Allen-Bradley

XM Firmware Revisions

Catalog Numbers 1440-VST02-01RA, 1440-VST02-01RA, 1440-VLF02-01RA, 1440-VLF02-01RA, 1440-VSE02-01RA, 1440-VAD02-01RA, 1440-SPD02-01RB, 1440-TPS02-01RB, 1440-TPR06-00RE, 1440-TUN06-00RE, 1440-TTC06-00RE, 1440-RMA00-04RC, 1440-VDRS06-00RH, 1440-VDRS06-06RH, and 1440-VDRP06-00RH

XM Modules and Firmware Revisions

The following table lists the XM modules and their current firmware revision. Change bars indicate which modules have been updated in this release.

Catalog Number	Module Description	Revision
1440-VST02-01RA	XM-120E Eccentricity Module	5.018
1440-VST02-01RA	XM-120 Standard Dynamic Measurement Module	5.016
1440-VLF02-01RA	XM-121 Low Frequency Dynamic Measurement Module	
1440-VLF02-01RA	XM-121A Absolute Shaft Vibration Module	5.023
1440-VSE02-01RA	XM-122 gSE Vibration Module	5.018
1440-VAD02-01RA	XM-123 Aeroderivative Module	5.018
1440-SPD02-01RB	XM-220 Speed Module	5.009
1440-TPS02-01RB	XM-320 Position Module	5.009
1440-TPR06-00RE	XM-360 Process Module	5.010
1440-TUN06-00RE	XM-361 Universal Temperature Module	
1440-TTC06-00RE	XM-362 Thermocouple Temperature Module	
1440-RMA00-04RC	XM-440 Master Relay Module	5.008
1440-VDRS06-00RH	Direct (OA) Vibration	5.022
1440-VDRS06-06RH	Direct Vib w/4-20mA out	
1440-VDRP06-00RH	Direct Vib w/Prox Probe Pwr	

Enhancements

This section describes the new features in major revision 5.

Modules	Enhancement	Description
All	Customizable I/O Poll Data	A Dynamic Assembly instance has been implemented that allows you to create a customizable data structure for the I/O Poll response.
	Alarm and Relay Settings Included in I/O Poll Data	The Alarm and Relay configuration parameters can now be included with the measurement values in the I/O Poll response when you use the Custom Assembly. Note that the Alarm and Relay parameters are NOT included in any of the Static Assemblies. You must use the new Custom Assembly to get these parameters in the Poll data.
	Floating Point Threshold (Setpoint) Multiplier	The setpoint multiplier value can now be set to any fractional value between 0 and 10.
	Improved PanelView Integration	• The XM explicit message connection has been redesigned to conform to the PanelView interpretation of the DeviceNet specification. This makes it possible for PanelView to send explicit messages to XM classes with 2-byte class codes, such as the Alarm Object. • The XM has been updated with an alternate method of performing special services (Reset, Delete, Restore, and Save) using the more common Set services. Refer to Appendix D in the XM Module User Manual for details.
	New XM Module	The following XM modules are released in revision 5: • XM-121 Absolute Shaft module • XM-160, XM-161, XM-162 Direct Vibration modules
XM-120, XM-121, XM-122, XM-123	Bypass High Pass Filter Option	A new "Bypass" option is available for the High Pass Filter parameter. This option will reduce distortion of the waveform at low frequencies and reduce attenuation at lower frequencies, providing a more accurate representation of dynamic signals at low frequencies.
	Order-based Measurements Available in Asynchronous Sampling Mode	The 1-3X Magnitude, Not 1X, and Sum Harmonics measurements are now calculated in both Asynchronous and Synchronous sampling modes if a tachometer signal is enabled and present.
	Tachometer Fault Time-Out	A new configuration parameter has been added to the configuration tools and the EDS file that allows you to specify how soon a Tach Fault condition should be indicated after the last valid tachometer pulse is detected.
XM-220	Quicker Tach Fault Detection in Redundant Mode	The module can now detect a Tach Fault on the active channel and switch to the redundant channel in the period of a few tachometer signal cycles.
	Tachometer Fault Time-Out	A new configuration parameter has been added to the configuration tools and the EDS file that allows you to specify how soon a Tach Fault condition should be indicated after the last valid tachometer pulse is detected.
XM-320	Units of Percent	"Percent" is now available as an additional data unit option. Percent is useful for displaying valve position in terms of percent open or closed.
XM-360, XM-361, XM-362	Difference Measurements	Six (6) difference measurements have been added to the configuration tools and EDS file. A Channel's difference measurement value is equal to the Channel's measurement value minus the previous Channel's measurement value. For example, the Channel 2 difference measurement is equal to the Channel 2 measurement minus the Channel 1 measurement.
	External Relay Reset Switch	A new configuration parameter has been added to the configuration tools and EDS file that allows you to convert the Channel 6 input terminals into terminals for wiring an external relay reset switch.
	Adjustable Sensor Out-of-Range Diagnostic (XM-360 only)	A new configuration parameter has been added to the configuration tools and EDS file that allows you to enter a margin beyond the sensor input range for which a sensor out-of-range fault will not be indicated. The new parameter applies to all six channels and is defined as a percent of full scale.
	0 to 1V Input Range (XM-360 only)	The XM-360 module now supports a 0 to 1 Volt sensor input range. This selection will provide improved measurement resolution and accuracy for sensors with low sensitivity such as a combination accelerometer/temperature sensor.
	250 Ohm Pt. 392 RTD Sensor Type Support (XM-361 only)	The XM-361 module now supports a 250 Ohm Pt. 392 RTD sensor type.
XM-440	Relay Inputs	You can now use the status of the slaves' relays as input into the XM-440 relay logic. Previously the XM-440 supported only alarm status inputs. This new feature provides more versatile XM-440 relay programming.
	Support for New XM Modules	• XM-440 revision 5 supports the new XM-121 Absolute Shaft Vibration module. Any XM-440 firmware prior to R5 does NOT support the XM-121 Absolute Shaft module. • XM-440 revision 5 supports the new XM-160, XM-161, and XM-162 Overall Vibration modules. Any XM-440 firmware prior to R5 does NOT support the XM-160, XM-161, or XM-162.

Corrected Anomaly

This section describes the corrected anomaly in revision 5.009.

Module	Anomaly	Description
XM-320	Non-communicative startup state	An anomaly was resolved that caused the module to go into a non-communicative state at startup. The anomaly occurred randomly and was indicated by a flashing red Module Status LED.

Considerations When Upgrading to a New Major Revision

Consider the following before upgrading your firmware to a more recent major revision. If a particular module or major revision is not listed then there are no considerations.

Modules	Upgrade	Considerations
All	All	If you use the XM Serial Configuration Utility, you will need to install and use the version of the XM Serial Configuration Utility that corresponds to the new firmware's major revision. You can download the appropriate XM Serial Configuration Utility from the XM Firmware Update page at http://support.rockwellautomation.com/.
		If you use Enterprise Online Configuration Utility or RSNetWorx with your XM modules, you will need to download and register the EDS files that correspond to the new firmware's major revision. You can download the appropriate XM EDS files from http://www.ab.com/networks/eds.
		General purpose master/scanner devices such as the XM-500 and 1756-DNB typically use the slave's major revision as one of the keys used to identify the slave module. So if you update the slave's firmware to a new major revision then you may need to update the configuration of any master/scanners that own this slave. Note that the XM-440 Master Relay module does not use the slave's major revision as an identification key so you won't need to update the XM-440 configuration for this reason.
XM-120, XM-121, XM-122, XM-123	XM-120 revision 1 to revision 2 or later	Any saved configuration will be lost and the factory defaults will be restored.
		The 23.8 Hz high pass filter that existed in the Series A hardware is no longer supported. If you have Series A hardware, the 23.8 Hz filter will be identified by the configuration software as a 40 Hz filter. DO NOT USE THIS FILTER because it will produce incorrect data. The other high pass filter selections are fine.
		The size of the I/O Poll Response message increases from 56 to 120 bytes. This means: • If you are using an XM-440, then you need to upgrade the XM-440 to revision 2 firmware or greater. • The scan list of any XM-500 or any other Master/Scanner besides the XM-440 will have to be reconfigured to support the larger Poll message size. • Any ladder logic programs that rely on the mapping of the scan list data may have to change to reference the new mapping in the modified scan list. • Any PanelView monitor that may be listening for a 56 byte Poll Response message from the XM-120 will have to be changed to expect a 120 byte message.
	XM-12x revision 2 to revision 3 or later	If you have an XM-440 and plan to change the size of the XM-12x I/O Poll Response message from its default size of 120 bytes, you must also upgrade the XM-440 firmware to revision 3 or greater
	XM-12x revision 3 to revision 4 or later	The new Acceleration measurement is included in the Poll Response message, increasing the maximum size of the Poll Response message from 120 to 124 bytes. If you want to use the new Acceleration measurement data, then you may need to reconfigure the Poll Response Assembly instance and size so that the new measurement is included. If you are not interested in the Acceleration measurement data, then you may still need to reconfigure the Poll Response size in order to get all of the same data you were getting from the revision 3 firmware. The Acceleration measurement value is appended to the end of the Poll Assembly instances 101, 103, and 106. This means that the format of the first 120 bytes of these instances has not changed from revision 3 to revision 4. If your XM-12x is configured for one of these instances and you are not interested in the Acceleration measurement, then you do NOT need to change your configuration. However, the Acceleration measurement value is inserted into Poll Assembly instances 102, 104, and 105. This insertion increased the byte offset by 4 for all the measurements after the Acceleration measurement. If your XM-12x is configured for one of these instances, then you should revisit the Poll Response configuration. You may need to increase the size of the Poll Response message by 4 bytes to include all of the data that was in the revision 3 Poll Response message. Any ladder logic programs that rely on the format of the Poll Response may need to be adjusted to match the new revision 4 format. Any PanelView monitor applications that are listening for the Poll Response may need to be adjusted as well.
	XM-12x revision 4 to revision 5 or later	An ADR scanner cannot restore a revision 4 configuration to a revision 5 device. In other words, if ADR was set up with a revision 4 XM-12x slave, ADR will fail if the replacement is a revision 5 XM-12x slave. You will need to reconfigure the ADR scanner after upgrading the XM-12x slave to revision 5 and registering the XM revision 5 EDS file.

Modules	Upgrade	Considerations
XM-220	Revision 4 to revision 5 or later	An ADR scanner cannot restore a revision 4 configuration to a revision 5 device. In other words, if ADR was set up with a revision 4 XM-220 slave, ADR will fail if the replacement is a revision 5 XM-220 slave. You will need to reconfigure the ADR scanner after upgrading the XM-220 slave to revision 5 and registering the XM revision 5 EDS file.
XM-320	Revision 4 to revision 5 or later	An ADR scanner cannot restore a revision 4 configuration to a revision 5 device. In other words, if ADR was set up with a revision 4 XM-320 slave, ADR will fail if the replacement is a revision 5 XM-320 slave. You will need to reconfigure the ADR scanner after upgrading the XM-320 slave to revision 5 and registering the XM revision 5 EDS file.
XM-360, XM-361, XM-362	Revision 4 to revision 5 or later	The size of the COS message has increased from 8 to 9 bytes. This means: • If you are using an XM-440 then you need to upgrade the XM-440 firmware to revision 5. • The scan list of any XM-500 or any other Master/Scanner besides the XM-440 will have to be reconfigured to support the larger COS message size. • Any ladder logic programs that rely on the mapping of the scan list data may have to change to reference the new mapping in the modified scan list. • Any PanelView monitor that may be listening for an 8 byte COS response message from the XM-36x will have to be changed to expect a 9 byte COS message.
		An ADR scanner cannot restore a revision 4 configuration to a revision 5 device. In other words, if ADR was set up with a revision 4 XM-36x slave, ADR will fail if the replacement is a revision 5 XM-36x slave. You will need to reconfigure the ADR scanner after upgrading the XM-36x slave to revision 5 and registering the XM revision 5 EDS file.
XM-440	Revision 1 to revision 2	If you have any XM-120 slave modules, you need to update them to revision 2 firmware as well.
	Revision 3 to revision 4 or later	If you plan to use the new Group Trigger feature, then you need to upgrade all of your slave modules to revision 4 firmware.
	Revision 4 to revision 5 or later	XM-440 revision 5 expects a 9 byte COS message from the XM-36x module. XM-36x revision 5 supports a 9 byte COS message but previous XM-36x revisions support an 8 byte COS message. If you have any XM-36x modules then you must also update them to revision 5 firmware.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

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