

TrendManager Suite®

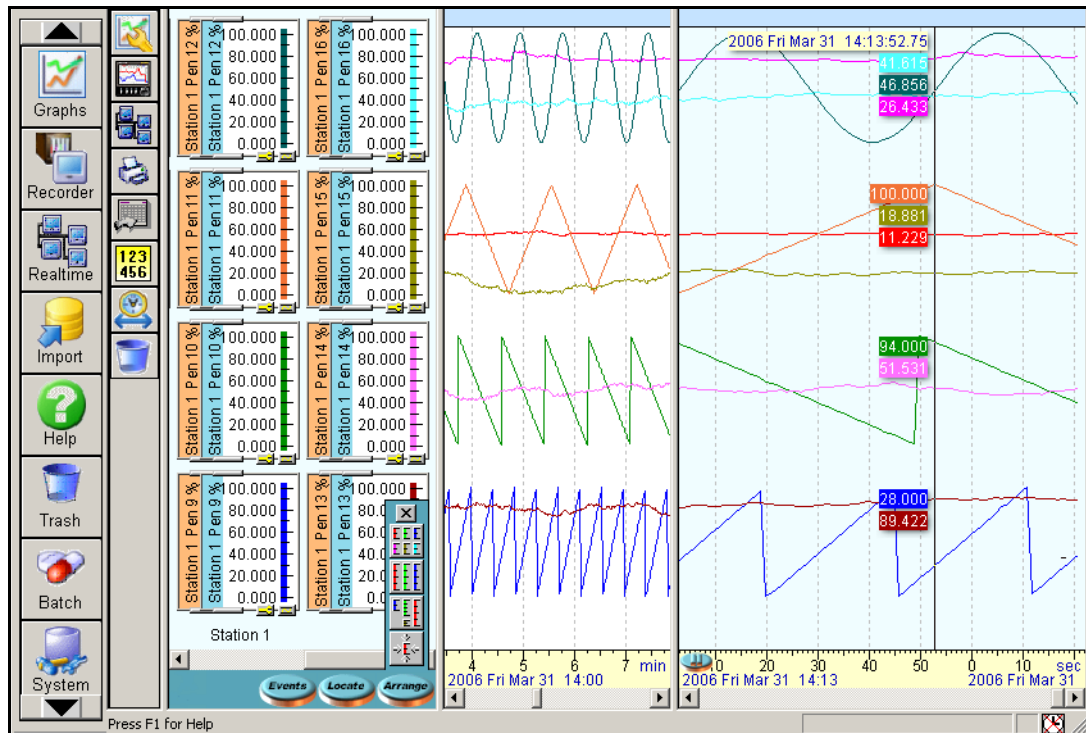
Specification

APPLICATION SOFTWARE AND DATABASE MANAGEMENT TOOL

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Overview



- The TrendManager Suite software is a Windows™ based PC package that complements the Honeywell line of data acquisition products. It provides the capability to configure, analyse and network recorders for data acquisition.
- The TrendManager software ties your process together, providing access to the recorder through the plant LAN or the Internet, while keeping a high level of security.
- TrendManager provides the tools for real-time communication, data analysis and configuration for the entire family of X Series and V5 paperless data recorders.
- The application also imports and analyses electronic data from the Honeywell Modular Systems UMC800 and HC900, paperless recorders, Circular and Strip Chart recorders. These devices and Honeywell Actuators and UDC Controllers have Realtime capabilities.
- The software is designed for use on Microsoft Windows™ platforms and networks.
- The TrendManager Suite is easy to use and is available in English, French and German operation languages. The software is simple using "Drag-and-drop" operations, clear menus and logical configuration wizards to help the operator set up and analyse data from the recorders.

Trend Manager Suite

The latest version of the Trend Manger Suite software supports both V5 and X Series recorders.

TrendViewer

TrendViewer displays and prints electronic data, stored on a storage media (V5 floppy disk, ZIP drive, PCMCIA memory card or X Series compact flash/USB). It is available at no charge on the CD and shipped with every Honeywell paperless recorder.

TrendManager Pro

TrendManager Pro is an advanced data analysis/archiving software package, providing full configuration of the recorders. TrendManager Pro is a stand-alone package that delivers to the user total recorder configuration, allowing the user to archive, graph, print and export data. TMP also allows files to be exported using comma separated variables (CSV) format, that can be imported into most computer software. TrendManager Pro imports data from various Honeywell recorders, and stores the data individually in a secure database on a PC for graphing, analysis, adding comments, later retrieval, print and export. TrendManager has a Batch Mode facility where markers can be entered via the recorder or TrendManager/Server to create separate batches of data that can be viewed, graphed and exported to a spreadsheet.

TrendServer Pro

TrendServer Pro is a fully network aware software package for real-time viewing and archiving of data with communications to the recorder. It supports all the capabilities of TrendManager Pro plus real-time data acquisition and web browser access. TrendServer Pro provides secure multi-level, multi-user access to the recorder data by various departments with security. Standard features of TrendServer Pro include data archive tools, email set up and alarming, graphing, print import and export data facilities.

TrendServer Pro with OPC Server - provides the same functions as the TrendServer Pro but includes the added function of an integrated OPC Server to allow easy interfacing to third party HMI software packages that support an OPC Client. This provides a real-time interface between servers and clients.

Features	TrendViewer	TrendManager	TrendServer
Import data form disk	*	*	*
Graph data	*	*	*
Upgrades available via download (www.XSeries-info.net)	*	*	*
Print graph data	*	*	*
Print recorder configurations		*	*
Full configuration of any recorder on a PC		*	*
Fuzzy logging		*	*
Events system		*	*
Archive data on secure databases		*	*
Export using CSV format		*	*
Batch Mode		*	*
Export using OPC links (Note 1)			*
Communicate with up to 256 recorders on RS485			*
Communicate with recorders using Ethernet TCP/IP			*
Distribute recorder data over plant-wide LAN			*
Realtime Ethernet and RS485 connections			*
FTP Ethernet connection (Note 1)			*
Password protection			*
Send setup to recorder via Ethernet			*
Audit trail manager			*
Web browse a recorder (web browser only required)			*

Note 1: FTP available soon on the X Series recorders

Communications Server

The Communication Server is supplied with TrendServer Pro. It manages real-time communications, distributed access to the stored data, time synchronisation over RS-485 and Ethernet networks. It is also available with a V2 compliant OPC Server to make it easier to interface third party HMI software packages that support an OPC Client. The Communication Server provides security for the transmission and storage of process data.

Database Management Tool

The Database Management Tool is a separate software application that is supplied with TrendServer Pro software. It provides the user with the ability to backup, sort, archive, move and copy the data stored by the TrendManager Pro and TrendServer Pro Software.

Features

TrendViewer Features

TrendViewer provides the ability to view and print the graph data that has been imported from the recorder's removable storage media. It provides a graph screen that displays the currently imported data along with the associated events. Only data from a single recorder can be imported; this is held in the RAM of the PC and must be imported again if the screen is closed. A tabular listing of the data is not available in TrendViewer; this is a TrendManager Pro function. TrendViewer is supplied with each recorder and no unlock code is required to install it.

TrendManager Pro Features

TrendManager Pro includes all the features of the TrendViewer software plus it supports the configuration of the Honeywell paperless V5 and X Series recorders, analysis of the data and the exporting of data to other third party spreadsheet (like Microsoft Excel or Lotus 123) packages.

- Import of data in the local databases via removable media. TrendManager Pro allows for the importing of data from a variety of devices – X Series Minitrend QX and Multitrend SX, eZtrend V5, Minitrend V5, Multitrend Plus V5, Circuitrend V5, Teletrend V5, Multitrend V5 and V4 recorders. Also VRX Recorders, DPR180/250, Truline recorders, UMC800, HC900, with data storage. These devices and Honeywell Actuators and UDC Controllers have Realtime capabilities. When imported, the new data is automatically recognized and stored in the correct place in a secure database. Remembering file names or labelling the storage media are not necessary. The structure for storing data follows a hierarchy of Servers showing a list of Databases, Databases showing a list of Recorders and Recorders having a list of the Pen data. The recorders or pen data from the recorder can be dragged into the graph window for viewing. Reviewing of the data files does not require knowledge of file structures or recall of cryptic file names.
- Saving and organizing graphs - Once a particular graph has been setup, it can be saved - When reopened it will display all the data, including any data imported while the graph was closed. Graphs can be saved and organized in graph folders
- User Added Comments - User comments can be added to the data on any graph to aid in understanding any particular point of interest and these are embedded with the data and cannot be modified or erased once the graph has been saved. A User Added Comment Block is shown here.
- Multiple Trends: data from different sources can be displayed and reviewed together on the same graph; multiple graphs can show the same trend with different scale zooms and time spans.
- Export Data: supports the exporting of data to other third party spreadsheet (like Microsoft Excel or Lotus 123) packages; data can also be emailed. Export as multiple spreadsheets or as a single spread sheet.
- Event/Batch Viewer: All the alarms, events markers, status messages, etc., are displayed on the graph with the measurement data, or on a tabular view with time and date stamps. Event/Batch details are displayed in the Event/Batch Viewer.
- Recorder Setup management: TrendManager Pro allows the creation, archiving (up to 26 setups per recorder), printing, copying of Honeywell V4, V5 and X Series paperless recorders setups, thus providing traceability in the management of configurations.



TrendManager Pro Features continued

- Displays a tabular window: The Data Viewer screen displays an overview of data currently visible in the graph window, showing date, time and value for each pen in column form. This window can be resized to allow many pens to be viewed at once or the column width may be adjusted to suit the user needs by clicking on the gaps between the headings & dragging as in Excel. Individual rows can be selected and copied by clicking on them while holding down the Ctrl key or you can block copy all the data. There is a copy button so all the selected data can be copied to the clipboard and then pasted into programs such as Word or Excel. A print button will print all of the selected data or the complete window.

Note: ACTUAL LOGGED DATA - a value with a star after it has been logged at t

Time	Temperature	Pressure	Vitesse
Thu Aug 29 2006 15:32:29.9000	22.9*	-0*	0*
Thu Aug 29 2006 15:32:31.4700	22.9*	-0*	0*
Thu Aug 29 2006 15:42:56.1800	23*	-0*	0*
Thu Aug 29 2006 15:43:26.1800	23*	-0*	0*
Thu Aug 29 2006 15:44:56.1800	23*	-0*	0*
Thu Aug 29 2006 15:45:26.1800	23*	-0*	0*
Thu Aug 29 2006 15:45:56.1800	23*	-0*	0*
Thu Aug 29 2006 15:47:06.7100	23*	-0*	0*
Thu Aug 29 2006 15:47:36.7100	23*	-0*	0*
Thu Aug 29 2006 15:48:06.7100	23*	-0*	0*
Thu Aug 29 2006 15:48:36.7100	23*	-0*	0*
Thu Aug 29 2006 15:49:06.7100	23*	-0*	0*
Thu Aug 29 2006 15:49:36.7100	23*	-0*	0*
Thu Aug 29 2006 15:50:06.7100	23*	-0*	0*
Thu Aug 29 2006 15:50:36.7100	23.1*	-0*	0*

Hardware Configuration Wizard

• - V5 Recorders

Allows you to enter all the recorder details for type of inputs, - Standard or Fast Scan, the quantity, set communications, either Ethernet or RS485/RS232 Trendbus or the Modbus RTU option via RS485 or Ethernet.

• - X Series recorders

Setup includes Analogue Inputs, Outputs and Pulse options, Relay Alarm/Digital Input/Output card options. Standard fit is Modbus TCP/IP (slave mode) and web over Ethernet (DHCP std) communications port and Modbus RTU (slave mode) via an RS485 port.

• Recorder Set up Function

TrendManager Pro can be used to set up and configure a Honeywell X Series or V5 recorder from the PC. Parameters can be set as part of the configuration. These include General Set up information, eg. Recorder Name and description and the Recorder ID, which is used throughout the software for identification purposes.

- Pen Set ups include Scaling information, engineering units, colour and thickness of trends, logging types and rates, math calculation, totalisation set up and alarm types and levels. Analog Inputs can be configured for type and range along with a label and any signal conditioning that may be required. Digital Inputs, Digital Outputs and Re-transmission outputs are configured by selection of the appropriate menu button on the left. A pen or input setup can be copied instantly by 'dragging-and-dropping' the pen or input icon.

Batch Mode

The "Batch Mode" facility comes as standard with TrendManager Pro and TrendServer Pro version 5.0.4.0 and later. Batch Mode enhances the management of data collected in non-continuous processes (so-called "batch processing"), such as thermal treatment, sterilisation, food processing, chemical reactions, etc.

On the recorder, command lines to Start, End, Pause, Resume or Abort a batch are logged via the "batch " menus" (option), by using the touch screen a USB keyboard or a barcode reader. Other Batch markers can be added such as a Description, User ID, Comments, Lot Number.

The data is then collected by the usual means: media (disk or card), FTP, real-time communications and processed in TrendManager/Server Pro software.

Batch Mode continued

Once imported, the batch identifiers are listed in a dedicated window. Batches can be sorted, filtered, searched by keywords or numbers. Selecting a batch automatically opens a graph containing all the pen data and all events relative to this batch. The graph can be saved, printed and exported in a quick and easy operation. Exported data can be defined to ensure only the exact data required is sent to an Excel spreadsheet.

Existing data can be searched by time and re-organized by batch names/numbers.

Batch Mode highlights:

- Retrospective Batches - Creating batches for existing historic graphed data for individual viewing, graphing and exporting to spread sheet.
- Seamlessly logging continuous data
- Comprehensive visible event and batch information displayed on the graph
- Elapsed batch time for comparison analysis
- Simple search for Batch data

TrendManager Pro graphs all the data and any events.
Double click on a Start batch icon in the Event bar to produce an individual batch graph

Individual batch data can be displayed in the Event/Batch Viewer

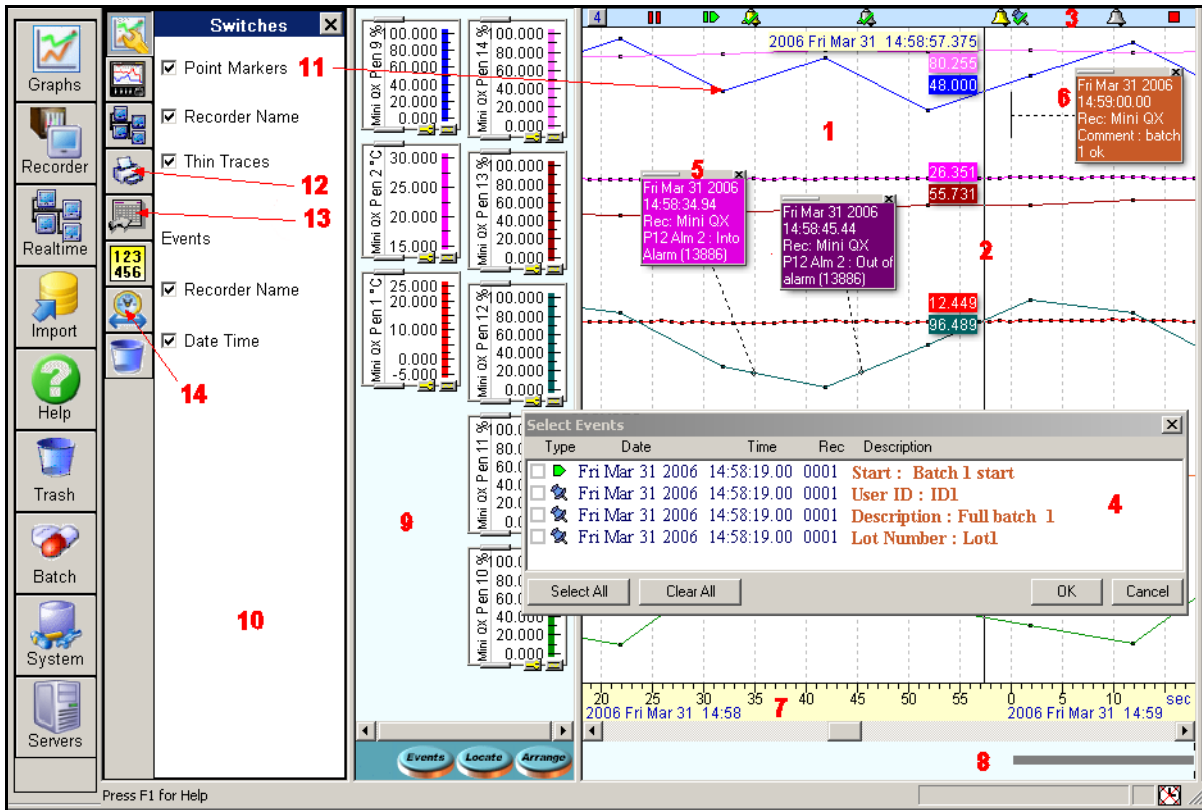
Name	Start Time	End Time
Old Data - New Batch	Thu 03 Mar 2005 06:06:40	Thu 03 Mar 2005 06:23:48
001	Wed 02 Mar 2005 23:43:20	Thu 03 Mar 2005 00:00:44
002	Wed 02 Mar 2005 09:09:47	Wed 02 Mar 2005 23:43:20
003	Wed 02 Mar 2005 09:04:54	Wed 02 Mar 2005 09:06:35
004	Wed 02 Mar 2005 09:02:49	Wed 02 Mar 2005 09:04:54
005	Wed 02 Mar 2005 09:02:06	Wed 02 Mar 2005 09:02:31
006	Wed 02 Mar 2005 09:01:06	Wed 02 Mar 2005 09:02:06
007	Wed 02 Mar 2005 08:59:06	Wed 02 Mar 2005 09:01:06
008	Wed 02 Mar 2005 08:52:28	Wed 02 Mar 2005 08:59:06
009	Wed 02 Mar 2005 08:35:48	Wed 02 Mar 2005 08:49:17
010	Wed 02 Mar 2005 08:19:08	Wed 02 Mar 2005 08:32:37
011	Wed 02 Mar 2005 08:02:28	Wed 02 Mar 2005 08:15:57

Date	Batch Details
Thu 03 Mar 2005 06:06:40	Added: Tue Mar 08 2005 15:04:50 Start : Old Data - New Batch
Thu 03 Mar 2005 06:07:57	Added: Tue Mar 08 2005 15:05:37 User ID : Add User ID - June
Thu 03 Mar 2005 06:11:54	Added: Tue Mar 08 2005 15:05:56 Comment : Add a Comment ...
Thu 03 Mar 2005 06:15:45	Added: Tue Mar 08 2005 15:06:49 Pause : add in other Events ...
Thu 03 Mar 2005 06:17:55	Added: Wed Mar 09 2005 14:53:18 Resume : resume
Thu 03 Mar 2005 06:23:48	Added: Tue Mar 08 2005 15:05:10 End :

TrendManager Pro is also used to setup pre-defined messages for "mark on chart", setup of the Email Alarm System, Event/ Batch Markers, Counters Control, and periodic Totaliser reset on V5 recorders. The TrendManager Pro also supports data analysis as shown in the screen below. (Email and Counters available soon for X Series).

Batch Mode continued

The X Series recorders use the Modbus comms protocol which does not support retrieving event data in Realtime or buffered Logged data. The Modbus Comms Protocol only supports getting real time analog data from the recorders and other network connected devices.



1. **Trend area** is the area where the trend lines for the recorders are displayed. Colours and thickness of the trends are the same as displayed on the recorder.
2. **Cursor:** right click the mouse, - process values, date and time are displayed around a vertical cursor line.
3. **Event bar:** shows in time when various system, alarm, digital, user and event/batch marker events occurred.
4. **Events box:** Displays a group of events/batch events that are in a numbered tile in the Event bar. (Events not available for Realtime and Logged data via Modbus).
5. **Event Detail boxes:** The details of the events are displayed and printed on the graph in the Event Information boxes.
6. **User comments/Batch events** appear on the printout and are saved with the data.
7. **Time and date bar** provides time and date by month, day, hours, minutes, seconds and milli-seconds. Trend data can be expanded or collapsed in time by using the mouse left and right click in this area.
8. **Data Locator** Gives you a quick view of where the recorded data is represented as a grey bar.
9. **Scale area** is the area that displays all of the pen scales, these can be arranged, expanded and moved to provide for the best viewing. Dragging a scale to the trash can removes the trend from the display without affecting the stored data.
10. **Option switches zone:** several display options are performed in this area.
11. **Point markers:** show the actual logged values with black dots.
12. **Print button:** prints the graph on the default printer.
13. **Export Button:** exports the data on the graph to excel or CSV (Comma Separated Variables) format.
14. **Clock button:** Defines the data to be displayed on the graph, (a Graph Set Time Span display menu shown here) appears. "Go to last" can be used to display automatically the last period of recorded data for the duration: 1 min., 5 min., 15 min., 30 min., 1 hr, 2 hr, 6 hr, 12 hr, 1 day, 5 days or 7 days.

TrendServer Pro Features

Includes all TrendManager Pro functionality plus offers significant improvements by providing the additional functionality of:

Access control and traceability

The password system supports five levels of users and eight areas of access with ability to password protect functions within these areas – Graphing, Folders, Recorders, Database, Server, Import, Communications and Settings, etc. Up to 50 Users can be registered. All modifications and access are recorded in the Audit manager. A System Status window, which can be hidden, provides status information concerning communications.

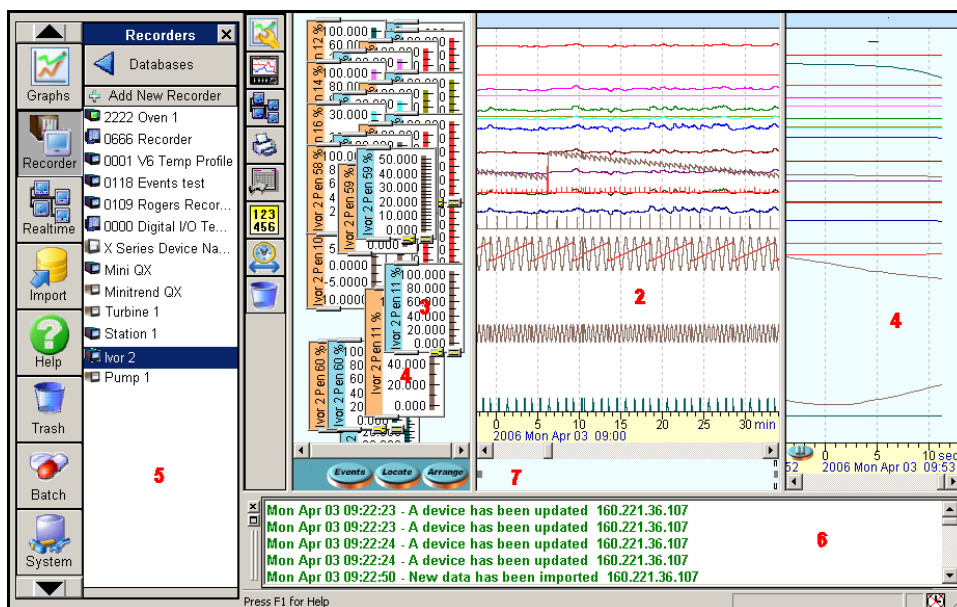
Communications with recorders

TrendServer Pro is used to manage communications with the recorders and other network connected devices; this includes uploading set-ups over the communications link, file transfers manually or with the FTP scheduler or collecting data in real time using the integral Communications Server. It gives you a complete view of process and real-time data on your PC. (FTP available soon for X Series). A separate modbus configuration tool is used to quickly setup communications between Trend Server Pro and any compatible device. FTP and real-time communications to the same database are not supported and that doing time synchronisation both by FTP and by real time is not recommended.

Sharing data over the Network

Using DCOM, TrendServer Pro can be used to access the databases remotely on any PC that is also running TrendServer and is connected to the same Local Area Network. This allows the user to share data over the network and to perform such functions as:

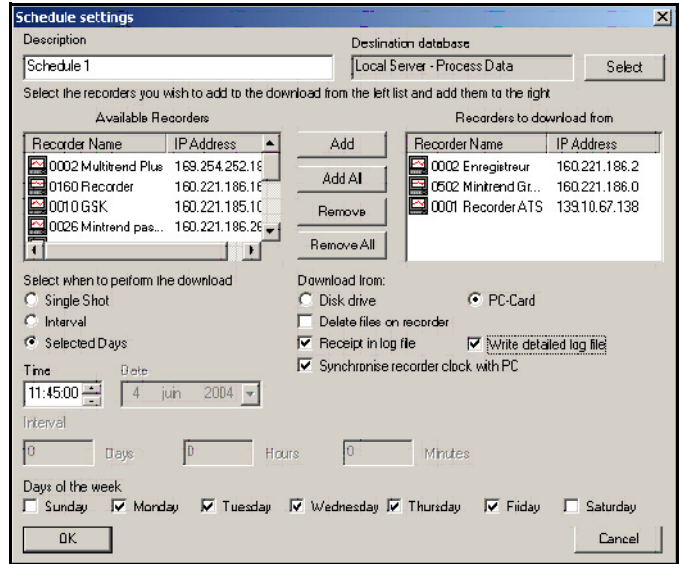
- Logging real-time data on two different PCs simultaneously.
- Sending the data from the recorder, real-time to one PC, and by FTP, at given times, to another PC.
- Accessing the data stored on a server from other PCs (TrendServer must be installed on the client PCs, multiple licenses available).
- Installing the Communication Server and the Database on a central, backed-up server with an uninterrupted power supply to provide added security of the data.



TrendServer Pro provides the ability to view real time data [1] together with historical data [2]. These windows can be expanded or collapsed by dragging the viewing area to the right or left depending on what is most important to the user. Scale indicators [3] for each of the pens are available for viewing at the same time. These can be expanded and collapsed by using grab bars at the top and bottom of the scale display. The colour of the scale indicator signifies whether the data is historical data (blue) [3] or real time data (orange) [4]. White scales indicate FTP or disk data. Recorder data is displayed by dragging selected recorders [5] or pens from individual recorders into the graph window. A System Status window [6], which can be hidden, provides status information concerning communications; the window will appear automatically if an error or connection problem occurs. Review of the data is aided with the use of the Data Locator [7] and the mouse to scroll forward and backward in time. The review of data can be done in both the historical and real time data windows; the real time buffer can be set in the System parameters from 10 minutes to 2 hours. The real time window can be paused and a cursor bar allows the user to view the digital values. Other functions include Zoom In/Zoom Out using the right button on the mouse, switches are available to turn on or off selected display features like Point Markers of the actual data point, the Recorder Name on the bar graphs indicators and Event Message boxes to view as Thin Traces and the Date/Time of the Event Marker. Turning these off does not erase the data it only affects what is being displayed at the time.

FTP Scheduler

The FTP Scheduler downloads the data automatically from the media storage of the recorders and stores them in a database, based on specified days and time. The data acquisition rates are the ones specified in the setup of the recorder. FTP transfer is protected and secure; the files in the recorder cannot be accessed by any other application other than Trend Server Pro. (FTP transfers available with V5 Recorders, X-Series FTP available soon).

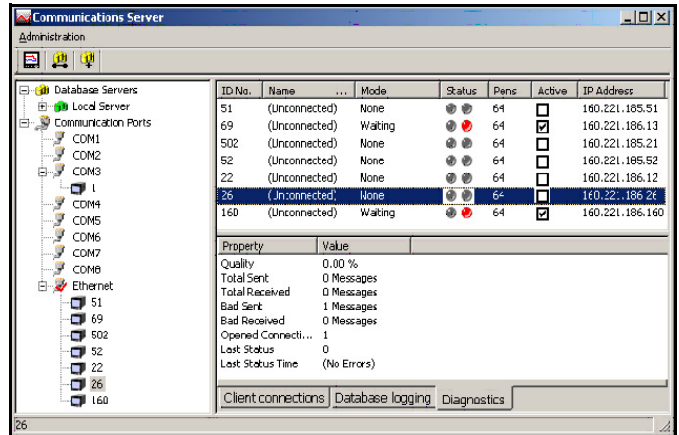


Communications Server

The Communication Server is a software application supplied with the TrendServer software. It can be installed on a different PC than TrendServer to manage communications over the whole network (only one instance of the communication server is necessary on the network). Administrator rights are necessary for setup and operation.

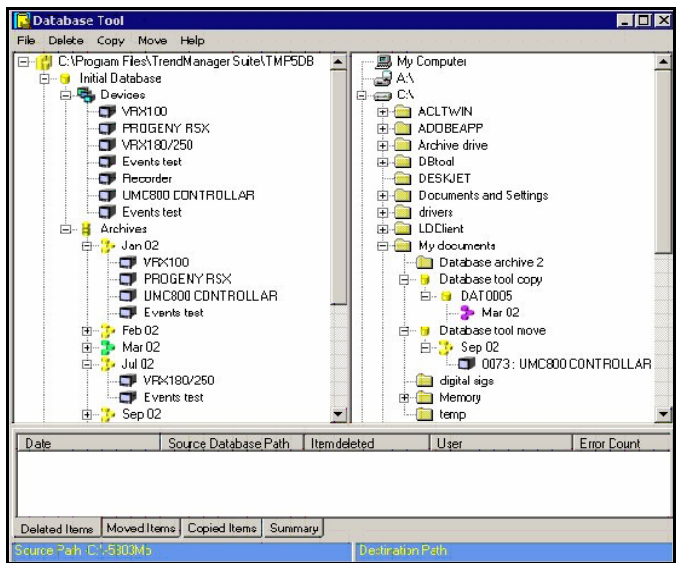
The Communication Server manages the Real-Time communications with networked recorders using the Trendbus protocol (only Modbus comms is available on the X Series recorders). The data acquisition rates are specified at the PC and can be different from the ones used in the setup of the recorder.

Real-time communications is the safest way of handling process data, since it does not rely on data transport via the removable media of the recorders and the data is stored in the secure database immediately after acquisition.



Database Management Tool

The Database Management Tool is an "offline" separate software application that is supplied with the TrendServer software. It uses a tree structure to view data files in TrendManager database folders as well as files on the PC hard drive. The data files can be viewed and managed by Devices (all data for one recorder) or by Monthly Archives (one month's worth of data). Using the Database Tool, portions as well as entire databases can be copied, archived, moved or deleted. Colour highlights of data files (shown below in Green, Purple and Yellow) are used to show if data is being stored to a different location other than the local databases. This allows data to be stored to a secure server that is backed up on a routine basis. The data is still accessible with TrendManager Pro or TrendServer Pro, just as if it was still located on the local PC. The Tabbed Window at the bottom of the Database Management Tool window provides a summary of operations or an Audit Trail of actions performed during each session.



Specification

Minimum System requirements	
PC Operating System	Supported: Windows™ XP and 2000
PC System (TrendViewer)	1 GHz Pentium processor or higher with a mouse, CD-ROM drive Monitor screen resolution 1024 x 768 minimum requirement, high colour 512 Mbyte of RAM, 50Mbyte free hard disk space 16 colour graphics, 24 bit recommended (Screen Designer only) Flash card reader or USB port for X Series recorders 3.5" floppy disk drive or PCMCIA for V5 recorders
PC System (TrendManager or TrendServer)	As for TrendViewer but with: 2 Gbyte Hard-drive free disk space, TCP/IP installed
V5 For RS-485 communications	RS-485 or RS-232 port with adapter (V5)
X Series Communications	Modbus TCP/IP (slave mode), web over Ethernet (DHCP standard) communications port Modbus RTU (slave mode) via an RS485 port. USB ports allow the use of an ASCII barcode reader.
For FTP communications and setup transfer	Ethernet port, TCP/IP stack installed, Fixed IP addresses for all connected recorders (FTP transfers available with V5 Recorders, X-Series FTP available soon).
For Real-time communications	Ethernet port, RS485 to RS232 adaptor, TCP/IP stack installed Fixed IP addresses for all connected PCs and recorders
For Database Management Tool	Same as TrendServer Pro. (Microsoft.NET framework needs to be installed) Use with TrendManager software version 5.0.3.24 or higher
Batch Mode	Available with TrendManager Pro and TrendServer Pro only. Use with TrendManager/Server Pro software version 5.0.4.0 or higher

Features	
Display and print time scales	From 3.5 ms/cm to 1.15 month/cm
Data format	Honeywell proprietary binary encryption
Protocol used for Recorder Communications	TrendServer Software utilizes the Honeywell Trendbus communication protocol for real time network communications with the V5 recorders. The X Series recorders use the Modbus protocol only.
Modbus	The Comms Server is a MODBUS master. It has no slave capability. The maximum speed of data transfer over MODBUS is 1 (one) reading per second. The maximum speed of data logging of realtime MODBUS data is 1 (one) reading per second.
OPC Capability	Optional OPC Server broadcasting, for each pen: Current Value; Engineering units; Zero; span; High EU; low EU; for communication with HMI software that supports an OPC Client V2.
Time Synchronisation	For Honeywell recorders connected in Real-time mode with Trendbus, every 5 minutes for V5 recorders; For FTP transfer, at the end of each scheduled download. The recorders clocks are synchronised to the PC clock.
Software License (Users)	Available as a Single or Five User license, the license is based on the number of PC's the software is installed on, not the number of users using a particular PC with the software installed on it
Data Import Capability	Provides ability to import data files from many Honeywell Recorders, see "Trend-Manager Pro Features" on page 3.
Databases	Databases can be local (on same PC as TrendManager Suite), remote (on different PC), allows the data to be available to other Trend Server Pro users
Password (TrendManager Suite)	Five levels of users – Guest or Default User, Basic User, Standard User, Power User or Administrator, Eight area of access with ability to password protect functions within these areas – Graphing, Folders, Recorders, Database, Server, Import, Communications and Settings. 50 Users with their own password allowed
Audit Manager	Available on TrendServer Pro and is accessed through the password system at the Administrator level, allows the Administrator to configure, log and view all actions that have occurred within the software

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

ASIA PACIFIC

Control Products

Asia Pacific Headquarters
Phone: +(65) 6355-2828
Fax: +(65) 6445-3033

Australia

Honeywell Limited
Phone: +(61) 2-9370-4500
FAX: +(61) 2-9370-4525
Toll Free 1300-36-39-36
Toll Free Fax:
1300-36-04-70

China – PRC - Beijing

Honeywell China Inc.
Phone: +(86-10) 8458-3280
Fax: +(86-10) 8458-3102

China – PRC - Shanghai

Honeywell China Inc.
Phone: +(86-21) 6237-0237
Fax: +(86-21) 6237-1237

China - Hong Kong S.A.R.

Honeywell Ltd.
Phone: +(852) 2953-6412
Fax: +(852) 2953-6767

China – PRC - Chengdu

Honeywell China Inc.
Phone: +(86-28) 6786-348
Fax: +(86-28) 6787-061

China – PRC - Guangzhou

Honeywell China Inc.
Phone: +(86-20) 3879-1169
Fax: +(86-20) 3879-1269

China – PRC - Shenzhen

Honeywell China Inc.
Phone: +(86) 755-518-1226
Fax: +(86) 755-518-1221

Indonesia

Honeywell Indonesia
Pte Ltd.
Phone: +(62) 21-535-8833
FAX: +(62) 21-5367 1008

IndiaTATA

Honeywell Ltd.
Phone: +(91) 20687 0445/
0446
Fax: +(91) 20681 2243/ 687
5992

Japan

Honeywell Inc.
Phone: +(81) 3 5440 1425
Fax: +(81) 3 5440 1368

Malaysia

Honeywell Engineering
Sdn Bhd
Phone: +(60-3) 7958-4988
Fax: +(60-3) 7958-8922

New Zealand

Honeywell Limited
Phone: +(64-9) 623-5050
Fax: +(64-9) 623-5060
Toll Free (0800) 202-088

Philippines

Honeywell Systems
(Philippines) Inc.
Phone: +(63-2) 636-1661 /
1662
Fax: +(63-2) 638-4013

Singapore

Honeywell South East Asia
Phone: +(65) 6355-2828
Fax: +(65) 6445-3033

Thailand

Honeywell Systems
(Thailand) Ltd.
Phone: +(662) 693-3099
FAX: +(662) 693-3085

Taiwan R.O.C.

Honeywell Taiwan Ltd.
Phone: +(886-2) 2245-1000
FAX: +(886-2) 2245-3242

EUROPE

Austria

Honeywell Austria GmbH
Phone: +43 (316)400123
FAX: +43 (316)40017

Belgium

Honeywell SA/NV
Phone: +31(0)205656999
FAX: +31(0)165330746

Bulgaria

Honeywell EOOD
Phone: +(359) 2 79 40 27
FAX: +(359) 2 79 40 90

Czech Republic

Honeywell spol. s.r.o.
Phone: +420-54324-5014
FAX: +420-54324-5011

Denmark

Honeywell A/S
Phone: +(45) 39 55 55 55
FAX: +(45) 39 55 55 58

Finland

Honeywell OY
Phone: +358 (3) 2727625
FAX: +358 (3) 2728600

France

Honeywell SA
Phone: +33 (0)1 60198075
FAX: +33 (0)1 60198201

Germany

Honeywell AG
Phone: +49 (69)8064336
FAX: +49 (69)806497336

Hungary

Honeywell Kft.
Phone: +36-1-451 4335
FAX: +36-1-451 4343

Italy

Honeywell S.p.A.
Phone: +39 02 9214 6503
FAX: +39 0292146377

The Netherlands

Honeywell B.V.
Phone: +31(0)205656999
FAX: +31(0)165330746

Norway

Honeywell A/S
Phone: (45) 39 55 55 55

Poland

Honeywell Sp. zo.o
Phone: +48-22-6060900
FAX: +48-22-6060901

Portugal

Honeywell Portugal Lda
Phone: +351 21 424 5000
FAX: +351 21 424 50 99

Romania

Honeywell Bucharest
Phone: 40212110076
FAX: +40 (40212103375)

Russian Federation (RF),

ZAO "Honeywell"
Phone: +(7 095) 796 98 00
FAX: +(7 095) 796 98 93

Slovak Republic

Honeywell s.r.o.
Phone: +421-2-58247 410
FAX: +421-2-58247 415

Spain

Honeywell S.A.
Phone: +34 (0)91313 61 00
FAX: +34 (0)91313 61 30

Sweden

Honeywell AB
Phone: +(46) 8 775 55 00
FAX: +(46) 8 775 56 00

Switzerland

Honeywell AG
Phone: +41 18552448
FAX: +(41) 1 855 24 45

Turkey

Honeywell Turkey A.S.
Phone: +90 216 575 6600
FAX: +90 216 575 6637

Ukraine

Honeywell
Tel : +380-44-201 44 74
Fax: +380-44-201-44-75

United Kingdom

Honeywell Control Systems
Ltd.
Phone: +44 (0)1344 655034
FAX: +44 (0) 1344 655554

MIDDLE EAST

Abu Dhabi U A E

Middle East Headquarters
Honeywell Middle East Ltd.
Phone: +971 2 4041220
FAX: +971 2 4432536

Sultanate of Oman

Honeywell & Co Oman LLC
Phone: +968 701397
FAX +968 787351

Saudia Arabia

Honeywell Turki Arabia Lim-
ited
Phone: +966-3-341-0140
Fax: +966-3-341-0216

Kuwait

Honeywell Kuwait KSC
Phone: +965 2421327

AFRICA

Mediterranean & African Distributors

Honeywell SpA
Phone: +39 (02) 250 10 604
FAX: +39 (02) 250 10 659

South Africa (Republic of)

Honeywell Southern Africa
Honeywell S.A. Pty. Ltd.
Phone: +27 11 6958000
FAX +27 118051504

NORTH AMERICA

Canada

Honeywell LTD
Phone: 1-800-737-3360
FAX: 1-800-565-4130

USA

Honeywell Process Solu-
tions,
Phone: 1-800-343-0228
FAX: 1-815-235-6545

LATIN AMERICA

Argentina

Honeywell S.A.I.C.
Phone: +(54-11) 4383-3637
FAX: +(54-11) 4325-6470

Brazil

Honeywell do Brasil & Cia
Phone: +(55-11) 7266-1900
FAX: +(55-11) 7266-1905

Chile

Honeywell Chile, S.A.
Phone: +(56-2) 233-0688
FAX: +(56-2) 231-6679

Mexico

Honeywell S.A. de C.V.
Phone: +(52) 55 5259-1966
FAX: +(52) 55 5570-2985

Puerto Rico

Honeywell Inc.
Phone: +(809) 792-7075
FAX: +(809) 792-0053

Trinidad

Honeywell Inc.
Phone: +(868) 624-3964
FAX: +(868) 624-3969

Venezuela

Honeywell CA
Phone: +(58-2) 238-0211
FAX: +(58-2) 238-3391

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Honeywell Process Solutions

Honeywell
2500 W.Union Hills Drive
Phoenix, Arizona 85027
www.honeywell.com/imc/pi

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