

### 1 DESCRIPTION

The 4-20mA Isolated Analog Input module (HE670ADC840) is compatible with GE Fanuc Field Control. It provides eight analog channels with a resolution of 12-bits. Isolation levels are 400VDC (channel-to-channel) and 1,000VDC (channel-to-ground). The module converts the current input signals into digital values, which can be accessed through communications with the Bus Interface Unit. These modules are physically housed in the standard Field Control I/O case and are compatible with a variety of I/O bases providing flexible termination options.

**NOTE:** For HE670ADC840, revision C and higher, hot swap capability is supported.

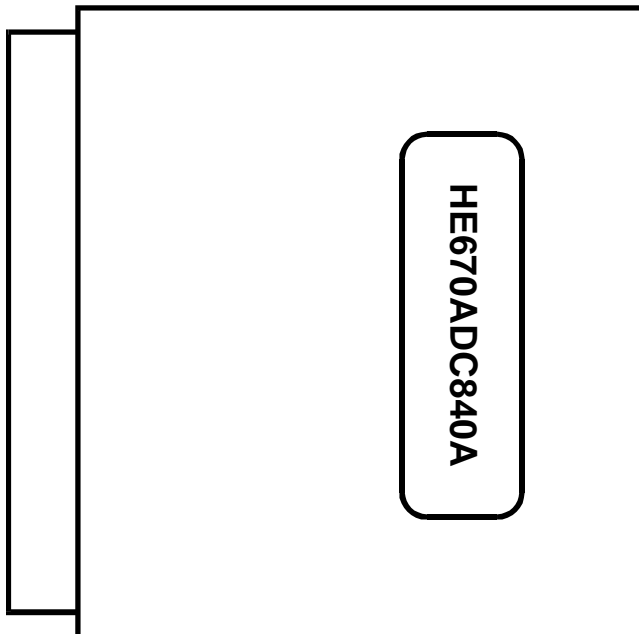


Figure 1 – Side View

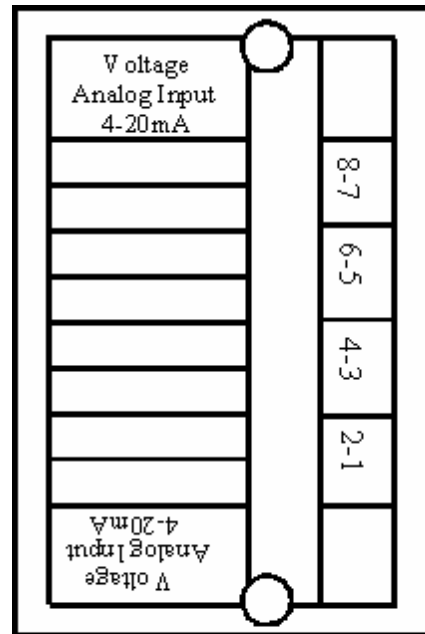
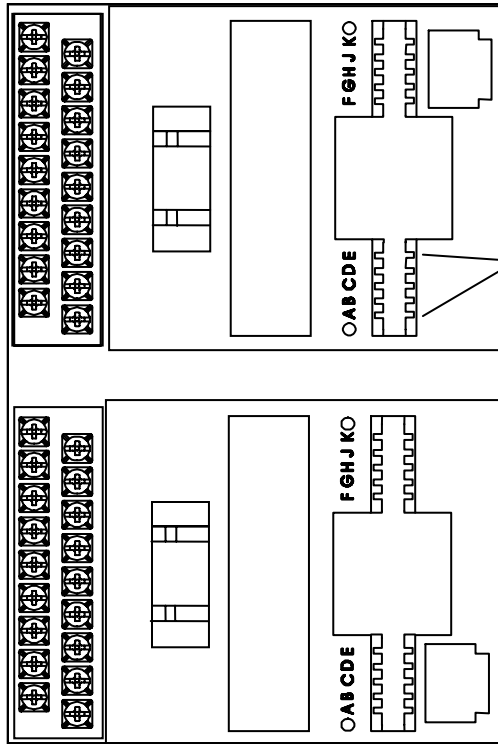


Figure 2 – Front View

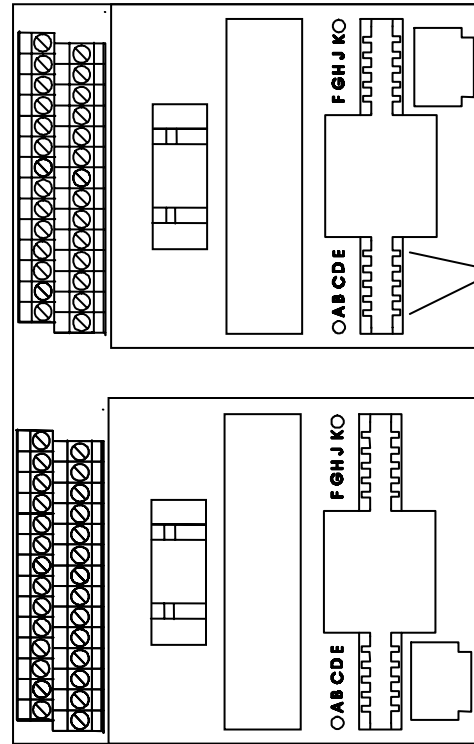
### 2 SPECIFICATIONS

| Table 2.1 - HE670ADC840 Specifications |                      |                       |                           |
|--|----------------------|-----------------------|---------------------------|
| Power Consumption                      | 130mA from backplane | Output Format         | Set by BIU                |
| Number of channels                     | 8                    | Resolution            | 12-bits                   |
| Range                                  | 4-20mA               | Maximum error at 25°C | ± 1% Full Scale           |
| Channel-to-Channel Isolation           | 400VDC               | Operating Temperature | 0 to 75°C                 |
| Channel-to-Bus Isolation               | 1,000VDC             | Relative Humidity     | 5% to 95%, non-condensing |
| Input Impedance                        | 100 ohms             | Input Power Required  | Supplied by BIU           |

3 WIRING



Keyed Slots



Keyed Slots

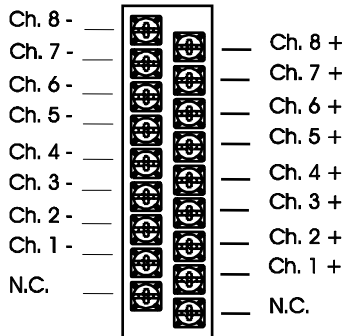


Figure 3 – Terminal Block With Block Terminal

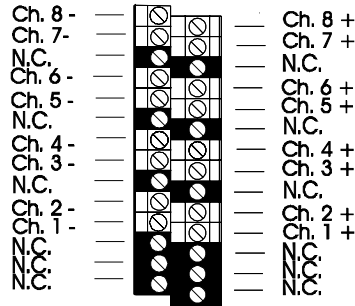


Figure 4 – Terminal Block With Barrier Terminal

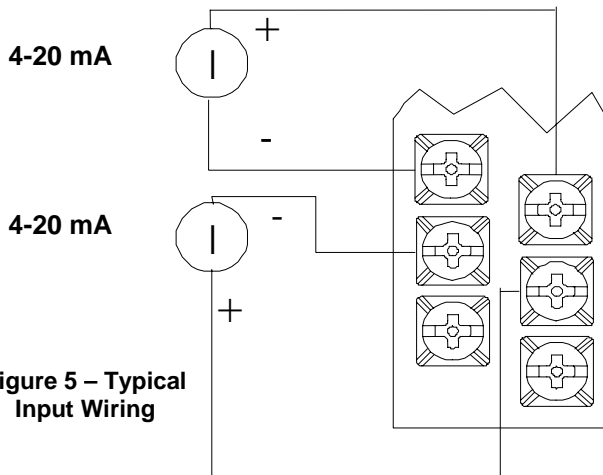


Figure 5 – Typical Input Wiring

| Key Locations |   |   |   |   |   |   |   |   |   |   |
|---------------|---|---|---|---|---|---|---|---|---|---|
| A             | B | C | D | E | F | G | H | I | J | K |
| X             |   |   | X |   |   | X |   |   |   | X |

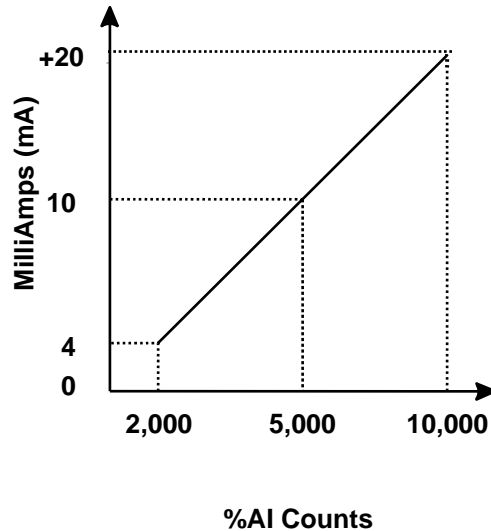
## 4 INPUT SCALING

- 4.1 The value of each %AI varies from 0 to 10,000 counts depending upon mA input.

Example:

Ch.1 = 10mA  
%AI 1 = 5,000 counts

Ch.2 = 5mA  
%AI2 = 2,500 counts



## 5 CONFIGURATION

### 5.1 Configuration Procedure for HE697ADC840

- 1 Connect the GE Fanuc Genius Hand Held Monitor (Part # IC660HHM501).
- 2 Turn the hand held monitor on. The screen should display the baud rate.
- 3 If baud is set at the correct setting, press **OK** (F4).
- 4 The hand held monitor performs the self-test.
- 5 Press **CONFIGURATION** (F3).
- 6 Press **CONFIG. BLOCK** (F2).
- 7 Press **CONFIGURATION** (F2).
- 8 Press **MODULE CONFIG.** (F2).
- 9 "**I/O SCAN**" is displayed on the screen.
- 10 Press F2 to page-up through the memory reference settings.

**Memory Reference Settings:** (Starting addresses can vary.)

|                  |        |                   |          |
|------------------|--------|-------------------|----------|
| I/O Scan         | Enable | BLK Map Start AI  | AI00001  |
| Network          | Enable | BLK Map Length AI | 8        |
| BLK Map Start I  | I00001 | BLK Map Start AQ  | AQ00001  |
| BLK Map Length   | ?      | BLK Map Length AQ | ?        |
| BLK Map Start Q  | Q00001 | Sync Module       | YYYYYYYY |
| BLK Map Length Q | ?      |                   |          |

11. The next set of screens represent module parameter settings for each of the slots.
12. Select the screen representing the slot containing the HE670ADC840. Example: S:1, S:2, etc.
13. The module type **must** be set for “**Analog 8 volt in.**” This will be represented by AI:08 in the top-right corner of the hand held monitor screen.
14. Once the slot is selected, press **ZOOM** (F4).
15. Press (F2) to page-up through the slot parameters.

### Slot Parameters

|                         |          |  |
|-------------------------|----------|--|
| <b>Ref Address</b>      | AI00001  | (Select desired starting address)          |
| <b>Faults</b>           | NNNNNNNN |  |
| <b>Active</b>           | YYYYYYYY |  |
| <b>Range</b>            | 0 to 10V | (channels 1 – 8)                           |
| <b>Scale 1 (Eng Lo)</b> | 00000    | (channels 1 – 8)                           |
| <b>Scale 2 (Eng Hi)</b> | 10000    | (channels 1 – 8)                           |
| <b>Scale 3 (Int Lo)</b> | 00000    | (channels 1 – 8)                           |
| <b>Scale 4 (Int Hi)</b> | 10000    | (channels 1 – 8)                           |
| <b>Alarm</b>            | 00000 Lo | (Defaults to 0. Set to desired value)      |
| <b>Alarm</b>            | 10000 Hi | (Defaults to 10,000. Set to desired value) |
| <b>Hld Lst State</b>    | No       | (Select Yes or No)                         |

16. Press **HOME** when all values are set.
17. Power cycle the Field Control System.

## 6 INSTALLATION

### 6.1 Installation Hints

- a. Wiring should be routed in its own conduit.
- b. Shielded, twisted pair extension wiring offers best noise immunity.
- c. If shielded wiring is used, a good earth ground connection is critical.

### 6.2 Safety Note

- a. **CAUTION: DO NOT INSERT OR REMOVE A MODULE DURING OPERATION. HAZARDOUS CONDITIONS CAN RESULT.**

## 7 TECHNICAL ASSISTANCE

- 7.1 For user manual updates, contact Horner APG, Technical Support Division, at (317) 916-4274 or visit our website at [www.heapg.com](http://www.heapg.com). For additional assistance, contact Technical Support Division's website: [Techsptt@heapg.com](mailto:Techsptt@heapg.com).