



DigiTrace Supervisor™

HEAT-TRACING CONTROLLER CONFIGURATION AND MONITORING SOFTWARE
INSTALLATION MANUAL FOR DIGITRACE SUPERVISOR ENTERPRISE
VERSIONS UP TO 2.1



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SECTION 1 – INTRODUCTION

1.1 Welcome

The DigiTrace Supervisor™ heat-tracing controller configuration and monitoring software provides a graphical user interface for DigiTrace® communications and controller products. The software supports one or more NGC-UIT User Interface Terminals with NGC-30 controllers, 780 Series/GCC-9000 Group Communications Controllers, DigiTrace T2000 AC 2000+ alarm/communications interface cards, DigiTrace 910/915/920 Heat Trace Controllers and/or legacy DigiTrace Controllers (except the DigiTrace 200N) using the ModBus® protocol. The software allows the user to configure and monitor any DigiTrace controller which has the appropriate communications interface installed from one central location. The software also incorporates advanced features such as data logging and trending, batch and recipe processing, scheduled events, etc. This new version has added support for the NGC-UIT User Interface Terminal and the NGC-30 Controller peripherals, both forming part of the Pentair Thermal Management next generation family of products. Version V2.1 retains the full multi-user, multi-server and networking capabilities that were added in V2.0. Electric HeatTracing (EHT) system information can now be accessed and managed from almost anywhere in the world, using the latest connectivity technologies. This flexibility can reduce the cost of installing communications to controllers within your facility. Devices are no longer limited to simple hard-wired serial communications, but can now take advantage of existing network infrastructures including Ethernet LANs (Local Area Networks), and Internet-based WANs (Wide Area Networks).

1.2 New Features

DigiTrace Supervisor version 2.1 replaces previous versions of the DigiTrace Supervisor software. This section provides a summary of the new features that have been added since the last version of this software package was released.

- The software now includes support for the NGC-UIT User Interface Terminal and the NGC-30 controller peripherals.

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1.5 User Responsibilities

The performance, reliability and safety of your heat-tracing system depend on proper design, selection and installation. The DigiTrace Supervisor program will help you configure and monitor a system that meets your requirements, but it is only a tool. It assumes that your input is accurate, that you are familiar with heat-tracing system design and configuration, and that you will ensure that all components of the heat-tracing system are installed, maintained and used as intended. The configuration of the DigiTrace Supervisor program should be reviewed by a knowledgeable engineer to ensure it is appropriate for your application. Additional information relating to safety, design and installation is contained in Design Guides, Installation Manuals, Data Sheets, and other literature available from Pentair Thermal Management. Be sure to consult these documents as needed.

1.6 Safety Warnings

There are important safety warnings shipped with our products and printed in our literature. Be sure to read and follow them to reduce the risk of fire, shock or personal injury. If you have any questions, contact you local Representative or Pentair Thermal Management directly.

1.7 Technical Support

In North America, contact Pentair Thermal Management directly at: Pentair Thermal Management

2415 Bay Road

Redwood City, CA 94063-3032

Tel: (800) 545-6258

Tel: (650) 216-1526

Fax: (800) 527-5703

Fax: (650) 474-7711

email techsupport@pentair.com

SECTION 2 – SYSTEM OVERVIEW

The DigiTrace Supervisor heat-tracing controller configuration and monitoring software provides a graphic interface to one or more NGC-UIT User Interface Terminals with NGC-30 Controllers, 780 Series/GCC-9000 Group Communications Controllers, DigiTrace T2000 AC 2000+ alarm/communications interface cards, DigiTrace 910/915/920 Heat Trace Controllers and/or legacy DigiTrace Controllers (except the DigiTrace 200N) using the ModBus® protocol.

The software allows the user to configure and monitor any DigiTrace controller installed in the field which has the appropriate communications interface installed from one central location. The software also supports alarm monitoring, with the ability to acknowledge and clear alarms.

2.1 System Requirements

The DigiTrace Supervisor software is designed to run in a networked environment using one or more computers. The software is composed of three components, and it is assumed that all computers are networked together on a corporate intranet. Implementation details of this type of networking environment are beyond the scope of this document.

- DigiTrace Supervisor (DTS) Master Server
- DigiTrace Supervisor (DTS) Slave Server
- DigiTrace Supervisor (DTS) Client

The DTS Master Server and DTS Slave Server applications must be installed and run on separate computers. DTS Slave Servers are optional; however you may add new DTS Slave Servers to your EHT system as required. Using DTS Slave Servers allows your EHT system to distribute the communications workload. For example, instead of one computer providing the monitoring for all devices in your system, one or more slave

servers can be configured to monitor for alarms at the same time.

The DTS Client provides the user interface and can be installed on any computers that require user interaction with the system. Once the DTS Master Server, DTS Slave Server(s) and DTS Client(s) are installed, multiple users can access the DigiTrace Supervisor EHT system from different client computers simultaneously.

The computer hardware required to run DTS Master Server, DTS Slave Server and DTS Client are outlined in the following sections.

2.1.1 TYPICAL SYSTEM ARCHITECTURES

While many DTS system architectures are possible, they will generally fall into one of three types, and these in turn will use either MSDE or SQL for their databases.

- **Single Master Server, no Slave Servers, Single User (Client).** This type of installation will typically use the MSDE database (“Standard”) version of DigiTrace Supervisor.

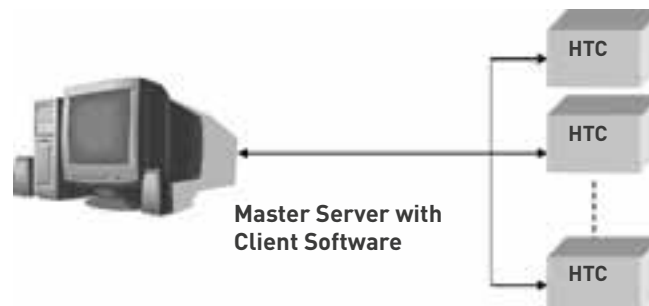


Figure 2-1 Typical single master, single client system

- Single Master Server, no Slave Servers, Multiple Users (Clients).** This architecture may be MSDE-based as long as the number of simultaneous users is limited to a maximum of four. Due to MSDE database limitations, no performance guarantees can be made in all situations with this many Users. For example, if several data trending or batch jobs are being run simultaneously, only one or two Users may be able to connect without impacting system performance. Applications that require more Users or the ability to have a larger number of batch/trending/configuration jobs must use the SQL-based Enterprise version of DigiTrace Supervisor.

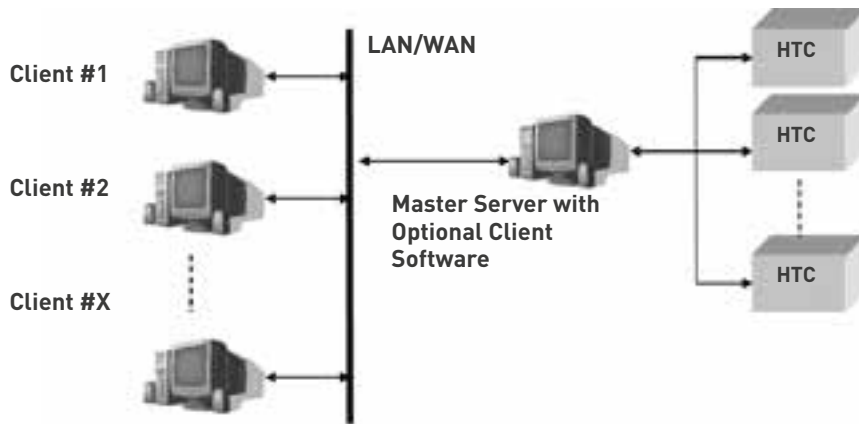


Figure 2-2 Typical single master, multiple client system

- Single Master Server, one or more Slave Servers, Multiple Users (Clients).** This topology represents the largest system type, where multiple computers are used to distribute the communications and processing workload. This type of installation will always use the SQL-based Enterprise version of DigiTrace Supervisor and will support a large number of simultaneous Users and data processing jobs.

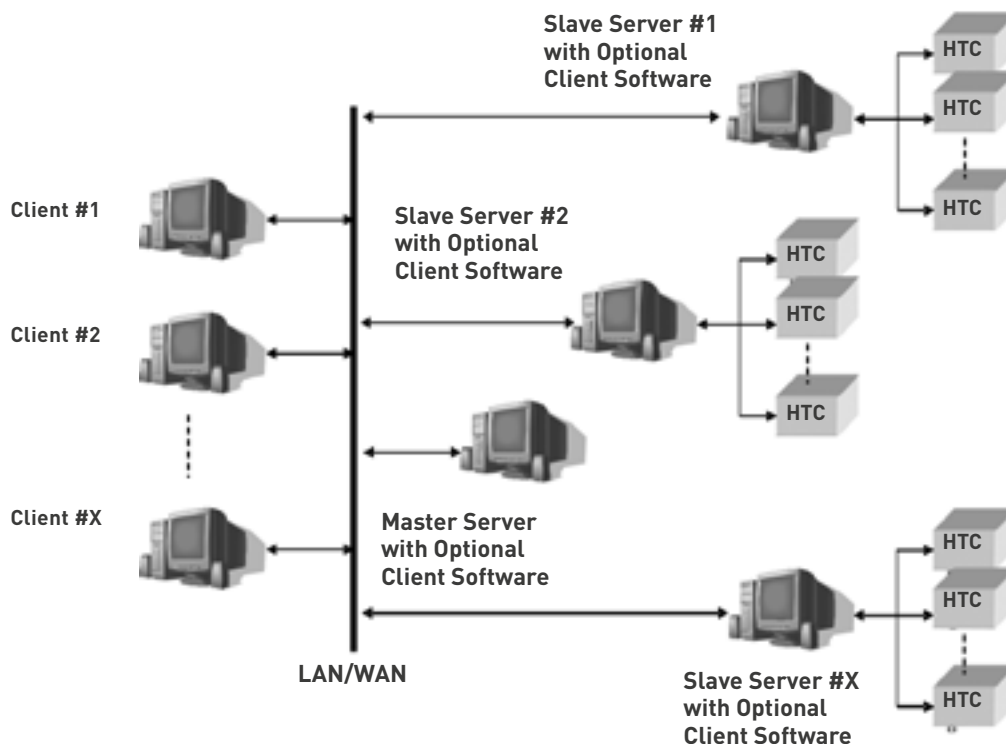


Figure 2-3 Typical single master, multi-slave server, multiple client system

2.1.2 DIGITRACE SUPERVISOR (DTS) MASTER SERVER

To effectively use the software, the following configuration is required:

- A Pentium® 4 – 2.4GHz or faster (Recommended), Pentium® III – 500 MHz (Minimum) IBM-compatible personal computer. Large systems using multiple Slave Servers should consider the use of a higher speed/multiple processor Master Server computer for best performance. Consult Pentair Thermal Management Applications Engineering for guidance.
- A hard disk with at least 500 megabytes of free space (Recommended), 150 megabytes (Minimum)
- 1 gigabyte of RAM (Recommended), 256 megabytes of RAM (Minimum)
- CD-ROM Drive
- 1 or more available serial ports
- A mouse or other compatible pointing device
- SVGA display with 800x600 resolution
- Standard configurations using MSDE: Microsoft Windows® XP Pro, Windows® XP Home, or Windows 2000®
- Multi-User/Server Capable configurations using SQL: Microsoft Windows® 2003 Server, or Windows 2000 Server ® on the computer where SQL is installed
- Microsoft .NET® Framework version 1.1
- Network connectivity

2.1.3 DIGITRACE SUPERVISOR (DTS) SLAVE SERVER

To effectively use the software, the following configuration is required:

- A Pentium® 4 – 1GHz or faster (Recommended), Pentium® III – 300 MHz (Minimum) IBM-compatible personal computer
- A hard disk with at least 150 megabytes of free space (Recommended), 50 megabytes (Minimum)
- 256 megabytes of RAM (Recommended), 128 megabytes of RAM (Minimum)
- CD-ROM Drive
- 1 or more available serial ports
- A mouse or other compatible pointing device
- SVGA display with 800x600 resolution
- Microsoft Windows® XP Pro, Windows® XP Home, or Windows® 2000
- Microsoft .NET® Framework version 1.1
- Network connectivity

2.1.4 DIGITRACE SUPERVISOR (DTS) CLIENT

To effectively use the software, the following configuration is required:

- A Pentium® III – 500MHz or faster (Recommended), Pentium® II – 300 MHz (Minimum) IBM-compatible personal computer
- A hard disk with at least 50 megabytes of free space
- 256 megabytes of RAM (Recommended), 128 megabytes of RAM (Minimum)
- CD-ROM Drive
- A mouse or other compatible pointing device
- SVGA display with 800x600 resolution
- Microsoft Windows® XP Pro, Windows® XP Home, or Windows® 2000
- Microsoft® .NET Framework version 1.1
- Network connectivity

2.1.5 780 SERIES/GCC-9000 GCC CONNECTIONS

The 780/GCC-9000 Group Communications Controller has both an RS-232C and RS-485 serial communications port, either of which you can use to communicate with the computer using the DigiTrace Supervisor software. Connections are as follows:

RS-232C

You will normally use this type of connection when only one 780/GCC-9000 is in the system and it is in close proximity to the computer. The RS-232C requires a Null Modem Serial cable connection, with a 25 pin male connector on the GCC end and either a 9 or 25 pin connector on the PC end. Refer to Appendix A at the back of this manual for connection details.

RS-485

Use this type of connection when longer distances are to be covered and/or multiple GCCs are to be connected to the DigiTrace Supervisor software. The RS-485 wiring should be a twisted, shielded cable of appropriate gauge based on transmission speed and distance. See Appendix A, or the RS-485 Standard for wire gauge versus speed/distance. Appendix A also includes jumper details for the GCC when using an RS485 connection.

2.1.6 AC 2000+ ALARM/COMMUNICATIONS INTERFACE CARD CONNECTIONS

The AC 2000+ has a local and a remote port. You can select the local port as an RS-232C or a 2-wire non-isolated RS-485 interface. You can select the remote port as a 2-wire isolated RS-485 or as a 10Base-T Ethernet connection. You can use either port to communicate with the computer using the DigiTrace Supervisor software. Connections are as follows:

RS-232C

You will normally use this type of connection when only one AC 2000+ is in the system and it is in close proximity to the computer. The RS-232C requires a standard, straight-through serial cable connection, with a 9 pin male connector on the AC 2000+ end and either a 9 or 25 pin connector on the PC end. Refer to Appendix A at the back of this manual for connection details.

RS-485

Use this type of connection when longer distances are to be covered and/or multiple AC 2000+ units are to be connected to the DigiTrace Supervisor software. The RS-485 wiring should be a 2-wire twisted, shielded cable of appropriate gauge based on transmission speed and distance. See Appendix A, or the RS-485 Standard for wire gauge versus speed/distance.

Ethernet

For this type of connection, you can use a standard 10Base-T Ethernet cable with a RJ-45 plug. The network speed supported by the AC 2000+ alarm/communications interface card is 10 Mbps. See with your network administrator regarding assigning IP addresses for the AC 2000+ alarm/communications interface card.

2.1.7 NGC-UIT USER INTERFACE TERMINAL CONNECTIONS

The NGC-UIT has both local and remote communication ports. You may elect to use the local serial port (RS-232C) or one of the remote ports (either 2-wire isolated RS-485, or the 10/100Base-T Ethernet). Any of these ports may be used to communicate with a computer using the DigiTrace Supervisor software.

RS-232C

You will normally use this type of connection when only one NGC-UIT is in the system and it is in close proximity to the computer. Connections via the RS-232C port require use of the special serial cable provided with the NGC-UIT. See the NGC-UIT Installation Instructions and the **NGC-30 Programming Guide (H57402)** for additional details on setting up this type of connection.

RS-485

Use this type of connection when longer distances are to be covered and/or multiple NGC-UITs are to be connected to the DigiTrace Supervisor software. The RS-485 wiring should be a 2-wire twisted, shielded cable of appropriate gauge based on transmission speed and distance. See Appendix A, or the RS-485 Standard for wire gauge versus speed/distance recommendations.

Ethernet

For this type of connection, you can use a standard 10/100Base-T Ethernet cable with an RJ-45 plug. The NGC-UIT supports both 10 Mbps and 100 Mbps connections. Consult with your network administrator, the **NGC-30 Programming Guide** (H57402) regarding assignment of IP addresses.

2.1.8 HTC-DIRECT CONNECTIONS

A device acting as a ModBus master (i.e.: a PC running the DigiTrace Supervisor software) may communicate directly with DigiTrace 910, 915 or 920 Series controllers supporting ModBus communication protocols.

Three types of communications option cards are presently available for 910 and 920 Controllers: Modem, RS-232C and RS-485. Only RS-232C and RS-485 communications option cards are typically used for HTC-direct connections to DigiTrace Supervisor. The Modem option card is used only when connecting to a 780 Series/GCC-9000 Group Communications Controller.

RS-232C


Use an RS-232C connection when only one controller is present and is in close proximity to the computer. Refer to the User Manual for the specific type of controller and communications option card you are using for connection details.

RS-485


Use an RS-485 connection when longer distances are to be covered and/or multiple controllers are to be connected to the DigiTrace Supervisor software. The RS-485 wiring should be a 2-wire twisted, shielded cable of appropriate gauge based on transmission speed and distance. See Appendix A, or the RS-485 Standard for recommended wire sizes versus speed/distance.

SECTION 3 – INSTALLING DIGITRACE SUPERVISOR

DigiTrace Supervisor's (DTS) installation wizard will install the DigiTrace Supervisor software on your PC's hard disk drive. You must already have Windows® XP Pro, XP Home, or Windows® 2000 installed on your computer. If you are using an SQL database version (DigiTrace Supervisor Enterprise Edition), the computer on which the SQL Server is installed must have Windows® Server 2000 or 2003 pre-installed.

 **Note:** To install Windows, follow the installation procedure provided by Microsoft. Familiarity with the Windows environment is highly recommended, and it is assumed throughout this manual. Knowledge of the Windows environment will make this program easier to use and understand.

If you are upgrading an existing DigiTrace Supervisor installation, refer to Section 14.3 "Converting DigiTrace Supervisor Databases" in the **DigiTrace Supervisor Operations Manual (H57576)** for information on how to convert your existing database.

 **Note:** Components should be installed in the order in which they are presented in this document.

3.1 Quick Start Guide

The following provides a brief outline of the installation process for the Enterprise (SQL) version of DigiTrace Supervisor (DTS). Detailed instructions may be found in each of the Sections that are referenced within the individual steps:

3.1.1 ENTERPRISE (SQL SERVER) DTS INSTALLATIONS:

1. Setup the Master Computer:
 - A. Ensure that the .NET Framework is installed (see Section 3.2).
 - B. Ensure that the MDAC component is installed (see Section 3.3).
 - C. Install the SQL Server database (see Section 3.4).
 - D. Install the DigiTrace Supervisor Master Server application (see Section 3.6).
 - E. (Optional but Recommended) Install the DigiTrace Supervisor Client software if you want the user to be able to interact with the DigiTrace system from the Master computer (see Section 3.6.7).
2. Setup any Slave Server Computers:
 - A. Ensure that the .NET Framework is installed (see Section 3.2).
 - B. Install the DigiTrace Supervisor Slave Server application (see Section 3.6.5).
 - C. (Optional) Install the DigiTrace Supervisor Client software if you want the user to be able to interact with the DigiTrace system from the Slave computer (see Section 3.6.7).
3. Setup any Client Computers:
 - A. Ensure that the .NET Framework is installed (see Section 3.2).
 - B. Install the DigiTrace Supervisor Client software (see Section 3.6.7).
4. Convert an existing database (optional):
 - A. If you are upgrading from a previous version of DigiTrace Supervisor, PyroMaster, or TraceMaster software, you may import some of the system setup information into the new software (see Sections 14.3 through 14.4 of the **DigiTrace Supervisor Operations Manual (H57576)** as appropriate).
5. Activate and Register your new software (see Section 4).

3.2 Installing .NET Framework

To start the .NET Framework installation, insert the “DigiTrace Supervisor Disk 1 – Application and Utilities” CD (SQL versions) into the PC’s CD-Rom drive. Navigate to the dotnetfx folder and start the dotnetfx.exe file. You will be asked “Would you like to install Microsoft .NET Framework 1.1 Package?” Click on “Yes”. Follow the remaining on screen instructions. (Refer to Figure 3-1 and Figure 3-2).

Note: All computers running DigiTrace Supervisor need to have the .NET Framework installed. Any attempt to install DTS without first installing the .NET Framework will generate an error message.



Figure 3-1 Microsoft .NET Framework 1.1 setup



Figure 3-2 Microsoft .NET Framework 1.1 License Agreement

Once the .NET Framework has been successfully installed, reboot the computer so that the changes will take effect, and run the SETUP program on the CD again to continue the installation procedure.

3.3 Installing MDAC

Microsoft Database Access Component (MDAC) – If your computer does not have the proper database access components installed, the following message will appear. Click OK and the appropriate files will be copied to your PC. If your computer has the proper database access components, this part of the installation will be bypassed automatically.



Figure 3-3 MDAC installation

The program will display a license agreement for MDAC installation. If you accept the terms of the agreement, press the Yes button and the installation will proceed. If you press the No button, the installation will terminate.

Once the MDAC has been successfully installed, run the SETUP program on the CD again to continue the installation procedure.

 **Note:** MDAC only needs to be installed on the computer running the DigiTrace Supervisor Master Server.

3.4 Installing Microsoft SQL Server 2000

To install Microsoft SQL Server 2000, insert the “DigiTrace Supervisor Disk 2 – Microsoft SQL Server 2000 Standard Edition” CD in your computer’s CD-Rom drive. If the installation application does not start automatically, navigate to the CD-Rom drive (D:\ for example) and then double click on Autorun.exe.

 **Note:** If you are upgrading from a standard (MSDE) version of DigiTrace Supervisor, be sure to follow the procedure in the MSDE Installation manual to uninstall MSDE first. Ensure that you have completed all of the steps or SQL Server may not install properly.

3.4.1 INSTALLING THE DATABASE SERVER COMPONENTS

Once the install screen is displayed, click on “SQL Server 2000 Components” and then select Install Database Server.



Figure 3-4 Install SQL Server 2000 components



Figure 3-5 Install database server

Follow the on screen instructions. When the “Computer Name” screen appears, select Local Computer and then click “Next”.



Figure 3-6 Computer name

Choose Create a new instance of SQL Server, or install Client Tools in the “Installation Selection” window. Click on “Next.”



Figure 3-7 Create a new instance

Continue following the on screen directions. When the “Installation Definition” screen appears, select Server and Client Tools and then click on “Next.”



Figure 3-8 Install client and server tools

In the Instance Name screen, leave the installation type selection set to Default. Click on “Next.”



Figure 3-9 Default installation

Choose the Typical setup and then click "Next."

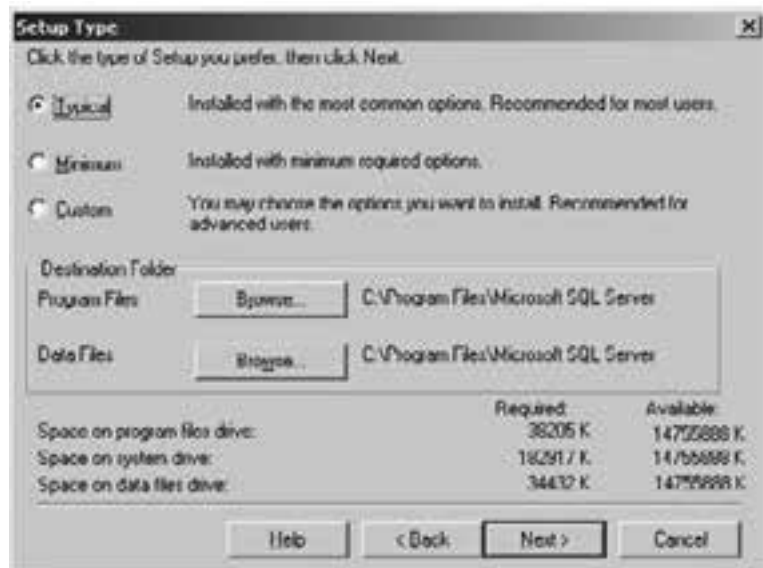


Figure 3-10 Typical Setup

Next, choose Use the same account for each service, Auto start SQL Server Service and ensure the Service Settings are set to Use the Local System account. Then click on "Next."



Figure 3-11 Services accounts

In the Authentication Mode window, choose Windows Authentication Mode, and then click on “Next.”

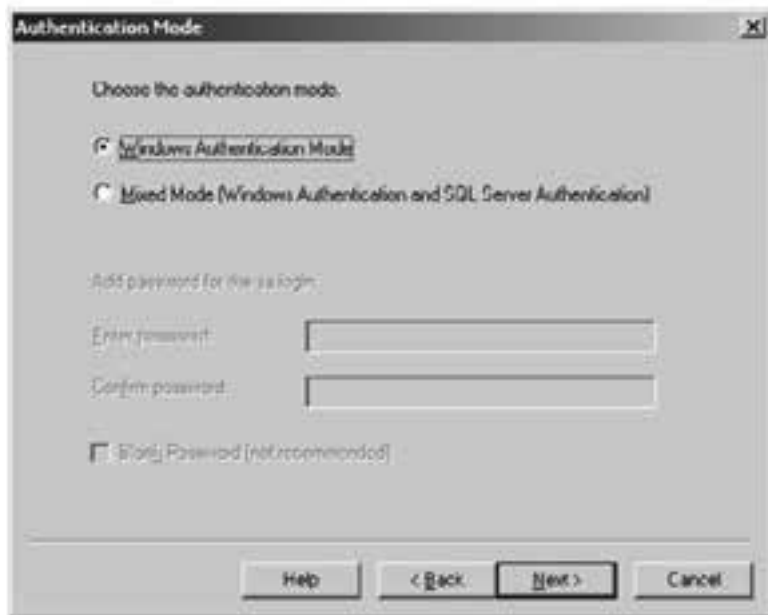


Figure 3-12 Authentication mode

Continue following the on screen directions. When prompted to choose the Licensing Mode, select the Per Seat mode and enter the total number of devices for which you have purchased an SQL license.

Note: When purchased from Pentair Thermal Management, copies of DigiTrace Supervisor Enterprise include a SQL Server license and the appropriate number of SQL device (CALs) with the Supervisor software application. Simply add up the total number of Servers (Master+Slaves) and Users and enter this total into the devices box. For example, if you have purchased a package of DigiTrace Supervisor software that includes (1) Master Server, (2) Slave Servers, and (5) Users, you would enter a total of 8 devices in the box.

Once you have done this, click on “Next.”



Figure 3-13 Licensing modes

Follow the on screen instructions until the installation is complete.

If your DTS software package includes an additional CD labeled "DigiTrace Supervisor Disk 3 – Microsoft SQL Server 2000 Service Pack 3a," insert this disk into the computer's CD-Rom drive. If the installation application does not start automatically, navigate to the CD-Rom drive (D:\ for example) and then double click on Setup.bat.

The Welcome screen will be displayed. Click on "Next" to continue.



Figure 3-14 Install SQL Server SP3

The program may display a license agreement. If you accept the terms of the agreement, press the Yes button and the installation will proceed. If you press the No button, the installation will terminate.

If you installed SQL Server by following the instructions earlier in this Section (see Figure 2-3-1-6), check the Default check box to select the instance name. If you have more than one instance of SQL Server installed on the computer, specify which instance to update by entering the instance name into the space provided. Click on "Next" to continue.



Figure 3-15 Select the instance name to update

Next, select how to connect to the SQL Server. Choose Windows Authentication and click on "Next."



Figure 3-16 Connect using Windows authentication

The installation program will attempt to authenticate the password. This may take a few minutes to complete. A Password Warning window may be displayed. Choose Ignore the security threat warning, leave password blank and click on "OK."



Figure 3-17 Leave SA password blank

When the SQL Server SP3 Setup window is displayed, check the Upgrade Microsoft Search and apply SQL Server 2000 SP3 box and click on "Continue."



Figure 3-18 Apply SQL Server 2000 SP3

When the Error Reporting screen is displayed, ensure that the check box is not selected and then click on "OK."

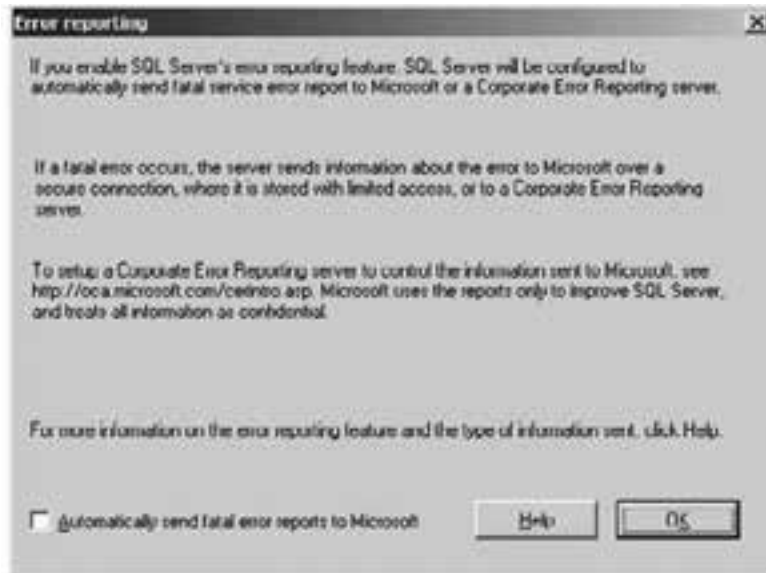


Figure 3-19 Error reporting

This will complete the setup required to allow the Service Pack to be installed. Click on "Next" to begin the installation process.



Figure 3-20 Start the installation

The setup software may ask you to perform a backup of your database. This is not required for new installations and may be ignored. Click on "OK" to continue.



Figure 3-21 Backup notification

Once the installation process is finished, you may be prompted to reboot the computer to complete the process. Remove the CD from the drive and click on Finish to complete the setup process.



Figure 3-22 Reboot the computer

3.4.2 STARTING THE SQL SERVER

In order for the DigiTrace Supervisor software to install and run, you must start the SQL Server database service. This can be accomplished by simply rebooting the computer or you may start the Server manually as follows:

Go to START SETTINGS CONTROL PANEL ADMINISTRATIVE TOOLS COMPONENT SERVICES SERVICES (LOCAL).

Perform a right click on the MSSQLSERVER entry and click on "start."

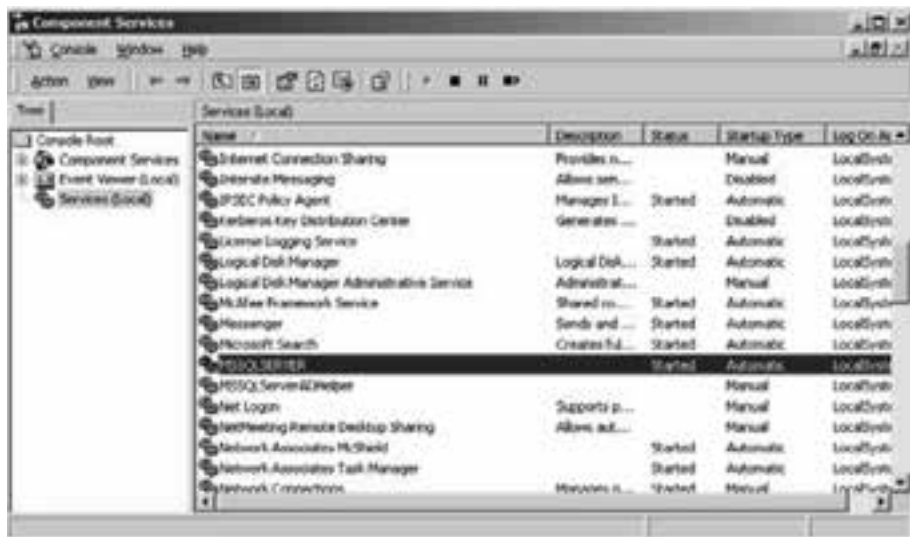


Figure 3-23 Manually starting the SQL server service

3.4.3 CONFIGURATION OF A WINDOWS ACCOUNT FOR USE WITH SQL SERVER

Now that you have successfully installed and started SQL Server, you must create an account that will allow the DigiTrace Supervisor Master Server to access the service.

To accomplish this, go to START SETTINGS CONTROL PANEL ADMINISTRATIVE TOOLS COMPUTER MANAGEMENT LOCAL USERS & GROUPS USERS.



Figure 3-24 Creating a new local user

Right click in the Name area (right-hand side) of the window and click on New User. You may choose any name that you wish for the account, but a name that is representative of the account's use is recommended. For example, "DigiTrace Master" could be used. Complete each field making specific note of the User name and Password, as these parameters will be required when setting up the Master Server Software. Click "Create" to complete the operation.



Figure 3-25 New user setup

Once the user has been created, it will appear in the user list. Right click on the new user name and go to Properties. Once in the Properties window, choose the General tab and ensure that User cannot change password and Password never expires are both selected.



Figure 3-26 New user properties

Next, choose the Member Of tab and click on the Add button.



Figure 3-27 New user group assignment

In the list of groups, choose Administrators and then click on "Add". This step will ensure that the DigiTrace Master Server user will have the access it needs to interact with the SQL Server service.

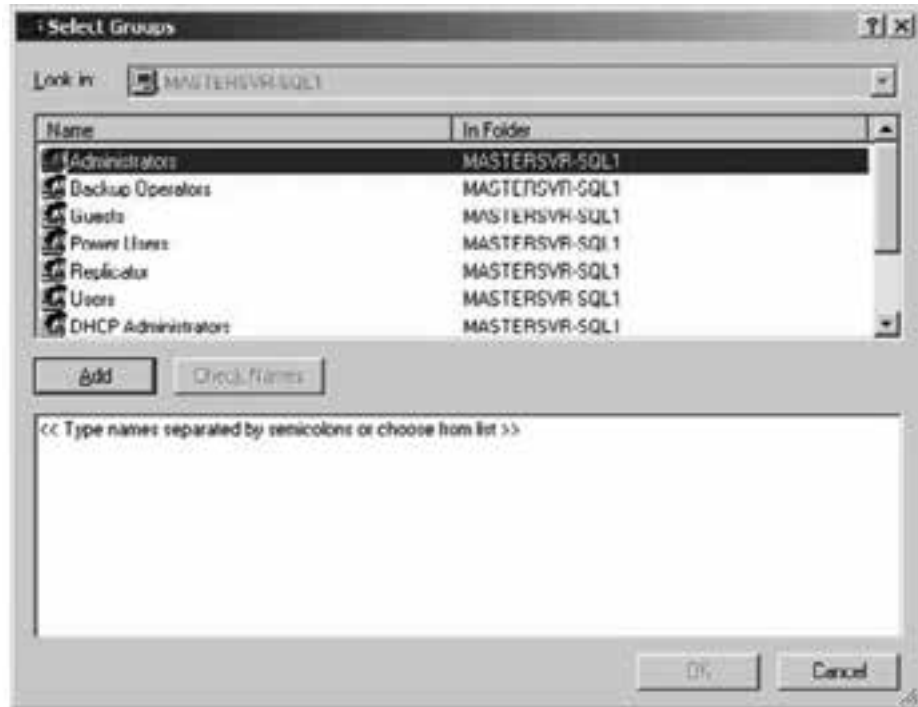


Figure 3-28 Set the new user as an administrator

Once the Administrators group has been added, the new user should be a member of both the Administrators and Users groups.

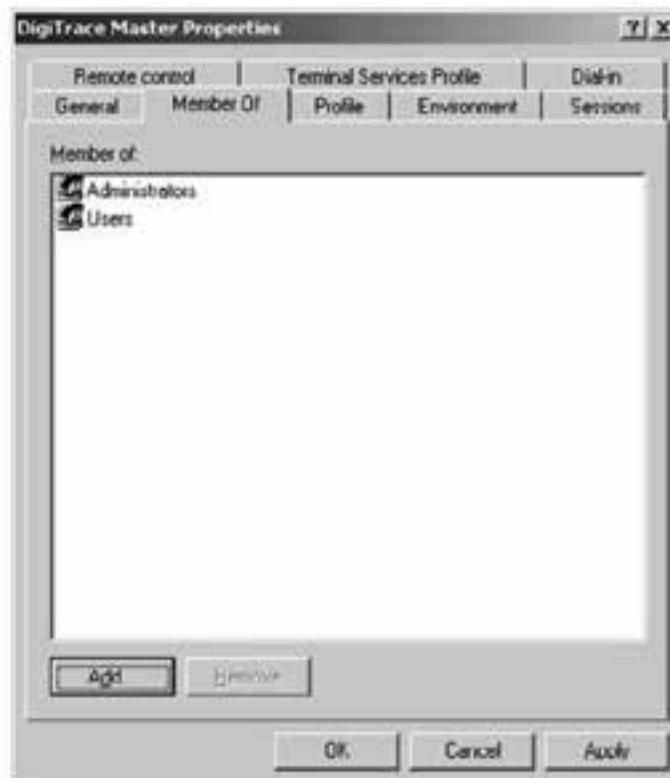


Figure 3-29 User Membership List

Click on "Apply" and then "OK." The new user name should be added to the list.



Figure 3-30 Addition of the new user

3.4.4 WINDOWS SERVER LICENSING

The computer on which SQL Server is installed must use Microsoft Windows® 2003 Server or Windows® 2000 Server as the operating system. **The user is responsible for ensuring that the proper licensing following the latest requirements is obtained from Microsoft for legal use of Windows® Server and User or Device connections.**

A number of options for Windows Server Client Access Licenses (CALs) are available from Microsoft. For a detailed description of the various options, see the Microsoft Website at www.microsoft.com/resources/sam/lic_cal.msp.

Typical DigiTrace Supervisor systems will use a mix of Device and User CALs. You will need to purchase a separate Windows Server Device CAL for each Master and Slave Server and a separate Windows Server User CAL for each user in your DigiTrace system.

3.5 Uninstalling Microsoft SQL Server 2000

You may remove Microsoft SQL Server from your computer system by following these steps:

1. Click the START button, then Select Control Panel.
2. Double-Click Add/Remove Programs.
3. In the list of installed programs, select Microsoft SQL Server. Click on the Remove button.
4. Follow the instructions that appear on the screen.



Figure 3-31 Remove Microsoft SQL Server

3.6 Installing DigiTrace Supervisor

The installation program will start up the Installation Wizard, which will guide you through the installation process. You are required to read and accept the Software License Agreement. Once you read and agree with the license agreement, click the Yes button and the installation will continue. If you do not agree with the license agreement, click No and the installation will terminate.

Note: The following Sections assume that you have already installed a database application (either MSDE or SQL Server) on the same computer as the one where the DigiTrace Supervisor Master Server software will be installed. If you have not yet completed this step, refer to Sections 3.4 and/or 3.6 for additional information on how to do this.

3.6.1 INSTALLING DIGITRACE SUPERVISOR (DTS) MASTER SERVER

To start the DigiTrace Master Server installation, insert the “DigiTrace Supervisor Disk 1 – Application and Utilities” CD (SQL versions) into the PC’s CD-Rom drive. Navigate to the DTSMasterServer folder and double click on the Setup.exe file. Follow the on screen instructions.



Figure 3-32 Welcome screen for DTS Master Server installation

You will be prompted to enter a Database Server Name – enter the name that was defined during the database installation process (see Section 3.4.1). If you did not enter a specific database Instance name as instructed, then the name will simply be the Master Server computer name. If you do not recall your computer name, you can find it by performing a right click on My Computer and going to Properties. Once the window opens, click on the Computer Name tab.

Once you know your Computer Name enter it into the Database Server Name field and click on “Next.” (Refer to Figure 3-3)

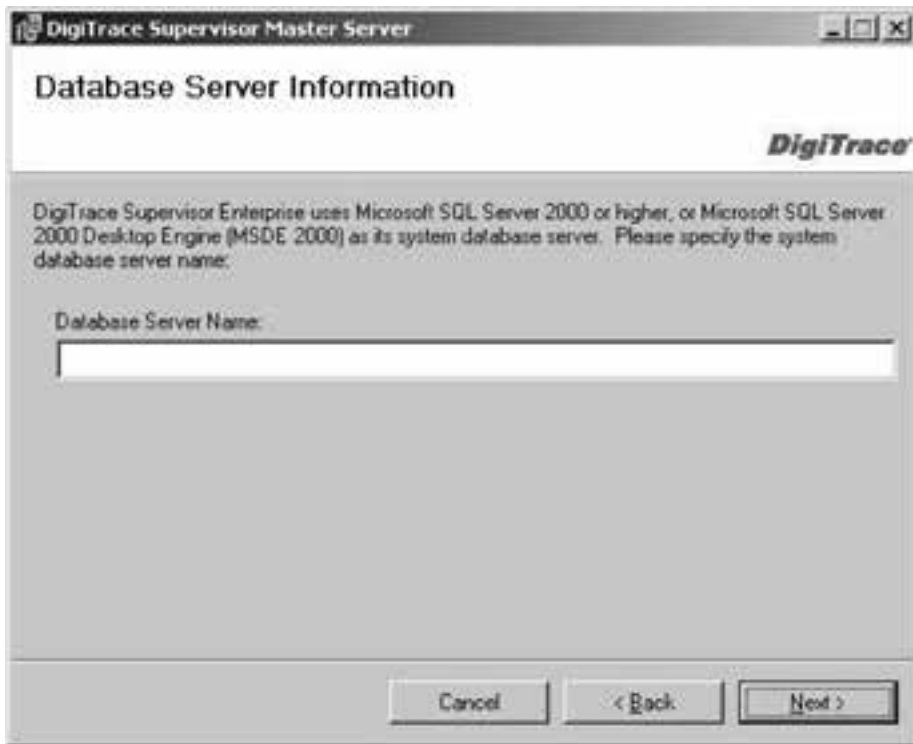


Figure 3-33 DTS database server information screen

3.6.2 CONFIGURING THE MASTER SERVER SOFTWARE

After installing the Master Server Software, perform the following steps to configure the Master Server:

For SQL Server-based installations perform the following additional steps:

You must configure the Master Service to automatically log in to Windows Server. To do this, go to **START SETTINGS CONTROL PANEL ADMINISTRATIVE TOOLS COMPONENT SERVICES SERVICES (LOCAL) DIGITRACE SUPERVISOR MASTER SERVER SERVICE**.

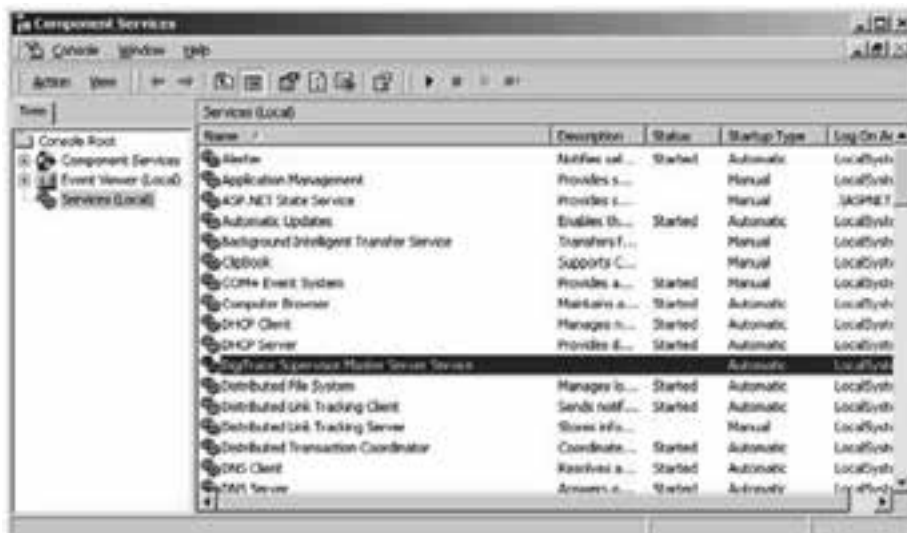


Figure 3-34 Configure the master server

Right click on DigiTrace Supervisor Master Server Services and select Properties. Once in the Properties window, choose the Log On tab. Select Log On as: and This account. Click on the "Browse" button and choose the new user account that was created in Section 3.4.3 . Enter the same password that you used when the account was created.


 **Note:** You must re-enter the password into both the Password and the Confirm Password fields. Click on “Apply” and then “OK.”



Figure 3-35 Set the log on account

If successful, you will be granted access to the Windows Server.



Figure 3-36 Access granted to the Windows Server

3.6.3 CONFIGURING MICROSOFT SQL WITH THE (DTS) MASTER SERVER

SQL Server must be configured to allow the Master Server to connect to it. Do this by clicking on START PROGRAMS MICROSOFT SQL SERVER ENTERPRISE MANAGER MICROSOFT SQL SERVERS SQL SERVER GROUP MASTERSVR-SQL1 DATABASES EHTPLUS USERS.


 **Note:** In the example above, the Database Server name is “MASTERSVR-SQL1”. In your application, this will be replaced by the Database Server name that was assigned during the database server installation process (refer to Section 3.4.1).



Figure 3-37 Database users

Right Click on the right hand side of the screen and choose New Database User. In the Database User Properties window, choose the Login name that was created in Section 3.4.3 . If the name does not appear in the list, click on "<new>" to add it.



Figure 3-38 Select the database user

In the SQL Server Login Properties – New Login window, click on the “ ” button to browse and pick the user name that was previously created in Section 3.4.3 . Click “Add” and then “OK.”



Figure 3-39 Add a new database user

The Authentication and Defaults fields will automatically be populated with the appropriate information once the new user has been added. Do not modify these settings. Click “OK” to accept.



Figure 3-40 Add new database user

After the Login name has been chosen, ensure that both the public and db_owner selections are enabled in the Database role membership area. Then click “OK.”

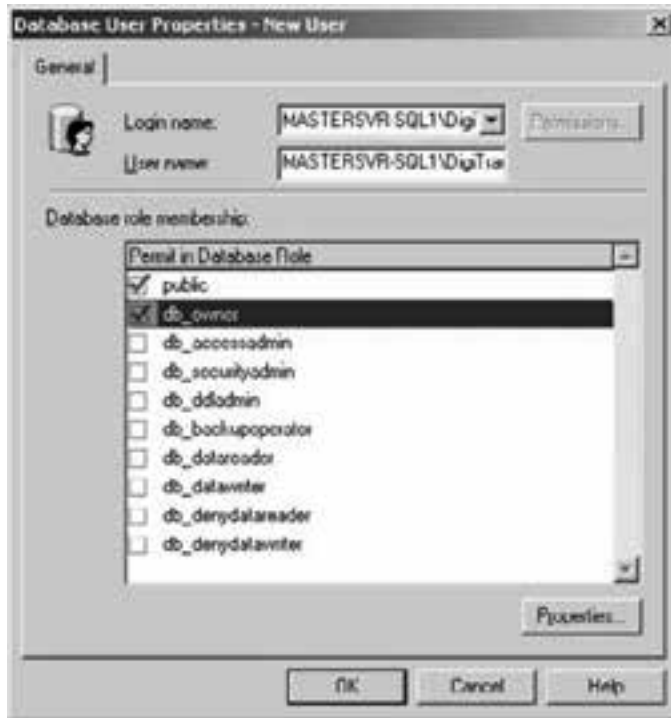


Figure 3-41 Set database role

The SQL Server Enterprise Manager should now show the DigiTrace Master Server as a database user.

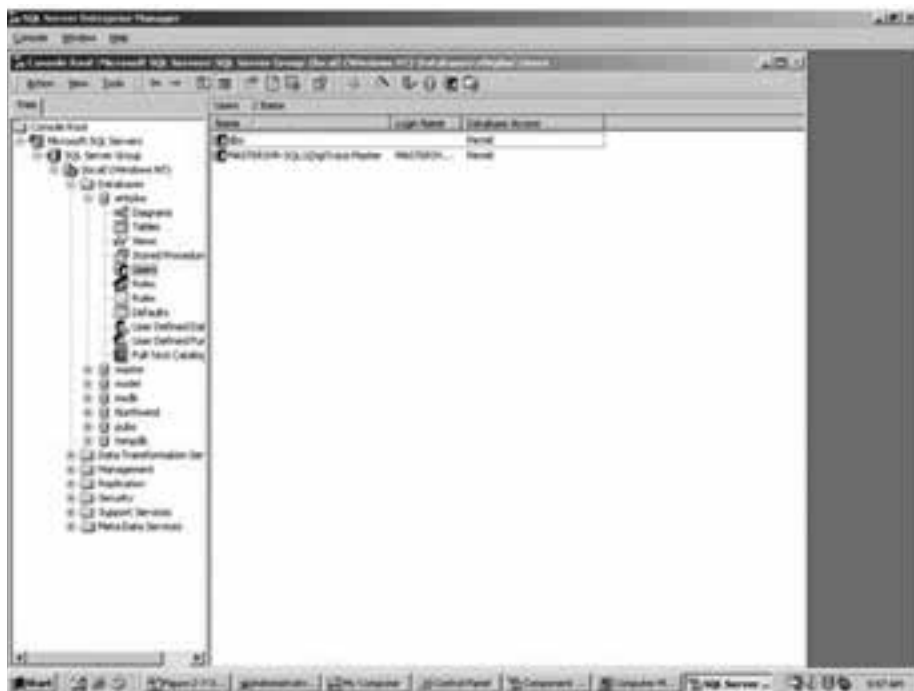


Figure 3-42 New database user created

Close the SQL Server Enterprise Manager window.

3.6.4 STARTING THE DTS MASTER SERVER SERVICE

The DigiTrace Supervisor Master Server service must now be started. This can be accomplished by either of the methods described in Section 3.4.2 .

3.6.5 INSTALLING THE DIGITRACE SUPERVISOR (DTS) SLAVE SERVER

To start the DigiTrace Slave Server installation, insert the “DigiTrace Supervisor Disk 1 – Application and Utilities” CD (SQL version) into the PC’s CD-Rom drive. Navigate to the DTSSlaveServer folder and double click on the Setup.exe. Follow the on screen instructions.



Figure 3-43 Welcome screen for DTS Slave Server installation

3.6.6 STARTING THE DTS SLAVE SERVER SERVICE

The DigiTrace Supervisor Slave Server service must now be started. This can be accomplished by either of the methods described in Section 3.4.2 .

3.6.7 INSTALLING DIGITRACE SUPERVISOR (DTS) CLIENT

To start the DigiTrace Supervisor Client installation, insert the “DigiTrace Supervisor Disk 1 – Application and Utilities” CD (SQL versions) into the PC’s CD-Rom drive. Navigate to the DTSCClient folder and double click on the Setup.exe. Follow the on screen instructions.



Figure 3-44 Welcome screen for DTS client installation

3.7 Uninstalling DigiTrace Supervisor

Prior to removing any DigiTrace Supervisor components from your computer system, back up your DigiTrace Supervisor database. (Refer to Section 13-2-1 in the **DigiTrace Supervisor Operations Manual (H57576)** for instructions on the proper backup procedure.)

3.7.1 UNINSTALLING DIGITRACE SUPERVISOR (DTS) MASTER SERVER

You may remove DigiTrace Supervisor Master Server from your computer system by following these steps:

1. Click the START button, then Select Control Panel.
2. Double-Click Add/Remove Programs.
3. In the list of installed programs, select DigiTrace Supervisor Master Server. Click on the Remove button.
4. Follow the instructions that appear on the screen.



Figure 3-45 Remove DTS master server

3.7.2 UNINSTALLING DIGITRACE SUPERVISOR (DTS) SLAVE SERVER

You may remove DigiTrace Supervisor Slave Server from your computer system by following the following steps:

1. Click the START button, then Select Control Panel.
2. Double-Click Add/Remove Programs.
3. In the list of installed programs, select DigiTrace Supervisor Slave Server. Click on the Remove button.
4. Follow the instructions that appear on the screen.



Figure 3-46 Remove DTS slave server

3.7.3 UNINSTALLING DIGITRACE SUPERVISOR (DTS) CLIENT

You may remove DigiTrace Supervisor Slave Server from your computer system by following the following steps:

1. Click the START button, then Select Control Panel.
2. Double-Click Add/Remove Programs.
3. In the list of installed programs, select DigiTrace Supervisor Client. Click on the Remove button.
4. Follow the instructions that appear on the screen.



Figure 3-47 Remove DTS client

SECTION 4 – SOFTWARE ACTIVATION AND REGISTRATION

When you first install DigiTrace Supervisor software on to your computer it will run in DEMO time restricted mode. In this mode, the software will limit the number of simultaneous users to 4 and no Slave servers will be supported.

The software will run continuously for 14 days, after which it will expire. When the system has expired no user will be allowed to login and you must stop and start the Master Server Service to reset the expiry timer. To eliminate the expiry timer, you must:

1. Register your software with Pentair Thermal Management, and
2. Get a free activation code to activate your software. This free activation sets your copy of DigiTrace Supervisor to a non-time restricted, fully operational mode.

4.1 Activate Software License

Using a Client computer's main screen, click the Help pull down menu and select Software License, then Activate. The License Activation screen will be displayed.

You can perform three types of activation using the Activate Software License screen.

4.1.1 ACTIVATE A DEMO VERSION

If you did not purchase your copy of the DigiTrace Supervisor software and would like to activate it:

- Select Activate DEMO Version from the Activation Type drop down box. This process will convert your copy from DEMO time-restricted mode into non-time restricted Standard mode.
- A set of Configuration (Config) Codes will be filled in for you in the Config Code boxes, and you may click the Generate Request Code button to generate a Request Code.



Figure 4-1 License activation

Once you have the Request Code, you can use it to get an Activation Code from Pentair Thermal Management. To activate using the Internet, go to the Pentair Thermal Management website at www.thermal.pentair.com/DigiTraceSupervisor. Use the DigiTrace Supervisor Registration selection to start the activation process. You must have your Request Code available as you will be asked to provide it. If you prefer to activate your software manually, use the Registration Form in Appendix C of this manual and follow the instructions.

Once you have obtained your Activation Code, enter it into the Activation Code boxes and click the Activate Now button. If there are no errors, you will see a message indicating a successful activation.

4.1.2 ACTIVATE A NEW LICENSE

If you have purchased your copy of DigiTrace Supervisor Enterprise and you need to activate it, locate the Configuration (Config) Code label located on the case of your DigiTrace Supervisor CD.

- Select Activate New License from the Activation Type drop down box.
- Enter the Config Code on the label into the Config Code boxes.
- Click the Generate Request Code button. If the Config Code is valid, the Request Code text boxes will be filled in with a Request Code.

Once you have the Request Code, you can use it to get an Activation Code from Pentair Thermal Management. To activate using the Internet, go to the Pentair Thermal Management website at www.thermal.pentair.com/DigiTraceSupervisor. Use the DigiTrace Supervisor Registration selection to start the activation process. You must have your Request Code available as you will be asked to provide it. If you prefer to activate your software manually, use the Registration Form in Appendix C of this manual and follow the instructions.

Once you have obtained your Activation Code, enter it into the Activation Code boxes and click the Activate Now button. If there are no errors, you will see a message indicating a successful activation.

4.1.3 ACTIVATE AN UPGRADE

When upgrading the number of Server and/or User licenses for an existing copy of DigiTrace Supervisor Enterprise, you will need to activate the additional licenses. Locate the Configuration (Config) Code label located on the case of your DigiTrace Supervisor Upgrade CD.

- Select Activate License Upgrade from the Activation Type drop down box.
- Enter the Config Code on the label into the Config Code boxes.
- Click the Generate Request Code button. If the Config Code is valid, the Request Code text boxes will be filled in with a Request Code.

Once you have the Request Code, you can use it to get an Activation Code from Pentair Thermal Management. To activate using the Internet, go to the Pentair Thermal Management website at www.thermal.pentair.com/DigiTraceSupervisor. Use the DigiTrace Supervisor Registration selection to start the activation process. You must have your Request Code available as you will be asked to provide it. If you prefer to activate your software manually, use the Registration Form in Appendix C of this manual and follow the instructions.

Once you have obtained your Activation Code, enter it into the Activation Code boxes and click the Activate Now button. If there are no errors, you will see a message indicating a successful activation of your upgrade.

You may verify the upgraded number of Server and/or User licenses by logging into DTS and using the Help!About screen to display the total number of licenses.

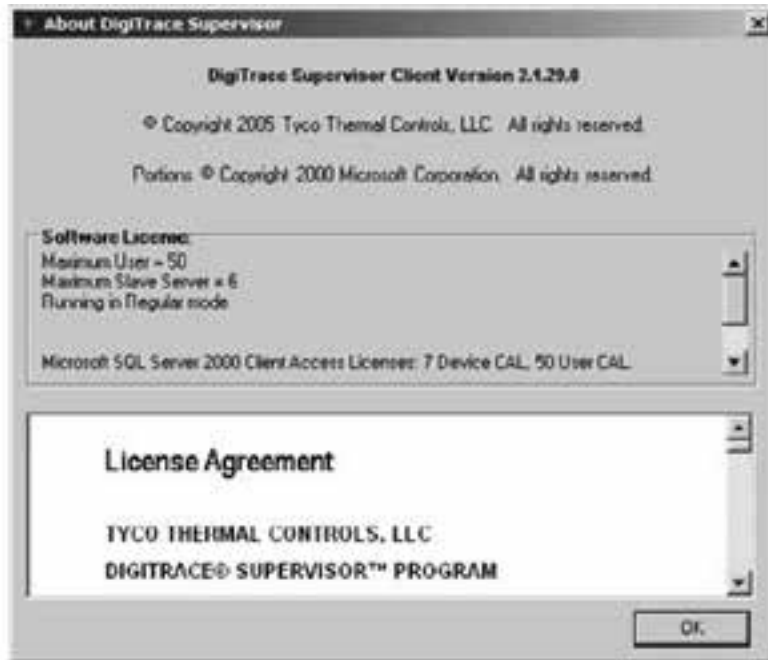


Figure 4-2 About DigiTrace Supervisor

4.1.4 UPGRADE SQL SERVER LICENSES

Once you have completed the upgrade process, increment the number of SQL Server licenses that you are approved to use. Make note of the total number and type of SQL Server 2000 Client Access Licenses (CALs) that you now own by looking at the summary in the DTS Help → About screen (See Figure 4-2 in this example, there are a total of 7 Device + 50 User CALs for a total of 57 SQL Server CALs).

On the computer where you have installed SQL Server, click on Start → Control Panel → SQL Server 2000 Licensing Setup.

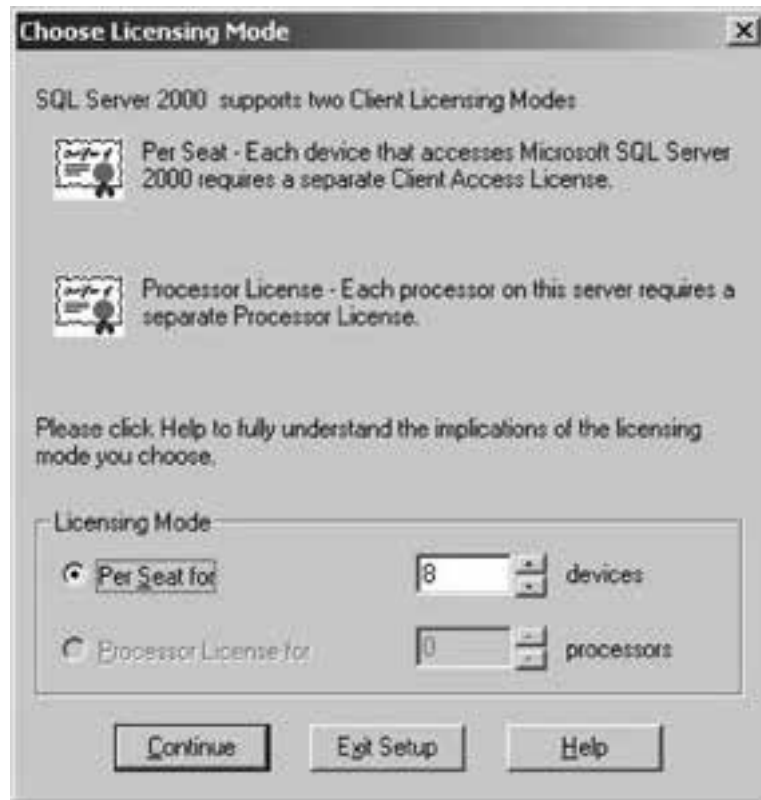


Figure 4-3 SQL licensing mode

When prompted to choose the Licensing Mode, select the Per Seat mode and enter the total number of CALs (devices) that you noted on the DTS Help ! About screen.

4.1.5 UPGRADE WINDOWS SERVER LICENSES

Upgrading the number of Slave Servers or Users in a DTS system will also require that you increase the number of Microsoft Windows® 2003 Server or Windows® 2000 Server licenses that you own.

The user is responsible for ensuring that the proper licensing following the latest requirements is obtained from Microsoft for legal use of Windows® Server and User or Device connections.

A number of options for Windows Server Client Access Licenses (CALs) are available from Microsoft. For a detailed description of the various options, see the Microsoft Website at www.microsoft.com/resources/sam/lic_cal.msp.

Typical DigiTrace Supervisor systems will use a mix of Device and User CALs. You will need to purchase a separate Windows Server Device CAL for each Master and Slave Server and a separate Windows Server User CAL for each User in your DigiTrace system. You can verify the number of each type of Windows Server CAL that you require by looking at the summary in the DTS Help About screen (See Figure 3-1-3).

4.2 Registering Online

Click Register Online to complete the registration form online. Or, click Register Offline to display a form that you can print, complete and fax to Pentair Thermal Management. A copy of the registration form is also included in Appendix C of this manual.

4.3 Transferring a License to Another Computer

A Software License may be transferred from one computer to another. In order to transfer the license to a different computer, you must have a valid license in the computer presently running the DigiTrace Supervisor Master software.

Use the following steps to transfer a license:

1. Install the DigiTrace Supervisor Master Server and Client software onto the new computer. This computer should be connected to your plant or office network.
2. On the new computer, start the Master Server service (refer to Section 3.6.4 “Starting Your DigiTrace Supervisor Master or Slave Server”), then start the Client software. Log in to the Master server using the default user ‘admin’.
3. Insert a blank floppy disk or a removable disk (also known as a memory stick, flash or USB drive) into the new computer.
4. On the new computer’s Client main screen, use the Help pull down menu and select Software License and Transfer. Once the Software Transfer screen appears, check the ‘Create a blank software license on to a removable disk’ button and select the drive letter that corresponds to the removable disk that you have installed in step 3 above. Next click the OK button to start the process.



Figure 4-4 Create a blank software license

5. Next, insert the blank software license removable disk created in the previous step into the existing Master Server computer. Again, use the Help pull down menu and select Software License and Transfer. Check the ‘Transfer license from computer to a removable disk’ option and click the OK button to transfer the software license to the removable disk. The old Master Server computer will be updated to DEMO mode.



Figure 4-5 Software license transfer to disk

6. Finally, install the removable disk from step 5 into the drive on the new computer and select Software License and Transfer using the Help pull down menu. Check 'Transfer license from a removable disk to computer' and click on the OK button. This completes the transfer process.



Figure 4-6 Software license transfer to new computer

4.4 Upgrading DTS from MSDE to SQL Server 2000

If you are upgrading a version of DigiTrace Supervisor using MSDE to one using SQL Server (DigiTrace Supervisor Enterprise) perform the following steps:

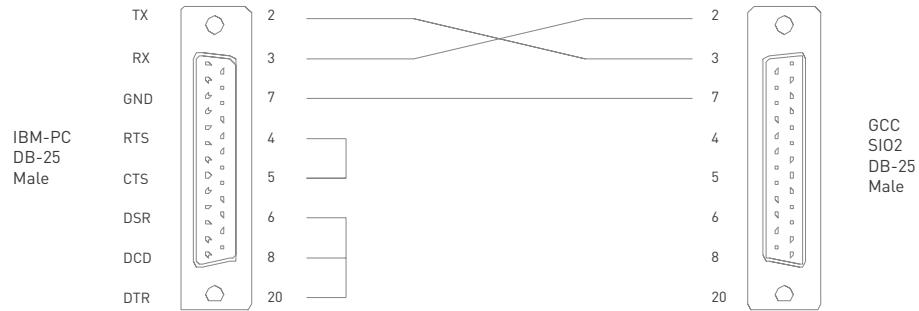
1. Backup the MSDE database on your existing computer using the DTS Database Backup function (see Section 14-2-1 in the **DigiTrace Supervisor Operations Manual (H57576)**). Copy the backup file to a removable drive.

2. If you are updating the existing computer, ensure that Microsoft Windows Server 2000 has been installed, and that you have uninstalled the previous version of the DTS Master Server software (see Section 3.7.1).
3. Ensure that the new computer has been configured with all of the appropriate software as outlined in Sections 3.1 , 3.2 , and 3.5 .
4. Stop the DTS Master Server (see **DigiTrace Supervisor Operations Manual [H57576]** Section 3-2).
5. Restore the database using the EHTDBRestore.exe utility as described in Section 14.2.2 in the **DigiTrace Supervisor Operations Manual [H57576]**.
6. Start the DTS Master Server (see **DigiTrace Supervisor Operations Manual [H57576]** Section 3-2).
7. If your new system includes new Slave Servers, follow the steps outlined in Section 3.6.5 and 3.6.6 .
8. Register and Activate your new software (see Section 4).

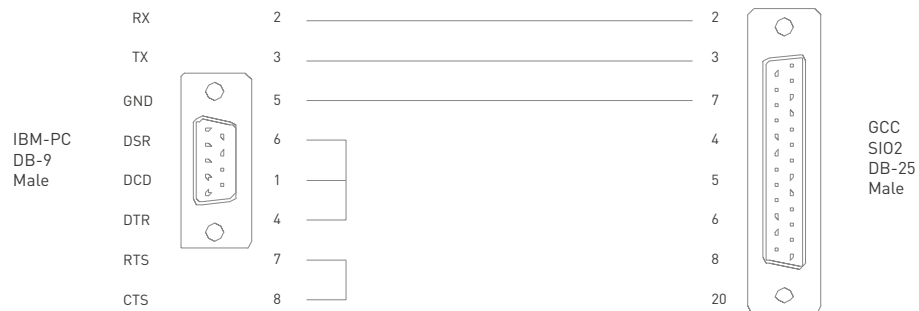
APPENDIX A – 780 SERIES/GCC-9000 CABLING

Refer to the 780 Series/GCC-9000 manual for an explanation regarding wiring of the HTC communications, alarm and relay ports. The communications between the master computer and the 780 Series/GCC-9000s may be accomplished using either RS-232 or RS-485, depending on the circumstances. If you are connecting multiple 780 Series/GCC-9000s to the DigiTrace Supervisor software, you will need to use the RS-485 port and associated wiring to accomplish this.

PERSONAL COMPUTER 25-PIN MALE TO GCC RS-232C



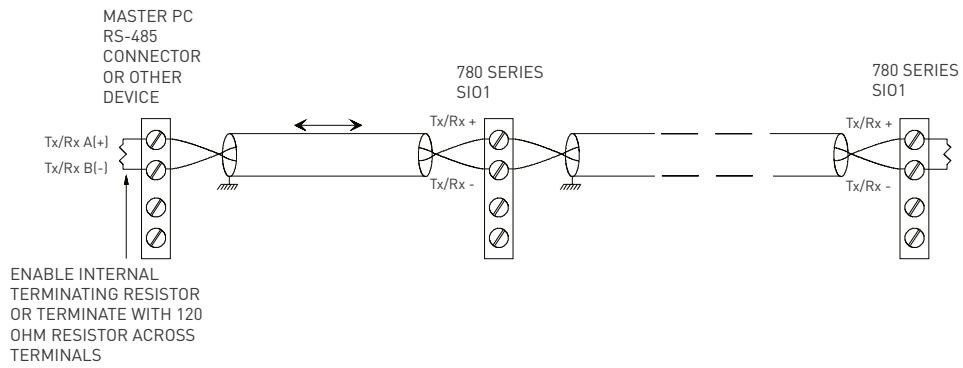
PERSONAL COMPUTER 9-PIN MALE TO GCC RS-232C



A-1 RS-232 COMMUNICATIONS TO A 780 SERIES/GCC-9000

Communications to the 780 Series/GCC-9000 may be established via an RS-232 cable plugged into the 780 Series/GCC-9000's SIO#2 port and to one of the serial (COM) ports of your computer. The required cable wiring is shown below.

780 SERIES SIO1 WIRING DIAGRAM (2-WIRE RS485)



NOTES:

- DEVICES AT EXTREME ENDS OF THE COMMUNICATIONS LINE SHOULD UTILIZE TERMINATION RESISTORS.
- ISOLATE ALL DEVICES WHERE POSSIBLE
- GROUND COMMUNICATIONS WIRE SHIELDS AT ONE END ONLY AS SHOWN, USING AN EARTH GROUND (NOT THE SIGNAL GROUND)
- MAXIMUM DISTANCE IS 4000 FT.

A-2 RS-485 COMMUNICATION TO A 780 SERIES/GCC-9000

The wiring between the master computer and a 780 Series/GCC-9000 using the RS-485 port is accomplished using either a 2-wire or a 4-wire connection and an RS-485/RS-232 converter plugged into the computer's serial (COM) port.

The following chart shows typical distances that may be achieved using the RS-485 communications port. These distances are based on using a 4-wire, 26-AWG shielded twisted pair. Note that speed and distances will depend on actual operating conditions.


Speed	Distance
1200 bps	4.00 miles (6.4 km)
2400 bps	3.00 miles (4.8 km)
4800 bps	2.30 miles (3.7 km)
9600 bps	1.70 miles (2.7 km)

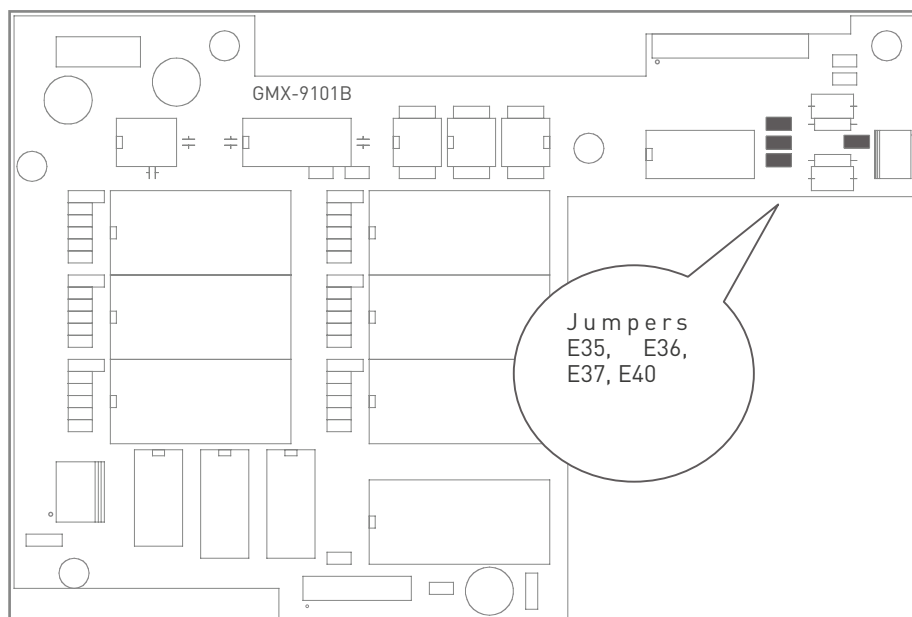
The RS-485 converter may be an internal card that plugs into one of your computers' empty slots, or an external device that connects to one of the existing serial ports via a cable. It is strongly recommended that you use an isolated-type interface to protect the computer from any voltage transients that may be introduced into the field wiring.

A-3 780 SERIES/GCC-9000 RS-485 JUMPER SETTINGS

Preparation

1. Power down the GCC and unplug its line cord.
2. Remove the four screws holding down the GCC's cover.
3. Identify the four jumpers on the drawing below.
4. Check to see if the existing jumper settings are acceptable.

 **Note:** STATIC ELECTRICITY CAN DESTROY ELECTRICAL COMPONENTS! GROUND ONE HAND AGAINST THE METAL CASE PRIOR TO HANDLING THE JUMPERS.



For 2 Wire RS-485 Operation

1. Install jumpers E36 and E40 and use Tx+ and Tx- terminals to connect the RS-485 wiring.
2. Install jumper E35 for the termination resistor if this is the last (or furthest) GCC.

For 4 wire RS-485 Operation

1. Remove jumpers E36 and E40, if present, and use all four terminals Tx+, Tx-, Rx+, and Rx- to connect the RS-485 wiring.
2. Remove jumper E35 and install jumper E37 for the termination resistor if this is the last GCC on the RS485 communications bus.

APPENDIX B – TROUBLESHOOTING

B-1 Installation Errors

Cannot install Master Server due to database error

- Ensure that the Microsoft SQL Server is properly installed and running on the computer where you are installing DigiTrace Supervisor.
- Verify that the Master Server name has been typed in correctly.

B-2 Communication Errors

Communication Failures

When DigiTrace Supervisor is connected to GCCs and HTC-direct controllers using a 2-wire RS-485 configuration make sure that the Tx Delay setting for each GCC and HTC-direct controller is set to at least 0.06 seconds. This will ensure that the GCC or HTC-direct devices do not start to transmit a reply until DigiTrace Supervisor has turned off its driver.

B-3 Other Errors

Some text does not display properly in the “Help About” screen

- If you are using McAfee Virus Scan software, you may have to disable the “Buffer Overflow Protection” option in the McAfee setup to eliminate this problem.

APPENDIX C – DIGITRACE SUPERVISOR SOFTWARE REGISTRATION FORM

Please complete this registration form and fax it to the appropriate Pentair Thermal Management number below, or save it and email it to info@pentair.com. Once you submit your registration, you will receive an Activation code which will allow you to activate your copy of the DigiTrace Supervisor software.

North American users: Fax (650) 474-7630

European users: Fax (32) 16 213 606

Other International users: Fax (650) 474-7630

How would you like to receive your Activation Code?:

Email

Fax

Telephone

Which monitoring software package are you upgrading from?

DigiTrace Supervisor version no. _____

PyroMaster version no. _____

TraceMaster version no. _____

None

Request Code (refer to Section 4-1 of this manual for instructions):

Company:

Facility Name:

Division:

Address:

City:

State/Province:

Country:

Zip/Postal Code:

Contact Name:

Department:

Telephone:

Fax:

Email:

Activation Code (for TTC use only):

EUROPE, MIDDLE EAST, AFRICA (EMEA)

Tel: +32 16 213 511
Fax: +32 16 213 603
ptm-info@pentair.com

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salesee@pentair.com

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