



Reliance Electric 57C431

AutoMax 6011 Processor Module

Product scope

- Executes AutoMax control tasks on an 8 MHz Motorola 68010 processor.
- Supports BASIC, Control Block and Ladder Logic applications.
- Can participate in a four-processor rack with common-memory arbitration.
- Provides battery-backed memory and an isolated RS-232C service port.

Manufacturer source

Rockwell Automation / Reliance Electric AutoMax Processor M/N 57C431, AMAX-IN238 and AMAX-IN142.

The enclosed record and retained manufacturer pages identify the exact product and explain its function, operating principle, application and critical matching requirements.

Request a fast quote	Product reference	
Email: info@apterpower.com Phone: +86 18106909650 apter.com/inquiry.php	Reliance Electric 57C431	

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Reliance Electric 57C431

AutoMax 6011 Processor Module

Manufacturer-source product record

This record consolidates exact-model facts from the manufacturer references listed below. It is included to identify the ordering configuration before the retained source pages.

Processor	Motorola 68010, 16-bit
CPU speed	8 MHz
Module memory	512K; 300K available for application tasks in the documented runtime environment
Programming languages	BASIC, Control Block and Ladder Logic
Processors per rack	Up to four with the required common-memory module
Serial port	RS-232C, 450 V isolation, +/-12 V
Power	+5 V at 3.0 A; +12 V and -12 V at 0.1 A each
Average dissipation	15 W
Dimensions	11.75 x 1.25 x 7.375 in

Official references

- Rockwell Automation / Reliance Electric AutoMax Processor M/N 57C431, AMAX-IN238 and AMAX-IN142.
- Official source: https://literature.rockwellautomation.com/idc/groups/literature/documents/in/amax-in238_-en-e.pdf

Only the exact configuration shown above is represented. Adjacent model variants, optional assemblies and system accessories are not treated as part of this ordering identity.

Function, operating principle and application

The notes below explain how this product is used and how its documented signal, power or control path operates. They remain limited to the manufacturer evidence for this model.

Control function

The 6011 processor executes AutoMax application tasks that coordinate the I/O, communication and special-purpose modules installed in the rack.

Execution model

The runtime executive schedules programs written in BASIC, Control Block or Ladder Logic. Each task reads shared or local data, performs its control calculation and updates the required system variables or outputs.

Multiprocessor operation

Up to four processors can share a rack to increase execution capacity. In that arrangement a 57C413B or compatible common-memory module in slot 0 arbitrates bus access and holds shared configuration data.

Data retention and service

Onboard battery backup protects processor memory during power loss. The isolated RS-232C port provides the documented programming and maintenance connection.

Migration and replacement

Back up the executive, operating-system revision, task files and rack configuration before replacement. A processor with the same connector cannot be assumed compatible without matching memory, runtime and common-memory requirements.

AutoMax Processor
(M/N 57C430A)
(M/N 57C431)
(M/N 57C435)

Module Specifications

Module Number 57C430A Contains: One (1) AutoMax Processor Module (256K)
Module Number 57C431 Contains: One (1) AutoMax Processor Module (512K)
Module Number 57C435 Contains: One (1) AutoMax Processor Module (512K)

Ambient Conditions

- Storage temperature: -40°C – 85°C
- Operating temperature: 0°C – 60°C
- Humidity: 5-90% non-condensing

Maximum Module Power Dissipation

- 15 Watts average

Dimensions

- Height: 11.75 inches
- Width: 1.25 inches
- Depth: 7.375 inches

System Power Requirements

- 5 Volts: 3000 ma average
- -12 Volts: 100 ma average
- +12 Volts: 100 ma average

Battery Specifications

- Type: Lithium
- Size: AA
- Voltage: 3.6 Volts
- Amp. Hrs.: 2.0

Memory Retention

	57C430A/57C431	57C435
• Minimum hold-up with battery:	42 days	186 days
• Typical hold-up with battery:	333 days	8.2 years
• Minimum hold-up without battery:	10 minutes	10 minutes
• Typical hold-up without battery:	10 hours	10 hours
• Maximum charge-up time:	15 minutes	15 minutes

Serial Port Specifications

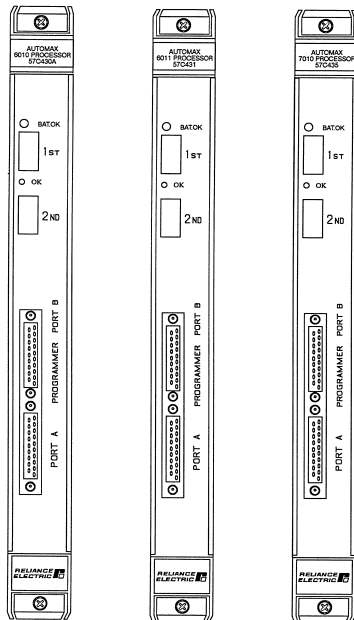
- Type: RS-232C
- Electrical Isolation: 450 Volts
- Voltage: ± 12 Volts
- Maximum current per channel: ± 30 ma

Industrial
CONTROLS

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1 0 0 0 0 0

Processor Module Faceplate



Connection Information

Programmer/Port B

If the personal computer that will be used as a programming terminal for the Processor module was purchased from Reliance, you will receive with the computer the proper cable to connect the computer and the Processor module through the port labeled "Programmer/Port B."

WARNING

THE FOLLOWING INSTRUCTIONS ARE INTENDED ONLY TO ALLOW FABRICATION OF PROPER CONNECTIONS BETWEEN RELIANCE EQUIPMENT AND USER-PROVIDED PROGRAMMING DEVICES. THE USER MUST READ AND UNDERSTAND ALL APPLICABLE INSTRUCTION MANUALS PRIOR TO OPERATING THE EQUIPMENT. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY.

If it is necessary to prepare a cable to connect a programming terminal to the RS-232 port labeled "Programmer/Port B" on the leftmost processor in the AutoMax rack, follow the steps outlined below.

1. Determine whether your programming terminal contains a 9- or 25-pin male connector.
2. Cut a suitable length (not to exceed 10 feet) of 22- gauge, multi-conductor cable.
3. Follow the connector manufacturer's instructions and make cable connections using figure 1 or 2, whichever is applicable.
4. Check for grounds, shorts, and continuity using an Ohm meter.

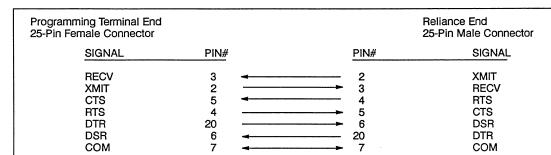


Figure 1

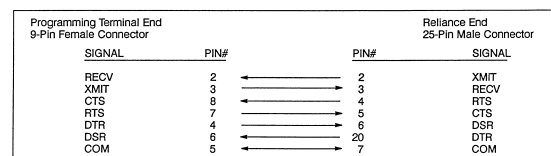


Figure 2

Connection Information

User Serial Ports

All Processor module ports except for the port labeled "PROGRAMMER/PORT B" on the leftmost Processor in the rack are available to the user to connect to an external device which will be controlled by application tasks running on the Processor. Refer to the Enhanced BASIC Language Instruction Manual (J-3675) for more information. Note that with AutoMax Processor modules, you can use the statements OPEN "PORTA" or OPEN "PORTB".

Note: If you do not enable bit 15 (hardware handshaking) in the SETUP parameter of the OPEN statement, only pins 2, 3, and 7 of the port you OPEN will be meaningful.

Pin#/I/O	Function
2 O	This signal contains transmitted data.
3 I	This signal contains received data.
4 O	Transmit status. This signal is true whenever the transmitter is sending characters. It is used to "bracket" a character transmission. It can be used to enable/disable any type of external equipment, such as a tri-state transmit modem, which requires an enable signal to output characters. This signal is meaningful only if hardware handshaking has been enabled.
5 I	This signal enables the transmitter. It must be true for the transmitter to send a character. This signal is typically used for hardware flow control. It is meaningful only if hardware handshaking has been enabled.
6 I	This signal enables the receiver. It must be true in order for the receiver to accept characters. If the signal becomes false while a message is being received, any characters being received will be deleted and an error will be reported to the application software. This signal is meaningful only if hardware handshaking has been enabled.
7	Signal ground.
10 O	This signal is an isolated +12 Volt which can be used as an enable or equipment ready indicator. The signal is always on whenever power is applied to the Processor.
20 O	This signal indicates receiver status. The signal is true whenever the receiver can accept characters, i.e., when the receive buffer is not full. When the receive buffer fills to within a specified limit, the signal is turned off. The signal can be used to disable another transmitter. It is meaningful only when hardware handshaking has been enabled.

For additional information

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