DIGITAL OUTPUT CARD (DO-08)
MODEL DS383

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 employ isolated type digital signals to monitor status outputs of the drive (alarm signal, zero-speed detection, etc.).

This option card can be used on a GPD 515 drive, a GPD 503 drive, a GPD 575 drive, or a VCD 703 drive.

CAUTION

The option card uses CMOS IC chips. If proper electrostatic discharge (ESD) protective procedure is not used when handling the card, the ICs may be damaged, resulting in erratic performance of the drive.

INSTALLATION

1. Disconnect all electrical power to drive.

2. Remove drive front cover. Check that the CHARGE indicator lamp inside the 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.

NOTE: If this option is being installed on a GPD 515 with speed feedback, the speed feedback card needs to be temporarily un-installed to allow access to the connector 2CN on the drive's Control Board and terminals TD1 through TD11 on the option card.

CHANGE RECORD				
1	STD-5688 1-24-94			
2	STD-6602 6-13-96			

4. See Figure 1 (GPD 515) or Figure 2 (GPD 503, GPD 575, VCD 703). Install the option on the Main Control Board, 1PCB, and ensure 3CN is properly connected. Make sure Electrostatic procedure is followed.
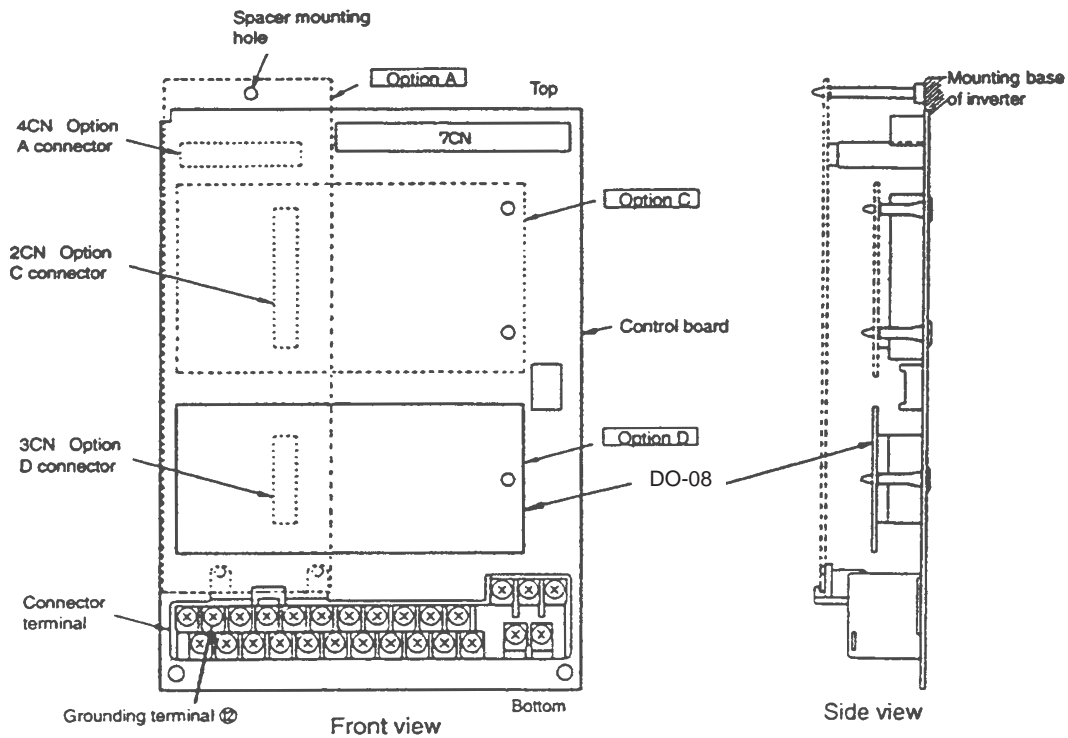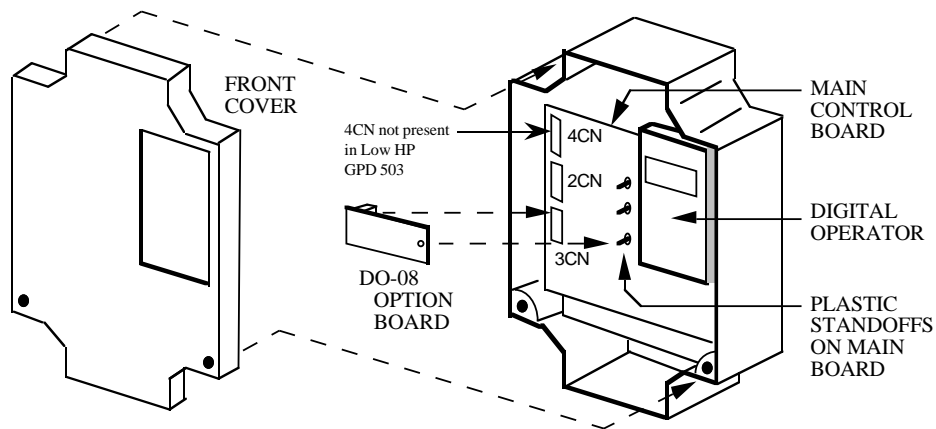

Figure 1. Installation of DO-08 Card in GPD 515

Figure 2. Installation of DO-08 Card in GPD 503, GPD 575, or VCD 703

Table 1. Specifications

Output Method	Available Outputs
Photocoupler Output	6 channels (common)
Relay Contact Output	2 channels (independent)

Control voltage input (from drive): 24V (isolated)

5. Wiring. See Figure 3 for Digital Output connections. See Table 2 for terminal functions.

Table 2. Terminal Functions of Digital Output Card DO-08

Terminal No.	Terminal Screw Size	Function	Capacity	Output Signals
TD1 to TD4	M3	Relay contact output: 2 outputs (independent)	250 Vac, 1A or less 30 Vdc, 1A or less	See "Adjustments" (INSTALLATION step 6)
TD5 to TD10		Photocoupler output: 6 outputs	48 Vdc, 50mA or less	See "Adjustments" (INSTALLATION step 6)
TD11		Output Common, 0V	——	——

* Attention must be paid to diode polarity.

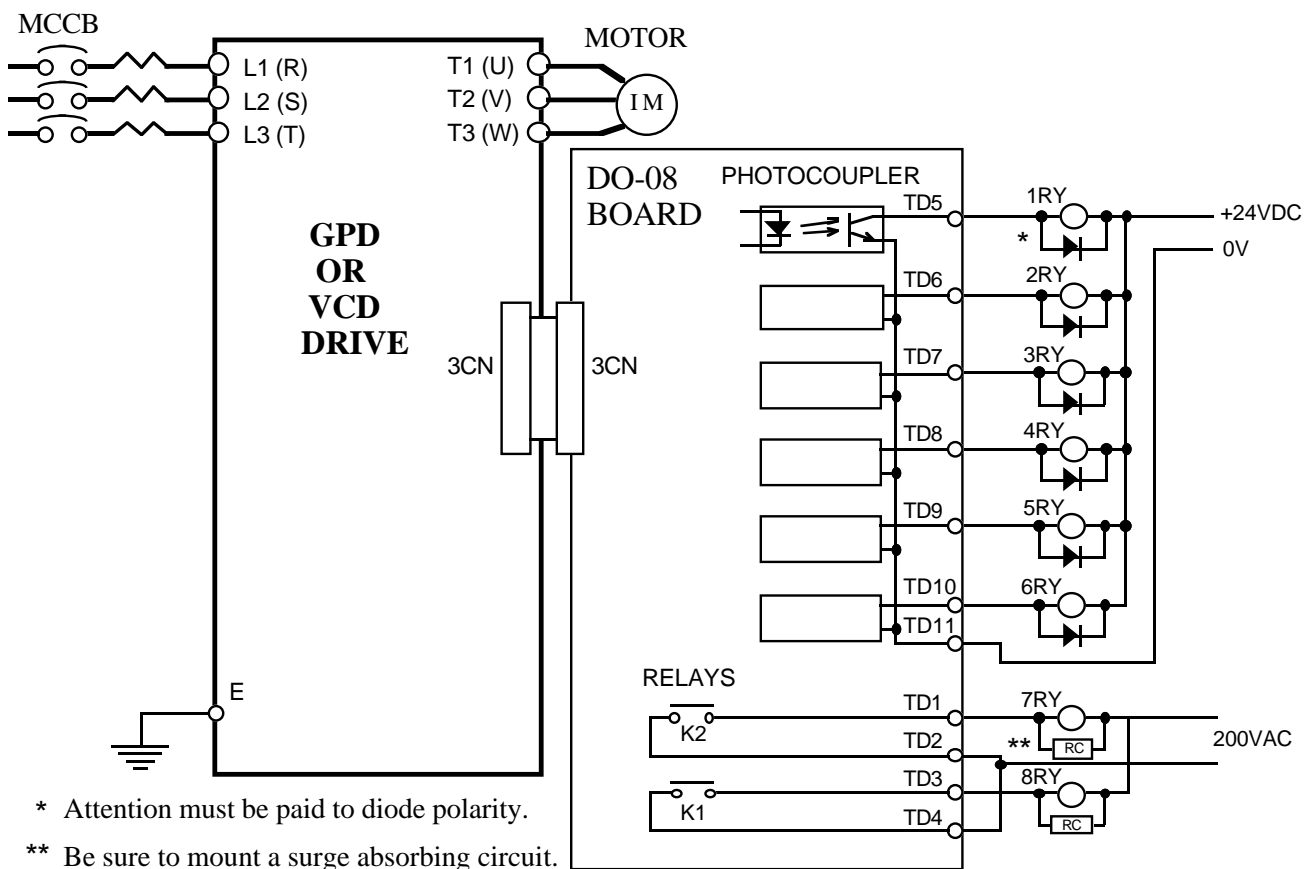** Be sure to mount a surge absorbing circuit.

Figure 3. Interconnection for Digital Output (DO-08) Circuit

CAUTION

KEEP DIGITAL OUTPUT (I.E. CONTROL CIRCUIT) WIRING
SEPARATE FROM MAIN CIRCUIT INPUT/OUTPUT WIRING.

Refer to Sheet 1 for latest change.

<u>CAUTION</u>

TO PREVENT ERRONEOUS OPERATION CAUSED BY NOISE
INTERFERENCE, USE SHEILDED CABLE FOR CONTROL
SIGNAL WIRING, AND LIMIT DISTANCE TO 50M (165 FEET) OR
LESS.

Route wires from the drive and connect to the peripheral device(s). Refer to "Electrical Installation" in the drive's technical manual for further information on use of shielded cable.

6. Adjustments.

    A. GPD 515: There are no adjustments to be made on the Digital Output option; however, drive parameter F6-01 will have to be reprogrammed for the desired output signal content. See Table 3.

Table 3.   Programming For DO-08 Outputs

F6-01 Setting	Output Type	Terminals	Output Contents	
0	Fixed Data	TD5 - TD11	Overcurrent (SC, OC, GF)	
		TD6 - TD11	Overvoltage (OV)	
		TD7 - TD11	Drive Overload (OL2)	
		TD8 - TD11	Fuse Blown (FU)	
		TD9 - TD11	not used	
		TD10 - TD11	Overheat (OH)	
		TD1 - TD2	Zero-speed	
		TD3 - TD4	Speed at set frequency	
1	Coded Output	TD5 - TD11	Coded Output (See Table 4)	Bit 0
		TD6 - TD11		Bit 1
		TD7 - TD11		Bit 2
		TD8 - TD11		Bit 3
		TD9 - TD11	Zero-speed	
		TD10 - TD11	Speed at set frequency	
		TD1 - TD2	Running	
		TD3 - TD4	Minor fault	

Table 4. Function of DO-08 Coded Output From GPD 515

Bits 3, 2, 1, 0	Output Contents	Bits 3, 2, 1, 0	Output Contents
0 0 0 0	No fault	1 0 0 0	External fault (EFxx)
0 0 0 1	Overcurrent (oC) (including grounding)	1 0 0 1	Drive hardware fault (CPFxx)
		1 0 1 0	Motor overload (oL1)
0 0 1 0	Overvoltage (ou)	1 0 1 1	not used
0 0 1 1	Drive overload (oL2)	1 1 0 0	Power loss (Uu) (including momentary power loss)
0 1 0 0	Drive overheat (oH2)		
0 1 0 1	not used	1 1 0 1	not used
0 1 1 0	Fuse blown (FU)	1 1 1 0	not used
0 1 1 1	not used	1 1 1 1	Cooling fan fault (FAn)

B. GPD 503, GPD 575, or VCD 703: There are no adjustments to be made on the Digital Output option; however, drive constant Sn-27 will have to be reprogrammed for the desired output signal content. See Table 5.

Table 5.   Programming For DO-08 Outputs

Sn-27 Setting	Output Type	Terminals	Output Contents	
X X X **0**	Fixed Data	TD5 - TD11	Overcurrent (oC)	
		TD6 - TD11	Overvoltage (ou)	
		TD7 - TD11	Drive Overload (oL2)	
		TD8 - TD11	Fuse Blown (FU)	
		TD9 - TD11	not used	
		TD10 - TD11	Overheat (oH1)	
		TD1 - TD2	Zero-speed	
		TD3 - TD4	Speed at set frequency	
X X X **1**	Coded Output	TD5 - TD11	Coded Output (See Table 6)	Bit 0
		TD6 - TD11		Bit 1
		TD7 - TD11		Bit 2
		TD8 - TD11		Bit 3
		TD9 - TD11	Zero-speed	
		TD10 - TD11	Speed at set frequency	
		TD1 - TD2	Running	
		TD3 - TD4	Minor fault (HHP only)	

Table 6   Function of DO-08 Coded Output From GPD 503, GPD 575 or VCD 703

Bits 3, 2, 1, 0	Output Contents	Bits 3, 2, 1, 0	Output Contents
0 0 0 0	No fault	1 0 0 0	External fault (EFxx)
0 0 0 1	Overcurrent (oC)	1 0 0 1	Drive hardware fault (CPFxx)
	(including grounding)	1 0 1 0	Motor overload (oL1)
0 0 1 0	Overvoltage (ou)	1 0 1 1	not used
0 0 1 1	Drive overload (oL2)	1 1 0 0	Power loss (Uu) (including
0 1 0 0	Drive overheat (oH2)		momentary power loss)
0 1 0 1	not used	1 1 0 1	not used
0 1 1 0	Fuse blown (FU)	1 1 1 0	not used
0 1 1 1	not used	1 1 1 1	Cooling fan fault (FAn)

7.   Reinstall and secure drive cover.

8.   Place this instruction sheet with the drive's technical manual.

THIS COMPLETES INSTALLATION OF THIS OPTION.