

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE PACSYSTEMS RX3i

IC694ALG223LT-GD

16-CHANNEL ANALOG CURRENT INPUT MODULE

Used with the applicable PACSystems RX3i analog I/O configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

9.4	Analog Input Module 4-Channel Differential Current: IC694ALG221	362
9.4.1	LEDs: ALG221	362
9.4.2	Specifications: ALG221	363
9.4.3	Data Format: ALG221	363
9.4.4	Field Wiring: ALG221	365
9.5	Analog Input Module 16-/8-Channel Voltage: IC694ALG222	367
9.5.1	Isolated +24Vdc Power	367
9.5.2	LEDs: ALG222	367
9.5.3	Specifications: ALG222	367
9.5.4	Configuration: ALG222	369
9.5.5	Data Format: ALG222	371
9.5.6	Field Wiring: ALG222	373
9.6	Analog Input Module 16-Channel Current: IC694ALG223	375
9.6.1	Module Power	375
9.6.2	LEDs: ALG223	375
9.6.3	375	
9.6.4	Specifications: ALG223	376
9.6.5	Configuration: ALG223	377
9.6.6	Data Format: ALG223	378
9.6.7	Field Wiring: ALG223	380
9.7	Analog Input Module Advanced Diagnostics 16-Channel Voltage: IC694ALG232	383
9.7.1	Features	384
9.7.2	Isolated +24Vdc Power	384
9.7.3	LEDs: ALG232	384
9.7.4	Specifications: ALG232	385
9.7.5	Configuration: ALG232	386
9.8	Example:	391
9.8.2	Channel Input Data: ALG232	393
9.8.3	Field Wiring: ALG232	394
9.9	Analog Input Module Advanced Diagnostics 16-Channel Current: IC694ALG233	396
9.9.1	Module Power	396
9.9.2	Features	396
9.9.3	LEDs: ALG233	396
9.9.4	Specifications: ALG233	397
9.9.5	Configuration: ALG233	398
9.9.6	Field Wiring: ALG233	406

Figure 269: Input Scaling ALG222	371
Figure 270: Field Wiring Single-Ended ALG222	374
Figure 271: Field Wiring Differential ALG222	374
Figure 272: IC694ALG223	375
Figure 273: Input Scaling ALG223	379
Figure 274: Field Wiring ALG223	381
Figure 275: Connection Example 1 ALG222	382
Figure 276: Connection Example 2 ALG222	382
Figure 277: IC694ALG232	384
Figure 278: Input Scaling ALG232	391
Figure 279: Field Wiring Single-Ended ALG232	395
Figure 280: Field Wiring Differential ALG232	395
Figure 281: IC694ALG233	396
Figure 282: Input Scaling ALG233	403
Figure 283: Field Wiring ALG223	407
Figure 284: Connection Example 1 ALG233	408
Figure 285: Connection Example 2 ALG233	408
Figure 286: IC695ALG616	409
Figure 287: Scaling Example ALG608 or ALG616	416
Figure 288: Scaling Example ALG608 or ALG616	416
Figure 289: Field Wiring, Single-Ended ALG608 or ALG616	425
Figure 290: Field Wiring, Differential Mode ALG608 or ALG616	427
Figure 291: IC694ALG390	430
Figure 292: D/A Bits versus Output Voltage	432
Figure 293: Scaling Units versus Output Voltage	432
Figure 294: IC694ALG391	434
Figure 295: Derating Curve ALG391	436

Description	Catalog Number	Minimum RX3i CPU Version
Output 4 Amp 16-Pt Relay	IC694MDL916	3.81
Output Relay N.O. 4 A 8-Pt Isolated	IC694MDL930	All
Output Relay N.C. and Form C 3 A 8-Pt Isolated	IC694MDL931	All
Output Relay N.O. 2 A 16-Pt	IC694MDL940	All
Discrete Mixed Modules		
High-Speed Counter Module (Classic Mode)	IC694APU300	All
High-Speed Counter Module (Enhanced Mode)		7.13
Special I/O Processor	IC694APU305	2.90
High-Speed Counter Module, 1.5MHz, 8 Inputs, 7 Outputs	IC695HSC304	3.81
High-Speed Counter Module, 1.5MHz, 16 Inputs, 14 Outputs	IC695HSC308	3.81
Mixed I/O 24Vdc Input (8-Pt) N.O. Relay Output (8-Pt)	IC694MDR390	All
Analog Input Modules		
Analog Input Module, 6 Channel Isolated Voltage/Current	IC695ALG106	5.00
Analog Input Module, 12 Channel Isolated Voltage/Current	IC695ALG112	5.00
Input Analog 4pt Voltage	IC694ALG220	All
Input Analog 4pt Current	IC694ALG221	All
Input Analog 16 Single-Ended/8 Differential Voltage	IC694ALG222	All
Input Analog 16 Single-Ended Current	IC694ALG223	All
Input Analog 16 Channel Current	IC694ALG232	6.70
Input Analog 16 Channel Voltage	IC694ALG233	6.70
Isolated Thermocouple Input Module, 6 Channels	IC695ALG306	5.50
Isolated Thermocouple Input Module, 12 Channels	IC695ALG312	5.50
Isolated Thermocouple Input Module, 12 Channels	IC695ALG412	6.50
Isolated RTD Input Module, 8 Channels	IC695ALG508	5.50

9.6 Analog Input Module 16-Channel Current: IC694ALG223

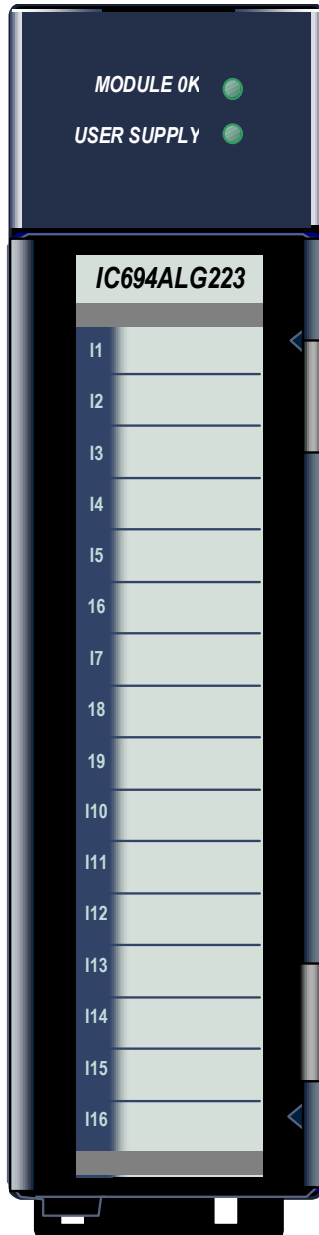


Figure 271: IC694ALG223

The **16-Channel Analog Current Input** module, IC694ALG223, provides sixteen single-ended inputs. Each input can be configured using the configuration software for any of three input ranges:

- 4 to 20 mA
- 0 to 20 mA
- 4 to 20 mA Enhanced

High and Low alarm limits are available on all ranges. In the 4 to 20 mA Enhanced range, a low alarm limit can be set up to detect input current from 4 mA to 0 mA, providing open-wire fault detection in 4 to 20 mA applications.

The module also reports module status and external power supply status to the CPU using its assigned program reference addresses.

This module can be installed in any I/O slot in an RX3i system.

Revision -BA and later supports insertion into and removal from an RX3i Universal Backplane which is under power. Refer to *Hot Insertion and Removal*, Section 2.6.4.1.

Module supports firmware upgrades using the WinLoader software utility (if the host CPU has a serial port) or using a Web-based tool (if the host CPU has no serial port).

Instructions are included with the firmware upgrade kit.²³

9.6.1 Module Power

This module consumes 120 mA from the 5Vdc bus on the PLC backplane. It also requires 65 mA from a user-supplied +24Vdc supply, which must also supply current for each current loop employed.

9.6.2 LEDs: ALG223

The **MODULE OK** LED provides module status information on power-up as follows:

- *ON*: status is OK, module configured;
- *OFF*: no backplane power or software not running (watchdog timer timed out);
- *Continuous rapid flashing*: configuration data not received from CPU;
- *Slow flashes, then OFF*: failed power-up diagnostics or encountered code execution error.

The **User Supply** LED indicates that the external 24Vdc supply is within specifications.

9.6.3

A-4.2 Additional RX3i Specifications

Standards for EMC Emissions, and Immunity, for RX3i products are provided on the following pages. Refer to the listing of module catalog numbers below to determine which set of standards applies to a specific module: Specifications Group 1 or Group 2.

17.2.3.1.4 Group 1 Table

IC694ACC300	IC694DNM200	IC694MDL390	IC694MDL740
IC694ALG220	IC694DNS201	IC694MDL632	IC694MDL741
IC694ALG221	IC694DSM314	IC694MDL634	IC694MDL742
IC694ALG390	IC694DSM324	IC694MDL635	IC694MDL752
IC694ALG391	IC694MDL230	IC694MDL645	IC694MDL753
IC694ALG392	IC694MDL231	IC694MDL646	IC694MDL758
IC694APU300	IC694MDL240	IC694MDL648	IC694MDL930
IC694APU305	IC694MDL241	IC694MDL654	IC694MDL931
IC694BEM320	IC694MDL250	IC694MDL655	IC694MDL940
IC694BEM321	IC694MDL310	IC694MDL658	IC694MDR390
IC694BEM340	IC694MDL330	IC694MDL730	IC694PWR321
IC694BEM341	IC694MDL340	IC694MDL732	IC694PWR330
IC694CHS392	IC694MDL350	IC694MDL734	IC694PWR331
IC694CHS398			

17.2.3.1.5 Group 2 Table

IC694ALG222	IC695ALG106	IC695CMM002	IC695HSC304
IC694ALG223	IC695ALG112	IC695CMM004	IC695HSC308
IC694ALG232	IC695ALG306	IC695CMU310	IC695LRE001
IC694ALG233	IC695ALG312	IC695CMX128	IC695MDL664
IC694ALG442	IC695ALG412	IC695CNM001	IC695MDL765

Description	Catalog Number
Series 90-30 Input Analog 16sgl/8diff Current	IC693ALG223
RX3i Input Analog 16sgl Current	IC694ALG223
Series 90-30 Output Analog 2-point Voltage	IC693ALG390
RX3i Output Analog 2-point Voltage	IC694ALG390
Series 90-30 Output Analog 2-point Current	IC693ALG391
RX3i Output Analog 2-point Current	IC694ALG391
RX3i Analog Output 8-Channel Current/Voltage	IC694ALG392
Series 90-30 Analog Combination Current/Voltage 4in/2out	IC693ALG442
RX3i Analog Combination Current/Voltage 4in/2out	IC694ALG442
RX3i Analog Module 4-Input 2-Output Current/Voltage with Advanced Diagnostics	IC694ALG542
Series 90-30 I/O Link Module (Slave)	IC693BEM320
RX3i I/O Link Interface Module	IC694BEM320
Series 90-30 I/O Link Module (Master)	IC693BEM321
RX3i I/O Link Master Module	IC694BEM321
Series 90-30 10-Slot Expansion Backplane	IC693CHS392
RX3i 10-Slot Serial Expansion Backplane	IC694CHS392
Series 90-30 Remote Baseplate, 10 Slots	IC693CHS393
Series 90-30 Remote Baseplate, 5 Slots	IC693CHS399
RX3i Control Memory Xchange Module	IC695CMX128
Series 90-30 DSM314 Motion Controller	IC693DSM314
RX3i DSM314 Motion Controller	IC694DSM314
RX3i DSM324 Motion Controller	IC694DSM324
Series 90-30 Mixed I/O 8-point 120 Vac In / 8-point Relay Out	IC693MAR590
Series 90-30 Input 120 Vac 8-point Isolated	IC693MDL230
RX3i Input 120 Vac 8-point Isolated	IC694MDL230