



Dynamix 2500 Data Collector, Firmware Revision 1.020

Catalog Numbers 1441-DYN25, 1441-DYN25-Z

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Safety Information

Be aware of these safety precautions.

IMPORTANT Avoid Water

The Dynamix™ 2500 data collector is splash and dust resistant. However, avoid direct contact with water, wet surfaces, or condensing humidity. Keep this instrument away from wet locations, for example, laundry, wet basements, swimming pools.

If the data collector is subjected to these conditions, adverse operation may result. Before you use it, let the instrument dry thoroughly before operating.



ATTENTION: To avoid damage or injury, place the Dynamix 2500 data collector on a solid stable surface when not in use and do not place any heavy objects on it. Use only the accessories recommended by Rockwell Automation. Keep liquids and foreign objects away from the instrument, and never operate it if any liquid or foreign object has entered it.

Optical Ports



ATTENTION: When the laser on the data collector is active, viewing the laser beam can expose your eyes beyond the maximum permissible exposure recommendations and cause harm.

Laser Radiation Ports



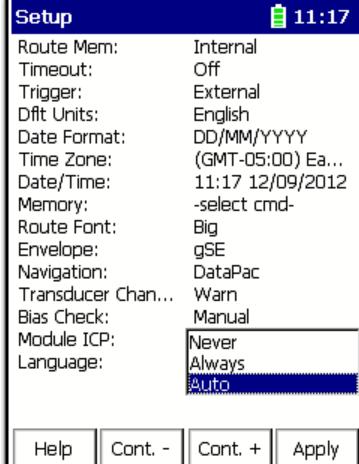
ATTENTION: Class 1 laser product. Laser radiation is present when the system is open and interlocks bypassed. Only trained and qualified personnel should be allowed to install, replace, or service the instrument.



Enhancements

This table lists the enhancements that are provided with the Dynamix 2500 data collector, revision 1.020.

Table 1 - Enhancements with Revision 1.020

Cat. No.	Enhancement																																
1441-DYN25, 1441-DYN25-Z	A Set-up menu option for Module ICP is available.  <p>The screenshot shows the 'Setup' menu screen. At the top right, there is a battery icon and the time '11:17'. The menu lists various configuration options:</p> <table border="1"><tr><td>Route Mem:</td><td>Internal</td></tr><tr><td>Timeout:</td><td>Off</td></tr><tr><td>Trigger:</td><td>External</td></tr><tr><td>Dft Units:</td><td>English</td></tr><tr><td>Date Format:</td><td>DD/MM/YYYY</td></tr><tr><td>Time Zone:</td><td>(GMT-05:00) Ea...</td></tr><tr><td>Date/Time:</td><td>11:17 12/09/2012</td></tr><tr><td>Memory:</td><td>-select cmd-</td></tr><tr><td>Route Font:</td><td>Big</td></tr><tr><td>Envelope:</td><td>gSE</td></tr><tr><td>Navigation:</td><td>DataPac</td></tr><tr><td>Transducer Chan...</td><td>Warn</td></tr><tr><td>Bias Check:</td><td>Manual</td></tr><tr><td>Module ICP:</td><td>Never</td></tr><tr><td>Language:</td><td>Always</td></tr><tr><td></td><td>Auto</td></tr></table> <p>At the bottom of the screen are four buttons: 'Help', 'Cont. -', 'Cont. +', and 'Apply'.</p>	Route Mem:	Internal	Timeout:	Off	Trigger:	External	Dft Units:	English	Date Format:	DD/MM/YYYY	Time Zone:	(GMT-05:00) Ea...	Date/Time:	11:17 12/09/2012	Memory:	-select cmd-	Route Font:	Big	Envelope:	gSE	Navigation:	DataPac	Transducer Chan...	Warn	Bias Check:	Manual	Module ICP:	Never	Language:	Always		Auto
Route Mem:	Internal																																
Timeout:	Off																																
Trigger:	External																																
Dft Units:	English																																
Date Format:	DD/MM/YYYY																																
Time Zone:	(GMT-05:00) Ea...																																
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Module ICP:	Never																																
Language:	Always																																
	Auto																																

Corrected Anomalies

This table lists the corrected anomalies with the Dynamix 2500 data collector, revision 1.020.

Table 2 - Corrected Anomalies with Revision 1.020

Cat. No.	Description	
1441-DYN25	CORRECTED: The data collector does not recognize user defined units.	ICM00000755
1441-DYN25-Z	CORRECTED: The data collector freezes when collecting data on a Secure Digital (SD) card for two continuous hours.	ICM00000760
	CORRECTED: If no previous data is set with the Emonitor software configured as undefined for the speed reference, the instrument may not calculate speed correctly for dependant points.	ICM00000785 ICM00000782
	CORRECTED: The increase from 3 to 6 levels of hierarchy can make the navigation more complex due to the amount of data that must be scrolled through to confirm the point.	ICM00000787
	CORRECTED: Spectral peak displays as 3x higher than overall amplitude.	ICM00000798
	CORRECTED: The -gSE Time waveforms can appear 'smoothed' when compared to the Datapac® 1500 data collector. Occasionally gSE / Time measurements are not taken correctly (all 0s). The - gSE Time waveforms are inverted.	ICM00000876
	CORRECTED: Overlapping band alarms do not trigger correctly.	ICM00000789
	CORRECTED: The Capture On Alarm works with only the first point after the Magnitude point.	ICM00000914
	CORRECTED: Filtered Orbits support up to 3x filtering. All others will be taken and uploaded as Unfiltered.	ICM00000935
	CORRECTED: The 1x RPM does not update cursors when in Continuous mode.	ICM00000913
	CORRECTED: When trying to set a high Fmax to measure gear mesh frequencies, for example, up to 80 kHz, the unit may let you take the reading if you enter it with numeric keys.	ICM00000802
	CORRECTED: When the route is collected, the first two-channel measurement is collected without errors. During the second two-channel measurement, the error message; 'error retrieving information from database' appears and the route locks up.	ICM00000815
	CORRECTED: The data collector fails to recognize a change in collection specifications, for example, spectral data with different Fmax. The collector takes data but uses only one Fmax.	ICM00000818
	CORRECTED: When you load a magnitude/phase measurement point with a collection spec that has more than eight orders and then attempt to load to the collector, it does not load the measurement point. The error message 'Unsupported Measurement'.	ICM00000825
	CORRECTED: The data collector cannot extract speed from the spectrum if the magnitude reading is taken first. To avoid this situation, create a Location ID with a magnitude measurement point prior to a spectrum measurement point.	ICM00000834
	CORRECTED: When taking a reading with the wrong filter selected, the OA Power Bar is not displayed when taking a reading.	ICM00000845
	CORRECTED: When you have band alarms that are overlapping and one is triggered but the overlapping alarm is not, you will not see the whole alarm band flashing as the untriggered alarm is painted over the triggered one.	ICM00000848
	CORRECTED: The frequency item order reference is not always the motor speed reference. Although the time waveforms have the correct speed for the motor locations, the speed increased or reduced locations have an incorrect speed on just the waveforms. The ratio (multiply) relationship is not used, and the waveform uses the motor speed for its rpm value.	ICM00000849

Table 2 - Corrected Anomalies with Revision 1.020

Cat. No.	Description
1441-DYN25	CORRECTED: There is no power for accelerometer with velocity output when displaying reading in mils. ICM00000850
1441-DYN25-Z	CORRECTED: Option for printing to SD card is lost. ICM00000861
	CORRECTED: The data collector is unable to support DC Bias Trending in Route mode when taking readings from a switch-box. These readings require the instrument to power the transducer. ICM00000862
	CORRECTED: Order-based measurements collect as if the Fmax is based on the speed downloaded from the Emonitor software, so changing the actual speed does not change the Fmax used for the measurement. ICM00000902, ICM00000870
	CORRECTED: If a enter key is pressed before the data collector starts the Initialize process, the unit locks up and must be warm booted. If the enter/fire key is pressed before Splash Screen has completed, the data collector will lock up during the power cycle. ICM00000875
	CORRECTED: When the Balancing Extension Module defaults to External Trigger, a LASERTACH® option is needed. ICM00000880
	CORRECTED: When a motor is going slow, the rpm on the screen does not display the proper value. When changing speeds, the rpm does not change to match the motor speed. ICM00000882
	CORRECTED: The number of characters that can be used to define route locations needs to be expanded. You need to be able to manually change the font size on the data collector to reduce the amount of scrolling. ICM00000915
	CORRECTED: Overall (or Overall and Spec) points can get marked with the wrong speed. ICM00000924
	CORRECTED: Using an SD Card, formatted as Fat32, you need to take two sets of data for the same route. ICM00000933
	CORRECTED: The data collector collects Unfiltered Orbit only, but not 1st Order, 2nd Order, for example, no filtered orbits. ICM00000935
	CORRECTED: The data collector always unloads a value of either -4.0882V when collected with an Orbit or -4.0868V when collected as a separate measurement. This is regardless of the fact that the actual gap voltage is, for example, -9.987 or -10.023. ICM00000936
	CORRECTED: Low Frequency measurement reads lower than expected. ICM00000937
	CORRECTED: Having a (Ov+Spec or RSS) Control Point that is its own reference causes the point measurement to not be taken. ICM00000938
	CORRECTED: The percentage change between last and current reading is displayed incorrectly when Chinese language is selected. The workaround is to set the language to English and retake the measurement. ICM00000941

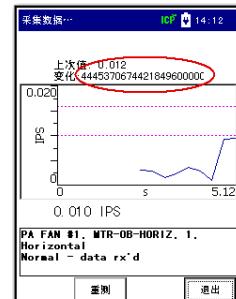


Table 3 - Corrected Anomalies with Revision 1.010

Cat. No.	Description
1441-DYN25 1441-DYN25-Z 1441-PEN25-2C	CORRECTED: If you have band alarms that are overlapping then if one is triggered but the overlapping is not, you will not see the whole alarm band flashing as the untriggered alarm is painted over the triggered one. ICM00000848
	CORRECTED: gSE/Time measurements may not be taken correctly; the instrument has displayed all zeros when you follow this sequence. 1. Restart the instrument. 2. Take a gSE Time Only point. ICM00000893
	CORRECTED: When using a Velocity probe, both the Enpac 2500 data collector, revision 2.02, and the Dynamix 2500 data collector, revision 1.01, disables ICP power. When using OffRoute and coupling set to ICP, the unit does not actually turn on ICP power. ICM00000894
	CORRECTED: If connected to a Speed Ref POINT, the Spectrum POINT is downloaded with the wrong speed value. This speed value is based on the previously uploaded Speed. If this POINT is attached to a Speed Ref POINT, it should update to the newly measured speed and then upload to the Emonitor software with the new value. ICM00000895
	CORRECTED: When you setup an OffRoute gSE POINT with Display Format = Time and 2 kHz filter, with 500 Hz Fmax, the gSE time waveforms are inverted. If you apply a Burst signal, with a carrier of 1 kHz and Burst of 10 cycles and 50 ms (20 Hz), you may see that the spikes in the time waveform are going negative, rather than positive. ICM00000896
	CORRECTED: The first time you delete a measurement (from Review) you get a TourDB error and it isn't deleted (although the tick mark vanishes), but if you delete it again it disappears. ICM00000897
	CORRECTED: When taking an Orbit measurement, the default view shows the correct rpm. If you change to the Time View using the View Menu, then the incorrect rpm is shown. The Orbit view is correct and is showing what is actually measured and stored. ICM00000898
	CORRECTED: If you take a measurement with Frequency Items where the Speed is taken from a previous POINT, for example rpm, then the Frequency Items are incorrectly drawn in the FFT. They appear to get correctly drawn after the POINT has been stored, for example, they are correct in Review. ICM00000899
	CORRECTED: The Machine Speed 'Auto' setting should default to behave like 'Slow' when the associated rpm has less than 600 rpm. 'Auto' may only behave like 'Slow' when the speed drops below 200 rpm, but this is too low (3.33 Hz). ICM00000900
	CORRECTED: When setting the following parameters OffRoute and applying a 60 Hz sine wave at 100 mV Pk with a -1V DC offset: <ul style="list-style-type: none"> • Accel (g) • DC Coupling • Peak Detection • Filter OFF • 400 Hz Fmax You will get these results: <ul style="list-style-type: none"> • Overall - 23.1 g • 0 Hz bin - 20.1 g • 60 Hz bin - 1 g ICM00000901
	CORRECTED: Orders-based measurements collect as if the Fmax is based on the speed downloaded from the Emonitor software, so changing the actual speed does not change the Fmax used for the measurement. ICM00000902

Table 3 - Corrected Anomalies with Revision 1.010

Cat. No.	Description
1441-DYN25 1441-DYN25-Z 1441-PEN25-2C	CORRECTED: Measurements are collected with the wrong Fmax for Orders points with speed set by a Control Point. If a point is set up as Orders but with the speed coming from a Control Point, then (in many cases) the measurement is taken with the incorrect Fmax that makes the frequencies labeled incorrectly.
	ICM00000903
	CORRECTED: Downloading a route where the first point is unsupported and can give TourDB errors even though the invalid point is not downloaded and require a soft restart.
	ICM00000904
	CORRECTED: If there is a point with a Magnitude and Spectrum collection, and you are using an Analog Filter, then it is possible for the Spectrum Peak to be much larger than the Overall - especially if the measurement is Integrated.
	ICM00000905

Known Anomalies

This table lists the known anomalies for the Dynamix 2500 data collector, revision 1.020.

Table 4 - Known Anomalies with Revision 1.020

Cat. No.	Description
1441-DYN25 1441-DYN25-Z	Automatic amplitude ranging may take a long time. Data might be missed.
	ICM00000808
	When the route is collected, the first two-channel measurement is collected without errors. During the second two-channel measurement the error message 'error retrieving information from database' appears and the route locks up.
	ICM00000815
	Channel 2 previous values do not download on cross-phase POINTs. If you take a cross-phase POINT, then the Channel 2 previous value does not load correctly so the overall bar shows a 100% change.
	ICM00000910
	Offroute does not take displacement from Accel in Time format.
	ICM00000921
	When taking an integrated measurement by using the Conservative Autoranging setting, you may notice a measurement that is 15% lower than expected. To avoid this lower reading, use the Aggressive or Fixed Autoranging setting to get consistently correct results.
	ICM00000942

Known Anomalies for the Emonitor Software

This table lists the known anomalies for the Emonitor software that affects the Dynamix 2500 data collector, revision 1.020 and earlier.

Cat. No.	Description	
Emonitor	If no previous data is set with the Emonitor software configured as undefined for the speed reference, the instrument may not calculate speed correctly for dependant points. You may not see the overall amplitude versus a time plot prior to collecting data starting on measurement point. The increase from 3 to 6 levels of hierarchy can make the navigation more complex due to the amount of data that must be scrolled through to confirm the point.	ICM00000785 ICM00000782 ICM00000783 ICM00000787
	The Speed Reference function from a spectrum is not supported.	ICM00000795
	When trying to set a high Fmax to measure gear mesh frequencies, for example, up to 80 kHz, the unit may let you take the reading if entering with numeric keys.	ICM00000802
	When you measure gear mesh frequencies above 20 KHz, you will not be able to see a 2x (40 KHz) gear mesh frequency. Emonitor software version 3.4 does not support > 40 KHz on the Dynamix 2500 data collector or the Enpac 2500 data collector.	ICM00000806
	ISO2954 is not fully supported with the Dynamix 2500 data collector or the Enpac 2500 data collector.	ICM00000807
	You may find that the option to Unload All Measurements when following this sequence. 1. Load a route from Emonitor software, version 3.4 with HF090525 applied via USB connection. 2. Take multiple readings. 3. Select Unload all and view multiple measurements for the route point. 4. Load a route from Emonitor software, version 3.4 with HF090525 applied. 5. Take multiple readings. The Unload All Measurements setting cannot be selected.	ICM00000826
	When taking a reading with the wrong filter selected, the OA Power Bar does not display when taking a reading.	ICM00000845
	If the SD card is in the data collector and is set to Internal memory, it sees the routes loaded via the USB connection for both the card and internal memory. If you initialize before loading, it also deletes the card files.	ICM00000872
	The Dynamix 2500 data collector intermittently displays the message No Routes in Active Memory. If the software initializes prior to loading routes, the data collector intermittently displays the message No Routes in Active Memory. This happens during the following sequence. 1. Format a card for FAT32 in a card reader. 2. Initialize the card in the data collector. 3. Place the card back into the card reader to load routes. This may be happening if you erase routes from the Secure Digital (SD) card via the Emonitor software. If you see the intermittent message, press Refresh on the data collector.	ICM00000873
	Emonitor downloads the data twice (plus SBA) once data has been taken (presumably because the alarms don't match between the Mag+Spec). If you remove the alarms from both (or even just the Spec point), then it looks like this point is loaded correctly.	ICM00000923
	Two-channel data works simultaneously if you set Lo Chan to 1 and 2. Adding a time point to the group changes the group from two channels to a single channel.	ICM00000934
	When you take an Offroute orbit reading and unload it to Emonitor, version 3.4, it will unload to Unscheduled. The orbits graph in Emonitor looks completely different than in Dynamix 2500.	ICM00000939

Operating System Update Procedures

Download the Dynamix 2500 .zip upgrade file from <http://www.rockwellautomation.com/support/>. Choose Downloads > Firmware Updates > Condition Monitoring.

IMPORTANT We recommend that you delete all older versions of the installer loader .msi files from your computer before updating the Dynamix 2500 data collector's operating system.

You can load the operating system/firmware from Dynamix 2500 data collector product CD by using the USB connection. Use the Dynamix 2500 OS Loader application on the product CD or at <http://www.rockwellautomation.com/support/firmware.html>

To use the Dynamix 2500 OS Loader application, the following must be installed on your computer:

- Microsoft's ActiveSync software

Communication is supported through the USB port by using Microsoft ActiveSync software, version 4.5 or later.

If you have not installed ActiveSync software, see Install ActiveSync or Mobile Device Center Software in the Dynamix 2500 Data Collector User Manual, publication [1441-UM001](#), for more information.

- USB Drivers

If you have not installed the USB drivers for your Dynamix 2500 data collector, see Installing the USB Drivers in the Dynamix 2500 Data Collector User Manual, publication [1441-UM001](#).

IMPORTANT Whenever you rerun the OS Loader software, you will reload only the main OS firmware. The OS loader will back up licence files and data, but not the optional extension modules. Once you have updated the OS firmware, install the latest version of your optional extension modules.

Before performing the 1.020 firmware upgrade, take note of the modules installed on the Dynamix 2500 data collector.

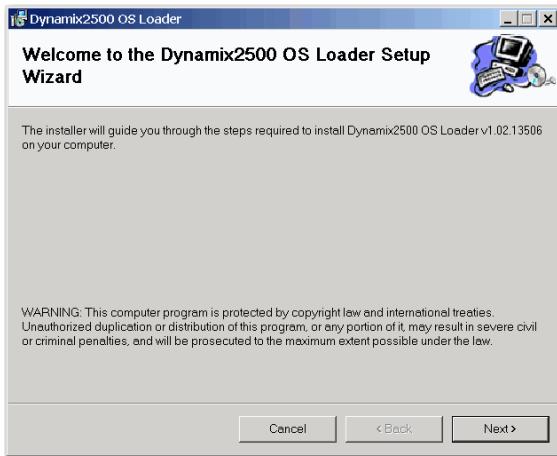
TIP To confirm which modules are installed and the version, press F3 (About) on the Main Screen.

Table 5 - Data Collector Modules

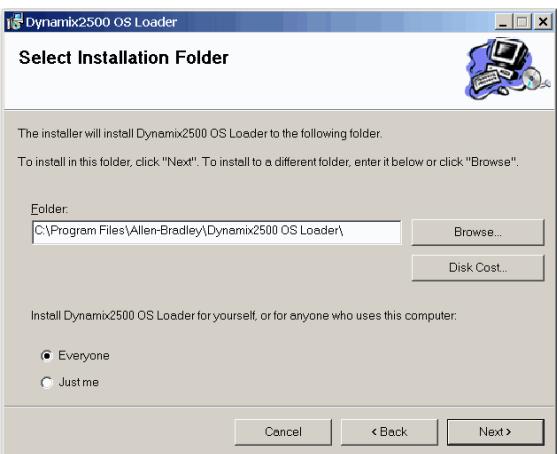
Cat. No.	Module	Version
1441-DYN25-MBAL	Balancing Upgrade	
1441-DYN25-MBMP	Bump Test	
1441-DYN25-MFRF	FRF - Frequency Response Function	
1441-DYN25-MREC	RuCD - RunUp CoastDown	
1441-DYN25-MRUC	Recorder	

Install the Dynamix 2500 OS Loader Application

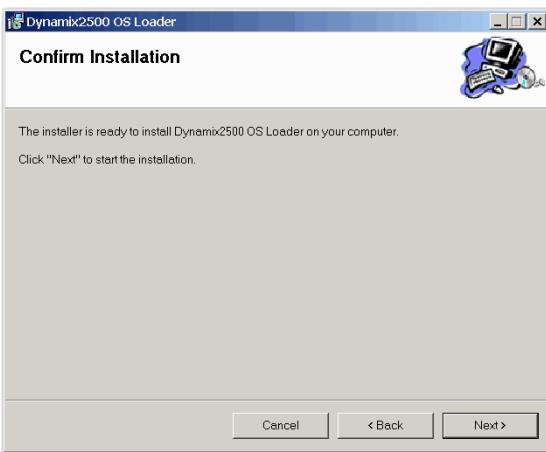
1. Double-click the Dynamix 2500 Dynamix2500_OS_Loader_v1.02.13506.msi file on your computer.



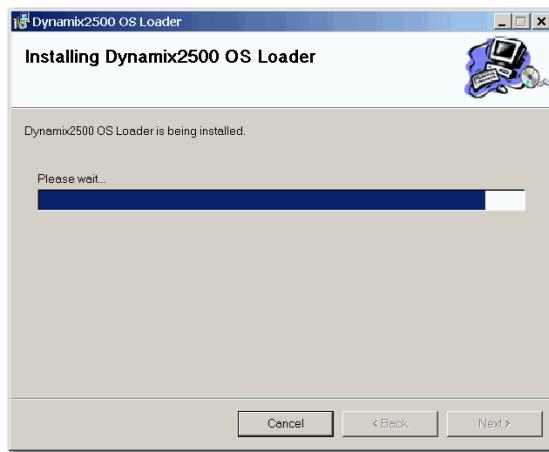
2. Click Next.



3. Select an installation folder and click Next.

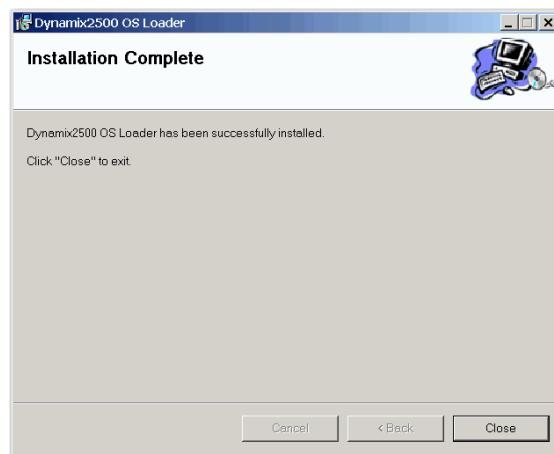


4. Click Next.



The loader is installed.

The installation is complete.



5. Click Close.

Install the Dynamix 2500 Data Collector Firmware

This procedure details the steps necessary to reinstall or upgrade your data collector's firmware by using the Dynamix 2500 OS Loader application.

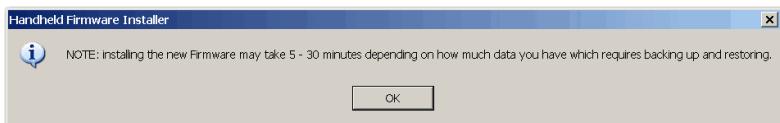
TIP

We recommend that you upload your data to Emonitor before you update the operating system just in case there is an error with the firmware installation, such as a cable disconnect.

Follow these instruction to install the firmware.

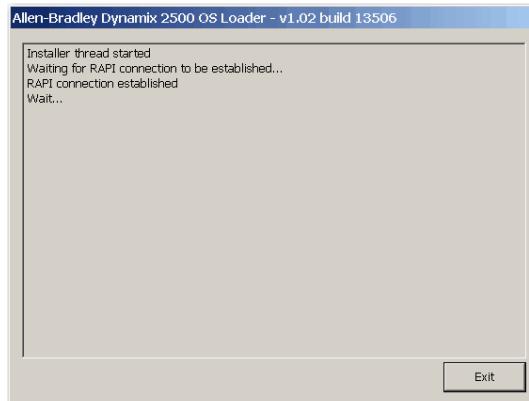
1. Apply power to the data collector.

2. Connect your Dynamix 2500 data collector to the computer by using the splitter cable USB connection.
3. Make sure the ActiveSync software is running.
4. From the Start Menu, choose Programs>Allen-Bradley>Dynamix 2500>Dynamix 2500 OS Loader.



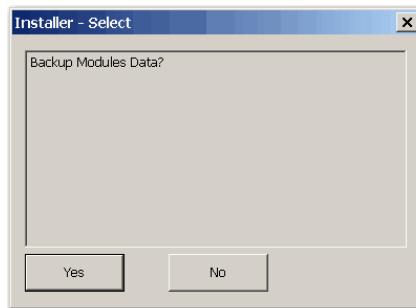
5. Click OK.

During the installation, the Dynamix 2500 data collector restarts several times and multiple screens are displayed. Disrupting or disconnecting the data collector from the computer causes the installation procedure to terminate and may leave the data collector in a corrupted state.



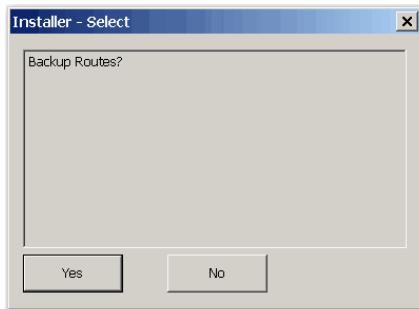
You will be prompted to back up module data, for example, Run-up Coast-down measurements, route database, and measurement data. You can choose to back up this data; it is automatically restored later in the firmware installation process. Any module data that is not backed up will be erased.

6. Click Yes, if desired.

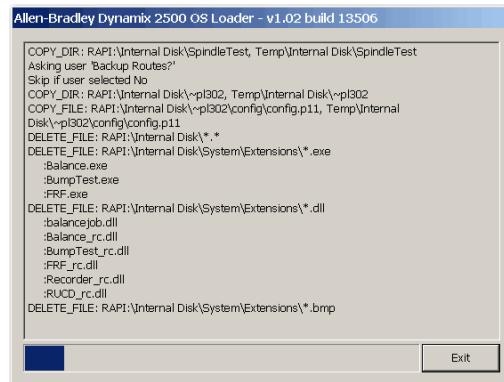


You will be prompted also to back up Routes. If backed up, these are also automatically restored later in the firmware installation process. Any Routes that are not backed up will be erased.

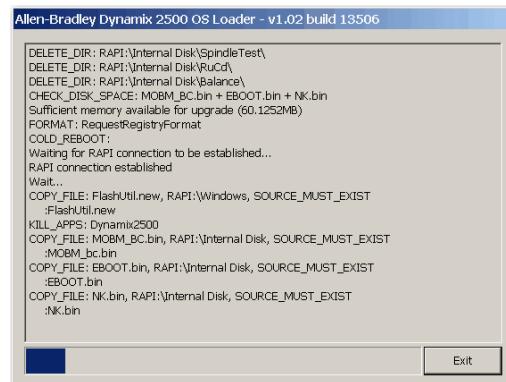
7. Click Yes, if desired.



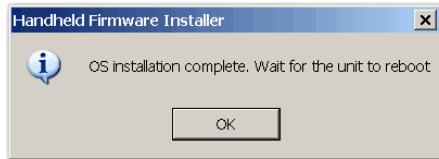
The loader goes through a series of backing up, deleting, and copying files.



You will notice that the unit will reboot and ActiveSync will disconnect and reconnect. Let the loader run through its processes. Do not remove any cables or press any keys on the data collector.

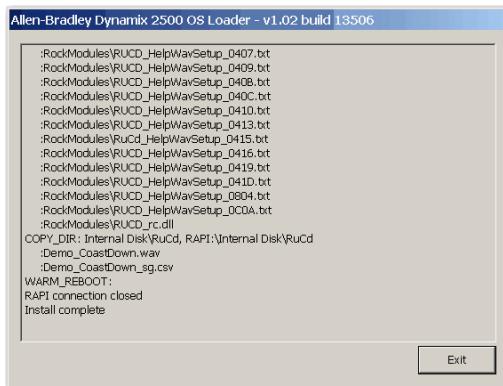


8. Click OK.



Installation is complete.

9. Click Exit.



Module Licensing

Any modules that were licensed prior to the upgrade will still be licensed. Any modules that are installed, but which have not been licensed will appear grayed out as unavailable.



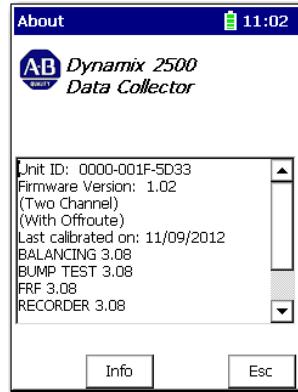
To activate grayed-out modules, contact your local Allen-Bradley distributor or Rockwell Automation sales representative. Use the table [Data Collector Modules on page 8](#) to identify what modules you need to order.

IMPORTANT

You will need to reenter the date and time in the data collector.

TIP

To confirm that the correct revision was loaded, press F3 (About) on the Main Menu screen. The firmware revision should match the operating system file just loaded.

*Upgrading the Emonitor Software*

The Dynamix 2500 data collector, firmware revisions 1.010 and 1.020, are compatible with the Emonitor software, revision 3.4 and later. For instructions on how to upgrade your Emonitor software, refer to one of the Emonitor installation manuals.

Table 6 - Emonitor Installation Manuals

Publication	Publication Number
Emonitor Gupta Single User Installation Manual	EMONTR-IN001
Emonitor Gupta Multi User Installation Manual	EMONTR-IN002
Emonitor Oracle Multi User Installation Manual	EMONTR-IN003
Emonitor MSSQL Multi User Installation Manual	EMONTR-IN004

Secure Digital (SD) Storage Cards

The Dynamix 2500 data collector stores program information and data on a Secure Digital (SD) card. The unit is configured to accept a standard SD card > 4 GB that is supported with a Microsoft Windows CE driver. You can insert the SD card into the instrument when it is powered on or off.

IMPORTANT The Dynamix 2500 data collector is only certified for use with the Sandisk Secure Digital Card SDSDx-yyy.

Dynamix 2500 Data Collector Kit Parts List

See the Dynamix 2500 Data Collector User Manual, publication [1441-UM001](#), for a complete parts list. This publication is also on the product CD-ROM.

Additional Resources

These documents contain additional information concerning products from Rockwell Automation.

Resource	Description
Dynamix 2500 Data Collector User Manual, publication 1441-UM001	Describes configuring the data connector, setting up measurements, collecting and reviewing data, and loading and unloading data.
Emonitor User's Guide, publication EMONTR-UM001	Describes data management for predictive maintenance services.
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.

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://www.rockwellautomation.com/support/>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnectSM support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/support/>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/support/americas/phone_en.html , or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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