GE RX3i PacSystem Series Service Manual

IC694ALG221

1. Description

The IC694ALG221 is a PACSYstem RX3i Programmable Automation Controller (PAC), analog input module. This module is formerly manufactured by GE Intelligent Platforms (GE IP), now under Emerson Automation. This module features Four (4) analog inputs individually configurable to receive current signals specifically, 0-20 mA and 4-20 mA with a resolution of 4 µA at 4-20mA and 5 µA at 0-20 mA.

3. Product Information

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Manufacturer Emerson Automation

Series PACSystem RX3i

Product Description Analog input module

Manufacturer GE Intelligent Platform (GE IP); Emerson Automation (Current)

Part Number IC694ALG221

No of Channels Four (4) input channels

Series PACSystem RX3i

Product Type Input Module

Nominal Input signal 0-20 mA; 4-20 mA

Part Number IC694ALG221

Module Type Analog

Channel update rate 2 ms

Product Description Analog input module

Number of inputs 4

Digital Resolution 12 bit

Analog input signal 0-20 mA; 4-20 mA

LED 1 Green "Module OK" LED

Analog resolution 5 µA/bit (0-20 mA); 4 µA/bit (4-20 mA)

Analog output resolution 4 µA at 4-20mA; 5 µA at 0-20 mA

Hot-Swapping Not Supported

Accuracy: 0.1 % full scale

Response times 2 milliseconds (all four channels)

Compatible CPUs All RX3i PacSystem CPUs

Input filter response 325 Hz

Calibration: Factory calibrated to 4 µA per count

Input Current 0 to 20 milliamps or 4 to 20 milliamps

Current draw 25 mA @ 5 VDC; 100 mA @ 24 VDC Isolated

Absolute Accuracy 0.1% full scale + 0.1% reading

Input impedance 250 ohms

Linearity < 1 Least Significant Bit

Module connector type Terminal Block (20 screws), included with module.

Input Filter Response 325 Hz

Product Lifecycle Status Active

Internal Power Consumption 100 mA from the isolated +24 VDC supply 25 mA from +5 VDC bus on the backplane

Common Mode Voltage 200 volts

The IC694ALG221 is a component module of the PACSystem RX3i Programmable Automation Controller (PAC). This module features Four (4) analog input channels designed to accept current input signals such as 0-20 mA and 4-20 mA electrical standards. This module is used to interface analog measuring instruments such as transmitters, signal splitters, isolators, converters, and similar devices for monitoring and implementing closed-loop control of analog systems. The IC694ALG221 has a built-in Analog to Digital Converter (DAC) circuit that converts analog data to a digital format readable by the host controllers for processing and, conditioning and integration to the user logic. The ADC output has a resolution of 4 µA at 4-20mA and 5 µA at 0-20 mA with absolute accuracy of 0.1% full scale + 0.1% reading. Each of the input channels has an update rate of 2 ms and is factory calibrated for 4 µA per count. This module has a common mode voltage of 200 Volts and linearity of < 1 Least Significant Bit (LSB). It has field-to-backplane (optical) isolation and to frame ground isolation of 250 VAC for continuous voltage and 1500 VAC for a duration of 1 minute. The module’s input filter response is 325 Hz while the input impedance is 250 Ohms. This module has internal power consumption rated at 100 mA for the isolated 24 VDC power supply and 25 mA from the +5VDC bus on the PLC backplane. This module comes with a MODULE OK LED, providing the user indicates that the module is actively supplied with power.

The GE Fanuc IC694ALG221 input module is an analog current input module that has 4 input points. It is compatible with every CPU manufactured in the GE RX3i PacSystems product line. This module is hot-swappable, which means that it can be either inserted into or removed from a GE backplane that is powered on. Attempting to hot-swap the IC694ALG221 input module may result in component damage and user injury. The GE Fanuc RX3i PacSystems IC694ALG221 4-point analog draw current from the backplane. At 5 Volts DC, this analog input module can support a load of 25 milliamps or 0.125 Watts. At 24 Volts DC isolated voltage, this input module can support a load of 100 milliamps or 2.4 Watts. The IC694ALG221 input module can also operate with 2 different input current ranges which are 4 to 20 milliamps and 0 to 20 milliamps. This module comes with a range jumper for input channels 1 and 2, and another range jumper for input channels 3 and 4. Every channel has a conversion speed of half a millisecond. There is 1 green LED on the module known as the Module OK LED that lights up when the module is powered on.