ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *ABB / GE Industrial Solutions IS200BAIAH1BDC* at our website: *Click HERE*

GE Industrial Systems

Bridge Application Interface Board IS200BAIAH_B_ _

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.

This document contains proprietary information of General Electric Company, USA and is furnished to its customer solely to assist that customer in the installation, testing, operation, and/or maintenance of the equipment described. This document shall not be reproduced in whole or in part, nor shall its contents be disclosed to any third party without the written approval of GE Industrial Systems.

Table of Contents

Functional Description 1
Application Data 2
Indicators 2
Testpoints and Jumpers 2
I/O Connectors 2
Renewal/Warranty Replacement 12
How to Order a Board 12
Board Identification 12
Warranty Terms 12
Placing the Order 13
Onboard Firmware 13

Functional Description

The IS200BAIA Bridge Application Interface Board (BAIA) provides isolation and an earth ground reference for all signal inputs from user terminal boards. It outputs customizable and application to the processor board, as follows:

- Six isolated, differential, universal 115 V ac, 50/60 Hz sinusoidal (or 24–105 V dc) discrete logic
- Three separately controlled form C relay contacts are provided for discrete outputs.
- Two bipolar (±10V) analog input channels, each with a differential amplifier followed by a synchronous voltage-controlled oscillator (VCO).
- VCO pulse trains transmitted differentially to isolate the analog inputs

The BAIA converts digital inputs from the DSPX to analog outputs: channels A and B are available for customer use at the terminal board; channels C and D are used to drive panel meters. The BAIA provides an RS-232C I/O interface between the DSPX and the drive's keypad and PC connections.

Application Data

The BAIA board includes plug connectors to interface with other devices in the IGCT drive. The BAIA board also includes adjustable hardware (jumpers), testpoints, and LED indicators. The board contains no fuses. See Figure 1 for a board layout diagram that shows the location of major board components.

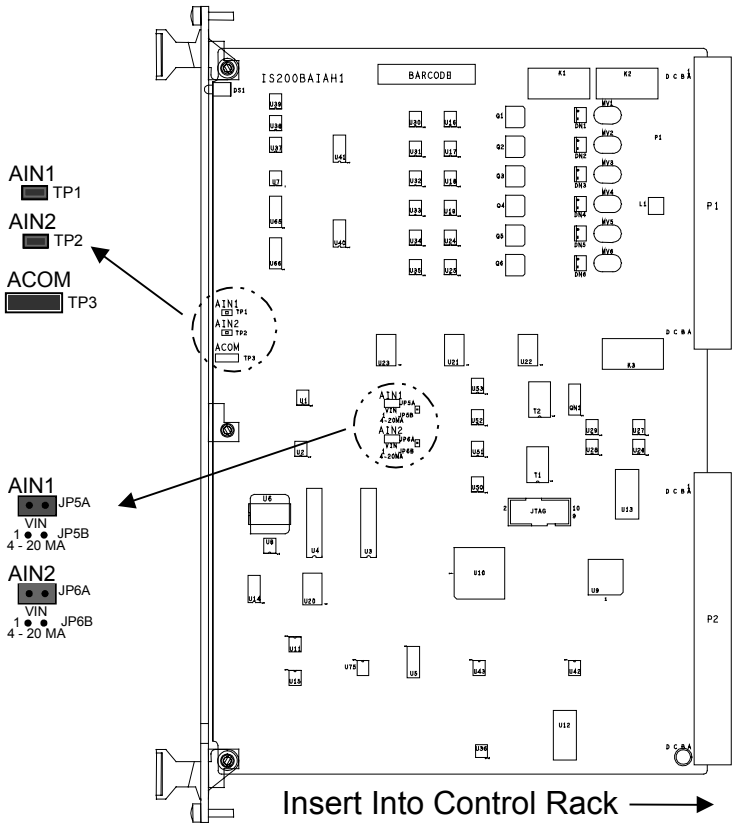


Figure 1 BAIA Board, Side View

Indicators

The BAIA front panel has one green LED, IMOK. This LED is turned on during user read and write activity of a specific location. It will automatically go out if no read or write activity is detected.

Testpoints and Jumpers

The BAIA board provides three testpoints for signal measurement (see Figure 1). These testpoints are accessible through the top opening in the board's front panel (for factory use only).

Testpoint	Jumper	Functions
1	AIN1	Buffered analog input 1
2	AIN2	Buffered analog input 2
4	ICOM12	Common for analog inputs

Four analog input jumpers are provided (in two pairs) for a given analog input circuit, A (VIN) and B (4–20 mA). The jumper should be in either the 4–20 mA position or in the VIN position.

Function	Description
JP5A	Lowers AIN1 input impedance
JP5B	Connects burden resistor across AIN1 input pair
JP6A	Lowers AIN2 input impedance
JP6B	Connects burden resistor across AIN2 input pair

I/O Connectors

The BAIA board connects to and mounts to the control rack backplane through two connectors, P2 and P1. See Figure 1 for locations and Tables 1 through 7 for pin descriptions.

Table 1. Plug P2 Pin Assignments, Row A

Pin No.	Nomenclature	Definition
A1	P5	+5 digital power source (common)
A2	XD0	Data bus (D0)
A3	XD4	Data bus (D4)
A4	DCOM	+5 digital power return (common)
A5	XD8	Data bus (D8)
A6	XD12	Data bus (D12)
A7	XD16	Data bus (D16)
A8	XD20	Data bus (D20)
A9	XD24	Data bus (D24)
A10	XD28	Data bus (D28)
A11	XA0	Address bus (A0)
A12	DCOM	+5 digital power return (common)
A13	XA4	Address bus (A4)
A14	XA8	Address bus (A8)
A15	XA12	Address bus (A12)
A16, A18, A19, A26	NC	Not Connected
A17	0XCSIO	0 = BAIA selected
A20	DCOM	+5 digital power return (common)
A21	0RESET	0 = reset BAIA
A22	P15	Non-isolated +15, -15 Vdc power source
A23	HIFI_2A	Hi-Fidelity input, 2 pair
A24	HIFI_4A	Hi-Fidelity input, 4 pair
A25	HIFI_4B	Hi-Fidelity input, 4 pair
A27	K_TX_ACL	Keyboard TTL level RS232 signals to/from ACL
A28	DCOM	+5 digital power return (common)
A29	GR_2TX	ISBus (1,2) TTL level signals to/from DSPX
A30	K_TX_TTL	Keyboard TTL level RS232 signals to/from DSPX
A31	PWM1	24 kHz, 10-bit duty-cycle PWM meter driver signal
A32	P5	+5 digital power source

Table 2. Plug P2 Pin Assignments, Row B

Pin No.	Nomenclature	Definition
B1	P5	+5 digital power source
B2	XD1	Data bus (D1)
B3	XD5	Data bus (D5)
B4	XD9	Data bus (D9)
B5	XD13	Data bus (D13)
B6	XD17	Data bus (D17)
B7	XD21	Data bus (D21)
B8	DCOM	+5 digital power return (common)
B9	XD25	Data bus (D25)
B10	XD29	Data bus (D29)
B11	XA1	Address bus (A1)
B12	XA5	Address bus (A5)
B13	XA9	Address bus (A9)
B14	DCOM	+5 digital power return (common)
B15	XA13	Address bus (A13)
B16	0ACL_1	0 = route GR1 to ACL
B17, B25-B27	NC	Not Connected
B18	DCOM	+5 digital power return (common)
B19	LDPLS1	1 = update I/O
B20	LDPLS2	1 = update I/O
B21	ACOM	+/- 15Vdc power return (common)
B22	HIFI_1A	Hi-Fidelity input, 1 pair
B23	HIFI_2B	Hi-Fidelity input, 2 pair
B24	DCOM	+5 digital power return (common)
B28	GR_2RX	ISBus (1,2) TTL level signals to/from DSPX board
B29	K_RX_ACL	Keyboard TTL level RS232 signals to/from ACL_ board
B30	K_RX_TTL	Keyboard TTL level RS232 signals to/from DSPX board
B31	PWM2	24 kHz, 10-bit duty-cycle PWM meter driver signal
B32	P5	+5 digital power source

Table 3. Plug P2 Pin Assignments, Row C

Pin No.	Nomenclature	Definition
C1	P5	+5 digital power source
C2	XD2	Data bus (D2)
C3	XD6	Data bus (D6)
C4	XD10	Data bus (D10)
C5	XD14	Data bus (D14)
C6	XD18	Data bus (D18)
C7	XD22	Data bus (D22)
C8	DCOM	+5 digital power return (common)
C9	XD26	Data bus (D26)
C10	XD30	Data bus (D30)
C11	XA2	Address bus (A2)
C12	XA6	Address bus (A6)
C13	XA10	Address bus (A10)
C14	DCOM	+5 digital power return (common)
C15	0XRD	0 = read data from BAIA request
C16	0ACL_2	0 = route keypad to ACL
C17	CPU_CLK1	Clock
C18	DCOM	+5 digital power return (common)
C19	LDPLS3	1 = Update I/O
C20	SYNC_LAN	Synchronize LAN
C21	ACOM	±15Vdc power return (common)
C22	HIFI_1B	Hi-Fidelity input, 1 pair
C23	HIFI_3A	Hi-Fidelity input, 3 pair
C24	DCOM	+5 digital power return (common)
C25	CLK20_1	20 MHz global clock (supplied by DSPX board)
C26	T_TX_ACL	Keyboard TTL level RS232 signals to/from ACL_ board
C27	GR_1RX	ISBus (1, 2) TTL level signals to/from DSPX board
C28	GR_ACL_TX	ISBus 1 TTL level signals to/from DSPX board
C29	T_TX_TTL	Tool TTL level RS232 signals to/from DSPX board
C30	K_RTS_TTL	Keyboard TTL level RS232 signals to/from DSPX board
C31	K_RTS_ACL	Keyboard TTL level RS232 signals to/from ACL_ board
C32	P5	+5 digital power source

Table 4. Plug P2 Pin Assignments, Row D

Pin No.	Nomenclature	Definition
D1	P5	+5 digital power source
D2	XD3	Data bus (D3)
D3	XD7	Data bus (D7)
D4	DCOM	+5 digital power return (common)
D5	XD11	Data bus (D11)
D6	XD15	Data bus (D15)
D7	XD19	Data bus (D019)
D8	XD23	Data bus (D23)
D9	XD27	Data bus (D27)
D10	XD31	Data bus (D31)
D11	XA3	Address bus (A3)
D12	DCOM	+5 digital power return (common)
D13	XA7	Address bus (A7)
D14	XA11	Address bus (A11)
D15	0XWR	0 = write data to BAIA board request
D16	0XBUSY	Busy
D17	INT_IO	I/O interrupt
D18 D21	NC	Not Connected
D19	BRD_ID	Serial board identification line
D20	DCOM	+5 digital power return (common)
D22	N15	Non-isolated +15, -15Vdc power source
D23	HIFI_3B	Hi-Fidelity input, 3 pair
D24	HIFI_5A	Hi-Fidelity input, 5 pair
D25	HIFI_5B	Hi-Fidelity input, 5 pair
D26	T_RX_ACL	Keyboard TTL level RS232 signals to/from ACL_ board
D27	GR_1TX	ISBus (1,2) TTL level signals to/from DSPX board
D28	DCOM	+5 digital power return (common)
D29	T_RX_TTL	Tool TTL level RS232 signals to/from DSPX board
D30	T_TXEN_TTL	Tool TTL level RS232 signals to/from DSPX board
D31	T_TXEN_ACL	Keyboard TTL level RS232 signals to/from ACL_ board
D32	P5	+5 digital power source

Table 5. Plug P1 Pin Assignments, Rows A and B

Pin No.	Nomenclature	Definition
A1-A4, A6, A8, A10, A12, A14, A16, A18, A20, A22-23, A25, A27-28	NC	Not Connected
A5	RLY1(NO)	Relay 1 form C contact
A7	RLY1(COM)	Relay 1 form C contact
A9	RLY1(NC)	Relay 1 form C contact
A11	RLY2(NO)	Relay 2 form C contact
A13	RLY2(COM)	Relay 2 form C contact
A15	RLY2(NC)	Relay 2 form C contact
A17	RLY3(NO)	Relay 3 form C contact
A19	RLY3(COM)	Relay 3 form C contact
A21	RLY3(NC)	Relay 3 form C contact
A24	I24	Isolated +24 V dc power source (for customer relays)
A26	ICOM24	I24 isolated power return (common)
A29	MTR1P	Panel meter 1–4 signal (P) and return (N)
A30	MTR1N	Panel meter 1–4 signal (P) and return (N)
A31	MTR2P	Panel meter 1–4 signal (P) and return (N)
A32	MTR2N	Panel meter 1–4 signal (P) and return (N)
B1, B3, B5, B7, B9, B11-17, B19, B21, B28	NC	Not Connected
B2	SSR_N	I24 V dc relay driver (use isolated 24 V dc & COM)
B4	DIN2A	Differential digital input 2
B6	DIN3B	Differential digital input 3
B8	DIN5A	Differential digital input 5
B10	DIN6B	Differential digital input 6
B18	EV1	Encoder voltage "1" and return (2)
B20	EV2	Encoder voltage "1" and return (2)
B22	AOUT1	Analog output 1 & 2
B23	POT_P	P12/N12 supplied to user for powering a potentiometer
B24	K232TX	Keypad RS232 TX signal
B25	K_SIG_RTN	Keypad RS232 return (common)
B26	T232TX	Tool RS232 TX signal
B27	T_SIG_RTN	Tool RS232 return (common)
B29	MTR3P	Panel meter 1–4 signal (P) and return (N)
B30	MTR3N	Panel meter 1–4 signal (P) and return (N)
B31	MTR4P	Panel meter 1–4 signal (P) and return (N)
B32	MTR4N	Panel meter 1–4 signal (P) and return (N)

Table 6. Plug P1 Pin Assignments, Row C

Pin No.	Nomenclature	Definition
C1	SSR_P	I24 V dc relay driver (use isolated 24 V dc & COM)
C2, C4, C6, C8, C10-16, C19, C23, C30-32	NC	Not Connected
C3	DIN1B	Differential digital input 1
C5	DIN3A	Differential digital input 3
C7	DIN4B	Differential digital input 4
C9	DIN6A	Differential digital input 6
C17	ENCBP	Differential encoder input B
C18	ENCBN	Differential encoder input B
C20	AIN2P	Analog input 2 differential input (also burden resistor input)
C21	AIN2N	Analog input 2 differential input (also burden resistor input)
C22	AOUT2	Analog output 2
C24	K232RX	Keypad RS232 RX signal
C25	T232RX	Tool RS232 RX signal
C26	GR_A(TX+)	ISBus "A" TX signal
C27	GR_A(RX+)	ISBus "A" RX signal
C28	GR_B(TX+)	ISBus "B" TX signal
C29	GR_B(RX+)	ISBus "B" RX signal

Table 7. Plug P1 Pin Assignments, Row D

Pin No.	Nomenclature	Definition
D1, D3, D5, D7, D9, D11, D13, D15, D31, D32	NC	Not Connected
D2	DIN1A	Differential digital input 1
D4	DIN2B	Differential digital input 2
D6	DIN4A	Differential digital input 4
D8	DIN5B	Differential digital input 5
D10	P12	Isolated +12, –12 V dc power source
D12	COM12	±12Vdc isolated power return (common)
D14	N12	Isolated +12, –12 V dc power source
D16	ENCAP	Differential encoder input A
D17	ENCAN	Differential encoder input A
D18	DT(M)	Differential transmit A
D19	DT(MB)	Differential transmit B
D20	AIN1P	Analog input 1 differential input (also burden resistor input)
D21	AIN1N	Analog input 1 differential input (also burden resistor input)
D22	ACOM	Analog common – for outputs 1 & 2
D23	POT_N	P12/N12 supplied to user for powering a potentiometer
D24	K232RTS	Keypad RS232 RTS signal
D25	T232TXEN	Tool RS232 TX signal
D26	GR_A(TX–)	ISBus "A" TX signal
D27	GR_A(RX–)	ISBus "A" RX signal
D28	GR_B(TX–)	ISBus "B" TX signal
D29	GR_B(RX–)	ISBus "B" RX signal
D30	P18	+18 V

Renewal/Warranty Replacement

How to Order a Board

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

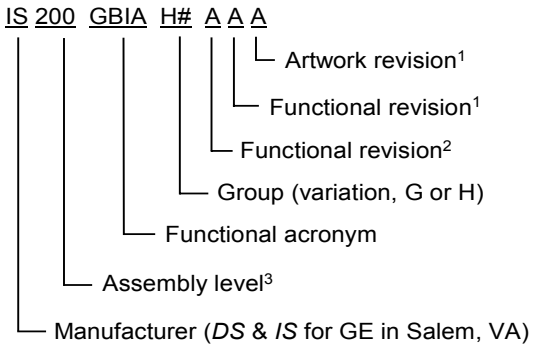
When ordering a replacement board for a GE drive, you need to know:

- How to accurately idenify 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. The following diagram explains the structure of the part number.

The board's functional acronym, shown in Figure 3, normally is based on the **board description**, or name. For example, the BAIA board is described as the Bridge Application Interface board.



[1]Backward compatible
[2]Not backward compatible
[3]*200* 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

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.

Onboard Firmware

Each new board is shipped with the firmware already installed (when applicable). The onboard EEPROM containing this firmware is not intended for removal or programming in the field. If a board fails because of firmware or EEPROM problems, or if an upgrade is needed, the board must be replaced.

How to Replace the Board

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.

Printed wiring boards may contain static-sensitive components. Therefore, 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 (per above *Caution* criteria).

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.

➢ To remove the BAIA board from the rack

1. Make sure that the drive in which the board resides has been deenergized.
2. Open the drive's cabinet door, and using equipment designed for high voltages, test any electrical circuits **before touching them** to ensure that power is off.
3. Carefully remove the board from the rack, as follows:
    a. Loosen the screws at the top and bottom of the faceplate, near the ejector tabs. The screws are captive in the faceplate and should not be removed.)
    b. Unseat the board by raising the ejector tabs.
    c. Using both hands, gently pull the board from the rack. (Note jumper positions).

➢ To install the new (replacement) board in the rack



Caution

Because Innovation Series boards are designed for specific rack slots, inserting the BAIA board into the wrong slot can damage the electronics.

1. Slide the board into the **correct slot** in the rack.
2. Begin seating the board by firmly pressing the top and bottom of the faceplate at the same time with your thumbs.
3. Finish seating the board in the slot by starting and then tightening the screws at the top and bottom of the faceplate. **Tighten the screws evenly** to ensure that the board is seated squarely.

Note If the BAIA board must be configured in any way, refer to the applicable User's Manual for the drive/source for procedures.

Notes



GE Industrial Systems

Issue date: 1999-07-27
© 1998 by General Electric Company, USA.
All rights reserved.

General Electric Company
1501 Roanoke Blvd.
Salem, VA 24153-6492 USA

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP