CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

SOFTWARE
Programming, Display, Development
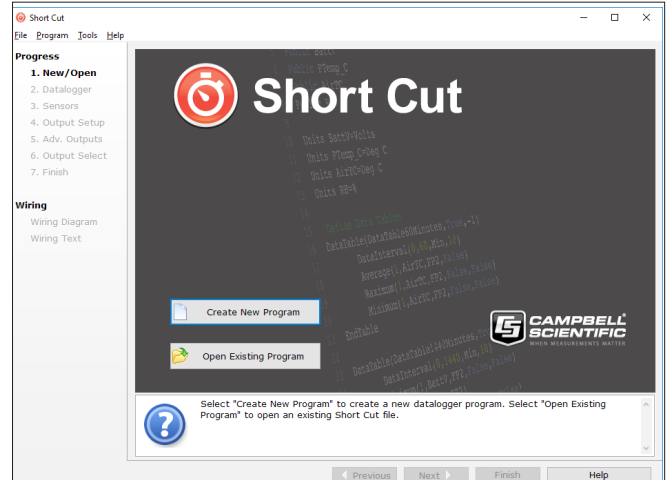
Campbell Scientific Software Overview

Whether you're a new user with one datalogger or a long-time user with networks of dataloggers, Campbell Scientific provides a software solution for your application. Our software packages range from introductory packages for simple applications to full-featured packages for sophisticated measurement and control capabilities and computer-to-computer data distribution. We also have software packages that allow our dataloggers to communicate with an iOS or Android device, as well as software packages that provide comprehensive, easy-to-use software support for specific applications.

Starter Software

These are easy-to-use software products intended for first time users or applications that don't require sophisticated communications or datalogger program editing.

Short Cut Starter Programming

❯ Creates straightforward programs that measure sensors and control multiplexers and the AVW200-series Vibrating Wire Interfaces

❯ Allows user entered calculations

❯ Supports our dataloggers as well as our ET107, ET106, and MetData1 Weather Stations

❯ Includes a reference crop evapotranspiration calculation module and many other useful calculation modules such as heat index or wind chill

❯ Provides a head start on developing new programs by letting you import Short Cut programs into CRBasic or Edlog, our more sophisticated editors

Short Cut generates programs using a wizard-like interface.

PC200W Starter Communications

❯ Supports communications between a computer and a Campbell Scientific datalogger

❯ Communicates via a direct link

❯ Collects data with a push of a button (scheduled data collection not supported)

❯ Provides numeric display of measurements and final storage data

❯ Creates line graphs, xy plots, histograms, rainflow histograms, and FFT from a data file

❯ Includes Short Cut Programming Software for datalogger program generation

Datalogger Support Software

Our general purpose datalogger support software packages provide more capabilities than our Starter Software. Each of these software packages contains program editing, communications, and display tools that can support an entire datalogger network.

PC400

PC400, our mid-level datalogger support software, provides a simple user interface that:

❯ Supports all contemporary dataloggers and many retired dataloggers (e.g., CR510, CR23X, CR10X)

❯ Generates/edits datalogger programs used to measure sensors and control multiplexers, SDM devices, and relays

❯ Collects data with a push of a button (scheduled data collection not supported)

❯ Retrieves data via direct connect, phone modems, Ethernet, radios (UHF, VHF, spread spectrum), or multidrop modems (combinations of communication options not supported)

❯ Provides numeric display of measurements and final storage data

❯ Creates line graphs, xy plots, histograms, rainflow histograms, and FFT from a data file

Software on our Website

Our starter software, patches, and trial software is available, at no charge, from www.campbellsci.com/downloads. Patches provide updates within versions (e.g., 2.0 to 2.1). Trial software allows the user to test drive the software before purchasing the entire package.
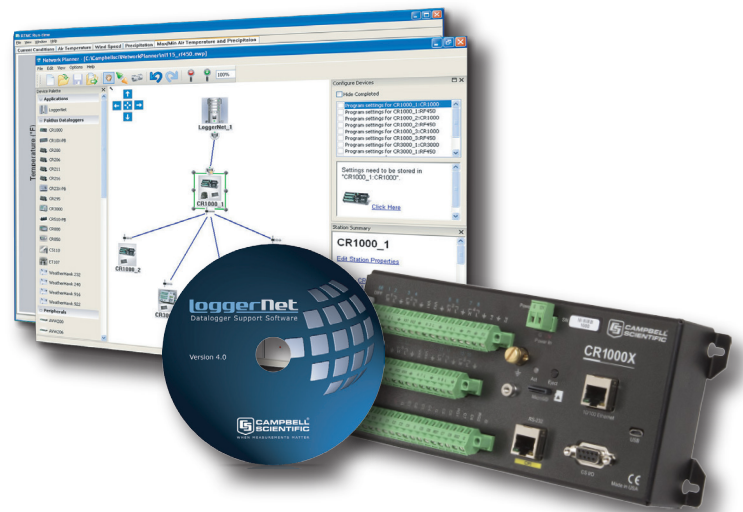
LoggerNet Datalogger Support Software Packages

LoggerNet

LoggerNet is a full-featured software package based on a server application and several client applications. LoggerNet supports connection to a single datalogger and large datalogger networks.

LoggerNet supports:

› All contemporary dataloggers, as well as many retired dataloggers
› Creation/editing of datalogger programs that measure sensors and control multiplexers, SDM devices, vibrating wire interfaces, and relays
› Data collection on demand or by schedule
› Data retrieval via any of our communications options and combinations of those options (e.g., phone-to-RF)
› Historical data displays in a variety of formats (Line Graph, X-Y Plot, Histogram, Rainflow Histogram, and 2-D and 3-D FFTs)
› Multi-tab data displays that include digital displays, set-points, alarms, sliders, charts, toggles, switches, and gauges (using RTMC)
› Network Planner that assists you in designing PakBus datalogger networks

Client/Server network architecture allows LoggerNet to accommodate communication between one computer and the datalogger network, many computers and the datalogger network, or many remote computers and the datalogger network.

LoggerNet Admin

LoggerNet Admin, a more advanced software package than the standard LoggerNet, has tools that are useful for those with large datalogger networks. Besides providing all the capabilities of the standard LoggerNet software, LoggerNet Admin includes:

› Option to collect data quickly over UHF/VHF networks via Data Advise
› Remote client capabilities to administer the server via TCP/IP
› LoggerNet user security settings
› Additional network views and sorting options for monitoring large networks
› Utilities that facilitate data transfer from LoggerNet via TCP/IP
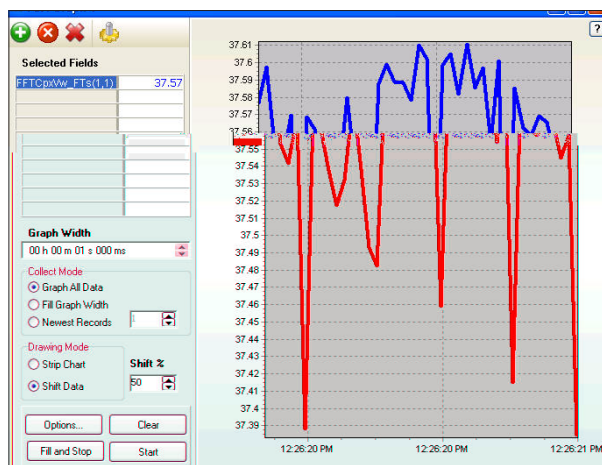› Ability to run the LoggerNet server as a Windows service

LoggerNet Remote

LoggerNet Remote includes LoggerNet Admin clients to administer a running LoggerNet Admin server via TCP/IP from a remote computer. This software does not include the LoggerNet server.

LoggerNet Linux

LoggerNet Linux includes a Linux version of the LoggerNet server and a copy of LoggerNet Remote. The Microsoft® Windows-based clients in LoggerNet Remote run on a separate computer, and are used to manage the LoggerNet Linux server. The LoggerNet Linux disk includes a Debian distribution and Redhat RPM distribution.

RTDAQ

In RTDAQ, the Fast Graph window displays time-series data items from a datalogger graphically in real-time.

RTDAQ is an ideal solution for industrial and real-time users desiring to use reliable data collection software over a single telecommunications medium, and who do not rely on scheduled data collection. RTDAQ's strength lies in its ability to handle the display of high speed data. RTDAQ is compatible with most of our CRBasic dataloggers.

Features/Benefits:

› Provides noninvasive field calibration of sensors—including the appropriate multipliers and offsets into the datalogger program
› Monitors real-time data using the Graph, Fast Graph (similar to PC9000's virtual oscilloscope), Histogram Viewer, Fast Fourier Transform (FFT) Viewer, Rainflow Viewer, Table Monitor (similar to the PC9000 Field Monitor), and XY Plot Viewer
› Displays historical data files including specialized engineering data such as FFTs and histograms

Clients

Clients add functionality to LoggerNet or LoggerNet Admin. RTMC-based clients can also add functionality to RTDAQ.

CSI OPC Server
The CSI OPC Server feeds datalogger data into third-party OPC-compatible graphic packages. A trial version of CSI OPC Server is offered.

LNDB
LNDB moves data from one LoggerNet server into a single database. The two main components of LNDB are LNDB Manager and LNDB Engine. LNDB Manager is used to set up a database and select the datalogger data tables that will be stored in the database. It also provides tools to monitor the LNDB Engine and to review the database data. LNDB Engine runs as a service and sends the selected data from the LoggerNet data cache to the database. Additionally, LNDB includes utilities for importing and exporting data, and generating simple reports from your database data.
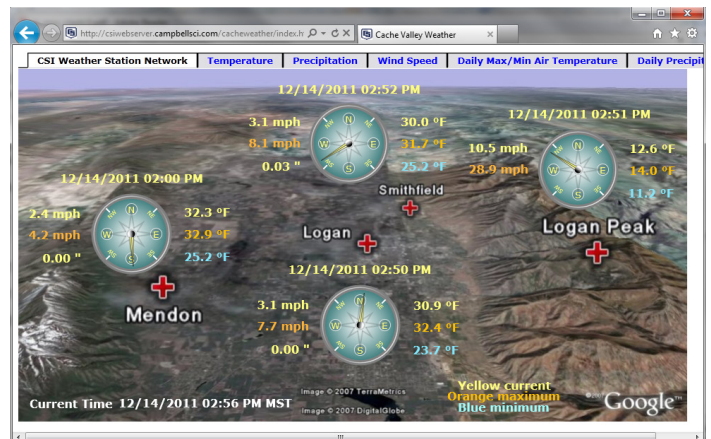
RTMC Pro
RTMC Pro is an enhanced version of the RTMC client. RTMC Pro provides additional capabilities and more flexibility, including multi-state alarms, email on alarm conditions, hyperlinks, and FTP file transfer.

RTMCRT
RTMCRT allows you to view and print multi-tab displays of real-time data. The displays are created in RTMC or RTMC Pro.

CSI Web Server
The CSI Web Server allows RTMC projects to be published to either a computer website or to an HTTP-enabled datalogger. With this software, users can configure the web server, check the status of the web server, and easily browse to sites running on the web server. The CSI Web Server is included with RTMC Pro. It can be purchased separately for use with the standard RTMC Development application that is bundled with LoggerNet, LoggerNet Admin, and RTDAQ.

CSI Web Server was used to simultaneously display data from multiple dataloggers on one web page.

Software Development Kits (SDKs)

Campbell Scientific software development kits (SDKs) permit software developers to create custom applications that communicate with our dataloggers.

BMP5-SDK
› Allows users to create custom software clients that support communications with one PakBus® datalogger using an RS-232 or IP Port connection.
› Provides a simple call-level API (SimplePB.DLL) that acts as a wrapper for the included PakBus communications engine (coralib3d.dll)
› Available at no charge from our website

LoggerNet-SDK
› Allows software developers to create custom applications that communicate through a LoggerNet server with any datalogger supported by LoggerNet
› Includes a limited LoggerNet Server communications DLL that only allows communication with a single datalogger via an RS-232 or IP Port connection
› Provides six ActiveX® controls that encapsulate the fundamental communication tasks most applications require
› Targeted at developers who want to create a custom client application for an existing LoggerNet server

LoggerNet Server-SDK
› Allows software developers to create custom applications that communicate through a LoggerNet server with any datalogger supported by LoggerNet
› Includes the full-function LoggerNet Server DLL
› Provides six ActiveX® controls that encapsulate the fundamental communication tasks most applications require
› Targeted at developers who want to create a custom datalogger support package for our dataloggers
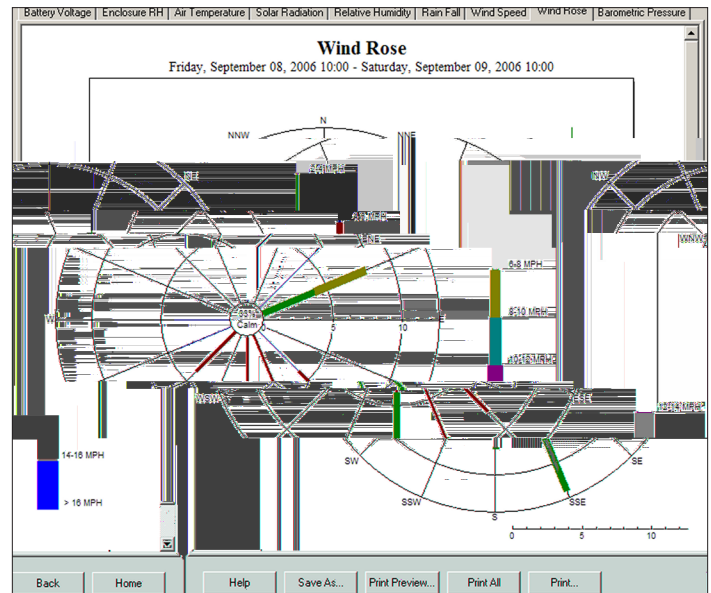
Java-SDK
› Allows software developers to write Java applications or applets that use the PakBus protocol to communicate directly with dataloggers in a PakBus network
› Supports the creation of applets that enable users to access data and control the network via a web browser
› Provides an option for developers who do not want to use Microsoft Windows products

Application-Specific Software

Application specific software supports use of Campbell Scientific dataloggers in common but specialized applications where customized software is of substantial benefit.

VisualWeather Weather Station

❯ Supports the ET107, Toro T.107, ET106, MetData1, and custom weather stations

❯ For pre-configured weather stations, automatically generates program as sensors and communication path are selected

❯ Includes Short Cut for programming custom Campbell Scientific weather stations

❯ Supports direct, short haul, phone, phone-to-RF, RF, and TCP/IP communications

❯ Collects data on demand or by schedule

❯ Provides a large variety of reports

❯ Targeted at developers who want to create a custom datalogger support package for our dataloggers

❯ Calculates ETo, Growing Degree Days, crop watering needs, wind chill, dew point, and chill hours

You can use VisualWeather software to create a wind rose report that displays the distribution of wind directions at various wind speeds.

Software for Mobile Devices

The following apps allow an iOS or Android device to communicate with our products. They are available, at no charge, through the Apple Store or Google Play.

LoggerLink

LoggerLink Mobile apps allow an iOS or Android device to communicate with our CR300, CR310, CR800, CR850, CR6, CR1000X, CR1000 CR3000, or CR200X dataloggers via an IP device. LoggerLink for Android also supports Bluetooth communication for these same dataloggers using an RS-232-Bluetooth adapter. The apps support field maintenance tasks such as viewing and collecting data, setting the clock, and downloading programs.

LoggerNet Mobile Connect

LoggerNet Mobile Connect apps allow an iOS or Android device to communicate with any station in your LoggerNet network. They let you connect to any LoggerNet server that is accessible via TCP/IP. The apps can be used to check LoggerNet and datalogger status as well as view and collect data from individual dataloggers. Field maintenance tasks such as setting the clock, sending programs, and changing station settings (including variables) are also supported. To use LoggerNet Mobile Connect, a licensed copy of LoggerNet or LoggerNetAdmin needs to be running on a computer that is accessible via TCP/IP.

Starter and Datalogger Support Software

Select the software that best suits your needs ...	**Short Cut** (see note 1)	**PC200W** (see note 1)	**PC400** (see note 1)	**LoggerNet** (see note 1)	**RTDAQ** (see note 1)
CONTEMPORARY DATALOGGERS SUPPORTED	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X
RETIRED DATALOGGERS SUPPORTED	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR5000	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000, CR9000	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000, CR9000	CR5000
DATA STORAGE METHOD SUPPORTED	mixed-array, table	mixed-array, table	mixed-array, table	mixed-array, table	table
SOFTWARE LEVEL	entry	entry	entry to intermediate	intermediate to advanced	intermediate to advanced
SENSORS SUPPORTED	over 100 sensors (including generic measurements)	includes Short Cut for programming	most commercially available sensors	most commercially available sensors	most commercially available sensors
COMMUNICATION DEVICES SUPPORTED	N/A (program generator only)	direct connect	direct connect, Ethernet, short-haul, phone modems (land-line, cellular, voice synthesized), RF trans-ceivers (UHF, VHF, and spread spectrum), multidrop modems	direct connect, Ethernet, short-haul, phone modems (land-line, cellular, voice synthesized), RF trans-ceivers (UHF, VHF, and spread spectrum), multidrop modems	direct connect, Ethernet, short-haul, phone modems (land-line, cellular, voice synthesized), RF trans-ceivers (UHF, VHF, and spread spectrum), multidrop modems
COMBINATIONS OF COMMUNICATION DEVICES SUPPORTED	N/A (program generator only)	no	no	yes	no
MEASUREMENT AND CONTROL PERIPHERALS SUPPORTED	multiplexers, AVW200-series Vibrat-ing Wire Interfaces, CDM-A100-series	see Short Cut	SDMs, multiplexers, relays, vibrating wire interfaces, CDMs	SDMs, multiplexers, relays, vibrating wire interfaces, CDMs	SDMs, multiplexers, relays, vibrating wire interfaces, CDMs
OTHER PRODUCTS SUPPORTED (see note 2)	ET107, ET106, MetData1, SC115, microSD cards, CompactFlash cards, PC cards	microSD cards, CompactFlash cards, PC cards	ET107, ET106, MetData1, microSD cards, CompactFlash cards, PC cards	ET107, ET106, MetData1, microSD cards, CompactFlash cards, PC cards	ET107, microSD cards, CompactFlash cards, PC cards
SCHEDULED DATA COLLECTION SUPPORTED	N/A (program generator only)	no	no	yes	no
DATA DISPLAY SUPPORTED	N/A (program generator only)	numeric, Boolean, View Pro	numeric, Boolean, View Pro	numeric, graph, table, Boolean, View Pro, RTMC	numeric, graph, table, Boolean, View Pro, RTMC

Notes:
1. Short Cut is bundled with PC200W, PC400, LoggerNet, and RTDAQ, and is also available from our website.
2. Customers can use flash storage modules with PC200W, PC400, or LoggerNet by downloading SMS Storage Module Support Software, at no charge, from our website.
3. Computer requirements and more detailed information are provided in our product brochure for the specific software package.

Data Graphics and Analysis Software

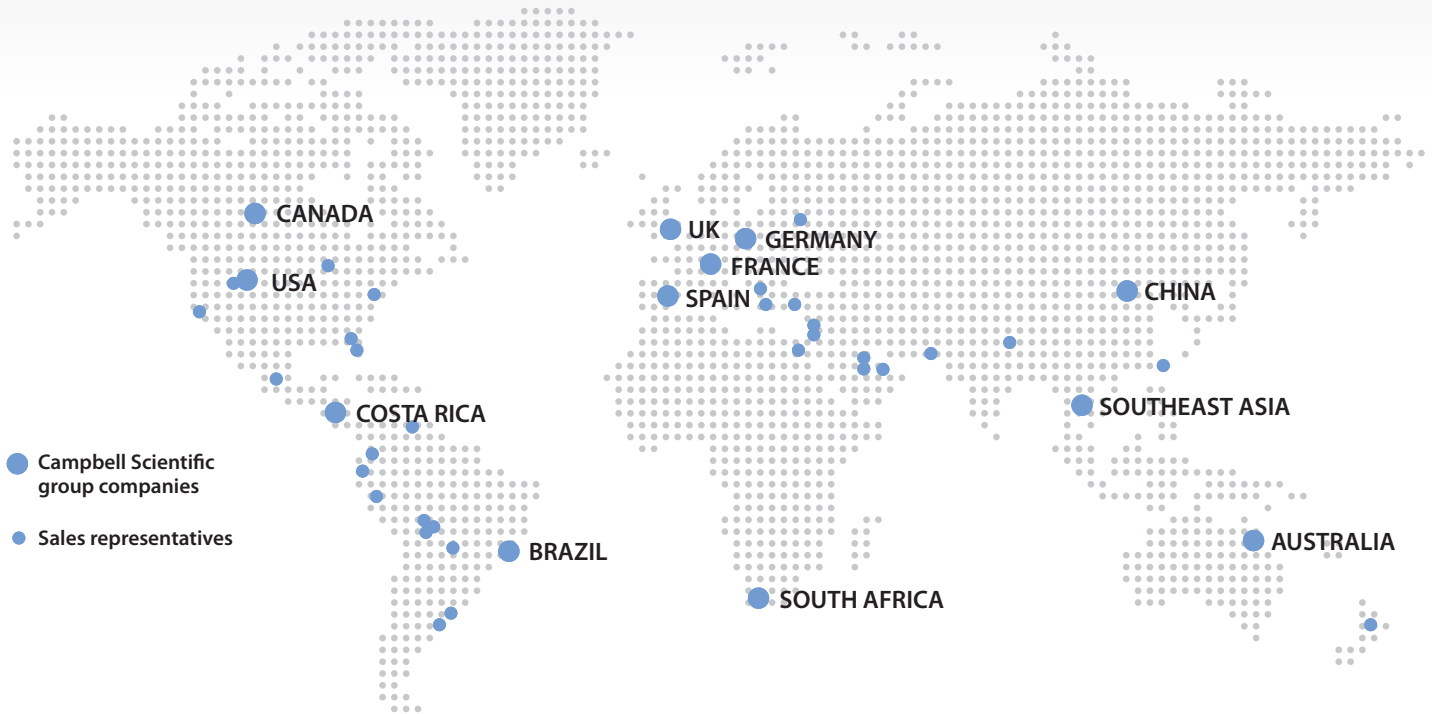| Select the software that best suits your needs ...	View Pro	QuickReports	RTMC	RTMC Pro
PURCHASED SEPARATELY	no (included in PC200W, PC400, LoggerNet, and RTDAQ)	no (included in LNDB)	no (included in RTDAQ, LoggerNet, and LoggerNet Admin)	yes (as an enhancement to RTMC)
CONTEMPORARY DATALOGGERS SUPPORTED	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X	CR300-series, CR6, CR800, CR850, CR1000X, CR1000, CR3000, CR9000X
RETIRED DATALOGGERS SUPPORTED	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000, CR9000	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000, CR9000	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000, CR9000	CR200-series, CR200X-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR7, CR5000, CR9000
DATA STORAGE METHOD SUPPORTED	mixed-array, table	mixed-array, table	mixed-array, table	mixed-array, table
DESIGN GOAL	graphically appealing, flexible, powerful	simple report generator using an LNDB database	starter software, simple, yet graphically appealing	graphically appealing, flexible, powerful
REAL-TIME UPDATES	no (historic only)	no (historic only)	yes	yes
ALARMS	none	none	real time, visual, audible	real time, visual, audible, multi-level alarms possible, alarm log, launch programs, email notifications
DESIGNER TOOL KIT	tables, graphs with multiple traces, FFTs, histograms	tables, graphs with multiple traces	alarms, COM check, gages, charts, images, labels, digital displays, set points, sliders, status bars, table displays, time displays, switches	all the tools included in RTMC, as well as additional alarm types, switches, layout components, hot spots launch commands, FTP file transfer, run cora commands, xy chart, oscilloscopes
CREATE FILES FOR EXPORT TO WEBSITE	yes (see note 1)	no	(see note 2)	yes
TRIAL VERSION AVAILABLE	yes (see note 3)	yes (see note 4)	yes (see note 3)	yes
RUN-TIME VERSION AVAILABLE	no	no	yes	yes

Notes:
1. Graphic files created in View Pro can be exported to a website on demand.
2. Projects created in RTMC or RTMC Pro can be displayed on a website using CSI Web Server. For the standard RTMC Development application, CSI Web Server needs to be purchased separately. CSI Web Server is included with RTMC Pro.
3. A trial version of View Pro and RTMC is included in the trial version of both LoggerNet and RTDAQ.
4. A trial version of QuickReports is included in the trial version of LNDB.
5. Computer requirements and more detailed information are provided in our product brochure for the specific software package.

CAMPBELL SCIENTIFIC®
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Other Locations: Sales and support are provided in many other locations through an extensive network of international reps. For the full list, please visit *www.campbellsci.com/directory*.