GE Field Control Series Service Manual

IC670ALG230

1. Description

The IC670ALG230 is an 8-Point Analog Current source input module from the Field control series of GE Fanuc. This module has Eight (8) single-ended input channels configurable for 0-20 mA / 4-20 mA with digital resolution of 12 bits and analog resolution of 5.0 µAmps. It has typical conversion time of 60 Microseconds per channel. Technical specifications for IC670ALG230

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Field Control**
Manufacturer	**GE Fanuc**
Part	**Number IC670ALG230**
Part	**Number IC670ALG230**
Series	**Field I/O control**
No.	**of channels Eight (8)**
Description	**Input module**
Product	**Description Analog Current / Voltage Source Input Module**
Wiring	**configuration Single-ended**
Channel	**8**
No	**of Channels Eight (8), Single-ended inputs**
Input	**signal, nominal 0-20 mA**
Isolation	**to Case 250 Volts AC continuous**
Input	**Range 0-20 mA**
Input	**signal, range 0.0-25 mA mA**
Input	**Impedance 2.87 kiloohms**
Isolation	**1500 VAC for 1 minute, 250 VAC continuous**
Analog	**resolution 5.0 µA**
On-state	**Voltage 15-30 Volts DC**
Conversion	**time @ 1MHz clock 60 Microseconds per channel, typical**
Conversion	**resolution 12 bits**
Off-state	**Voltage 0-5 Volts DC**
Digital	**Resolution 12 bits, typical**
External	**Power supply 18-30 VDC**
Current	**from BIU 100 milliamperes**
Analog	**resolution 5.0 microAmps**
Nominal	**Supply voltage 24 VDC**
Input	**current span 0.1 mA minimum, 20mA maximum**
Current	**input Module only: 50 mA, typical: Including Loop: 2**

3. Product Information

The IC670ALG230 is an 8-Point Analog Current source input module from the Field control series of GE Fanuc. This module has Eight (8) single-ended input channels configurable for 0-20 mA / 4-20 mA with digital resolution of 12 bits and analog resolution of 5.0 µAmps. It has typical conversion time of 60 Microseconds per channel. Technical specifications for IC670ALG230

Brand GE Fanuc

Series Field Control

Manufacturer GE Fanuc

Part Number IC670ALG230

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Series Field I/O control

No. of channels Eight (8)

Description Input module

Product Description Analog Current / Voltage Source Input Module

Wiring configuration Single-ended

Channel 8

No of Channels Eight (8), Single-ended inputs

Input signal, nominal 0-20 mA

Isolation to Case 250 Volts AC continuous

Input Range 0-20 mA

Input signal, range 0.0-25 mA mA

Input Impedance 2.87 kiloohms

Isolation 1500 VAC for 1 minute, 250 VAC continuous

Analog resolution 5.0 µA

On-state Voltage 15-30 Volts DC

Conversion time @ 1MHz clock 60 Microseconds per channel, typical

Conversion resolution 12 bits

Off-state Voltage 0-5 Volts DC

Digital Resolution 12 bits, typical

External Power supply 18-30 VDC

Current from BIU 100 milliamperes

Analog resolution 5.0 microAmps

Nominal Supply voltage 24 VDC

Input current span 0.1 mA minimum, 20mA maximum

Current input Module only: 50 mA, typical: Including Loop: 210 mA, maximum

Maximum error at 25 degrees C +/– .05% full scale, 0.1< Input<20mA

Current Drawn from BIU power supply 51 mA, maximum

Non-linearity +/– .025% of full scale

Ground to Logic Isolation 1500 VAC for 1 minute; 250 VAC, continuous

Input Impedance 249.75 to 250.25 Ohms

Input grouping Single group

Power Supply 18-30 VDC

Product Lifecycle Status Discontinued/Obsolete

Description

The IC670ALG230 is an analog input module from GE Fanuc. It specifically belongs to the Field I/O control product family of expansion modules that operate with a compatible Bus Interface Unit (BIU). This module primarily features Eight (8) Analog input channels that accepts 0-20 mA and 4-20 mA analog input signals. This module is mainly used for interfacing of field signal transmitters of many types, outputs of panel meters, data loggers, signal splitters, Variable Frequency Drives (VFD) and similar devices. The IC670ALG230 has analog resolution of 5.0 µA while the digital resolution is 12 bits, typical. It accepts a minimum input current of 0.1 mA and maximum of 20 mA. It is built with internal protection features such as open wire detection and over-range fault detection. The IC670ALG230 has built-in analog to digital converter (ADC) circuit which converts the received analog signal to digital format for processing of the host CPU. The ADC circuit has a conversion time of 60 µs per channel at 1 MHz module clock. It also has a 1st order RC input filter with typical transition capacity of 160 Hz. This module has non-linearity of +/- 25% of Full Scale and temperature coefficients of +/–.002% of value per degree C, typical and +/–.005% of value per degree C, maximum. This module comes with a single group of input channels and supports single-ended wiring configuration. Each channel has ground and logic isolation rated 1500 VAC for 1 minute and 250 VAC, continuous. It has a rated current draw of 51 mA, maximum from the BIU power supply.

The IC670ALG230 input module is an 8-channel input module manufactured by GE Fanuc. It can run with a common power supply. It is powered with a 24 Volts power supply that also powers the bus interface unit. In case of isolation, a separate power supply is used. The front of the module has LED indicators that show the operation of backplane and the field power. The input module is used to drive different isolated transducers and inputs by using a local power supply. No isolation is present between individual points that are in a group. The isolation to case rating is 250 Volts AC for a continuous time period, and isolation to ground is 1500 Volts AC for a time period of 1 minute. The input impedance of the module is 2.87 kiloohms. The on-state voltage is between 15 Volts DC and 30 Volts DC, and the off-state voltage is between 0 and 5 Volts DC. The response time for powering the IC670ALG230 input module on ranges between 25 and 60 us, and the response time for powering it off ranges between 100 and 150 us. The module draws 100 milliamps of current from the bus interface unit. Output keying is available in this module for mixed inputs and outputs. The input module should be properly grounded for reductions in noise immunity, signal commons, and reference points. The loop-powered transmitters in the module should use the same power supply. The IC670ALG230 input module has an open enclosure design and it

is not waterproof. The temperature should be set between 0 and 60 degrees Celsius in a humid environment with 95% maximum non-condensing humidity.