GE RX3i PacSystem Series Service Manual

IC694ALG222

1. Description

The IC694ALG222 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. It supports Eight (8) differential voltage analog input channels and Sixteen (16) single-ended voltage analog inputs. Each channel is individually configurable to receive signals specifically, 0 to 10 V (unipolar) and -10 to +10 V (bipolar) with resolution 2.5 mV (1 LSB = 2.5 mV) at 0-10VDC and 5

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**PACSystem RX3i**
Manufacturer	**Emerson Automation**
Manufacturer	**GE Intelligent Platform (GE IP); Emerson Automation (Current)**
Part	**Number IC694ALG222**
Product	**Description Analog input module**
Series	**PACSystem RX3i**
Product	**Type Analog input voltage module**
No	**of Channels Single-ended: Sixteen (16) input channels Differential: Eight (8) input channels**
Part	**Number IC694ALG222**
Input	**Channels 16**
Nominal	**Input signal -10 V to ±10 V and 0 to 10 V**
Product	**Description Analog input module**
Input	**Voltage Range 0 to 10 Volts, -10 to +10 Volts**
Channel	**update rate 13 ms**
Wiring	**configuration Single-ended / Differential**
Calibration	**at 0 to 10 Volts 2.5 millivolts per count**
Digital	**Resolution 12 bit**
Analog	**input signal 0 to 10 V (unipolar); -10 to +10 V (bipolar)**
Calibration	**at -10 to 10 Volts 5 millivolts per count**
Analog	**resolution 5 mV/20 µA/bit for ±10 V signal and 5 mV/20 µA/bit for 0-10 V**
Resolution	**2.5 mV (1 LSB = 2.5 mV) at 0-10VDC; 5 mV (1 LSB = 5 mV) at -10V to +10V**
Power	**Requir**

3. Product Information

The IC694ALG222 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. It supports Eight (8) differential voltage analog input channels and Sixteen (16) single-ended voltage analog inputs. Each channel is individually configurable to receive signals specifically, 0 to 10 V (unipolar) and -10 to +10 V (bipolar) with resolution 2.5 mV (1 LSB = 2.5 mV) at 0-10VDC and 5 mV (1 LSB = 5 mV) at -10V to +10V.

Technical specifications for IC694ALG222

Brand GE Fanuc

Series PACSystem RX3i

Manufacturer Emerson Automation

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

Part Number IC694ALG222

Product Description Analog input module

Series PACSystem RX3i

Product Type Analog input voltage module

No of Channels Single-ended: Sixteen (16) input channels Differential: Eight (8) input channels

Part Number IC694ALG222

Input Channels 16

Nominal Input signal -10 V to ±10 V and 0 to 10 V

Product Description Analog input module

Input Voltage Range 0 to 10 Volts, -10 to +10 Volts

Channel update rate 13 ms

Wiring configuration Single-ended / Differential

Calibration at 0 to 10 Volts 2.5 millivolts per count

Digital Resolution 12 bit

Analog input signal 0 to 10 V (unipolar); -10 to +10 V (bipolar)

Calibration at -10 to 10 Volts 5 millivolts per count

Analog resolution 5 mV/20 µA/bit for ±10 V signal and 5 mV/20 µA/bit for 0-10 V

Resolution 2.5 mV (1 LSB = 2.5 mV) at 0-10VDC; 5 mV (1 LSB = 5 mV) at -10V to +10V

Power Requirement at 5 Volts DC 112 milliamps

Accuracy: 0.25% at 25ºC (77ºF)

Update rate: 6 milliseconds (all 16 single-ended channels); 3 milliseconds (all 8 differential channels)

Power Requirement at 24 Volts DC 41 milliamps

Input filter response 200 Hz

Calibration: 2.5 mV per count on 0 V to +10 V (unipolar) range; +/10.25% of full scale @ 25°C (77°F); +/-0.5% of full scale over specified operating temperature range

Operating Temperature 0 to 60 degrees Celsius

Current draw 112 mA @ 5 VDC; 4150 mA @ 24 VDC (user supplied)

Linearity < 1 Least Significant Bit

Input impedance 250 ohms

Input Filter Response 41 Hz (single-ended mode); 82 Hz (differential mode)

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

Internal Power Consumption 112 mA from the isolated +24 VDC supply 41 mA from +5 VDC bus on the backplane

Product Lifecycle Status Active

Isolation, Field to Backplane (optical) and to frame ground 250 VAC continuous; 1500 VAC for 1 minute

The IC694ALG222 is an input module that belongs to the PACSystem RX3i platform formerly by GE Intelligent Platforms now under Emerson Automation. The IC694ALG222 supports both single-ended and differential wiring configuration which dictates the number of available input channels to the device. Specifically, up to Eight (8) voltage input channels when differential wiring method is used and Sixteen (16) voltage input channels when single-ended wiring is configured. Single-ended wiring refers to the measurement method in reference to the ground wire. The signal lead is terminated to the input terminal of the module while the common is connected to the ground terminal. This configuration is less resistant to Electro-Magnetic Interference (EMI) thus, should not be used in noisy environments or old wiring systems without wire re-harnessing. With differential wiring, Two (2) signal leads are used to measure the target variable. The difference between the wire function as a reference to the actual measurement and provides increased resistance to EMI thus, this wiring method is recommended in critical measurements. This analog input module accepts voltage signals specifically, 0 to 10 V (unipolar) and -10 to +10 V (bipolar) with resolution 2.5 mV (1 LSB = 2.5 mV) at 0-10VDC and 5 mV (1 LSB = 5 mV) at -10V to +10V. It exhibits an update rate of 6 milliseconds on all 16 single-ended channels and 3 milliseconds on all 8 differential channels. This module has measurement accuracy rated at +/10.25% of full scale @ 25°C (77°F) and +/-0.5% of full scale over a specified operating temperature range.

The GE Fanuc IC694ALG222 input module is a 16-channel analog input module. The IC694ALG222 input module is an input module that supports 16 single-ended input channels or 8 differential input channels. Each input channel on the IC694ALG222 input module can be configured for 0 to 10 Volts or -10 to +10 Volts. For the 0 to 10 Volts input range, the factory calibration is 2.5 millivolts per count, and for the -10 to 10 Volts range, the factory calibration is 5 millivolts per count. The update rate is 6 milliseconds for single-ended channels and 3 milliseconds for differential channels. The field to backplane isolation voltage is 250 Volts AC continuous and 1500 Volts AC for 1 minute duration. The rated cross-channel rejection is greater than 80 decibels. In single-ended mode, the rated input impedance of the IC694ALG222 input module is greater than 500 kiloohms. The internal power consumption for the IC694ALG222 input module is a maximum of 112 milliamps at 5 Volts DC and a maximum of 41 milliamps from the backplane at 24 Volts DC isolated voltage. When the IC694ALG222 input module is installed in an RX3i backplane, an external power source rated for 24 Volts DC is required to power up the module. An external power source needs to be connected to the TB1 connector located on the left side of the rack backplane. When the IC694ALG222 input module is installed in an expansion rack, then the power supply of the backplane

provides the 24 Volts DC supply for the module. A Module Ok ; LED displays module's status during powerup. The Module P/S LED lights up when the internal 5 Volts DC power supply is above the minimum threshold.