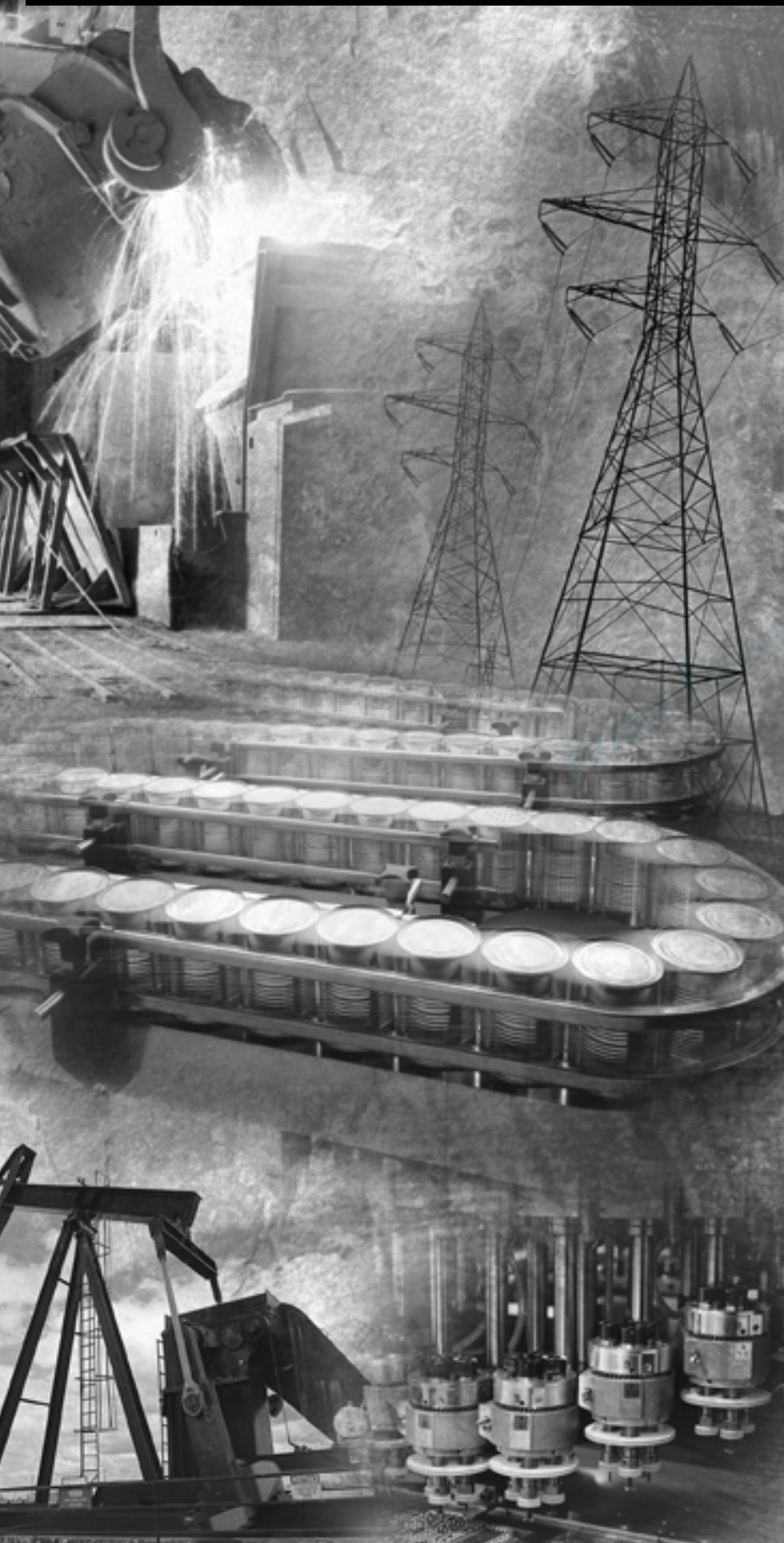




Allen-Bradley

SLC 500 Fast Analog I/O Module

**Catalog Numbers 1746-FI04I and
1746-FI04V**

User Manual

**Rockwell
Automation**

Quick Start

This chapter presents an overview of installation and start-up procedures to help you get the module working quickly.

It refers to full procedures in corresponding chapters of this manual or in other SLC documentation that may be helpful if you are unfamiliar with programming techniques or system installation.

We recommend that you use this chapter in either of two ways.

- Use as a fast installation and start-up guide for the experienced users.
- Use as an overview for using the entire manual for the first-time user.

IMPORTANT

If you have any questions about the abbreviated procedures presented in this chapter, always read the referenced chapters and other recommended documentation before trying to apply the information.

Required Tools and Equipment

Have the following tools and equipment ready.

- Medium flat-head screwdriver
- Medium Phillips-head screwdriver
- Wire strippers
- Utility knife
- Hot-air blower
- Shrink wrap
- Belden 8761 cable or equivalent
- Analog I/O devices for your application
- I/O modules (1746-FIO4I and/or 1746-FIO4V)
- Programming software

Module Specifications

General Description

The 1746-FIO4I and 1746-FIO4V fast analog I/O modules provide two input and two output channels. Input channels are the same for both types of modules: you select either current or voltage operation for each channel. The 1746-FIO4I module contains two current-output channels, while the 1746-FIO4V module contains two voltage-output channels.

Specifications

Specifications for the fast analog I/O modules include the following:

- general specifications.
- general input specifications.
- voltage input specifications.
- current-loop input specifications.
- current output specifications for the 1746-FIO4I.
- voltage output specifications for the 1746-FIO4V.

General Specifications

Catalog 1746-	Input Channels per Module	Output Channels per Module	Backplane Current		ID Code
			5 V	24 V	
FIO4I	Two differential, voltage or current, selectable per channel	Two current outputs, not individually isolated	55 mA	150 mA	3224
FIO4V	Same as FIO4I	Two voltage outputs, not individually isolated	55 mA	120 mA	3218

Electrical Specifications - 1746-FIO4I, 1746-FIO4V

Attribute	Value
Cable	Shielded, Belden #8761 (recommended)
Wire Size	2.5 mm ² (14 AWG) max
Terminal Block	Removable
Installation	Single slot in the 1746 I/O Rack
Calibration	Every six months or as necessary

Electrical Specifications - 1746-FI04I, 1746-FI04V

Attribute	Value
Noise Immunity	NEMA standard ICS 2-230
Temperature, Operating	0... 60 °C (32...140 °F)
Temperature, Storage	–40...85 °C (–40...185 °F)
Relative Humidity	5 ... 95% (noncondensing)

General Input Specifications - 1746-FI04I, 1746-FI04V

Attribute	Value
Converter Resolution	12 bits
Converter Type	Successive approximation
Track and Hold Time to Acquire the Analog Signal Before Conversion	1.5 µs (nom)
Signal Convert from Hold	6.0 µs (nom)
Conversion Time (sum of above two specs)	7.5 µs every 512 µs (nom)
Non-linearity	±0.073% of full scale (max)
Location of LSB in I/O image word	0000 0000 0000 0001
Image Format (HEX)	0FFF
Common Mode Voltage Range	0 ...20V (max)
Common Mode Rejection at 60 Hz	50 dB (min with 1 kΩ imbalance)
Channel Bandwidth	7.0 kHz (min @ 3 dB point)
Module Throughput	1.10 ms (max ⁽¹⁾) 512 µs (typical)
Step Response (5...95%)	100 µs
Impedance to ANL COM	500 kΩ
Impedance Channel-to-channel	1 MΩ
Field Wiring to Backplane Isolation	500V dc

⁽¹⁾ Worst case throughput occurs when the module just misses seeing an event occur.

Voltage Input Specifications - 1746-FI04I, 1746-FI04V

Attribute	Value
Input Operating Range	0...10V dc (max)
Input Impedance	1 MΩ(nom)
Resolution	2.4414 mV per LSB (nom)
Voltage Input Coding (0...10V dc – 1 LSB)	0...4095 counts