



Application I/O Terminal Board IS200ATBAG_A_ _

Safety Symbol Legend



Warning

Indicates a procedure or condition that, if not strictly observed, could result in personal injury or death.



Caution

Indicates a procedure or condition that, if not strictly observed, could result in damage to or destruction of equipment.

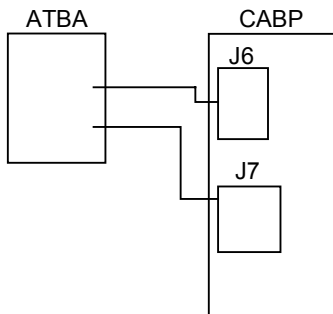
Note Indicates an essential or important procedure or statement

These instructions do not purport to cover all details or variations in equipment, nor to provide every possible contingency to be met during installation, operation, and maintenance. If further information is desired or if particular problems arise that are not covered sufficiently for the purchaser's purpose, the matter should be referred to GE Industrial Systems.

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Functional Description



The IS200ATBA Application I/O Terminal Board (ATBA) provides terminal block connections for all of the signals found on backplane connectors J6 and J7 of the IS200CABP Control Assembly Backplane Board (CABP). The ATBA board is used on the Innovation Series™ drives as an interface for the customer's connections to the drive. It is DIN-rail mounted (typically inside the control cabinet). Fuses are supplied externally.

Note Two different revision ATBA boards are used: G1AA and G1AB. The differences between these revisions are three pin reassignments for connector J6 and a different type of connector and pin reassignments for connector J7. These differences are noted in this instruction where applicable.

Application Data

The ATBA board provides one 60-position terminal block for all of the connections to J6 and J7 of the CABP board. The ATBA board connectors interface to the CABP board: J6 interfaces to CABP board backplane connector J6 (36-pin matrix miniature rectangular connector), and J7 interfaces to CABP board backplane connector J7 (24-pin matrix miniature rectangular connector). The ATBA board has no fuses or adjustable hardware. Figure 1 defines the terminal assignments.

Ratings

All connections to J7 are rated for 50 V, 1 A maximum. All J6 connections other than the following are rated for 225 V, 1 A maximum. The following J6 connections are rated for 176 V, 2 A maximum:

CONA_NO, CONA_NC, CONA_C	RLY2COM, RLY2NC, RLY2NO
RLY1COM, RLY1NC, RLY1NO	RLY3COM, RLY3NC, RLY3NC

Current rating depends on the size of the conductors in the wire harness. The terminal positions can accept one #12 AWG stranded wire or two #16 AWG stranded wires each. These ratings define how the ATBA board can be applied.

- See Table 1 for ATBA board plug connector J6 and terminal position signal descriptions.
- See Tables 2 and 3 for ATBA board plug connector J7 and terminal position signal descriptions.

Table 1. Connector J6 and Terminal Signal Descriptions (From CABP Board J6)*

Board Label	Description
MANO	Main contactor pilot relay normally open contact (CONA_NO)
S115	System fault string 115 volt input side (SYS115)
MACM	Main contactor pilot relay common side of NO and NC contacts – Same terminal is also used as the charge contactor pilot relay common side of the NO and NC contacts (CONAB_C)
S24	System fault string 24 volt input side (SYS24)
MANC	Main contactor pilot relay normally closed contact (CONA_NC)
SCOM	System fault string common input side (SYS_COM)
MASP	Feedback sense input positive terminal (SENSP)
L115	Local fault string 115 volt input side (LCL115)
MASN	Feedback sense input negative terminal (SENSN)
L24	Local fault string 24 volt input side of (LCL24)
SSRP	Solid state relay driver open collector output - Other side of relay should connect to isolated 24 V (SSRP)
LCOM	Local fault string common input side (LCL_COM)
SSRN	G1AA Boards: Solid State Relay Driver return side and I24_RTN (SSRN)
-----	G1AB Boards: Not Connected
DI1P	Digital input #1 positive side of line (DIN1P)
R1NO	Relay #1 normally open terminal (RLY1NO)
DI1N	Digital input #1 negative side of line (DIN1N)
R1CM	Relay #1 common side of NO and NC contacts (RLY1COM)

**Control Rack Assembly
Backplane (CABP)**

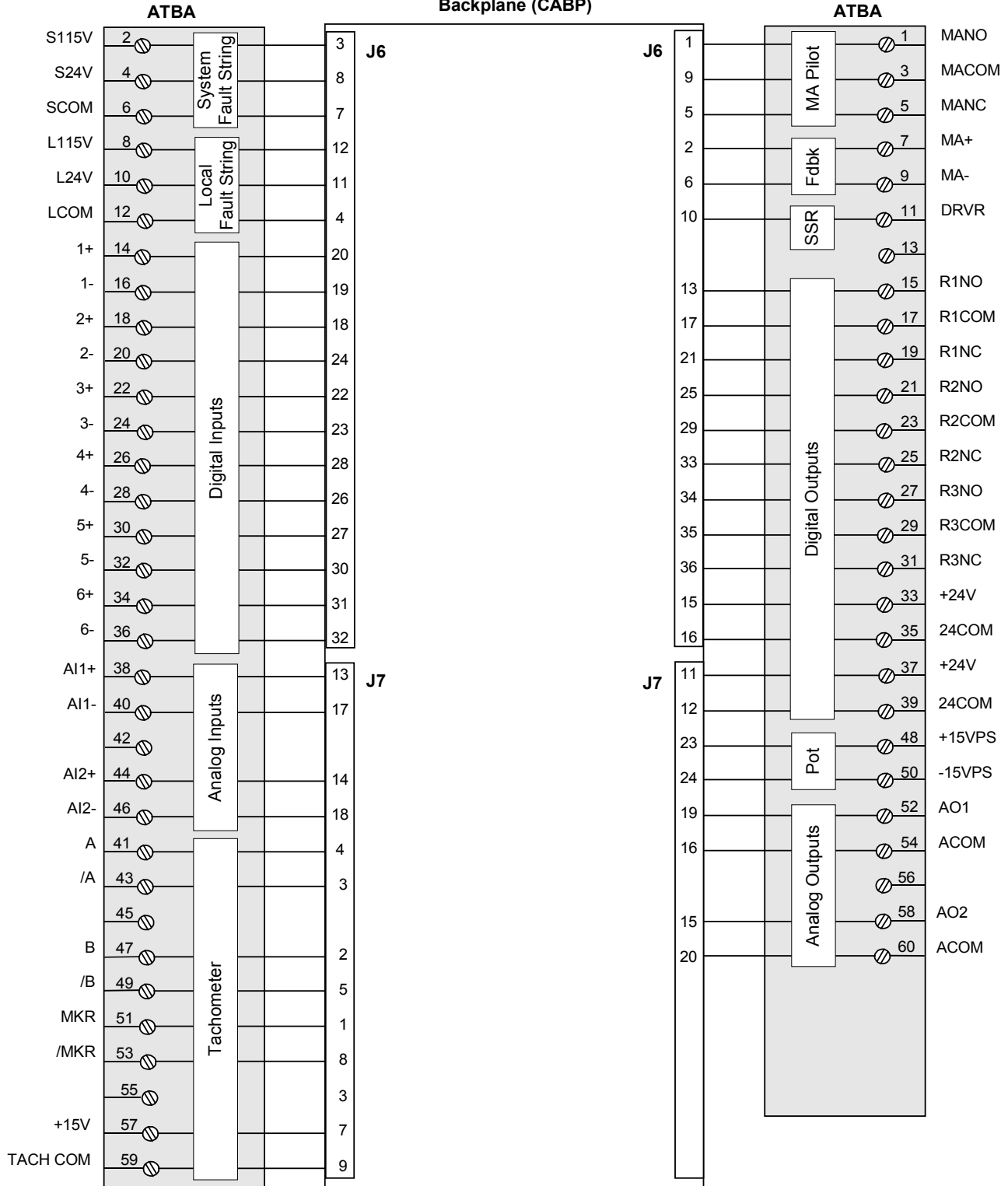


Figure 1. ATBA Terminal Assignments

Table 1. Connector J6 and Terminal Signal Descriptions (From CABP Board J6)* --
continued.

Board Label	Description and Elementary Name
DI2P	Digital input #2 positive side of line (DIN2P)
R1NC	Relay #1 normally closed terminal (RLY1NC)
DI2N	Digital input #2 negative side of line (DIN2N)
R2NO	Relay #2 normally open terminal (RLY2NO)
DI3P	Digital input #3 positive side of line (DIN3P)
R2CM	Relay #2 common side of NO and NC contacts (RLY2COM)
DI3N	Digital input #3 negative side of line (DIN3N)
R2NC	Relay #2 normally closed terminal (RLY2NC)
DI4P	Digital input #4 positive side of line (DIN4P)
R3NO	Relay #3 normally open terminal (RLY3NO)
DI4N	Digital input #4 negative side of line (DIN4N)
R3CM	Relay #3 common side of NO and NC contacts (RLY3COM)
DI5P	Digital input #5 positive side of line (DIN5P)
R3NC	Relay #3 normally closed terminal (RLY3NC)
DI5N	Digital input #5 negative side of line (DIN5N)
I24P	G1AA Boards: Isolated 24 volt output (I24_1)
I24P	G1AB Boards: Isolated 24 volt output (I24_1)
DI6P	Digital input #6 positive side of line (DIN6P)
I24N	G1AA Boards: Isolated 24 volt return (I24_RTN_1)
I24N	G1AB Boards: Isolated 24 volt return (I24_RTN_1)
DI6N	Digital input #6 negative side of line (DIN6N)

*These customer I/O signals are typically greater than 50 V (from CABP J6).

Table 2. ATBA G1AA Revision Board Connector J7 and Terminal Signal Descriptions
(From CABP Board J7)*

Board Label	Description and Elementary Name
I24P	Isolated 24 volt output (I24_2)
AI1P	Analog input #1 positive terminal (AIN1P)
I24N	Isolated 24 volt return (I24_RTN_2)
AI1N	Analog input #1 negative terminal (AIN1N)
DTAP	Digital tach A input positive terminal (DTA)
ASH1	Shield for analog signals (AN_SHLD1)
DTAN	Digital tach A input negative terminal (DTAX)
AI2P	Analog input #2 positive terminal (AIN2P)
TSH1	Shield for the tachometer lines (TAC_SHLD1)
AI2N	Analog input #2 negative terminal (AIN2N)
DTBP	Digital tach B input positive terminal (DTB)
POTP	Potentiometer positive power terminal (POTP)
DTBN	Digital tach B input negative terminal (DTBX)
POTN	Potentiometer negative power terminal (POTN)
DTMP	Digital tach marker input positive terminal (DTM)
AO1P	Analog output #1 positive terminal (AOUT1)
DTMN	Digital tach marker input negative terminal (DTMX)
AO1N	Analog output #1 negative terminal (ACOM1)
TSH2	Shield for the tachometer lines (TAC_SHLD2)
ASH2	Shield for the analog signals (AN_SHLD2)
DTPP	Digital tach power positive terminal (DT_PSP)
AO2P	Analog output #2 positive terminal (AOUT2)
DTPN	Digital tach power negative terminal (DT_PSN)
AO2N	Analog output #2 negative terminal (ACOM2)

*These customer I/O signals are typically less than 50 V (from CABP J7).

*Table 3. ATBA G1AB Revision Board Connector J7 and Terminal Signal Descriptions (From CABP Board J7)**

Board Label	Description and Elementary Name
AI1P	Analog input #1 positive terminal (AIN1P)
AI1N	Analog input #1 negative terminal (AIN1N)
DTAP	Digital tach A input positive terminal (DTA)
ASH1	Shield for analog signals (AN_SHLD1)
DTAN	Digital tach A input negative terminal (DTAX)
AI2P	Analog input #2 positive terminal (AIN2P)
TSH1	Shield for the tachometer lines (TAC_SHLD1)
AI2N	Analog input #2 negative terminal (AIN2N)
DTBP	Digital tach B input positive terminal (DTB)
POTP	Potentiometer positive power terminal (POTP)
DTBN	Digital tach B input negative terminal (DTBX)
POTN	Potentiometer negative power terminal (POTN)
DTMP	Digital tach marker input positive terminal (DTM)
AO1P	Analog output #1 positive terminal (AOUT1)
DTMN	Digital tach marker input negative terminal (DTMX)
ACOM	Analog output #1 negative terminal (ACOM1)
TSH2	Shield for the tachometer lines (TAC_SHLD2)
ASH2	Shield for the analog signals (AN_SHLD2)
DTPP	Digital tach power positive terminal (DT_PSP)
AO2P	Analog output #2 positive terminal (AOUT2)
DTPN	Digital tach power negative terminal (DT_PSN)
ACOM	Analog output #2 negative terminal (ACOM2)

*These customer I/O signals are typically less than 50 V (from CABP J7).

Renewal/Warranty Replacement

This information helps make sure that GE can process the order accurately and as soon as possible.

How to Order a Board

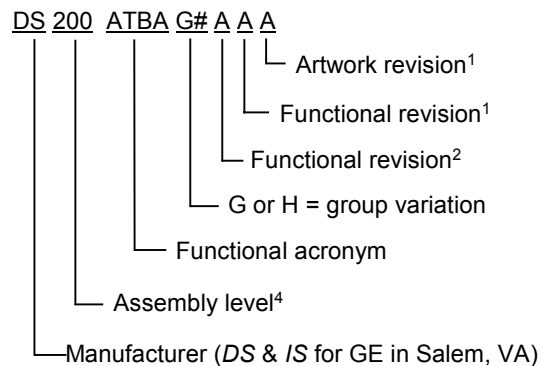
When ordering a replacement board for a GE drive, you need to know

- How to accurately identify the part
- If the part is under warranty
- How to place the order

Board Identification

A printed wiring board is identified by an alphanumeric **part (catalog) number** located near its edge. Figure 2 explains the structure of the part number.

The board's functional acronym is normally based on the **board description**, or name. For example, the ATBA board is described as the Application I/O Terminal Board.



¹Backward compatible

²Not backward compatible

³200 indicates a base-level board; 215 indicates a higher-level assembly or added components (such as PROM)

Warranty Terms

The GE *Terms and Conditions* brochure details product warranty information, including **warranty period** and **parts and service coverage**. The brochure is included with customer documentation. It may be obtained separately from the nearest GE Sales Office or authorized GE Sales Representative.

Placing the Order

Parts still under **warranty** may be obtained directly from the factory:

GE Industrial Control Systems
Product Service Engineering
1501 Roanoke Blvd.
Salem, VA 24153-6492 USA

Phone: + 1 540 387 7595

Fax: + 1 540 387 8606

+ indicates the international access code required when calling from outside the USA

Renewals (spares or those not under warranty) should be ordered by contacting the nearest GE Sales or Service Office. Be sure to include:

- Complete part number and description
- Drive serial number

Note All digits are important when ordering or replacing any board.

The factory may substitute later versions of boards based on availability and design enhancements. However, GE Industrial Control Systems ensures backward compatibility of replacement boards.

Handling Precautions



Caution

To prevent component damage caused by static electricity, treat all boards with static sensitive handling techniques. Wear a wrist grounding strap when handling boards or components, but only after boards or components have been removed from potentially energized equipment and are at a normally grounded workstation.

Because printed wiring boards may contain static-sensitive components, GE ships all replacement boards in antistatic bags. Use the following guidelines when handling boards:

- Store boards in antistatic bags or boxes.
- Use a grounding strap when handling boards or board components (see *Caution* above).

Replacement Procedures



Warning

To prevent electric shock, turn off power to the board, then test to verify that no power exists in the board before touching it or any connected circuits.



Caution

To prevent equipment damage, do not remove, insert, or adjust board connections while power is applied to the equipment.

➤ **Remove the ATBA board as follows:**

1. Make sure that the drive in which the board resides has been de-energized.
2. Open the control cabinet door and, using equipment designed for high voltages, test any electrical circuits **before touching them** to ensure that power is off.

3. Carefully disconnect all cables from the ATBA board to be replaced:
 - Verify cables are labeled with the correct connector name (as marked on the board) to simplify reconnection.
 - For cables with pull-tabs, carefully pull the tab.
 - For terminal connections, loosen the screw securing the cable.
-



Avoid dropping mounting hardware into the unit, which could cause damage.

Caution

4. Remove the six metal screws with washers from the six standoffs and remove the board from the standoffs.
 - **Install the new (replacement) ATBA board as follows:**
 1. Orient the board in the same position as the board that was removed and place it onto the six standoffs.
 2. Insert the nine metal screws with washers into the standoffs and fully tighten the screws to secure in the board in place.
 3. Reconnect all electrical connections that were disconnected in step 3 (above).
 4. Close the control cabinet door.



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