

InstantHMI Multi-Platform Interface

for Watlow Controllers (EZ, SD, 96, ...)

Welcome

February 29, 2008

InstantHMI Presentation Overview

- ➔ • **Introduction**
- **InstantHMI Architecture**
- **InstantHMI LaunchPad Designer**
- **InstantHMI Runtime Engines**
- **Watlow Application Considerations**
- **Conclusion**

OUR MISSION

Software Horizons focus is to develop and market **low cost** Human Machine Interface Software and **Total System Solutions** based on Windows PC, Windows CE and PDA Platforms (Windows Mobile, Pocket PC, Smartphone and Palm OS) incorporating the latest technology for **wireless** and wired connectivity to allow '**anywhere, anytime**' information access in the field and on the factory floor.

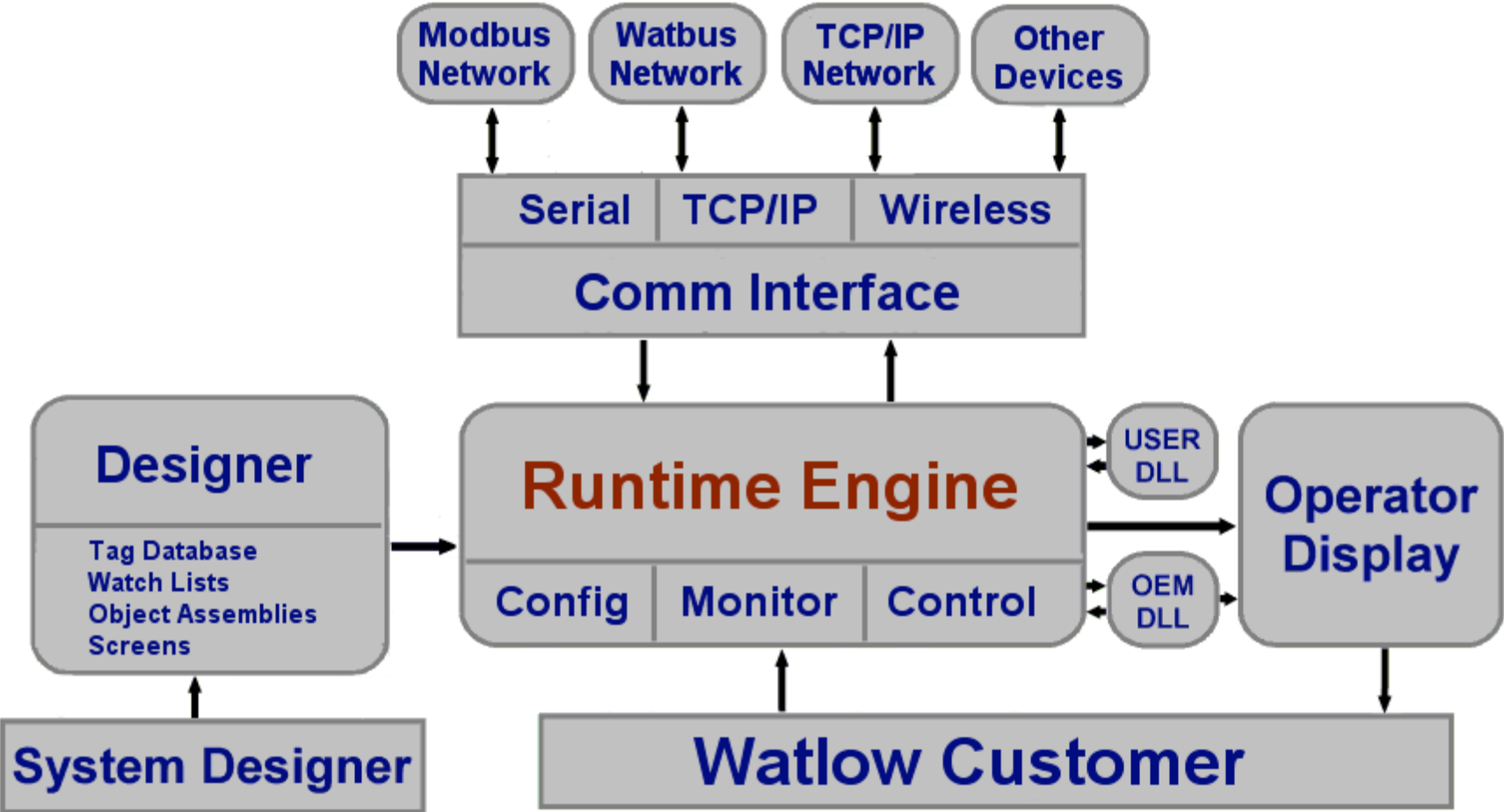
InstantHMI Product History

	<u>Version</u>	<u>Year</u>
• OI-2000 HMI/SCADA Software		
– DOS	1.x	1987
– Windows 3.x, 95 & NT	2.x, 3.0	1995-1997
– Windows 98, 2000 & XP	3.x	1998-2000
• InstantHMI Software (PDA)		
– Palm OS	1.0	2000
– Pocket PC (Windows CE)	1.x, 2.0	2001-2002
– InstantHMI for Watlow (PDA)	2.0, 4.0	2002-2003
• InstantHMI Software ('Deploy Anywhere')		
– PC, Tablets, CE Panels and PDA	4.x	2003-2006
– 'Simpler is Better' HMI Architecture	5.0	2007
– InstantHMI for Watlow (PC, CE, PDA)	2.0, 4.0	2002-2003

InstantHMI Presentation Overview

- Introduction
- ➔ • **InstantHMI Architecture**
 - Design Elements
 - Crucial Elements
- **InstantHMI LaunchPad Designer**
- **InstantHMI Runtime Engines**
- **Watlow Application Considerations**
- **Conclusion**

InstantHMI for Watlow Architecture

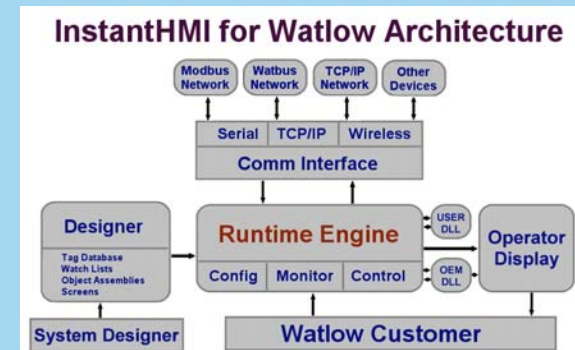


InstantHMI Design Elements

- Good Decisions require timely and accurate **information**
- Sensors provide information from machine/process to controllers (**Data Source**)
- InstantHMI maintains information items in a **Tag Database**
- **Screen Objects** display information on HMI Platforms
- **Comm Interface** connects Screen Objects to Data Sources
 - Wired serial or Ethernet cable link
 - Wireless IR and RF link
 - Communication drivers for various controllers

InstantHMI - Crucial Elements

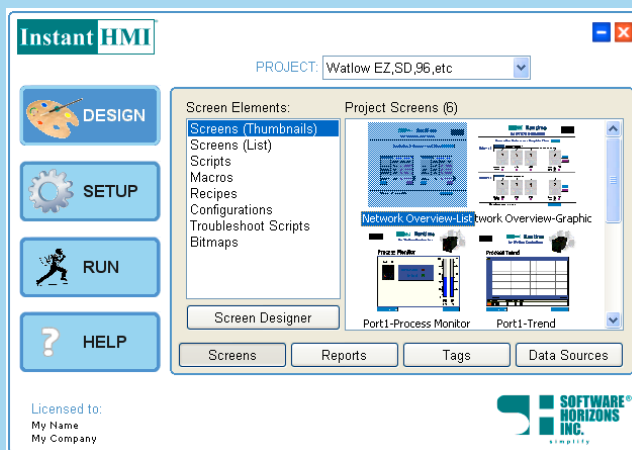
- Development System (PC-LaunchPad, CE & PDA)
 - Tag Manager and Tag Editor
 - Recipe Manager, Message Manager, Datalog Events
 - Troubleshoot Script Editor (PC-LaunchPad only)
 - Screen Designer (PC-LaunchPad only)
- Runtime Engines (PC, CE and PDA)
 - Data Source/Comm Link Setup
 - Monitoring and Data Entry
 - Trending and Data Logging
 - Recipes & Configuration
- Comm Interface
 - Wired Serial/Ethernet Link or Wireless IR and RF



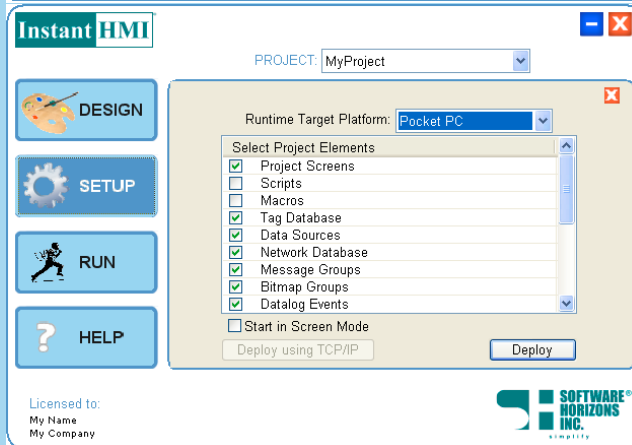
InstantHMI Presentation Overview

- Introduction
- InstantHMI Architecture
- • **InstantHMI LaunchPad Designer**
 - Tag Database
 - Data Sources
 - Screen Designer
- InstantHMI Runtime Engines
- Watlow Application Considerations
- Conclusion

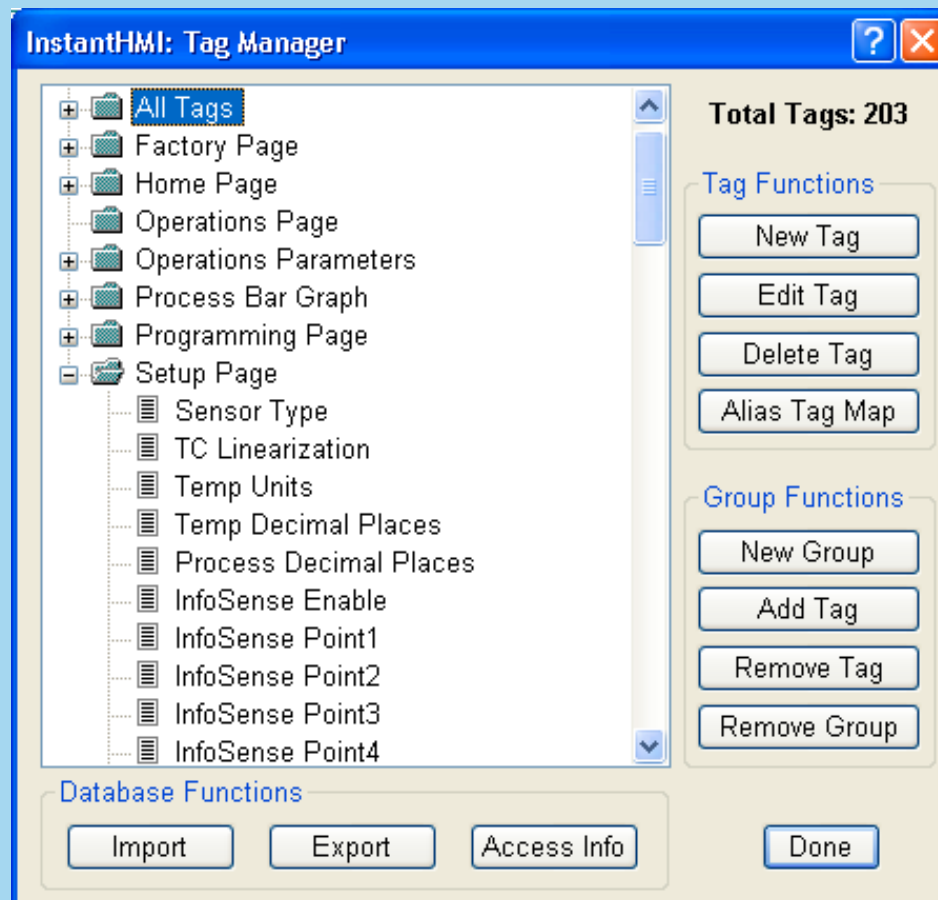
InstantHMI 5.0 LaunchPad Designer



- Use LaunchPad to **design** HMI project (tags, recipes, messages, scripts and screen objects) on Windows PC and then **deploy** on target platforms - PC, CE, or PDA (Windows Mobile, Pocket PC, or Palm).
- Transfer database changes made on the PDA or CE platforms to LaunchPad for backup.
- Upload Data logged in the runtime (PDA or CE) to Windows PC for analysis in Microsoft Excel.



LaunchPad Tag Manager



Create, organize and store Tags in LaunchPad Designer for use on target runtime platform.

Datalogging and Trend Analysis

- Datalogging using PC
 - Time Based Sampling and Logging
 - Event Triggered Logging
 - » **If (Event) then datalog (Tag List)**
 - Real Time/Historic Trend review on-line
 - Analysis in Historic Trending Utility
- Datalogging using PDA
 - Review and Analyze as in PC Platform
 - Transfer to PC using LaunchPad
- Spool Data in Text Files (PC)
 - Transfer to Excel (CSV or Tab delimited)
 - Analysis in Excel

InstantHMI: Datalog Events

Events (1)

EZ: Process Monitor [v] [New Event] [Delete Event]

Check Event from Startup

Event Definition

Trigger Type: Transition On [v] Logging Method: Log Once [v] Tags to Log:

WatEZ.Ch00.Process Value
WatEZ.Ch00.Sensor Type
WatEZ.CH00.Set Point
WatEZ.Ch01.Process Value
WatEZ.CH01.Set Point

Trigger Tag: SD.Process Value [v]

Value: 75 [input] [Tag Manager]

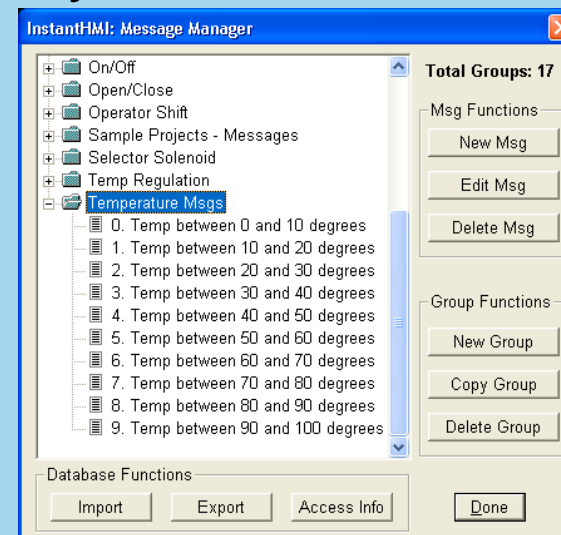
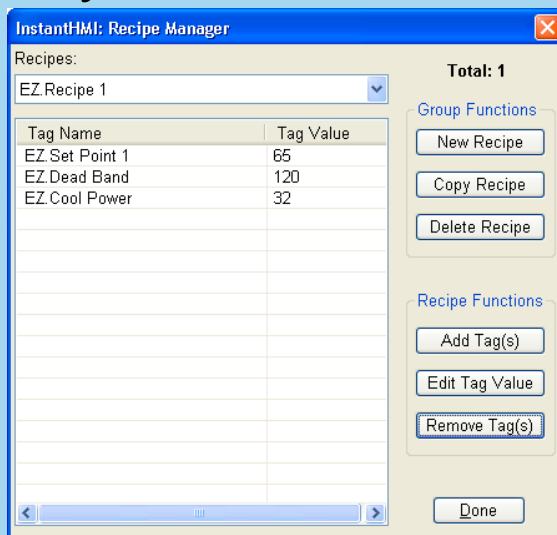
Handshake Tag: <No Tag Selected> [v]

Value: 0 [input] Sample Time: 1000 [input] [Add Tag] [Remove Tag]

[Done]

Recipe and Message Manager

- Recipe/Configuration Manager allows creation, editing and organization of many recipes and machine configurations.
- Messages convert numeric equipment information into easily understood textual display.



LaunchPad Screen Designer

Create, organize and store Screens for target platform

InstantHMI Runtime
for Watlow Controllers

Process Monitor

Station: 1

Process Value: 75
Set Point: 62

Tag Name	Tag Value	Date	Time	High Limit	Low Limit
WatEZ.CH00.Set Point	61.9456	02/29/2008	14:21:58	100	0
WatEZ.Ch00.Process Value	74.7953	02/29/2008	14:21:58	100	0

Network Overview Exit Runtime

Ready No Alarms No Errors Key Ok NUM

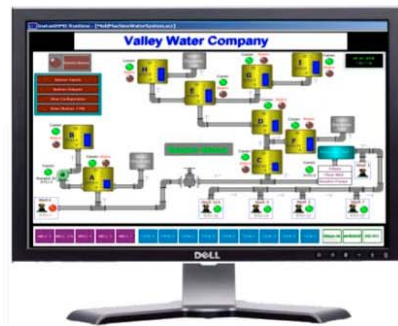
- Pick and Place
- OI-Widgets
- Object Assemblies
- ActiveX/COM/OLE
- Clipboard Tools
- Tag Editor
- Script Editor
- Report Formatter

InstantHMI Presentation Overview

- Introduction
- InstantHMI Architecture
- InstantHMI LaunchPad Designer
- ➔ • **InstantHMI Runtime Engines**
 - PDA, CE and PC Platforms
 - Features (ex. Troubleshoot Script)
- **Watlow Application Considerations**
- **Conclusion**

Runtime Engine for your Platform

InstantHMI® 5.0 Reinforces 'Simpler is Better' HMI Philosophy



Windows PC



CE Touch Panels

Pocket PC
PDA



Rugged
PDA

InstantHMI for Mobile Platforms



- Convert your CE/PPC/Palm into a powerful yet simple low cost HMI for machine diagnosis, troubleshooting and on-demand data collection.
- Tag Groups, Data Logging, Trend Plots, Recipes, Scrollable Monitor Screen, etc. facilitate easy configuration and monitoring.
- Wireless (WiFi, Bluetooth, IR) connectivity in addition to wired serial/Ethernet cable links.

Features: Troubleshooting Script

The screenshot shows a window titled "Troubleshoot Editor" with a close button (X) in the top right corner. It is divided into three main sections: "Topics:", "Symptoms:", and "Possible Causes:".

Topics:	Symptoms:	Possible Causes:
Alarms	Err1 - Underflow	Ambient temp. too hot/c
Communication	Err2 - Under Sensor Rang	Calibration offset set too
Input Errors	Err3 - Over Sensor Rang	Open loop detects broke
Power	Err4 - Overflow	
Unit Errors	Input in error condition	

Below the table is a "Corrective Steps:" section with a text area containing: "Check sensor function. The Open Loop Detect parameter indicates it may be broken." To the right of the text area are buttons for "Add Cause", "Remove", "Edit", and "Done". At the bottom, there are navigation arrows and a status indicator "Step: 1 of 1".

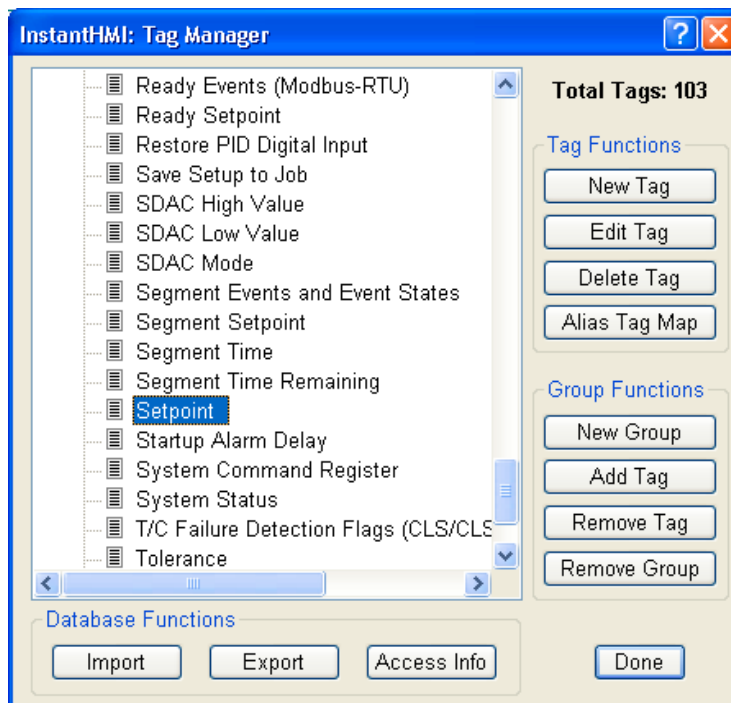
- Use InstantHMI LaunchPad Designer to customize your Troubleshooting Script.
- Select **Sub-Systems** (Display, Communication, Outputs, Alarms, Control, Errors) and observed **Symptoms**.
- Select from displayed **Possible Causes** to focus on **Corrective Actions** displayed on Pocket PC.

InstantHMI Presentation Overview

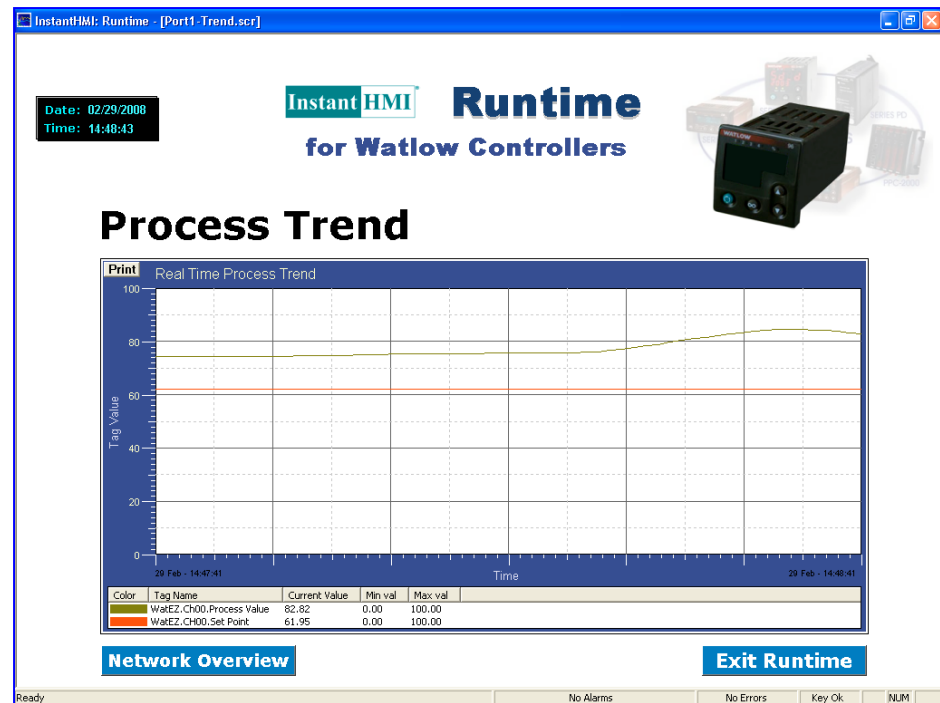
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 - Watlow Controller Interface
 - Device Discovery (Network Overview)
 - Object Assemblies (Dynamic Configuration)
- Conclusion

Modbus Watlow Controller Interface

InstantHMI Modbus interface (**right out of the box**) provides access to all the parameters in the Watlow Controllers using their modbus memory mapping.



The screenshot shows the 'InstantHMI: Tag Manager' window. It features a tree view on the left with various parameters such as 'Ready Events (Modbus-RTU)', 'Ready Setpoint', 'Restore PID Digital Input', 'Save Setup to Job', 'SDAC High Value', 'SDAC Low Value', 'SDAC Mode', 'Segment Events and Event States', 'Segment Setpoint', 'Segment Time', 'Segment Time Remaining', 'Setpoint', 'Startup Alarm Delay', 'System Command Register', 'System Status', 'T/C Failure Detection Flags (CLS/CLS)', and 'Tolerance'. The 'Setpoint' tag is currently selected. On the right, it displays 'Total Tags: 103' and provides 'Tag Functions' (New Tag, Edit Tag, Delete Tag, Alias Tag Map) and 'Group Functions' (New Group, Add Tag, Remove Tag, Remove Group). At the bottom, there are 'Database Functions' (Import, Export, Access Info) and a 'Done' button.



The screenshot shows the 'InstantHMI: Runtime - [Port1-Trend.scr]' window. It displays the date '02/29/2008' and time '14:48:43'. The main title is 'InstantHMI Runtime for Watlow Controllers'. Below this is a 'Process Trend' graph titled 'Real Time Process Trend'. The graph shows a yellow line representing the 'Process Value' and a red horizontal line representing the 'Set Point'. The y-axis is labeled 'Tag Value' and ranges from 0 to 100. The x-axis is labeled 'Time' and shows the date '29 Feb - 14:47:41' to '29 Feb - 14:48:41'. Below the graph is a table with the following data:

Color	Tag Name	Current Value	Min val	Max val
Yellow	WatEZ_CH00.Process Value	82.82	0.00	100.00
Red	WatEZ_CH00.Set Point	61.95	0.00	100.00

At the bottom of the window, there are buttons for 'Network Overview' and 'Exit Runtime'. The status bar at the very bottom shows 'Ready', 'No Alarms', 'No Errors', 'Key Ok', and 'NUM'.

InstantHMI Features

(Useful for Watlow Controllers)

- Import Watlow Modbus Mapping (Excel) directly into InstantHMI Tag Database
- Real-time/Historic Trending
- Data logging to MS Access (and MySQL)
- Multi-Platform support (Windows PC, CE, PDA, SmartPhone etc.)
- Windows **Vista** supported
- No hardware Dongle used (software registration/activation scheme)
- Connectivity Options (WiFi, Bluetooth, IR, etc.)
- **Tags can be generated/modified**
(WatView does not support tag creation)
- Multiple Stations/Channels viewable from single screen
- Unicode implementation for easy Internationalization

Watlow Controller Network Discovery

- InstantHMI architecture allows OEM extension to incorporate '**discovery of Watlow devices**' connected to one or more COM ports on the PC.
- See Modbus controllers discovered **today** (EZ, SD, 96 on multiple com ports).
- Discovered Network Topology is saved and used for faster startup subsequently.
- Watbus device discovery available soon! (when Watbus API functions for **EZ-Zone Controllers** are available from Watlow).

Object Assemblies

(Dynamic Configuration for Watlow Controllers)

- InstantHMI Object Assemblies allow dynamic runtime association to suit **'discovered Watlow devices'** connected to one or more COM ports on the PC.
- See Modbus controllers (EZ, SD, 96) today.
- Watbus devices will be accessed similarly (when Watbus API functions for **EZ-Zone Controllers** are available from Watlow).

Watch List

(Dynamic Data Table for selected Controller Variables)

- Watch List allows monitoring variables from any Watlow devices connected to one or more COM ports on the PC.
- See Modbus controllers (EZ, SD, 96) today.
- Watbus devices can be accessed similarly using EZ-Zone PC Interface API functions.

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Advantages of InstantHMI for EZ-Zone

- **Streamlined Architecture**
 - Flexible and Powerful Design Tools
 - ‘Extensions’ are easy to accommodate
- **Unicode Implementation**
 - Ease of Internationalization and Localization
- **No Hardware Dongles**
 - Simple download and install
 - 30 day Free Eval by Customer (‘Try before Buy’)
 - Selective Activation and upgrade of options

Why InstantHMI for You?

- **Unique HMI Software**
 - Ideal monitoring and diagnostic tool
 - Graphic Screens to suit any application
 - Serial / Ethernet and wireless connectivity
- **Enhances HMI/SCADA**
 - Simple user interface
 - Puts Data/Control in the Platform of your choice
 - Extensible via User Scripts, User DLL and ActiveX to suit any special application requirements

Thanks!

- **For Participating**
- **More Information**
 - www.InstantHMI.com
- **Comments/Questions**
800-664-2000 (US)
978-670-8700 (International)