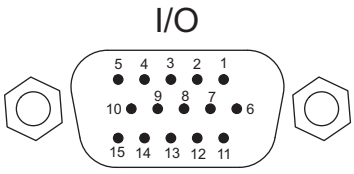
VXM-1J Jog / Autoreverse Controller

Auxiliary Inputs and Outputs (I/O)

Auxiliary I/O Connection

The I/O connections can be used for selecting optional internal settings, signaling external equipment, or duplicating the front panel button inputs for remote operation.



View looking at back of VXM

NOTE: All inputs and outputs are TTL levels (0 to +5VDC.) Inputs have resistive pull-ups, and are activated by connecting to 0V. Outputs are normally low, and can sink and source 20 mA max. For more information refer to I/O Electrical Specifications on the last page of this document.

Pin#	Name	Function
1	0V	Logic reference ground for inputs and outputs
2	+5V	+5VDC for external Speed potentiometer (75mA max. output)*
3	Ain	Analog input for external Speed potentiometer*
4	Run	Run input to start program, same input as Run button (active low)
5	I1	Input 1 for 2x Acceleration (active low)
6	I2	Input 2 (Same as Momentary/Continuous switch on front panel) (low=Continuous)
7	I3	Input 3 for 100% motor power (active low) (default = 70% power)
8	I4	Stop (Same as Stop button on front panel) (active low)
9	0V	Logic reference ground for inputs and outputs
10	J1-	Jog Motor CCW (Same as front panel button) (active low)
11	J1+	Jog Motor CW (Same as front panel button) (active low)
12	Range B	Override Speed Range Input B (active low)
13	Range A	Override Speed Range Input A (active low)
14	O1	Output 1 signal pulse at each end of autoreverse (normally 0.1 sec high pulse)
15	O2	Output 2 goes high for duration of Run**

* **NOTE:** Internal Speed potentiometer must be disconnected before attempting to connect an external Speed potentiometer. Consult Velmex, Inc. for more information.

** New for Ver 2.74 (5-23-11) Was Not Used on previous VXM-1J versions

Input Overrides (Ver 2.71 & up)

All I/O inputs are normally high (1). A single jumper wire from input to pin 1 or 9 (0V) will make the input low (0). Velmex part # 4-2120 Breakout Module has terminal strips for easy wire connection to the I/Os.

Range inputs will override the normally set speed range. Jog reads the override immediately. Autoreverse-teaches read range override at teach time, not at runtime.

Range B (I/O pin #12)	Range A (I/O pin # 13)	Speed Range (steps/sec)
1 (high/no connection)	1	Current set internal value
1	0 (low)	1-4000
0	1	1-2000 *
0	0	1-1000 **

* New for Ver 2.72 (11-4-10) Was 1-3000 in Ver 2.71
** New for Ver 2.72 (11-4-10) Was 1-2000 in Ver 2.71

Input 3 effects applied motor power dynamically (updated every step)

Input 3 (I/O pin # 7)	Motor power output
1 (high/ no connection)	70%
0 (low)	100%

Input 1 doubles acceleration value. This applies to all autoreverse moves (not jog) and is set at start of each Run.

Input 1 (I/O pin # 5)	Acceleration Double
1 (high/ no connection)	Current acceleration value
0 (low)	2x current acceleration value

I/O Electrical Specifications

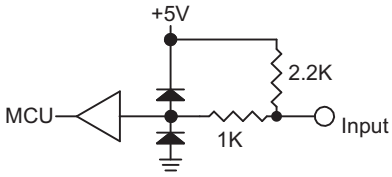
All User I/O inputs and outputs (except limit switch inputs) are TTL levels (0 to +5VDC.)

Inputs have a 2200 ohm resistor to +5VDC, and are activated by connecting to 0V.

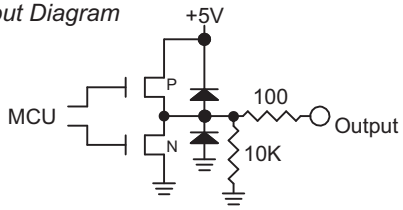
NOTE: When Input 4 (Stop) is held low (0V) and Run is pressed autoreverse points are stored.

Outputs are normally low, and can sink and source 20 mA max.

Input Diagram



Output Diagram



Limit switch inputs are optically isolated. Limit inputs operate on 24VDC through a 10K ohm resistor to power the LED in the optical isolator.

The +5VDC on I/O,2 is intended for use with an external Speed potentiometer when there is not a front panel one installed.

⚠ CAUTION:

Optically isolated relays may be required on all user I/Os to insure long term reliable operation.

Never directly connect a VXM I/O to an inductive load, any device that is not within 10 feet of the VXM, or anything not powered at the same AC source.

Damage due to improperly interfacing VXM controllers to other devices is not covered under the warranty.

As a minimum precaution against electrostatic discharge (ESD) damage follow these guidelines:

1. Provide the shortest conductive path possible to earth ground from user designed panels or enclosures that have switches or buttons the operator will come in contact with.

2. Use metal panels and enclosures to house buttons or switches electrically bonded to a protective earth ground.

3. Use shielded cables on all VXM I/O.

4. If no other protective earth ground is available, use the earth ground on the VXMs Auxiliary I/O connector shell or connector shell on shielded cable.

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