



ControlLogix Analog Input Modules

1756-IF6I, -IR6I

Read this document along with the user manual (publication number 1756-6.5.9) to use the ControlLogix Isolated Analog Voltage/Current and RTD input modules.

The following descriptions of the:

- Difference Between Integer and Floating Point on the 1756-IF6I
- Wire Off Conditions for the 1756-IR6I Module in Temperature Applications
- Wire Off Conditions for the 1756-IR6I Module in Ohms Applications
- 1756-IR6I Specifications

supersede descriptions in the user manual.

Difference Between Integer and Floating Point on the 1756-IF6I

IMPORTANT

The information in this section supersedes information found on page 3-11 of the user manual.

The key difference between choosing integer mode or floating point mode is that integer is fixed between -32,768 and 32,767 counts, but floating point mode provides scaling to represent I/O data in specific engineering units for your application.

Table A below shows the difference in the data returned from the 1756-IF6I module to the controller between data formats. In this case, the module uses the 0mA-20mA input range with 0mA scaled to 0% and 20mA scaled to 100%.

Table A
Difference Between Data Formats in Applications Using the 1756-IF6I Module and An Input Range of 0mA to 20mA

Signal value:	Fixed number of counts in integer mode:	Data representation in floating point mode (Eng. units):
0mA	-32,768 counts	-25%
4mA	-20,341 counts	0%
12mA	4,514 counts	50%
20mA	29,369 counts	100%
21.09376mA	32767 counts	106.25%

Using Wire Off Detection

The 1756-IR6I module alerts you when a wire has been disconnected from one of its channels.

When a wire off condition occurs for this module, two events occur:

- Input data for that channel changes to a specific scaled value
- A fault bit is set in the owner controller which may indicate the presence of a wire off condition

Differences exist when a wire off condition is detected in temperature or ohms applications.

Wire Off Conditions for the 1756-IR6I Module in Temperature Applications

There are two conditions in which the 1756-IR6I module detects a disconnected wire in temperature applications.

1. When any combination of wires are disconnected from the module, except the loss of a wire from terminal A by itself (see wiring diagram on page 6-16), the following occurs:
 - input data for the channel changes to the lowest scaled temperature value associated with the selected RTD type
 - the ChxUnderrange (x=channel number) tag is set to 1

For more information about tags in the tag editor, see Appendix A.

2. When only the wire connected to terminal A (see wiring diagram on page 6-16) is lost, the following occurs:
 - input data for the channel changes to the highest scaled temperature value associated with the selected RTD type
 - the ChxOvrrange (x=channel number) tag is set to 1

For more information about tags in the tag editor, see Appendix B.

Wire Off Conditions for the 1756-IR6I Module in Ohms Applications

There are two conditions in which the 1756-IR6I module detects a disconnected wire in ohms applications.

1. When any combination of wires are disconnected from the module, except the loss of a wire from terminal A by itself (see wiring diagram on page 6-16), the following occurs:
 - input data for the channel changes to the lowest scaled ohm value associated with the selected ohms range
 - the ChxUnderrange (x=channel number) tag is set to 1

For more information about tags in the tag editor, see Appendix B.

2. When only the wire connected to terminal A (see wiring diagram on page 6-16) is lost, the following occurs:
 - input data for the channel changes to the highest scaled ohm value associated with the selected ohms range
 - the ChxOvrrange (x=channel number) tag is set to 1

For more information about tags in the tag editor, see Appendix B.

1756-IR6I Specifications

IMPORTANT

The Open Circuit Detection Time specification in this section supersedes information found on pages 6-17 and A-5 of the user manual.

Specification	Value
Open Circuit Detection Time	Negative full scale reading within 5s with any combination of lost wires, except input terminal A alone. If input terminal A is lost by itself, the module reads a positive full scale reading within 5s.

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Publication 1756-6.5.9RN1 - September 2000

Supersedes Publication 1756-6.5.9RN1 - February 1999



**Rockwell
Automation**

PN 957424-36

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