I/O Terminal Block

Figure 1.5 Typical I/O Terminal Block Location (B Frame Shown)

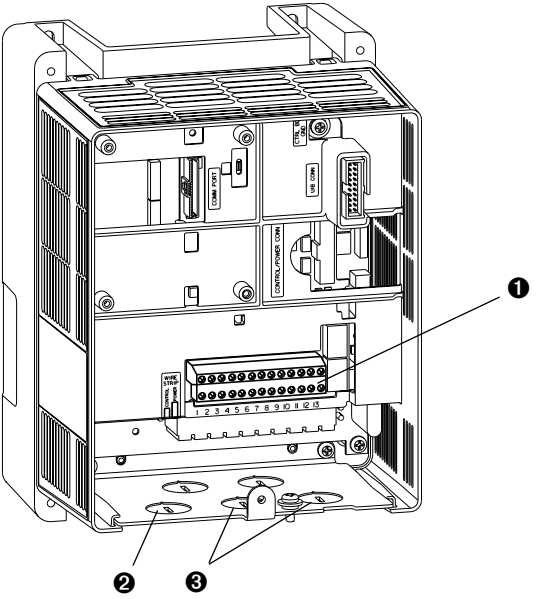


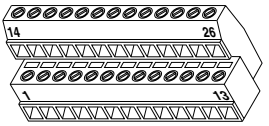
Table 1.E I/O Terminal Block Specifications

No.	Name	Description	Wire Size Range[1]		Torque
			Maximum	Minimum	
❶	I/O Terminal Block	Signal & control connections	1.5 mm^2 (16 AWG)	0.05 mm^2 (30 AWG)	0.5 N-m (4.4 lb.-in.)

(1) Maximum / minimum that the terminal block will accept - these are not recommendations.

Table 1.F Wire Routing Recommendations

No.	Description
❷	Suggested entry for communication wiring.
❸	Suggested entry for I/O and control wiring.



No.	Signal	Factory Default	Description	Related Param.
1	Digital In1 Sel	Stop – CF (CF = Clear Fault)	11.2 mA @ 24V DC 19.2V minimum on state 3.2V maximum off state Important: Use only 24V DC, not suitable for 115V AC circuitry. Inputs can be wired as sink or source. See page 1-14.	361 - 366
2	Digital In2 Sel	Start		
3	Digital In3 Sel	Auto/Man		
4	Digital In4 Sel	Speed Sel 1		
5	Digital In5 Sel	Speed Sel 2		
6	Digital In6 Sel	Speed Sel 3		
7	24V Common	–	Drive supplied power for Digital In1-6 inputs. See examples on page 1-14. 150mA maximum load.	
8	Digital In Common	–		
9	+24V DC	–		
10	+10V Pot Reference	–	2 k ohm minimum load.	
11	Digital Out 1 – N.O.(1)	NOT Fault	Max Resistive Load: 250V AC / 30V DC, 50 VA / 60 Watts Max Inductive Load: 250V AC / 30V DC, 25 VA / 30 Watts Minimum DC Load: 10 µA, 10 mV DC	380 - 387
12	Digital Out 1 Common			
13	Digital Out 1 – N.C.(1)	Fault		
14	Analog In 1 (– Volts)	(2) Voltage – Reads value at 14 & 15	Non-isolated, 0 to +10V, 10 bit, 100k ohm input impedance.(3)	320 - 327
15	Analog In 1 (+ Volts)			
16	Analog In 1 (– Current)		Non-isolated, 4-20mA, 10 bit, 100 ohm input impedance.(3)	
17	Analog In 1 (+ Current)			
18	Analog In 2 (– Volts)	(2) Voltage – Reads value at 18 & 19	Isolated, bipolar, differential, 0 to +10V unipolar (10 bit) or ±10V bipolar (9 bit & sign), 100k ohm input impedance.(4)	
19	Analog In 2 (+ Volts)			
20	Analog In 2 (– Current)		Isolated, 4-20mA, 9 bit & sign, 100 ohm input impedance.(4)	
21	Analog In 2 (+ Current)			
22	Analog Out (– Volts) 10V Pot Common	(2) Output Freq	0 to +10V, 10 bit, 10k ohm (2k ohm minimum) load. Referenced to chassis ground.	341 - 344
23	Analog Out (+ Volts)		Common if internal 10V supply (terminal 10) is used.	
24	Digital Out 2 – N.O.	Run	See description at No.s 11-13.	380 - 387
25	Digital Out 2 Common			
26	Digital Out 2 – N.C.			

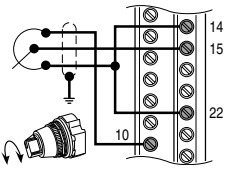
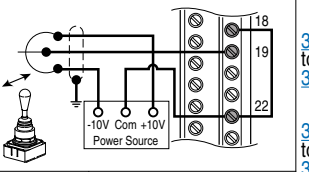
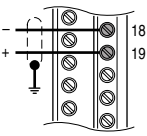
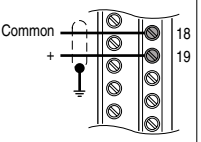
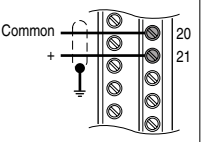
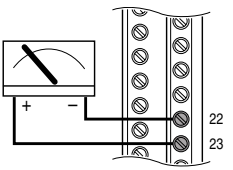
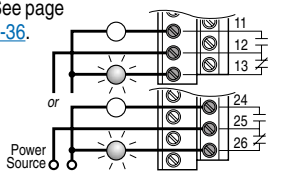
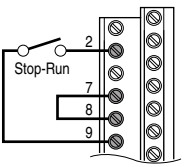
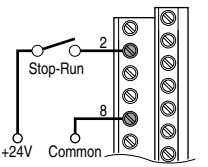
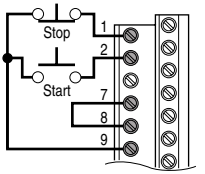
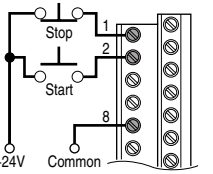
(1) Contacts shown in unpowered state. Relays change state when drive is powered.

(2) These inputs/outputs are dependent on a number of parameters. See “Related Parameters.”

(3) Differential Isolation - External source must be less than 10V with respect to PE.

(4) Differential Isolation - External source must be maintained at less than 160V with respect to PE. Input provides high common mode immunity.

I/O Wiring Examples

Input/Output	Connection Example[3]	Related Param.
Potentiometer[1] 10k Ohm Pot. Recommended (2k Ohm minimum) **Joystick[1]** ±10V Input - 100k ohm input impedance	[Speed Ref A Sel] = "Analog In 1" Potentiometer  Joystick 	090 to 095 320 to 327 361 to 366
Analog Input Bipolar: ±10V Unipolar: 0 to +10V, 100k ohm impedance 4-20 mA, 100 ohm impedance	Bipolar[1]  Unipolar (Voltage)  Unipolar (Current) 	
Analog/Digital Output 0 to +10V Output - Can drive a 2k Ohm load (25 mA short circuit current limit)	Analog Output  Digital N.O. / N.C. Output See page 3-36. 	341 to 344 380 to 387
2 Wire Control[2] - Non-Reversing Requires 2-wire functions only ([Digital In1 Sel]). Using 3-wire selections will cause a type 2 alarm (page 4-7).	24V DC Input[4]: [Digital In1 Sel] = "Run" Internal Supply  External Supply 	361 to 366
3 Wire Control Requires 3-wire functions only ([Digital In1 Sel]). Using 2-wire selections will cause a type 2 alarm (page 4-7).	24V DC Input[4]: [Digital In1 Sel] = "Stop – CF", [Digital In2 Sel] = "Start" Internal Supply  External Supply 	

(1) Refer to the Attention statement on page 1-10 for important bipolar wiring information.

(2) **Important:** Programming inputs for 2 wire control deactivates all HIM Start buttons.

(3) Examples show hardware wiring only. Refer to pages 1-13 and 1-14 for parameters that must be adjusted.

(4) If desired, a User Supplied 24V DC power source can be used. Refer to the "External" example.