ControlLogix™ Controller

Cat. No. 1756-L55, -L55M13, -L55M14, -L55M16

IMPORTANT If you have a 1756-L55 controller, you must install a memory board. Install either a 1756-M13, -M14, or -M16 memory board. For more information, see the *ControlLogix Memory Board Installation Instructions*, publication 1756-IN033.

Introduction

These release notes correspond to the following revisions of the ControlLogix family of controllers:

Controller:	Catalog number:	Firmware revision:
Logix5555™	1756-L55Mxx	8.16 or later

These release notes describe the:

- enhancements, additional memory requirements, corrected anomalies, and restrictions of Logix5555 controllers

To use this firmware revision, update your system as follows:

Update this software or firmware:	To this revision or later:
RSLinx™ software	2.30.00 (build 39)
RSLogix 5000™ software	8.00
RSNetWorx™ for ControlNet software	3.00.00 (build 27)
RSNetWorx for DeviceNet software	3.00.00 (build 19)
1756-MO2AE module firmware	3.08
1756-SYNCH module firmware	1.10

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Enhancements

This revision of Logix5555 controllers contains the following new features:

Enhancement:	Applicable instructions:	Description:
ASCII strings	New instructions: • CONCAT, DELETE, FIND, INSERT, MID • STOD, STOR, DTOS, RTOS Existing instructions: • EQU, GEQ, GRT, LEQ, LES, NEQ • FFL, FFU, LFL, LFU • ARD, ARL, AWA, AWT	• A new STRING data type stores up to 82 characters. • You may create additional string data types to store the number of characters that you define. • You may use the new and existing instructions to read, write, manipulate, compare, and convert ASCII strings.
SIZE instruction	SIZE	You may use the SIZE instruction to find the number of elements in a dimension of an array.
DH-485 communications	MSG	You may send messages to and receive messages from another controller over a DH-485 network.
output camming	MAOC and MDOC	You may turn on and off digital outputs based on the position of an axis. You may configure an axis to control up to 4 32-bit tags.
more frequent updates of 1756-CNB/D and -CNBR/D modules	n/a	All output data (except produced tags) that is going over a ControlNet™ network is updated as follows: • The controller now sends the data to the local 1756-CNB/D or -CNBR/D module at the end of every task or at the RPI, whichever is shorter. • The local 1756-CNB/D or -CNBR/D module sends the data to remote chassis at the actual packet interval, as in previous releases. To use this enhancement, you must meet these conditions: 1. The local CNB module must be a 1756-CNB/D or -CNBR/D module. 2. In the I/O configuration of the controller, the configuration for the module must indicate that it is a series D module.

Additional Memory Requirements

This revision of Logix5555 controllers requires more memory than previous revisions:

- Before upgrading to this revision, check the amount of unused memory that you have in the controller. To upgrade to this revision you may have to add an expansion memory card to the controller or use a larger memory card.
- To estimate the additional memory that your project will require, see Table 1 on page 3.

Table 1 Additional memory to upgrade to revision 8.16

If you have this firmware revision (add *all* that apply):	Then add the following memory requirements to your project:					
	Component			**Number in your project**	**Increase per instance**	**Total (number x increase)**
7.x or earlier	project				1050 bytes	1050 bytes
	tags				0.55 bytes	
	axis				21.6K bytes	
	messages that: • transfer more than 500 bytes of data *and* • target a controller in the same chassis This memory is allocated only when the MSG instruction is enabled. To estimate, count the number of these messages that are enabled and/or cached at one time.				2000 bytes	
6.x or earlier	base tags				24 bytes	
	alias tags				16 bytes	
	produced and consumed tags	Data type	Bytes per tag			
		DINT	4		12 bytes	
		REAL	4		12 bytes	
					3 x bytes per tag	
					3 x bytes per tag	
					3 x bytes per tag	
					3 x bytes per tag	
6.x	routines				68 bytes	
5.x or earlier	routines				116 bytes	
					Total additional bytes	

Restrictions

This revision of Logix5555 controllers has the following restrictions:

- If you attach an output cam to a consumed axis, the following members of the AXIS tag *do not* update:
  - OutputCamStatus
  - OutputCamPendingStatus
  - OutputCamLockStatus
  - OutputCamTransitionStatus
- An interruption in power to a ControlLogix chassis *might* produce a non-recoverable fault in a 1756-M02AE analog/encoder servo module when power is restored. If this occurs:
  - The OK LED will be solid red and the module will be inoperative.
  - The connection to the ControlLogix controller will be faulted. If the connection is configured to produce a major fault when it fails, the ControlLogix controller will fault upon returning to Run mode.

  To clear the fault of the servo module, cycle power to the chassis or remove and re-insert the servo module.

The 1756-L55M16 controller has the following restrictions:

- You *cannot* download a project that has more than 3.5M bytes of tags to a 1756-L55M16 controller. During the download, RSLogix 5000 software indicates that the controller is out of memory.

  To stay within the 3.5M byte limit, take this precaution:

  - As you create tags, periodically download the project. If the project successfully downloads, then you know you are within the 3.5M byte limit.

- You *cannot* download a project that has very large routines. During the download, RSLogix 5000 software indicates that the controller is out of memory. (While online, you may be able to create a very large routine, but once offline you will be unable to download the project.)

  To avoid creating routines that are too large, take these precautions:

  – Limit the number of rungs in a routine to less than 2500. (Use a series of smaller routines.)
  – If you are entering a large number of rungs in a routine, do this offline.
  – As you enter rungs, periodically download the project. If the project successfully downloads, then your routines are within limits.

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