

**LUDLUM MODEL 375
ETHERNET
SOFTWARE MANUAL**

**May 2021
Version 2.0.4**

Model 375 Ethernet Software
LMI Part No. 1370-055

Software Manual
Version 2.0.4
May 2021



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1. General

The Model 375 Ethernet software connects up to 50 model 375, 375P, and 3276 area monitors to provide real time radiation reading displayed in either a grid or graphical map. When an alarm or failure occurs the quick alert window will be displayed along with an audible notification. It's also possible to send an email alert and/or print a report.

The monitors connect to the application using the User Datagram Protocol (UDP) protocol over the Local Area Network (LAN). The UDP port is user configurable from 50000 to 59999.

Readings are displayed in a color coded boxes arranged in a table view. A graphical map can be used to display the boxes providing a location based map of the radiation readings. The reading box changes color to indicate the current status of the monitor:

- Red High Alarm
- Blue Low Alarm
- Yellow Over Range
- Orange Error
- Purple Detector Failure
- Green Online (OK)
- Black Missing (Communication Failure)

Readings are logged to a Microsoft Access® database and a comma-delimited (.csv) file. The rate at which the readings are logged is user-definable, and readings can be logged at a different rate when an alarm or failure occurs. This allows more data to be collected during the alarm. Readings can be averaged over the logging interval or saved as discrete readings. The data are stored in C:\ProgramData\Ludlum Measurements, Inc\Model 375 Ethernet. This is also the location for the settings.ini file.

Each channel can individually be labeled with a custom channel caption as well as a user-defined comment that displays in the tool-tip when the mouse is hovered over the channel name. This information is also logged in the database.

Real time and archived readings from the csv files can be graphed using the graph display. The software supports the ability to query and view the data either in graph form or in terms of status. The database stores the serial number, time, date, status, reading, comment, and path of camera image.

When a high alarm occurs, an image can be captured from an IP based camera. Presets are defined for IQeye (now VICON) and Axis cameras. The images are saved in C:\ProgramData\Ludlum Measurements, Inc\Model 375 Ethernet\images. A resizable window is displayed, which shows the date and time of the alarm, the reading of the Model 375, the channel where the alarm occurred, and the image.

2. Installation

To begin installation of the software, place the installation disc in the CD-ROM drive. If the installation process does not automatically begin, navigate to the root folder of the CD-ROM and double-click on the “Model_375_Ethernet_Installer” file to begin. Follow the on-screen prompts to install the software.

2.1 Minimum PC Requirements

- 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor*
- 1 gigabyte (GB) RAM (32-bit) or 2 GB RAM (64-bit)
- CD-ROM Drive
- 16 GB available hard disk space (32-bit) or 20 GB (64-bit)
- DirectX 9 graphics device with WDDM 1.0 or higher driver
- Windows 7 or higher

2.2 Model 375 Configuration

The Model 375 and 375P monitors must have the correct firmware version that supports Ethernet functionality. The following versions are supported by this software:

- 39602n35 - Fixed UDP Port 5555 only
- 39608n38 - Fixed UDP Port 5555 only
- 39608n42 - UDP Port adjustable from 50000-59999
- 39608n43 - UDP Port adjustable from 50000-59999
- 39608n48 - UDP Port adjustable from 50000-59999
- 39608n66 - UDP Port adjustable from 50000-59999
- 39608n74 - UDP Port adjustable from 50000-59999
- 39608n80 - UDP Port adjustable from 50000-59999
- 39667n04 - UDP Port adjustable from 50000-59999
- 39667n05 - UDP Port adjustable from 50000-59999
- 39667n06 - UDP Port adjustable from 50000-59999

Contact Ludlum Measurements, Inc. if you require a firmware update or customer firmware.

The Model 375, 375P, and 3276 must also have Ethernet added to the instrument. The 375-10 includes Ethernet by default. All versions of the Ethernet kit for this application must be programmed with firmware 39801N09.

Model 375 Ethernet Kit (Internal)	LMI Part # 4558-098
Legacy Model 375, 375P Ethernet Kit (External)	LMI Part # 4396-579
Model 3276 Ethernet Kit (External)	LMI Part # 4498-958

The model 3276 must have the minimum and maximum ranges locked to one prefix for proper operation.

There are two parameters that must be set for the monitor to connect to the software. First, a distinct unit ID must be set for each monitor. Second, the UDP port number must be specified. The unit ID must be unique for each Model 375 while the port number must be the same.

In order to change these parameters, the Model 375/375P must be put into calibration mode so the parameters can be changed. Do this by removing the calibration cover to expose the four-pole dip-switch. Switch the top CAL MODE (DIP-SWITCH 1) switch to the right (ON) to place the monitor in calibration mode. After changing the parameters, return the CAL MODE switch to the left (OFF) position and re-attach the calibration cover. See the 3276 instrument manual for instructions on setting these parameters.

Note: See Section 4 for a step-by-step installation guide.

2.3 ID Number Assignment

Each monitor must be assigned a unique ID number, which can range from 1 to 255.

- Model 375 - press both the LOW ALARM and HIGH ALARM
- Model 375P - press both the SIGMA ALARM and SUM ALARM

The current ID number will be displayed on the LED display. Use the UP and DOWN buttons to change the ID number. In Tools/Options/Model 375 Setup change the unit ID for each channel to match the monitor. For example, if you have two Model 375s, assign them an ID number of 1 and 2 respectively, and set the software to use ID number 1 for channel 1 and an ID number of 2 for channel 2. The monitors do not have to be assigned in a strict numerical order in the software.

If using a model 3276 configured for use with the Ethernet software, the unit ID will be the last three digits of the serial number.

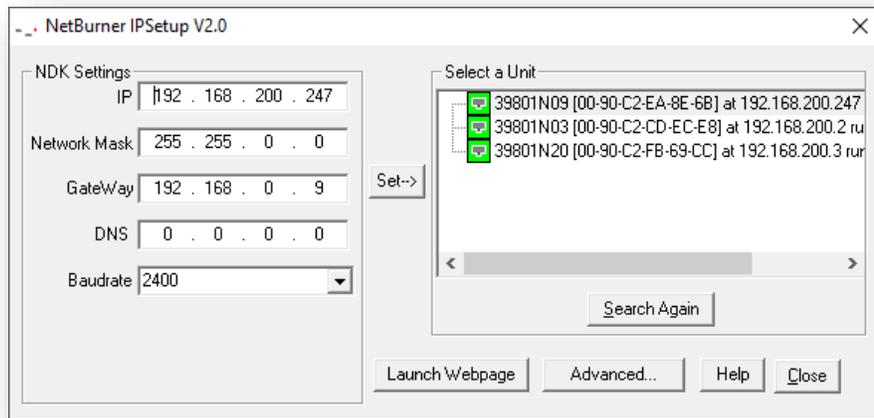
Note: See Section 4 for the step-by-step installation guide.

2.4 IP Address Configuration

The monitors are configured by default to use DHCP. If it is desired not to use DHCP, use the included ipsetup utility to search for and display the current IP address configurations of all the monitors.

To identify each monitor, a label is affixed to the side that displays the Ethernet MAC address. Select the 375 you wish to set to a static IP and type a new IP address. Set the network mask to match your network's configuration. The Gateway and DNS can be left at their default values. If the 375 needs to function with DHCP, place zeros in the IP address location. If necessary, in the Gateway address location, an IP address can be placed, which is the fallback IP address if the DHCP fails. This fallback IP address is only useful if the Model 375 is set in DHCP mode. Click "Set" to save the settings to the Model 375 NIC.

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WARNING: If you wish to make a specific Model 375's IP address static and do not know its MAC address, you must isolate that Model 375 from all the other Model 375 instruments and then use ipsetup to change its IP address.

2.5 UDP Port Number Assignment

The Model 375 monitors communicate with the software via a UDP port. This port must be specified for all monitors that will be connected and must be the same for all monitors. Since the 375 display can only show four digits, the port and is adjustable from 0 to 9999. This corresponds to 50000 to 59999.

- Model 375 – press both the LOW ALARM and CAL CONST
- Model 375P – press both the SIGMA ALARM and CHI

The current UDP port will be displayed on the LED display. Use the UP and DOWN buttons to change the port number. In the Tools/Options/Model 375 Setup change the UDP port number to match. The default is 50000.

The model 3276 requires the Lumeric software to configure the UDP port number. This software can be purchased directly from LMI using Part #4498-1018 Lumeric Calibration Kit - Model 3000 Series. Please refer to the Lumeric documentation for information on how to set the UDP port number.

Note: See Section 4 for the step-by-step installation guide.

2.6 Camera Installation

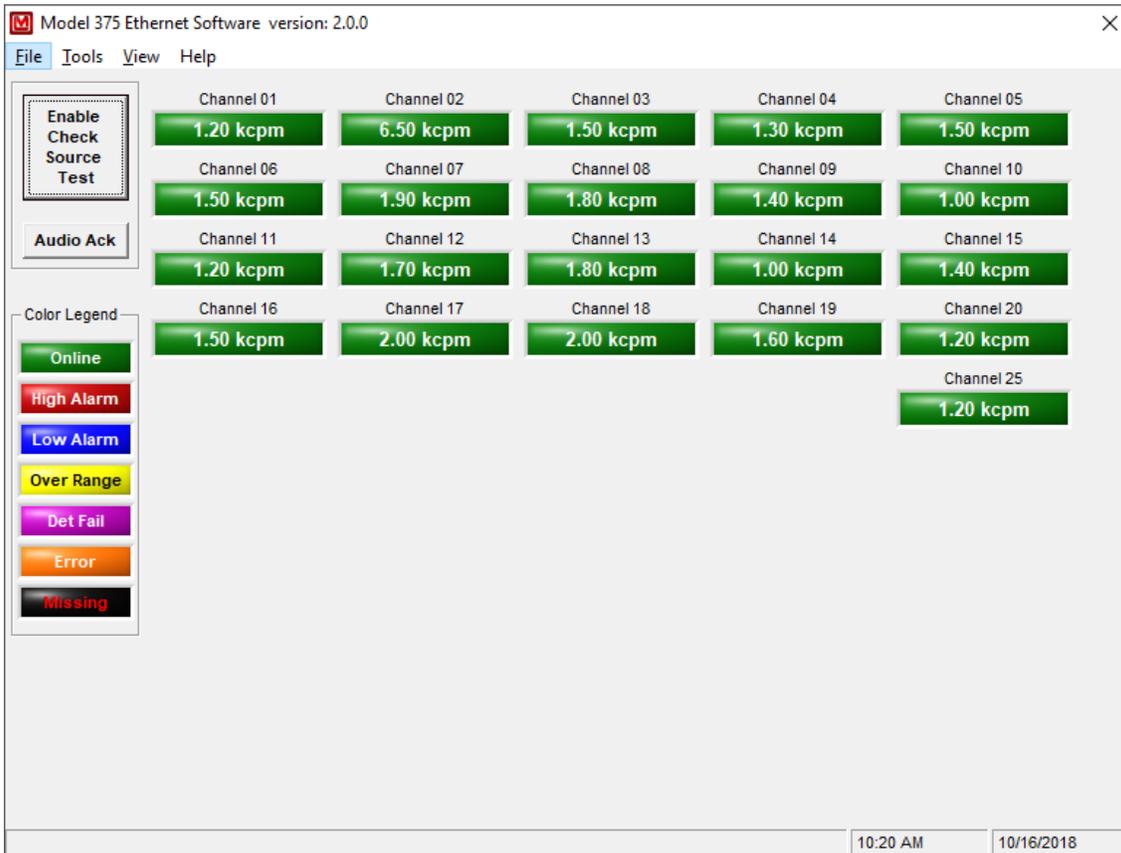
When a high alarm occurs, the software can download an image from an IP based Ethernet camera. Each 375 can be setup with its own camera. Please refer to the manufacturer's instructions for mounting and installing the cameras on the network. Consult your network administrator on how to setup the IP addresses. Once the cameras are set up, enter the IP addresses for each channel in the Preferences window.

Note: See Section 4 for the step-by-step installation guide.

3. Operation

The Model 375 Ethernet software must be running in order for the data to be logged, and the computer must be logged into a user account with sufficient privileges to write to the folder where the data and images will be stored. To start the software, click on the shortcut in the Start Menu labeled **Model 375 Ethernet Software**.

3.1 Main Window



The main window displays reading boxes for all enabled Model 375s along with their status, units, and caption. Left-clicking on the channel will open a web browser to the camera if enabled. Right-clicking on the channel name will display the last image and alarm information that has occurred since the program was running. Holding the mouse over the channel name will display a tool tip with the user-defined comment.

The background color will change to indicate the current status of the monitor:

- Green Online (OK)
- Red High Alarm
- Blue Low Alarm
- Yellow Over Range
- Purple Detector Failure

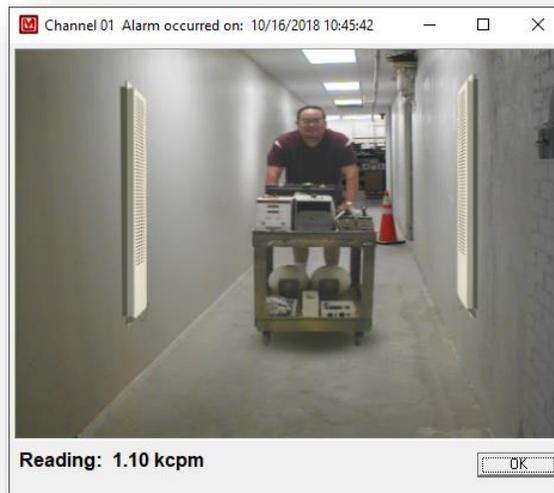
- Orange Error
- Black Missing (Communication Failure)

On the left side of the window are buttons used to enable the check source test and acknowledge audio.

3.1.1 Check Source Test

When enabled, for 15 minutes all alarms are marked as check source tests. The check source test will end automatically after 15 minute or if the button is clicked again.

3.1.2 Alarm Image Window



When a high alarm occurs, the image will be displayed in a resizable window along with the date, channel caption, and reading. The images are saved in the images folder under C:\ProgramData\Ludlum Measurements, Inc\Model 375 Ethernet\images. The images are named using the following format:

XXX_YYYYMMDD_HHMMSS.JPG where:

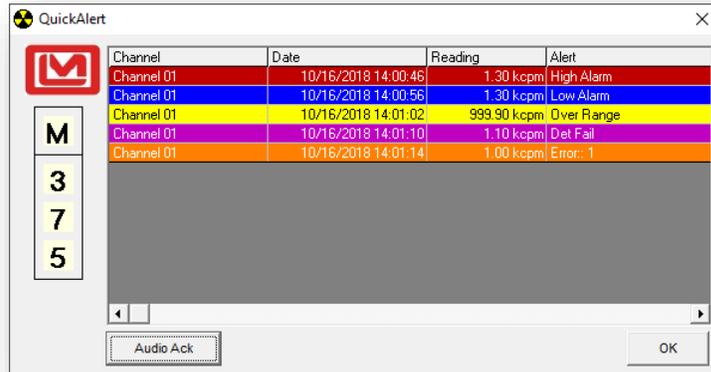
XXX = Channel number (001 – 050)

YYYYMMDD = Date of image

HHNNSS = Time of image

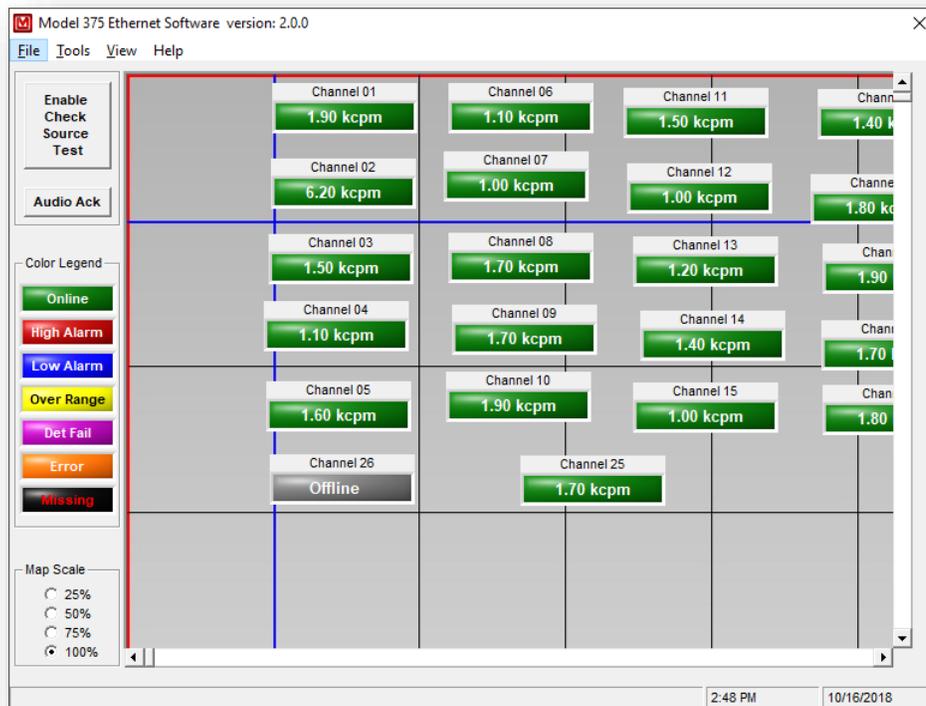
If the image cannot be retrieved from the camera, a default image will be used that indicates no valid image was found.

3.1.3 Quick Alert Window



When any type of failure or alarm occurs, this window is displayed showing the channel, date, reading, and type of event. This data is available until the window is closed. Click the Audio Ack button to silence the audio.

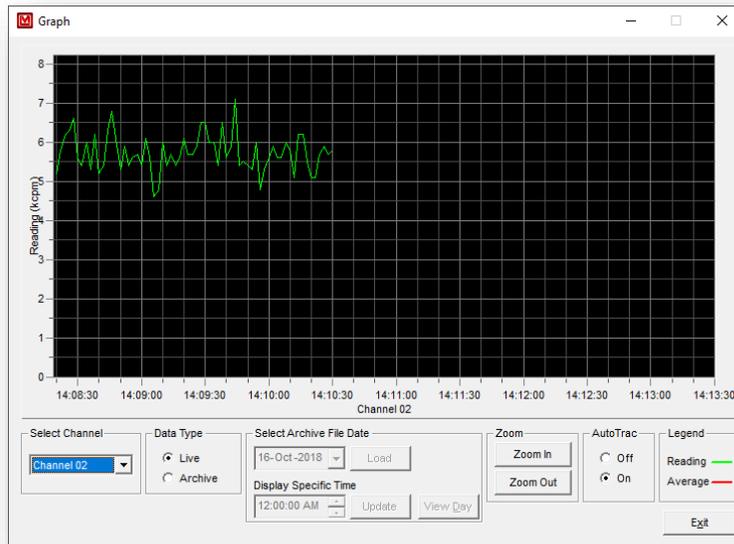
3.1.4 View Map/Table



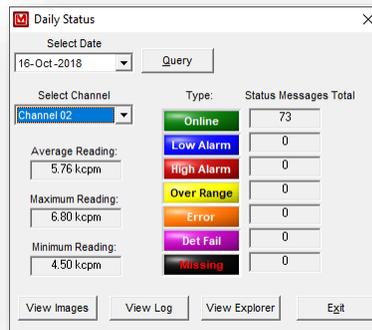
The View/Map menu toggles between showing a user-defined map or a table view. The table view shows the readings in a table format 5 columns by 10 rows. The map view uses the graphical map set in Tools/Options/Map Setup. Use the map editor in the Tools/Options to select and place the readings on the map.

3.1.5 View Graph

The View/Graph menu displays a screen showing the current readings of the selected channel using an XY graph. Live data is displayed using the real time readings as they arrive. Optionally archive data loaded from the CSV files can be displayed. There are buttons to zoom in/out of the graph. The AutoTrac feature adjusts the plot so that the latest data is always visible.



3.1.6 View Daily Status

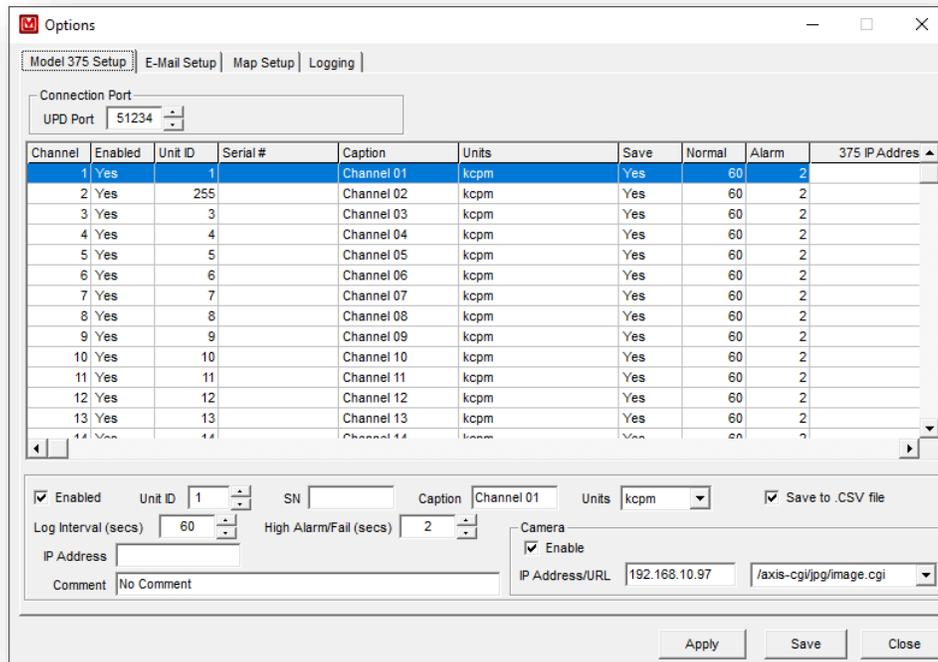


The Daily Status window counts the number of low alarm, high alarm, over range, errors, detector fails, and missing logged in the csv file. Select a day and click the Query button to load the data. The average, minimum, and maximum readings are also displayed. Images can be viewed by clicking on the View Images button. Clicking the View Log button will open the csv file in notepad. Clicking on the View Explorer button will open the folder in Windows Explorer.

3.1.7 Password

The Options screen is protected by a user-definable password. The default password is “m375”. To change the password, click on Tools/Change Password and enter the new password. If the password is lost, contact LMI to reset.

3.2 Tools/Options



The Options window is divided into different tabs where related parameters are grouped. The Model 375 Setup tab is used to configure each 375/375P/3276 monitor. Clicking on a row in the table populates the controls for editing.

3.2.1 Model 375 Setup

UDP Port – Specifies the UDP port that the software listens on for data from the monitors.

Channel Enabled – When checked enables the channel.

Unit ID – Specifies the unit ID for the channel. For a model 375, this must be between 1 and 255. The unit ID for a model 3276 is the last 3 digits of the serial number and is adjustable from 0 to 999.

Serial Number – Sets the serial number for the monitor assigned to the channel.

Caption – User defined caption for the channel.

Units – Specifies the unit of measure for the channel. This must match the unit of measure of the monitor.

Save to CSV – When checked saves the data to a comma separated (csv) file that can be opened in notepad or Microsoft Excel.

Log Interval – Specifies the logging interval for the channel when operating normally. Setting this parameter to zero, disables logging for normal background.

High Alarm/Fail Interval – Specifies the logging interval for the channel when a high alarm or fail condition is present.

IP Address – Specifies the IP address of the monitor. For informational purposes only.

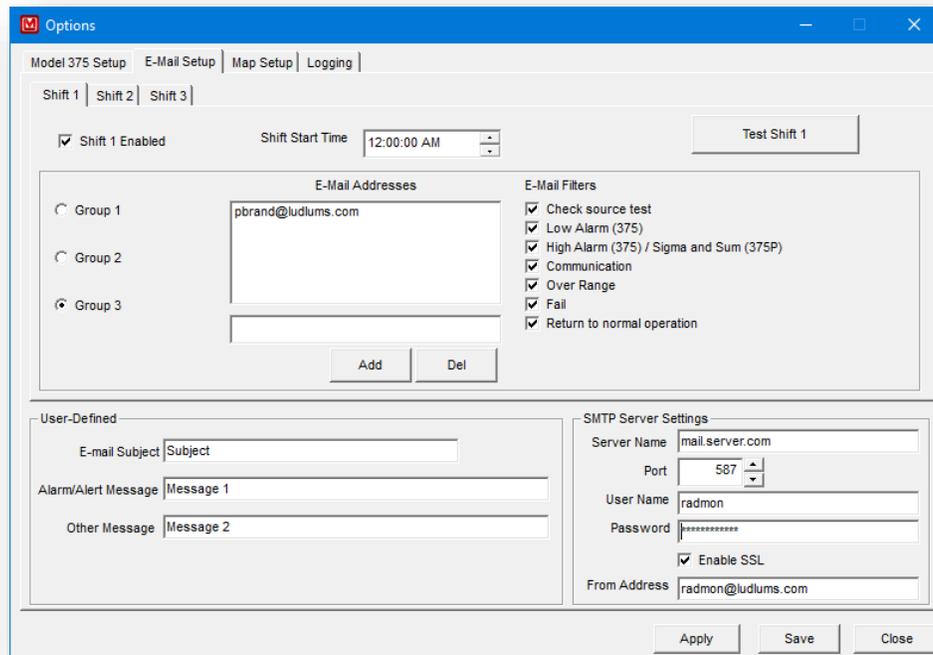
Comment – User defined comment.

Camera Enable – When checked, enables the software to retrieve an image from the camera.

Camera IP Address – IP Address of the camera.

Camera URL – URL that allows the software to retrieve an image from the camera. The URL used for IQeye and Axis cameras are predefined.

3.2.2 E-Mail Setup



The E-Mail Setup tab configures the E-Mail alert functions of the software. E-Mails alerts can be sent for three different shifts, with each shift have three groups. Each group has its own set of

20 E-Mail addresses that can be added. Also each group has a set of filters that specify when an E-Mail is sent. The filters are:

- Check Source Test
- Low Alarm (375)
- High Alarm (375 / Sigma and Sum (375P))
- Communication
- Over Range
- Fail
- Return to normal operation

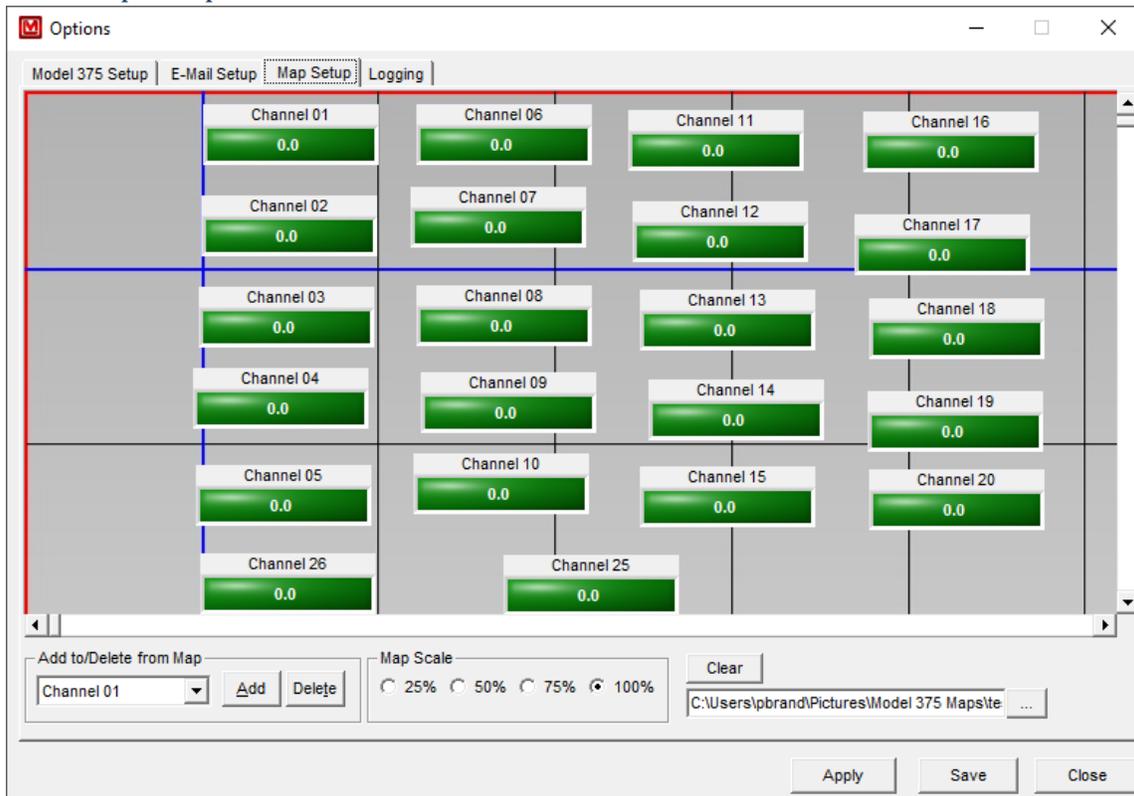
The groups allow a set of E-Mail alerts to be sent based on specific conditions. For instance, group 1 could be set to only send alerts when check source tests and alarms are detected. Group 2 could be used to send alerts when any failure is detected. Group 3 could be used for any communication issues. This gives flexibility in being able to send an alert to the right person(s).

There are fields for adding a custom subject and two different messages depending on if the alert is for an alarm or any other event.

When configuring the application to send alerts, the following information must be filled in correctly.

- SMTP server name – Server name or IP address
- SMTP port – Port number to use (typically 587)
- SMTP user name – User name
- SMTP password - Password
- Enable SSL – If SSL is required check this box. (This will probably need to be always checked)
- From Address – Valid email address on the SMTP server.

3.2.3 Map Setup

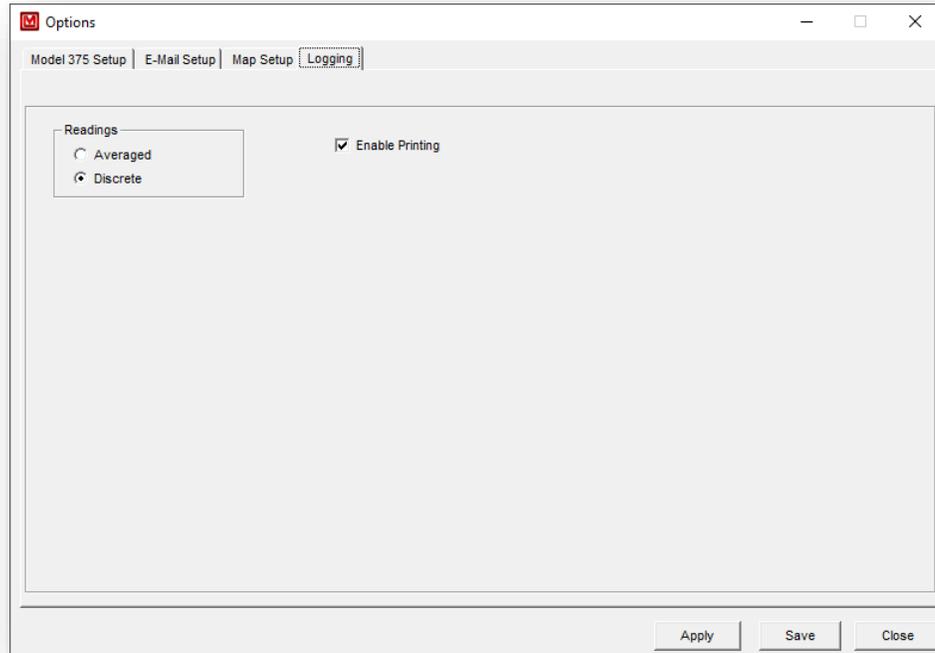


From this screen it's possible to load in a custom map file to be used as a background on the main screen. Once a map is loaded, channels can be added and deleted on the map. Channels can be dragged around to any location on the map.

The Map scale can be set to 25%, 50%, 75%, or 100% using the four scale options on the map scale frame.

To remove the map, click the Clear button.

3.2.4 Logging



Readings can be saved either as an average of the logging interval or as discrete values. When discrete readings are selected, the logged reading is whatever the current reading is at the time the data is logged.

To enable a report to be printed when an alarm or fail occurs, check Enable Printing. This prints a report that shows what the event is along with some blank lines that can be used to write in additional information.

3.3 Logged Data

Data are logged automatically to a Microsoft Access database. This database can be used to query and generate reports if necessary. From the left most column going right, the database records include: Channel Number (manually set on Model 375), Date and Time, Status at time of reading, Numerical reading value, Units for reading, and user-defined comment.

Data logged to a .csv file has different columns. From left to right these are: Channel, Caption, reading, units, audio status, high alarm status, low alarm status, over range status, detector fail status, error status, missing status, date, image path, and comment.

4. Installation Guide

The area monitors require A/C power and a standard Ethernet connection for operation. Newer instruments support 100 MB/Full duplex while older instruments only support 10 MB/half-duplex.

Note: The software must be run on a computer on the same broadcast domain as the monitors, since they use UDP broadcasts to communicate to the computer.

Check with your network administrator before connecting any devices to your network.

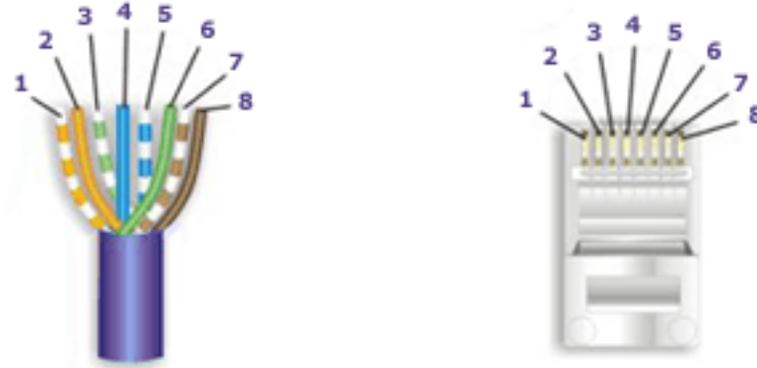
4.1 Installation

2. Determine location for the monitors.
3. Run a Cat-5 Ethernet cable to each location.
4. Run A/C power to each location to power the Model 375 monitors.
5. Mount the monitors.
6. Power on the first monitor. Check the switch or hub that connects the monitor to the network for a good link indication.
7. Remove calibration cover and switch the CAL MODE switch to the ON (right) position to enable the parameters to be changed.
8. Set the ID number to the desired value. It is recommended to use incrementing values starting at one for the first Model 375.
9. Hold down both the LOW ALARM and HIGH ALARM buttons (375) or SIGMA AND SUM buttons (375P) simultaneously. While holding down these buttons, press the UP and DOWN buttons to change the ID number. The ID number is adjustable from 1 to 255. Each monitor must have a unique ID number. To check the ID number at any time, simply press both the ALARM and HIGH ALARM or SIGMA and SUM buttons.
10. Set the UDP port to the desired value. All monitors must be set to the same UDP port.
11. Hold down both the LOW ALARM and CAL CONST buttons (375) or SIGMA AND CH1 buttons (375P) simultaneously. While holding down these buttons press, the UP and DOWN buttons to change the UDP port number. The port number is adjustable from 0 to 9999. This corresponds to setting the port to 50000 to 59999. To check the UDP port number at any time, simply press both the LOW ALARM and CAL CONST or SIGMA AND CH1 buttons.
12. Return the CAL MODE switch to the OFF (left) position and screw the calibration cover back on. The parameters can still be viewed when the calibration mode is off by pressing the appropriate buttons. Leaving the switch in CAL MODE will cause the 375P to be in printer mode and will not communicate with the software.
13. Perform steps 6 through 12 for the rest of the monitors.
14. Install and run the Model 375 software on the computer. See Section 2 for software installation instructions. The computer must be logged in, and the software must be running for data to be collected from the monitors.
15. Open the Options screen and fill out the information for each active monitor. When done, click the Save button.

4.2 IP Addresses

Each device on a network has a unique address. This number is called the Internet Protocol (IP) address. This number can either be dynamically or statically assigned. A static IP address is assigned to the device manually. A dynamic IP address is automatically assigned by a Dynamic Host Configuration Protocol (DHCP) server. The format is a 32-bit numeric address written as four numbers separated by periods (dots). Each of the four numbers ranges from 0 to 255.

5. Ethernet Cable Termination



Looking at the connector with the pins at the top facing you, pin 1 is on the left. Pin 8 is on the right.

Pin 1 – White/Orange

Pin 2 – Orange

Pin 3 – White/Green

Pin 4 – Blue

Pin 5 – White/Blue

Pin 6 – Green

Pin 7 – White/Brown

Pin 8 – Brown

Tools required for cable termination:

- Wire strippers
- Network cable tester
- Network cable crimper
- RJ-45 connectors appropriate for cable conductor type
- Category 5E network cable, stranded or solid conductor

Stranded cable is generally used where the network cable can be moved, such as patch cables. Solid cable is used where the cable will be fixed, such as internal wiring in walls.

If possible, save some of the extra cable that has been pulled into where the switch is located. This extra cable can be used to make patch cables, if necessary.

1. Strip off approximately one inch (2.5 cm) of the cable jacket.
2. Untwist the four pairs and straighten them out.
3. Arrange them in a fan shape, following the color order above, with the white/orange wire on the left, and the brown wire on the right.
4. Bring the wires together until they touch. Double-check the order.

5. Cut the wires to make a 90-degree angle approximately a half inch (1.3 cm) from the end of the jacket. The wires must be cut straight so that they fit all the way into the connector to make good contact with the pins.
6. Align Pin 1 of the cable with Pin 1 of the connector and insert the cable into the connector. Push firmly so the wires go all the way to the top of the connector and the jacket goes into the connector by about three-sixteenths of an inch (0.5 cm). Again, check to make sure the colors are in the right order.
7. Place the connector into the crimp tool and squeeze the handle hard.
8. Inspect the connector to make sure all pins were crimped.
9. Repeat steps 1-8 for the other end.
10. Use a cable tester to test the cable for shorts and crossed wires.

6. Network Troubleshooting

If you have trouble communicating with the monitors or network cameras, first check all cabling with a network cable tester and make sure the power is connected and the devices are turned on.

6.1 Ethernet Data Format

The data message from the instrument will broadcast every two seconds. The format of the data will be one of the following two versions:

Obsolete Version:

Byte 1	0	x
Byte 2	x	x
Byte 3	x	OR x
Byte 4	x	x
Byte 5	.	.
Byte 6	x	0
Byte 7	Audio Status = 1 = on	
Byte 8	Alarm Status = 1 = on	
Byte 9	Alert Status = 1 = on	
Byte 10	Over Range Status = 1 = on	
Byte 11	Monitor Status = 1 = on	
Byte 12	Error Code	
Byte 13	UNIT ID CHAR 1	
Byte 14	UNIT ID CHAR 2	
Byte 15	UNIT ID CHAR 3	
Byte 16	Carriage Return (0DH)	
Byte 17	Line Feed (0AH)	

New Version: (Firmware version 39608n42 or higher)

Byte 1	L	
Byte 2	M	
Byte 3	I	
Byte 4	0	x
Byte 5	x	x
Byte 6	x	OR x
Byte 7	x	x
Byte 8	.	.
Byte 9	x	0
Byte 10	Audio Status = 1 = on	
Byte 11	Alarm Status = 1 = on	
Byte 12	Alert Status = 1 = on	
Byte 13	Over Range Status = 1 = on	
Byte 14	Monitor Status = 1 = on	
Byte 15	Error Code	
Byte 16	UNIT ID CHAR 1	

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```
Byte 17    UNIT ID CHAR 2
Byte 18    UNIT ID CHAR 3
Byte 19    PORT NUM CHAR 1
Byte 20    PORT NUM CHAR 2
Byte 21    PORT NUM CHAR 3
Byte 22    PORT NUM CHAR 4
Byte 23    3          Firmware version of Model 375|
Byte 24    9
Byte 25    6
Byte 26    x
Byte 27    x
Byte 28    n
Byte 29    x
Byte 30    x
Byte 31    3          Firmware version of Ethernet board
Byte 32    9          Note: The firmware version of the
Byte 33    8          Ethernet board is not sent out the
Byte 34    x          serial port of the Model 375!
Byte 35    x
Byte 36    n
Byte 37    x
Byte 38    x
Byte 39    Carriage Return (0DH)
Byte 40    Line Feed (0AH)
```

Check to make sure the network is not blocking the UDP port used by the Model 375 monitor. Firewalls and/or routers may need to be configured. The Model 375 monitor uses a local port (Source) that is one less than the UDP port (Destination) set by the user. For instance, if the remote port (Destination) is set to 50005, the local port (Source) will be 50004. Older versions of the firmware do not have a user-definable UDP port and only use a remote port (Destination) of 5555, and a local port (Source) of 5554. A network protocol analyzer may be used to determine if the Model monitor is broadcasting any data. Ethereal (www.wireshark.org) is recommended for this purpose.

The RS-232 output of the Model 375 is connected internally to the Ethernet board, which converts the RS-232 signals into UDP packets. The external RS-232 connector is still active, and it is possible to connect a serial cable to the Model 375 to verify if the RS-232 port is functioning correctly.

An RS-232 cable can be made using the following:

Model 375	PC (9-pin)	PC (25-pin)
pin 4 TXD	pin 2	pin 3
pin 2 GND	pin 5	pin7

The cable connector has male pins on the Model 375 side. The cable connector has female pins on the PC side. The RS-232 uses the following parameters: 2400 baud, 8 data bits, 1 stop bit, No

parity, No Handshaking. Using a program like HyperTerminal, which comes with Windows, will allow the verification of proper RS-232 operation.

7.0 Revisions

- 2.0.4 – 05/28/2021 – Fixed typo in unit of measure for mSv/hr- was mS/hr.
- 2.0.3 – 06/17/2020 – Added support for the model 3276. Added ability to disable normal logging by setting the log interval to zero.
- 2.0.2 – 05/20/2020 – Fixed issue where password window would cause a crash if left open and either an error or quick alert window was opened. Added low alarm as a filter for the email alerts.
- 2.0.1 – 04/24/2019 – Fixed issue with series one firmware with two decimal places and regions that swap comma and period for decimal.
- 2.0.0 – 10-17-2018 – Initial release of the 2.0.0 rewrite. Improved email configuration, new Options screen.
- 1.5.4 – 11/22/2017 – Added check source test mode per customer request.
- 1.5.3 – 4/27/2017 – Added logging of email and SMTP information for troubleshooting purposes.
- 1.5.2 – 07/23/2014 – Added option to use either MX lookup or manual specify SMTP settings.
- 1.5.1 – 09/06/2013 – Added option to disable printing. Increased maximum logging interval to 4 places.
- 1.5.0 – 09/05/2013 – Added printout whenever an event happens per customer request. Added audible sound alert. Changed main screen to not show monitors that were not enabled. Moved Save button to options screen from main screen. Removed the rainbow. Minor bug fixes.
- 1.4.1 – 03/02/2011 – Fixed issue where graph would flicker when more than one monitor was connected. Changed default port from 5555 to 50000. Fixed Quick Alert window to not automatically center in screen.
- 1.4.0 – 08/06/2008 – Changed email functions to use MX Record. Added support for two decimal places.
- 1.3.1 – 03/12/2008 – Fixed issue relating to French language causing software to crash.
- 1.3.0 – 02/25/2008 – Changed to allow camera URL to be user-defined instead of hard coded.
- 1.2.5 – 12/05/2007 – Not released.
- 1.2.4 – 07/23/2007 – Fixed bug where database path could not be loaded from Prefs file.
- 1.2.3 – 02/14/2007 – Added connection status to the .csv/mdb files. Not released.
- 1.2.2 – 02/09/2007 – Fixed bug where alerts/alarms might not be reflected into the csv files depending on timing.

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- 1.2.1 – 01/31/2007 – Fixed bug where opening csv file could bail out without closing the file.
- 1.2.0 – 01/20/2007 – Fixed where data saved to csv file showed blanks instead of status. Fixed overflow error when set to not log any data. Fixed bug where if units were blank an error would occur saving to database.
- 1.1.3 – 03/14/2006 – Fixed where logged data was not averaged correctly.
- 1.1.2 – 03/19/2005 – Added checkbox to enable/disable sending of email.
- 1.1.1 – 08/01/2005 – Fixed bug where units were not correctly displayed when main screen was loaded.
- 1.1.0 – 06/14/2005 – Added camera support. Requires firmware on both monitor and Ethernet board that allow user-defined UDP port.
- 1.0.0 – 12/19/2002 – Initial version.