



Matrix 3 Troubleshooting & How-To Guide

Matrix Computer Settings

General Overview

Matrix 3 is a software-based Fluid Management System that runs on one or more of your facilities computers (PC's). This guide only applies to the Graco Matrix 3 Fluid Management System and walks you through issues and the solutions to remedy them.

Throughout this guide, there will be colored text entries, they are:

Links – These are links to other support resources that may be needed to accomplish the task you are working on.

Green Text – These are navigational commands directing you to skip to or reference another section in the guide. If the command is underlined, clicking it will direct you to the location it describes.

Red Text – These are STOP points where you will need assistance from IT, Graco or your Graco distributor.

Specific troubleshooting topics can be found in the instruction manuals below. This guide will provide more theory of operation and detail on addressing specific issues. Click the links or type the numbers into the Graco.com search box.

[313046](#) - Meters

[313008](#) - Transceivers

[312964](#) - Tank Level Monitors

[312417](#) - Pump Air Controls

[313013](#) - Matrix 3 Oil Bars

[313104](#) - Basic Software

[313106](#) - Professional Software (includes 3rd Party Interface capability)

[313108](#) - Premier Software (includes 3rd Party Interface capability)

[313112](#) - Premier Software with CDK Interface

[313114](#) - Premier Software with Reynolds & Reynolds Interface

[334786](#) - Premier Software with Procede/Excede Interface

[3A4999](#) - Premier Software with DealerTrack Interface (As an addendum to the Premier Software Manual)

Notes:

- All PC related references used in this guide are based on the Microsoft Windows 10 Operating System conventions, other versions of Windows operating systems may vary.
- Troubleshooting efforts may require help from your IT/IS staff or vendor. Having them available is highly recommended.
- If you need Matrix software, contact Graco and they will get you a direct download link. All PC's must be running the same version of Matrix software, delete or discard any different versions you have.
- Check for new and updated content by visiting graco.com/matrixsupport, scroll down to the "Guides" section.
- If you find you still need help, contact a Graco Tech Assistance Agent by using the information found at the bottom of each page of this guide.

Contact Graco LED Tech Assistance at 800-533-9655, option 2 or LEDtech@graco.com



Computer Settings for Matrix Systems

Overview

When installing Matrix on any PC, Graco recommends checking/changing some computer settings to ensure trouble free communication within the Matrix system; these are:

- Windows Firewall and Ports
- Power Options
- Matrix Transceiver (USB Port) Drivers

All can be accessed from within the computer's "Control Panel" settings.

Notes:

- Due to the ever increasing threat of computer related attacks, the company's IT department may have restrictions in place that prevent these settings from being tampered with. You will have to enlist their help if this is the case.
- The settings explained below may be overridden by a "Group Policy" enforced by the company's IT department the next time the user logs into the computer(s). It may be wise to consult with the IT department regarding this and have them grant special exceptions as needed to allow these settings to remain in force at all times.

Procedures

- [Windows Firewall and Ports Settings](#)
 - Matrix Server
 - Matrix Clients
- [Windows Power Options Settings](#)
- [Matrix Transceiver Drivers](#)
 - Matrix Transceiver Driver Update
 - Matrix Transceiver Power Management
- [Anti-Virus and Anti-Malware Program Settings](#)

Windows Firewall and Ports

If the Matrix system is used with more than one PC at a facility, these settings should be checked or applied to ensure trouble-free operation. In some cases, a single PC Matrix system will have issues opening due to Firewall restrictions and can be remedied by:

- Following prompts to "Allow" access if the Firewall program provides the choice.
- Changing Matrix settings to "localhost", visit graco.com/matrixsupport and find the "Edit Matrix Settings" guide for help.
- Configuring the settings below.

Matrix Server

Graco recommends always configuring the Windows Firewall settings on the Matrix Server if allowed by IT.

1. Click the PC "Start" button and type "Windows Firewall".
2. The PC should find "Windows Defender Firewall", click to open it.
3. This will bring up a window with the title "Windows Defender Firewall".
4. In the next window, click on "Advanced settings" on the left side of the page.
5. In the next window, click "Inbound Rules".
6. Next, click "Action>New Rule".

Contact Graco LED Tech Assistance at [800-533-9655](tel:800-533-9655), option 2 or LEDtech@graco.com



7. In the next window, check "Port", then click "Next".
8. In the next window, type 20000-20006 in the "Specific local ports" field, then click "Next".
9. In the next window, leave "Allow the connection" checked, then click "Next".
10. In the next window, leave "Domain, Private & Public" checked, then click "Next".
11. In the next window, type Matrix in the "Name" field, then click "Finish".
12. Repeat all steps above with the following exceptions:
 - a. On #5 click "Outbound Rules" instead.
 - b. On #9, you will have to check "Allow the connection"

Notes:

1. If you see all RED ribbons for the "Domain, Private and Guest or Public" networks, then the IT department may be controlling these settings and if you still have trouble with opening Matrix, consult IT for assistance.
2. Graco recommends performing the Windows Firewall settings for Matrix even if it is turned off. In the event that it does get turned on later, it will not break the connections.
3. If Matrix still fails to open after adjusting these settings, try completely turning the firewall off and trying again.

Matrix Clients

Matrix clients do not need any firewall setting modifications UNLESS they have a Matrix Transceiver connected to them. Follow steps 1-12 above.

Note: If you see all RED ribbons for the "Domain, Private and Guest or Public" networks, then the IT department may be controlling these settings and if you still have trouble with opening Matrix, consult IT for assistance.

Windows Power Options

Power Options should ALWAYS be applied to the Matrix Server and ANY Matrix Clients that have a Transceiver.

1. Click the PC "Start" button and type "Power Options".
2. The PC should find "Power & Sleep Settings", click to open it.
3. This will bring up a window with the title "Power & Sleep".
4. Click on "Additional power settings".
5. In the next window, click on "Create a power plan".
6. In the next window, choose "High performance", type "For Matrix" into the "Plan name", then click "Next".
7. In the next window, choose "Create".
8. In the next window, choose, check the "For Matrix" radio button and click "Change plan settings".
9. In the next window, click "Change advanced power settings".
10. In the new window, expand the "Hard disk" and scroll the "Turn off hard disk after" down to "Never".
11. Expand the "Sleep" section if needed. (laptops may have two settings for "On battery" & "Plugged in")
12. Scroll it down to "Never".
13. Expand the "Allow hybrid sleep" section if needed.
14. Scroll it down to "Off".
15. Expand the "Hibernate after" section if needed.
16. Scroll it down to "Never".
17. Expand the "USB settings" section and "USB selective suspend" if needed.
18. Scroll it down to disabled" and click "OK".
19. Click "Apply" and "OK" when done.



Matrix Transceiver Drivers

All Matrix software packages contain an installation for the USB port drivers needed for Matrix Transceivers to communicate with Matrix. These are installed at the end of the Matrix software installation by default. If you are just having communication issues, it could be due to the Transceiver drivers being out of date and you do not need to reinstall Matrix. This guide will help you determine the correct version needed based on your computer operating system and a download link to get the correct drivers.

Notes:

1. This driver is only needed on PC's that have Transceivers plugged into them.
2. If you are installing or reinstalling Matrix due to PC issues, this driver installation may appear to fail, ignore this and reboot the PC when prompted and continue from here.

Depending on your PC's operating system and the version of Matrix you are installing, the driver installation included in the Matrix software package may be out of date. First, you will need to figure out what driver version is installed and then determine if you need to upgrade it or not. Below are "known good" versions for each of the popular operating systems. If you find your existing drivers are within the minimum range listed, there is no need to upgrade them.

- Windows 7 - the driver must be version 6.3.0 to 6.7.5, with 6.7.5 being the latest, all work perfectly.
[Download Windows 7 driver directly here.](#)
- Windows 10 - the driver must be version 10.1.3 to 10.1.10, with 10.1.10 being the latest, all work perfectly.
[Download Windows 10 driver directly here.](#)
- Windows 11 - the driver must be at least 11.0.0.
[Download Windows 11 driver directly here.](#)

Matrix Transceiver Driver Update

1. Download the correct driver (you may need assistance from IT to perform this task).
2. Navigate to the location where you downloaded the driver (normally the "Downloads" folder).
3. Find the downloaded file (usually the one with the most recent date stamp).
4. Right-click it and choose "Extract all".
5. In the next window, click "Extract" and it will extract the file and open the contents in a new window.
6. Click the PC "Start" button and type "Device Manager".
7. The PC should find "Device Manager", click to open it.
8. This will bring up a window with the title "Device Manager".
9. Make sure the Transceiver(s) are plugged into the PC you are at.
10. It should show up in one of the sections below.
 - a. "Ports (COM & LPT)" – Labeled as "Silicon Labs CP210x USB to UART Bridge (COMx).
 - b. "Other devices" - Labeled as "CP2102 USB to UART Bridge Controller".
11. Right click on the one you find and choose "Update Driver".
12. In the next window, click the "Browse my computer for drivers" button.
13. In the next window, click the "Browse" button and navigate to the location of the folder you unzipped the driver file to earlier (make sure the "Include subfolders" box is checked).
14. Click "Next", this should update the driver, you will be prompted to reboot the computer:
 - a. If you only have one Transceiver, go ahead and reboot.
 - b. If you have more than one Transceiver plugged into the computer, repeat for each, then reboot.

Notes:



- For all PCs that have a Transceiver plugged into them, visit graco.com/matrixsupport and find the “Windows Computer Settings for Matrix 3 Systems” guide and follow it to ensure they are set up correctly to allow trouble free Matrix operation.
- Repeat all steps for each Transceiver including other Matrix Client PCs that have Transceivers plugged into them.

Matrix Transceiver Driver Power Management

1. Click the PC “Start” button and type “Device Manager”.
2. The PC should find “Device Manager”, click to open it.
3. This will bring up a window with the title “Device Manager”.
4. Make sure the Transceiver(s) are plugged into the PC you are at.
5. Find and expand the “Ports (COM & LPT)” field, you should find one or more “Silicon Labs...” entries.
6. Right click on the “Silicon Labs...” entry and choose “Properties”.
7. Click on the “Power Management” tab at the top of the screen and uncheck the “Allow the computer to turn off this device to save power” box.
 - a. If the “Power Management” tab is not visible, IT may have it disabled, it is not a required setting, but Graco recommends setting it up.
8. Click “OK” when done
9. Repeat this for each and every Transceiver (remember to also repeat for other Matrix Client computers that have Transceivers plugged into them)

Anti-Virus and Anti-Malware Program Settings

In addition to all the settings detailed above, the facility IT department or vendor may have third party Anti-Virus or Anti-Malware tools installed for monitoring and protecting the computers and network. It is possible that these may affect Matrix communication and should be addressed if you are still having trouble opening it. There are also known instances where an Anti-Virus or Anti-Malware program sees Matrix as a threat and disables or removes one of more of the Matrix Services.

1. On the Server, 3 Matrix Services should be present, on Matrix Clients, there should only be one - the Transceiver Server service, visit graco.com/matrixsupport and find the “Matrix Services” guide for help.
2. If some are missing, Matrix will have to be reinstalled, visit graco.com/matrixsupport and find the “Edit Matrix Settings” guide to get directions on exporting the database BEFORE you start.
3. You may also need to obtain a copy of the software if you can't find it. You MUST verify it is the same version as what you were running, visit graco.com/matrixsupport and find the “Identifying Matrix 3 Software” for help.
4. Configure the Anti-Virus or Anti-Malware program to allow Matrix as “approved” software so it no longer prevents Matrix from operating.
5. Install Matrix, reboot and open it, visit graco.com/matrixsupport and find the “Installing Matrix 3 Software” for help.
6. If it opens, import the old database, visit graco.com/matrixsupport and find the “Edit matrix Settings” guide for help on importing the database.

Note: Matrix uses TCP Port 20000-20006, provide this to IT as needed.

Troubleshooting

If after making changes, you encounter the “Cannot send message to MSE” message on Matrix, try the guides to help.

- Restart the Matrix Services first, visit graco.com/matrixsupport and find the “Matrix Services” guide for help.
- “MSE” message at the Matrix Server - visit graco.com/matrixsupport and find the “Unable to Send Message to MSE - Server” guide for help. (Always start here since the Matrix Server MUST be working for Clients to also work).
- “MSE” message at a Matrix Client - visit graco.com/matrixsupport and find the “Unable to Send Message to MSE - Client” guide for help.

Contact Graco LED Tech Assistance at 800-533-9655, option 2 or LEDtech@graco.com