

DIGITAL REFERENCE CARD (DI-16H2)

MODEL DS016

Before installing this option, a TECHNICALLY QUALIFIED INDIVIDUAL, who is familiar with this type of equipment and hazards involved, should READ this ENTIRE INSTRUCTION SHEET.

IMPORTANT

This option may have been installed by the factory. However, certain steps can only be completed at the installation site. Therefore, review and then perform those steps which complete the installation process.

INTRODUCTION

When installed, this option allows the user to interface a 16-bit digital speed reference to the GPD 515/G5. This reference can be binary, BCD(Hz) or BCD(%), with SIGN and SET (read) inputs. (Refer to the GPD 515/G5 technical manual description of parameter F3-01.)

CAUTION

THIS OPTION CONTAINS CMOS IC CHIPS (ELECTROSTATIC SENSITIVE DEVICES). PERSONNEL SHOULD BE GROUNDED BEFORE REMOVING CONTENTS FROM THE CARTON AND INSTALLING INTO THE EQUIPMENT.

INSTALLATION

1. Disconnect all electrical power to drive.
2. Remove drive front cover. Check that CHARGE indicator lamp inside drive is off.
3. Verify voltage has been disconnected by using a voltmeter to check for voltage at incoming power terminals (L1, L2, L3).

WARNING

HAZARDOUS VOLTAGE CAN CAUSE SEVERE INJURY OR DEATH. LOCK ALL POWER SOURCES FEEDING DRIVE IN "OFF" POSITION.

4. See Figure 2. Install the option on the Main Control Board, 1PCB, and ensure 2CN is properly connected. Make sure Electrostatic procedure is followed.

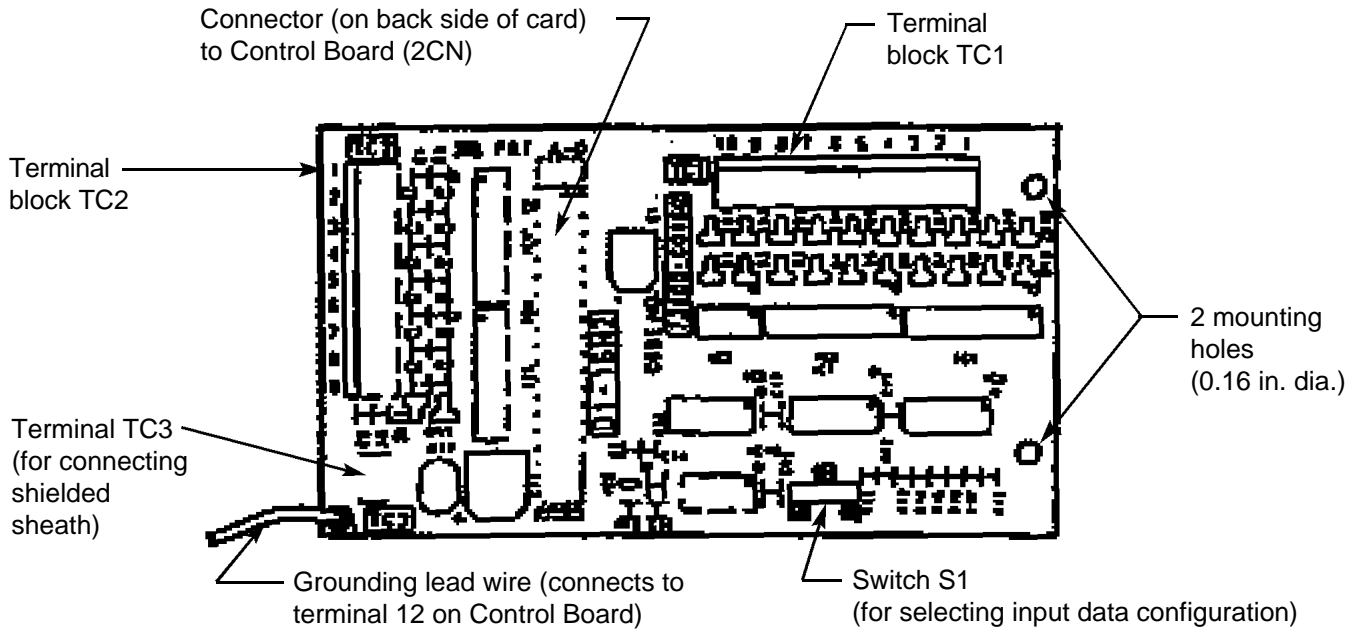


Figure 1. Digital Reference Card DI-16H2

Table 1. Specifications of DI-16H2 Card

Parameter	Value
Input Data Signal	Binary 16 Bit/BCD 4 digits Binary 12 bits/BCD 3 digits } Selected by switch S1
SIGN and SET Signal Voltage	+24V

Control voltage input (from GPD 515/G5): 24V (isolated)

- Connect the grounding lead wire from the DI-16H2 card to terminal 12 on the Control Board.
- Wiring.** See Figure 3 and Tables 2 & 3 for Digital Reference Card (DI-16H2) connections. Connect digital input signals to terminal blocks TC1 and TC2. Route wires from the GPD 515/G5 and connect to the peripheral device(s). Refer to "Electrical Installation" in the GPD 515/G5 technical manual for further information on use of shielded cable.

Table 2. Applicable Wire Sizes For TC1 and TC2

Wire Type	mm ²	AWG	Current (Amps)	VAC
Thin twisted wire	1	16	12	125
Solid wire	1.5	16	12	125
UL	—	22-16	10	300
CSA	—	28-16	10	300
CSA	—	28-16	10	150

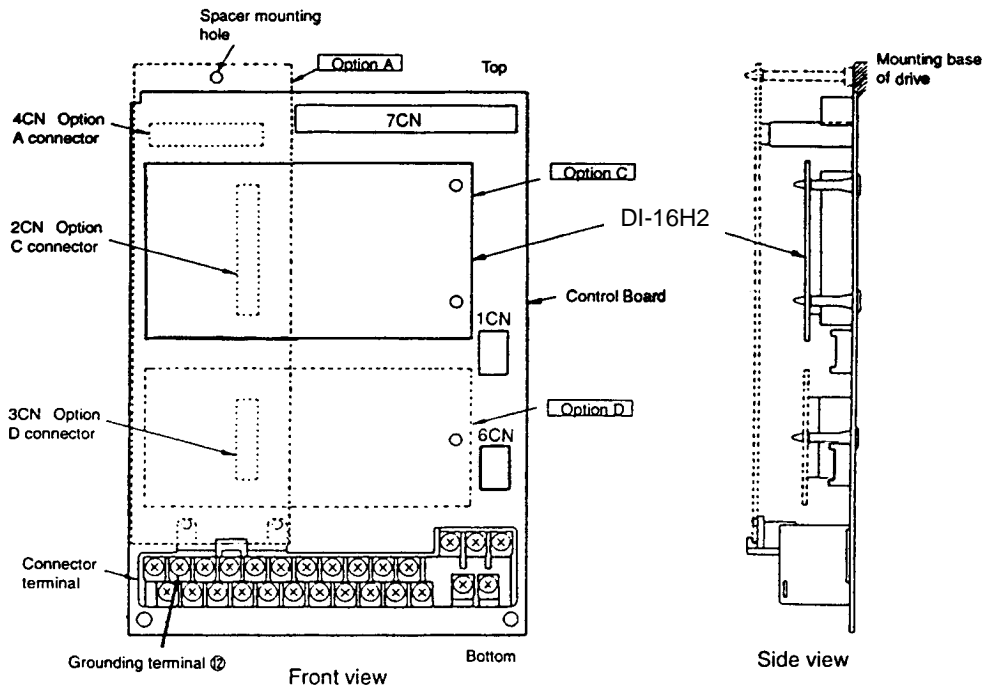
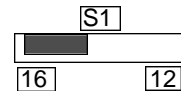


Figure 2. Installation of Digital Reference Card (DI-16H2) in GPD 515/G5

Table 3. Terminal Functions of DI-16H2

Terminal Block	Pin No.	Function		Notes	
		Binary Input	BCD Input		
TC1	1	2 ⁰	1	— "On" when closed (shorted to 0V at TC2-9); "Off" when open.	
	2	2 ¹	2		
	3	2 ²	4		
	4	2 ³	8		
	5	2 ⁴	1	— Binary / BCD selection and input unit is set by GPD 515/G5 parameter F3-01; see Table 4.	
	6	2 ⁵	2		
	7	2 ⁶	4		
	8	2 ⁷	8		
	TC2	9	2 ⁸	1	— Terminal screws are metric size M3.
		10	2 ⁹	2	
1		2 ¹⁰	4	— Set selection switch S1 according to the input signal configuration being used:	
2	2 ¹¹	8			
3	2 ¹²	1			
TC2	4	2 ¹³	2	— Binary 16 bits/BCD 4 digits Binary 12 bits/BCD 3 digits	
	5	2 ¹⁴	4		
	6	2 ¹⁵	8		
TC3	7	SIGN signal		— SIGN signal: "Off" = Forward direction command "On" = Reverse direction command	
	8	SET (read) signal *			
	9	Frequency Ref. Common (0V)			
TC3	Shield sheath connection				



* SET (read) signal is the signal to read digital speed reference data. When reading, close between TC2-8 and TC2-9 by the timing shown in Figure 4.



CAUTION

KEEP CONTROL CIRCUIT WIRING SEPARATE FROM MAIN CIRCUIT
INPUT/OUTPUT WIRING.

TO PREVENT ERRONEOUS OPERATION CAUSED BY NOISE INTERFERENCE, USE
SHEILDED CABLE FOR DIGITAL SIGNAL WIRING, AND LIMIT DISTANCE TO
50M (164 FEET) OR LESS.

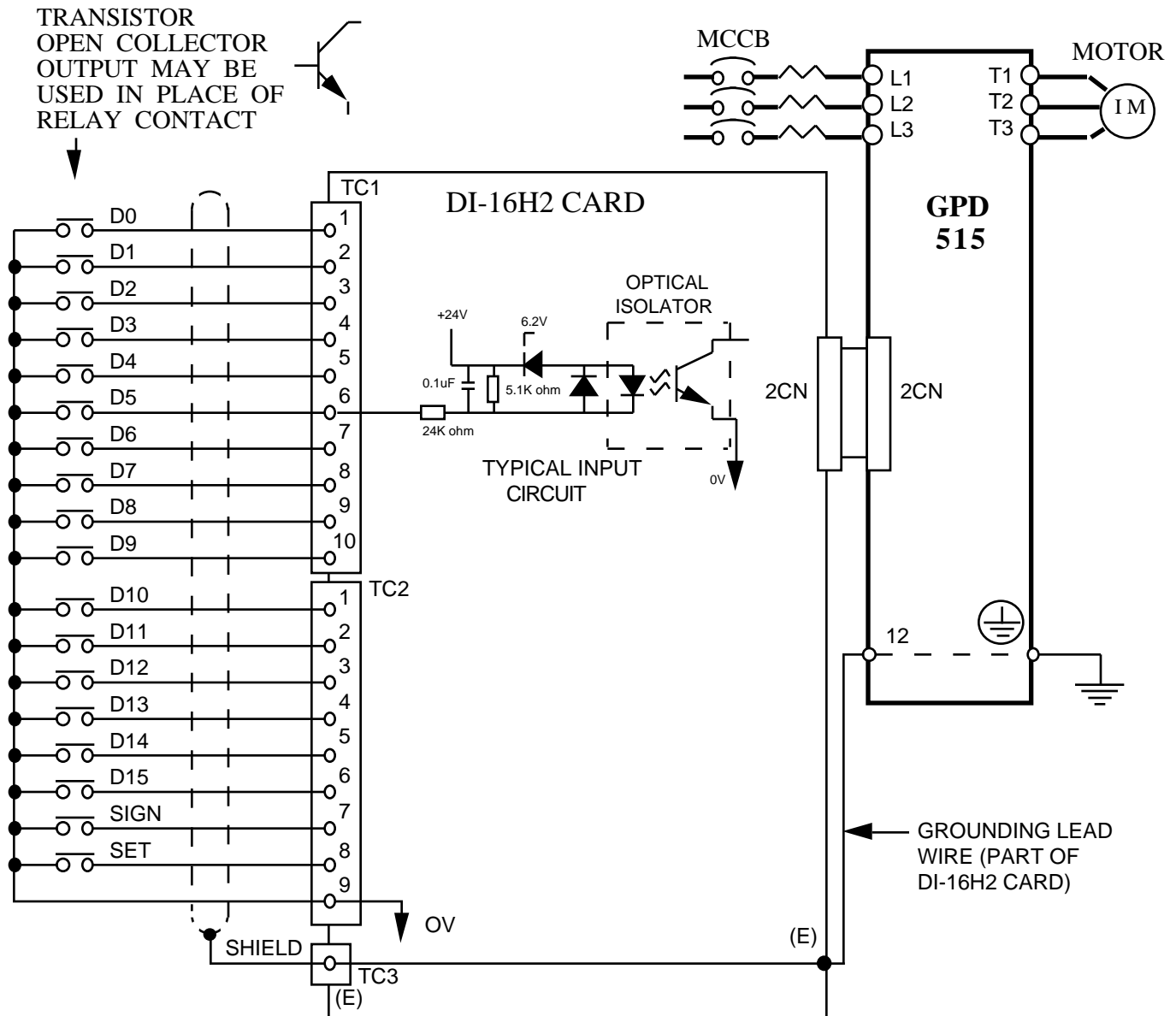


Figure 3. Interconnection for Digital Reference Card (DI-16H2) Circuit

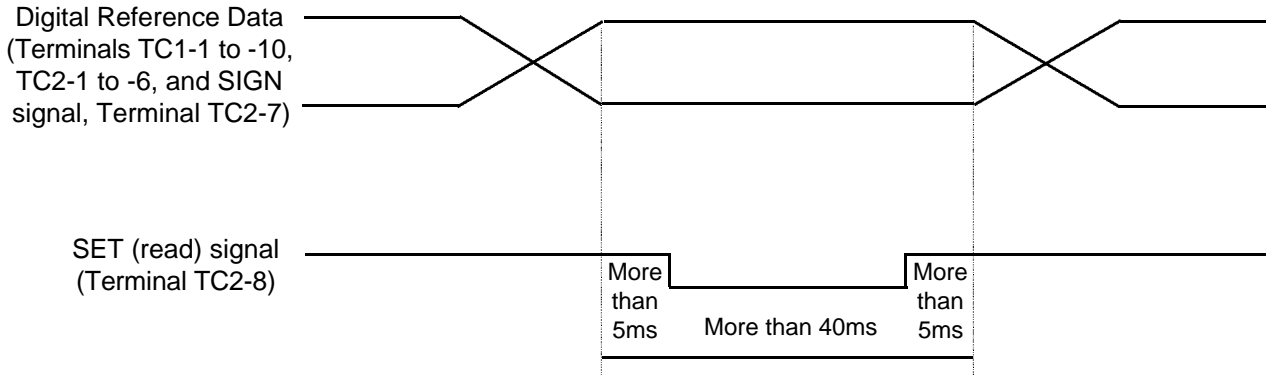


Figure 4. Timing of Reference Input

IMPORTANT

The DI-16H2 input circuits can receive output of relay contacts or transistor (open collector).

- Use relays with highly reliable contacts (for very small current) with a capacity of 30VDC or more and rated current of 100mA or higher.
- Use transistor (open collector) with rated voltage of 35VDC or more and rated current of 30mA or higher.

7. Adjustments. There are no adjustments to be made on the Digital Speed Reference option; however, the GPD 515/G5 will have to be reprogrammed for the input requirement of the digital reference. See Table 4, and refer to the Technical Manual description of parameter b1-01 (Reference Selection).

IMPORTANT

For the Digital Reference circuit to function properly, GPD 515/G5 parameter b1-01 must be set to " 3 " (input to DI-16H2 replaces auto speed reference signal).

8. Reinstall and secure drive cover.
9. Place this instruction sheet with the GPD 515/G5 technical manual.

THIS COMPLETES INSTALLATION OF THIS OPTION.

Table 4. F3-01 – Setting Unit and Range

F3-01 Set Value	Setting Unit		Setting Range
0	BCD	1%	0 - 159 %
1	BCD	0.1%	0.0 - 15.9 %
2	BCD	0.01%	0.00 - 1.59 %
3	BCD	1Hz	0 - 159 Hz
4	BCD	0.1Hz	0.0 - 15.9 Hz
5 or 6	BCD	0.01Hz	0.00 - 1.59 Hz
7	Binary	255/100%	0 - Max. Output Freq.