



ControlLogix Temperature Sensing Analog Input Modules

Catalog Numbers 1756-IR6I & 1756-IT6I

Use the information in this release note in conjunction with the following publications:

- 1756-IN014 - 1756-IR6I installation instructions
- 1756-IN037 - 1756-IT6I installation instruction
- 1756-6.5.9 - 1756-Analog I/O modules user manual

to properly operate your ControlLogix temperature-sensing analog input modules.

This release note describes a functional anomaly in **firmware revision 1.9** of the 1756-IR6I and 1756-IT6I input modules.

Rate Alarm

If you are using the on-board Rate Alarm while operating a channel in Temperature mode, the alarm bit toggles randomly as the input value changes. The alarm functions properly if the channel is **NOT** in Temperature mode.

For more information on the Rate Alarm, see page 6-6 of the ControlLogix Analog I/O modules user manual, publication 1756-6.5.9.

Recommended Action

You can disable the Rate Alarm on each channel by entering a “0” (zero) in the Rate dialog portion of the module configuration screens.

This on-board feature can be easily emulated in ladder logic. Follow these steps:

1. Disable the Rate Alarm as described above.
2. Write ladder logic that emulates the following formula for each channel in a periodic task with a time interval equal to the Real Time Sample rate of the module.
 - a. Subtract current channel value from the previous channel value.
 - b. Divide the absolute value of the result from Step 2.a by the RTS value. The RTS must be expressed in seconds (e.g. 100mS = 0.1s) as shown:

$$\frac{\left| \begin{array}{cc} \text{Previous} & \text{Current} \\ \text{Channel} & \text{Channel} \\ \text{Value} & \text{Value} \end{array} \right|}{\text{Real Time Sample}} \\ \text{(in seconds)}$$

- c. Compare the result with a constant value representing your Rate Alarm.
- d. If the Compare (from Step 2.a) is equal to or exceeds the Rate Alarm value (from Step 1), set an alarm bit.

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Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (52) 2 663 0600, Fax: (52) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846