

Procedures

1.	Check the contents of shipping box.	Reference
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Unpack the shipping box making sure that the contents include:

- Analog I/O module (Catalog Number 1746-Series)
- installation instructions (publication 1746-IN008)

If the contents are incomplete, call your local Allen–Bradley representative for assistance.

2.	Determine your power requirements for the modular controller.	Reference
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Review the power requirements of your system to see that your chassis supports placement of the analog module.

- For modular style systems, calculate the total load on the system power supply using the procedure described in the *SLC 500 Modular Hardware Style User Manual* (publication 1747-UM011) or the *SLC 500 Family System Overview* (publication 1747-SO001).
- For fixed SLC 500 controllers, refer to the *SLC 500 Fixed Hardware Style Installation & Operation Manual* (publication 1747-6.21).

Chapter 3
(Installing and Wiring Your Analog Module)

Appendix A
(Specifications)

Catalog Number	Backplane Current Draw		External 24V dc Power Supply Tolerance
	5V (max.)	24V (max.)	
1746-NI4	35 mA	85 mA	NA
1746-NIO4I	55 mA	145 mA	NA
1746-NIO4V	55 mA	115 mA	NA
1746-NO4I	55 mA	195 mA	24 ±10% at 195 mA max. (21.6 to 26.4V dc) ⁽¹⁾
1746-NO4V	55 mA	145 mA	24 ±10% at 145 mA max. (21.6 to 26.4V dc) ⁽¹⁾

⁽¹⁾ Required for some applications if SLC 24V power is not readily available.

6.	Configure system I/O configuration.	Reference
	Configure your system I/O configuration for the particular slot the analog module is in. When assigning an I/O module to a slot location, select the module from the displayed list. If not listed, select <i>OTHER</i> at the bottom of the list and enter the module's ID code at the prompt.	Chapter 4 <i>(Module Operation and System Considerations)</i>

Catalog No.	Module ID Code
1746-NI4	4401
1746-NIO4I	3201
1746-NIO4V	3202
1746-NO4I	5401
1746-NO4V	5402

7.	Check that the module is operating correctly.	Reference
		Chapter 5 <i>(Testing Your Module)</i>

ATTENTION

Machine motion during system checkout can be hazardous to personnel. During all checkout procedures, you must disconnect all devices which, when energized, might cause machine motion.

Apply power to the fixed or modular system. The analog module LED (red) should be illuminated, indicating that the module is receiving 24V dc power.

Determining Your Power Requirements for a Modular Controller

Analog modules require both 5V dc and 24V dc power from the backplane of the SLC 500 system. However, the NO4I and NO4V analog modules can use an external 24V dc power supply. This eliminates the 24V dc backplane power requirement, providing configuration flexibility if SLC power supply loading is critical. These two modules provide user-supplied external 24V dc power supply connections.

The 24V dc user power connection on a fixed SLC 500 can power an NO4I or NO4V analog module. However, the regulation of the 24V dc user connection on a modular SLC 500 power supply, Catalog Number 1746-P1, -P2, -P4 is outside of the requirements of the NO4I and NO4V analog modules and cannot be used.

The following table shows the power requirements for each analog module using backplane power. Use this table to calculate the total load on the modular system power supply. For more information refer to the SLC 500 user manual for modular controllers.

IMPORTANT

The analog modules do not supply loop power for the input device. You must supply the appropriate loop power for loop-powered input devices.

Catalog Number	5 Volt Current	24 Volt Current
1746-NI4	35 mA	85 mA
1746-NIO4I	55 mA	145 mA
1746-NIO4V	55 mA	115 mA
1746-NO4I	55 mA	195 mA ⁽¹⁾
1746-NO4V	55 mA	145 mA ⁽¹⁾

⁽¹⁾ Omit these values from your SLC power supply loading calculations if you decide to use an external power supply.

Determining Your Power Requirements for a Fixed Controller

The chart starting on the next page provides available analog module combinations in the expansion chassis of a fixed controller.

- ☒ valid combination
- ☐ invalid combination
- ☐ valid combination when used with external power supply

BASIC net = Basic Module is supplying power to an AIC. No other device requiring power is connected to the AIC.

Module Operation and System Considerations

This chapter describes:

- Interface between the Module and Processor
- System Considerations

Interface between the Module and the Processor

This section describes how to set up an analog module in a SLC 500 system.

Entering Module ID Codes

When configuring an analog module for an SLC 500 system using your programming software, a list of the different I/O modules, including the analog modules, is most likely provided for you. If a list is not provided, you need to enter the module identification code when configuring the slot. Refer to the table below for the appropriate analog module ID code.

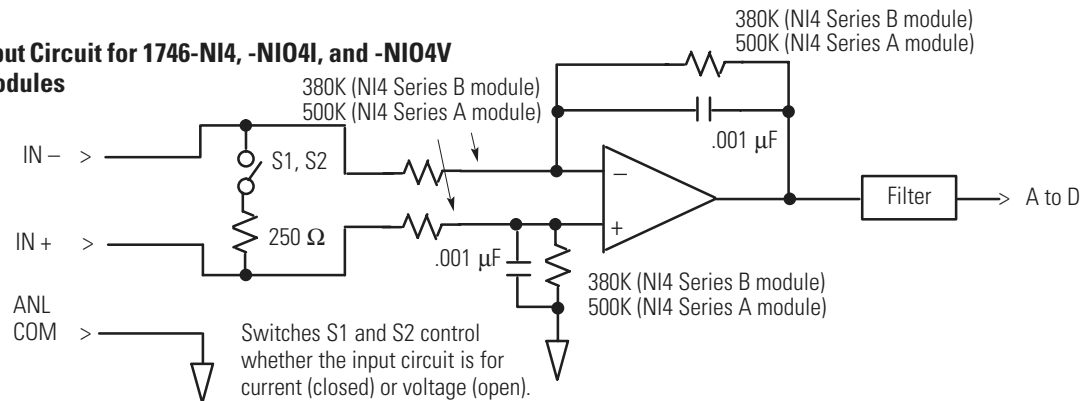
Using the Hand-Held Terminal (HHT) firmware v1.1, enter the proper MODULE ID CODE under the “other” selection. Version 2.0 or later of the HHT firmware provides a list of I/O modules. Refer to the following publications for complete information:

- your programming software's user manual
- the Hand-Held Terminal User Manual

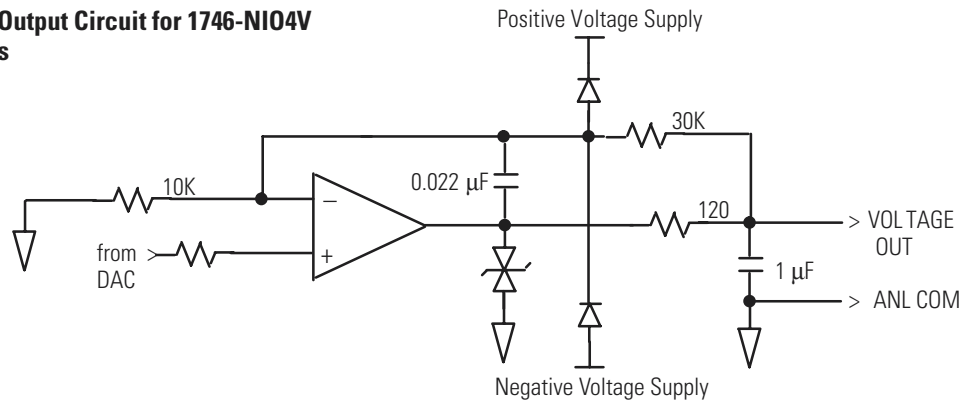
Catalog No.	Module ID Code
1746-NI4	4401
1746-NIO4I	3201
1746-NIO4V	3202
1746-NO4I	5401
1746-NO4V	5402

Module Input and Output Circuits

Input Circuit for 1746-NI4, -NI04I, and -NI04V Modules



Voltage Output Circuit for 1746-NI04V Modules



Current Output Circuit for 1746-NI04I Modules

