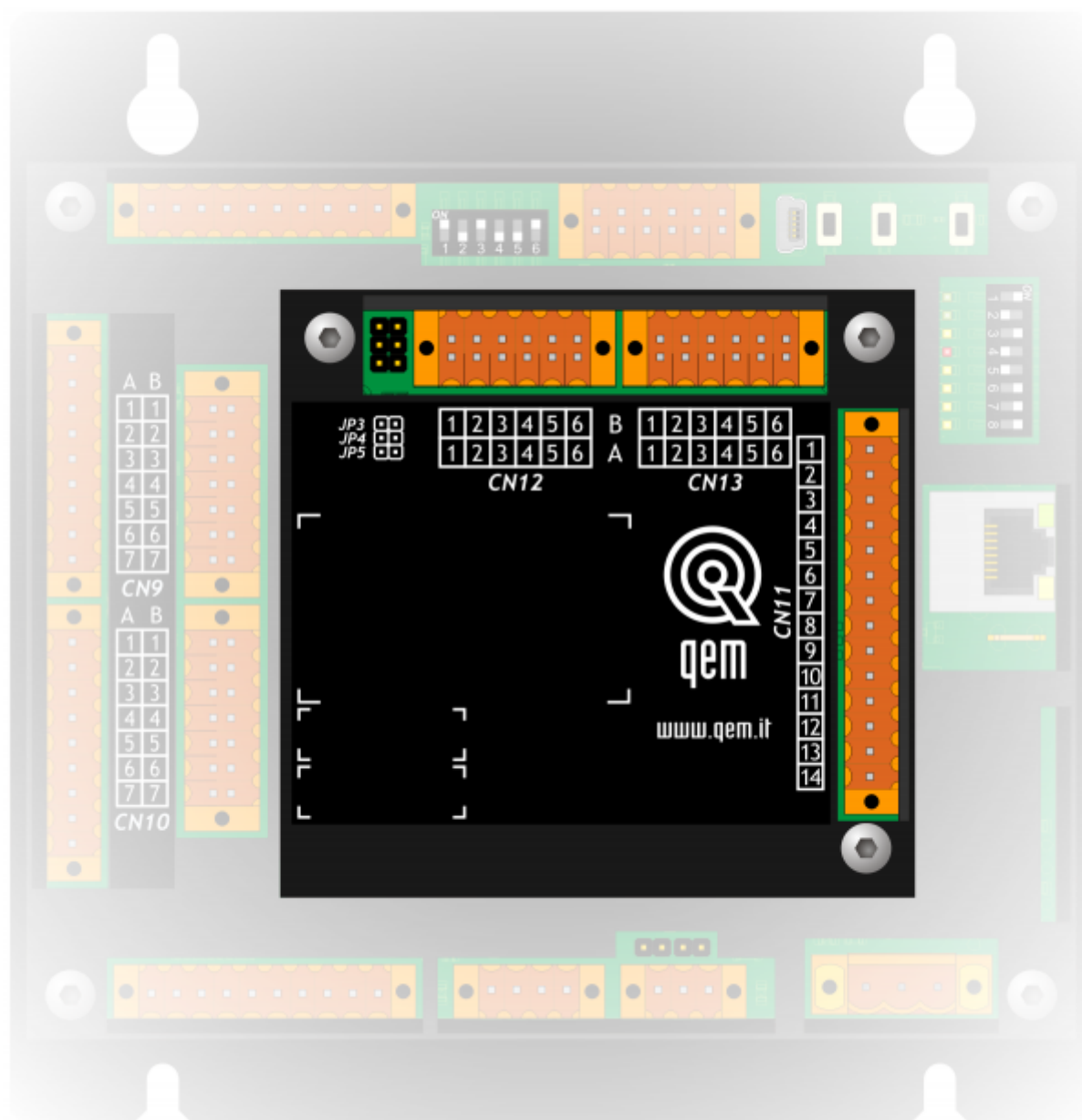


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PRELIMINARY**Specialization card 1MS3F rel.01****Informations**

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Description:	Installation and maintenance manual			
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Language:	English			
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00	01	New manual		14/01/2016

1. Description

The **1MS3F** is this card of **QCNC1** series.

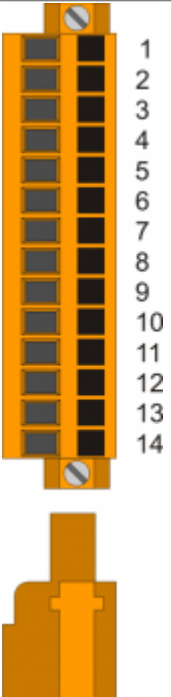
1.1 Equipment

	8 digital inputs 5÷24V
	1 counter input A-B 15KHz
	4 STEP-DIRECTION outputs

2. Connections

2.1 Digital inputs

2.1.1 8 digital inputs and 1 counter AB

CN11	Terminal	Symbol	Description	Address	
	1	0V	Common of digital inputs		
	2	I1	Input 1		3.INP01
	3	I2	Input 2		3.INP02
	4	I3	Input 3		3.INP03
	5	I4	Input 4		3.INP04
	6	I5	Input 5		3.INP05
	7	I6	Input 6		3.INP06
	8	I7	Input 7		3.INP07
	9	I8	Input 8		3.INP08
	10	+5V	5 Volts DC output ¹⁾		
	11	PHA1	A phase encoder	3.CNT05	3.INP09
	12	PHB1	B phase encoder		3.INP10
	13		Internal bridge 13 -14		
	14				

¹⁾ Maximum current 50mA

2.2 Digital outputs

2.2.1 4 STEP-DIRECTION outputs



The electrical features are given in section [Electrical features](#).
The example of the connection are given in section [Connection examples](#)

CN12	Terminal	Symbol	Description	Address
	1A	VD1	Internal bridge 1A -1B	
	2A	DIR1+	DIRECTION 1 output	3.PULSE01
	3A	STEP1+	STEP 1 output	
	4A	DIR2+	DIRECTION 2 output	
	5A	STEP2+	STEP 2 output	
	6A	0V	Common stepper outputs	
	1B	VD1	Internal bridge 1A -1B	
	2B	DIR1-	DIRECTION 1 complementary output	Complementary outputs for use on driver with Line-Driver inputs
	3B	STEP1-	STEP 1 complementary output	
	4B	DIR2-	DIRECTION 2 complementary output	
	5B	STEP2-	STEP 2 complementary output	
	6B	0V	Common stepper outputs	

CN13	Terminal	Symbol	Description	Address
	1A	VD1	Internal bridge 1A -1B	
	2A	DIR3+	DIRECTION 3 output	3.PULSE03
	3A	STEP3+	STEP 3 output	
	4A	DIR4+	DIRECTION 4 output	
	5A	STEP4+	STEP 4 output	
	6A	0V	Common stepper outputs	
	1B	VD1	n.c.	
	2B	DIR3-	DIRECTION 3 complementary output	Complementary outputs for use on driver with Line-Driver inputs
	3B	STEP3-	STEP 3 complementary output	
	4B	DIR4-	DIRECTION 4 complementary output	
	5B	STEP4-	STEP 4 complementary output	
	6B	0V	Common stepper outputs	

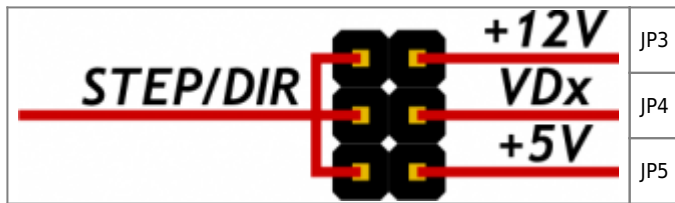
STEP-DIRECTION voltage settings

Set JP3, JP4 or JP5 jumper for choose the STEP DIRECTION voltage outputs.



Must be inserted only one bridge at a time
If you set the 5V(JP5) or 12V(JP3) voltage, the terminal 1A and 1B must be disconnected

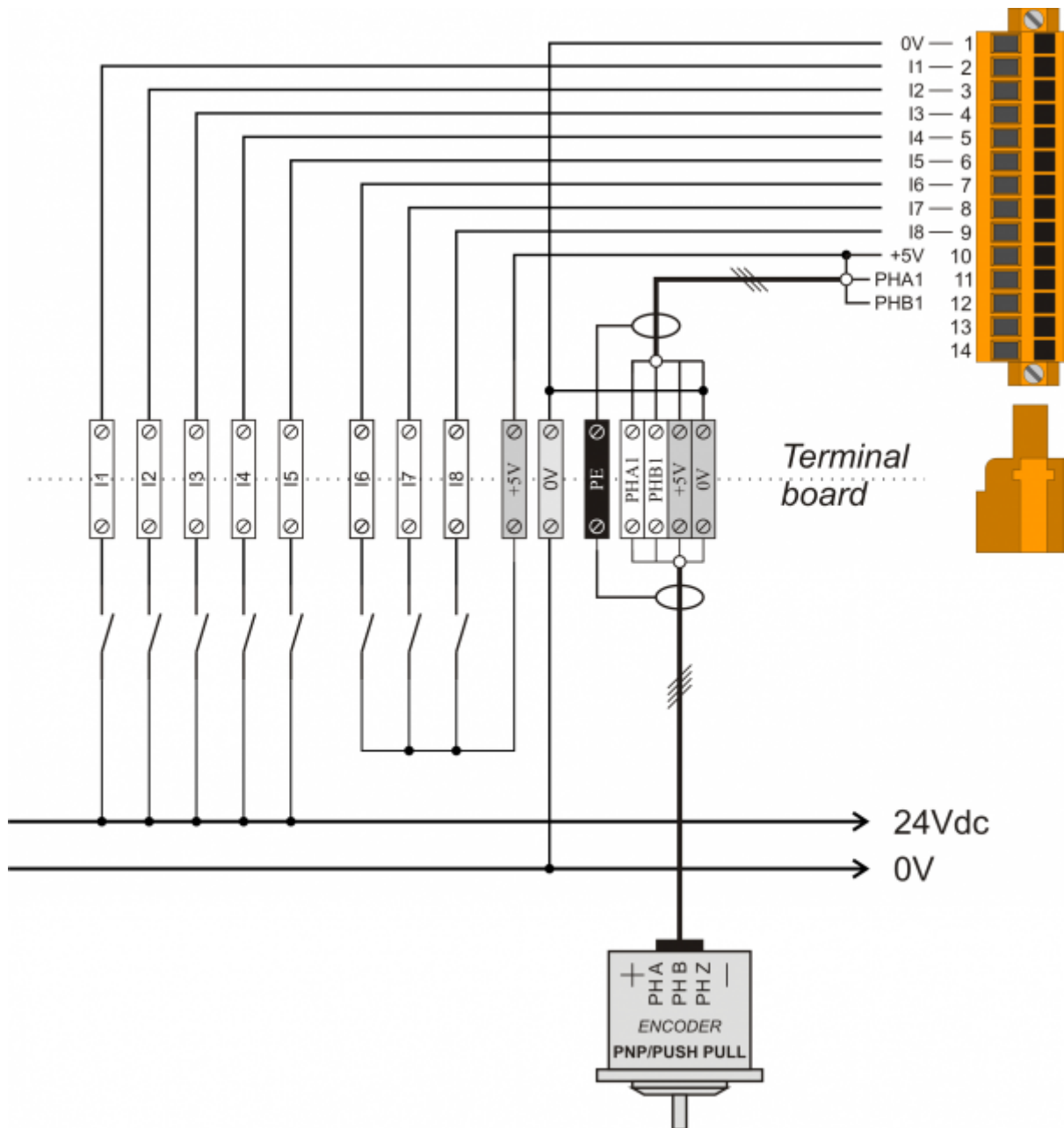
	Nome jumper	Impostazione	Tensione nominale
	JP3	INSERTED	12V (Voltage supplied by the device)
	JP4	INSERTED	VD1 (Voltage to be supplied to terminals 1A or 1B)
	JP5	INSERTED	5V (Voltage supplied by the device)



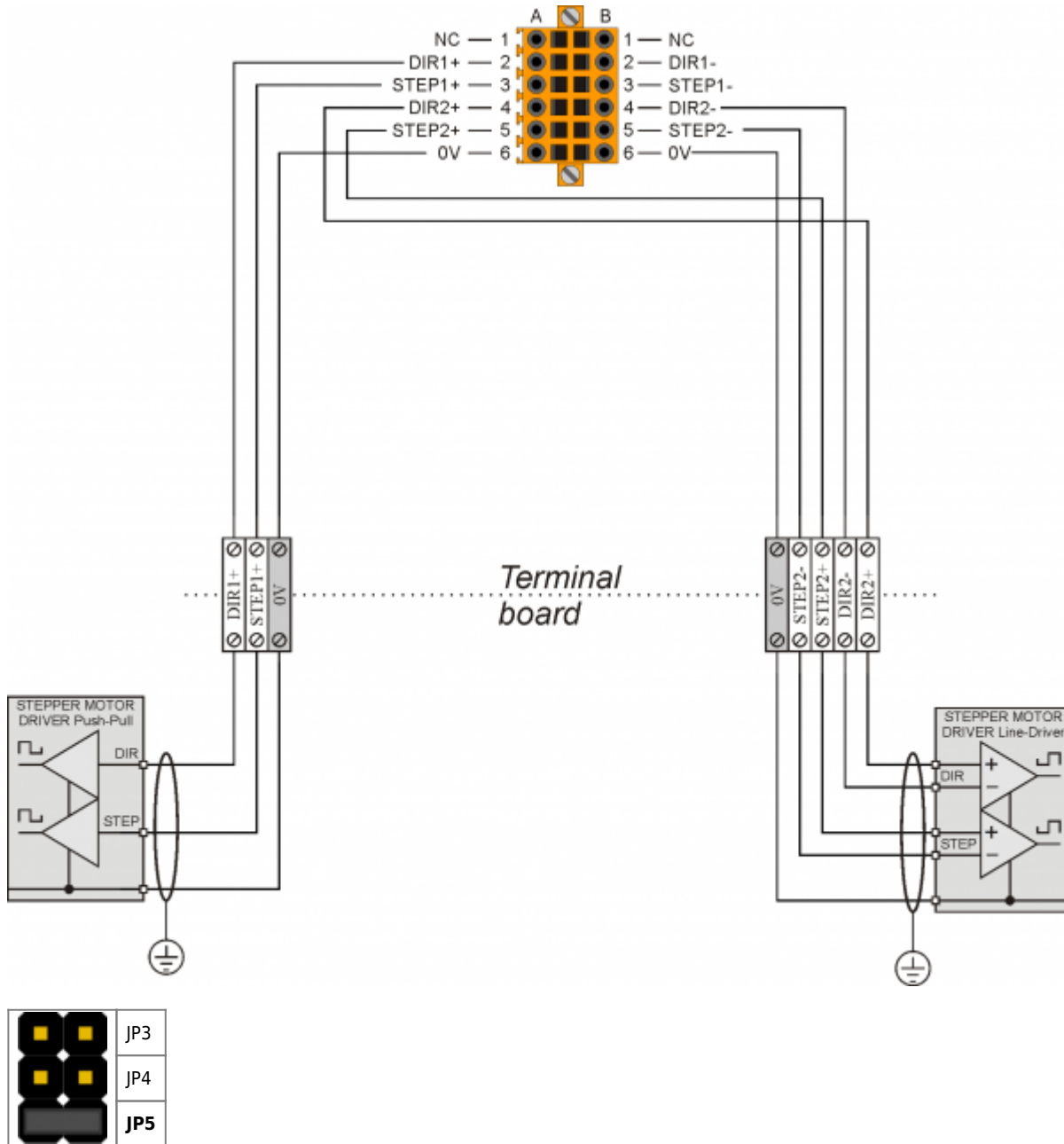
3. Connection examples

3.1 Digital inputs

Example with 5 inputs 24Vdc, 3 inputs 5Vdc and 1 Push-pull encoder 5Vdc



3.2 STEP - DIRECTION outputs



4. Electrical features

The following are the electrical hardware features.

The maximum and minimum frequency values and actual acquisition times, can still depend on any additional software filters, see the system variable "QMOVE:sys004".

4.1 Ingressi

4.1.1 Digital inputs

Polarization type	PNP
Minimum time of acquisition (hardware)	1ms
Insulation	1000Vrms
Nominal working voltage	5÷24Vdc
Maximum applicable voltage	26Vdc
Logical state voltage 0	< 1.8V
Logical state voltage 1	> 4.5V
Internal voltage drop	5V
Input resistance (Ri)	112000
Maximum absorbed current	17mA @ 24V
Maximum supply current da +5V	50mA

4.1.2 Counter input

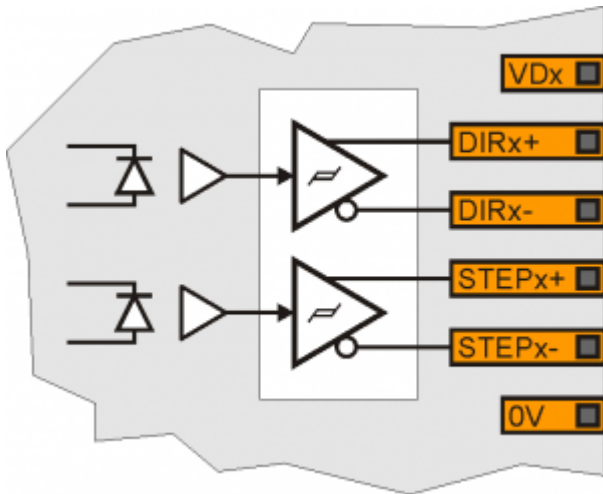


**The values given in the table refer to A, B e Z input signals.
The maximum frequency value, given on the table refer to A e B phase input signal with DutyCycle = 50%
With counter frequencies more than 50KHz is preferable to the use of Line-Driver encoders .**

Polarization type	PNP/PP
Maximum frequency	15KHz
Minimum time of acquisition	 Fix Me!
Insulation	1000Vrms
Nominal working voltage	5Vdc
Logical state voltage 0	 Fix Me!
Logical state voltage 1	 Fix Me!
Internal voltage drop	1.2V
Input resistance	12000

4.2 STEP-DIRECTION outputs

Polarization type	Push-Pull / Line-Driver
Maximum output frequency	300KHz
Insulation	1000Vpp
Max working current	20mA
Rated voltage	Selectable with JP3-JP4-JP5



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