GE RX3i PacSystem Series Service Manual

IC695ALG728

1. Description

The IC695ALG728 is an analog output module that is part of the PACSystem RX3i platform, currently under Emerson Automation, formerly produced by GE Intelligent Platforms (GE IP). This module has Eight (8) non-isolated output channels configurable as voltage and current. It generates +/-10 VDC, 0-10 VDC and 0-20 mA and 4-20 mA output signals with resolution of 14.9 bits for voltage and 15.9 bits at 0-20 mA and 15.6 bits at 4-20 mA. This module supports Highway Addressable Remote Transducer (HART)

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**PACSystem RX3i**
Manufacturer	**Emerson Automation**
Manufacturer	**GE Intelligent Platforms (Former); Emerson Automation (Current)**
Part	**Number IC695ALG728**
Product	**Description Non-isolated analog output module**
Part	**Number IC695ALG728**
Number	**of Channels 8**
No	**of Channels Eight (8) non-isolated**
Product	**Description Analog output module**
Voltage	**Range 0 to +10 Volts, -10 to +10 Volts**
Output	**signals, Current 0-20 mA; 4-20 mA**
Output	**signals: +/-10 VDC, 0-10 VDC; 0-20 mA, 4-20 mA**
Current	**Range 0 to 20 milliamps, 4 to 20 milliamps**
Output	**signals, Voltage +/-10VDC; 0-10 VDC;**
Resolution:	**14.9 bits for voltage; 15.9 bits at 0-20 mA; 15.6 bits at 4-20 mA**
Backplane	**Power Requirements 380 milliamps (maximum) at 3.3 Volts (with HART enabled)**
Module	**resolution +/-10V: 15.9 bits, 0 to 10V: 14.9 bits, 0 to 20mA: 15.9 bits; 4 to 20mA : 15.6 bits**
HART	**Protocol: Version 5.0 supported**
Isolation	**Voltage (Field to Backplane) 2550 Volts DC for 1 second**
Data	**Format Floating point IEEE 32 bit; 16-bit**

3. Product Information

The IC695ALG728 is an analog output module that is part of the PACSystem RX3i platform, currently under Emerson Automation, formerly produced by GE Intelligent Platforms (GE IP). This module has Eight (8) non-isolated output channels configurable as voltage and current. It generates +/-10 VDC, 0-10 VDC and 0-20 mA and 4-20 mA output signals with resolution of 14.9 bits for voltage and 15.9 bits at 0-20 mA and 15.6 bits at 4-20 mA. This module supports Highway Addressable Remote Transducer (HART) protocol version 5.0.

Technical specifications for IC695ALG728

Brand GE Fanuc

Series PACSystem RX3i

Manufacturer Emerson Automation

Manufacturer GE Intelligent Platforms (Former); Emerson Automation (Current)

Part Number IC695ALG728

Product Description Non-isolated analog output module

Part Number IC695ALG728

Number of Channels 8

No of Channels Eight (8) non-isolated

Product Description Analog output module

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

Output signals, Current 0-20 mA; 4-20 mA

Output signals: +/-10 VDC, 0-10 VDC; 0-20 mA, 4-20 mA

Current Range 0 to 20 milliamps, 4 to 20 milliamps

Output signals, Voltage +/-10VDC; 0-10 VDC;

Resolution: 14.9 bits for voltage; 15.9 bits at 0-20 mA; 15.6 bits at 4-20 mA

Backplane Power Requirements 380 milliamps (maximum) at 3.3 Volts (with HART enabled)

Module resolution +/-10V: 15.9 bits, 0 to 10V: 14.9 bits, 0 to 20mA: 15.9 bits; 4 to 20mA : 15.6 bits

HART Protocol: Version 5.0 supported

Isolation Voltage (Field to Backplane) 2550 Volts DC for 1 second

Data Format Floating point IEEE 32 bit; 16-bit integer in a 32-bit field

No. of HART Modems Two (2)

Maximum Output Load 850 Ohms

HART Protocol Supported

No. of output per HART modem Four (4)

Update Rate 8 milliseconds

Analog Update Rate 8 milliseconds (approximate, all eight channels)

Output Data Format Configurable as floating point IEEE 32 bit or 16-bit integer in a 32-bit field

Power Consumption 375 milliamps at +3.3 Volts DC/315 milliamps at +24 Volts DC (isolated)

External Power Supply: 19.2V to 30V (24V nominal)

Analog update rate 16mS with HART (approximate, all eight channels) 8mS without HART (approximate, all eight channels)

Maximum Power Dissipation Within Module 7.25 Watts

External Current input: 190 mA

Output voltage protection -30V for 60 seconds, +30V for one hour (for Current output only)

External Power Supply +19.2 Volts to +30 Volts DC

Current draw 340 mA maximum at 3.3V

Calibrated accuracy 0.15% of full scale at 25°C; 0.30% of full scale at 60°C

Output Settling Time 2 milliseconds, 0 to 95% (voltage output)

Power Dissipation 7.25 Watts maximum (Vuser=24V)

External Power Supply Voltage Range: +19.2V to +30VDC

Calibrated Accuracy Accurate to within 0.15% of full scale at 25degrees C Accurate to within 0. 25% of full scale at 60degrees C

Maximum current required 250mA

The IC695ALG728 is an analog output module that belongs to the PACSystems RX3i mid-range Programmable Automation Controller (PAC) series that is manufactured by Emerson Automation, formerly by GE Intelligent Platforms (GE IP). This module is capable of providing voltage and current signals and features capability of being configured via Highway Addressable Remote Transducer (HART) protocol as it supports HART version 5.0. The IC695ALG728 features Eight (8) non-isolated output channels configurable for +/-10 VDC, 0-10 VDC and 0-20 mA and 4-20 mA output signals with specific resolutions of 14.9 bits for voltage and 15.9 bits at 0-20 mA and 15.6 bits at 4-20 mA. Each channel features an update time of 16 ms with HART communication and 8 ms when HART is not used. The module's output data format is configurable as floating-point IEEE 32-bit or 16-bit integer using a 32-bit register. The module's calibrated accuracy is 0.15% of full scale at 25°C or 0.30% of full scale when operating at 60°C. Furthermore, the output settling time is 2 ms for voltage configuration; 70 ms with HART and 23 ms without HART, for current signals. The IC695ALG728 requires an external power supply to operate. Appropriate power supply to this module must provide 19.2 - 30.0 VDC and maximum supply current of 250 mA. This module is installed to any available slot of an RX3i Rack and may be located to the local CPU rack or to a distributed I/O rack. Other features of this module includes clamping and alarm limits, latching of alarms and configurable output bias among other features.

The IC695ALG728 module by GE Fanuc is part of the RX3i PACSystems series and it is equipped with output channels that can be fully configured for voltage operation or for current operation. In addition to that, the output module has an integrated communication feature with the HART 5.0 software. This means that the module can be prepared and programmed for specific operation through software and it does not require jumpers for setup. The features that the GE IC695ALG728 output module include the ability to enable or disable all the channels, alarm latching, configurable limits or settings for the alarms, advanced handling of errors and faults, automatic calibration, and many more. The IC695ALG728 module

includes 8 non-isolated analog voltage/current outputs that are assigned to 2 HART modems. The modems are parts of the module and all the channels that are used for this communication feature have an operating current range of 4 to 20 milliamps. The featured voltage range of the IC695ALG728 module is 0 to +10 Volts or -10 to +10 Volts. The data format of the output is presented in the form of 16-bit or 32-bit values and the HART channels are updated within 2 seconds if 2 HART devices are used. The module has an accuracy of up to 0.3% at a temperature of 60 degrees Celsius and it has a voltage output settling time of 2 milliseconds within the range of 0 to 95%. The settling time for the current output is from 23 to 70 milliseconds, depending on if a HART modem is used or not. The IC695ALG728 module has a backplane power rating of 380 milliamps when the module is connected to a 3.3 Volts power source and it has an update time of 8 milliseconds.