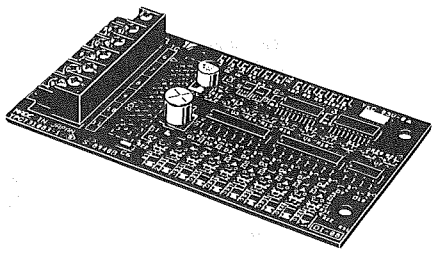
OMRON

Model **3G3IV-PDI08**

DIGITAL SPEED REFERENCE CARD

INSTRUCTION SHEET

Thank you for purchasing an OMRON product. Read this thoroughly and familiarize yourself with the functions and characteristics of the product before using it.
Keep this instruction sheet for future reference.



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Digital speed reference card 3G3IV-PDI08 (hereinafter called PDI08)*, an on-board type optional card, is mounted on the inverter control board. This allows digital speed reference setting with high accuracy and high resolution. When PDI08 is used to set speed reference, select inverter system constant Sn-04 (run signal selection 1) so that external terminal input will be set as main speed frequency reference. Also select system constant Sn-08 (run signal selection 5) so that frequency reference from the optional card will be effective.

- Sn-04 : □□□0 Set 0 as the 1st digit, where 1 has been set prior to shipping.
- Sn-08 : □□□0 Set 0 as the 1st digit, where 0 has been set prior to shipping.

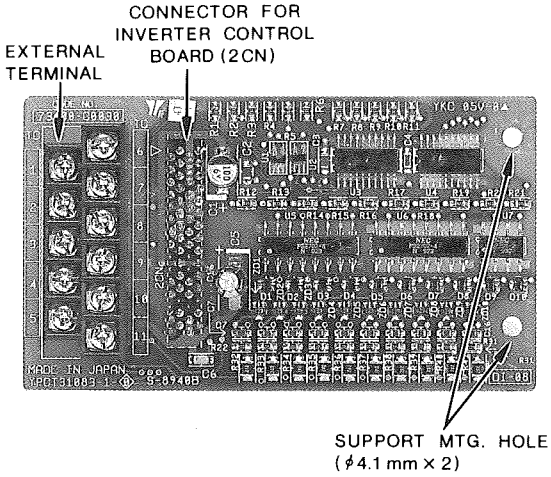
* DI-08 appears as a model number on the body of Digital Speed Reference Card (3G3IV-PDI08)

CAUTION

(1) Read this instruction paper and instruction manuals of the inverter (SYSDRIVE 3G3IV) which will be provided with this PDI08 before use.
(2) When connection to PDI08 connector or external terminals is required, turn off the inverter AC main circuit power supply and check that the inverter CHARGE indicator lamp is out.

1. SPECIFICATIONS

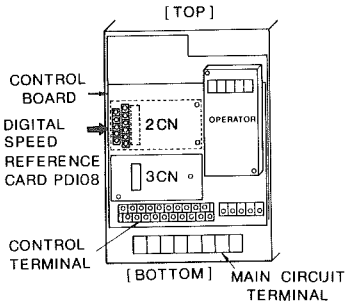
Input Method
· Input signal : Binary 8 bits/BCD 2-digit, SIGN signal, SET signal · Input voltage : +24V (isolated)



2. INSTALLATION TO INVERTER (Fig. 1)

(1) Turn off AC main circuit power supply and remove inverter face plate. Check if CHARGE indicator lamp is out.
(2) Mount PDI08 connector 2CN on connector 2CN (number of pins: 60 poles) on the inverter control board. Insert optional card supports on the control board to PDI08 support mounting holes (2 places) to stabilize PDI08.
(3) After mounting PDI08, perform connection with peripheral equipment. When the connection is completed, replace inverter face plate.

DIGITAL SPEED REFERENCE CARD 3G3IV-PDI08



SYSDRIVE 3G3IV

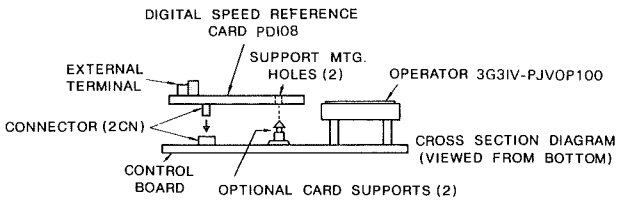
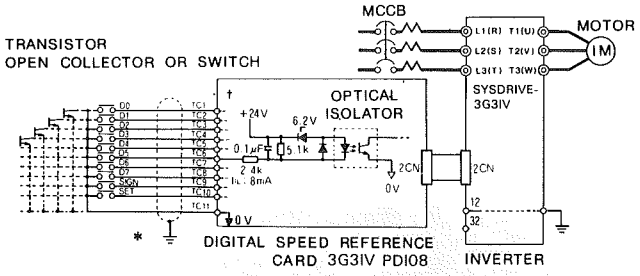


Fig. 1 Installation of Digital Speed Reference Card PDI08

3. INTERCONNECTION BETWEEN EQUIPMENT

Fig.2 shows a typical the inverter interconnection with PDI08 to peripheral equipment.



* Connect cable shield to control terminal 12 on the inverter control board.

† Input circuits of TC1 to TC10 are the same. (Figure shows TC6 input circuit.)

Fig. 2 Interconnection Diagram

PRECAUTIONS FOR WIRING

(1) Separate control signal wiring (terminal TC1 to TC11) of PDI08 from main circuit wiring or other power lines.

(2) To prevent malfunction caused by noise, use shielded cable for control signal wiring and prepare its terminal ends as shown in Fig. 3. Wiring length must not exceed 50m.

(3) Connect terminal ends of cable which is not used in shielded cables to 0V.

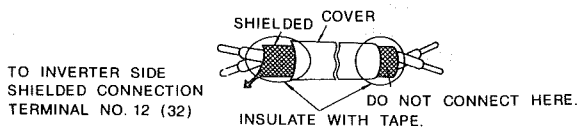


Fig. 3 Preparation of Shielded Cable Ends

4. PRECAUTIONS FOR INPUT SIGNAL APPLICATION

PDI08 input circuit can receive output from relay contacts or transistor (open collector). The following should be carefully noted.

(1) When relay contact is used as digital speed reference signal, use highly reliable relay contact (for very small current) with a capacity of 30VDC or more and rated current of 100mA or higher.

(2) Use transistor (open collector) with rated voltage of 35VDC or more and rated current of 30mA or higher.

5. EXTERNAL TERMINAL FUNCTIONS

PDI08 has external terminals (11 poles) for connection with peripheral equipment so that digital signals (binary 8 bits/BCD 2-digit+SIGN and SET signals) can be input. Table 1 shows the terminal functions.

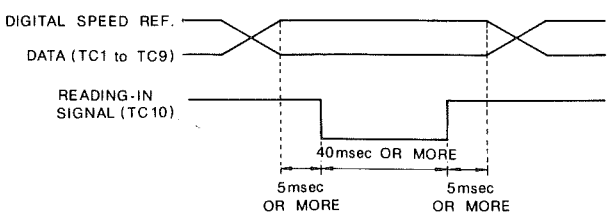


Fig. 4 Digital Speed Reference Read-in Signal Timing

Table 1 PDI08 External Terminal Functions

Terminal	Function			Remarks
	Binary Input	BCD Input		
TC1	2^0	1	×10^0	· Input signal Open : 0 Close : 1 (short-circuited with TC11) · Binary or BCD input is selected by setting inverter system constant Sn-26.(Refer to DIGITAL SPEED REFERENCE SELECTION METHOD). · External terminal screw size : M3
TC2	2^1	2		
TC3	2^2	4		
TC4	2^3	8		
TC5	2^4	1	×10^1	
TC6	2^5	2		
TC7	2^6	4		
TC8	2^7	8		
TC9	· SIGN signal			
TC10	· SET (reading-in signal) *			
TC11	· Speed ref. common signal (0V)			

* Terminal symbol TC10 "SET (read-in) signal" enables digital speed reference reading-in. When reading-in, short circuit TC10 and TC11 as shown in Fig. 4. When continuous reading-in required without using this read-in signal, short circuit TC10 and TC11 in advance.

6. DIGITAL SPEED REFERENCE SELECTION METHOD

Digital speed reference (binary 8-bit input, BCD 2-digit input) can be selected by setting Sn-26 Table 2 shows set values and digital speed references that may be selected. When the contents of digital speed reference is selected as shown in Fig.2, however, set 0 or 1 to (Cn-20).(0 has been set prior to shipping.)

Table 2 Digital Speed Reference Selection

System Constant No.	Set Value	Digital Speed Ref. *	Setting Range
Sn-26	0000	BCD 1%	0~159%
	0001	BCD 0.1%	0.0~15.9%
	0010	BCD 0.01%	0.00~1.59%
	0011	BCD 1Hz	0~159Hz
	0100	BCD 0.1Hz	0.0~15.9Hz
	0101	BCD 0.01Hz	0.00~1.59Hz
	0111	Binary 255/100%	0.00~Max.frequency/100% †
	1000	Binary 255/100%	0.00~Max.frequency/100% †

* For BCD 2-digit input, 0 to F can be set for upper digit.

† Operator displays of set values 0111 and 1000 differ as follows:
0111: Digital speed reference is expressed in %
1000: Digital speed reference binary 8-bit input is expressed in a value converted to decimal.

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