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MCE_P1P20F - 022 : Connections

1. Informations

1.1 Release

			
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01	New manual		18/09/2020

1.1.1 Specifications/Copyright

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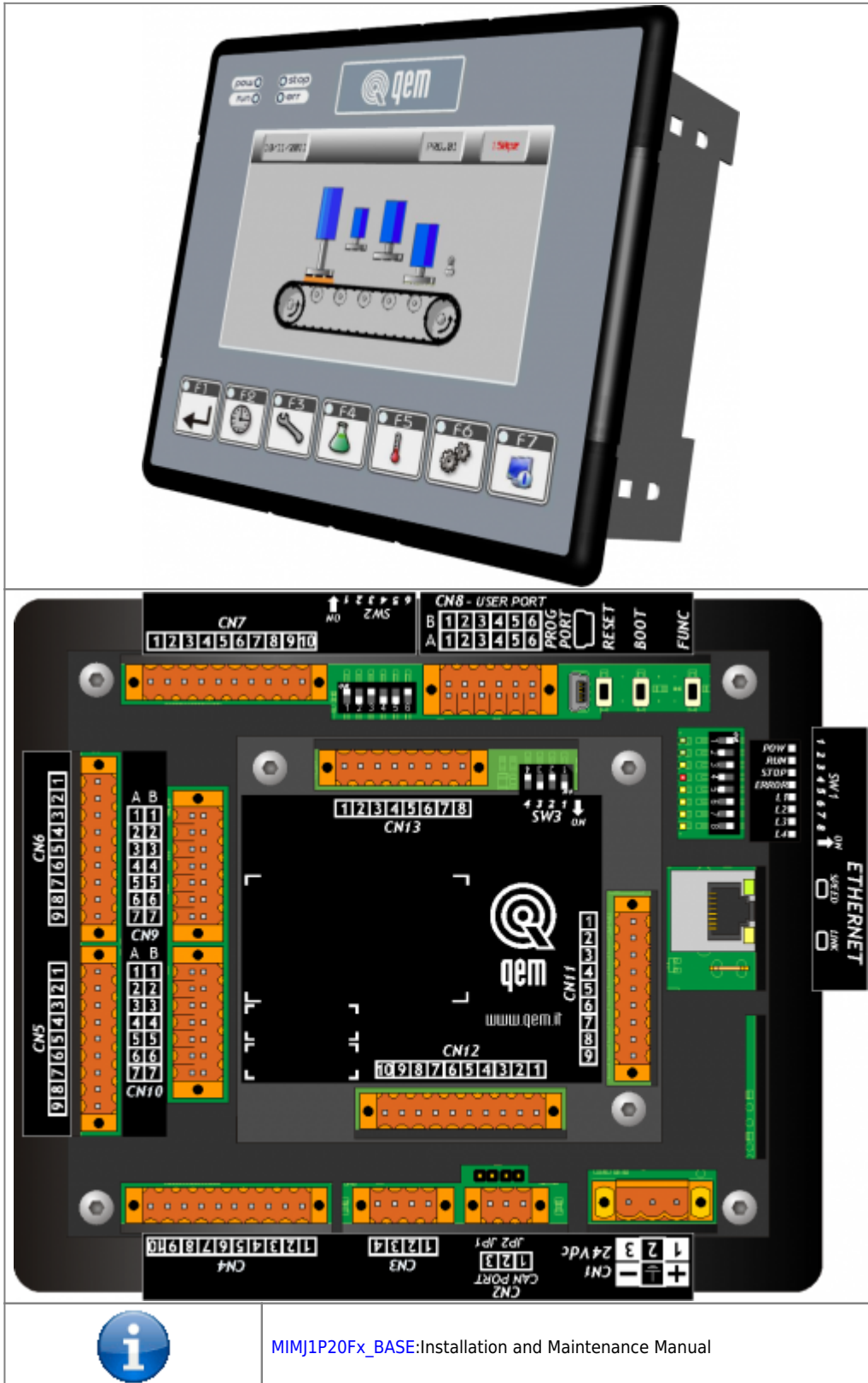
2. Description

The **P1P20F - 022** software, controls the automation of **polishing machine max 19 heads**.

N.B. If you want to separately control the activation of the head motors with the descent and ascent of the heads, you need to use the remote I/O module (RMC3M).

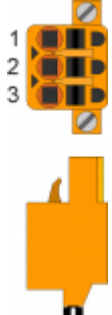
3. Hardware and connections

3.1 Operator panel



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

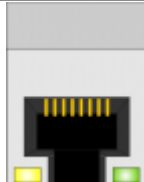
Nr. 1 ETHERNET PORT

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.

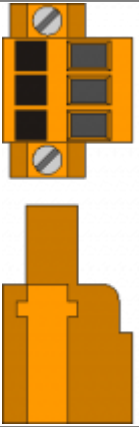
3.3.2 ETHERNET port

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)

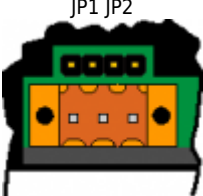
3.3.3 CANbus PORT

3.3.3.1 CN2

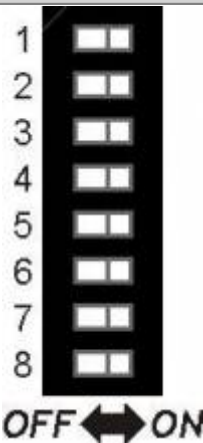
	Terminal	Symbol	Description
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	Terminal	Symbol	Description
	1	CAN H	CAN H terminal
	2	CAN L	CAN L terminal
	3	0V	CAN common

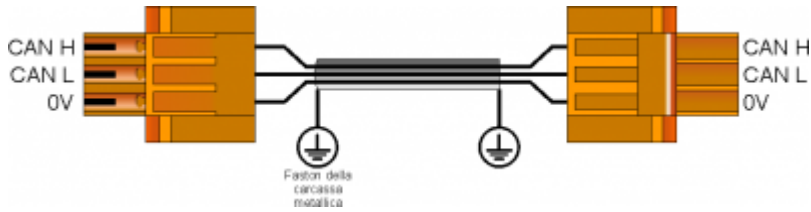
3.3.3.1.1 Terminating Resistance Setting

	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



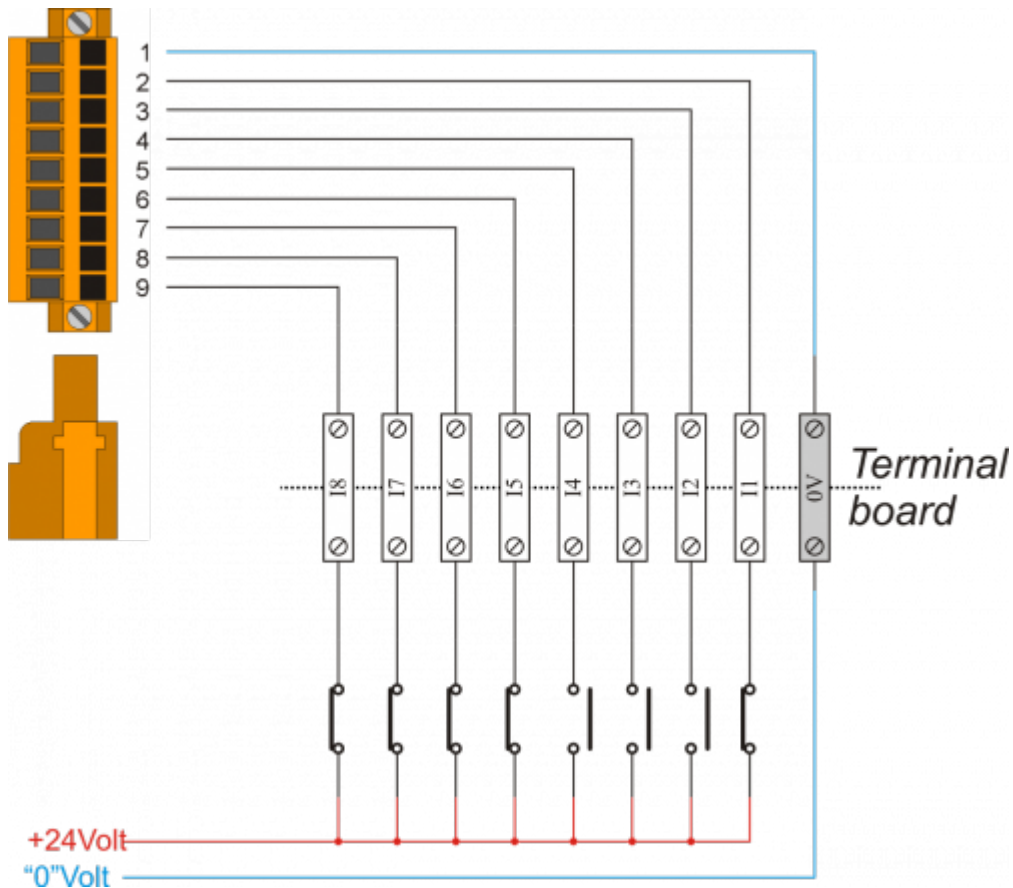
3.4 Digital inputs

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	n.c.	-		-	-
	4	I3	Motors start	Start rolling activation of motors (MP-05 = 1)		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	Lack of air			

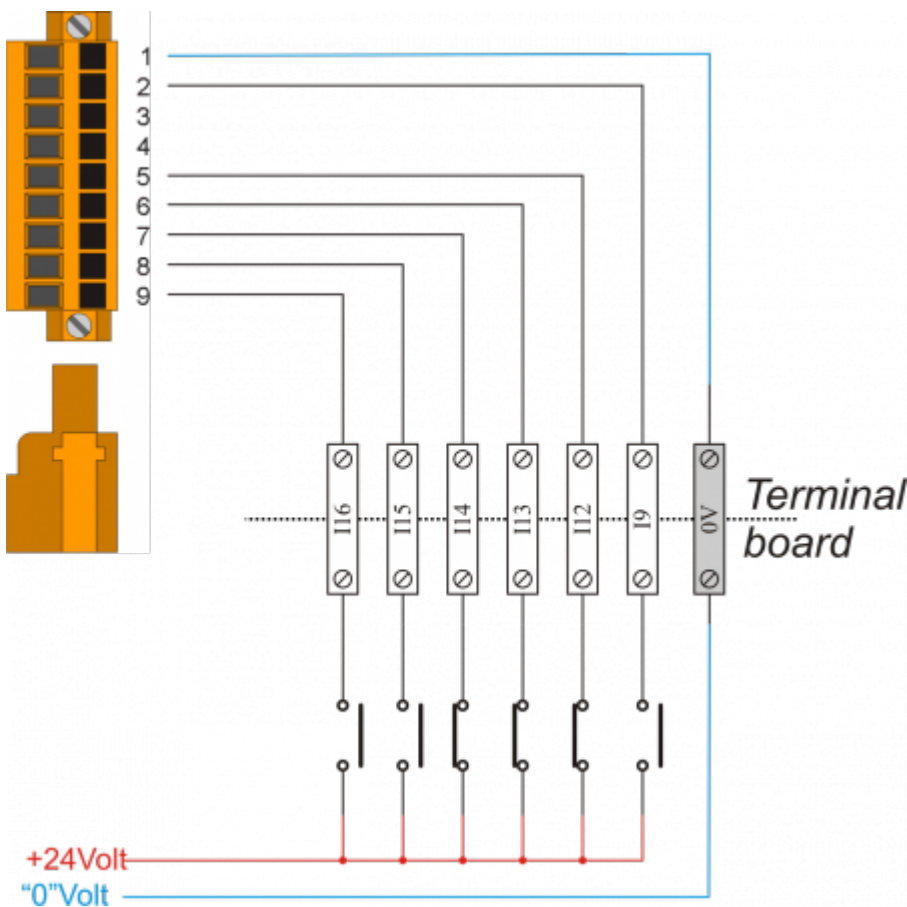
3.4.1.1 Connection example



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					

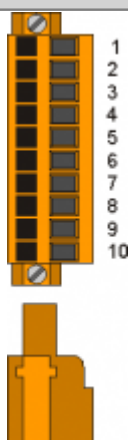
3.4.2.1 Connection example



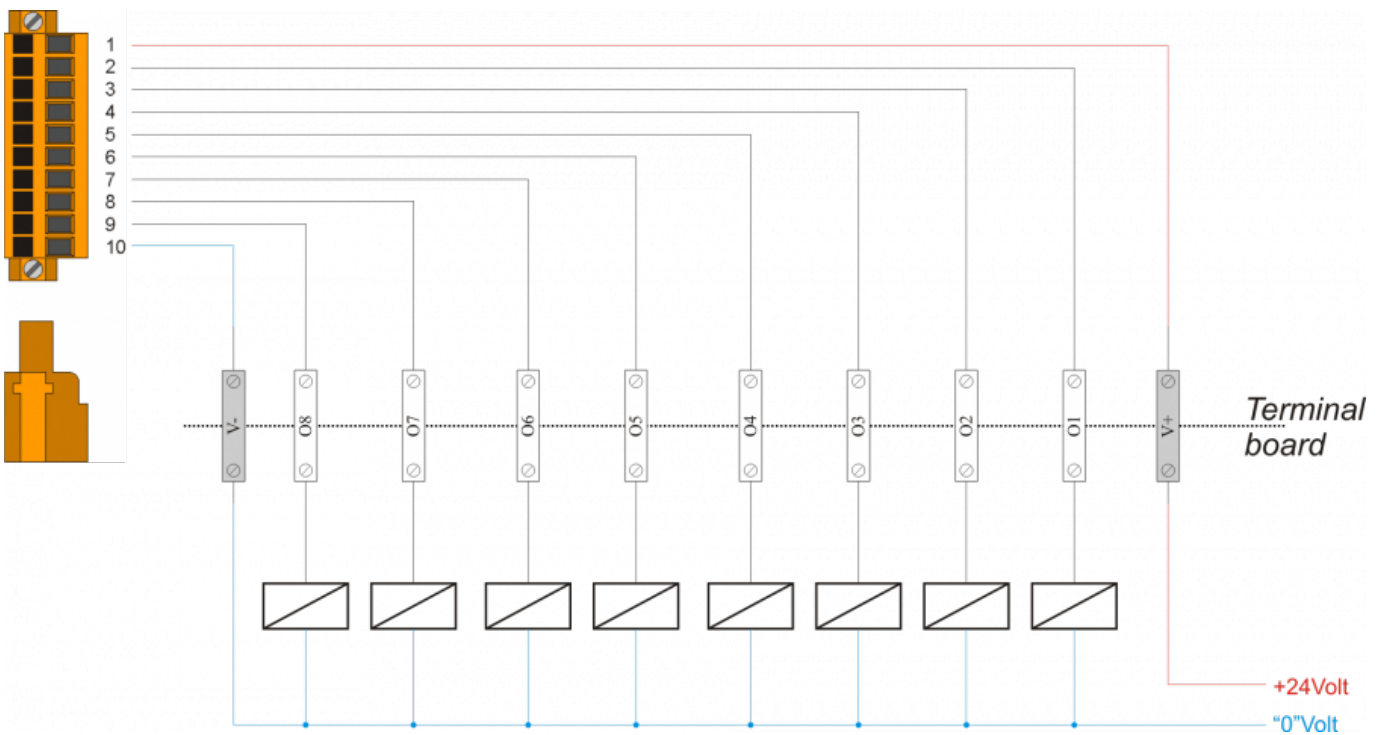
3.5 Digital outputs

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

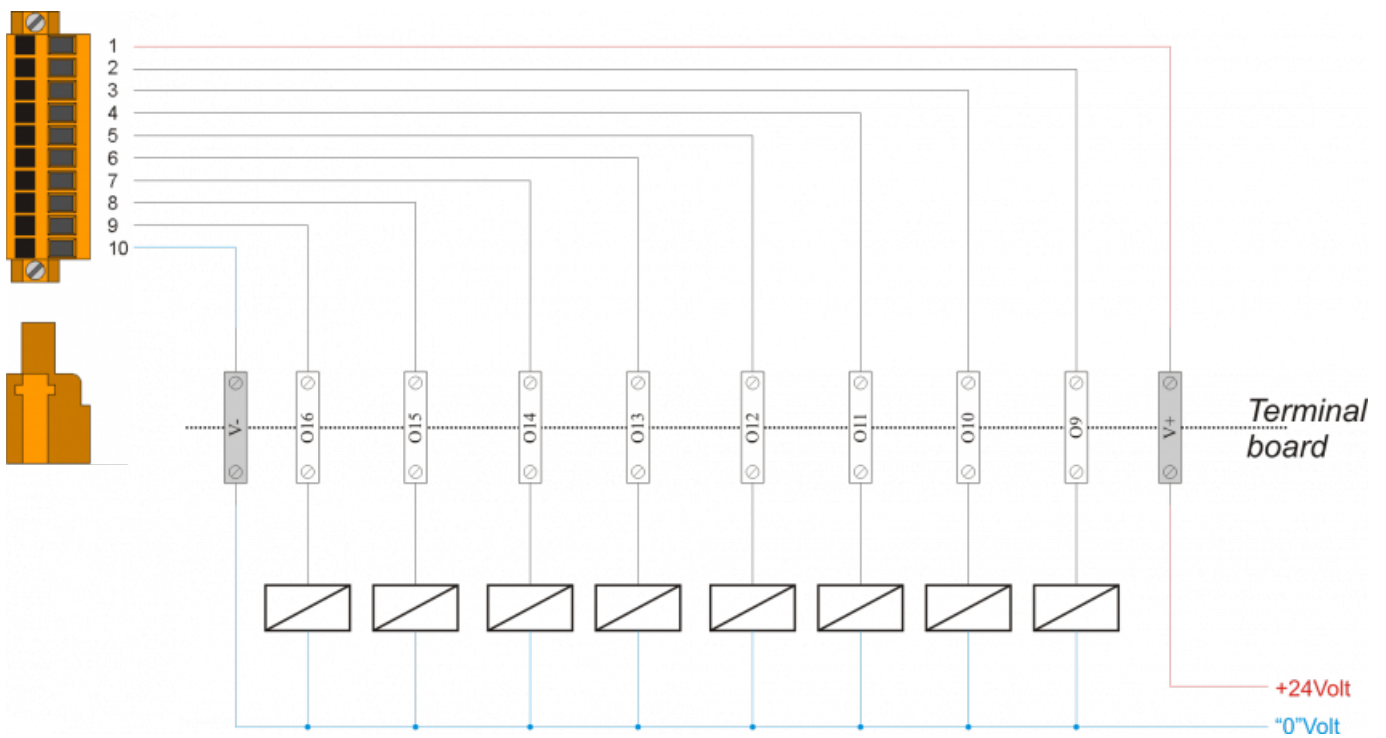
3.5.1.1 Connection example



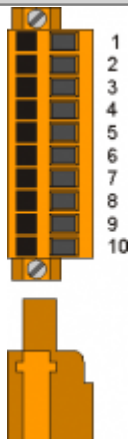
3.5.2 CN4

	PIN	ID	DESCRIPTION		S	
	1	V+	Input power outputs O9÷O16 (12÷28Vdc)			
	2	O9	Head	9	Head descent and 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)		

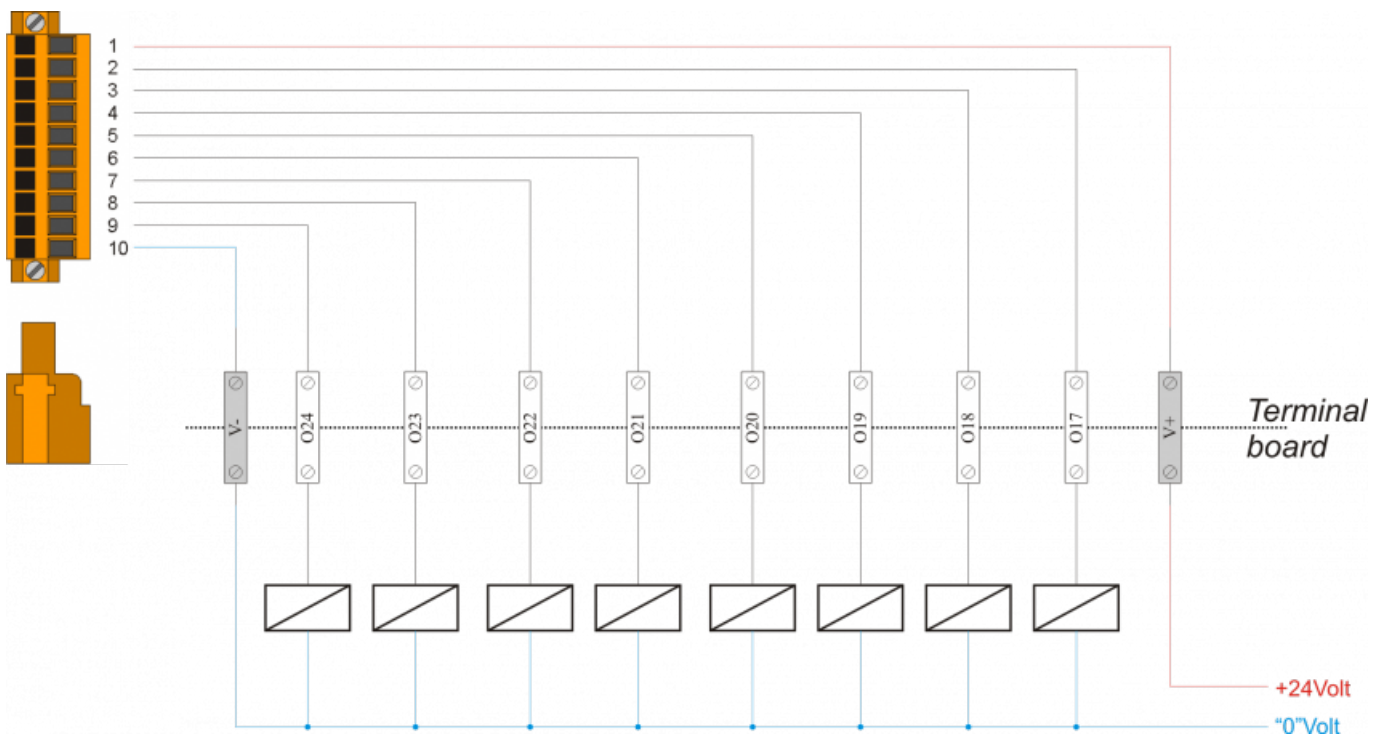
3.5.2.1 Connection example



3.5.3 CN12

	PIN	ID	DESCRIPTION	S
	1	V+	Input power outputs O17÷O24 (12÷28Vdc)	
	2	O17	Head 17 18 19 Head descent and motor start control	OFF
	3	O18		
	4	O19		
	5	O20	Conveyor direction OFF = forward ON = backward	
	6	O21	Bridge direction OFF = forward ON = backward	
	7	O22	Water valve	
	8	O23	Consensus per upstream line	
	9	O24	Machine OK	
	10	V-	Input power outputs (0Vdc)	

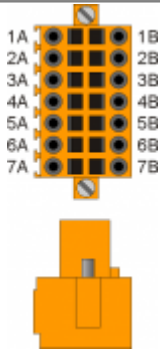
3.5.3.1 Connection example



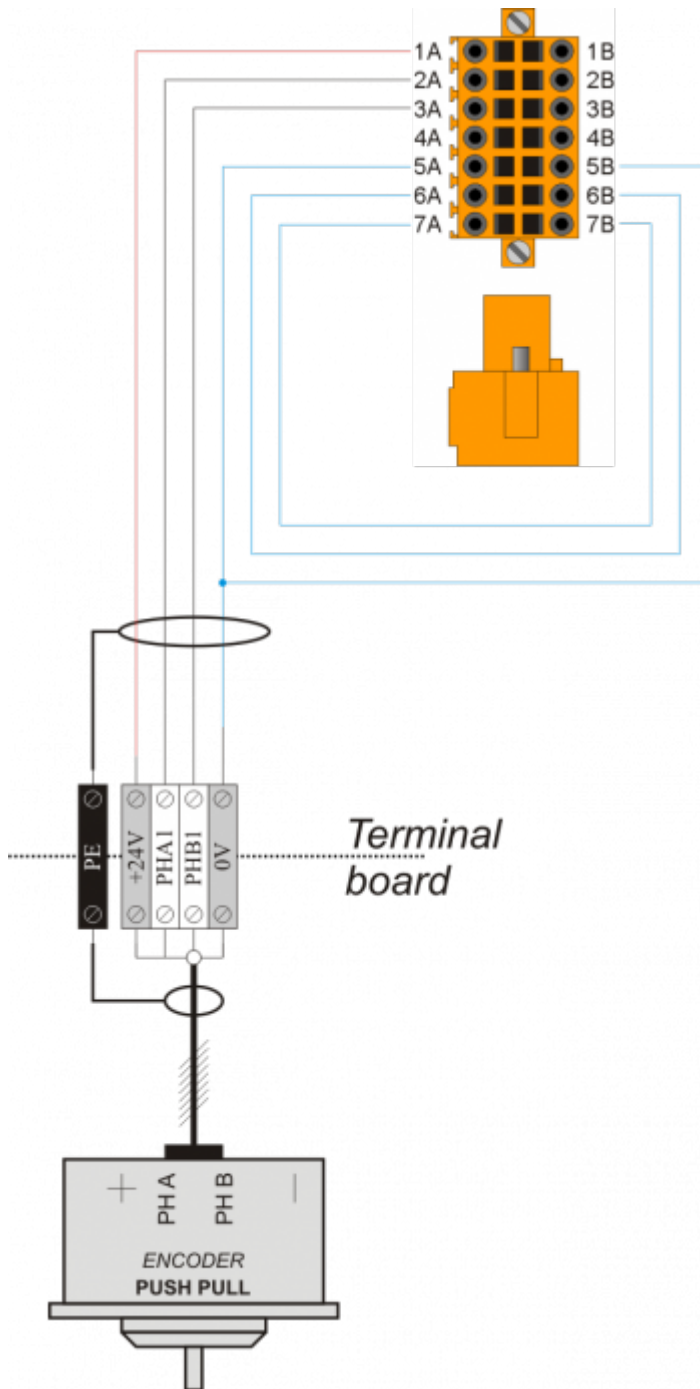
3.6 Bi-directional counter inputs

3.6.1 CN9

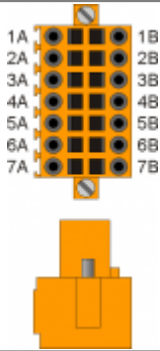
3.6.1.1 For "Push Pull" encoder type

		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	

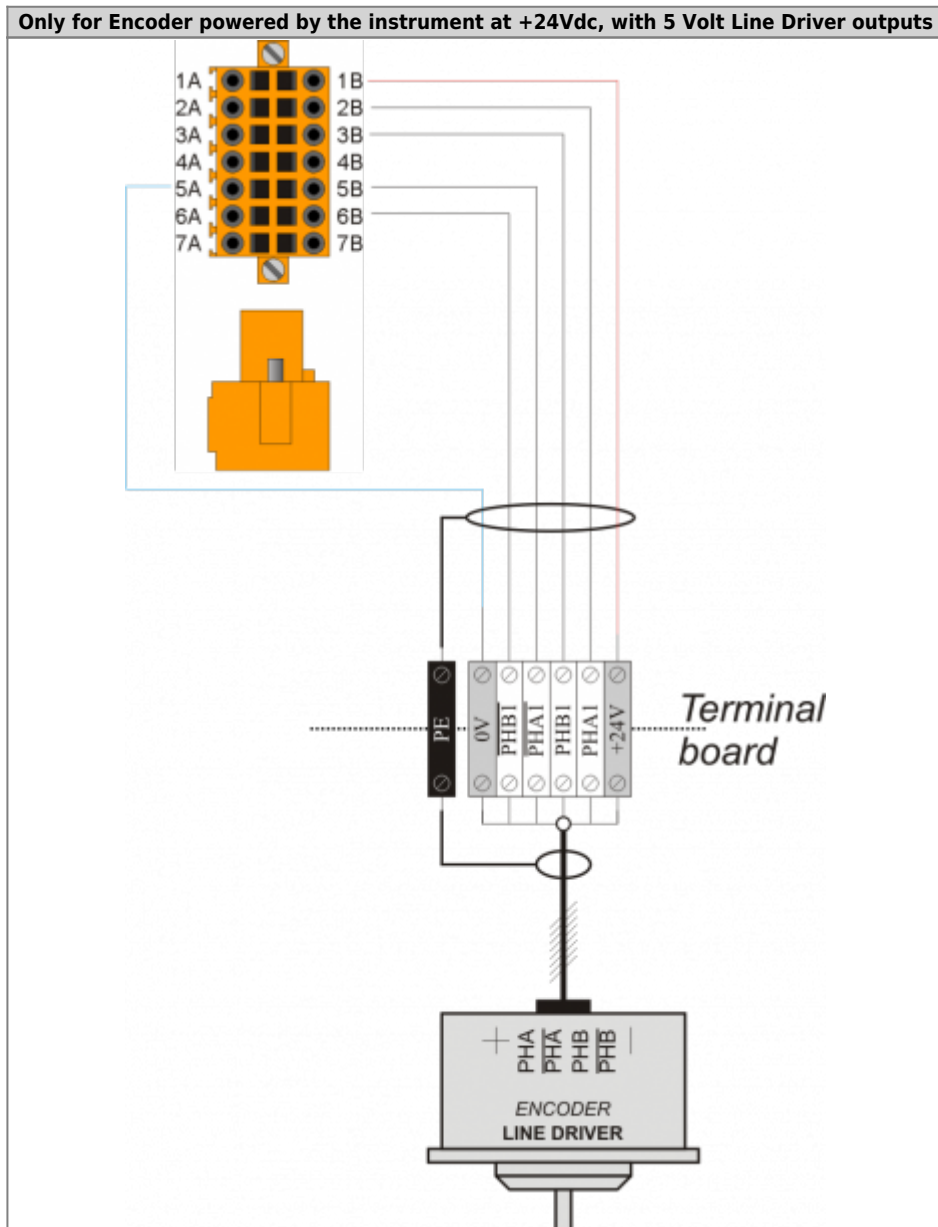
3.6.1.1.1 Connection example

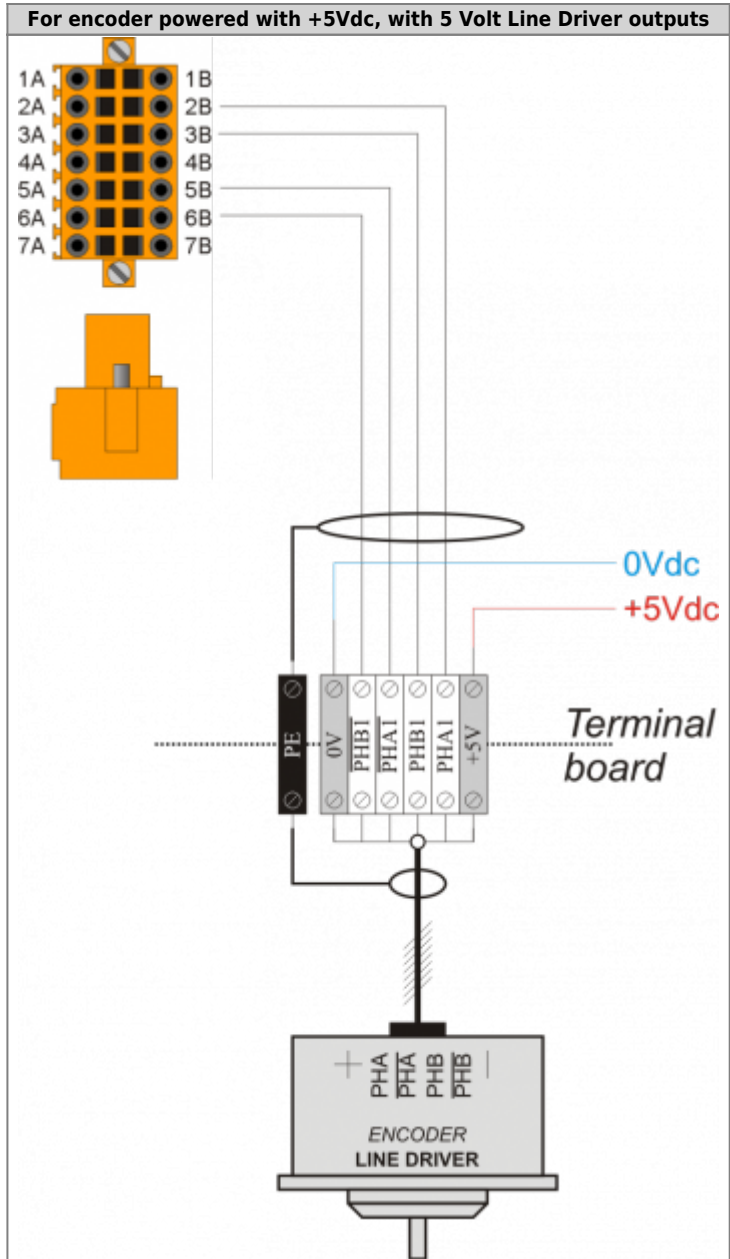


3.6.1.2 For "Line Driver" encoder type

	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.	

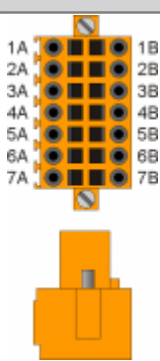
3.6.1.2.1 Connection example



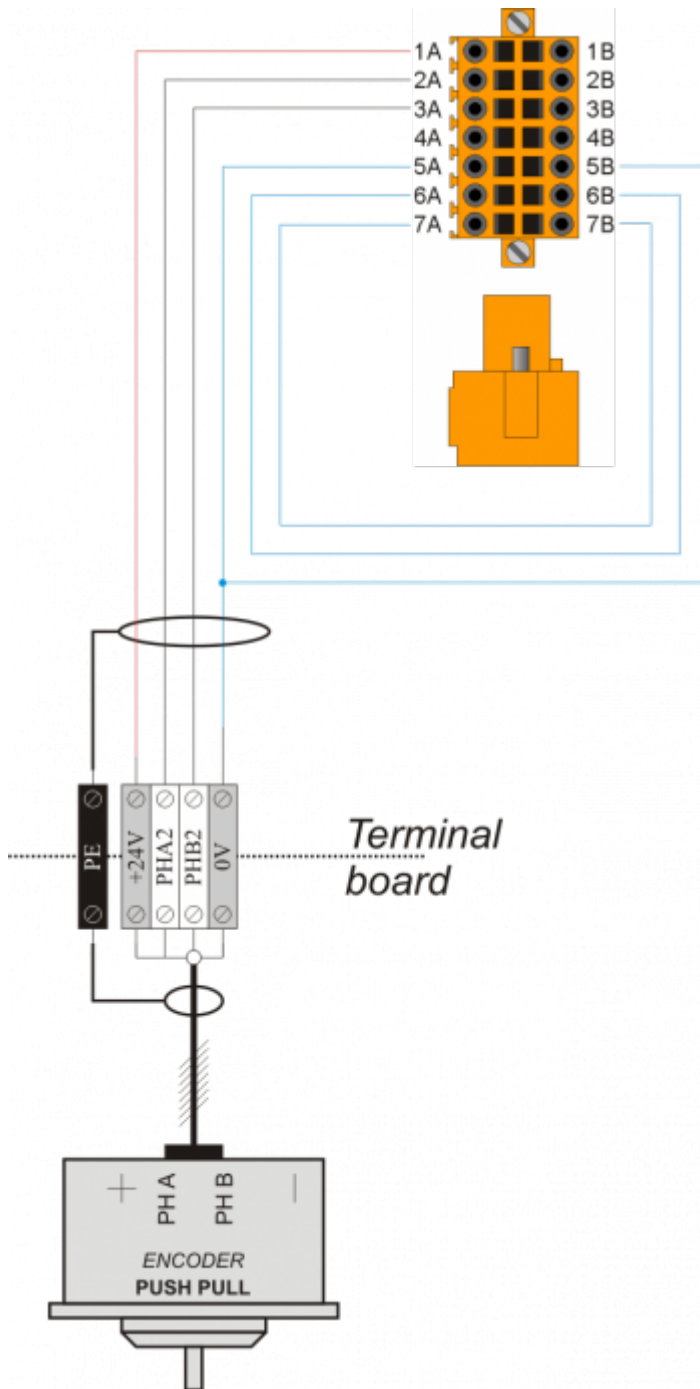


3.6.2 CN10

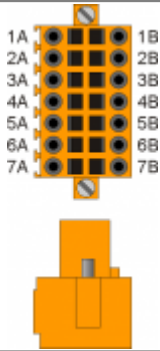
3.6.2.1 For "Push Pull" encoder type

		PIN	ID	DESCRIPTION	
	1A	1A	+24V	Encoder power supply	Bridge
	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

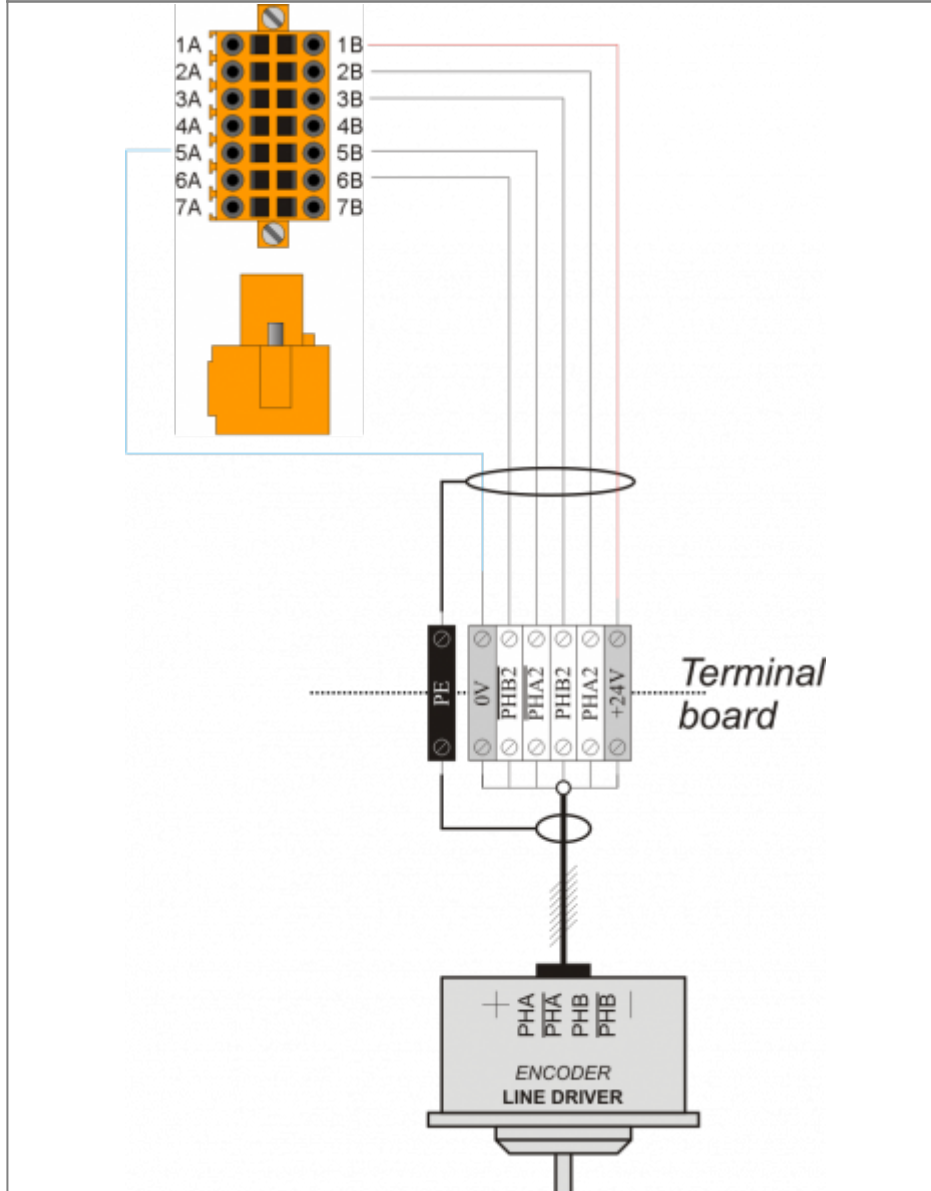


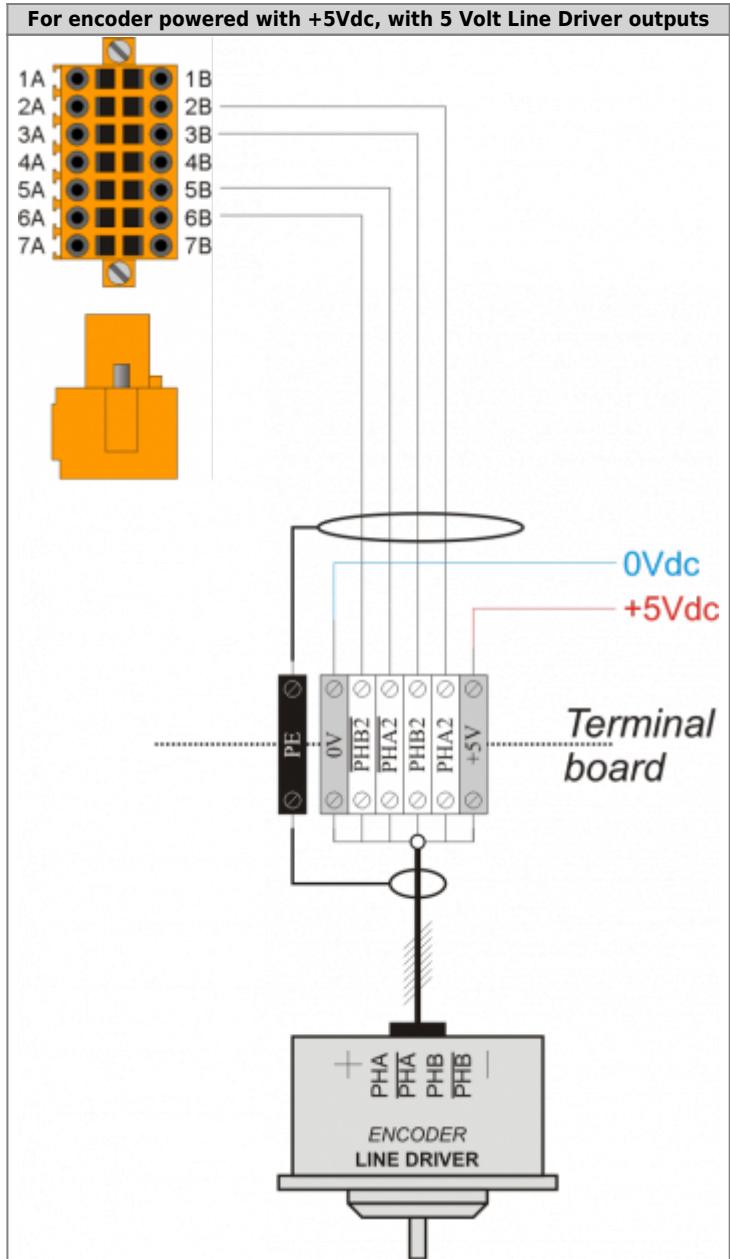
3.6.2.2 For "Line Driver" encoder type

	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

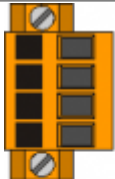
Only for Encoder powered by the instrument at +24Vdc, with 5 Volt Line Driver outputs



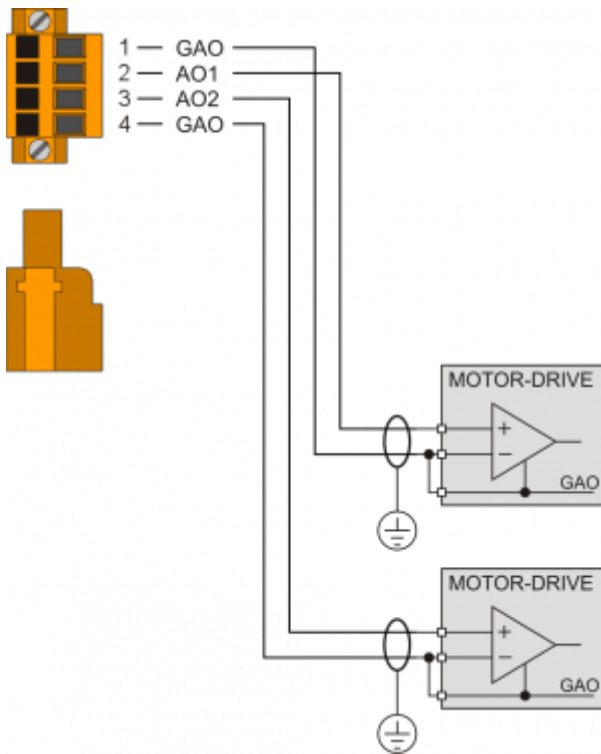


3.7 Analog outputs

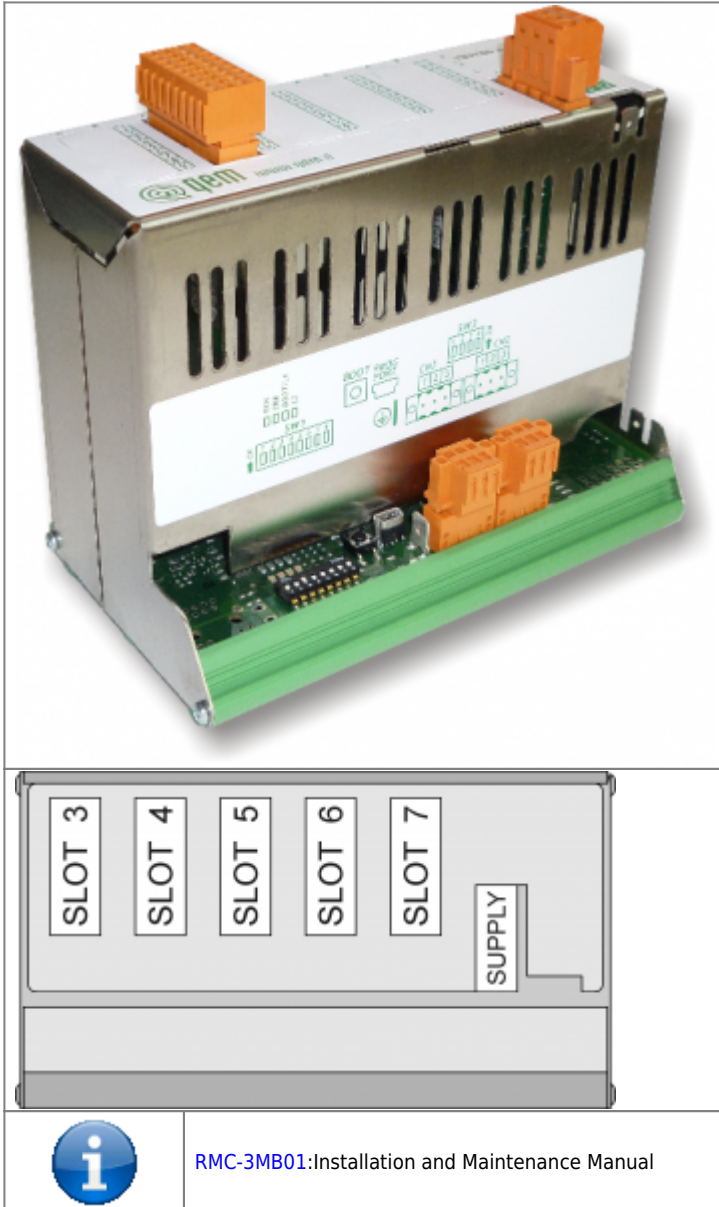
3.7.1 CN3

						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.

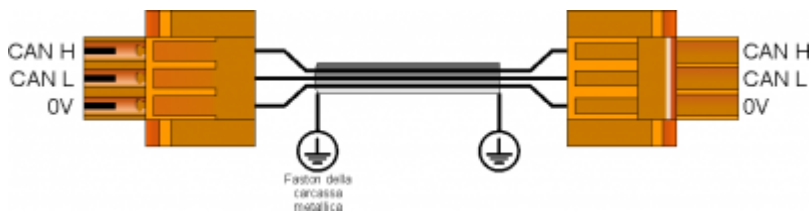
3.8.2.2 CN2

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

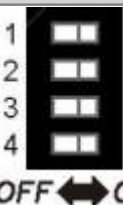
3.8.2.3 CN3

	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



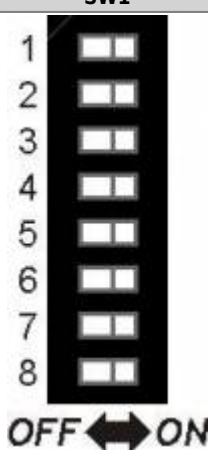
3.8.2.3.2 Terminating Resistance Setting

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.

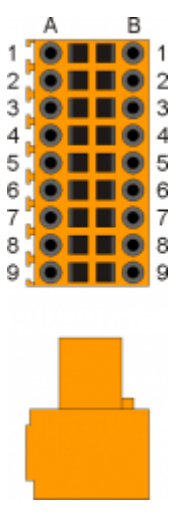
3.8.2.3.3 Address and speed settings

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

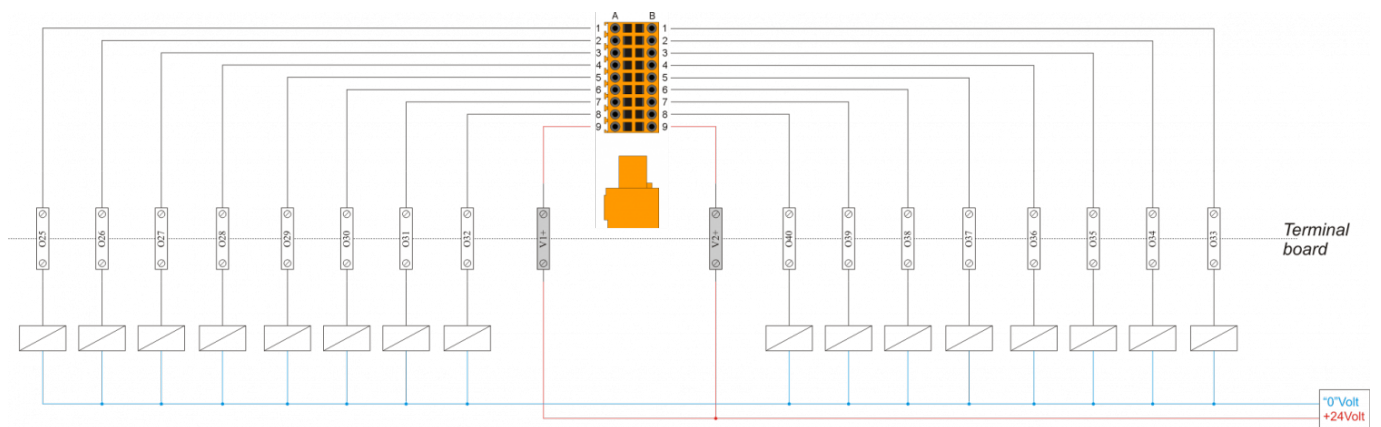
3.8.3 Digital output

S = Stato	ID
OFF	ID = Software
ON	

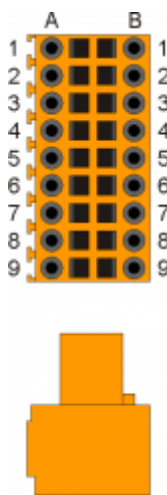
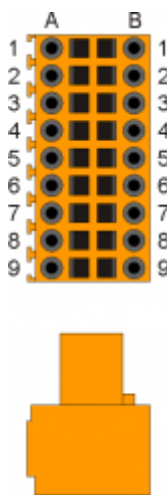
3.8.3.1 SLOT 6

	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)	-

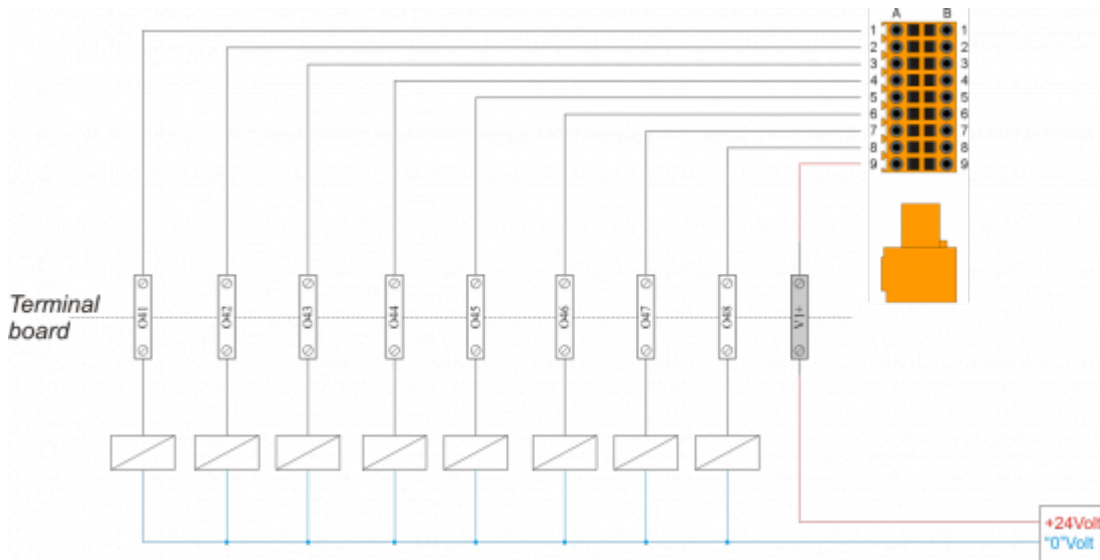
3.8.3.1.1 Connection example



3.8.3.2 SLOT 7

	PIN	ID	DESCRIPTION		S
	1A	O41	Head motor	17	OFF
	2A	O42		18	
	3A	O43		19	
	4A	O44	n.u.	-	-
	5A	O45		-	-
	6A	O46		-	-
	7A	O47		-	-
	8A	O48		-	-
	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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