



GAI-TRONICS®
A HUBBELL COMPANY

Model 12584-001 I/O Control Module

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General Information

The Model 12584-001 I/O Control Module provides 32 dry contact inputs and 32 digital outputs. The control module requires a 12 or 24 volt dc power supply. For communication and control by other systems, the control module is equipped with two types of serial data interfaces (RS-232 and RS-485).

Data Connections

The I/O Control Module supports both RS485 and RS-232 data connections. A jumper is provided to select either RS-485 or RS-232 data communications. The use of either the RS-485 or RS-232 is dependent on the application. Please refer to the interconnecting device for data connection details (i.e., AMI manual).

For RS-485, the data connections are made directly to TB2, terminals 1 and 2. Typically, TB2-1 (+) and TB2-2 (-) connect to the corresponding + and - terminals on the controlling device.

For RS-232, a standard male DB-9 connector is provided. A null modem cable should be used when connecting to the controlling device.

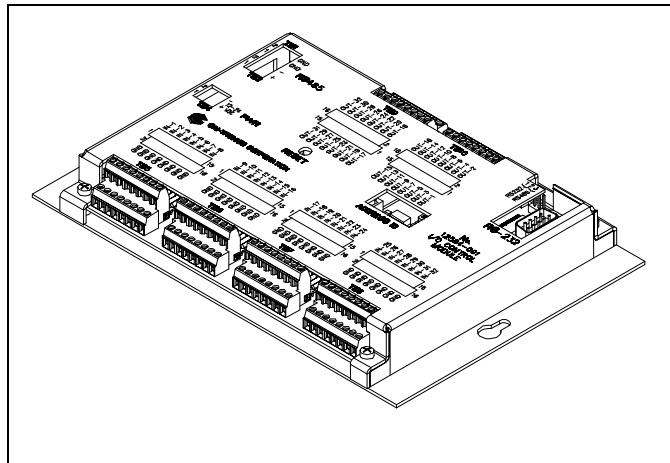


Figure 1. Model 12584-001 I/O Control Module

Installation

Wiring

! WARNING ! Do not apply power until all the connections have been wired.

! Warning: Observe precautions for handling electrostatic sensitive devices.

! WARNING ! Connect only to a UL-listed Class 2 power source.

TB10 and TB9 - Digital Output Connections

The TB10 and TB9 connectors each provide 16 digital (common ground) output connections designed to drive externally-mounted relays or other indicating circuits. Each output can sink up to 150 mA of the current. External circuitry (relays, indicators, etc.) must be powered from an external power supply of the same voltage used to power the I/O Control Module (12 to 24 V dc). The ground (or dc common) terminals of the external power supply must be tied to TB4-2.

Terminal	Labeled	Function	Type
TB10-1 to TB10-16	OUT-1 TO 16	Digital output	Idle = +V dc, active (low) = sink100 mA maximum
TB9-1 to TB9-16	OUT-17 TO 32	Digital output	Idle = +V dc, active (low) = sink100 mA maximum

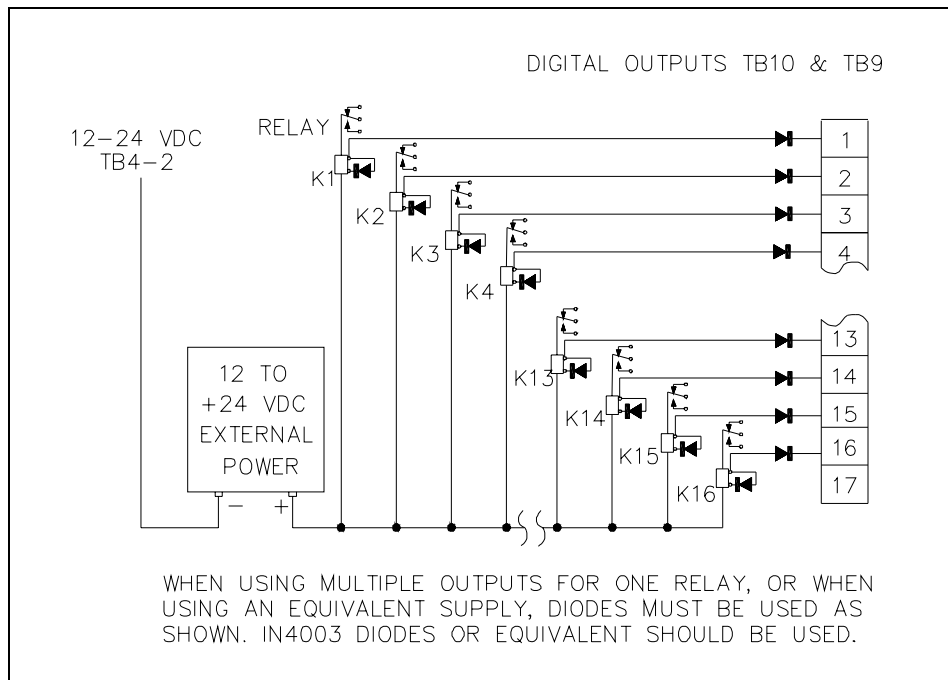


Figure 2. Typical digital output relay wiring

TB5, TB6, TB7, and TB8 - Digital Input Connections

The TB5, TB6, TB7 and TB8 connectors each provide connections for eight contact closure inputs. Switches or relay contact closures are used to activate the inputs. The input contacts may be any combination of momentary (pulsed) switches and maintained (latched) switches. They can be either N.O. or N.C. dry contacts rated at 5 mA minimum.

NOTE: For the inputs to operate reliably, the cable loop resistance connecting the relay/switch contact closures cannot exceed 200 ohms. For example, using 24 AWG cable, the maximum cable length for connection of the relay/switch contact closures cannot exceed 1,500 feet. Refer to the terminal block assignment charts and Figure 3 below.

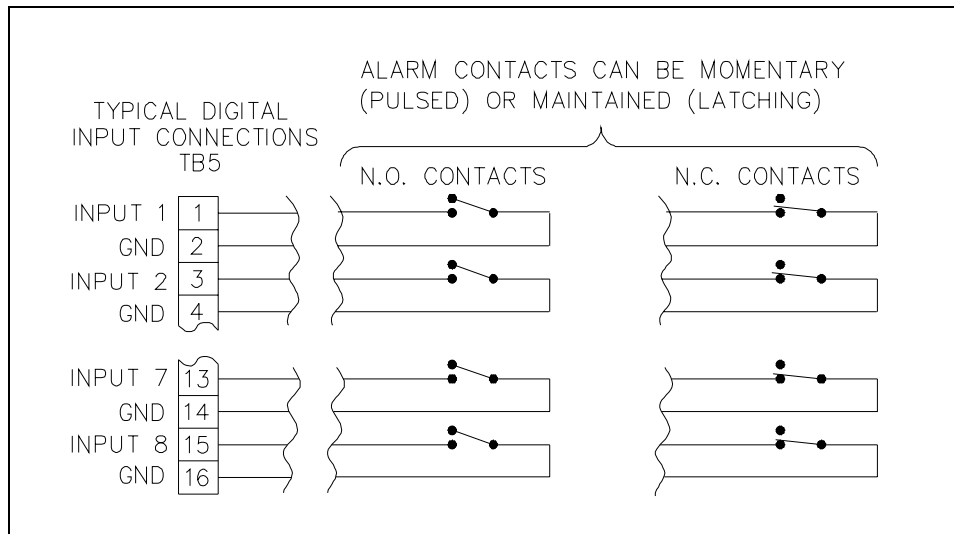


Figure 3. Typical input switch wiring

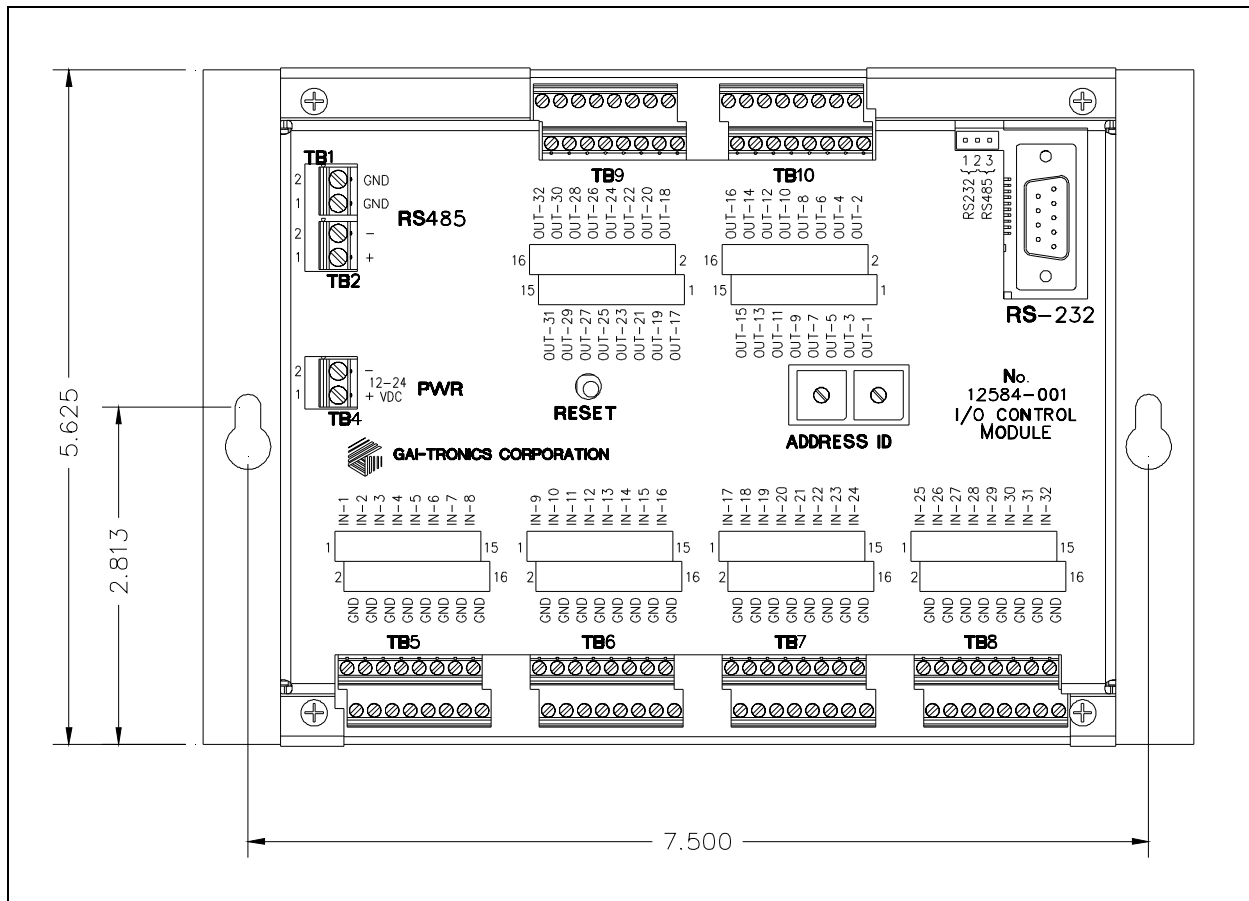


Figure 4. Terminal Block Locations

TB5 Terminal Block Assignments

Terminal	Labeled	Function	Type
TB5-1	IN-1	Input 1	Activates input #1
TB5-3	IN-2	Input 2	Activates input #2
TB5-5	IN-3	Input 3	Activates input #3
TB5-7	IN-4	Input 4	Activates input #4
TB5-9	IN-5	Input 5	Activates input #5
TB5-11	IN-6	Input 6	Activates input #6
TB5-13	IN-7	Input 7	Activates input #7
TB5-15	IN-8	Input 8	Activates input #8
TB5-2, 4, 6, 8, 10, 12, 14, 16	GND	Ground	Ground reference

TB6 Terminal Block Assignments

Terminal	Labeled	Function	Type
TB6-1	IN-9	Input 9	Activates input #9
TB6-3	IN-10	Input 10	Activates input #10
TB6-5	IN-11	Input 11	Activates input #11
TB6-7	IN-12	Input 12	Activates input #12
TB6-9	IN-13	Input 13	Activates input #13
TB6-11	IN-14	Input 14	Activates input #14
TB6-13	IN-15	Input 15	Activates input #15
TB6-15	IN-16	Input 16	Activates input #16
TB6-2, 4, 6, 8, 10, 12, 14, 16	GND	Ground	Ground reference

TB7 Terminal Block Assignments

Terminal	Labeled	Function	Type
TB7-1	IN-17	Input 17	Activates input #17
TB7-3	IN-18	Input 18	Activates input #18
TB7-5	IN-19	Input 19	Activates input #19
TB7-7	IN-20	Input 20	Activates input #20
TB7-9	IN-21	Input 21	Activates input #21
TB7-11	IN-22	Input 22	Activates input #22
TB7-13	IN-23	Input 23	Activates input #23
TB7-15	IN-24	Input 24	Activates input #24
TB7-2, 4, 6, 8, 10, 12, 14, 16	GND	Ground	Ground reference

TB8 Terminal Block Assignments

Terminal	Labeled	Function	Type
TB8-1	IN-25	Input 25	Activates input #25
TB8-3	IN-26	Input 26	Activates input #26
TB8-5	IN-27	Input 27	Activates input #27
TB8-7	IN-28	Input 28	Activates input #28
TB8-9	IN-29	Input 29	Activates input #29
TB8-11	IN-30	Input 30	Activates input #30
TB8-13	IN-31	Input 31	Activates input #31
TB8-15	IN-32	Input 32	Activates input #32
TB8-2, 4, 6, 8, 10, 12, 14, 16	GND	Ground	Ground reference

TB4- Power Connections

The I/O Control Module requires a dc power supply. The dc power supply voltage must be between 12 and 24 V dc. TB4 is used for power connections. Please refer to the TB4 terminal block assignment chart and Figure 5 below.

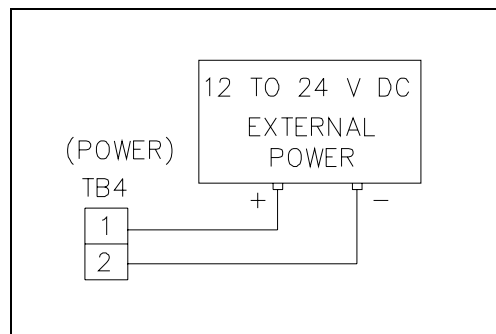


Figure 5. Power connections at TB4

Terminal	Labeled	Description	Function
TB4-1	+	Power (+)	12 to 24 V dc power supply positive terminal
TB4-2	-	Power (-)	12 to 24 V dc power supply negative terminal

Specifications

Power Supply Requirements

Connection to a 12 to 24 V dc (UL listed) Class 2 power source 600 mA minimum
 Power consumed 7 watts maximum
 Auxiliary outputs Sink 150 mA maximum, per output to circuit common
 and pulled up to the power input voltage

Mechanical

Enclosure Steel body and cover; black fine-textured paint finish
 Mounting Wall or shelf
 Dimensions 7.50 W × 5.625 D × 1.02 H inches (191 × 143 × 26 mm)
 Weight 2 lbs. (0.902 kg)

Environmental

Temperature range +32° F to +122° F (0° C to +50° C)

Replacement Parts

Part Number	Description
69407-002	PCBA, I/O Controller

Warranty

Equipment. GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy. The warranty period on any repaired or replacement equipment shall be the greater of the ninety (90) day repair warranty or one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. Buyer may also be entitled to the manufacturer's warranty on any third-party goods supplied by GAI-Tronics hereunder. The applicability of any such third-party warranty will be determined by GAI-Tronics.

Services. Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will re-perform such services at no cost to buyer to correct said deficiency to Company's satisfaction provided any and all issues are identified prior to the demobilization of the Contractor's personnel from the work site. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics warranty obligations with respect to services exceed 100% of the total cost of the services provided hereunder.

Warranty Periods. Every claim by Buyer alleging a defect in the goods and/or services provided hereunder shall be deemed waived unless such claim is made in writing within the applicable warranty periods as set forth above. Provided, however, that if the defect complained of is latent and not discoverable within the above warranty periods, every claim arising on account of such latent defect shall be deemed waived unless it is made in writing within a reasonable time after such latent defect is or should have been discovered by Buyer.

Limitations / Exclusions. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by Buyer's neglect, failure to follow operational and maintenance procedures provided with the equipment, or the use of technicians not specifically authorized by GAI-Tronics to maintain or service the equipment. **THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

Return Policy

If the equipment requires service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs or a replacement will be made in accordance with the warranty policy set forth above. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 (inside the USA) or 610-777-1374 (outside the USA) for help identifying the Regional Service Center closest to you.