

Sommario

MCE_P1P20F - 022 : Connections	3
1. Informations	3
1.1 Release	3
1.1.1 Specifications/Copyright	3
2. Description	4
3. Hardware and connections	4
3.1 Operator panel	4
3.2 Power supply	6
3.3 Connectivity	6
3.3.1 PROG PORT (USB mini-B)	6
3.3.2 ETHERNET port	6
3.3.3 CANbus PORT	6
3.4 Digital inputs	8
3.4.1 CN6	8
3.4.2 CN5	9
3.5 Digital outputs	10
3.5.1 CN7	10
3.5.2 CN4	11
3.5.3 CN12	12
3.6 Bi-directional counter inputs	13
3.6.1 CN9	13
3.6.2 CN10	17
3.7 Analog outputs	21
3.7.1 CN3	21
3.8 External I/O module RMC-3MB01-M9/0/0/0/P16/P16/24Vdc	22
3.8.1 Power supply	22
3.8.2 Connectivity	22
3.8.3 Digital outpus	24
4. Assistance	26
Repair	26
Shipping	26

MCE_P1P20F - 022 : Connections

1. Informations

1.1 Release

			
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1.1.1 Specifications/Copyright

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2. Description

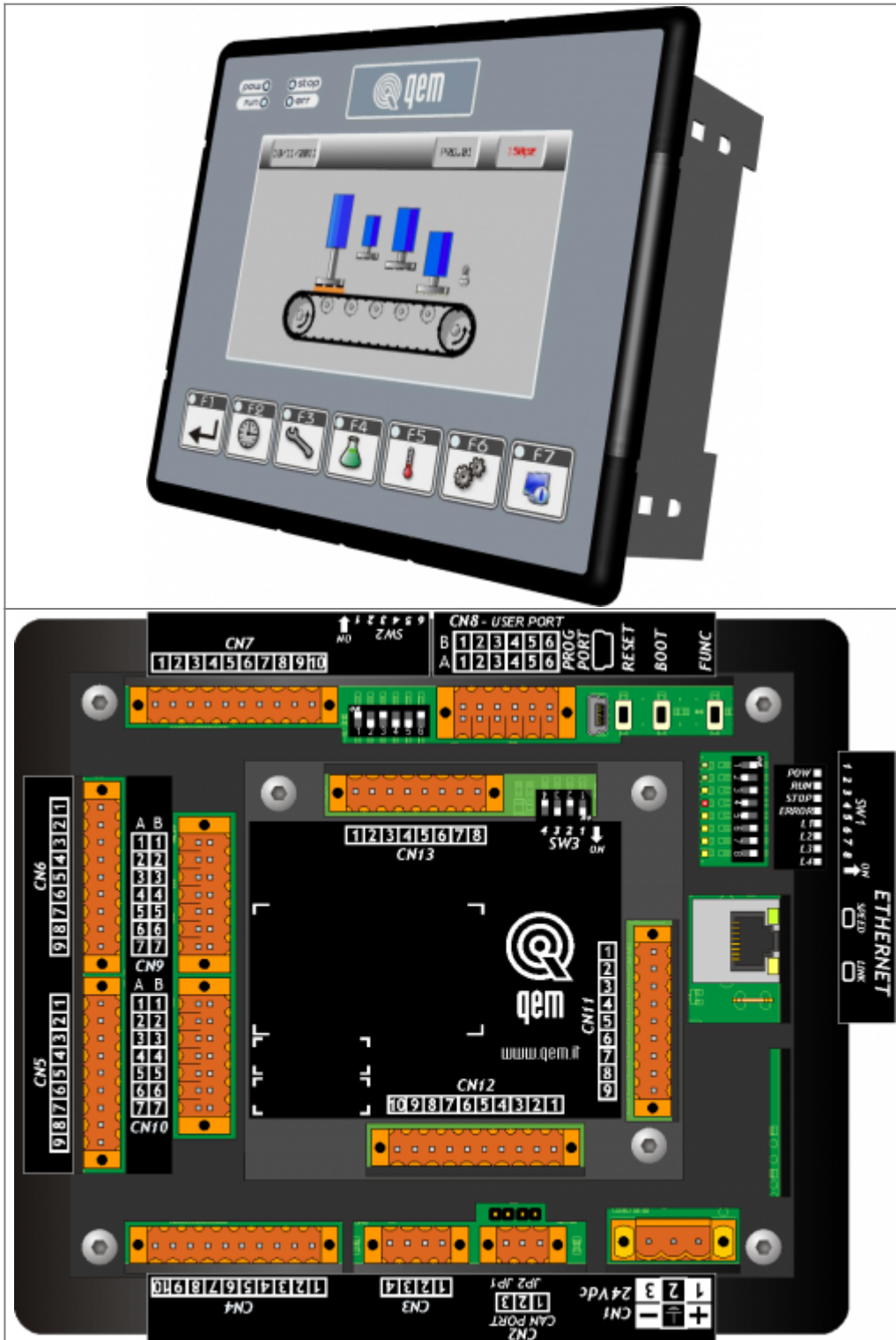
The **P1P20F - 022** software, controls the automation of **polishing machine max 20 heads**.

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

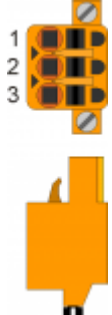




[MIMJ1P20Fx_BASE](#):Installation and Maintenance Manual

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 +24Vdc
	2	PE	Ground-PE
	3	0V	Common power supply 0Vdc

3.3 Connectivity

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

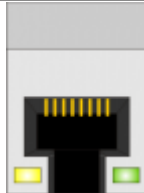
Nr. 1 ETHERNET PORT

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 IQ009 or IQ013 accessories.

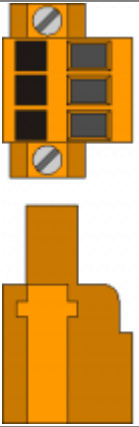
3.3.2 ETHERNET port

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)

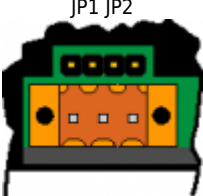
3.3.3 CANbus PORT

3.3.3.1 CN2

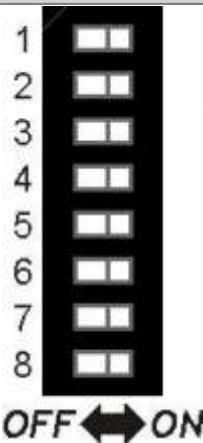
	Terminal	Symbol	Description
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	Terminal	Symbol	Description
	1	CAN H	CAN H terminal
	2	CAN L	CAN L terminal
	3	0V	CAN common

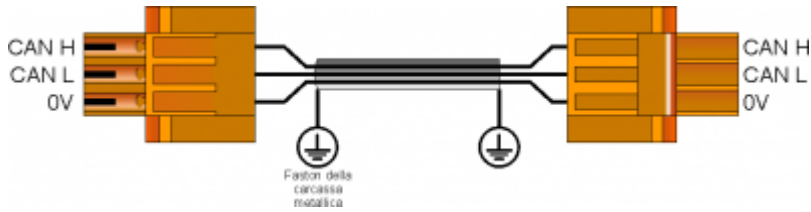
3.3.3.1.1 Terminating Resistance Setting

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

3.3.3.1.3 Connection example



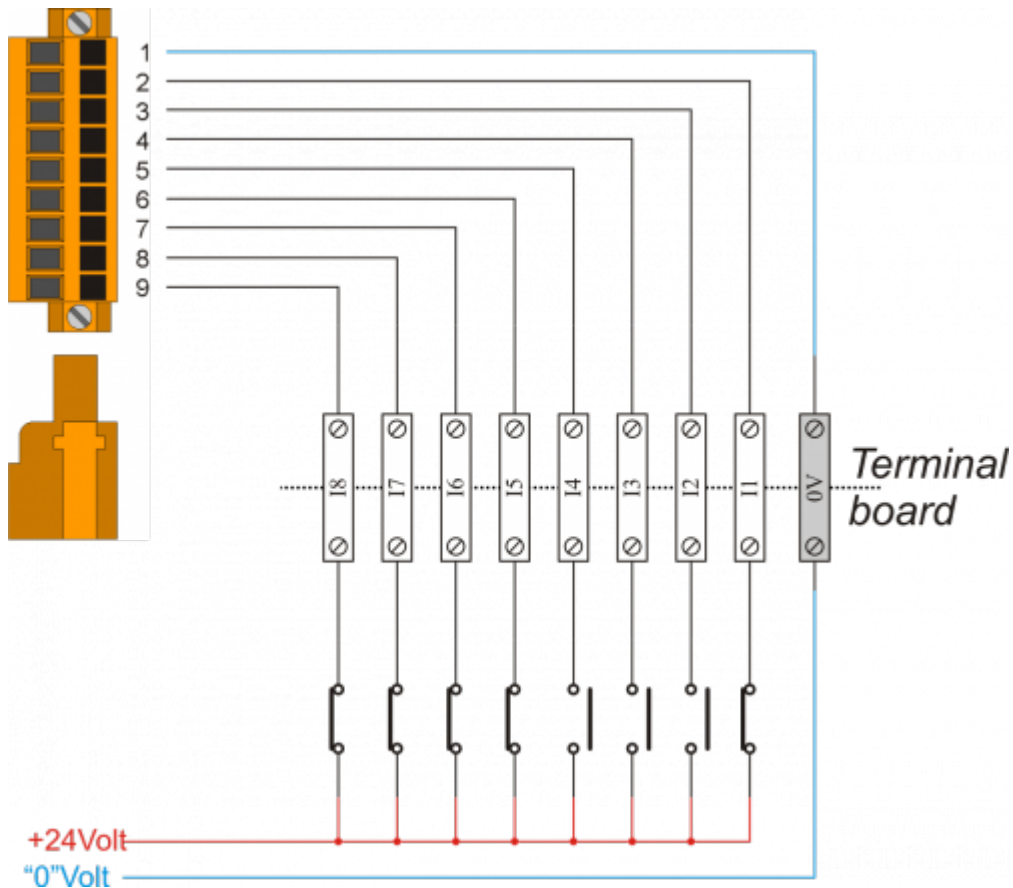
3.4 Digital inputs

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

3.4.1 CN6

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

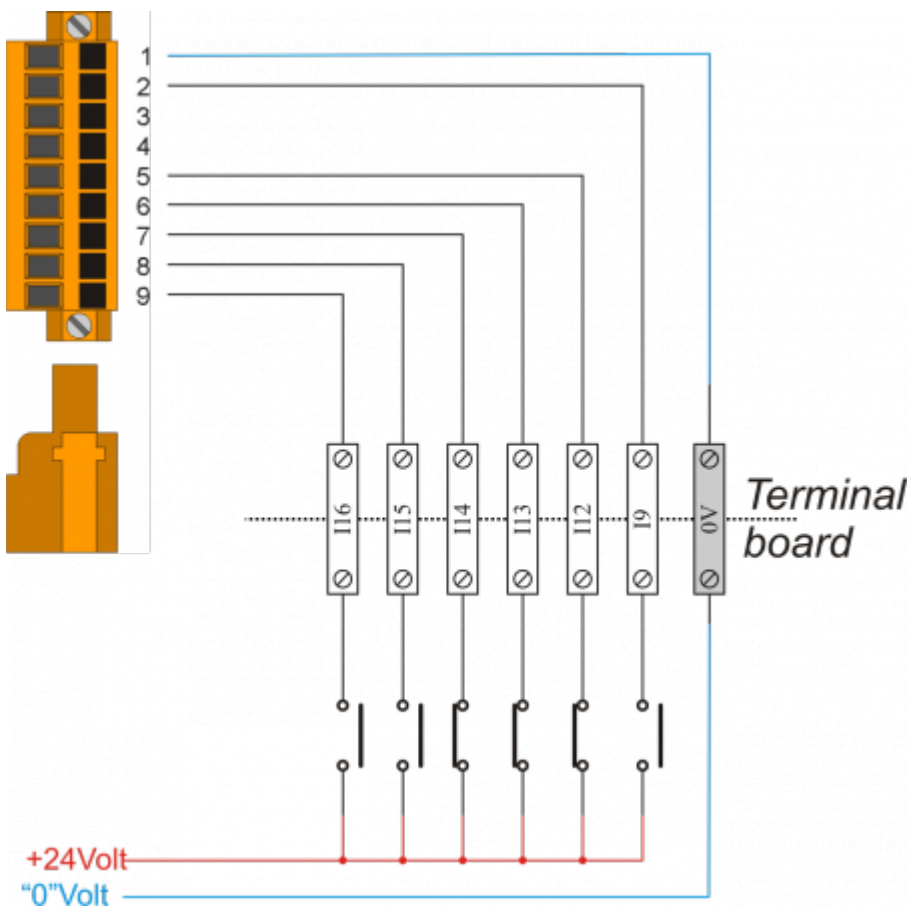
3.4.1.1 Connection example



3.4.2 CN5

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

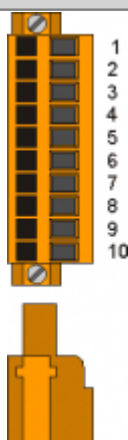
3.4.2.1 Connection example



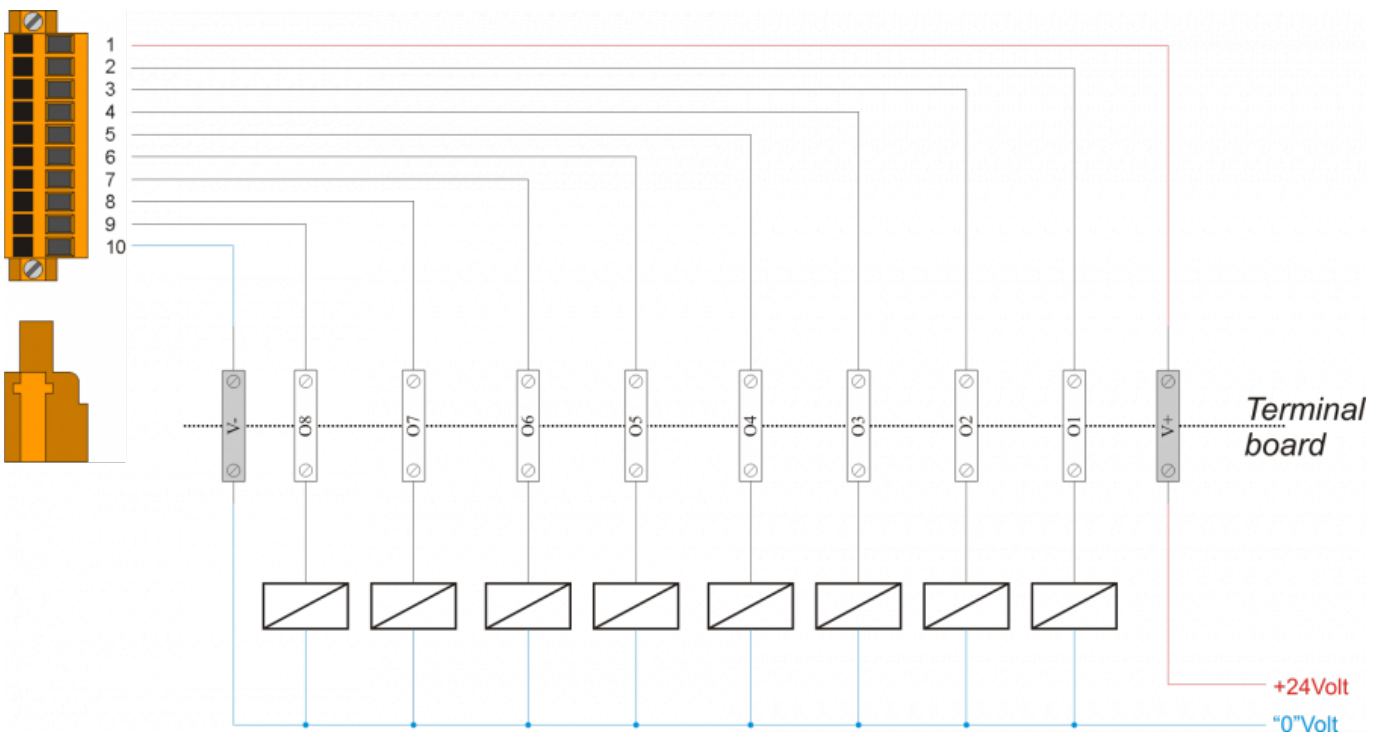
3.5 Digital outputs

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	1 2 3 4 5 6 7 8 Head descent or motor start control	OFF
	3	O2		
	4	O3		
	5	O4		
	6	O5		
	7	O6		
	8	O7		
	9	O8		
	10	V-	Input power outputs (0Vdc)	

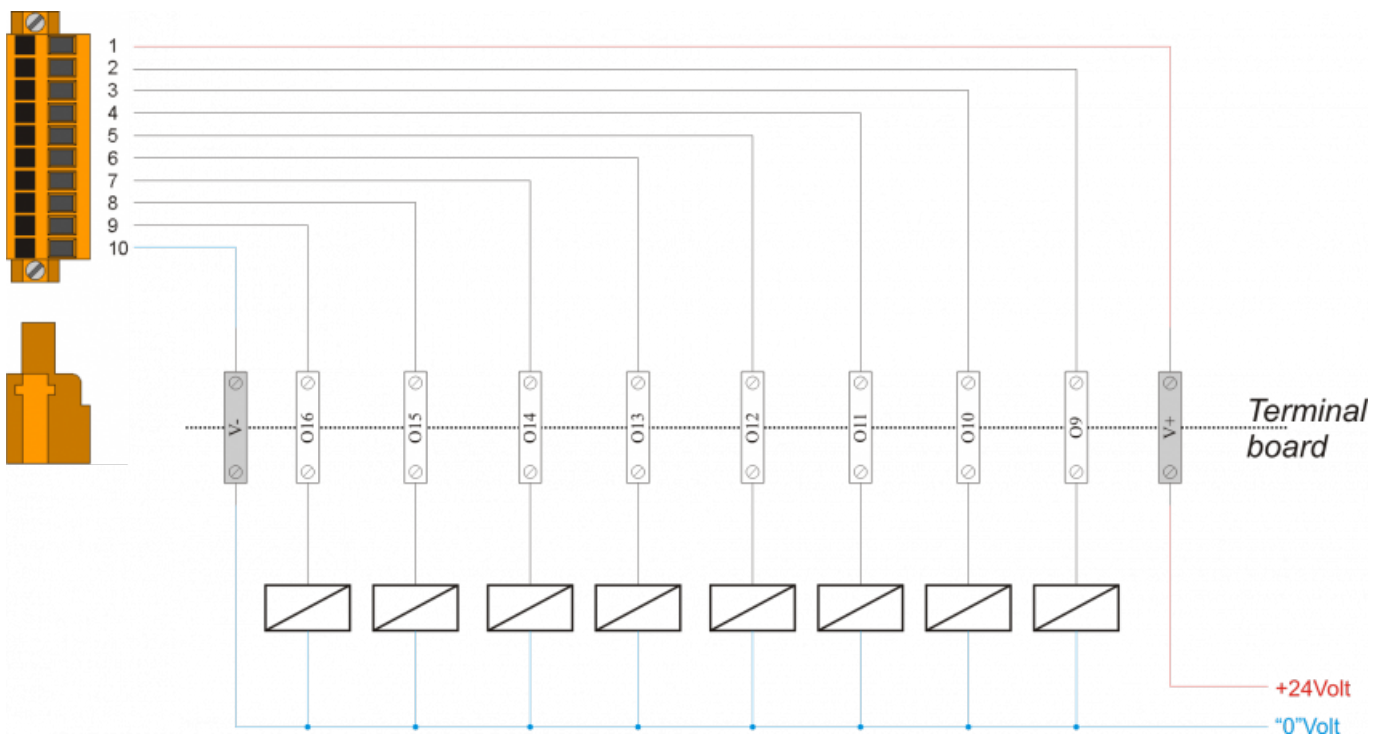
3.5.1.1 Connection example



3.5.2 CN4

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

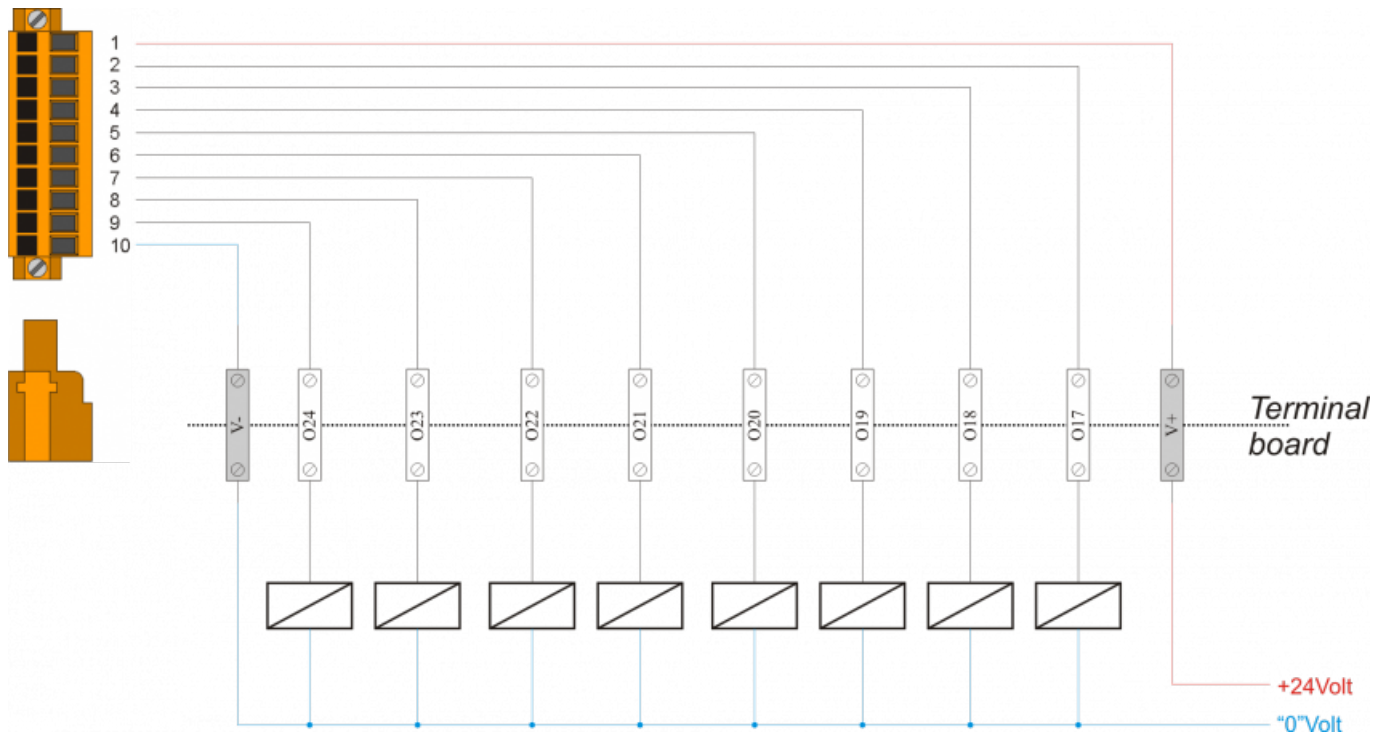
3.5.2.1 Connection example



3.5.3 CN12

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

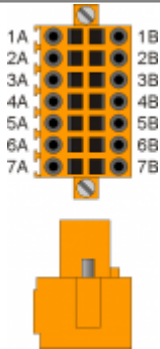
3.5.3.1 Connection example



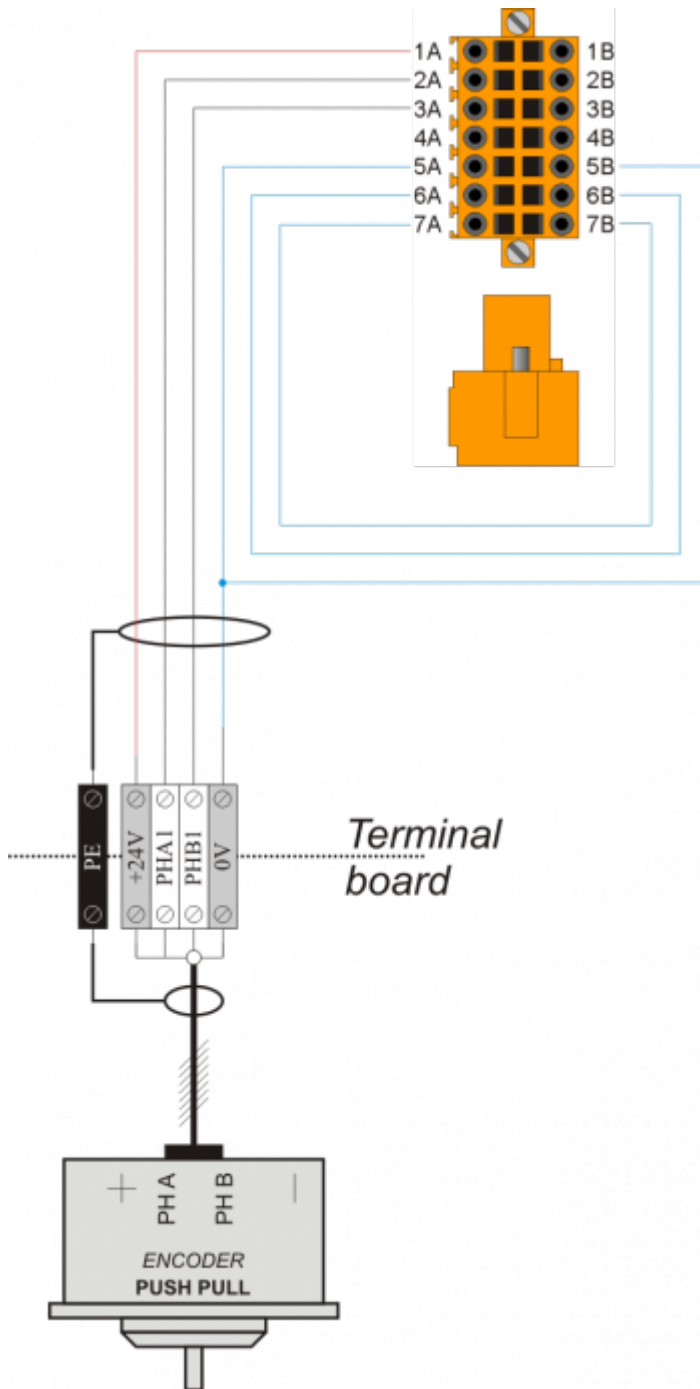
3.6 Bi-directional counter inputs

3.6.1 CN9

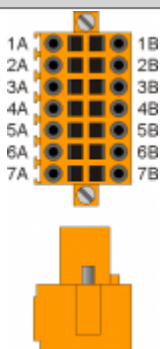
3.6.1.1 For "Push Pull" encoder type

		PIN	ID	DESCRIPTION	Conveyor
	1A	+24V		Encoder power supply	
	2A	PHA1		Phase A	
	3A	PHB1		Phase B	
	4A	Z1		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 PIN 7B	

3.6.1.1.1 Connection example

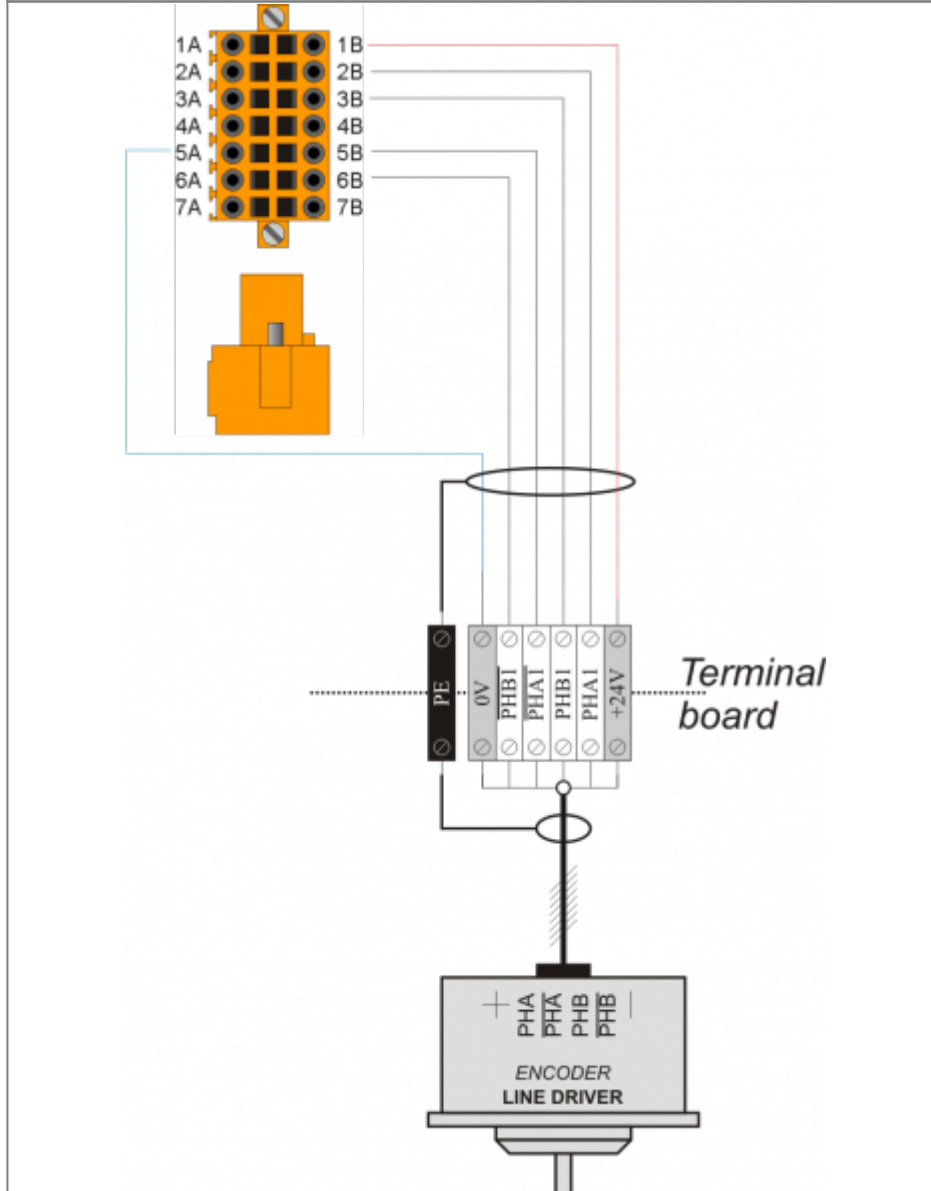


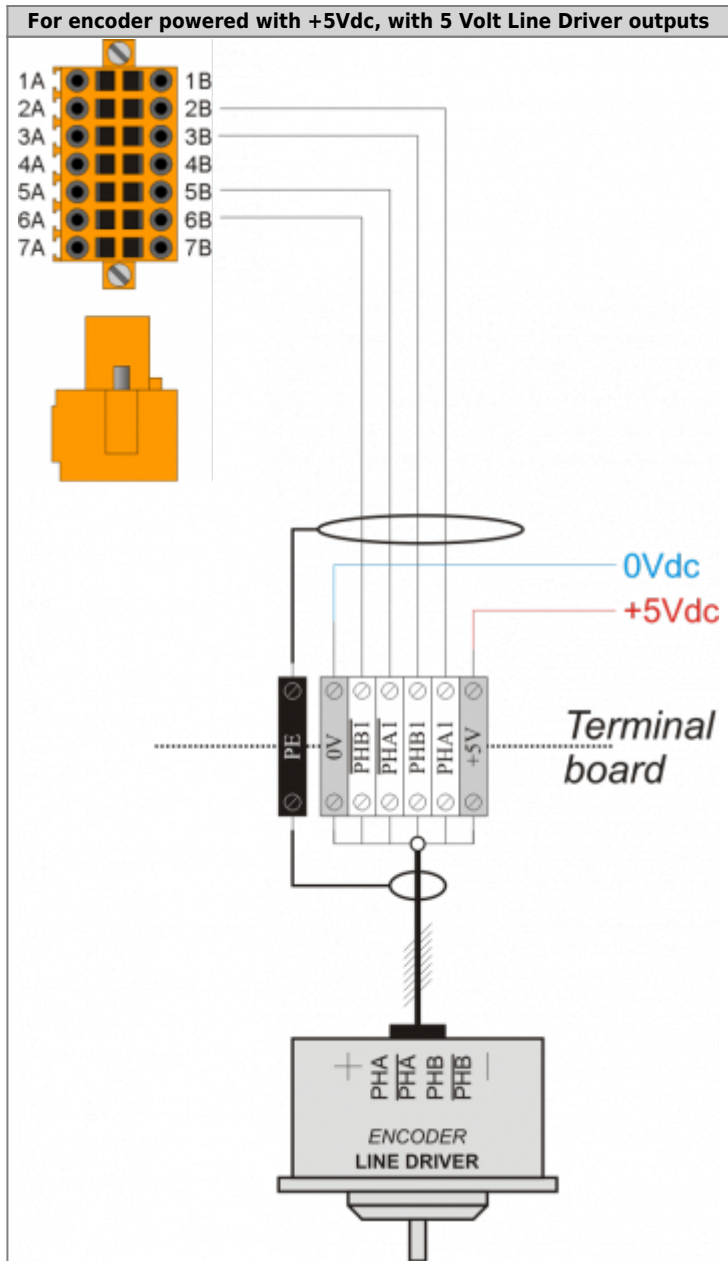
3.6.1.2 For "Line Driver" encoder type

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

3.6.1.2.1 Connection example

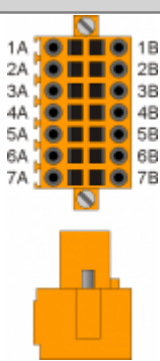
Only for Encoder powered by the instrument at +24Vdc, with 5 Volt Line Driver outputs



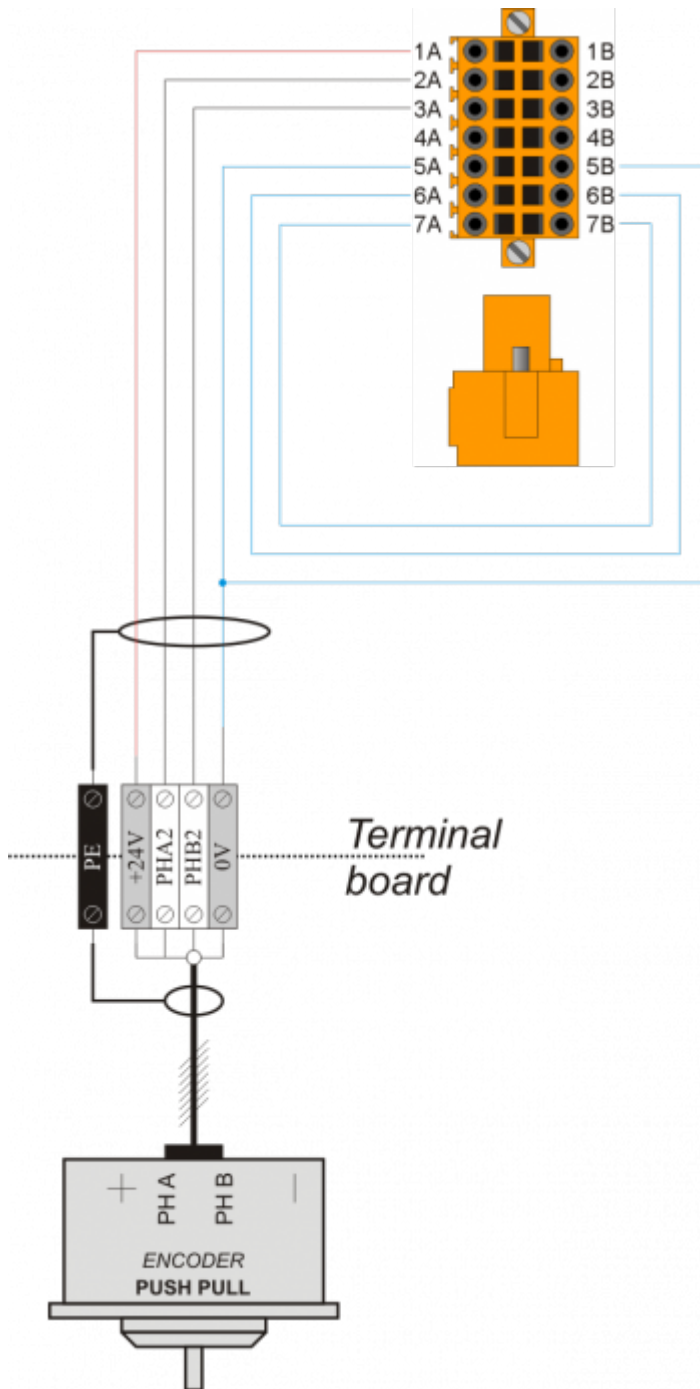


3.6.2 CN10

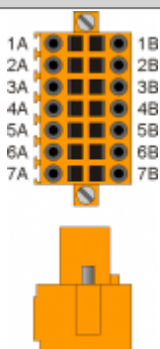
3.6.2.1 For "Push Pull" encoder type

		PIN	ID	DESCRIPTION	Bridge
	1A	1A	+24V	Encoder power supply	
	2A	2A	PHA2	Phase A	
	3A	3A	PHB2	Phase 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

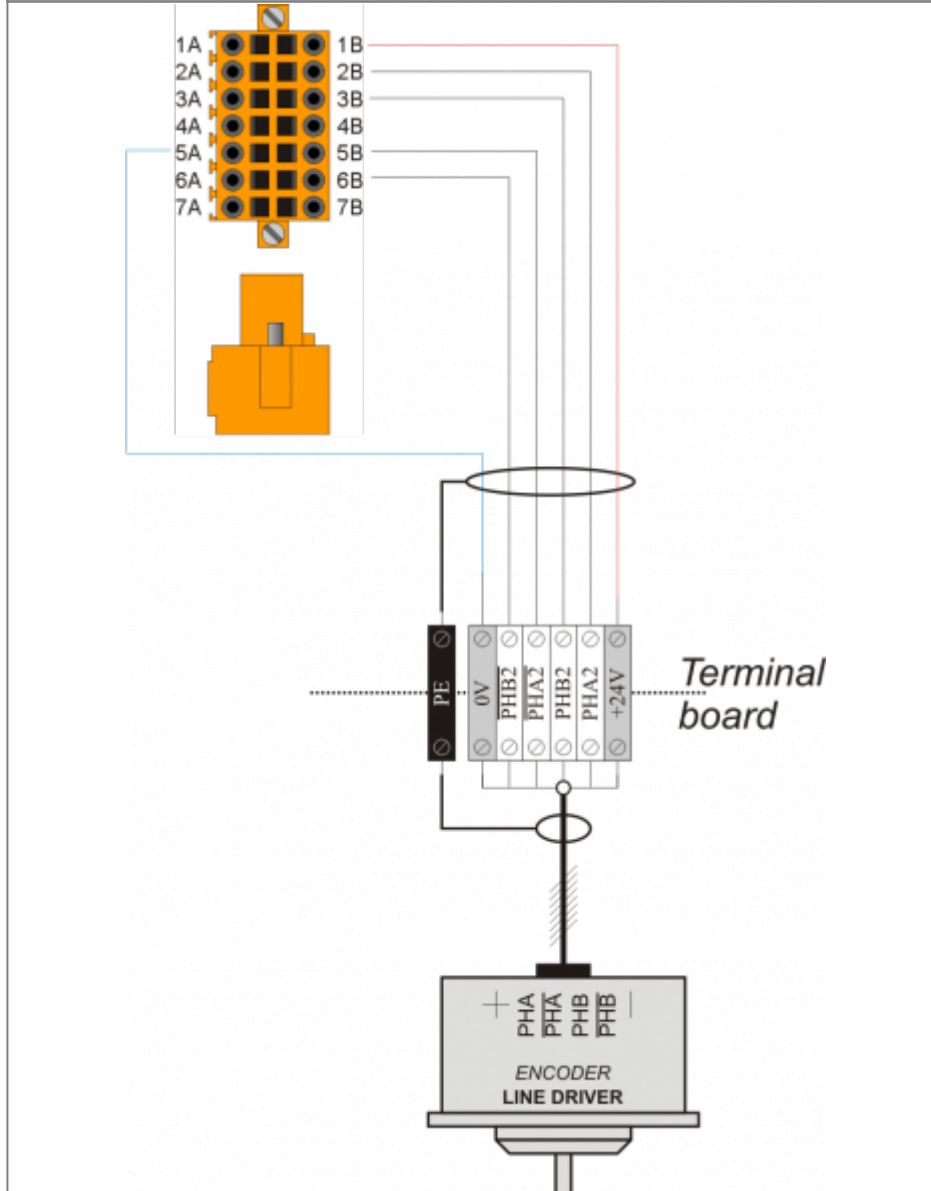


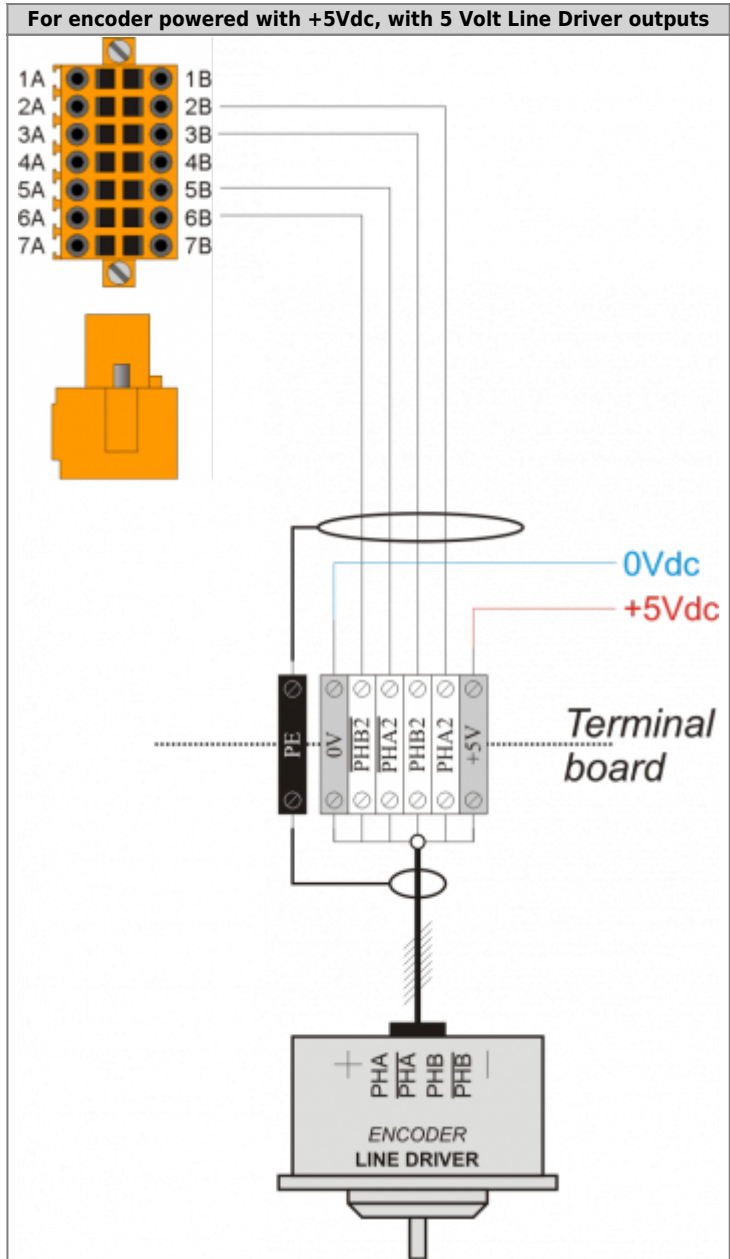
3.6.2.2 For "Line Driver" encoder type

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

3.6.2.2.1 Connection example

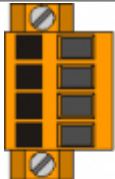
Only for Encoder powered by the instrument at +24Vdc, with 5 Volt Line Driver outputs



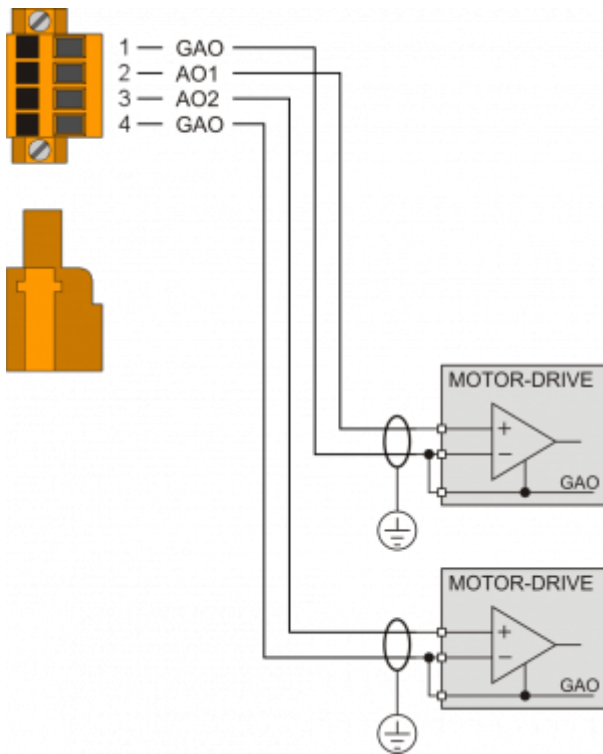


3.7 Analog outputs

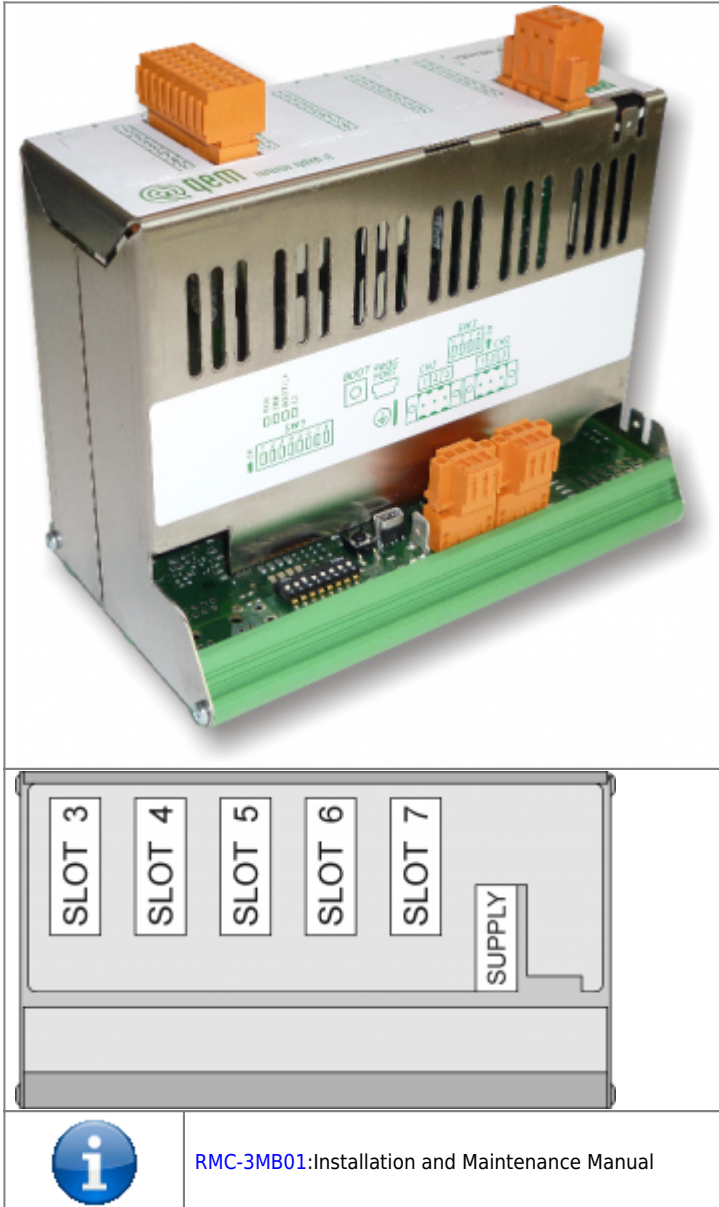
3.7.1 CN3

						PIN	ID	DESCRIPTION		
	1	GAO	Common of analog outputs							
	2	AO1	Output 0-10V	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



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)	0V	Common power supply 0Vdc
	2 (2)	PE	Ground-PE
	3 (3)	+24V	Positive power supply +24Vdc

3.8.2 Connectivity

3.8.2.1 PROG PORT (USB mini-B)

PROG PORT	Description
	Serial used for transferring and firmware update You must use only with the IQ009 or IQ013 accessories.

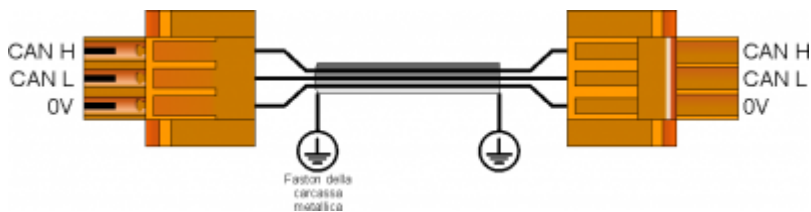
3.8.2.2 CN2

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

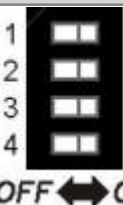
3.8.2.3 CN3

	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



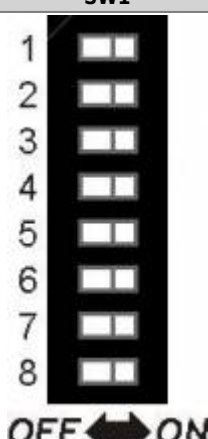
3.8.2.3.2 Terminating Resistance Setting

SW3	Num. Dip	Name Dip	DIP Setting	Function
	1	JP1	ON	Termination CAN PORT
	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.

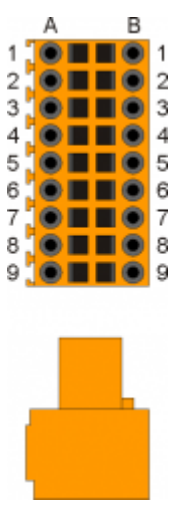
3.8.2.3.3 Address and speed settings

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

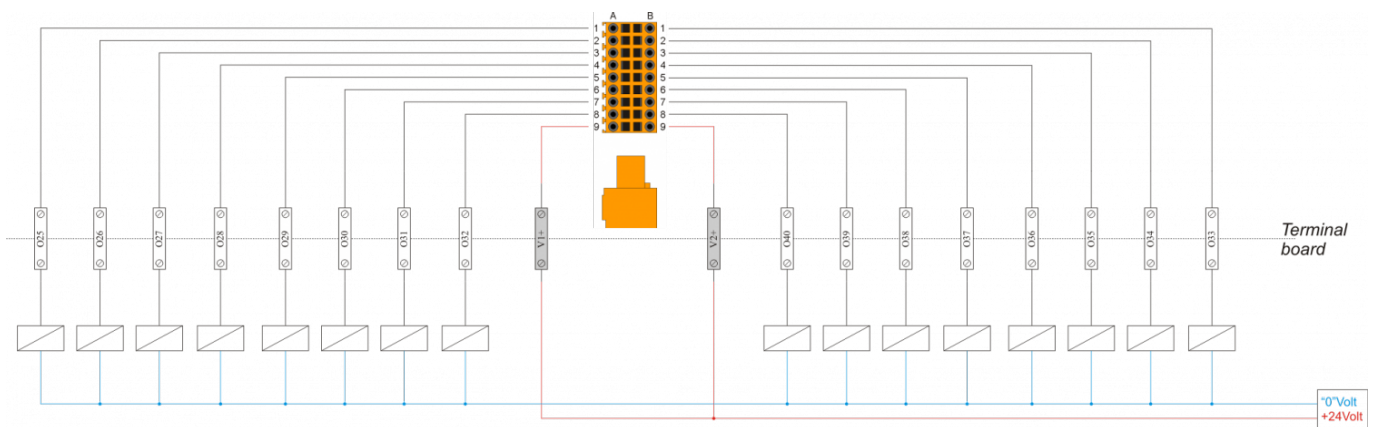
3.8.3 Digital output

S = Stato	ID
OFF	ID = Software
ON	

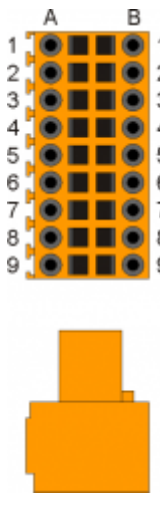
3.8.3.1 SLOT 6

	PIN	ID	DESCRIPTION	S
	1A	O25	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	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)	-

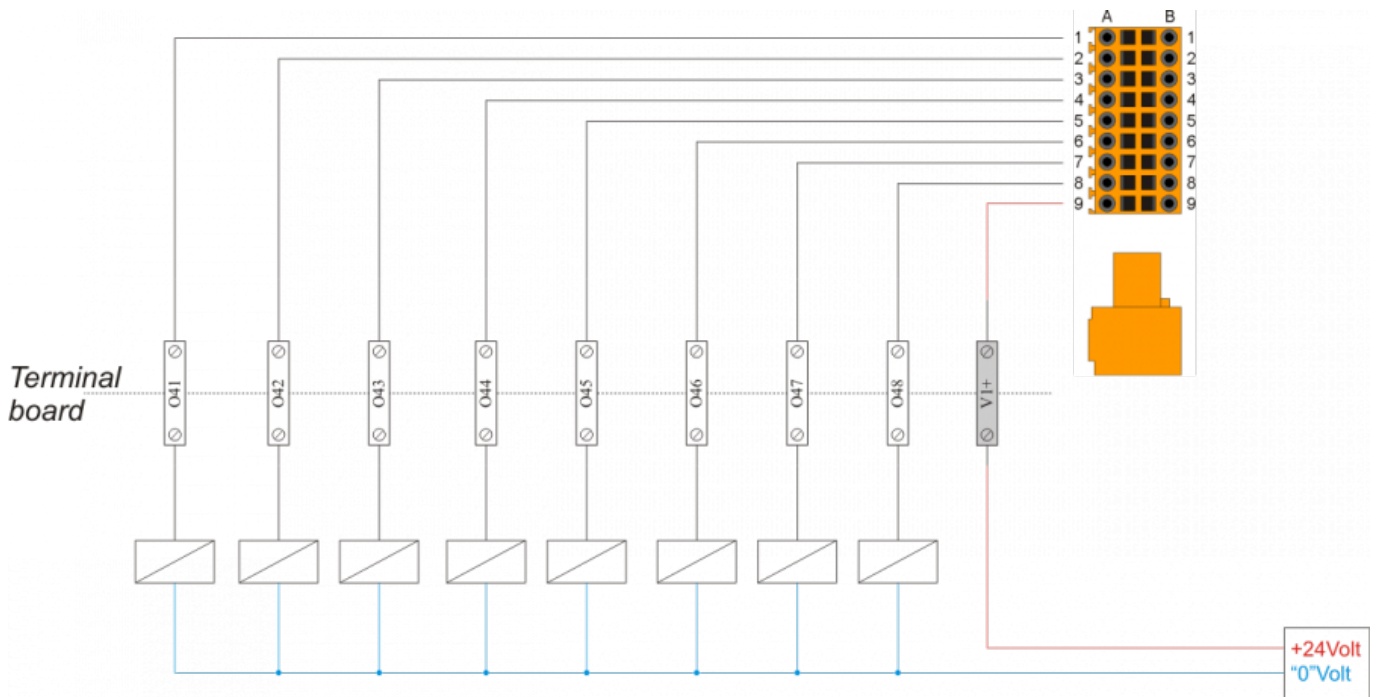
3.8.3.1.1 Connection example



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.

	
Follow all instructions provided in the MIMAT manual	If the problem remains, fill out the "Request Form for assistance" on the page Contacts at www.qem.it site. Our technicians will get elements essential for the understanding of your problem.

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.

		
Use the original package: it must protect the instrument during transport.	Attach: 1. A description of the anomaly; 2. A part of the electric scheme where the equipment is inserted 3. The planning of the equipment (set up, quotas of job, parameters...). 4. Request a quote for repair; if not required, the cost will be calculated in the final balance.	A full description of the problem, will help identify and resolve your problems fast. A careful packaging will avoid further inconveniences.

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