

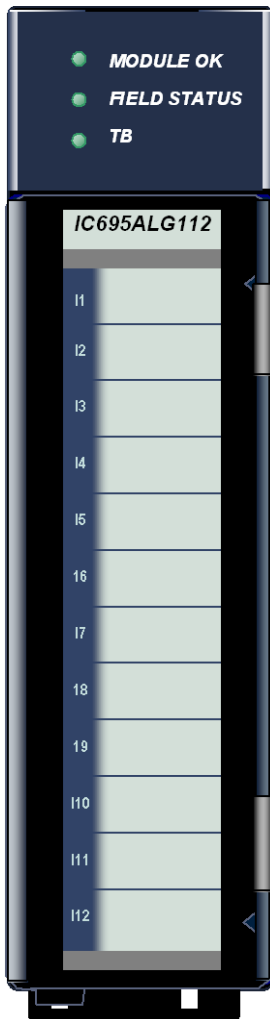
# GE Fanuc IC695ALG112

<http://www.pdfsupply.com/automation/ge-fanuc/rx3i-pacsystem/IC695ALG112>

## Rx3i PacSystem

Isolated Analog module, 12 individual isolated channels IC695A  
IC695AL IC695ALG

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**Isolated Analog Voltage/Current Input** module IC695ALG106 provides 6 isolated input channels. **Isolated Analog Voltage/Current Input** module IC695ALG112, shown at left, provides 12 input channels.

Analog input channels can be configured for these ranges:

- Current: 0 to 20mA, 4 to 20mA, +/- 20mA
- Voltage: +/- 10V, 0 to 10V, +/- 5V, 0 to 5V, 1 to 5V

These modules must be located in an RX3i Universal Backplane. Modules IC695ALG106 and IC695ALG112 require an RX3i CPU with firmware version 5.0 or later. Machine Edition Logic Developer-PLC Version 5.6 Service Pack 11 or later must be used for configuration.

These modules can be used with a Box-style (IC694TBB032), Extended Box-style (IC694TBB132), Spring-style (IC694TBS032), or Extended Spring-style (IC694TBS132) Terminal Block. Extended terminal blocks provide the extra shroud depth needed for shielded wiring. See the *PACSystems RX3i System Manual*, GFK-2314 for more information about Terminal Blocks. Terminal Blocks are ordered separately.

### Module Features

- Completely software-configurable, no module jumpers to set
- On-board error-checking
- Open-circuit detection for all voltage and 4-20mA inputs
- Configurable scaling and offsets per channel
- High alarm, low alarm, high-high alarm, low-low alarm detection and reporting selectable per channel
- Module fault reporting
- Supports diagnostic point fault contacts in the logic program
- Flash memory for future upgrades
- Positive and negative Rate of Change Alarms
- Configurable interrupts for channel alarms and faults
- Terminal Block insertion or removal detection

### Isolated +24 VDC Power

If the module is located in an RX3i Universal Backplane, an external source of isolated +24 VDC is required to provide power for the module. The external source must be connected via the TB1 connector on the left side of the RX3i Universal Backplane (IC695CHSxxx). For details on TB1, refer to "Universal Backplane Terminals (TB1)" in the *PACSystems RX3i System Manual*, GFK-2314.

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## Specifications

<b>Input Ranges</b>	Current: 0 to 20mA, 4 to 20mA, +/- 20mA Voltage: +/- 10V, 0 to 10V, +/- 5V, 0 to 5V, 1 to 5V		
<b>Power Requirements</b> from the backplane	ALG106:	230 mA maximum @ 5.0V +5% / -2.5%, 320 mA maximum @ 3.3V +5% / -3%	
from the 24VDC isolated supply	ALG112:	490 mA maximum @ 5.0V +5% / - 2.5%, 310 mA maximum @ 3.3V +5% / - 3%	
<b>CPU Version</b>	500 mA @ 19.2 V to 30 VDC		
<b>Programmer Version</b>	PACSystems RX3i CPU required. ALG106 and ALG112: CPU firmware version 5.0 and later		
<b>Power Dissipation within Module</b>	ALG106 and ALG112: Machine Edition version 5.6 SP11 and later		
<b>Thermal Derating</b>	IC695ALG106: 2.97 watts maximum; with 20mA inputs on all 6 channels IC695ALG112: 4.89 watts maximum with 20mA inputs on all 12 channels		
<b>Resolution</b>	No derating		
<b>Input Data Format</b>	16 bit ADC converted to Floating Point or Integer		
<b>Filter Options</b>	Configurable as floating point IEEE 32 bit or 16-bit integer in a 32-bit field		
<b>Input Impedance</b>	8Hz, 12Hz, 16Hz, 40Hz, 250Hz, 1000Hz		
<b>Current Input Resistance</b>	>500 Kohm voltage inputs		
<b>Open Circuit Detection time</b>	250 ohms +/- 1%		
<b>Overvoltage</b>	1 second maximum		
<b>Overcurrent</b>	+/-35 VDC continuous, maximum		
<b>Normal Mode Noise Rejection in dB</b>		<i>At 50Hz</i>	<i>At 60Hz</i>
	8 Hz filter	90	75
	12 Hz filter	75	80
	16 Hz filter	35	75
<b>Common Mode Noise Rejection</b>	+/-35mA continuous, maximum		
<b>Channel-Channel DC Crosstalk</b>	100dB minimum @ 50/60 Hz with 8 Hz filter 100dB minimum @ 50/60 Hz with 12 Hz filter		
<b>Isolation Voltage terminal block to backplane/chassis and channel to channel</b>	-70 dB minimum		
<b>Analog Step Change Response</b>	I-coupler, transformer isolated 250 VAC continuous/1500 VAC for 1 minute		
<b>Digital Filtering Settling Time</b>	The analog input will settle to 0.1% of its final value within 1.7mS for a step change on the input pins of the module. (Any digital filtering is in addition to this time.)		
<b>Analog Module Scan Time (in milliseconds)</b>	The settling time depends on the configured filter time. 8 Hz Filter: 127 mS 12 Hz Filter: 67 mS 16 Hz Filter: 56 mS 40 Hz Filter: 21 mS 250 Hz Filter: 3.1 mS 1000 Hz Filter: 0 mS (No digital filtering, only the analog front-end filter)		
<b>Calibrated Accuracy</b>	The module provides a new sample every 1mS, regardless of the digital filtering selected. See the Digital Filtering Settling Time for the amount of time required to have settled data.		
<b>Calibration Interval</b>	0.1% of range at 25°C 0.2% of range over entire temperature span In the presence of severe RF interference (IC 801-3, 10V/M), accuracy may be degraded by 2.0% of range.		
	12 months typical to meet accuracy specifications over time. Offset can be applied as a periodic calibration adjustment.		

**Installation in Hazardous Areas**

- WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- WARNING - EXPLOSION HAZARD - DO NOT REPLACE MODULES UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.
- WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

**LEDs**

<b>LED</b>	<b>Indicates</b>
Module OK	ON Green: Module OK and configured. Slow Flashing Green or Amber: Module OK but not configured. Quick Flashing Green: Error. OFF: Module is defective or no backplane power present
Field Status	ON Green: No faults on any enabled channel, and Terminal Block is present. ON Yellow: Fault on at least one channel. OFF: Terminal block not present or not fully seated.
TB	ON Red: Terminal block not present or not fully seated. ON Green: Terminal block is present. OFF: No backplane power to module.

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### Channel Diagnostic Data

The module can be configured to report channel diagnostics status data to the CPU. The CPU stores this data at the module's configured *Diagnostic Reference Address*. Use of this feature is optional. For details on module configuration, refer to the *PACSystems RX3i System Manual*, GFK-2314.

The diagnostics data for each channel occupies 2 words whether the channel is used or not:

<b>Bit</b>	<b>Value</b>	<b>Function</b>
D0	0	Low alarm not Exceeded
	1	Low alarm Fault
D1	0	High Alarm not Exceeded
	1	High Alarm Exceeded
D2	0	Not Under Range
	1	Under Range
D3	0	Not Over Range
	1	Over Range
D4	0	No Open Wire
	1	Open Wire
D5	0	No Short Circuit
	1	Short Circuit
D6	0	Spare. Always set to zero
	1	Invalid value.
D7	0	No extended diagnostic Information
	1	Extended Diagnostic Information in bits D8-D15.

### Operating Note

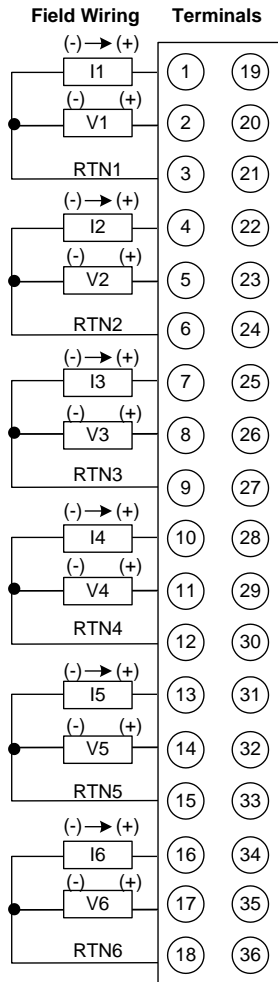
These modules have separate enable/disable options for Diagnostic Reporting and Interrupts. Normally, disabling a diagnostic (such as Low/High Alarm or Over/Under range) in the configuration means that its diagnostic bit is never set. However, if interrupts are enabled for a condition and that interrupt occurs, the diagnostic bit for that condition is also set during the same PLC scan. The next PLC input scan always clears this interrupt status bit back to 0, because Diagnostic Reporting has it disabled.

**Field Wiring**

The following tables list wiring connections for the IC695ALG106 and ALG112 modules.

**Note:** There are no shield terminals on these modules. For shielding, tie cable shields to the ground bar along the bottom of the backplane. M3 tapped holes are provided in the ground bar for this purpose.

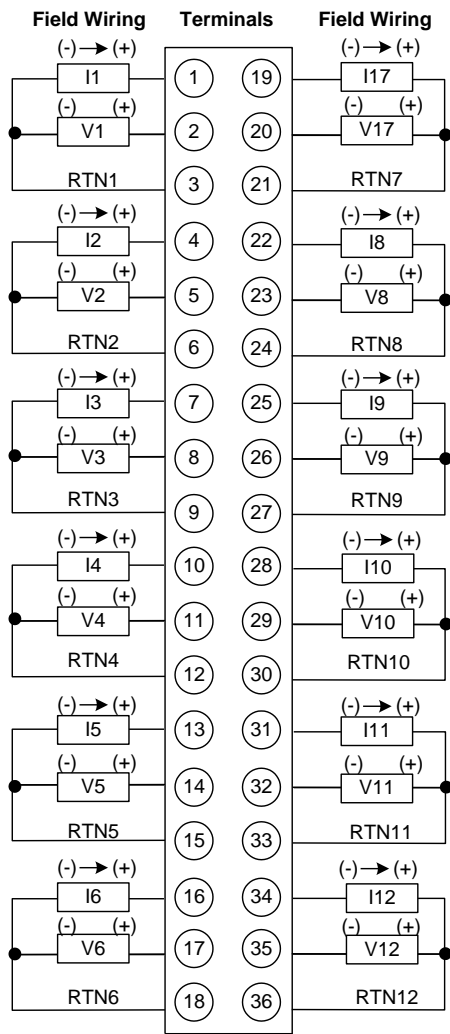
**IC695ALG106**



Terminal	Connection	Connection	Terminal
1	CH 1 Current In	No Connection	19
2	CH 1 Voltage In	No Connection	20
3	CH 1 RTN	No Connection	21
4	CH 2 Current In	No Connection	22
5	CH 2 Voltage In	No Connection	23
6	CH 2 RTN	No Connection	24
7	CH 3 Current In	No Connection	25
8	CH 3 Voltage In	No Connection	26
9	CH 3 RTN	No Connection	27
10	CH 4 Current In	No Connection	28
11	CH 4 Voltage In	No Connection	29
12	CH 4 RTN	No Connection	30
13	CH 5 Current In	No Connection	31
14	CH 5 Voltage In	No Connection	32
15	CH 5 RTN	No Connection	33
16	CH 6 Current In	No Connection	34
17	CH 6 Voltage In	No Connection	35
18	CH 6 RTN	No Connection	36

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IC695ALG112



Terminal	Connection	Connection	Terminal
1	CH 1 Current In	CH 7 Current In	19
2	CH 1 Voltage In	CH 7 Voltage In	20
3	CH 1 RTN	CH 7 RTN	21
4	CH 2 Current In	CH 8 Current In	22
5	CH 2 Voltage In	CH 8 Voltage In	23
6	CH 2 RTN	CH 8 RTN	24
7	CH 3 Current In	CH 9 Current In	25
8	CH 3 Voltage In	CH 9 Voltage In	26
9	CH 3 RTN	CH 9 RTN	27
10	CH 4 Current In	CH 10 Current In	28
11	CH 4 Voltage In	CH 10 Voltage In	29
12	CH 4 RTN	CH 10 RTN	30
13	CH 5 Current In	CH 11 Current In	31
14	CH 5 Voltage In	CH 11 Voltage In	32
15	CH 5 RTN	CH 11 RTN	33
16	CH 6 Current In	CH 12 Current In	34
17	CH 6 Voltage In	CH 12 Voltage In	35
18	CH 6 RTN	CH 12 RTN	36

**Release Information**

<b>Version</b>	<b>Firmware Revision</b>	<b>Description</b>
IC695ALG106-EA IC695ALG112-EA	1.00	Hardware design updated to address component obsolescence. No change in functionality, performance, or compatibility.
IC695ALG106-DA IC695ALG112-DA	1.00	Label change only. No change in functionality, performance or compatibility.
IC695ALG106-CA IC695ALG112-CA	1.00	Modified the terminal block detector switch to increase the size of the switch lever. The increased size of the switch lever allows additional tolerance to assure contact with the terminal block actuator.
IC695ALG106-AA IC695ALG112-AA	1.00	Initial Release
IC695ALG106-BA IC695ALG112-BA	1.00	UL approval

For technical assistance, please go to <http://www.ge-ip.com/support>.