GE Series 90-70 Series Service Manual

IC697ALG230

1. Description

The IC697ALG230 is a Series 90-70 PLC, base converter module. This module is formerly manufactured by GE Fanuc Automation, now under Emerson Automation. It is used with IC697ALG440 current expander and IC697ALG441 voltage expander module. This base converter module features Eight (8) differential inputs individually configurable for voltage or current signals

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Series 90-70**
Manufacturer	**GE Fanuc (Formerly); Emerson Automation (Current)**
No	**of Channels Eight (8) analog input**
Part	**Number IC697ALG230**
Series	**Series 90-70**
Analog	**input signal 4-20 mA; -10VDC / +10 VDC**
Product	**Description Base converter module**
Part	**Number IC697ALG230**
Input	**ranges Voltage: -10 volts to +10 volts (default) Current: 0.0 mA to 22.5 mA (4 to 20 mA default)**
No.	**of Inputs 8**
Maximum	**no. of inputs 120**
Analog	**output resolution 16 bits**
Voltage	**Input Range -10 to +10 Volts**
Wiring	**configuration Differential wiring**
Response	**times 5.0% 30 milliseconds; 1.0% 42 milliseconds; 0.5% 51 milliseconds; 0.1% 67 milliseconds**
Current	**Input Range 4 to 20 milliamps**
Voltage	**Input Range -10 to +10 Volts**
Calibration:	**Base Converter Voltage: ±.01% of full scale, ±.02% of value Base Converter Current: ±.05% of full scale, ±.1% of value**
Update	**Rate 2.4 ms to 2.8 ms**
Current	**Input Range 4 to 20 milliamps**
Linearity	**±.02% of full scale over entire negative to positive range**
Calibra	

3. Product Information

The IC697ALG230 is a Series 90-70 PLC, base converter module. This module is formerly manufactured by GE Fanuc Automation, now under Emerson Automation. It is used with IC697ALG440 current expander and IC697ALG441 voltage expander module. This base converter module features Eight (8) differential inputs individually configurable for voltage or current signals

Technical specifications for IC697ALG230

Brand GE Fanuc

Series Series 90-70

Manufacturer GE Fanuc (Formerly); Emerson Automation (Current)

No of Channels Eight (8) analog input

Part Number IC697ALG230

Series Series 90-70

Analog input signal 4-20 mA; -10VDC / +10 VDC

Product Description Base converter module

Part Number IC697ALG230

Input ranges Voltage: –10 volts to +10 volts (default) Current: 0.0 mA to 22.5 mA (4 to 20 mA default)

No. of Inputs 8

Maximum no. of inputs 120

Analog output resolution 16 bits

Voltage Input Range -10 to +10 Volts

Wiring configuration Differential wiring

Response times 5.0% 30 milliseconds; 1.0% 42 milliseconds; 0.5% 51 milliseconds; 0.1% 67 milliseconds

Current Input Range 4 to 20 milliamps

Voltage Input Range -10 to +10 Volts

Calibration: Base Converter Voltage: ±.01% of full scale, ±.02% of value Base Converter Current: ±.05% of full scale, ±.1% of value

Update Rate 2.4 ms to 2.8 ms

Current Input Range 4 to 20 milliamps

Linearity ±.02% of full scale over entire negative to positive range

Calibration Factory set at 10 Volts +/- 2 mV

Update Rate 2.4 ms to 2.8 ms

Temperature Coefficient ±5 PPM per °C typical ±15 PPM per °C maximum, voltage ±30 PPM per °C maximum, current

Voltage Accuracy +/- 0.01% of full scale, +/- 0.02% of value

Calibration Factory set at 10 Volts +/- 2 mV

Compatible expander modules IC697ALG440 Voltage Expander Module; IC697ALG441Current expander modules

Current Accuracy +/- 0.05% of full scale, +/- 0.1% of value

No. of terminals 40 pins

Power Requirement 0.8 Amps (4 watts) at +5 Volts

Product Lifecycle Status Discontinued

The IC697ALG230 is a base converter module from the Series 90-70 Programmable Logic Controller (PLC) platform that is formerly manufactured by GE Fanuc Automation, currently under Emerson Automation. This module is part of a high-level analog system that comes with Eight (8) differential inputs individually configurable for voltage or current signals particularly, 4-20 mA current output signal and -10VDC / +10 VDC voltage output signals with a channel resolution of 16-bits. The IC697ALG230 supports the installation of expander modules with catalog numbers IC697ALG440 Voltage Expander Module and IC697ALG441Current expander modules. These expander modules enhance the capability of the base converter module, enabling the accommodation of up to Sixteen (16) channels of the same signal types. The IC697ALG230 base converter module has a built-in Analog-Digital Converter (ADC) circuit that converts the received digital data to analog equivalent with a resolution of 14-bits. Individual low pass filters are installed to each of the module's channels as well as an opto-isolation circuit that provides module isolation to the PLC backplane. The IC697ALG230 supports differential wiring configuration. With differential wiring, the input signal is measured by the difference of Two (2) reference wires. This configuration has greater resistance against Electromagnetic Interference (EMI) and is most applicable in critical systems where accurate measurement is a consistent necessity. The base converter module comes with Forty (40) terminals. These terminals are mounted to a removable base which can be easily removed by a jackscrew driver. A door insert is provided to the module allowing users to write input short descriptions for easy identification.

The GE Fanuc IC697ALG230 Base Converter Module is designed to be used with GE Series 90-70 expander modules in a high-level analog input system. It comes with 8 differential inputs that can be configured for voltage or current individually. It also offers individual user scaling for each channel. The IC697ALG230 Base Converter Module has 2.4 milliseconds to 2.8 milliseconds of fast update rate times. It has an expansion port that is used to connect the voltage or current expander module. In order to increase the number of inputs, the module is capable of handling up to 7 expander modules. The IC697ALG230 Base Converter Module uses an efficient input sampling technique with a fast update rate. It also has a serial communication port that can be used to control the expanders via the processor of the base converter module. After connecting the maximum number of expander modules, the system can have a maximum of 120 inputs. There is a removable 40-terminal connector block on the front face of the module which can be used to connect user devices. The analog-to-digital converter of the IC697ALG230 Base Converter Module connects with the analog inputs of the expander module through a switching circuit. It has CPU alarm interrupts and CPU fault reporting facilities on a per-channel basis. Its MS-DOS Windows configuration software provides the facilities to program each input according to the needs of an application. The configuration software package also offers the data commands needed to modify some of the configuration parameters of the base converter module with the ladder logic.