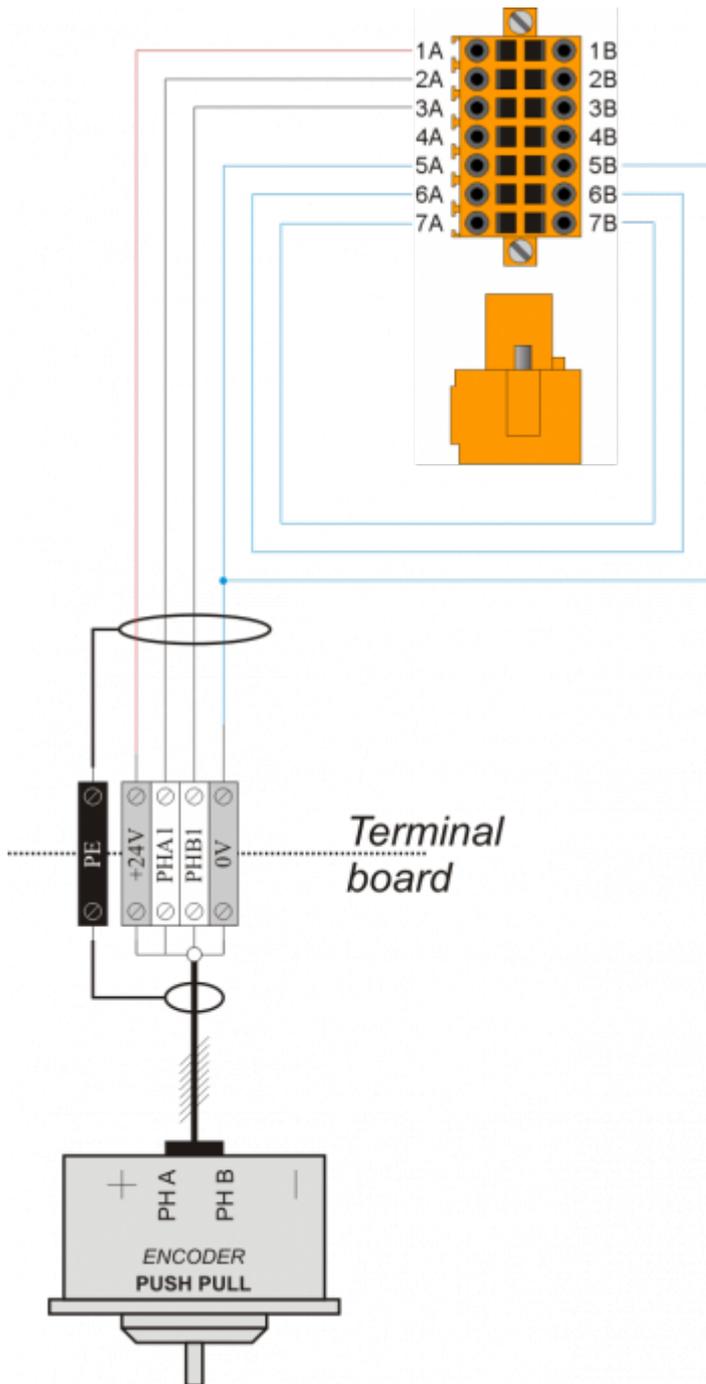
## 3.6 Bi-directional counter inputs

### 3.6.1 CN9

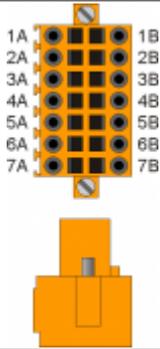
#### 3.6.1.1 For "Push Pull" encoder type

		PIN	ID	DESCRIPTION		
	1A	1B	+24V	Encoder power supply	<b>Conveyor</b>	
	2A	2B	PHA1	<b>Phase A</b>		
	3A	3B	PHB1	<b>Phase B</b>		
	4A	4B	Z1	n.u.		
	5A	5B	0V	n		Counter inputs common - Connected internally to 0Volt (PIN 3 - CN1) Connect to PIN 5B
	6A	6B				Connect to PIN 6B
	7A	7B				Connect to PIN 7B

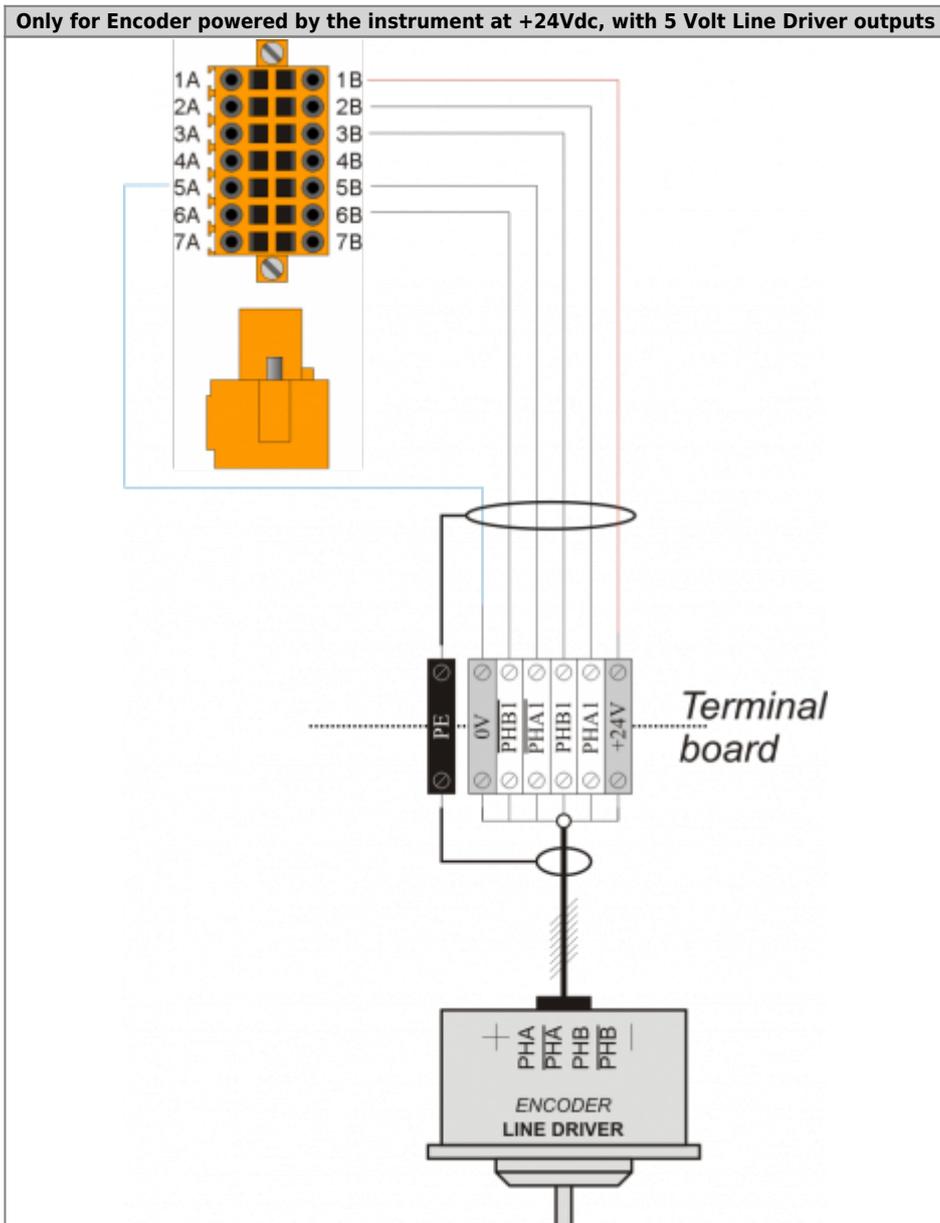
## 3.6.1.1.1 Connection example

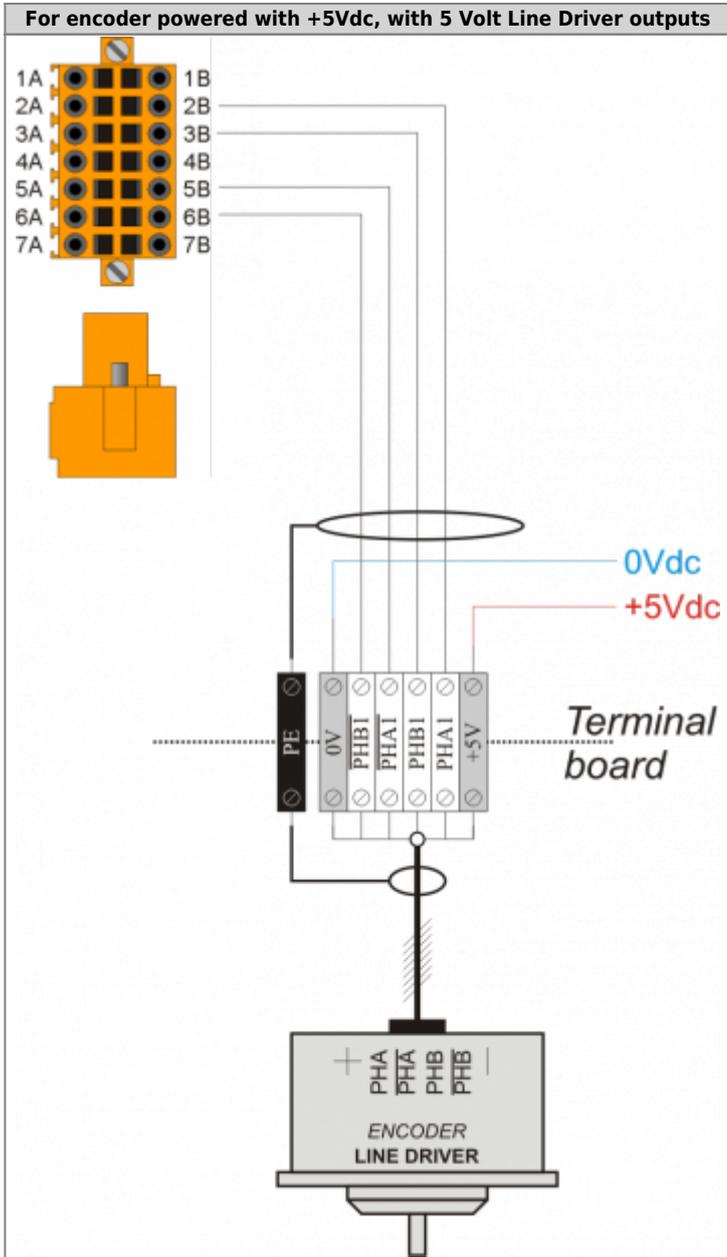


### 3.6.1.2 For "Line Driver" encoder type

	PIN	ID	DESCRIPTION	
	1B	+24V	Encoder power supply	<b>Conveyor</b>
	2B	PHA1+	<b>Phase A+</b>	
	3B	PHB1+	<b>Phase B+</b>	
	4B	Z1+	n.u.	
	5B	PHA1-	<b>Phase A-</b>	
	6B	PHB1-	<b>Phase B-</b>	
	7B	Z1-	n.u.	

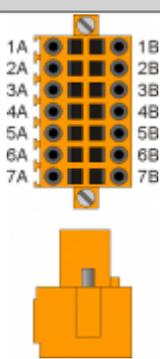
#### 3.6.1.2.1 Connection example



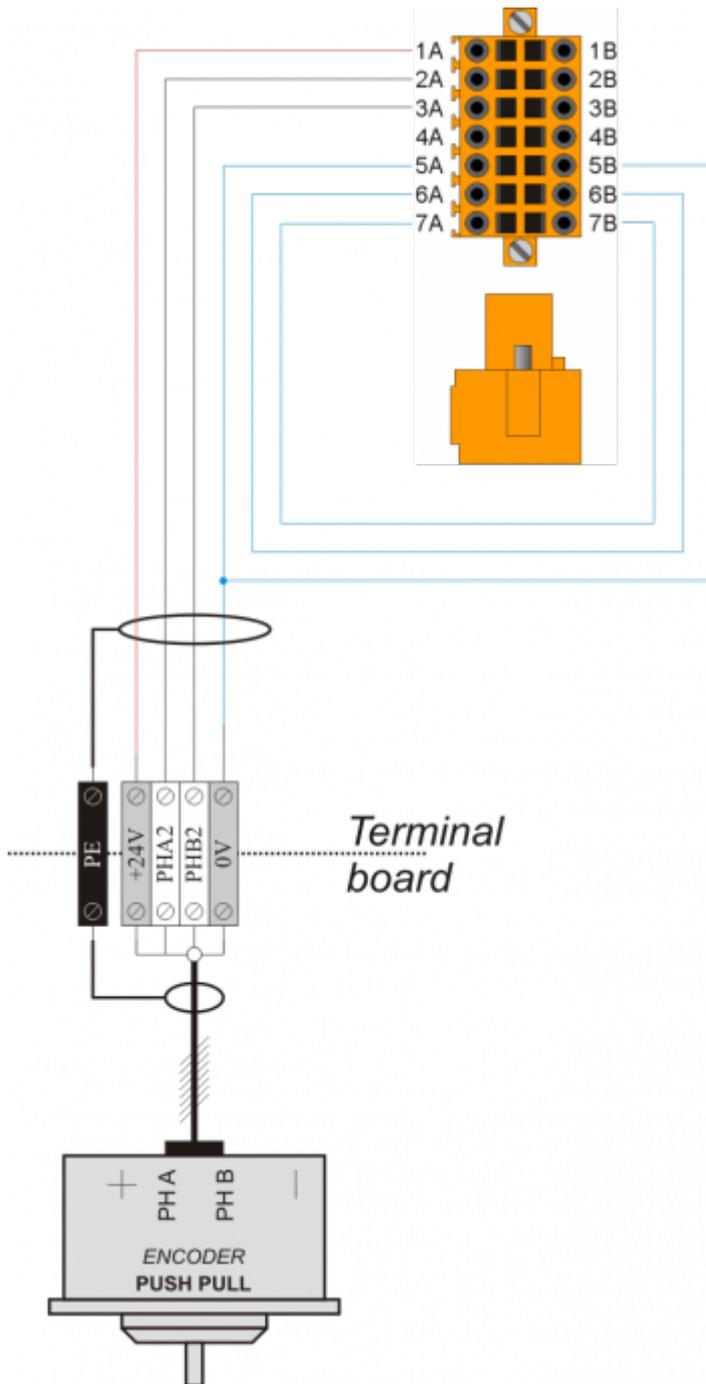


### 3.6.2 CN10

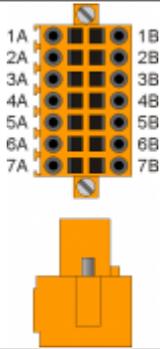
#### 3.6.2.1 For "Push Pull" encoder type

		PIN	ID	DESCRIPTION	
	1A	1A	+24V	Encoder power supply	<b>Bridge</b>
	2A	2A	PHA2	<b>Phase A</b>	
	3A	3A	PHB2	<b>Phase B</b>	
	4A	4A	Z2	n.u.	
	5A	0V	n	Counter inputs common - Connected internally to 0Volt (PIN 3 - CN1) Connect to PIN 5B	
	6A			Connect to PIN 6B	
	7A			Connect to al PIN 7B	

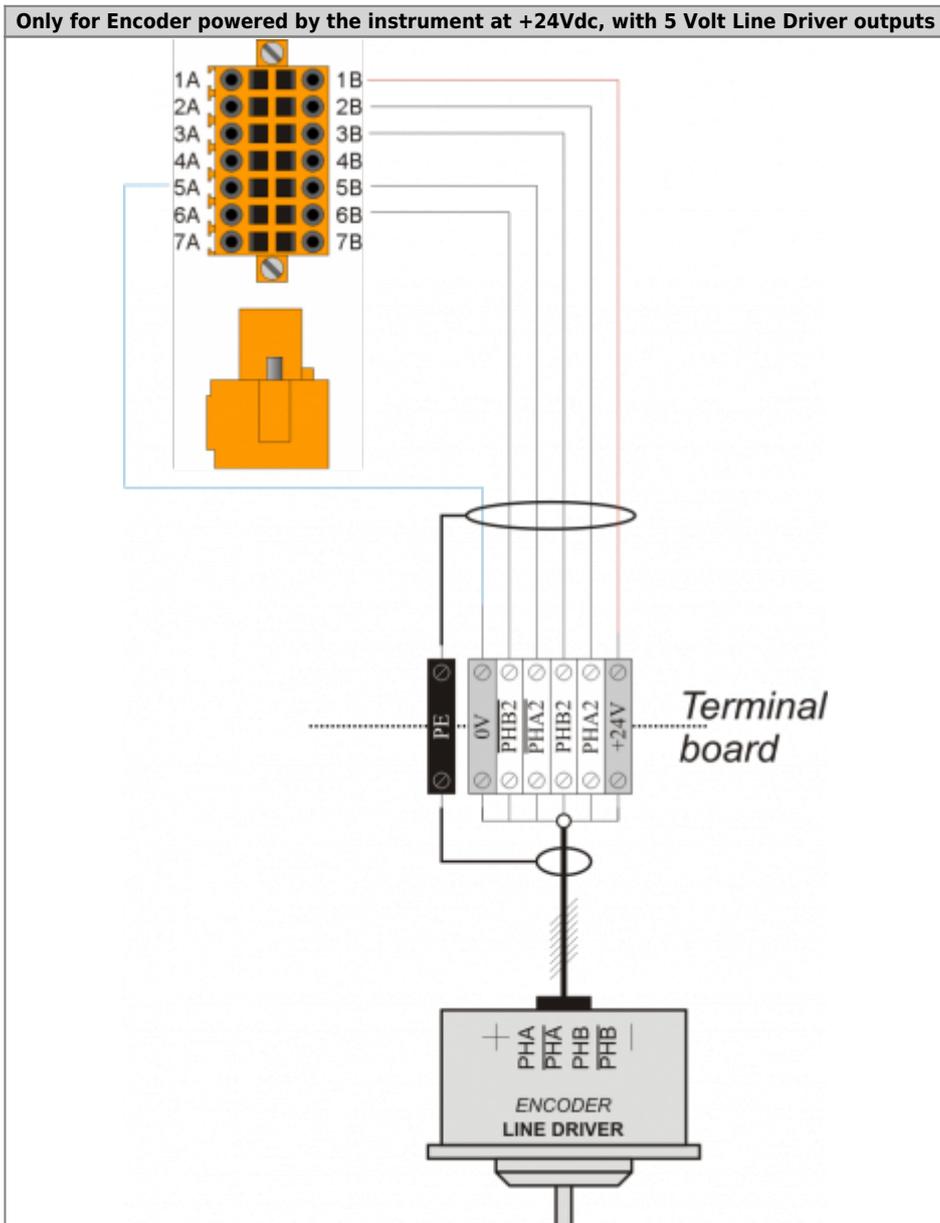
## 3.6.2.1.1 Connection example

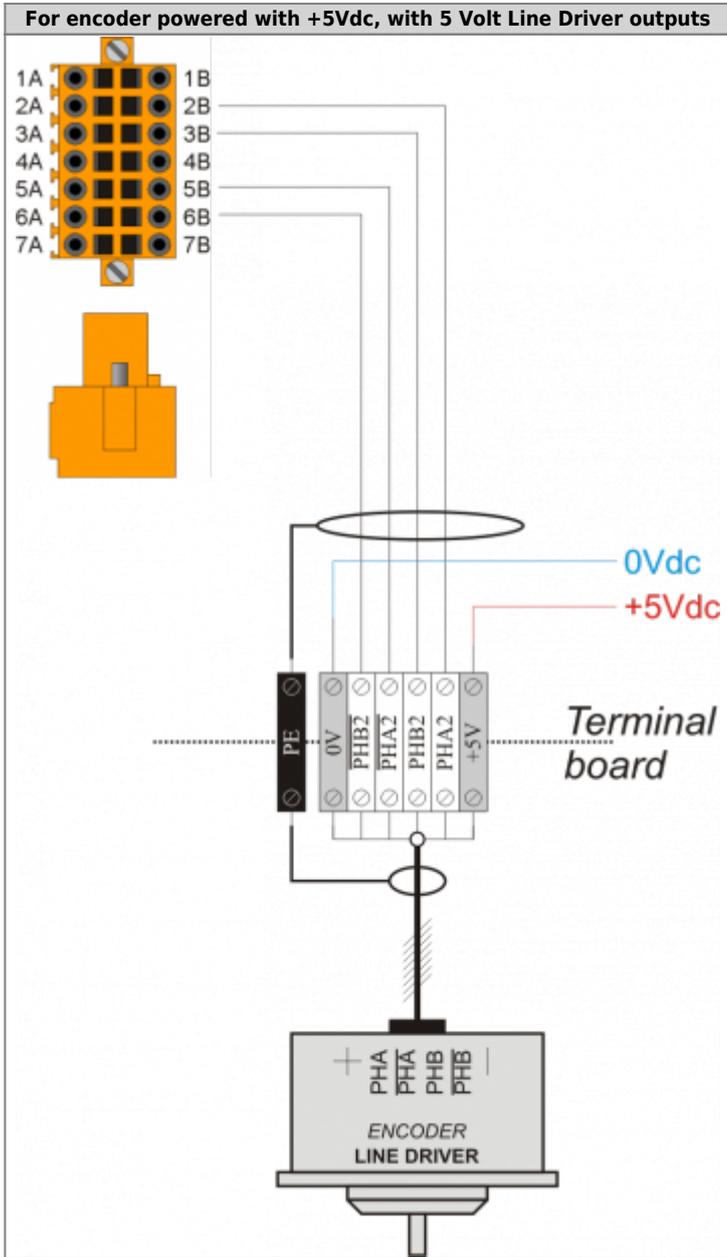


### 3.6.2.2 For "Line Driver" encoder type

	PIN	ID	DESCRIPTION	
	1B	+24V	Encoder power supply	<b>Bridge</b>
	2B	PHA2+	<b>Phase A+</b>	
	3B	PHB2+	<b>Phase B+</b>	
	4B	Z2+	n.u.	
	5B	PHA2-	<b>Phase A-</b>	
	6B	PHB2-	<b>Phase B-</b>	
	7B	Z2-	n.u.	

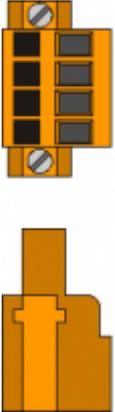
#### 3.6.2.2.1 Connection example



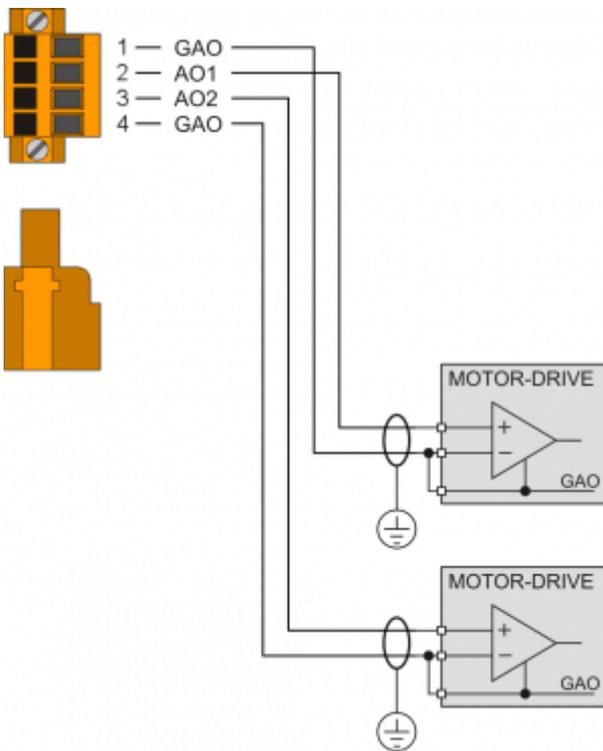


## 3.7 Analog outputs

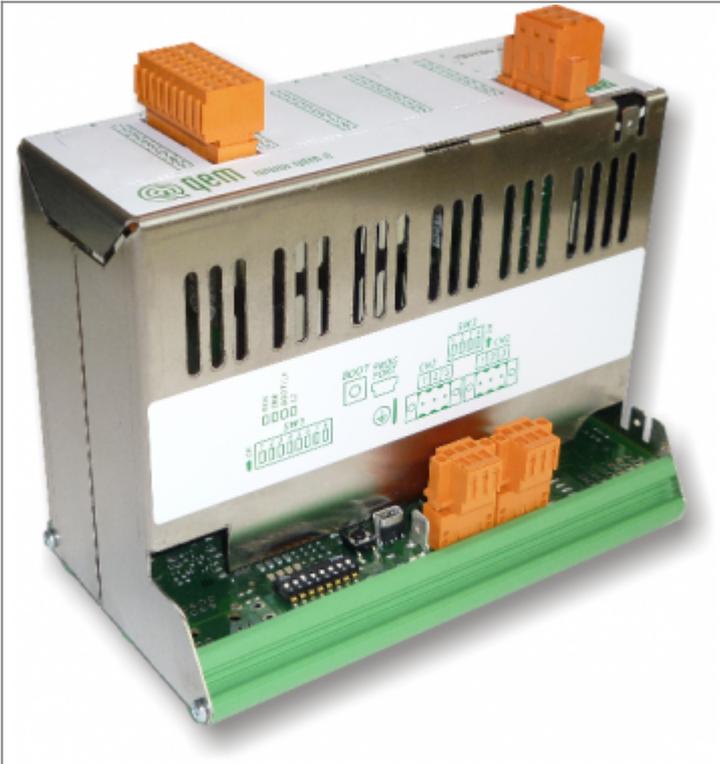
### 3.7.1 CN3

	PIN	ID	DESCRIPTION	
	1	GAO	Common of analog outputs	
	2	AO1	<b>Output 0-10V</b> Inverter command	Conveyor
	3	AO2		Bridge
	4	GAO	Common of analog outputs	

#### 3.7.1.1 Connection example



### 3.8 External I/O module RMC-3MB01-M9/0/0/0/P16/P16/24Vdc



[RMC-3MB01:Installation and Maintenance Manual](#)

#### 3.8.1 Power supply

##### 3.8.1.1 CN1

The instrument will need to be powered to 24Vdc. Install an external fuse in series to the positive conductor +24Volt.

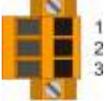
	PIN (NUMBER)	ID	DESCRIPTION
1	1 (1)	0V	Common power supply 0Vdc
2	2 (2)	PE	Ground-PE
3	3 (3)	+24V	Positive power supply +24Vdc

#### 3.8.2 Connectivity

##### 3.8.2.1 PROG PORT (USB mini-B)

PROG PORT	Description
	<p>Serial used for transferring and firmware update You must use only with the <a href="#">IQ009</a> or <a href="#">IQ013</a> accessories.</p>

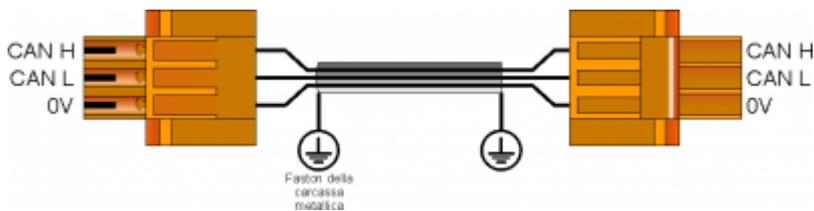
### 3.8.2.2 CN2

	PIN (NUMBER)	ID	DESCRIPTION
	1 (4)	0V	CAN common
	2 (5)	CAN_L	CAN low signal
	3 (6)	CAN_H	Can high signal

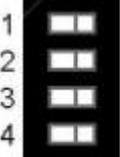
### 3.8.2.3 CN3

	PIN (NUMBER)	ID	DESCRIPTION
	1 (7)	0V	CAN common
	2 (8)	CAN_L	CAN low signal
	3 (9)	CAN_H	Can high signal

#### 3.8.2.3.1 Connection example



#### 3.8.2.3.2 Terminating Resistance Setting

SW3	Num. Dip	Name Dip	DIP Setting	Function
 OFF ↔ ON	1	JP1	ON	Termination <a href="#">CAN PORT</a>
	2	JP2	ON	
	3	JP1	NC	
	4	JP2	NC	



If you enable the terminating of the CAN port, both the DIP JP1 and JP2 must be enabled.

### 3.8.2.3.3 Address and speed settings

SW1		Nr. DIP	Function
	CAN transmission speed select	1	ON
		2	ON
		Baud-Rate	1Mb
	CAN transmission address select	3	ON
		4	OFF
		5	OFF
		6	OFF
		7	OFF
	8	OFF	
	ID	1	

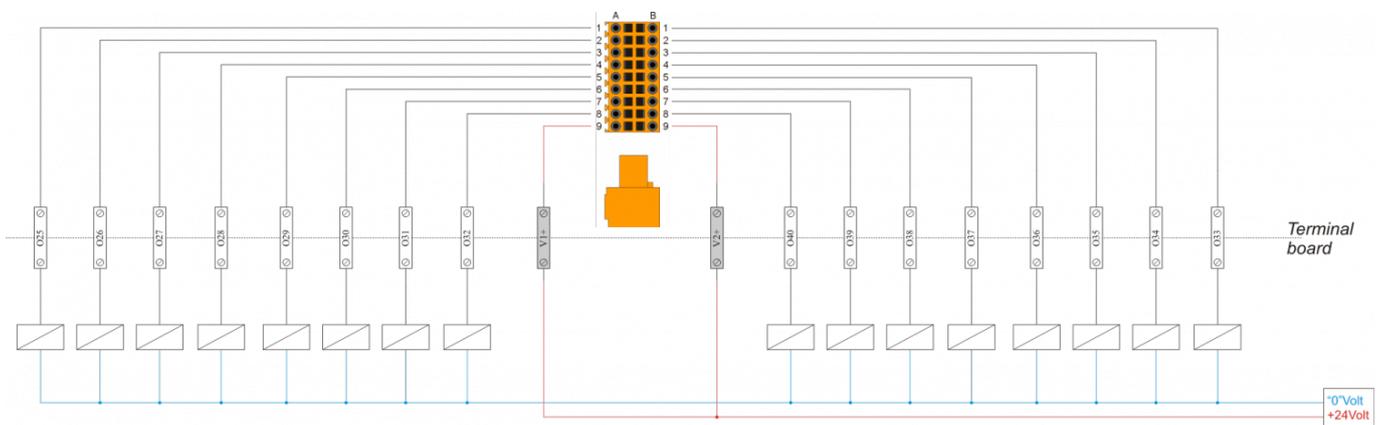
### 3.8.3 Digital output

S = Stato	ID
OFF	ID = Software
ON	

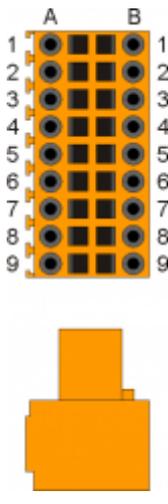
#### 3.8.3.1 SLOT 6

		PIN	ID	DESCRIPTION	S
	1A	O25	Start Head motor	1	OFF
	2A	O26		2	
	3A	O27		3	
	4A	O28		4	
	5A	O29		5	
	6A	O30		6	
	7A	O31		7	
	8A	O32		8	
	9A	V1+	Input power outputs O25÷O32 (12÷28V dc)		-
	1B	O33	Start Head motor	9	OFF
	2B	O34		10	
	3B	O35		11	
	4B	O36		12	
	5B	O37		13	
	6B	O38		14	
	7B	O39		15	
8B	O40	16			
9B	V2+	Input power outputs O33÷O40 (12÷28V dc)		-	

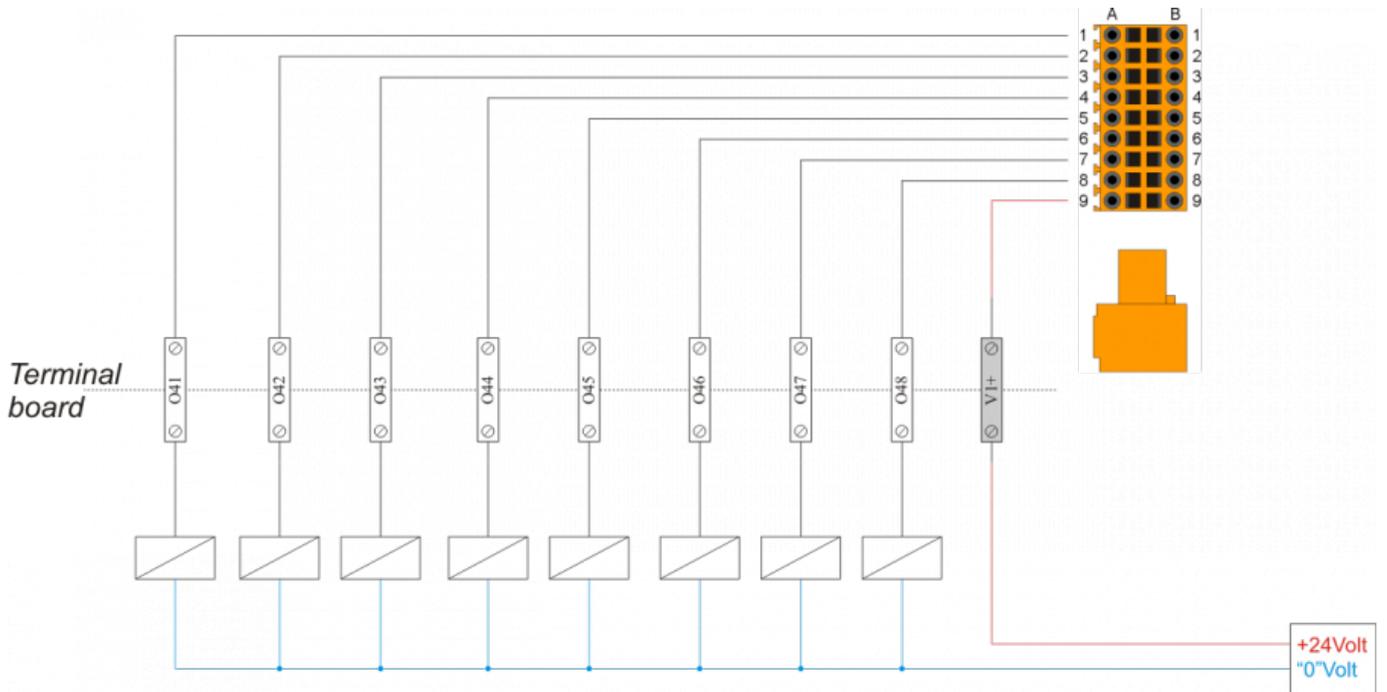
#### 3.8.3.1.1 Connection example



## 3.8.3.2 SLOT 7

	PIN	ID	DESCRIPTION	S
	1A	O41	Head lower	17
	2A	O42		18
	3A	O43		19
	4A	O44		20
	5A	O45	Head Motor	17
	6A	O46		18
	7A	O47		19
	8A	O48		20
	9A	V1+	Input power outputs O41÷O48 (12÷28V dc)	
1B	O49	n.u.	-	-
2B	O50		-	-
3B	O51		-	-
4B	O52		-	-
5B	O53		-	-
6B	O54		-	-
7B	O55		-	-
8B	O56		-	-
9B	V2+		Input power outputs O49÷O56 (12÷28V dc)	

## 3.8.3.2.1 Connection example



## 4. Assistance

For supplying you fast service, at the lowest cost, we need your support.

	
<p>Follow all instructions provided in the <a href="#">MIMAT</a> manual</p>	<p>If the problem remains, fill out the "Request Form for assistance" on the page <a href="#">Contacts</a> at <a href="http://www.qem.it">www.qem.it</a> site. Our technicians will get elements essential for the understanding of your problem.</p>

## Repair

To provide you with an efficient service, please read and adhere to the instructions given [here](#)

## Shipping

It is recommended to pack the instrument with materials that are able to cushion any falls.

		
<p>Use the original package: it must protect the instrument during transport.</p>	<p>Attach:</p> <ol style="list-style-type: none"> <li>1. A description of the anomaly;</li> <li>2. A part of the electric scheme where the equipment is inserted</li> <li>3. The planning of the equipment (set up, quotas of job, parameters...).</li> <li>4. Request a quote for repair; if not required, the cost will be calculated in the final balance.</li> </ol>	<p>A full description of the problem, will help identify and resolve your problems fast. A careful packaging will avoid further inconveniences.</p>

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