Analog Input Option Card
AI-14U

Part Number: AI-14U.

Applicability: F7, G7, GPD 515/G5, G5 HHP.
Note: If used in a GPD503/G3, refer to Instruction Sheet 02Y00025-0295.

Introduction: The AI-14U analog input option card is mounted on the drive's control board and enables the user to interface one high-resolution (14-bit) analog speed reference. This reference can be either voltage (0 to10VDC) or current (4 to 20mA). Frequency reference gain and bias are adjusted by parameter settings in the drive. When installed, this card replaces terminal 13 (GPD515/G5) or A1 (F7/G7) as the primary analog speed reference location.

Receiving: All equipment is tested against defect at the factory. Report any damages or shortages evident when the equipment is received to the commercial carrier who transported the equipment.

Warning: Hazardous voltage can cause severe injury or death. Lock all power sources feeding the drive in the "OFF" position.

Caution: This option card uses CMOS IC chips. Use proper electrostatic discharge (ESD) protective procedures when handling the card to prevent I.C. damage or erratic drive operation.

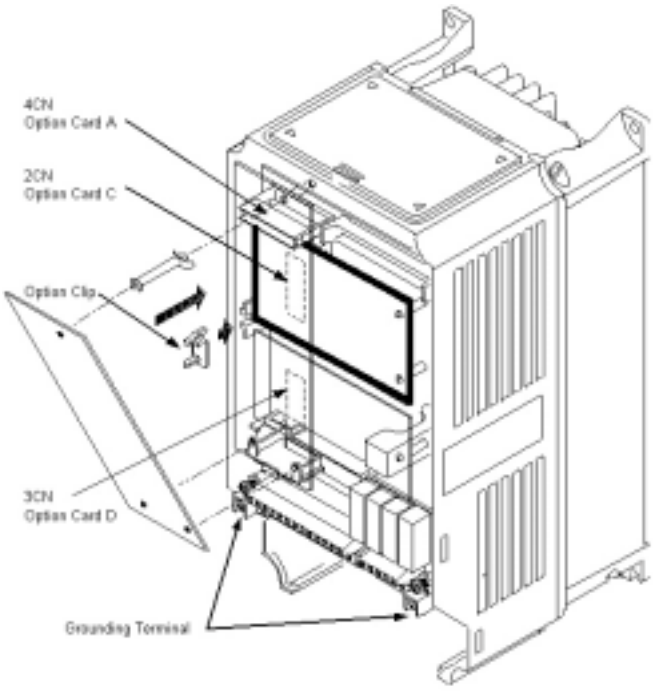

Figure 1. AI-14U Option Card Installation

Important:
1. If this option is being installed in a drive with an encoder (PG) feedback option card, that card will need to be temporarily removed to allow access to connector 2CN on the drive's control board and TC1 – TC3 on the AI-14U option card.
2. Before installing this option, a technically qualified individual, who is familiar with this type of equipment and the hazards involved, should read this entire installation guide.

Installation and Wiring:
1. Disconnect all electrical power to the drive.
2. Remove the drive's front cover.
3. Check that the "CHARGE" indicator lamp inside the drive is off.
4. Use a voltmeter to verify that the voltage at the incoming power terminals (L1, L2, L3) has been disconnected.

Table 1. Specifications

Parameter	Value
Input Signal Level	0 to 10VDC (Input Impedance: 20K ohms) 4 to 20mA (Input Impedance: 250 ohms)
Input Resolution	14 bit (1/16,384)

5. **Option Card Installation:** See Figure 1. Position the option card above the control board's 2CN connector and gently press the card into place.
6. **Wiring:** Refer to Figure 2 and Table 2. Make wire connections between the AI-14U card and the drive as well as all peripheral devices. Observe the following:
   a) Keep the AI-14U (i.e. control circuit) wiring separate from main circuit input/output wiring. A separate metallic grounded conduit with only the option card's wiring running through it is preferred.
   b) To prevent erroneous operation caused by noise interference, use shielded cable for control signal wiring. Limit the distance to 10m (33 feet) or less.
   c) Route wires from the drive and connect to the peripheral device. Refer to the drive technical manual for further information on use of shielded cable.
   d) **Important:** Because the analog input is high-resolution, the voltage source accuracy of the analog input source must be considered. To ensure accuracy, use a high-precision power supply for the voltage source.
7. **Adjustment:** There are no adjustments to be made on the AI-14U option; however, the drive will have to be programmed for the input requirements of the remote device. Refer to Figure 3 and Table 3.
8. Reinstall and secure the drive's front cover.
9. Place this instruction sheet with the drive's technical manual.

Table 2. Terminal Functions of the AI-14U			
Terminal	**Function**	**Signal Level**	**Notes**
TC1	Analog Voltage Input	Input Voltage: 0 to 10VDC Input Impedance: 20kohms	- Input Resolution: 1/16,384 (14 bit) - Signal Linearity: +/-0.1% - Terminal screws are metric size M3
TC2	Analog Current Input	Input Current: 4 to 20mA Input Impedance: 250ohms	
TC3	Signal Common	0VDC	

Table 3. Adjustment of the Input Signals					
Parameter		**Function**	**Setting Range**	**Increment**	**Factory Setting**
F7/G7	**GPD 515/G5**				
H3-02	H3-02	Gain	0.0 to 1000.0%	0.1%	10VDC / 100.0%
H3-03	H3-03	Bias	-100 to 100%	1%	0%

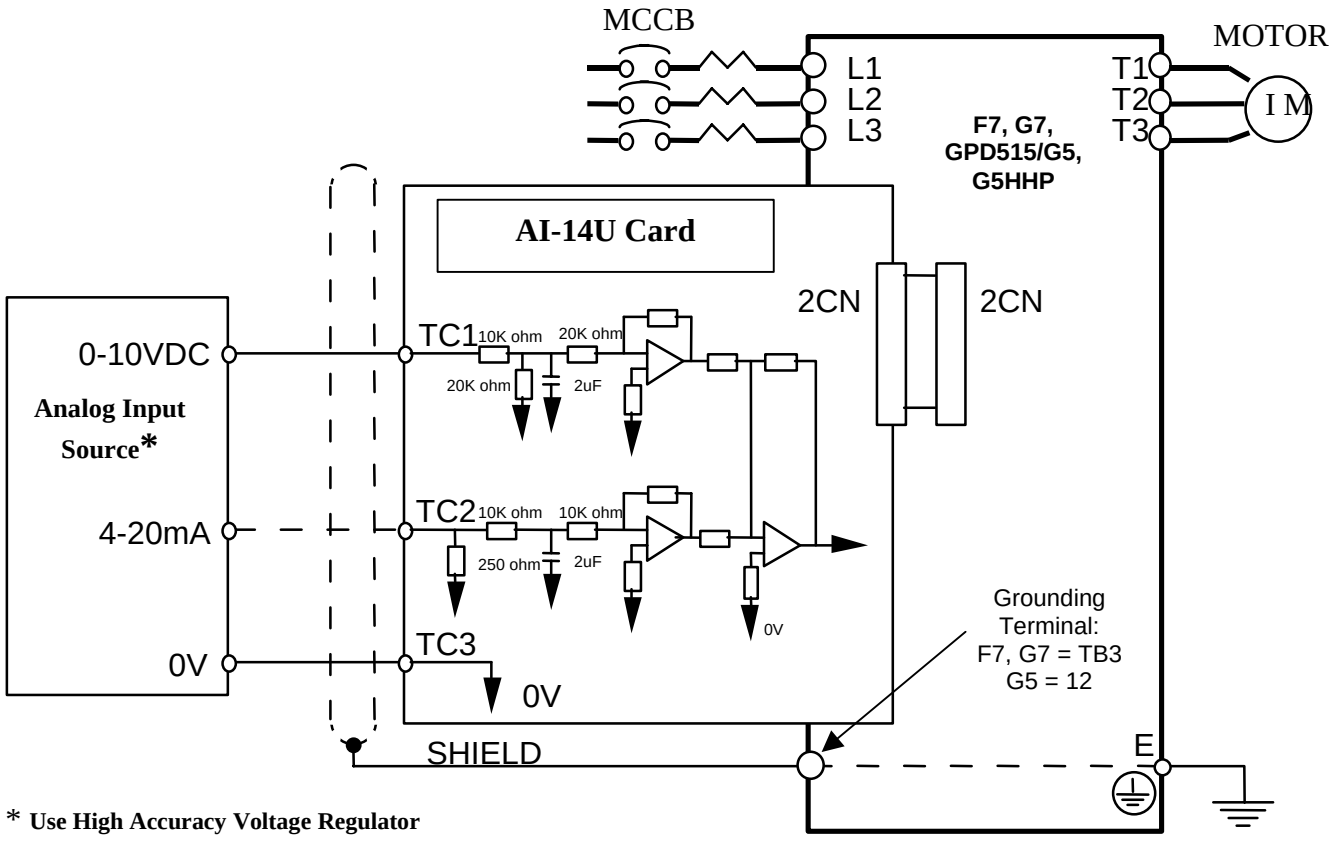

Figure 2. AI-14U Interconnection Diagram

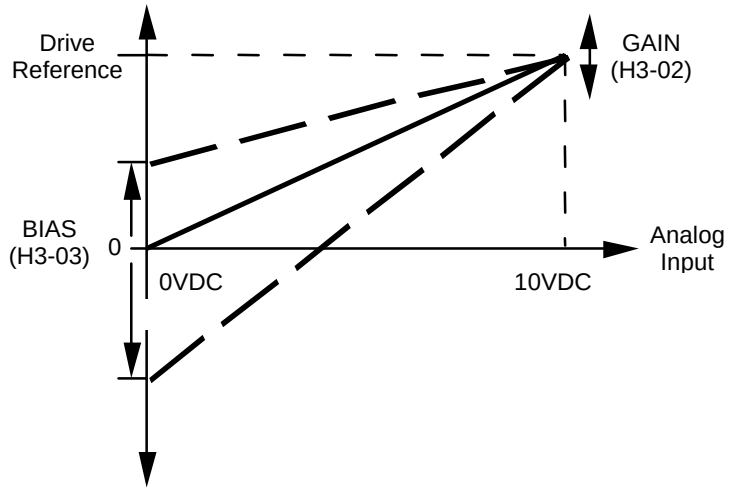

Figure 3. Gain & Bias Adjustments – Shown for Channel 1 (TC1)