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System Release Notes RN

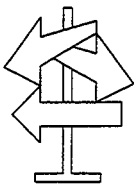
Pyramid Integrator

Baseline: 8.0

Introduction

A Pyramid Integrator™ (PI) system baseline release consists of a set of compatible hardware, firmware, and software that provides full system functionality.

These release notes describe the firmware, hardware, and software that are included in PI system baseline 8.0.



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This revision of the Pyramid Integrator Baseline 8.0 System Release Notes contains new information on anomalies that were corrected with the A09 release of the 5130-RM and -KA firmware. The location of this new information is indicated by change bars like those shown to the left of this paragraph.

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Firmware Features That Are New in PI System Baseline 8.0

New features included in PI system baseline 8.0 are part of the firmware in the:

- 5130-RM/A Resource Manager
- 5130-KA/A Module
- 5250-LP*x*/B Logic Processors

5130-RM/A Resource Manager

In the 5130-RM/A firmware, we:

- added support for the 5150-RS5 module
- added support for the search-abort feature, which allows you to abort searches by pressing

- made it possible for you to remove a non-control module—e.g., a KA, EI, UVAX, or Cx—without the declaration of an invalid system at powerup
- increased the System Routing Table (SRT) capacity from 24 to 48 links

5130-KA/A Module

In the 5130-KA/A firmware, we added support for the search-abort feature, which allows you to abort searches by pressing



5250-LP*x*/B Logic Processors

With the 5250-LP*x*/B logic processors, we added:

- enhanced floating-point operation with the math-coprocessor feature
- a search-abort feature, which allows you to abort searches by pressing

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Hardware That Is New in PI System Baseline 8.0

New hardware in PI system baseline 8.0 includes the:

- 5150-RS5/A Remote Scanner Module
- 5110-A4/B and -A8/B Chassis
- 5120-P1/B Power Supply

5150-RS5/A Remote Scanner Module

We designed the new 5150-RS5/A (RS5 module) to be compatible with the 5150-RS2/A (RS2 module). With an RS5 module in a PI system, however, you can:

- accommodate up to 4 remote I/O channels per module
- accommodate an extended-local I/O channel per module
- assign up to 32 unique full-rack addresses to a single scanner
- assign a maximum of 128 adapters—a total of 4096 inputs/outputs—to a single scanner

Important: You can install up to four scanners—any combination of RS2 and RS5 modules. With any combination of scanners, however, the total system can communicate with 32 unique full-rack addresses—4096 I/O.

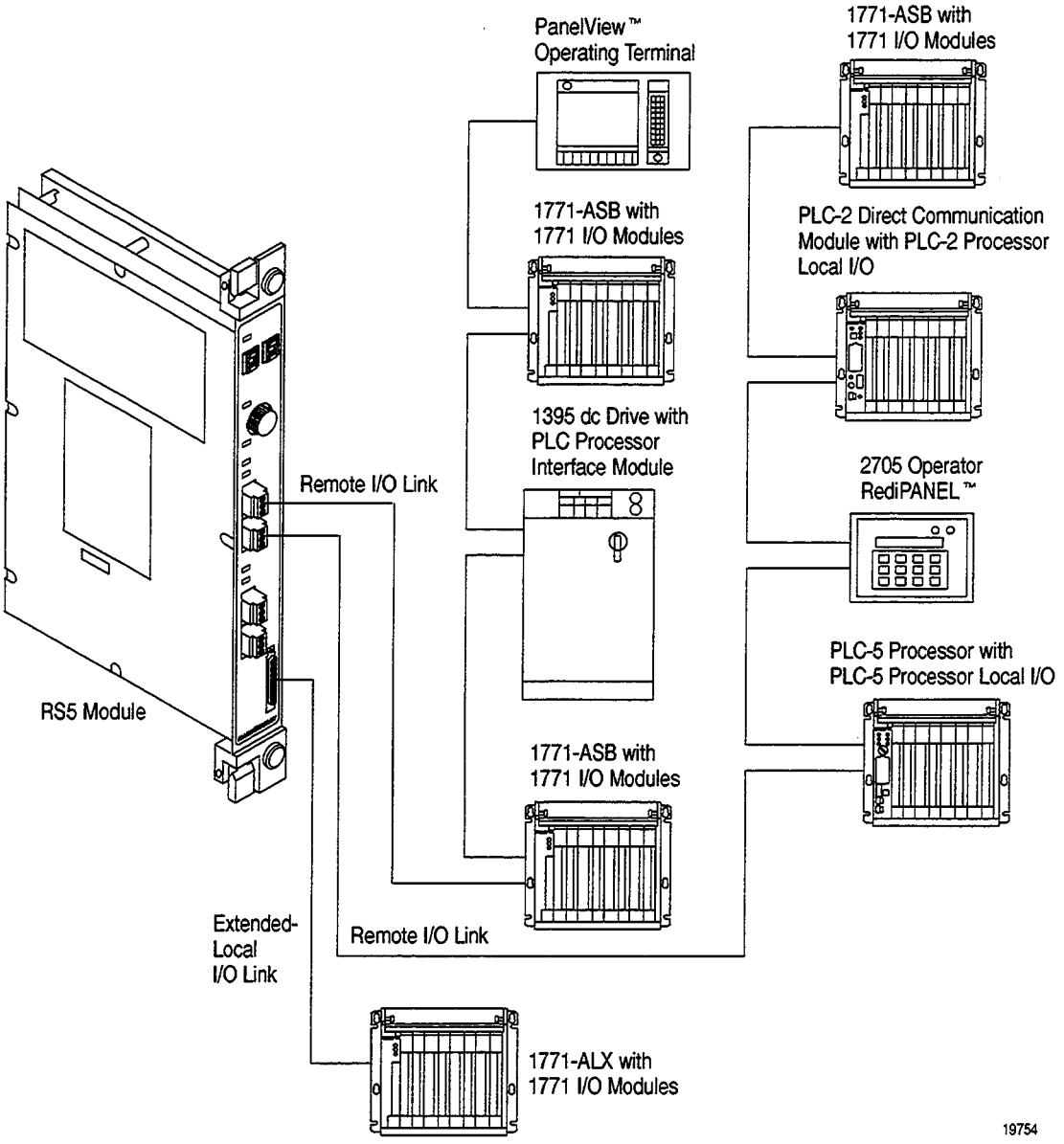
The 1771-ALX adapter with 1771 I/O modules is the only device that can be connected to the extended-local I/O channel on the RS5 module.

Table A
Scanner Specifications

Physical Specifications		RS2 Module	RS5 Module
Current Draw	On +5 V Supply	2.2 A	5 A
	On +12 V Supply	14 mA	16 mA
Memory Support (Battery)		AA lithium battery	
Operating Temperature		0 to 60° C (32 to 140° F)	
Storage Temperature		–40 to 85° C (–40 to 185° F)	
Humidity		5 to 95% non-condensing	
Physical Dimensions (H x W x D)		406 mm x 85 mm x 238 mm (15.97" x 3.34 " x 9.38 ")	
Weight		1.67 kg (3 lbs, 11.0 oz)	1.35 kg (2 lbs, 15.6 oz)

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Figure 1
RS5 Module



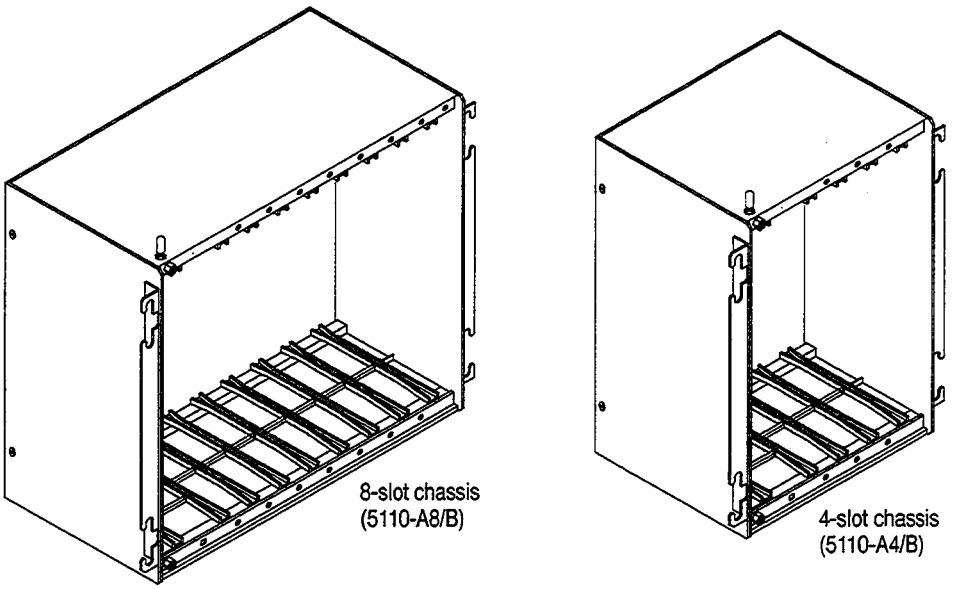
For more information, see chapter 3 of the Pyramid Integrator Design Manual, publication 5000-6.2.1.

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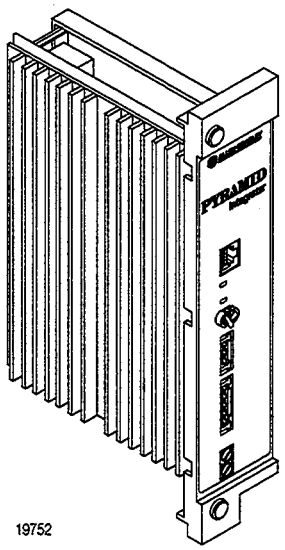
5110-A4/B and -A8/B Chassis

The new 5110-A*x* series B chassis has 4-slot (5110-A4/B) and 8-slot (5110-A8/B) versions. See Figure 2.

Figure 2
5110-A4/B and -A8/B PI Chassis



19751



19752

5120-P1/B Power Supply

Important: The 5120-P1 series A power supply is not compatible with the series B chassis. The new 5120-P1 series B power supply is compatible with both series A and B chassis.

The 5120-P1/B power supply is protected against overcurrent, over-temperature, overvoltage, and undervoltage. The on/off switch, input-line fuses and input-line connections are accessible on the front panel. The line voltage switch is accessible without disassembling the module.

Important: When configuring your PI system, make sure that you do not exceed the power-supply output capabilities since backplane current loads vary depending on the module type. See Table B on page 6 as well as chapter 1 of the Pyramid Integrator Design Manual, publication 5000-6.2.1.

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Table B
5120-P1/B Power-Supply Specifications

Specification	5120-P1/B Power Supply
Input Requirements	85–132 V ac or 170–264 V ac RMS 47–63 Hz, single phase
Maximum Real Input Power	300 W
Maximum App Input Power	490 VA
Maximum Transformer Load	750 VA
Isolation (Tested)	Input line to output: 1.5 KV dc minimum, for 1 minute or equivalent Input line to chassis: 1.5 KV dc minimum, for 1 minute or equivalent
Efficiency	70% minimum at full load over entire input range
On/Off	Controlled by toggle switch on front of power supply
Input Line Protection	Fuses in L1 and L2, accessible from front panel
Input Connections	Connector on front panel
Interlock Relay	Common, NO, and NC contacts rated at 240 V ac, 1 A resistive, with RC snubber included
Outputs	+5 V dc, 4 to 35 A +12 V dc, 0 to 3 A –12 V dc, 0 to 1 A
Transient Response	Output voltage within 1% of final value within 1mS after a 20% step load change applied at 1 A / microS. Maximum deviation less than 5% of final value
Voltage Overshoot	Less than 5% of final value for each output at turn-on and turn-off
Overcurrent Protection	+5 V: 45 A ±7 A +12 V: 4.5 A ±1.5 A –12 V: 1.75A ±0.75 A An overcurrent may cause power supply shutdown; recover by cycling input voltage off/on or cycling backplane voltage switch
dc Undervoltage Protection	All outputs: 85% ±10% of nominal output An undervoltage causes power supply shutdown if ac input is above undervoltage point
dc Overvoltage Protection	+5 V: 120% ±10% of nominal output (electronic overvoltage sense) ±12 V: 120% ±10% of nominal output (crowbars) A dc overvoltage causes power-supply shut-down; recover by cycling input voltage off/on or cycling backplane voltage switch
Overtemperature Protection	Warning at 65° C ±4° or when fan assembly faults Power-supply shut-down at 4° C higher than overtemperature warning ±2° After power supply has cooled, recover by removing input voltage for 20 seconds or cycling backplane voltage switch
Input Voltage Interruption Without System Shutdown	1/2 ac cycle

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Requirements of PI System Baseline 8.0

PI system baseline 8.0 offers new features as shown in the previous pages; in order to use these features, however, you must meet the baseline system requirements. Table C lists the manufacturing series, hardware revisions, firmware revisions, and software releases that are required if your PI system is to meet baseline 8.0 requirements.

Table C
PI System Baseline 8.0 Requirements

Module	Cat. No.	Series	Hardware Revision	Firmware Revision	Software
Resource Manager	5130-RM1 5130-RM2	A	001, 002, 003, or 004	A08 or A09③	6200 Series Programming Software, release 4.3 or later
KA Module	5130-KA	A	001, 002, or 003		
Remote Scanner	5150-RS2	A	001, 002, 003, or 004	A04	
	5150-RS5	A	001	A08	
Logic Processor	5250-LP1 5250-LP2	A①	003 or 004		
	5250-LP1 5250-LP2 5250-LP3 5250-LP4	B	B01 or B02		
CVIM™ Module	5370-CVIM	A or B	A	C01, C02, or C03	
MAP OSI Interface Module	5820-CC 5820-CBx	A	A001	B02	
MicroVAX Information Processor (Including Models EP and EE)	5730-CPU1	A	008 or later	A02	INTERCHANGE™ Software, release 3.0 or later②
	5731-CPU1 5731-CPU2	A	002 or later	A04	INTERCHANGE Software, release 3.0/1 or later②
Ethernet® Interface Module	5820-EI	A	008 or later	A04	Network INTERCHANGE Software, release 3.1.0 or later

Software	Catalog Number	Release
VMS	5730-OSSM	5.4-1 or later②
6200 Series Programming Software	6201-5250 6203-5250 6211-5250 6213-5250	4.3 or later
OSI Software	5820-OS	2.0
MAP Station Manager Software	6630-PM 6630-PMC	

① No enhanced math capability

② From VMS release 5.4-1 through subsequent releases earlier than 5.5, you must use INTERCHANGE Software release 3.0, 3.0/1, or 3.1—depending on which MicroVAX Information Processor you use. With VMS release 5.5 or later, you must use INTERCHANGE Software release 3.1.1 or later. See the release notes accompanying your version of INTERCHANGE for further details.

③ Firmware revision A09 of the RM and KA modules corrects those anomalies existing in A08 that are listed on page 9.

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Anomalies Corrected with PI System Baseline 8.0

The following anomalies were corrected with firmware revisions A08 and A09 of the PI modules.

5130-RM and -KA

The following anomalies were corrected with firmware revision A08 of the RM and KA modules:

If you:	Then:
cycled power to the processor during an edit①	memory could have become corrupted
used an ASCII Write instruction that had a zero-length string	the RM/KA module would transmit unintelligible data
used the Message Instruction, Read/Modify/Write command on forcible data—e.g., inputs, outputs, or internal storage	the forced value was written into the unforced image
configured channel 3 for any link number other than zero	you could not change it back to zero
sent a Typed Write Message command that included more than 70 words of 16-bit data to a destination of a 32-bit section—e.g., long, float, or timer accumulator	the RM/KA module PASS/FAIL indicator turned red
had a system that declared 18 faults quickly①	the 19th fault would cause the RM module PASS/FAIL indicator to turn red
forced a transition true using SFC forcing	the system ignored the command to clear the force
used DH+ channels with fiber-optic links and either the receive or transmit channel had intermittent connections	the DH+ channels could have locked up
attempted to create or delete data tables with 6 to 10 messages instructions addressing the system's own station address running in an IBP or queued and completed after switching to Program mode①	communications lockup could have occurred, causing ??? to display on the WHO screen
wanted the system to send Global-Status-Flag data for the alternate station addresses	it sent only zeros
configured Global Status Flags or Node-Table files that were not large enough—i.e., 64 words	no Global-Status-Flag or Node-Table data operation took place and no error indication was given A minor fault is now generated to let you know that no data operation took place
tried to write into bit-level addresses of any data-table sections such as counter, timer, and control elements	the message instruction appeared to be completed but the data were only written if the value was zero
accessed only the lower byte of the very last word of a BTD file via either bit instructions or distributed bit field addressing and attempted to delete or adjust that word via memory map	the memory usage check failed and the used BTD address was deleted or adjusted incorrectly—resulting in unexpected operation because the address then used by the program would be to unknown locations on the scanner
• had an alternate station and • configured another station with the same address as that of the alternate station and • connected the duplicate station to the DH+ network located on the RM module	the RM module PASS/FAIL indicator turned red and a major fault of "4400 bus error / parity error" was declared for the RM module
• had an alternate station and • configured another station with the same address as that of the alternate station and • connected the other (duplicate) station to the DH+ network with a KA module	the KA module FAULT indicator turned red and a major fault of "4413 unknown error" was declared for the KA module

① Anomaly applies to RM module only.

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The following anomalies were corrected with firmware revision A09 of the RM and KA modules:

If you:	Then:
tried to communicate using DH+ with an alternate station through routing with • the WHO function • an INTERCHANGE sample program using the Diagnostic-Status command • a message instruction	the PASS/FAIL indicator on the RM/KA module doing the routing turned red
had a PI system with 3 or 4 KA modules as well as an alternate station—e.g., an Ethernet interface module or MicroVAX information processor—that booted before all of the KAs in the system had powered up	there was a possibility that a major fault of "4413 internal firmware fault" would be declared when a DH+ message was sent from a KA module that powered up after the alternate station booted
• had an alternate station in chassis and booted and • had a duplicate node address between any other node and the RM/KA port receiving messages for the alternate station and • sent a DH+ message from the duplicate node to the alternate station	the RM/KA module PASS/FAIL indicator turned red
• had an instruction in your ladder program that sent data out the serial port of the RM—e.g., an AWT instruction① and • the instruction was continuously enabled and was not delayed at power-up and • an RS5 module was not in the chassis and • you cycled power while in Run mode	• all communications on the PI chassis stopped and • the key switch allowed switching from Run to Program but allowed no other changes and • all ladder-logic functions continued to work correctly
tried to rebuild the Sequential Function Chart (SFC)①	there was a possibility that the RM module PASS/FAIL indicator would turn red
did not assign a module and port number when creating a link in PI configuration	messages sent to that link would be lost

① Anomaly applied to RM module only.

5250-LP1, -LP2, -LP3, and -LP4

The following anomalies were corrected with firmware revision A08 of the LP modules:

If you:	Then:
programmed simultaneous branches in a SFC	they were executed in ascending descriptor order rather than left to right
had two terminals running 6200 Series Programming Software and accessing system memory at the same time—i.e., one editing and one scrolling through ladder logic	communications lockup could have occurred, causing `???` to display on the WHO screen
created an SFC that was large	a restore operation may not have completed
performed long search operations from one terminal	other terminals trying to use the same processor could have timed out

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Anomalies Existing with PI System Baseline 8.0

This section describes current anomalies associated with baseline 8.0.

5130-RM and -KA

This anomaly exists with firmware revisions A08 and A09 of the RM and KA modules:

If you:	Then:	To avoid this problem:
have slaves sending messages to a master that has been disconnected or configured inactive have these pending messages and then try to create or delete a data-table file or edit a program file in the master	that master does not poll the slaves and the messages remain pending you may lose communication and lock up the system	make sure that you first change the slave to Program mode—to stop messages from being sent—before you disconnect or reconfigure your master

5250-LP1, -LP2, -LP3, and -LP4

These anomalies exist with firmware revision A08 of the LP modules:

If you:	Then:	To avoid this problem:
save and restore a program that has been developed under A03 firmware onto firmware later than A03	the PID output values will be incorrect when running	1. Change either the Ki or Ti, or the Kd or Td, value to zero when in Run mode (if you're using LP firmware later than A03) 2. Make sure that the PID gets scanned once 3. Change either the Ki or Ti, or the Kd or Td, value back to its original value; do this to each PID to assure proper operation 4. Save the program
change the mode to Run	a delay can occur of up to the user-set watchdog limit—around 28 seconds—before the system gets to Run mode and enables outputs	
change the mode to Run then immediately change to another mode	the system may, after a time period of up to the user-set watchdog limit, actually go into Run mode for an instant and enable outputs before it can go into the other mode selected	
change the mode from Run to another mode during PROG PRESCAN, one of the steps needed to get into Run mode	the system may go into Run mode for an instant and enable outputs before it can go into the other mode selected	

MicroVAX and 5130-KA

If the MicroVAX module has not completely booted when you clear minor faults in the KA module, the KA channels will halt operation. The KA channels resume operation once the MicroVAX module completes booting.

5150-RS5 and 5250-LP*x*

The RS5 module uses 16 bits for the Adapter Retry Count—AS*xx*:*xx*.RC. The RS2 module allocates 16 bits, but it only uses 8 bits. Although the 6200 Series Programming Software and all communication commands that access this data allow all 16 bits to be read and written, ladder-diagram references to this data only access the lower 8 bits.

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System Maintenance and Upgrade Alternatives

The alternatives for upgrading your system—5130-KA, 5130-RM1, 5130-RM2, 5250-RS2, 5250-LP1, 5250-LP2, 5250-LP3, and 5250-LP4 firmware—to PI system baseline 8.0 requirements are as follows:

Product	Under Warranty	Under Support Agreement	Not Under Warranty or Support Agreement
Firmware upgrades	Upgrades are available through the Support Division at no charge for materials	Allen-Bradley will contact customers that have either a Hardware Support Agreement (HS) or a Master Support Package (MS/MSD) to schedule an upgrade	Must purchase a Hardware Support Agreement (HS) or a Master Support Package (MS/MSD); see the Allen-Bradley Support Plus Software and System Services Master Price List, publication SUPS-3.1 Or you may purchase upgrades through the Support Division
Documentation updates	Not provided under warranty Copies of Pyramid Integrator documentation can be purchased via order services; see the Allen-Bradley Control, Communication and Information Master Price List, publication ICCG-3.5	Provided as part of a Hardware Support Agreement (HS) or a Master Support Package (MS/MSD). See the Allen-Bradley SupportPlus Services Master Price List, publication SUPS-3.1	Must purchase a Hardware Support Agreement (HS) or a Master Support Package (MS/MSD); see the Allen-Bradley SupportPlus Services Master Price List, publication SUPS-3.1 Or copies of Pyramid Integrator documentation can be purchased via ICCG order services; see the Allen-Bradley Control, Communication and Information Master Price List, publication ICCG-3.5
Both hardware and firmware upgrades (Firmware is automatically upgraded when a hardware upgrade is performed)	Upgrades are available through the Support Division	Allen-Bradley will inform customers that have either a Hardware Support Agreement (HS) or a Master Support Package (MS/MSD) of the availability of upgrades	Must purchase a Hardware Support Agreement (HS) or a Master Support Package (MS/MSD); see the Allen-Bradley SupportPlus Services Master Price List, publication SUPS-3.1 Or you may purchase upgrades through the Support Division at current repair prices
Software upgrades	6200 Series Programming Software and Network INTERCHANGE software updates are provided under warranty to registered customers INTERCHANGE, OSI, and VMS software updates are not provided under warranty; upgrades are available through the Support Division; see the Allen-Bradley SupportPlus Services Master Price List, publication SUPS-3.1	6200 Series Programming Software and Network INTERCHANGE software updates provided under warranty renewal For INTERCHANGE, OSI, and VMS software, Allen-Bradley will provide media and documentation updates to customers with a Software Support Agreement (SSA)	Must purchase a warranty renewal for 6200 Series Programming Software and Network INTERCHANGE software For INTERCHANGE, OSI, or VMS software, you must purchase a Software Support Agreement (SSA), a Master Support Package (MS/MSD), or individual one-time software updates; see the Allen-Bradley SupportPlus Services Master Price List, publication SUPS-3.1

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