



GAI-TRONICS® CORPORATION
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Model XCP0600A Navigator Output Control Module Kit

Field Installation Kit Instructions

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General Information

The Model XCP0600A Output Control Module Kit for the ICP9000 Series Navigator Console includes the hardware and software necessary for plug and play installation, providing up to 32 output controls. This kit is intended only for use in the ICP9000 Series Navigator Console and includes the following components:

Qty	Description
1	USB to DB9 converter, No. 69275-026
1	DB9 to Control Module Interface cable, No.61504-106
1	Navigator Software CD
1	Output Control Module, No. 12584-xxx
2	Mounting screws, No. 28096-001

⚠ ATTENTION ⚠ This manual supercedes Pub. 42004-359 packaged with the Model 12584-xxx Output Control Module.

The Model 12584-xxx Output Control Module provides 32 digital outputs. The control module requires a 12 to 24 volt dc power supply. For communication and control by a Navigator MCU, the control module is equipped with an RS-485 serial data interface.

Installation

Mechanical

The XCP0600A Output Control Module Kit is provided with a 25-foot DB9-to-RS-485 cable for connection between user-provided PC and the Model 12584-xxx Output Control Module. This cable can be spliced to extend this connection to a maximum of 5000 feet using standard telephone wire.

Mount the 12584-xxx to any wooden or prepared metal surface (pilot holes are required) using the #8 × 3/4-inch screws provided with the kit.

Electrical

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.

Please review Figure 1, the typical interconnection diagram, prior to beginning the installation.

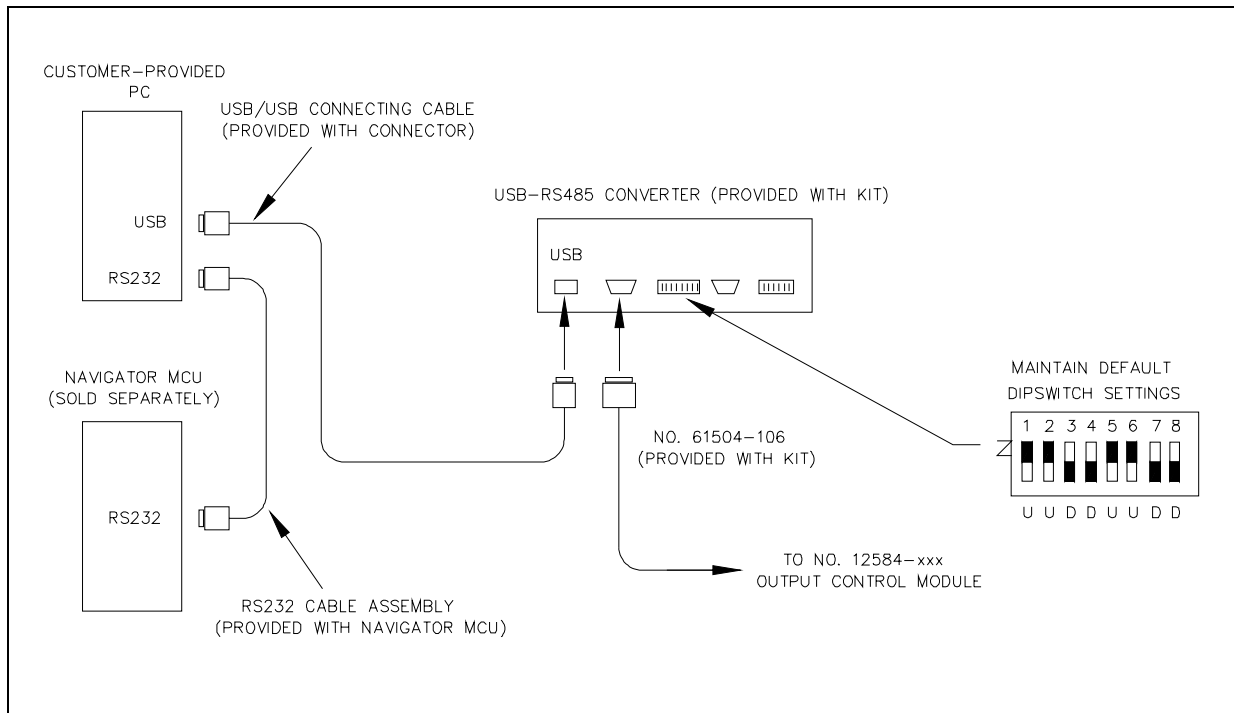


Figure 1. Typical Installation Block Diagram

Data Connections

The Output Control Module supports both RS-485 and RS-232 data connections. A jumper (J6) is provided to select either RS-485 or RS-232 data communications. **Make certain that jumper J6 (located next to the RS-232 connector) is positioned between pins 2 and 3.** Refer to Figure 2. The RS-485 data connections are made directly to TB2, terminals 1 and 2. It is not required to observe polarity.

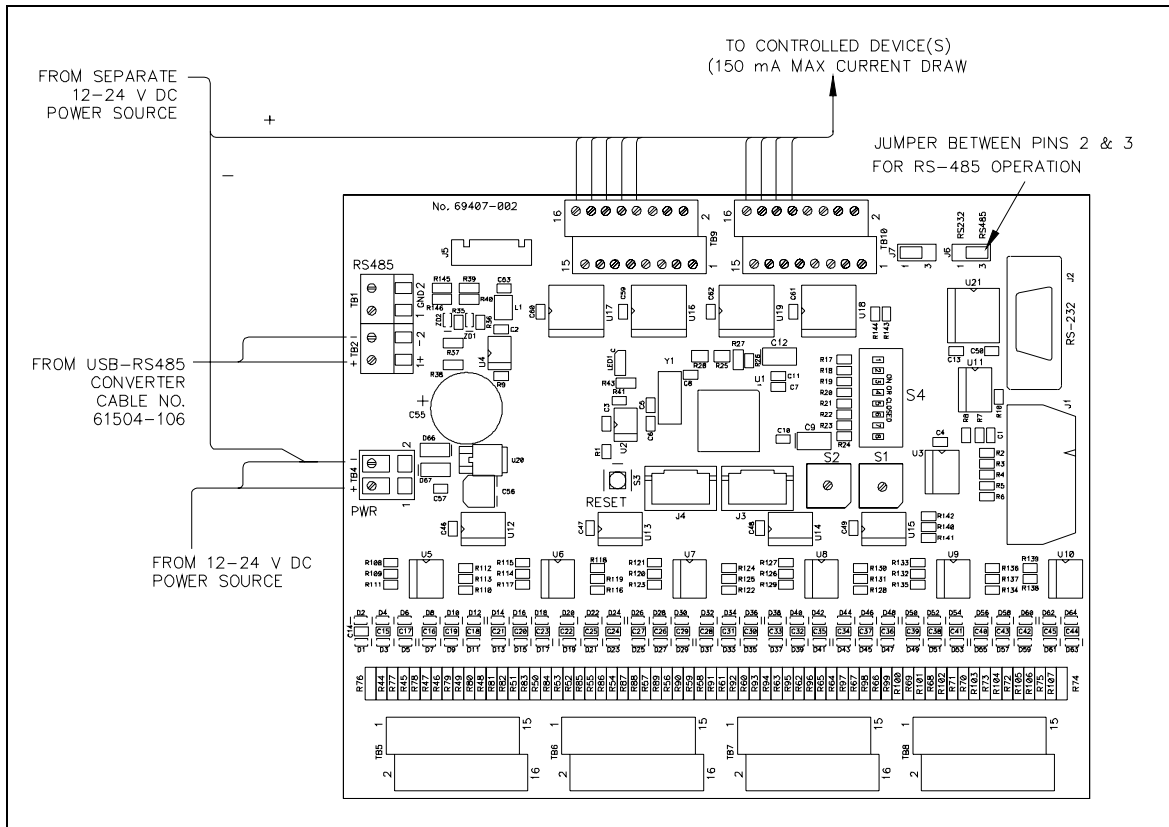


Figure 2. Model 12584-xxx Output Control Module

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 Output Control Module (12 to 24 V dc), or from the same actual source. The ground (or dc common) terminals of the external power supply must be tied to TB4-2 if two individual power sources are used. Refer to Figure 2.

Table 1.

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

Each output corresponds with the same number control push button on the Navigator Control Screen.

Power Connections

The Output 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 3 below.

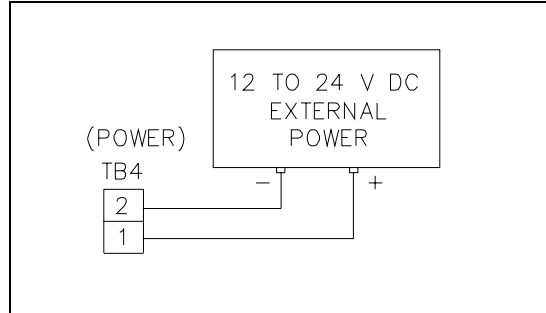


Figure 3. Power connections at TB4

Table 2.

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

Address Switches S1 and S2

S1 and S2 are hexadecimal switches that are used to set the I/O Controller’s address. If the system contains more than one I/O Controller, each device must be set with a different address. The device’s address should be set in sequential order starting with address 01. Switch S2 sets the first digit and switch S1 sets the second digit. See Figure 4.

Example:

Address 01: S2 = 0, S1 = 1

Address 02: S2 = 0, S1 = 2

Address 03: S2 = 0, S1 = 3

NOTE: After changing the board address, the **RESET** button must be momentarily depressed for the new address to take effect.

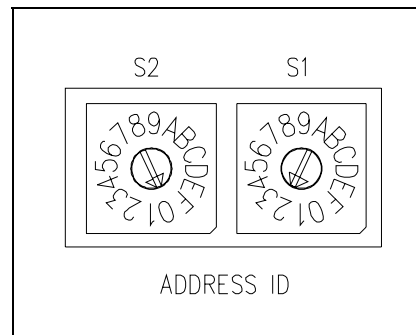


Figure 4. Hex Switches S2 and S1

Table 3.

Hex Switch Settings

Hex Switch No.	Function	Settings
S1 and S2	Board address	S1 = 2 S2 = 0

DIP Switch S4

An 8-position DIP switch S4 sets the various data parameters and operation parameters of the I/O Controller. Refer to Figure 5.

The following tables indicate each switch position and the corresponding settings/functions. DIP switch S4 positions 1-2 set the serial data line baud rate as follows:

Table 4.

DIP Switch S4 Positions 1-2: Baud Rate

Switch S4-1	Switch S4-2	Baud Rate
Closed	Closed	2400
Open	Closed	4800
Closed	Open	9600
Open	Open	19200

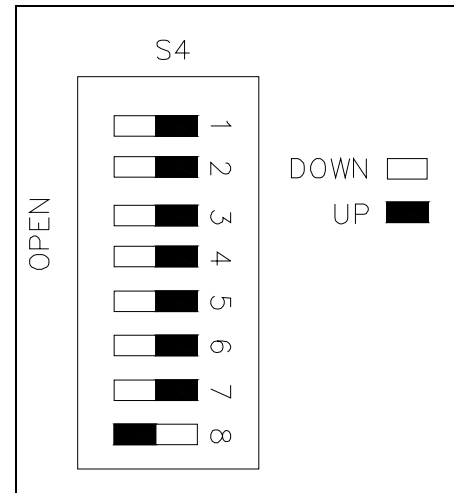


Figure 5. DIP Switch S4

Table 5.

DIP Switch S4 Positions 3-8: Operating Parameters

DIP Switch Position	Function	Settings
S4-3	None – Not used	N/A
S4-4	None – Not used	N/A
S4-5	None – Not used	N/A
S4-6	Automatic input response	Closed – will wait for a poll request from master controlling device before sending an input activation data message. Open – will automatically send a data message when an active input is detected. The controller will NOT wait for poll request from the master controlling device.
S4-7	Address return	Closed – will NOT return the controller’s address (set by hex switch S1 and S2) when sending a data message to the master controlling device. Open – will return the controller’s address (set by hex switch S1 and S2) when sending a data message to the master controlling device.
S4-8	Data default indication	Closed – if data communication is lost with the master controlling device, all outputs will remain in their current state until data communication is restored. Open – if data communication is lost with the master controlling device, all outputs will flash on/off.

Table 6.
DIP Switch S4 Default Settings

DIP Switch S4	Function	Settings
S4-1	Baud rate = 19.2 k	Open
S4-2		Open
S4-3	N/A	Open
S4-4	N/A	Open
S4-5	N/A	Open
S4-6	Wait for poll request from master	Open
S4-7	Return address to master controller	Open
S4-8	Do not signal data fault with master	Closed

Reset Switch

A small push-button switch is provided to restart the I/O controller’s microprocessor. Momentarily press the button to initiate the reset sequence.

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)