

## Frequently Asked Questions

### eZtrend QXe

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**1. What are some of the key differences between the eZtrend QXe and the eZtrend V5 recorders?**

**The eZtrend QXe has many new features that represent significant improvements over the eZtrend V5 recorder. They use an active TFT display instead of the passive STN display that provides improved viewing angles, display brightness and contrast, as well as improved backlight life. The recorder incorporates touch screen technology that makes navigation through the various configuration screens fast and easy as well as such function as replay and data analysis quick and convenient. Data storage functions and capacity have been enhanced. The recorder uses the latest data storage technology. There is a large internal buffer (70MB) which is expandable to 400 Megabytes, as well as the removable front and rear USB ports that can be used for downloading the data from the buffer. This gives the customer greater flexibility when it comes to data storage and eliminates the floppy drive and its inherent reliability issues. The mechanical design has been enhanced; the eZtrend QXe recorder comes standard with a NEMA 3/IP55 front face protection and an optional NEMA 4X/IP66 front face protection that prevents water and dust intrusion. The eZtrend V5 had no rating and used a separate cover to achieve a NEMA 4/IP65 rating. The Free Form Math capabilities have been improved to over the current eZtrend V5 by having addition Math capabilities that were not part of the eZtrend V5 recorder. Complete compliance to 21 CFR Part 11 is now possible with the Extended Security feature of the eZtrend QXe and its password system. It provides the ability to have up to 50 users with their own unique password, they can be set to expire and time out, also password capability has been added to the Ethernet port to prevent unauthorized access to the recorder via communications.**

**2. Why would customers consider these features to be of value to them?**

**Customers are concerned with how easy the recorder is to use, how much data can be saved to the recorder, how understandable are the displays, how easy it is to review and interpret the data, how secure the data is and the overall reliability of the recorder. The new features of the eZtrend QXe takes the Honeywell family of paperless recorders to the next level. The HMI interface makes it much easier to use and navigate through the various screens and recorder set ups, enhancements make it easier to replay data, the larger memory capacities allow the user to store more data without having to worry about losing data due to memory capacity and the improved mechanical design provides greater protection from the typical industrial environments.**

**3. Does my current version of TrendManager Pro Software work with the eZtrend QXe recorder?**

**You need the latest version of the TrendManager Pro software being released at the same time as the eZtrend QXe in order to have the full benefit of the software. This new version adds the configuration parameters for the new eZtrend QXe recorder while still supporting both the V5 recorders and X-Series recorders. If you have a previous version of the TMP that supports the X-Series recorders, a new version can be downloaded from the World Wide Web at <http://www.xseries-info.net>.**

**4. Does the eZtrend QXe support Custom Screens?**

**No, the Custom Screen capability is a feature found on the Minitrend QX and Multitrend SX recorders.**

**5. What Standard Screens are available on the eZtrend QXe recorder?**

**The standard screens for the eZtrend QXe recorder provide more flexibility than what existed with the eZtrend V5 recorder. The V5 was limited to 8 standard screens that used fixed set ups for Trends, Bars and Digitals. With the eZtrend QXe, the recorder supports 10 user definable screens. The user has greater flexibility in setting up the screens and what to view; they can be set up to use DPM (Digital Panel Meters), DPM'S & Scales, Charts & DPM'S, Charts and Scales Charts, DPM'S & Scales. You can set Horizontal or Vertical Orientation, whether to rotate the Scales or to show the Scale indicators as Pointers or Bars. The user can select how many scales to be displayed rather than a single fixed scale as was the case for the V5 recorder. The users can also choose to rotate between the various screens.**

**6. Does my current version of the Database Management Tool Software work with the eZtrend QXe recorder?**

**Yes, this application works with the data files created by the eZtrend QXe recorder since the format of the data has remained the same. The data format has not changed making the Data Base Management Tool compatible with all the V5 and X-Series recorders allowing users to move, copy and delete files from the database.**

**7. Can I use an eZtrend V5 Set up Configuration in the eZtrend QXe Recorder?**

**No, the eZtrend QXe uses a different menus structure and has many new features that make the configuration files incompatible.**

**8. How many inputs are available on the eZtrend QXe recorder?**

The eZtrend QXe Recorder can support up to 12 Analog Inputs, these can be Linear, T/C, Ohms or RTD. The recorder has the first three or six inputs, depending on the model ordered on the Processor board. The Analog Inputs 6 through 12 are on a plug in expansion board. To add these inputs to an existing recorder requires an Options Expansion board in order to connect them into the recorder's data bus. If you only have a 3 analog input Model the only way to make this a 6 input model is to change the complete Processor/I/O card out.

**9. Are there any restrictions to the use of the Analog Inputs?**

The eZtrend QXe Analog Inputs 1 through 3 and 1 through 6 are a Processor/Analog I/O board combination. You cannot just add three additional inputs to an existing 3 Channel Processor card, you would need to replace the entire assembly with a new 6 Channel processor to get a 6 Input recorder. You can add 6 Analog inputs to an existing 3 or 6 channel recorder by adding an Expansion board and a six channel Analog input board. The expansion card also allows the addition of a 24V Transmitter Power/Rear USB Port/RS485 Communications option board. Because of the way the Pen designations are set up relative to the Analog inputs the Pens may not be contiguous. For the eZtrend QXe the Analog Inputs 1 through 6 will have Pen designations 1 through 6, Analog inputs 7 through 12 on the MSG are really AI 9 to AI 14 on the recorder with Pen designations of P 9 to P14.

**10. What are the Scan Rates for the eZtrend?**

For the first six inputs, the scan rate can be set to 200msec (5Hz) or 500msec (2Hz); for the Expansion Inputs (6 to 12), the scan rate can be set to 100msec (10Hz), 200msec (5Hz) or 500msec (2Hz).

**11. Can the recorders replay data and how does this work?**

The recorders have the ability to replay data with the ability to scroll through the data using a cursor to display the digital data for the trends. The data is replayed from the display buffer memory. The amount of historical data available for replay depends on the chart speed selected and how much capacity has been allotted to the display buffer. The recorder's buffer is approximately 70MB in the standard configuration and is expandable to up to 400MB. The buffer is split between data storage and display data; the allocation for how the buffer is divided is initially set to 50% for each buffer. This can be adjusted by the user in the Recording Configuration Set up menu to provide more or less save for data storage vs. data for the chart display. The "Replay" mode is selected from the "Main Menu" and the touch screen scroll bar makes it easy to move back and forth in time. The screen background changes to indicate it is in Replay Mode as opposed to the normal real time trending mode and a cursor

appears on the screen along with panel meters on the right hand side to indicate the digital values for the instant of time the cursor shows.

**12. Can data be “Replayed” from the removable storage media on the recorder?**

You replay data from the recorder’s internal buffer memory and not the removable storage media of the recorder. Since the capacity of the internal buffer is so large (at least 70MB and expandable to 400MB) and is securely mounted internally in the recorder, preventing people from just removing the buffered data; it was decided to only replay data from the internal buffer. This provides one central repository for the buffered data and simplifies the replay function. Also replaying from the removable media would be slower.

**13. How much buffer memory is available in the units?**

The eZtrend QXe comes standard with a 128MB internal memory card with 70MB of available for the buffer memory. This is expandable up to 400MB. The memory is divided up between data storage buffer, data viewing (charts, graphs) buffer and the unit’s operating system. The Display buffer and Data Storage buffer is initially split set for 50% for data replay vs. data storage. For the standard buffer which is 70MB, this means it is divided equally between replay (35MB) and data storage (35MB), this represents of approximately 8.5 million data points for replay and 8.5 million data points for data storage.

**14. When the buffer becomes full does it start to write over the oldest data?**

If the data is not exported before the buffer becomes full, the recorder will eventually start to overwrite the oldest data. The eZtrend QXe provides the flexibility to order the recorder with a 400MB internal buffer if the user feels that more storage space is needed for the application. At any time, you can insert an external USB memory key to save the data, flushing the data in the buffer to the external removable media, in order to upload the data into a PC for further analysis. The data will not be erased from the buffer but will be marked as having been downloaded and eventually overwritten with the new data.

**15. Is there a way to know if the buffer is getting full?**

There is an indicator at the top of the display that shows various instrument status parameters. There is an icon for data storage that provides a quick status or whether the recorder is storing data and if the buffer is in an overwrite mode. The icon is green when data storage is occurring and red square when data storage is stopped. Double circular arrows are an indication that the recorder is in the data recycle mode where the oldest data is being overwritten. By clicking on the record icon a record menu appears to provide detailed information - the

number of pens being recorded when the next scheduled export is required before data will be overwritten and the current schedule for exporting data, if one is set up.

**16. Can the recorder be completely configured from the front of the recorder?**

**Yes all the parameters to operate and set up data storage can be configured from the front of the recorder.**

**17. How many pens can be displayed on the chart?**

**The recorder comes with a number of standard screens; the eZtrend QXe allows 8 pens per display for a standard screen**

**18. What are Firmware Credits?**

**Firmware credits provide a flexible way of enabling and using the various firmware options in the recorder. They work in similar ways to a debit account. The user can purchase credits when they order the recorder, or if they find out that they need more later on, they can order additional credits from the Upgrade MSG. Firmware functions have various values assigned to them, the user can go into the recorder's credit screen and see what credits are available, select what features they want to enable based on their available credits and begin using that feature. Credits can be reused by deselecting a firmware function no longer being used.**

**19. Does the recorder have Password capability?**

**The recorder is capable of up to 4 levels of Password capability – Engineer, Supervisor, Technician, and Operator as well as the ability to set up an Administrator level for the password system. The functions that can be password protected have been greatly expanded beyond the seven levels that were available in the V5 recorder. There are 39 areas that can be password protected including the Ethernet port at the various levels. These can be customized for users if necessary. Passwords are entered using an alphanumeric keypad that appears on the recorder's screen allowing the user to select the letters and numbers for the password. When initially setting up passwords for the first time make sure that at least one Administrator has been established so the password parameters can be changed later.**

**20. Does this mean that the recorder is compliant with 21CFR Part 11?**

**Yes, the recorder provides protection against undetected changes to the recorder configuration and provides a history file of changes made. The ESS (Extended System Security) option provides the password time outs, password expiration**

reuse requirements and audit trail needed to meet the requirements defined in 21CFR Part 11. This audit trail can be used by regulatory authorities to monitor what changes were made to the recorder configuration and who made them. In addition to this, the recorder provides secure data bases of the data that prevents undetected tampering of the data recorded to the storage media.

**21. What is 21CFR Part 11?**

21CFR Part 11 is part of the Code of Federal Regulations issued by the US government. 21CFR deals with the rules and regulations issued by the Department of Health and Human Services – Food and Drug Administration and deals with the rules covering Electronic Records and Electronic Signatures. These are the rules and regulations being applied to paperless recorders when they are being used in a regulated process.

**22. Do all processes using paperless recorders need to follow these regulations?**

No, these rules apply to processes that are covered by Federal regulations such as food processing, pharmaceutical manufacturing, and FAA regulated processes. Private companies may follow these same guidelines but it would not be a federal requirement unless the product was being used in a regulated process.

**23. What types of data logging options are available?**

The recorder provides a number of selections for how the data can be logged. It can be set to store the *Sample*, which stores the last sampled reading, it can be set to store the *Average*, which stores the average of all the samples taken since the last log, or it can store the *MAX/MIN*, which logs the highest and lowest of the sampled readings since the last logged data. The Max/Min mode is the most representative of an analog recorder. There is also a mode called Fuzzy Logging, which is used to increase the amount of representative data stored on the disk.

**24. What is “Fuzzy Logging”?**

Fuzzy Logging is a technique that can be used to store more representative data on the storage media thus effectively increasing its capacity. In many cases it can increase the capacity by as much as a 100:1. The way it works is Fuzzy Logging looks for straight line, real time data, whether it is horizontal, climbing or descending. Since it is a straight line it can be represented by two points as easily as it could with 50 points. Fuzzy logging would log only the 2 points instead of all 50 points. If the data is changing and cannot be represented by straight-line data, it records the actual real time data per the logging method that was

selected. It does record every 255<sup>th</sup> point regardless of whether the data remained the same for that many samples.

25. Can I mark a custom Message on the “Chart” and is it stored in the memory so I can see it later?

Yes, this is done from the “Message” selection of the Main menu. An Alphanumeric keypad is displayed on the front of the recorder, allowing the user to type out a message and adds it to the recorder’s data file. This will place a line across the full width of the chart with the text message and with a time and date stamp. The message can be entered through the USB port using a USB Bar code reader, a keyboard or via the Ethernet port and a web browser. Messages can be reviewed by selecting “Messages” on the Main Menu screen. Messages can be reviewed based on their type – Alarms, System, Diagnostics, Security and User or All Messages. The scroll bar on the right hand side allows the user to quickly review all the messages and each message is Date and Time Stamped. Message screens can also be printed to a PCL type printer connected to the USB port.

26. You mentioned Events, what are they and what else can be done with them besides marking the chart?

Events are certain conditions or operations that can be set up and logged according to the time and date of occurrence and can reviewed on the recorder’s message screen. Events are set up so when a condition occurs, i.e. a cause, it produces an outcome or effect. Some Cause and Effect actions are:

**CAUSE:**

Into Alarm  
Out of alarm  
Acknowledge Alarm  
Start Totaliser  
Stop Totaliser  
Reset Totaliser  
Digital In State  
Digital In On  
Digital In Off  
Digital In State Change  
Thermocouple O/C  
Scheduled

**EFFECT:**

Mark Chart  
Logging Start/Stop  
Totaliser Start  
Totaliser Stop  
Reset Totaliser  
Digital Out On  
Digital Out Off  
Acknowledge Alarm  
e-Mail  
Screen Change  
Print Screen

27. I need to do a complex Math calculation; can the recorder do this?

The recorders have an optional Math package that is part of the firmware “Credits” which allows a user to do a variety of different math operations. The Math can be up to a 100 character math expression and includes such operands as Add (+), Subtract (-), Multiply (\*), Divide (/), Negate, Square Root, Square,

**Round a value, Reciprocal of a parameter, Absolute Value, Totalize, LOG, LN, EXP, Lo value, Hi value, the root of a value, Power of a value, Over, Under, Trigonometric parameters, Counters plus a number of other math and Logic type functions. In addition to this Analog values, Digital Input status, Digital or Relay output status and Memory/Disk/PC Card use can be inserted in to these equations.**

**28. What are the “Virtual Pens” and what are they used for?**

**Virtual Pens are additional Pens not associated with a physical Analog Input. These extra pens are purchased using the “Credits” in the firmware options of the model selection guide. These Virtual Pens are used to display and store Math calculations; they can be used for writing communications values to the recorder or storing totalizations to memory. The Virtual pens start at Pen 49.**

**29. What is the maximum number of Virtual Pens available?**

**The eZtrend QXe recorder supports:**

- Max of 12 pens which are associated with the 12 available analog inputs**
- An Additional 12 Extra Pens are available using the Credits to purchase Extra Pens**
- A Total of 24 pens are available these consist of up to 12 pens associated with the recorder’s analog inputs and up to 12 virtual pens**

**30. What Communications capabilities exist in the recorders?**

**The eZtrend QXe comes standard with a 10/100 based-T Ethernet communications port which can be set up for real time communications and web browsing. In addition to the Ethernet port there is an optional RS485 communications port that can be used for real time communications. There are Communications Values that can be used to write values to the pens of the recorder over the communications link for display and recording purposes.**

**31. What communications protocols are supported?**

**The eZtrend QXe supports TCP/IP Modbus for real time communications. The recorder also supports an optional integral OPC Server function that allows an OPC Client to read and write directly to the recorder.**

**32. Can eZtrend QXe, V5 Recorders and other X-Series recorders reside on the same Ethernet network?**

**Yes, you just need to make sure they all have unique IP addresses and that you are using the proper protocols when setting up the TrendServer Pro**

**Communications Server. The X-Series recorders use TCP/IP Modbus while the V5 recorders can be set up with TCP/IP Modbus or Trendbus protocol for real time communications.**

**33. Will the data acquired over the network match what is written to the storage media?**

**Yes, the data that is acquired over the network is the same as the data recorded to the storage media. Because of network traffic issues, which can happen with Ethernet, data acquired over the network in real time could have missing data points if data was not available to the PC Application at the time it was requested.**

**34. Can the recorder be set up to get an available IP address from a server on the network?**

**Yes, this capability is called DHCP (dynamic host configuration protocol) and the recorder can be set to get an IP address from a network server that has that capability or it can be set for a static IP address that does not change. This is a configuration setting in the recorder.**

**35. Can I do a Bar Code Input with the recorder?**

**The USB port makes interfacing a bar code reader to the recorder easy. To use the bar code reader to enter a message you would go to the Message Screen; once the text box appears with a blinking cursor in the box you simply trigger the bar code reader to send the message to the recorder. The recorder accepts this message directly and enters it into the recorder. Bar coded messages can be used to create batch type data by entering messages using the Batch icon instead of the Mark icon on the Message screen.**

**36. Can I connect a printer to the USB port and what can I print?**

**You can connect a USB print to the USB port of the recorder. You can print STATUS screen information, MESSAGES and TREND displays. This does require a basic USB Standard PLC type printer. It does not support graphical or multifunction type USB printers as it does not have the drivers in the recorder to support these printers.**

**37. What is a PCL type printer?**

**This is a printer that supports PCL, which is a Printer Command Language that was developed by HP in order to provide an efficient and effective way to control printer features across many different printing devices. PCL commands are compact escape sequence codes that are embedded in the print job before being**

sent to the printer. HP PCL formatters and fonts were designed to quickly translate application output into high-quality, device-specific, raster print images. The PCL printer language is common to virtually all HP printers, but not universal and not always backward compatible. Printers that support graphics and the special camera printer functions are generally not PCL type printers.

**38. Can you upgrade the recorder's firmware and how do you do it?**

The USB ports can be used to upgrade the recorder's firmware. The process is very easy to do. First insert the USB Key into the recorder and go to **Menu>Configure>Setup>Edit>General> Factory>FW Upgrade**. The recorder will self recognize if a new firmware version is available on the memory media and begin the upgrade process automatically. Once completed it will indicate if the upgrade was successful.

**39. What is the alarm capability of the recorder?**

The recorders have a number of different options available when it comes to **Alarm Outputs**. There are two basic output types used in the eZtrend QXe recorder. There are **Relay Outputs** that are capable of handling 120/240Vac, 3 amps and there are **Discrete Outputs** capable of only 24Vdc, 1 amp outputs. The eZtrend QXe is capable of 4 or 8 Relay outputs or up to 8 Discrete outputs.

**40. How do I know from the recorder's display that a pen is in alarm?**

There are a number of ways to see if an alarm is active or has occurred in the past. First there is the "Alarm Bell" Icon in the status bar of the recorder, which turns Red when an alarm is active and green when no alarms are active. It also gives the number of currently active alarms. On Bar Graphs, there is an alarm level indication; Digital Panel values have Low and High Alarm pointers that flash when an alarm condition exists, and on Trends the screen changes the background color to indicate an alarm condition, the pen pointer flashes and a message can be shown on the trend display. Alarm conditions can be logged to the Message screen; All or specific classifications of messages (Alarm, System, Diagnostic, Security and User) can be viewed from the Main Menu by selecting the Message icon. Clicking on the Alarm Icon allow the user to acknowledge the alarm or to view the details for the various alarms.

**41. Can alarm values be changes without having to go through the complete Configuration Set-up menus?**

Yes, when initially configuring alarms on the individual pens there is a configuration parameter under the PENS that can be selected to ALLOW

**CHANGE.** Changing this selection from a Red X to a Green ✓ will allow the user to make Alarm set point changes from the ALARM – DETAIL screen.

**42. What is the life of the display and does it burnout?**

The display itself is an electronic part and as such does not burnout in the sense of a light bulb burning out. It is subject to failure just like any other electronic component, and therefore is very reliable. What happens with all recorders using this technology of color TFT displays is that they have a backlight behind the display to that allows you to see the traces and graphics. This backlight is a long life florescent bulb and since it is a light bulb it will eventually burnout. It typically has a life, defined as MTTF (Mean Time To Failure), of 40,000 hours at room temperature at full brightness for the eZtrend QXe. This is defined as having a greater than 50% chance of being half its original brightness at 40,000 hours. Because the brightness degrades over time this is why you will see a difference between a newly installed recorder and one that has been in use for some time. The backlight in the eZtrend QXe is not a replaceable item so if the backlight burns out the entire display assembly will need to be replaced.

**43. Is there a screen saver option?**

Yes, this is available under the SET UP – GENERAL – SCREEN SAVER selection. The user can set the Brightness, Time out condition, Saver Level and Days/Hours conditions.

**44. Can the display brightness be adjusted?**

Yes, the brightness adjustment allows the user to adjust the “display” brightness to compensate for the backlight degradation that is normal with these types of backlights. Lowering the intensity of the backlight also helps to prolong the life of the backlight.

**45. Is there any special care required for these recorders?**

There is no special care required to maintain the recorder. The front face can be cleaned with a soft cloth and soapy water if it becomes dirty. A protective cover is available for the touch screen to help prevent scratching of the touch screen. The touch screen can be replaced if necessary without having to replace the display.

**46. Does the recorder support Multi-language capability?**

Yes, the recorders support English, French, German, Italian, Portuguese, Polish, Hungarian, Czech, Slovakian, Romanian, Turkish, Russian and Spanish for configuration. The Help files currently only support English.

**47. How does the NEMA 4X option differ from the standard NEMA 3 rating for the recorder?**

**The NEMA 4X option has been certified by UL to meet the NEMA 4X requirements for a panel mounted device. The key differences from the standard recorder is the door is most robust, designed to keep water that is flowing at a rate of 65 gallons per minute out of the recorder. To do this, the gaskets for the recorder are different and the recorder requires additional mounting brackets to insure the proper compression of the panel gasket to keep out the water.**