Data Loggers

Product	Description	Supported Controllers	Operating Requirements	Page
F4T With INTUITION®	1 to 24 Channels	F4T and Flex Modules (FM)	None	**383**
EZ-ZONE® RM System with Access Module	Multi-loop controller with data logging ability	EZ-ZONE RM	None	**384**
SpecView HMI Software	Human machine interface for Watlow controllers	See catalog page 386	Windows® 10, 8.1, 8, 7, Vista, Server 2003, XP (Home and Professional), 2000, NT 4.0, ME, 98 and 95	**385**
Silver Series EM	Rugged, touch screen operator interface terminal	EZ-ZONE and many others	EZwarePlus: Windows® 10, 8.1, 8, 7, Vista and XP	**390**
WATVIEW HMI Software	Human machine interface for older Watlow controllers	See catalog page 392	Windows® XP	**391**
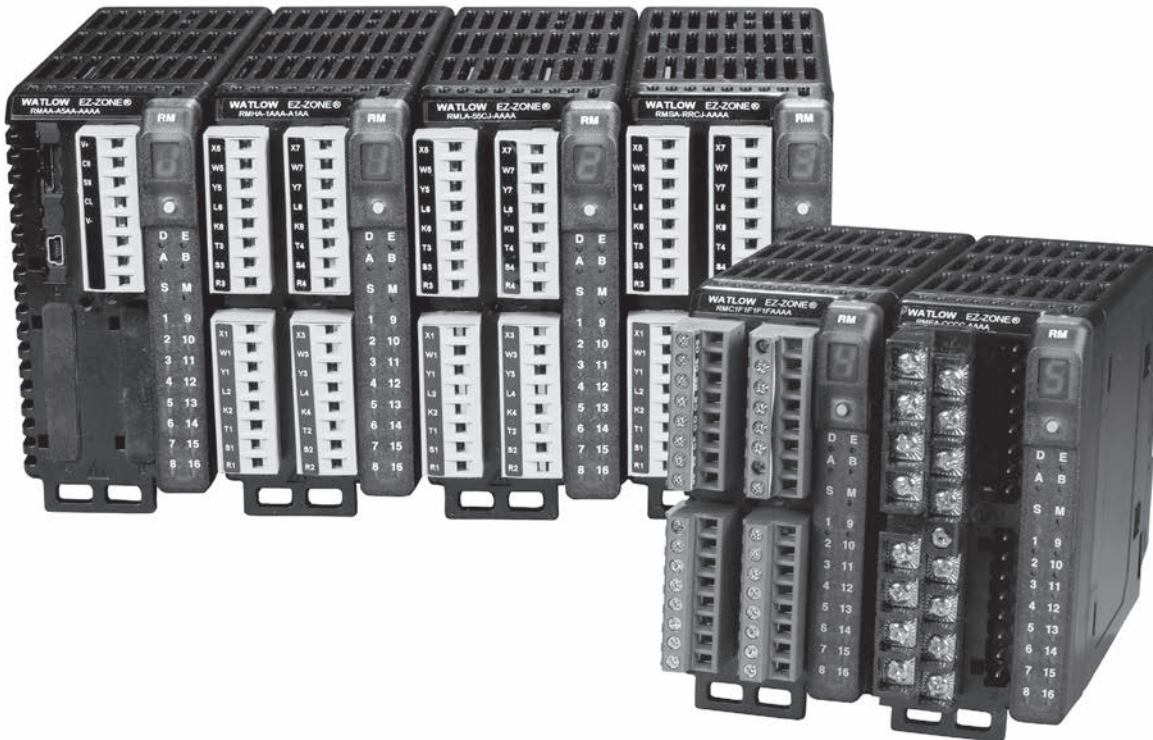
Data Loggers

Data Loggers

F4T With INTUITION®

The F4T with INTUITION® temperature process controller offers a wide range of field removable I/O modules for maximum design flexibility. Configurations can be custom tailored to meet the scaling needs of a tremendous range of equipment and applications while providing exactly the hardware types required for compatibility. The F4T controller also features a 4.3 inch, color, graphical touch panel. Combining power, flexibility and functionality, this new controller offers unmatched versatility, and its best-in-class ease of use could very well make user manuals a thing of the past.

Features and Benefits

4.3-inch, color touch panel with high-resolution, graphical user-interface
- Shortens learning curve and reduces operator errors
- Allows channels, profiles, alarms, inputs and outputs to be personalized with user defined names

Temperature PID, data logger, trend chart, over/under-temperature limit, power switching, math, logic, timers and counters combined into an integrated system
- Lowers ownership costs
- Eliminates the need for separate discrete components
- Reduces complexity
- Simplifies design, ordering and installation
- Saves money

Robust algorithms for temperature, cascade, altitude, humidity and compressor
- Improves process control
- Offers one to four channels of control
- Provides multiple PID sets
- Enables TRU-TUNE®+ adaptive control algorithm
- Offers 40 ramp and soak profiles with real-time clock and battery backup

COMPOSER® graphical configuration PC software
- Speeds up and simplifies commissioning
- Archives and documents controller setup
- Connects with controller easily via Ethernet

Many communications options available including Ethernet Modbus® TCP and SCPI and EIA-232/485 Modbus® RTU
- Offers two USB host ports and one device port
- Simplifies file transfers
- Connects easily

Modular design
- Adapts quickly to evolving requirements
- Offers numerous types of field pluggable modules for maximum flexibility and easiest compatibility
- Features scalable and modular firmware functions
- Delivers scalable input/output quantities from 1 to 36

Agency certifications include UL®, FM, CE, RoHS, W.E.E.E., NEMA 4X/IP65
- Ensures high quality and reliability
- Verifies performance in installations worldwide

SERIES F4S/F4D/F4P backward compatible
- Provides easy retrofit with minimum pain and disruption
- Ensures proper fit in existing SERIES F4 panel cutout

Off-the-shelf solution
- Provides cost-effective "make versus buy"
- Offers preconfigured touch-panel screens
- Assures quicker time to market

For detailed product and ordering information, see the full F4T product section located on pages 211 through 221.

EZ-ZONE® RM System with Access Module

The EZ-ZONE® RM controller simplifies thermal system management. The EZ-ZONE RM controller family is comprised of six module types: an integrated on-off or PID control, monitoring and over/under temperature limit module, a high-density on-off or PID control module, a high-density limit only module, an input/output (I/O) expansion module, a high-density monitor/scanner module and a data logging and field communications access module. A system is configured by connecting any combination of module types to address specific application needs. The EZ-ZONE RM is extremely flexible and scalable allowing mixing and matching of I/O to configure one to 152 control loops and up to 256 monitor points.

Optional integrated controller functions can be combined or ordered in different quantities:

- PID control loops
- Over/under temperature limit control loops
- 10 and 15 ampere power output/heater driver options
- On-board data logging
- Current measurement input
- Sequencer start up and control function
- Programmable timer and counter functions
- Programmable math and logic options
- Multiple communication protocol options
- Mobile configuration with removable secure digital (SD) flash card

Benefits of using an integrated controller solution:

- Reduces wiring time and termination complexity compared with connecting multiple discrete products
- Improves system reliability
- Reduces termination and installation cost
- Eliminates compatibility issues often encountered with using various discrete components and brands
- Reduces troubleshooting time and downtime costs because the system can specifically identify any problems with a sensor, controller, solid state relay (SSR) power output or heater load
- Complete thermal solution saves engineering time and labor costs while shortening project schedules
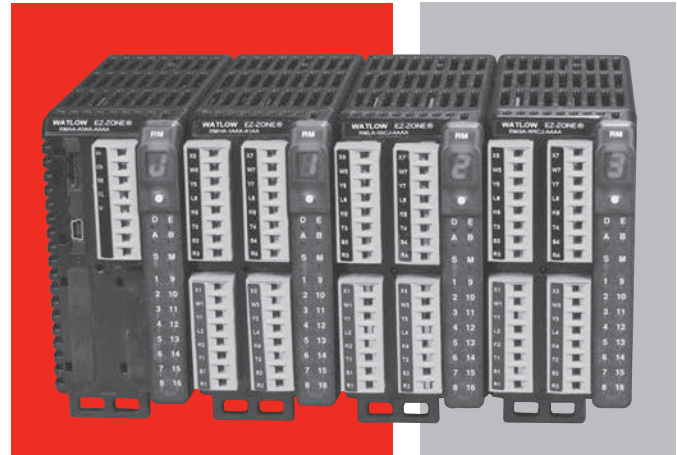
Features and Benefits

Multiple inputs; from one to 152 PID loops of control or monitor up to 256 analog inputs

- Mix and match I/O to fit any application; from one input with two outputs to 152 analog inputs with 152 outputs, or monitor up to as many as 256 analog inputs all in one system
- Reduces cost because only required loops are purchased
- Allows a common controller platform across many design applications as both loops and outputs can be ordered in single increments

Advanced PID control algorithm

- Offers TRU-TUNE®+ adaptive control to provide tighter control for demanding applications
- Enables auto-tune for fast, efficient start-up

Communication capabilities

- Provides a range of protocol options including universal serial bus (USB) device port, Modbus® RTU, EtherNet/IP™, Modbus® TCP, DeviceNet™ and PROFIBUS

USB Port

- Provides data log retrieval

SPLIT-RAIL control

- Enables modules mounted in separate high-voltage and low-voltage cabinets to function as an integrated system
- Minimizes the length and cost of wire runs and improves system reliability by locating inputs closer to sensors and outputs closer to loads

WATLOW

Data Loggers

SpecView HMI Software

SpecView software is an easy-to-use Human Machine Interface (HMI) to Watlow controllers, including the F4T with INTUITION process controller and EZ-ZONE controllers as well as third-party products. Watlow's single point of support for hardware, software and application needs ensures knowledgeable and expedient responses to questions or concerns.

This competitively priced package includes field-proven features, many suggested by loyal users. Built-in support and auto-detect for Watlow controllers make setup quick and simple. SpecView is ideal for industrial applications with support for barcode readers and touch-screen operation.

To try before purchasing, download SpecView from the Watlow website and run in the time-limited demo mode.

Features and Benefits

Built-in support and auto-detect for controllers
- Saves set-up time
- Eliminates the need to learn communications protocols
- Integrates devices from multiple vendors

Watlow EZ-ZONE standard bus communications protocol
- Communicates with any EZ-ZONE product without requiring purchase of a communications option

Highly configurable trending/graphing
- Simplifies monitoring and troubleshooting processes and machines
- Provides a permanent, unalterable record of results

Flexible data logging and report generator
- Helps users comply with regulatory requirements including AMS 2750D NADCAP
- Reduces labor and increases accuracy by automating data collection
- Simplifies record keeping by consolidating measurements, operator comments and other information into Excel® - compatible report formats
- Allows data to be grouped in user-defined batches
- Records operator actions

Easy-to-build, customizable screens
- Allows creation of application-specific screens, which can automate tasks, decrease training time and simplify monitoring and operation
- Highlights specific parameter values with user-set color dynamics and provides bar graphs for "at-a-glance" monitoring
- Limits access with passwords if desired
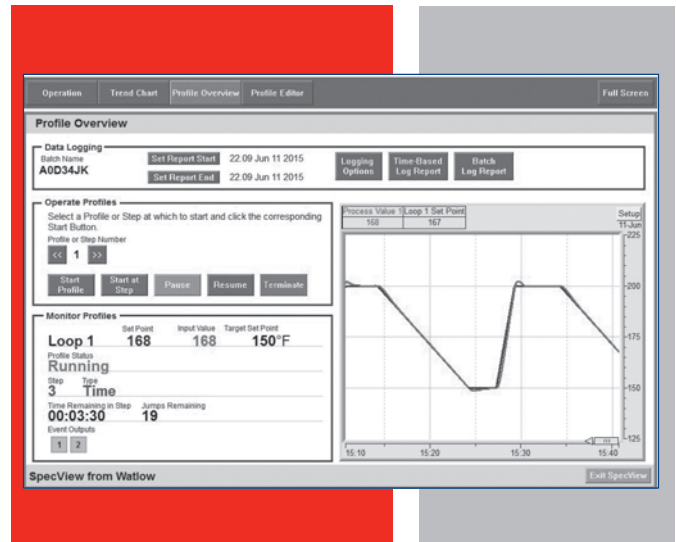
Easy-to-use recipe manager
- Saves snapshot of current parameter settings
- Eliminates operator error when setting machine parameters
- Reviews and edits complex programmer profiles

Historical replay option
- Helps troubleshoot processes by allowing review of recorded data

Remote access option
- Allows multiple, identical operator stations for convenient access
- Reduces downtime and increases utilization with monitoring and access over LAN, modem or Internet

System Requirements

Compatible Operating Systems:
- Windows® 10, 8.1, 8, 7, Vista, Server 2003, XP, 2000, NT 4.0, ME, 98 and 95

Minimum System:
- Pentium® processor or equivalent AMD
- 1GB RAM (2GB or more recommended)
- 100MB hard disk space to install SpecView
- Additional disk space for data logging
- Instrument connection: serial port or Ethernet
- USB port for the key

Ideal System:
- Intel® Core™ i5 2.6Ghz processor or AMD equivalent
- 2GB RAM
- 500GB hard disk plus enough space for data logging

Data Loggers

SpecView HMI Software

### Supported Controllers and Protocols

Controller	Controller's Communication Protocol		
	Standard Bus	Modbus® RTU	Modbus® TCP
F4T with INTUITION	N/A	✓	✓
EZ-ZONE RM, PM and ST	✓	✓ ①	✓ ①
SERIES F4 Ramping	N/A	✓	N/A
SERIES 96, 97, SD	N/A	✓	N/A
POWER SERIES	N/A	✓	N/A
MICRODIN	N/A	✓	N/A
SERIES 986, 987, 988, 989	N/A	✓	N/A
CLS200 (standard or ramp/soak)	N/A	✓	N/A
MLS300 (standard or ramp/soak)	N/A	✓	N/A

① Modbus® support for basic operation parameters is included. Automatic detection of EZ-ZONE instruments is not available via Modbus® so configurations must be set up manually. EZ-ZONE ST controllers versions 1 to 3 are supported via Modbus® with a RUI Gateway only.
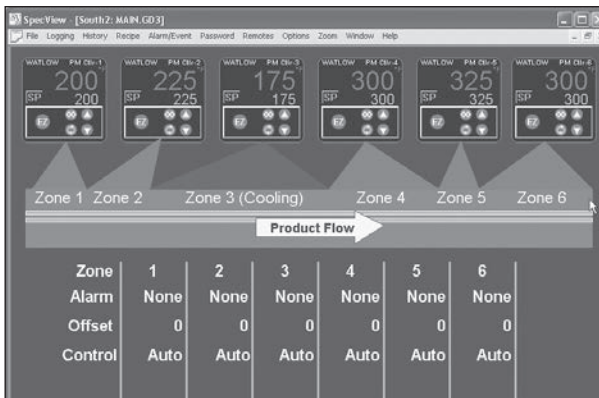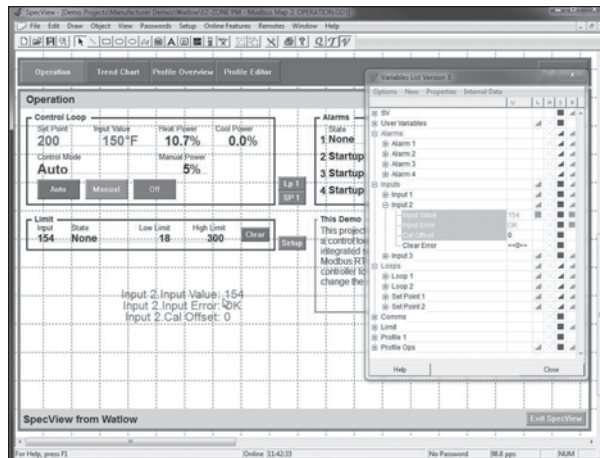
Application Examples
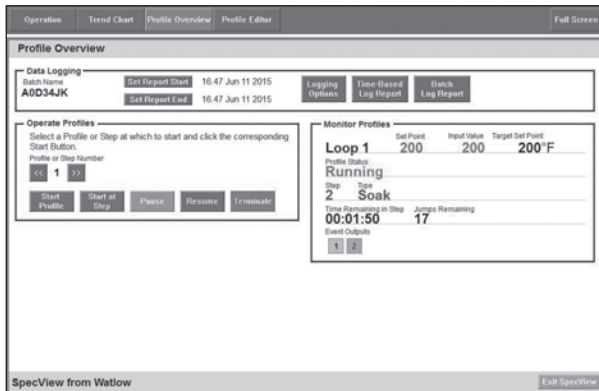
Track and report batch-specific processing data.
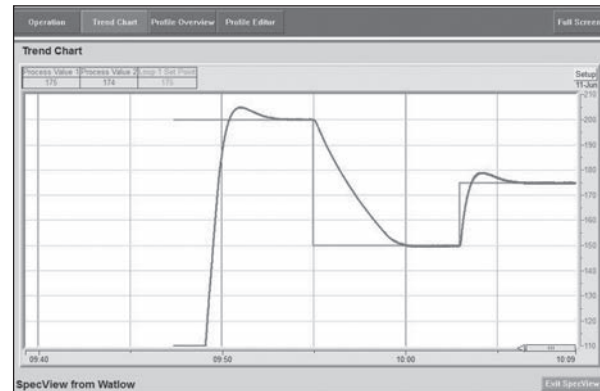
Graph and log process data. Replay data that may have been missed while a user was away. For playback of data older than four hours get the historical replay option.

Create application-specific screens that depict process data so users can relate.

Make screens with drag-and-drop ease.

WATLOW

SpecView HMI Software

Ordering Information - Standard

Part Number

① ②	③ Version	④ Ports	⑤ Historical Replay & Strategy Cont.	⑥ DDE and OPC	⑦ ActiveX Container	⑧ ⑨ Remote Users	⑩ Special Watlow Drivers	⑪ Third Party Drivers	⑫ Update Plan	⑬
SV	S			-			-			0

③	Version
S =	Standard

④	Ports
S =	Single
M =	Multiple

⑤	Historical Replay and Strategy Controller
0 =	None
H =	Historical replay
S =	Strategy controller
B =	Both

⑥	DDE and OPC
0 =	None
D =	DDE
C =	OPC client
B =	Both

⑦	ActiveX Container
0 =	None
A =	ActiveX container

⑧ ⑨	Remote Users
00 =	None
XX =	Number of simultaneous remote users (01 to 99)

⑩	Special Watlow Drivers
0 =	None
1 =	SERIES F4 programmer

⑪	Third Party Drivers
0 =	None
1 =	Allen-Bradley® DF1

Note: Special drivers for other third-party products (Honeywell, Eurotherm, Mitsubishi, Yokogawa and Marathon) are available directly from SpecView.

⑫	Update Plan
0 =	One year of free updates
5 =	Five additional years of updates (six years total)

Ordering Information - Mini

Part Number

① ②	③ Version	④ Ports	⑤ Historical Replay & Strategy Cont.	⑥ DDE and OPC	⑦ ActiveX Container	⑧ ⑨ Remote Users	⑩ Special Watlow Drivers	⑪ Third Party Drivers	⑫ Update Plan	⑬
SV	M			-			-			0

③	Version
M =	Mini (limited to two instrument views)

Note: The mini version is limited to two instrument views and may not be appropriate for use with some devices such as profiling and multi-loop controllers where a single device appears as multiple instruments in SpecView.

④	Ports
S =	Single
M =	Multiple

⑤	Historical Replay and Strategy Controller
H =	Historical replay
B =	Historical replay and strategy controller

⑥	DDE and OPC
0 =	None
D =	DDE
C =	OPC client
B =	Both

⑦	ActiveX Container
0 =	None
A =	ActiveX container

⑧ ⑨	Remote Users
00 =	None
XX =	Number of simultaneous remote users (01 to 99)

⑩	Special Watlow Drivers
0 =	None
1 =	SERIES F4 programmer

⑪	Third Party Drivers
0 =	None
1 =	Allen-Bradley® DF1

Note: Special drivers for other third-party products (Honeywell, Eurotherm, Mitsubishi, Yokogawa and Marathon) are available directly from SpecView.

⑫	Update Plan
0 =	One year of free updates
5 =	Five additional years of updates (six years total)

Data Loggers

SpecView HMI Software

Ordering Information - Upgrade

Part Number

① ②	③ Version	④ Ports	⑤ Historical Replay & Strategy Cont.	⑥ DDE and OPC	⑦ ActiveX Container	⑧ ⑨ Remote Users	⑩ Special Watlow Drivers	⑪ Third Party Drivers	⑫ Extend or Restart Update Plan	⑬
SV				-			-			0

③	Version
U =	No version change; upgrade options only
N =	Upgrade mini to standard

④	Ports
0 =	No upgrade
M =	Multiple

⑤	Historical Replay and Strategy Controller
0 =	No upgrade
H =	Historical replay (already included with SpecView Mini)
S =	Strategy controller
B =	Both (do not order this option with SpecView Mini)

⑥	DDE and OPC
0 =	No upgrade
D =	DDE
C =	OPC client
B =	Both

Note: Your upgrade order must be accompanied by the Step 1 code from the Upgrade screen in SpecView. Use the upgrade order form available at www.watlow.com or upon request from Watlow or your authorized distributor.

⑦	ActiveX Container
0 =	No upgrade
A =	ActiveX container

⑧ ⑨	Remote Users
00 =	No upgrade
XX =	Number of simultaneous remote users (01 to 99)

⑩	Special Watlow Drivers
0 =	No upgrade
1 =	SERIES F4 programmer

⑪	Third Party Drivers
0 =	No upgrade
1 =	Allen-Bradley® DF1

Note: Special drivers for other third-party products (Honeywell, Eurotherm, Mitsubishi, Yokogawa and Marathon) are available directly from SpecView.

⑫	Extend or Restart Update Plan
0 =	No additional updates
2 =	Extend update plan by two years. **Note:** Valid only **prior** to expiration of the update plan.
5 =	Extend update plan by five years. **Note:** Valid only **prior** to expiration of the update plan.
U =	Start a new two-year update plan. **Note:** Select this option to update SpecView after its update plan has expired.
A =	Start a new two-year update plan. **Note:** Valid one time only when upgrading from version 2.5 to version 3.

Data Loggers

SpecView HMI Software

How to Choose the Correct SpecView Options

Order this option...	If you want to...
Mini Version	Operate a system with data from one or two simple instruments. This option includes historical replay and allows up to two instruments. Note that in some cases, devices such as profiling and multi-loop controllers are represented by more than one instrument, the mini version may not be appropriate.
Standard Version	Be free to expand configurations beyond the two instrument limit of the mini version.
Single Port	Communicate with instruments on only one serial communications port or only via Ethernet only.
Multiple Port	Communicate with instruments on more than one serial communications port and via Ethernet.
Historical Replay	Replay logged data on screens in trends, bar graphs and numeric fields. Without the option, replay is limited to the last four hours of data.
Strategy Controller	Configure SpecView to respond automatically to events such as specific parameter values with actions such as printing the screen, starting logging or download a recipe. Events can also be time or calendar based. Without the strategy controller option there is a two event limit.
DDE	Integrate SpecView with other Windows® programs.
OPC Client	Connect SpecView to instruments via a third-party OPC server.
ActiveX Container	Integrate third-party or customer-written ActiveX controls into SpecView.
Remote Users	Monitor instruments from multiple computers simultaneously. Order the number of remote users corresponding to the maximum number of additional computers needed to connect simultaneously.
SERIES F4 Programmer Driver	Use the computer to manage profiles: program profiles in the computer, save profiles on the computer, or download profiles that are saved on the computer to the SERIES F4.
Allen-Bradley® DF1 Driver	Connect to Allen-Bradley® PLCs (process logic controllers) that support the DF1 protocol
Update Plan	SpecView includes one year of free updates with an option for five additional years. The update period may be extended or restarted with field upgrade options.

Silver Series EM

The Silver Series EM is a rugged, touch-screen operator interface terminal (OIT). Available in three sizes (4.3, 7 and 10 inch diagonal display sizes), the OIT's feature serial and Ethernet communications with multiple controllers, email messaging, universal serial bus (USB host), data logging, flexible password security and multiple languages. The small bezel size and two-inch depth make mounting in tight spots easy.

The Silver Series EM programming software, EZwarePlus, is easy to use and features a large variety of built-in screen objects that makes it powerful. When creating screens, the user can call upon extensive graphics libraries, import custom graphics and add numeric displays, entry fields, analog meters, bar graphs and trend graphs with just a few mouse clicks. Screen objects are highly customizable, and the user can create libraries of their own objects for repeat use. The online simulator, Ethernet and USB support make testing and downloading fast. The EZwarePlus screen editor is part of the EZwarePlus software suite and is available as a FREE download on www.watlow.com and on the DVD-ROM found in the accessories list on page 370.

The Silver Series EM OIT paired with Watlow controllers is the perfect solution for your industrial process or machine control application.

Features and Benefits

Bright, color, high resolution, graphic, touch screen, thin film transistor (TFT) display
- Maximizes display space in the OIT footprint
- Allows application specific interface design
- Allows viewing from a distance and at an angle
- Highlights important process information with color and animation

User selectable portrait or landscape operation
- Fits in tight spots

Ethernet, serial and USB host ports
- Allows options for connecting to controllers
- Provides options for downloading projects
- Expands memory for additional recipe and data log storage
- Supports barcode readers, keyboard, mouse and printers
- Supports monitoring from a personal computer (PC) with free virtual network computing (VNC) client software

Support for over 100 protocols, up to three simultaneously plus multiple protocols over Ethernet
- Connects to a wide range of industrial controllers and devices
- Integrates a variety of devices to simplify complex operation tasks

Data logging, display and trending
- Helps operators monitor processes
- Reduces labor and increases accuracy by automating time-stamped data collection
- Stores captured data for future retrieval in multiple files
- Saves time by exporting data to Excel®-compatible comma separated value (.csv) files
- Improves process understanding by allowing live and historical data to be viewed on the OIT

For detailed product and ordering information, see the full Silver Series EM product section located on pages 365 through 370.

Data Loggers

WATVIEW™ HMI Software

Note: WATVIEW™ is not compatible with versions of Windows® after Windows® XP and does not support Watlow EZ-ZONE controllers. Please consider SpecView for your HMI software needs.

WATVIEW is Watlow's Human/Machine Interface (HMI) software for older Watlow controllers. WATVIEW features easy controller setup, recipe and alarm managers, data-logging and trend plot graphing.

WATVIEW is available in three editions:

- **Run-Time Edition—**for operating controllers
- **Developer Edition—**creates custom screens
- **Configurator Edition—**available free of charge for setting up controllers at www.watlow.com

Note: See the Edition Comparison Table on the next page for details about which features are in each edition.

Features and Benefits

Easy program setup
- Scans all available communications ports and baud rates for supported controllers
- Detects which controllers are connected to the computer
- Automatically configures with appropriate setup screens and help files for detected controllers

### Controller specific setup and spreadsheet overview screens
- Simplify monitoring and adjusting controller parameters
- Display settings for multiple channels and controllers
- Present parameters according to controller's menus

Recipe manager
- Stores commonly used controller settings
- Speeds up repetitive controller setups
- Backs up "snapshot" of your settings against data loss

Calendar-start function
- Automates processes by downloading recipes automatically in a one-time or repeating schedule
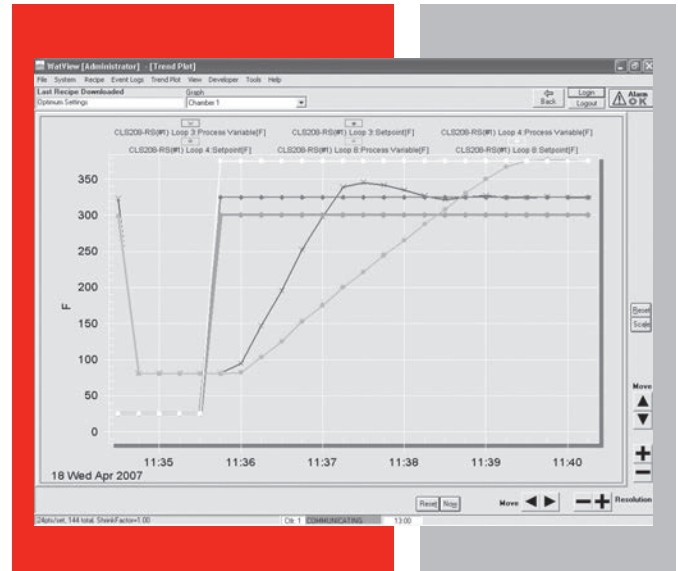
Alarm manager
- Makes alarms easier to understand with customizable, plain text messages
- Aids in troubleshooting by time stamping and logging alarms
- Streamlines alarm management by allowing monitoring, acknowledging and clearing alarms for multiple controllers

Data-logging and trend plot graphs
- Reduce labor and increase accuracy by automating data collection for the parameters you choose
- Save time by exporting data to Excel®-compatible spreadsheet files
- Simplify process adjustments and troubleshooting by graphing up to 20 data items together on a graph
- Provide flexibility by allowing users to name, save and choose for display from any number of graphs

Data Loggers

WATVIEW HMI Software

Specifications

Windows® XP System Requirements:
- RAM: 128 MB
- 800 x 600 screen resolution
- 16-bit or higher color palette ("High Color")
- Serial communications (COM) or Ethernet port
- Microsoft® compatible pointing device (mouse or trackball)
- Parallel or USB port
- 200 MB hard drive space
- CD-ROM drive or Internet connection (for installation only)

Controllers Supported:

WATVIEW supports the following controllers when equipped with the listed firmware revision or later:
- CAS200 (Rev. 2.0)
- CLS200 SERIES standard, enhanced, and extruder (Rev. 3.31), ramp and soak (Rev. 3.40)
- CPC400 SERIES (Rev. 1.00)
- F4S/F4D (Rev. 2.06), F4P (3.00)
- MICRODIN™ (Rev. 1.01)
- MLS300 SERIES standard, enhanced, and extruder (Rev. 3.31), ramp and soak (Rev. 3.40)
- POWER SERIES (Rev. 1.00)
- SERIES 96 (Rev. 1.20)
- SERIES 96 with ramping (Rev. 1.05)
- SERIES 97 (Rev. 1.10)
- SERIES SD controller (Rev. 4.00), profiling (Rev. 1.00), single-display controller (Rev. 2.00), limit (Rev. 2.00)

Note: See www.watlow.com/products/software/watview.cfm to download the latest version or get a free copy of the WATVIEW Configurator edition.
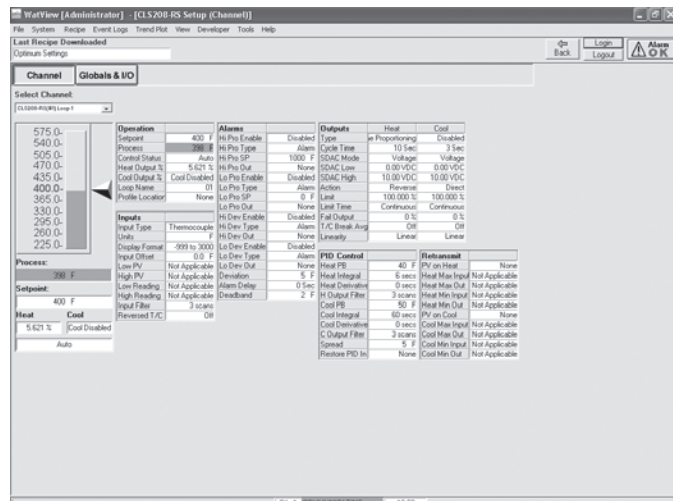
Setup screens make it easy to configure controllers.

Edition Comparison Table

	Developer	Runtime	Configurator
Process Monitoring Features			
Spreadsheet overview	Yes	Yes	Yes
Controller setup screens	Yes	Yes	Yes
Viewing custom screens	Yes	Yes	Yes
Alarm management	Yes	Yes	
Creating and editing custom screens	Yes		
Editing user variables	Yes		
Process Management and Documenting Features			
Editing and downloading recipes	Yes	Yes	Yes
Calendar-based, automatic recipe start	Yes	Yes	
Event logging	Yes	Yes	
Data logging	Yes	Yes	
Trend plot graphing	Yes	Yes	
Utility Features			
Multiple-controller support	Yes	Yes	Yes
Communications diagnostics	Yes	Yes	Yes
Password security	Yes	Yes	Yes
Customizable parameter names	Yes	Yes	Yes
Online help	Yes	Yes	Yes
Active X (OLE 2.0) support	Yes	Yes	Yes
Personal webserver compatibility	Yes	Yes	Yes

Ordering Information

Part Number

① ② ③ ④	⑤ Edition	⑥	⑦ Key Type	⑧	⑨ ⑩ ⑪ ⑫
WV00	–	0		0 –	0000

⑤	Edition
D =	Developer
R =	Runtime

⑦	Key Type
P =	Parallel Port (LPT)
U =	USB

WATLOW