GE Series 90-70 Series Service Manual

IC697ALG320

1. Description

The IC697ALG320 is a Series 90-70 PLC, analog output module providing 0-20 mA / 4-20 mA current output signal and -10VDC / +10 VDC voltage output signals. This module is formerly manufactured by GE Fanuc Automation, now under Emerson Automation. The module has Four (4) analog output channels with a resolution of 16-bit resolution with 14bit monotonicity.

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Series 90-70**
Manufacturer	**GE Fanuc (Formerly); Emerson Automation (Current)**
Product	**Description Analog output module**
Part	**Number IC697ALG320**
Series	**Series 90-70**
No	**of Channels Four (4) output channels**
Product	**Description Analog Output Module**
Part	**Number IC697ALG320**
Analog	**output signal 0-20 mA / 4-20 mA; -10VDC / +10 VDC**
No.	**of Outputs 4 Outputs**
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Output	**ranges Output Ranges: Voltage: -10 volts to +10 volts (default) Current: 0.0 mA to 22.5 mA (4 to 20 mA default)**
Voltage	**Output Range -10 to +10 Volts**
Voltage	**Output Range -10 to +10 Volts**
Analog	**output resolution 16 bit with 14-bit monotonicity 312.5 microvolts per LSB step on voltage**
Current	**Output Range 0 to 22.2 milliamps**
Current	**Output Range 0 to 22.2 milliamps**
Conversion	**rate 2.0 ms**
Conversion	**Rate 2 ms**
Max.	**number of module per rack Seven (7) IC697ALG320 modules**
Calibration:	**Calibrated at factory with calibration data stored in EEPROM memory**
Resolution	**16 bits with 14-bit monotonicity**

3. Product Information

The IC697ALG320 is a Series 90-70 PLC, analog output module providing 0-20 mA / 4-20 mA current output signal and -10VDC / +10 VDC voltage output signals. This module is formerly manufactured by GE Fanuc Automation, now under Emerson Automation. The module has Four (4) analog output channels with a resolution of 16-bit resolution with 14bit monotonicity.

Technical specifications for IC697ALG320

Brand GE Fanuc

Series Series 90-70

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

Product Description Analog output module

Part Number IC697ALG320

Series Series 90-70

No of Channels Four (4) output channels

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Voltage Output Range -10 to +10 Volts

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Analog output resolution 16 bit with 14-bit monotonicity 312.5 microvolts per LSB step on voltage

Current Output Range 0 to 22.2 milliamps

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Conversion rate 2.0 ms

Conversion Rate 2 ms

Max. number of module per rack Seven (7) IC697ALG320 modules

Calibration: Calibrated at factory with calibration data stored in EEPROM memory

Resolution 16 bits with 14-bit monotonicity

Max, no. of Output channels 252 channels

Analog output accuracy: Voltage: Factory set at full scale = 10 volts Ç2.5 millivolts. Current: Factory set at 4.0 mA Ç5 µA and 20 mA Ç 5 µA. Full Scale, with 24.0 VDC field side voltage.

Calibration Factory set at 10 Volts +/- 2 mV

Current draw 1.66A (8.3 watts) at 5VDC maximum 150 mA of DC user power must be supplied by the user for the current outputs

Power Requirement 1.66 Amps (8.3 watts) at +5 Volts

Product Lifecycle Discontinued / Obsolete

External Supply Voltage Range 10 to 30 VDC (24 VDC typical)

Module width 1-slot

Weight 0.84 kilograms

Product Lifecycle Status Discontinued

The IC697ALG320 is a high-level analog output module from the series 90-70 Programmable Logic Controller (PLC) that is formerly manufactured by GE Fanuc, not by Emerson Automation. This module is designed to occupy a single slot of a 5-slot or 10-slot baseplate and draws current from the backplane amounting to a maximum of 1.66A (8.3 Watts) at 5VDC and 150 mA from the user power supply to enable current output. The IC697ALG320 comes with Four (4) individually configured output channels that generated voltage and current outputs specifically, 0-20 mA / 4-20 mA current output signal and -10VDC / +10 VDC voltage output signals. It has built-in digital to analog converter (DAC) circuit with a resolution of 16-bits with monotonicity specifically, 312.5 microvolts per LSB step on voltage and 0.5 microamps per LSB step on 4 to 20 mA. It has a maximum sequential conversion rate of the conversion rate of 2.0 ms for all analog output channels. This module is factory calibrated with calibration data stored with the EEPROM of the module. It is also provided with a continuous short circuit without harm with the output automatically returning to normal state once the fault is addressed. Analog output loading specifications include a minimum of 2000 ms for resistive loads and a maximum of 1000 picofarads for capacitive load when configured for Voltage operation. For current operation, output loading specifications are up to 700 ohms for resistive loads; maximum of 1.0 microfarad for capacitive loads, and 250 miliHenry for inductive loads. The module’s accuracy is affected by a specific temperature coefficient with 25 PPM per Degree Celsius for Voltage and 50 ppm per degree Celsius for the current operation.

The IC697ALG320 Analog Output Module is a 4-channel analog output module made by GE Fanuc. The 4 outputs of the module can be configured for voltage or current operation individually. It provides bipolar or unipolar outputs with 16 bits of resolution with 14 bits of monotonicity. The update rate of the outputs is 2 milliseconds. It consumes a maximum of 1.66 Amps (8.3 Watts) of power at +5 Volts and the recommended operating voltage of this output module is 24 Volts DC. Some of the features of this module include a fast update rate, individually configurable output channels with individual user scaling, factory calibration, and isolated output circuitry. The IC697ALG320 Analog Output Module also offers diagnostic facilities such over range and under range detection, open-wire detection, configuration error detection, and module health detection. The GE IC697ALG320 Analog Output Module is designed for use with the GE Series 90-70 programmable logic controllers. The basic function of the module is to receive digital data from the control processing unit and perform a digital to analog conversion in order to output an analog signal. It ensures that the output is protected against overvoltage and transient conditions. It saves the calibration data in its non-volatile EEPROM. The users can connect multiple IC697ALG320 Output Modules to archive up to 252 output channels. It is recommended to connect a maximum of 7 modules in a CPU rack and a maximum of 8 modules in the expansion rack. The configuration software can be installed in a PC to perform output range selection, user scaling, and fault reporting. The user scaling provides the facilities to easily convert the output data into different units according to the needs of specific controllers and applications.